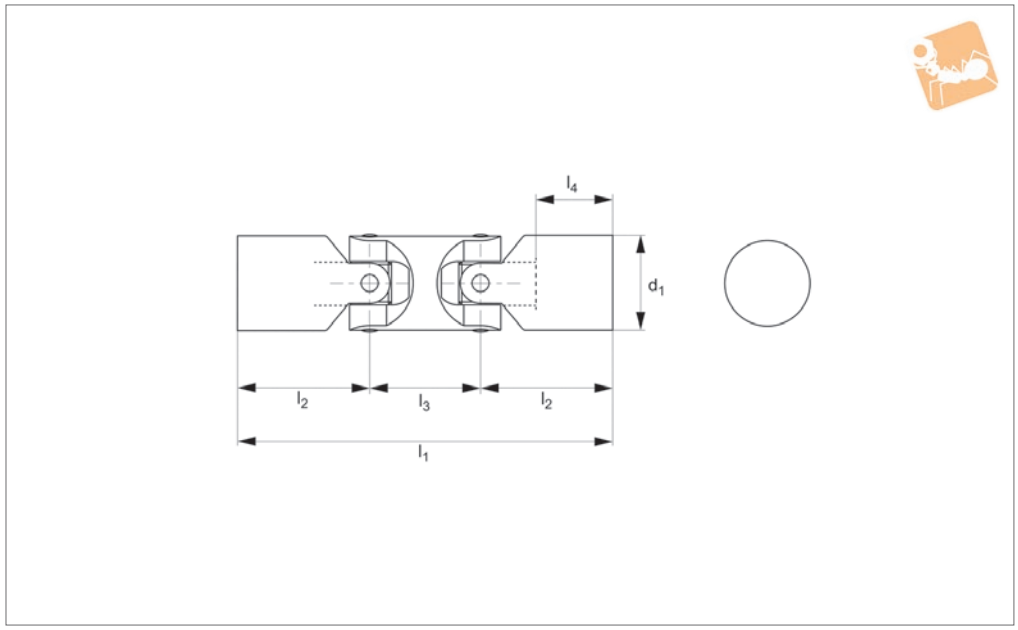
Double Universal Joint
unbored - solid ends





R3683

Material
Steel (9SMnPb28k, no. 10718).
Bearing type: Plain bearing.

Technical Notes
To DIN 808.

Maximum bending angle 45° per joint.
Max. drive speed of 1000 rpm.

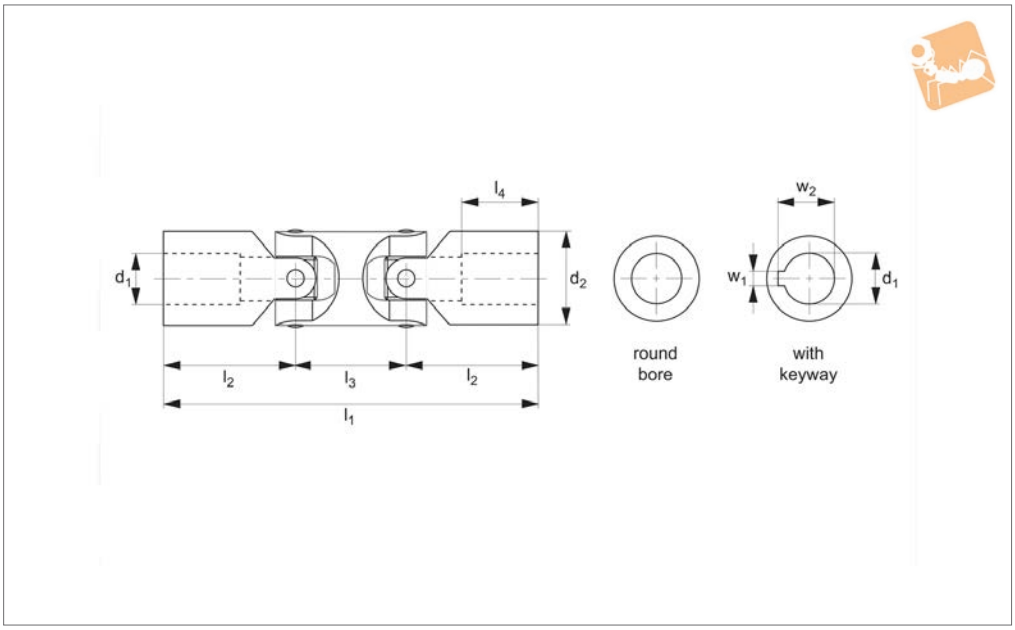
Tips
Double universal joints are used where large bending angles are required or where two shafts offset in relation to each other.
Product variations available on request: square bores and hex bores.

Order No.	Bore dia.	d_1	l_1	l_2	l_3	l_4	Weight g
R3683.013	Unbored	13	61	21	19	14	50
R3683.017	Unbored	17	63	20	23	12	80
R3683.018	Unbored	17	75	26	23	18	80
R3683.020	Unbored	20	89	31	27	21	150
R3683.025	Unbored	25	87	28	31	16	250
R3683.026	Unbored	25	105	37	31	25	350
R3683.032	Unbored	32	125	43	39	26	450
R3683.040	Unbored	40	155	54	47	34	1000
R3683.050	Unbored	50	189	66	57	42	2000
R3683.060	Unbored	60	237	83	71	53	3000

Double Universal Joint
Steel



R3684



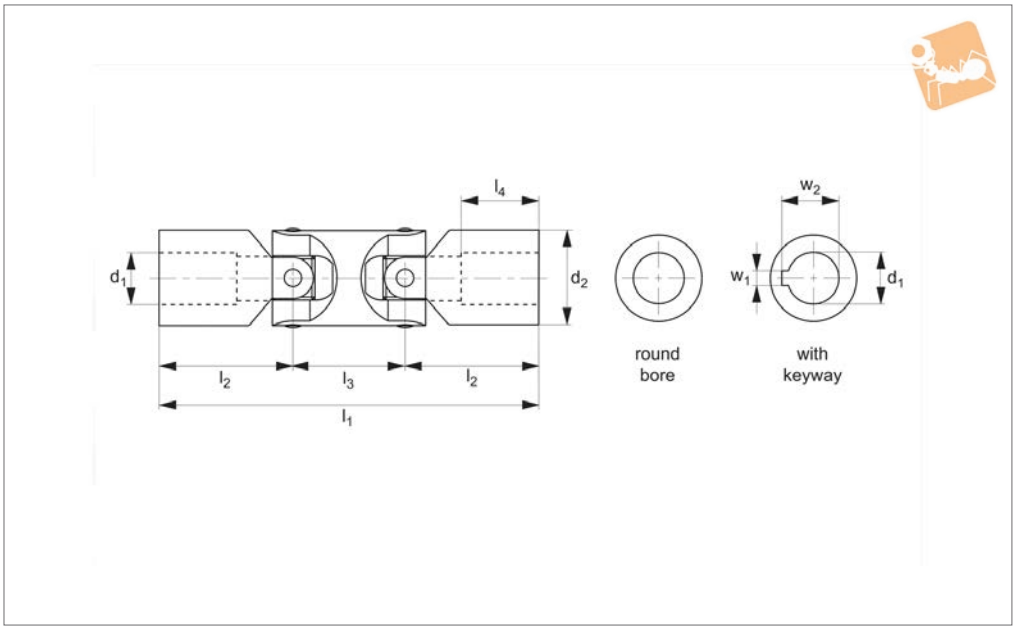
Material
Steel (9 SMnPb28k, no. 10718).
Bearing type: Plain bearing.

Technical Notes
To DIN 808/7551, keyways aligned.

Maximum bending angle 45° per joint.
Max. drive speed of 1000 rpm.

Tips
Double universal joints are used where large bending angles are required or where two shafts offset in relation to each other.
Product variations available on request, for square bores change the suffix to SQ for square bores or HX for hex bores.
For stainless steel see R3696.

Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	l_4	w_1 tol. JS9	w_2	Weight g
R3684.010-RB	Round Bore	10	16	74	26	22	15	-	-	80
R3684.012-RB	Round Bore	12	22	88	31	26	18	-	-	200
R3684.016-RB	Round Bore	16	25	104	37	30	21	-	-	300
R3684.020-RB	Round Bore	20	32	124	43	38	24	-	-	500
R3684.025-RB	Round Bore	25	42	156	54	48	31	-	-	1200
R3684.030-RB	Round Bore	30	50	188	66	56	38	-	-	1700
R3684.040-RB	Round Bore	40	70	238	83	72	47	-	-	4300
R3684.010-KW	With Keyway	10	16	74	26	22	15	3	11.4	80
R3684.012-KW	With Keyway	12	22	88	31	26	18	4	13.8	200
R3684.016-KW	With Keyway	16	25	104	37	30	21	5	18.3	300
R3684.020-KW	With Keyway	20	32	124	43	38	24	6	22.8	500
R3684.025-KW	With Keyway	25	42	156	54	48	31	8	28.3	1200
R3684.030-KW	With Keyway	30	50	188	66	56	38	8	33.3	1700
R3684.040-KW	With Keyway	40	70	238	83	72	47	12	43.3	4300





R3685

Material
Steel (9SMnPb28k, no. 10718).
Bearing type: Plain bearing.

Technical Notes
To DIN 808, keyways aligned.
Maximum bending angle 45° per joint.
Max. drive speed of 1000 rpm.

Tips
Double universal joints are used where large bending angles are required or where two shafts offset in relation to each other.
Product variations available on request, for square bores change the suffix to SQ for square bores or HX for hex bores.
For stainless steel see part number R3696, for needle roller bearings see part number R3686.

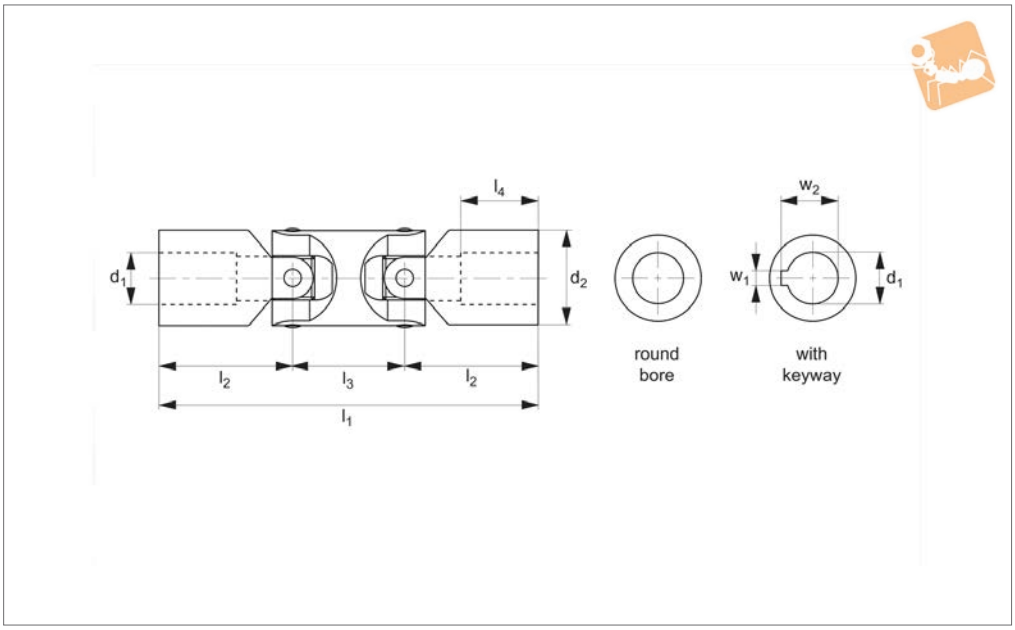
Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	l_4	w_1 tol. JS9	w_2	Weight g
R3685.006-RB	Round Bore	6	16	56	17.0	22	8	-	-	80
R3685.008-RB	Round Bore	8	16	62	20.0	22	11	-	-	80
R3685.010-RB	Round Bore	10	22	74	24.0	26	12	-	-	150
R3685.012-RB	Round Bore	12	25	86	28.0	30	13	-	-	250
R3685.014-RB	Round Bore	14	28	96	30.0	36	14	-	-	400
R3685.016-RB	Round Bore	16	32	104	34.0	36	16	-	-	450
R3685.018-RB	Round Bore	18	36	114	37.0	40	17	-	-	700
R3685.020-RB	Round Bore	20	42	128	41.0	46	18	-	-	1000
R3685.022-RB	Round Bore	22	45	145	47.5	50	22	-	-	1550
R3685.025-RB	Round Bore	25	50	163	54.0	55	26	-	-	2000
R3685.030-RB	Round Bore	30	58	190	61.0	68	29	-	-	2900
R3685.032-RB	Round Bore	32	58	198	65.0	68	33	-	-	3000
R3685.035-RB	Round Bore	35	70	212	70.0	72	35	-	-	4750
R3685.040-RB	Round Bore	40	80	245	80.0	85	39	-	-	7200
R3685.050-RB	Round Bore	50	95	290	95.0	100	46	-	-	12.000
R3685.006-KW	With Keyway	6	16	56	17.0	22	8	2	7	80
R3685.008-KW	With Keyway	8	16	62	20.0	22	11	2	9	80
R3685.010-KW	With Keyway	10	22	74	24.0	26	12	3	11.4	150
R3685.012-KW	With Keyway	12	25	86	28.0	30	13	4	13.8	250
R3685.014-KW	With Keyway	14	28	96	30.0	36	14	5	16.3	400
R3685.016-KW	With Keyway	16	32	104	34.0	36	16	5	18.3	450
R3685.018-KW	With Keyway	18	36	114	37.0	40	17	6	20.8	700
R3685.020-KW	With Keyway	20	42	128	41.0	46	18	6	22.8	1000
R3685.022-KW	With Keyway	22	45	145	47.5	50	22	6	24.8	1550
R3685.025-KW	With Keyway	25	50	163	54.0	55	26	8	28.3	2000
R3685.030-KW	With Keyway	30	58	190	61.0	68	29	8	33.3	2900
R3685.032-KW	With Keyway	32	58	198	65.0	68	33	10	35.3	3000
R3685.035-KW	With Keyway	35	70	212	70.0	72	35	10	38.3	4750
R3685.040-KW	With Keyway	40	80	245	80.0	85	39	12	43.3	7200
R3685.050-KW	With Keyway	50	95	290	95.0	100	46	14	53.8	12.000

Double Universal Joint

Needle roller bearings



R3686



Material
Steel (9SMnPb28k, no. 10718).
Bearing type: needle roller bearing.

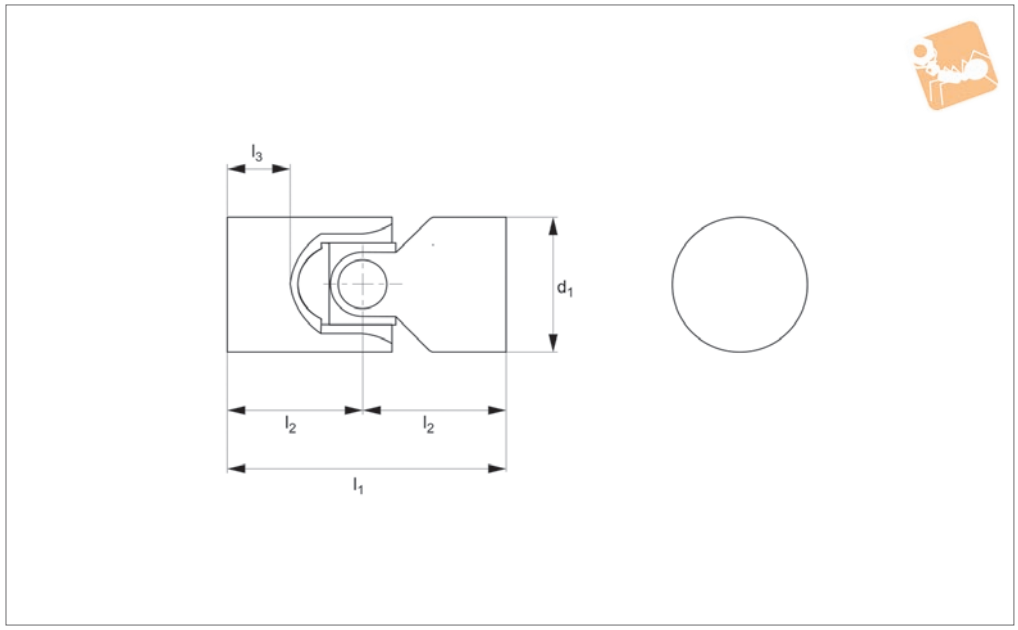
Technical Notes
To DIN 808.

Maximum bending angle 45° per joint.
Max. drive speed of 4000 rpm.
Keyways aligned.

Tips
Double universal joints are used where large bending angles are required or where two shafts offset in relation to each other. Product variations available on request, for square bores change the suffix to SQ for square bores or HX for hex bores.

Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	l_4	w_1 tol. JS9	w_2	Weight g
R3686.010-RB	Round bore	10	22	74	24.0	26	12	-	-	150
R3686.012-RB	Round Bore	12	25	86	28.0	30	13	-	-	250
R3686.014-RB	Round Bore	14	28	96	30.0	36	14	-	-	400
R3686.016-RB	Round Bore	16	32	104	34.0	36	16	-	-	450
R3686.018-RB	Round Bore	18	36	114	37.0	40	17	-	-	700
R3686.020-RB	Round Bore	20	42	128	41.0	46	18	-	-	1000
R3686.022-RB	Round Bore	22	45	145	47.5	50	22	-	-	1550
R3686.025-RB	Round Bore	25	50	163	54.0	55	26	-	-	2000
R3686.030-RB	Round Bore	30	58	190	61.0	68	29	-	-	2900
R3686.032-RB	Round Bore	32	58	198	65.0	68	33	-	-	3000
R3686.035-RB	Round Bore	35	70	212	70.0	72	35	-	-	4750
R3686.040-RB	Round Bore	40	80	245	80.0	85	39	-	-	7200
R3686.050-RB	Round Bore	50	95	290	95.0	100	46	-	-	12.000
R3686.010-KW	With keyway	10	22	74	24.0	26	12	3	11.4	150
R3686.012-KW	With Keyway	12	25	86	28.0	30	13	4	13.8	250
R3686.014-KW	With Keyway	14	28	96	30.0	36	14	5	16.3	400
R3686.016-KW	With Keyway	16	32	104	34.0	36	16	5	18.3	450
R3686.018-KW	With Keyway	18	36	114	37.0	40	17	6	20.8	700
R3686.020-KW	With Keyway	20	42	128	41.0	46	18	6	22.8	1000
R3686.022-KW	With Keyway	22	45	145	47.5	50	22	6	24.8	1550
R3686.025-KW	With Keyway	25	50	163	54.0	55	26	8	28.3	2000
R3686.030-KW	With Keyway	30	58	190	61.0	68	29	8	33.3	2900
R3686.032-KW	With Keyway	32	58	198	65.0	68	33	10	35.3	3000
R3686.035-KW	With Keyway	35	70	212	70.0	72	35	10	38.3	4750
R3686.040-KW	With Keyway	40	80	245	80.0	85	39	12	43.3	7200
R3686.050-KW	With Keyway	50	95	290	95.0	100	46	14	53.8	12.000

Single Universal Joint
unbored - solid ends





R3687

Material
Steel (9SMnPb28k, no. 10718).
Bearing type: Plain bearing.

Technical Notes
To DIN 808.

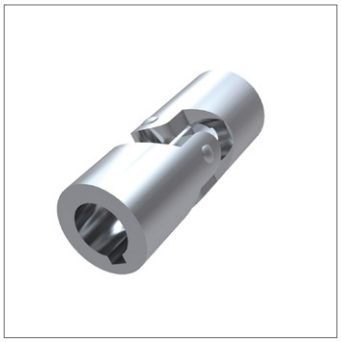
Maximum bending angle 45° per joint.
Max. drive speed of 1000 rpm.

Tips
Single universal joints are used where shafts off-set towards each other.

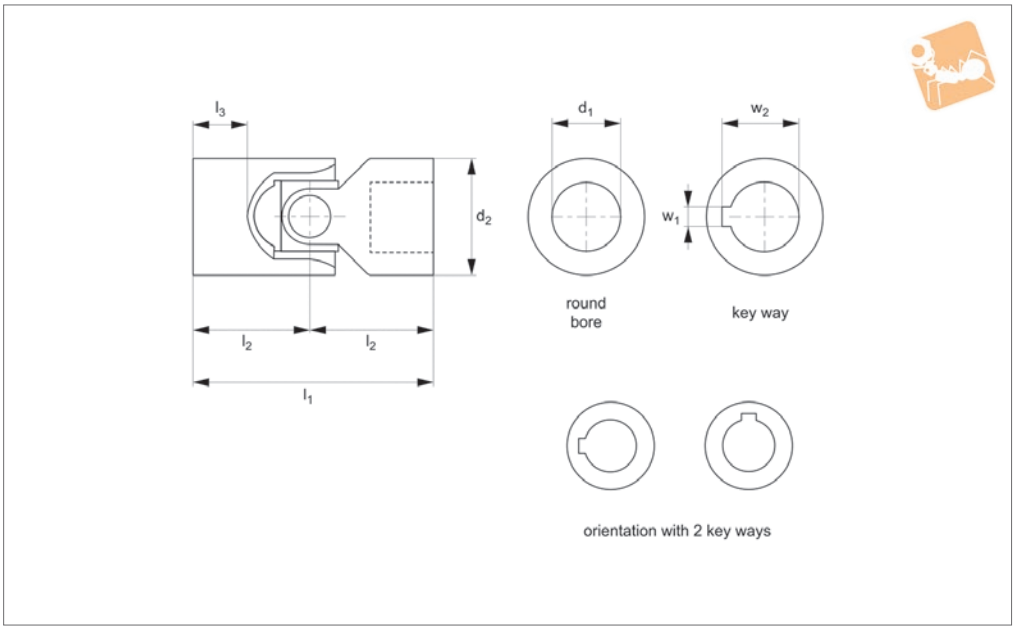
Product variations available on request, for square bores change the suffic to SB or HB square bores and hex bores.

Order No.	Bore dia.	d_1	l_1	l_2	l_3	Weight g
R3687.013	Unbored	13	43	21	14	20
R3687.017	Unbored	17	53	26	18	50
R3687.020	Unbored	20	63	31	21	70
R3687.025	Unbored	25	57	28	16	150
R3687.026	Unbored	25	75	37	25	150
R3687.032	Unbored	32	87	43	26	290
R3687.040	Unbored	40	109	54	34	600
R3687.045	Unbored	45	109	54	34	1120
R3687.050	Unbored	50	133	66	42	1160

Single Universal Joint
Steel



R3688



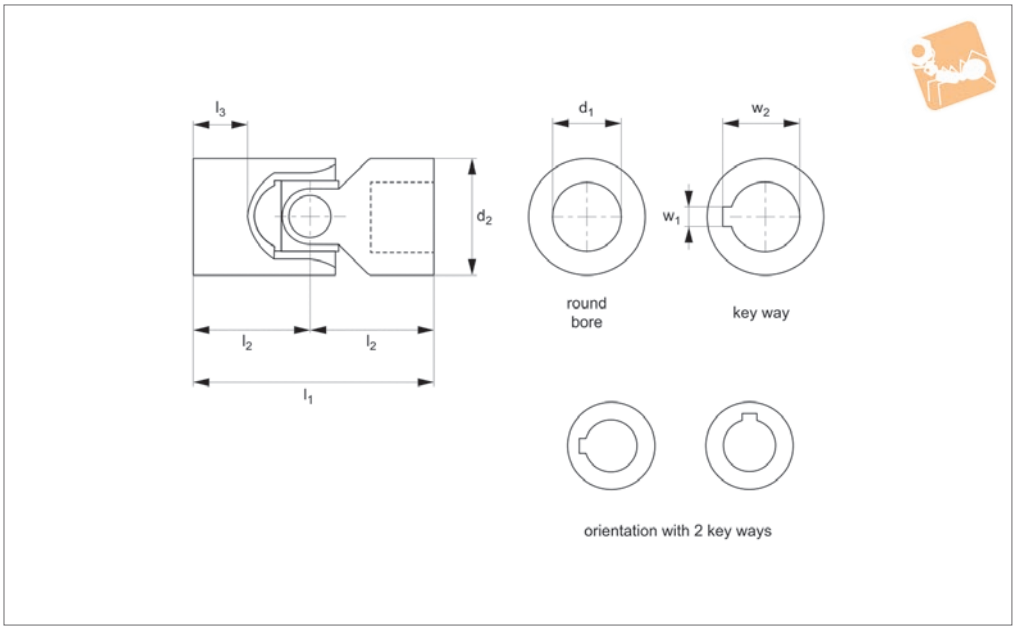
Material
Steel (9SMnPb28k, no. 10718).
Bearing type: plain bearing.

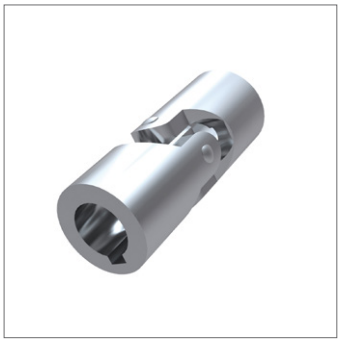
Technical Notes
To DIN 808/7551.
Maximum bending angle 45° per joint, Max. drive speed of 1000 rpm.

Tips
Single universal joints are used where shafts are off-set towards each other.
Product variations available on request, for square bores change the suffix to SQ for square bores or HX for hex bores.
For stainless steel see R3694

For needle roller bearings see part number R3690.

Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	w_1 tol. JS9	w_2	Weight g
R3688.010-RB	Round Bore	10	16	52	26	15	-	-	50
R3688.012-RB	Round Bore	12	22	62	31	18	-	-	120
R3688.016-RB	Round Bore	16	25	74	37	21	-	-	200
R3688.020-RB	Round Bore	20	32	86	43	24	-	-	350
R3688.025-RB	Round Bore	25	42	108	54	31	-	-	800
R3688.030-RB	Round Bore	30	50	132	66	38	-	-	1200
R3688.040-RB	Round Bore	40	70	166	83	47	-	-	2900
R3688.010-KW	With Keyway	10	16	52	26	15	3	11.4	50
R3688.012-KW	With Keyway	12	22	62	31	18	4	13.8	120
R3688.016-KW	With Keyway	16	25	74	37	21	5	18.3	200
R3688.020-KW	With Keyway	20	32	86	43	24	6	22.8	350
R3688.025-KW	With Keyway	25	42	108	54	31	8	28.3	800
R3688.030-KW	With Keyway	30	50	132	66	38	8	33.3	1200
R3688.040-KW	With Keyway	40	70	166	83	47	12	43.3	2900





R3689

Material
Steel (9SMnPb28k, no. 10718).
Bearing type: plain bearing.

Technical Notes
To DIN 808.

Maximum bending angle 45° per joint.
Max. drive speed of 1000 rpm.

Tips
Single universal joints are used where shafts are off-set towards each other.

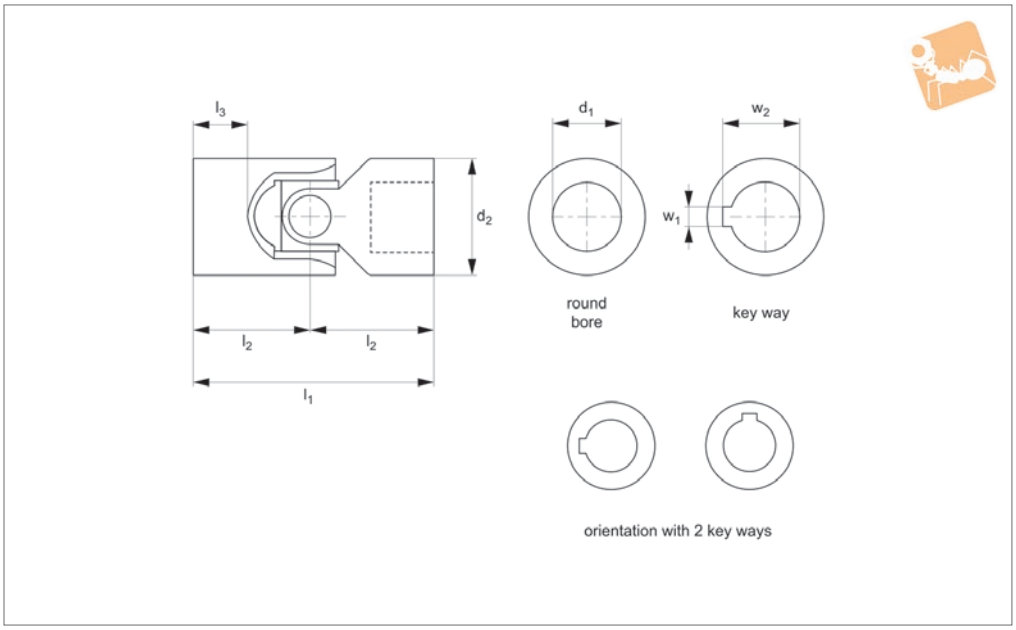
Product variations available on request, for square bores change the suffix to SQ for square bores or HX for hex bores.
For stainless steel see R3694.

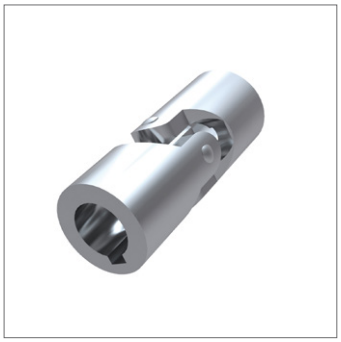
Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	w_1 tol. JS9	w_2	Weight g
R3689.006-RB	Round Bore	6	16	34	17	8	-	-	50
R3689.008-RB	Round Bore	8	16	40	20	11	-	-	50
R3689.010-RB	Round Bore	10	22	48	24	12	-	-	100
R3689.012-RB	Round Bore	12	25	56	28	13	-	-	160
R3689.014-RB	Round Bore	14	28	60	30	14	-	-	200
R3689.016-RB	Round Bore	16	32	68	34	16	-	-	300
R3689.018-RB	Round Bore	18	36	74	37	17	-	-	450
R3689.020-RB	Round Bore	20	42	82	41	18	-	-	600
R3689.022-RB	Round Bore	22	45	95	47.5	22	-	-	950
R3689.025-RB	Round Bore	25	50	108	54	26	-	-	1200
R3689.030-RB	Round Bore	30	58	122	61	29	-	-	1850
R3689.032-RB	Round Bore	32	58	130	65	33	-	-	2000
R3689.035-RB	Round Bore	35	70	140	70	35	-	-	3150
R3689.040-RB	Round Bore	40	80	160	80	39	-	-	4600
R3689.050-RB	Round Bore	50	95	190	95	46	-	-	7600
R3689.006-KW	With Keyway	6	16	34	17	8	2	7.0	50
R3689.008-KW	With Keyway	8	16	40	20	11	2	9.0	50
R3689.010-KW	With Keyway	10	22	48	24	12	3	11.4	100
R3689.012-KW	With Keyway	12	25	56	28	13	4	13.8	160
R3689.014-KW	With Keyway	14	28	60	30	14	5	16.3	200
R3689.016-KW	With Keyway	16	32	68	34	16	5	18.3	300
R3689.018-KW	With Keyway	18	36	74	37	17	6	20.8	450
R3689.020-KW	With Keyway	20	42	82	41	18	6	22.8	600
R3689.022-KW	With Keyway	22	45	95	47.5	22	6	24.8	950
R3689.025-KW	With Keyway	25	50	108	54	26	8	28.3	1200
R3689.030-KW	With Keyway	30	58	122	61	29	8	33.3	1850
R3689.032-KW	With Keyway	32	58	130	65	33	10	35.3	2000
R3689.035-KW	With Keyway	35	70	140	70	35	10	38.3	3150
R3689.040-KW	With Keyway	40	80	160	80	39	12	43.3	4600
R3689.050-KW	With Keyway	50	95	190	95	46	14	53.8	7600
R3689.006-HB	Hex Bore	6	16	34	17	8	-	-	50
R3689.008-HB	Hex Bore	8	16	40	20	11	-	-	50

Single Universal Joint
Steel



Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	w_1 tol. JS9	w_2	Weight g
R3689.010-HB	Hex Bore	10	22	48	24	12	-	-	100
R3689.012-HB	Hex Bore	12	25	56	28	13	-	-	160
R3689.014-HB	Hex Bore	14	28	60	30	14	-	-	200
R3689.016-HB	Hex Bore	16	32	68	34	16	-	-	300
R3689.018-HB	Hex Bore	18	36	74	37	17	-	-	450
R3689.020-HB	Hex Bore	20	42	82	41	18	-	-	600
R3689.022-HB	Hex Bore	22	45	95	47.5	22	-	-	950
R3689.025-HB	Hex Bore	25	50	108	54	26	-	-	1200
R3689.030-HB	Hex Bore	30	58	122	61	29	-	-	1850
R3689.032-HB	Hex Bore	32	58	130	65	33	-	-	2000
R3689.035-HB	Hex Bore	35	70	140	70	35	-	-	3150
R3689.040-HB	Hex Bore	40	80	160	80	39	-	-	4600
R3689.050-HB	Hex Bore	50	95	190	95	46	-	-	7600
R3689.006-SB	Square Bore	6	16	34	17	8	-	-	50
R3689.008-SB	Square Bore	8	16	40	20	11	-	-	50
R3689.010-SB	Square Bore	10	22	48	24	12	-	-	100
R3689.012-SB	Square Bore	12	25	56	28	13	-	-	160
R3689.014-SB	Square Bore	14	28	60	30	14	-	-	200
R3689.016-SB	Square Bore	16	32	68	34	16	-	-	300
R3689.018-SB	Square Bore	18	36	74	37	17	-	-	450
R3689.020-SB	Square Bore	20	42	82	41	18	-	-	600
R3689.022-SB	Square Bore	22	45	95	47.5	22	-	-	950
R3689.025-SB	Square Bore	25	50	108	54	26	-	-	1200
R3689.030-SB	Square Bore	30	58	122	61	29	-	-	1850
R3689.032-SB	Square Bore	32	58	130	65	33	-	-	2000
R3689.035-SB	Square Bore	35	70	140	70	35	-	-	3150
R3689.040-SB	Square Bore	40	80	160	80	39	-	-	4600
R3689.050-SB	Square Bore	50	95	190	95	46	-	-	7600





R3690

Material
Steel (9SMnPb28k, no. 10718).
Bearing type: needle roller bearing.

Technical Notes
To DIN 808.
Maximum bending angle 45° per joint.

Roller bearing lubricated for life.
No maintenance required. Precise, silent and smooth running, Max. drive speed of 4000 rpm.

Tips
Single universal joints are used where shafts are off-set towards each other.
Product variations available on request, for square bores change the suffix to SQ for square bores or HX for hex bores.

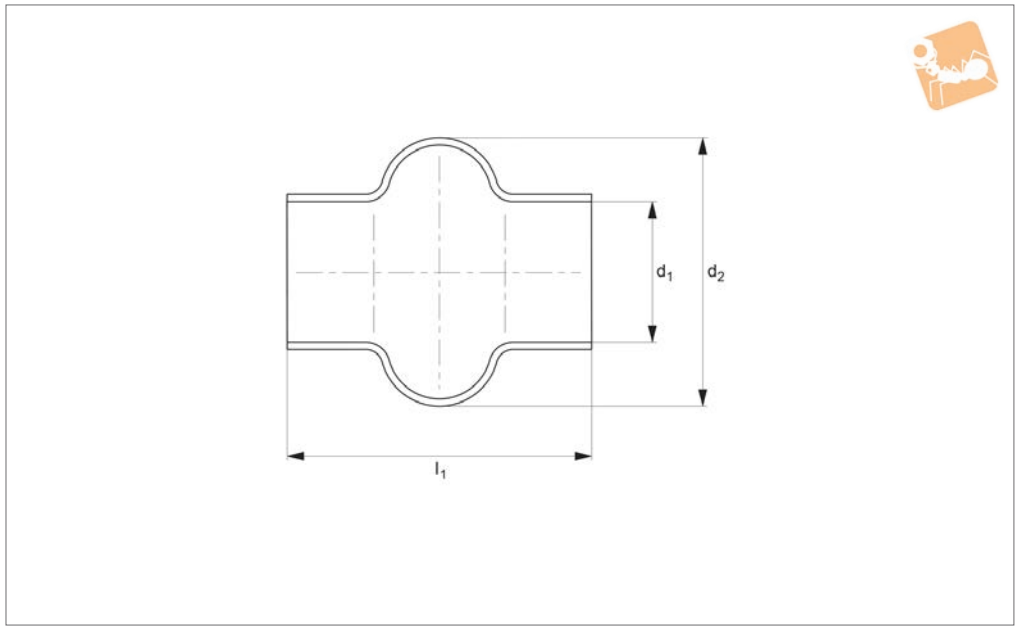
Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	w_1 tol. JS9	w_2	Weight g
R3690.010-RB	Round bore	10	22	48	24	12	-	-	100
R3690.012-RB	Round Bore	12	25	56	28	13	-	-	160
R3690.014-RB	Round Bore	14	28	60	30	14	-	-	200
R3690.016-RB	Round Bore	16	32	68	34	16	-	-	300
R3690.018-RB	Round Bore	18	36	74	37	17	-	-	450
R3690.020-RB	Round Bore	20	42	82	41	18	-	-	600
R3690.022-RB	Round Bore	22	45	95	47.5	22	-	-	950
R3690.025-RB	Round Bore	25	50	108	54	26	-	-	1200
R3690.030-RB	Round Bore	30	58	122	61	29	-	-	1850
R3690.032-RB	Round Bore	32	58	130	65	33	-	-	2000
R3690.035-RB	Round Bore	35	70	140	70	35	-	-	3150
R3690.040-RB	Round Bore	40	80	160	80	39	-	-	4600
R3690.050-RB	Round Bore	50	95	190	95	46	-	-	7600
R3690.010-HB	Hex bore	10	22	48	24	12	-	-	100
R3690.012-HB	Hex bore	12	25	56	28	13	-	-	160
R3690.014-HB	Hex bore	14	28	60	30	14	-	-	200
R3690.016-HB	Hex bore	16	32	68	34	16	-	-	300
R3690.018-HB	Hex bore	18	36	74	37	17	-	-	450
R3690.020-HB	Hex bore	20	42	82	41	18	-	-	600
R3690.022-HB	Hex bore	22	45	95	47.5	22	-	-	950
R3690.025-HB	Hex bore	25	50	108	54	26	-	-	1200
R3690.030-HB	Hex bore	30	58	122	61	29	-	-	1850
R3690.032-HB	Hex bore	32	58	130	65	33	-	-	2000
R3690.035-HB	Hex bore	35	70	140	70	35	-	-	3150
R3690.040-HB	Hex bore	40	80	160	80	39	-	-	4600
R3690.050-HB	Hex bore	50	95	190	95	46	-	-	7600
R3690.010-SB	Square bore	10	22	48	24	12	-	-	100
R3690.012-SB	Square bore	12	25	56	28	13	-	-	160
R3690.014-SB	Square bore	14	28	60	30	14	-	-	200
R3690.016-SB	Square bore	16	32	68	34	16	-	-	300
R3690.018-SB	Square bore	18	36	74	37	17	-	-	450

Single Universal joint

Needle roller bearing



Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	w_1 tol. JS9	w_2	Weight g
R3690.020-SB	Square bore	20	42	82	41	18	-	-	600
R3690.022-SB	Square bore	22	45	95	47.5	22	-	-	950
R3690.025-SB	Square bore	25	50	108	54	26	-	-	1200
R3690.030-SB	Square bore	30	58	122	61	29	-	-	1850
R3690.032-SB	Square bore	32	58	130	65	33	-	-	2000
R3690.035-SB	Square bore	35	70	140	70	35	-	-	3150
R3690.040-SB	Square bore	40	80	160	80	39	-	-	4600
R3690.050-SB	Square bore	50	95	190	95	46	-	-	7600
R3690.010-KW	With keyway	10	22	48	24	12	3	11.4	100
R3690.012-KW	With Keyway	12	25	56	28	13	4	13.8	160
R3690.014-KW	With Keyway	14	28	60	30	14	5	16.3	200
R3690.016-KW	With Keyway	16	32	68	34	16	5	18.3	300
R3690.018-KW	With Keyway	18	36	74	37	17	6	20.8	450
R3690.020-KW	With Keyway	20	42	82	41	18	6	22.8	600
R3690.022-KW	With Keyway	22	45	95	47.5	22	6	24.8	950
R3690.025-KW	With Keyway	25	50	108	54	26	8	28.3	1200
R3690.030-KW	With Keyway	30	58	122	61	29	8	33.3	1850
R3690.032-KW	With Keyway	32	58	130	65	33	10	35.3	2000
R3690.035-KW	With Keyway	35	70	140	70	35	10	38.3	3150
R3690.040-KW	With Keyway	40	80	160	80	39	12	43.3	4600
R3690.050-KW	With Keyway	50	95	190	95	46	14	53.8	7600





R3691

Material
Rubber.

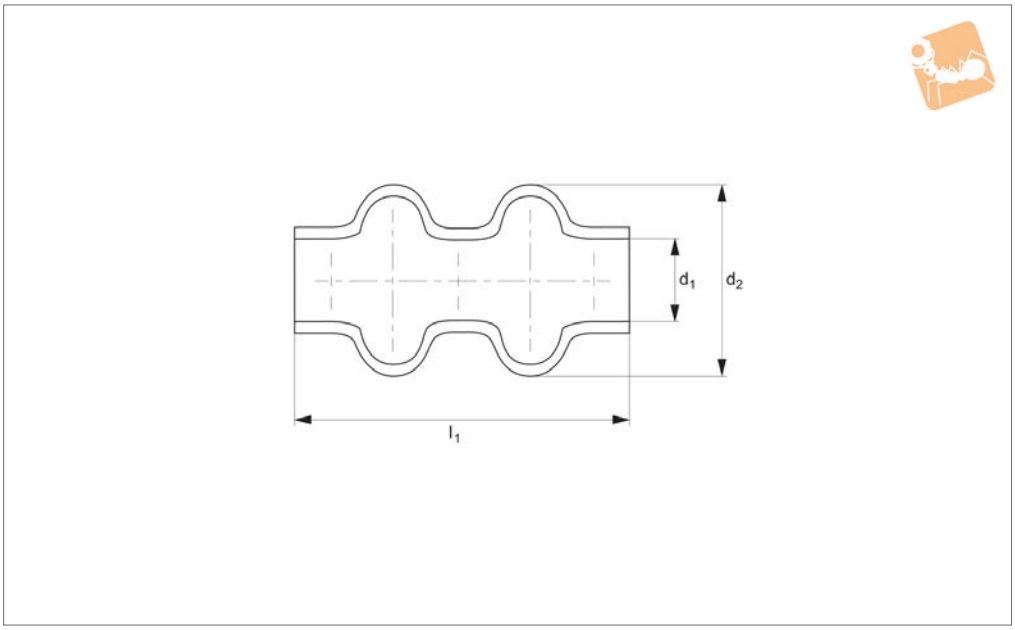
Tips
Bellows give universal joints full protection against ingress of dirt.
They can be filled with grease which gives long term lubrication for friction bearings.
Bellows should be secured at each end with two cable ties (not supplied).

Order No.	To suit joint of o.d	d_1	d_2	l_1
R3691.016	16	15.0	28	34
R3691.018	18	16.5	32	40
R3691.022	22	20.5	40	45
R3691.025	25/26	24.5	48	50
R3691.028	28/29	27.5	52	56
R3691.032	32	30.5	56	65
R3691.036	36/37	35.5	66	72
R3691.042	42	40.0	75	82
R3691.045	45/47	45.0	84	95
R3691.050	50/52	50.0	92	108
R3691.058	58	56.0	100	122

Bellows
for double universal joints



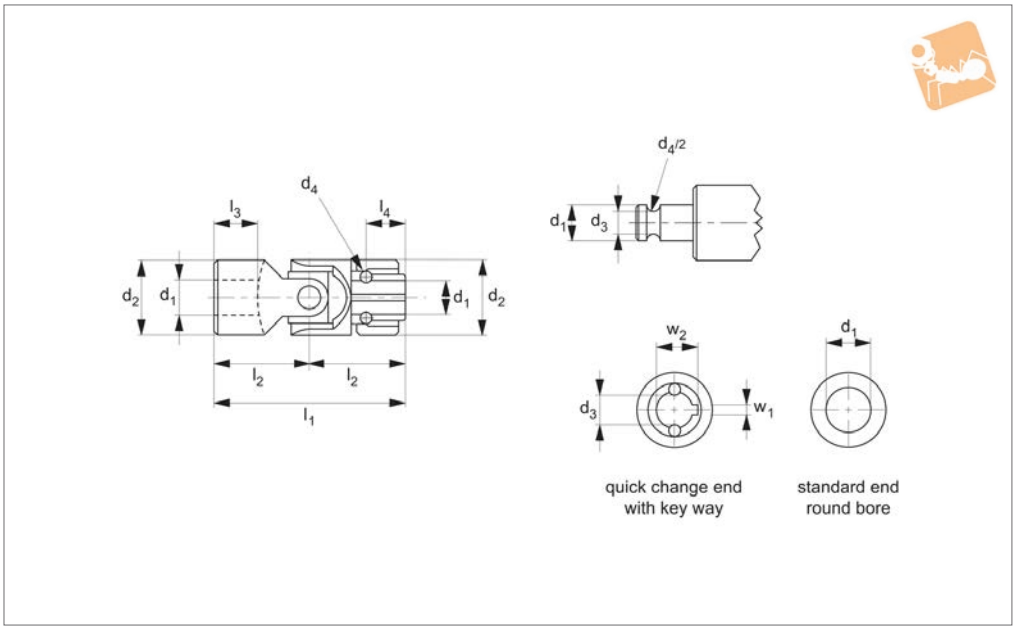
R3692



Material
Black elastomer plastic (smooth PVC)

Tips
Bellows give universal joints full protection against ingress of dirt.
They can be filled with grease which gives long term lubrication for friction bearings.
Bellows should be secured at each end with two cable ties (not supplied).

Order No.	To suit joint of o.d	d_1	d_2	l_1
R3692.016	16	16	35	55
R3692.022	22	20	36	65
R3692.025	25	24	44	70
R3692.028	28	28	51	80
R3692.032	32	32	62	90
R3692.042	42	40	73	120
R3692.050	50	50	90	155





R3693

Material
Steel (9 SMnPb28 k, no. 10718, greased).
Bearing type: plain bearing.

Technical Notes
To DIN 808.
Maximum bending angle 45° per joint.
Max. drive speed of joints with journal bearings 1000 rpm.

Tips
Rapid change coupling ideal where time is critical.
Retention of shaft accomplished with two ball bearings engaging the shaft via a round bore with keyway.

Product variations available on request: needle bearings and hex shaped bores. (Keyway and hex shaped bores on quick change end only unless requested otherwise.)

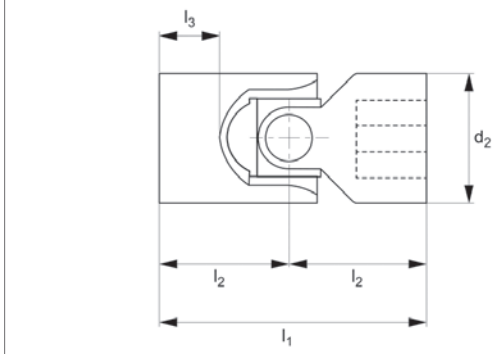
Order No.	d_1 tol. H7	d_2	d_3	d_4	l_1	l_2	l_3	l_4	w_1 tol. JS9	w_2	Weight g
R3693.010	10	22	8.7	4	62	31	17	11.5	3	11	100
R3693.012	12	25	11	4	74	37	21	13.5	4	13.3	160
R3693.014	14	25	13	4	74	37	21	13.5	5	15.3	160
R3693.016	16	32	14.8	6.35	86	43	24	14	5	17.3	310
R3693.018	18	36	16	8	96	48	28	19	6	19.8	460
R3693.020	20	42	18	8	108	54	31	19	6	22.8	610
R3693.022	22	45	20	10	120	60	34	20.5	6	24.8	960
R3693.025	25	50	23	10	132	66	38	20.5	8	28.3	1150
R3693.030	30	58	28	10	166	83	49	25	8	33.3	2080

Stainless Single Universal Joint

Stainless



R3694



Material
Stainless steel (AISI 304)

Technical Notes
To DIN 808, maximum bending angle 45° per joint.

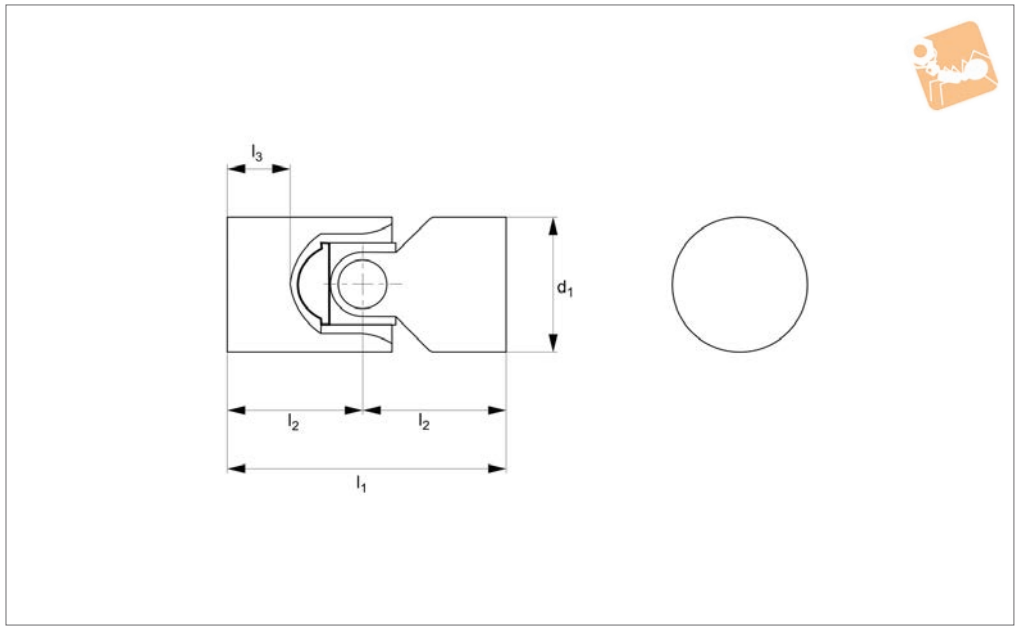
Tips
Single universal joints are used where shafts are off-set towards each other.

Product variations available on request, for square bores change the suffix to SQ for square bores or HX for hex bores.

Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	w_1 tol. JS9	w_2	Weight g
R3694.006-RB	Round Bore	6	16	34	17	8	-	-	50
R3694.008-RB	Round Bore	8	16	40	20	11	-	-	50
R3694.010-RB	Round Bore	10	22	48	24	12	-	-	100
R3694.012-RB	Round Bore	12	25	56	28	13	-	-	160
R3694.016-RB	Round Bore	16	32	68	34	16	-	-	300
R3694.020-RB	Round Bore	20	42	82	41	18	-	-	600
R3694.025-RB	Round Bore	25	50	108	54	26	-	-	1200
R3694.030-RB	Round Bore	30	58	122	61	29	-	-	1850
R3694.006-KW	Keyway	6	16	34	17	8	2	7.0	50
R3694.008-KW	Keyway	8	16	40	20	11	2	9.0	50
R3694.010-KW	Keyway	10	22	48	24	12	3	11.4	100
R3694.012-KW	Keyway	12	25	56	28	13	4	13.8	160
R3694.016-KW	Keyway	16	32	68	34	16	5	18.3	300
R3694.020-KW	Keyway	20	42	82	41	18	6	22.8	600
R3694.025-KW	Keyway	25	50	108	54	26	8	28.3	1200
R3694.030-KW	Keyway	30	58	122	61	29	8	33.3	1850

Stainless 304 Single Universal Joint

Stainless unbored - solid ends





R3695

Material
Stainless steel (AISI 304), bearing type: Plain bearing.

Technical Notes
To DIN 808.

Maximum bending angle 45° per joint. Max. drive speed of joints with journal bearings 1000 rpm.

Tips
Single universal joints are used where shafts off-set towards each other. Product variations available on request: square bores and hex bores.

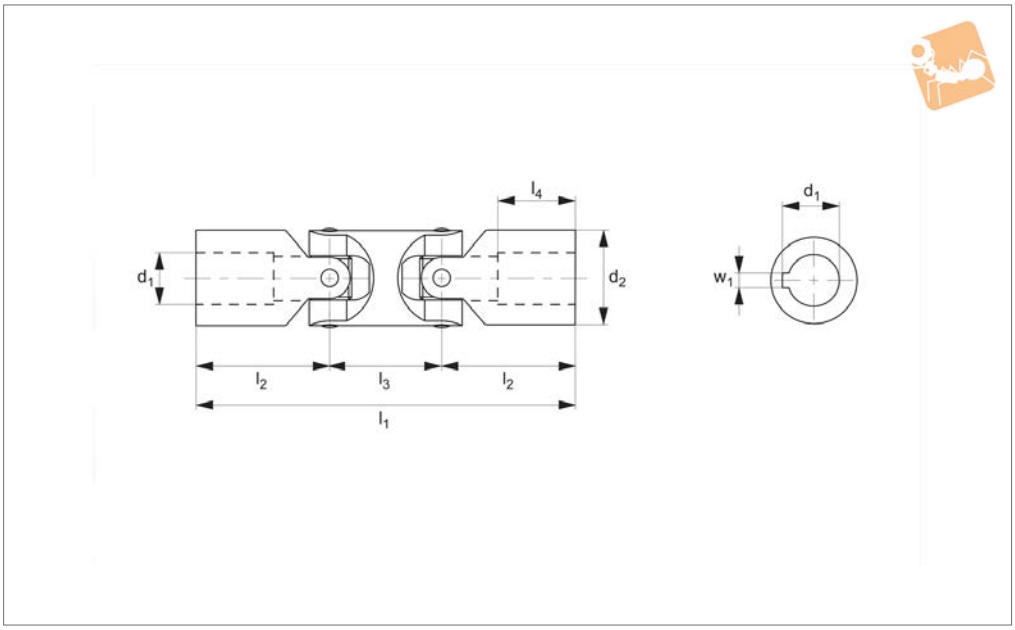
Order No.	Bore dia.	d tol. h4	l_1	l_2	l_3	Weight g
R3695.013	Unbored	13	43	21	14	20
R3695.017	Unbored	17	53	26	18	50
R3695.020	Unbored	20	63	31	21	70
R3695.025	Unbored	25	57	28	16	150
R3695.026	Unbored	25	75	37	25	150
R3695.032	Unbored	32	87	43	26	290
R3695.040	Unbored	40	109	54	34	600
R3695.050	Unbored	50	133	66	42	1160

Stainless Double Universal Joint

Stainless



R3696



Material
Stainless steel (AISI 304).

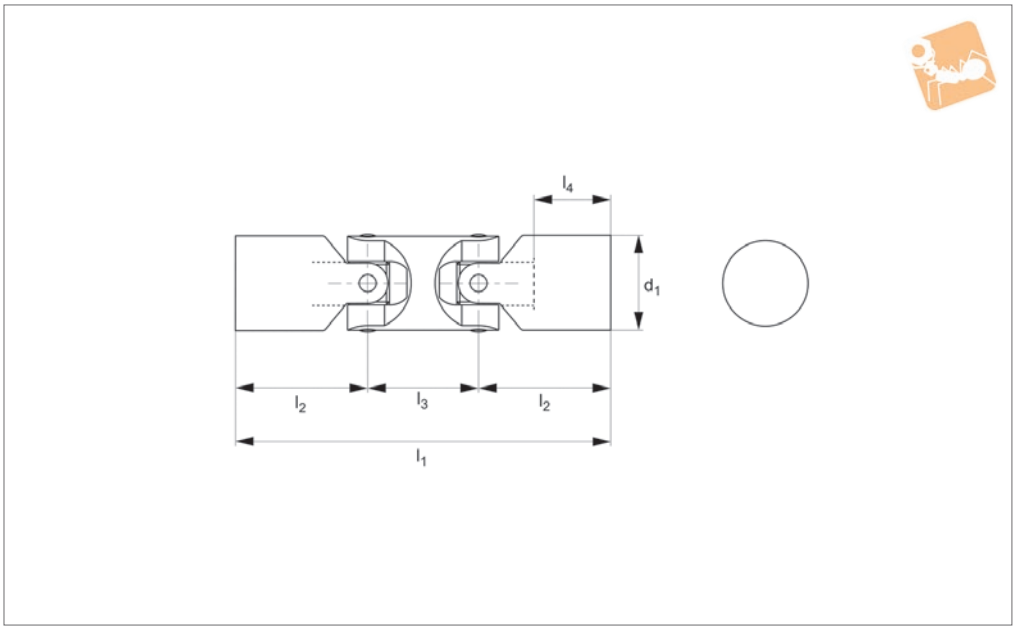
Technical Notes
To DIN 808, maximum bending angle 45° per joint.

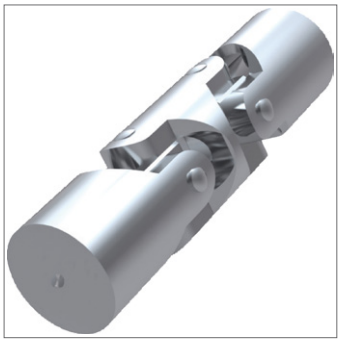
Tips
Product variations available on request, for square bores change the suffix to SQ for square bores or HX for hex bores.

Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	l_4	w_1	w_2	Weight g
R3696.006-RB	Round Bore	6	16	56	17	22	8	-	-	80
R3696.008-RB	Round Bore	8	16	62	20	22	11	-	-	80
R3696.010-RB	Round Bore	10	22	74	24	26	12	-	-	150
R3696.012-RB	Round Bore	12	25	86	28	30	13	-	-	250
R3696.016-RB	Round Bore	16	32	104	34	36	16	-	-	450
R3696.020-RB	Round Bore	20	42	128	41	46	18	-	-	1000
R3696.025-RB	Round Bore	25	50	163	54	55	26	-	-	2000
R3696.030-RB	Round Bore	30	58	190	61	68	29	-	-	2900
R3696.006-KW	Keyway	6	16	56	17	22	8	2	7.0	80
R3696.008-KW	Keyway	8	16	62	20	22	11	2	9.0	80
R3696.010-KW	Keyway	10	22	74	24	26	12	3	11.4	150
R3696.012-KW	Keyway	12	25	86	28	30	13	4	13.8	250
R3696.016-KW	Keyway	16	32	104	34	36	16	5	18.3	450
R3696.020-KW	Keyway	20	42	128	41	46	18	6	22.8	1000
R3696.025-KW	Keyway	25	50	163	54	55	26	8	28.3	2000
R3696.030-KW	Keyway	30	58	190	61	68	29	8	33.3	2900

Stainless Double Universal Joint

Stainless unbored - solid ends





R3697

Material
Stainless steel (AISI 304), bearing type: Plain bearing.

Technical Notes
To DIN 808.

Maximum bending angle 45° per joint. Max. drive speed of joints with journal bearings 1000 rpm.

Tips
Double universal joints are used where large bending angles are required or where two shafts offset in relation to each other. Product variations available on request: square bores and hex bores.

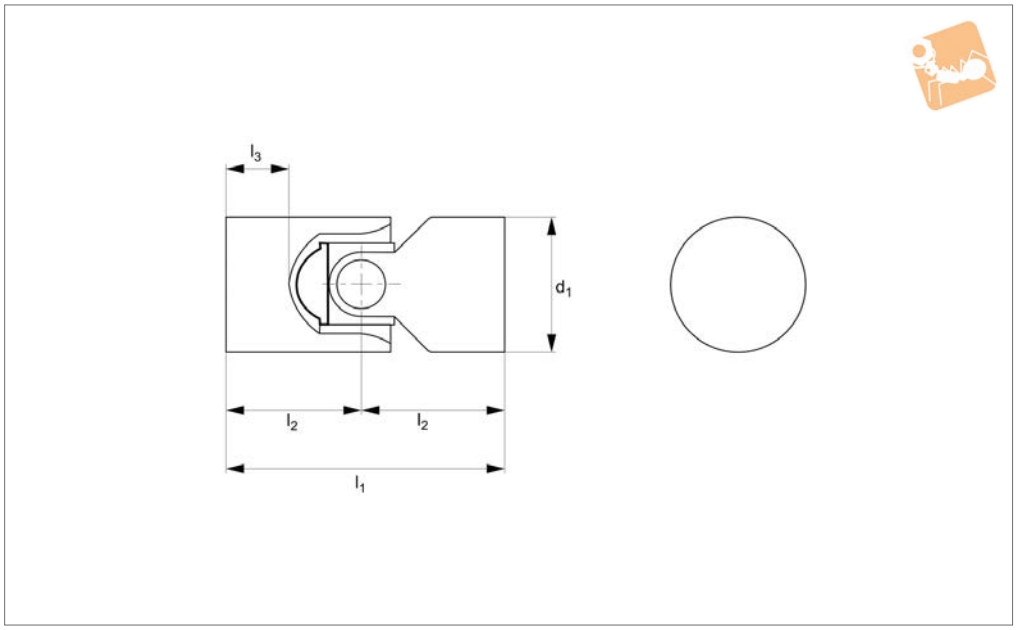
Order No.	Bore dia.	d_1 tol. H4	l_1	l_2	l_3	l_4	Weight g
R3697.013	Unbored	13	61	21	19	14	50
R3697.017	Unbored	17	63	20	23	12	80
R3697.018	Unbored	17	75	26	23	18	80
R3697.020	Unbored	20	89	31	27	21	150
R3697.025	Unbored	25	87	28	31	16	250
R3697.026	Unbored	25	105	37	31	25	350
R3697.032	Unbored	32	125	43	38	26	450
R3697.040	Unbored	40	155	54	47	34	1000
R3697.050	Unbored	50	189	66	57	42	2000
R3697.060	Unbored	60	237	83	71	53	3000

Stainless 316 Single Universal Joint

Stainless unbored - solid ends



R3698



Material

Stainless steel (AISI 316), bearing type: Plain bearing.

Technical Notes

To DIN 808.
Maximum bending angle 45° per joint.
Max. drive speed of joints with journal bearings 100 rpm.

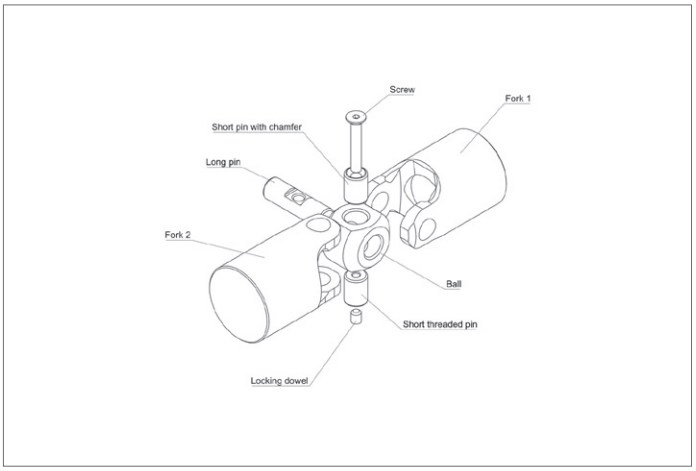
Tips

Single universal joints are used where shafts off-set towards each other.
Product variations available on request: square bores and hex bores.
Can be disassembled to aid machining of ends.

Assembly instructions:

Step 1: Spray with grease internal high load spray adhesive (type TG248) ball and holes in the forks.
Step 2: Place sphere inside fork 1 and insert long pin with planes oriented towards perpendicular hole in the sphere.
Step 3: Insert fork 2 on the ball and fit inside the short flared pin subsequently, on the opposite side, the short threaded pin.
Step 4: Place the countersunk screw tightening it adequately.
Step 5: Screw the locking dowel on the pin short threaded against the screw.

Order No.	d_1	l_1	l_2	l_3
R3698.020-UN	20	62	31	19
R3698.025-UN	25	74	37	23
R3698.032-UN	32	86	43	25
R3698.040-UN	40	108	54	30
R3698.050-UN	50	132	66	40



Single Universal Joints

Available with plain bearings or needle roller bearings. Plain bore and keyed bores stocked as standard, hex or square shaped bores on request.

Sizes Bore sizes from 6mm diameter up to 50mm diameter.



Pages 202 - 207

Double Universal Joints

Available with plain bearings or needle roller bearings. Plain bore and keyed bores stocked as standard, hex or square shaped bores on request.

Sizes Bore sizes from 6mm diameter up to 50mm diameter.



Pages 198 - 201

Stainless Steel Universal Joints

Single and double universal joints with plain bearings and plain bores. Keyed, hex, or square shaped bores available on request.

Sizes Bore sizes from 6mm diameter up to 30mm diameter.



Pages 211- 213

Telescopic Universal Joints

Two universal joints connected by a sliding splined shaft with the ability to extend, allowing adjustments in length during installation.

Sizes Bore sizes from 10mm diameter up to 30mm diameter.



Pages 194 - 197

Universal Joint Bellows

Available for both single and double universal joints, bellows are used to cover and protect the joints.

Sizes Available to protect joints up to 58mm outside diameter.



Pages 208 - 209

Quick Release Universal Joints

Quick change mechanism one end of the joint to allow rapid connection and release of the shaft, ideal when time is critical.

Sizes Bore sizes from 8mm diameter up to 30mm diameter.



Pages 210



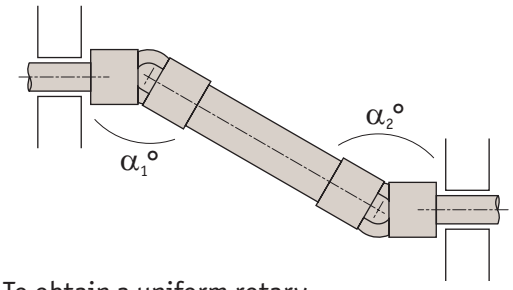
Universal Joints from Automotion Components

When one single joint is coupled with two shafts (of which the driving one is rotating at a constant speed) forming an angle, a periodic variation of the driven shaft is caused with exactly four fluctuations per revolution.

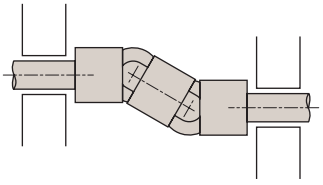
The difference between the maximum and the minimum speed of the driven shaft depends on the angle formed by the two shafts. The difference grows with the increase of the angle a°. To have a smooth transmission, either two opposite single joints (ensuring that the two central yokes lie on the same plane and the angles are equal) or a double joint need to be fitted. The irregularity caused by the articulation of the first unisex joint is cancelled by the second unisex joint. The overall length resulting from the coupling of the two single joints can be reduced by using a double unisex joint. In other words, the double joint is to be considered as the shortest method of achieving smooth transmission.

For low speed applications (max. 1000 rpm), joints with plain bearings are recommended. They are able to support shock loads, motion reversal, irregular running and relatively high torques. The working angles must be restricted when using at speeds between 500 - 1000 rpm. Please consult our technical department if you have such an application.

For high rotation speeds, relatively low torques or wide angles, joints with needle roller bearings are preferred. They can reach 4000 rpm dependent on the angle.

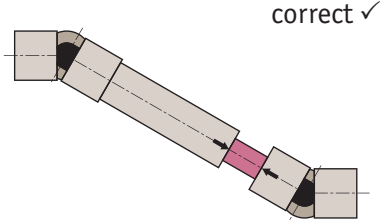


To obtain a uniform rotary motion always use either two opposite single joints or one double joint. $\alpha_1 = \alpha_2$



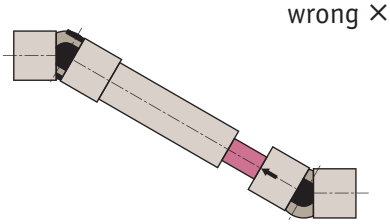
The pillow blocks supports should be positioned as close as possible to the joints

correct ✓



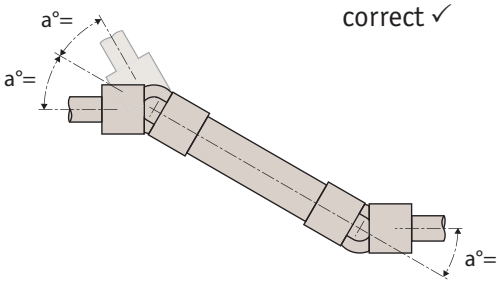
When using two opposite single joints ensure the alignment of the inside yokes

wrong ×



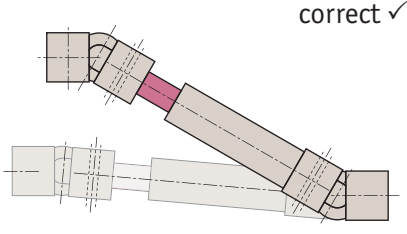
In extendable transmissions make sure that the arrows are perfectly aligned

correct ✓



It is essential that the two bending angles a° are equal

correct ✓



ov-universal-joints-selection-and-assembly-lnh- Updated - 29-03-2023

How to read diagrams

The joints capacity to transmit a regular torque at a constant load with no shocks, for a long period, mainly depends on the number of revolutions per minute and the inclination angle a° of the two axes. The diagrams on the following pages are based on this. Each curve corresponds to the joint size (outside diameter "D") and represents the torque that the joint can transmit depending on speed and working angle a°.

The diagrams can be directly read if angle (a°) is 10°. For wider angles, torques are reduced, these should be corrected using the correction vales (F) relating to the angle shown in the table.

IMPORTANT

Graph values are merely indicative and refer to the single joints only. When choosing a double joint, you have to consider that they can transmit a torque about 10% lower than the same sized single joints. Each application has its own particular motion characteristics, such as: shock loads, motion reversals, connected masses, kind of starting, presence of elastic joints, stops and starts, etc., that have to be considered when choosing the joint.

Working angle a°	Correction value F
5°	1,25
10°	1,00
15°	0,80
20°	0,65
25°	0,55
30°	0,45
35°	0,38
40°	0,30
45°	0,25

Torque Calculation for Plain Bearings

Power: 0,65 KW, RPM: 230

With working angle a 10° Value F = 1 we get point P. Torque = 27 Nm corresponding to joint size "D" = 25/26mm. = Types R3688.016 and R3689.012

With working angle a 30° Value F = 0.45 (Kw 0,65: 0,45 = 1,44Kw) we get point P1 Torque = 60 Nm corresponding to joint size "D" = 32mm. = Types R3688.020 and R3689.016

Consider that:

$$\text{Torque in Nm} = 9550 \times \frac{\text{Power (KW)}}{\text{RPM}}$$

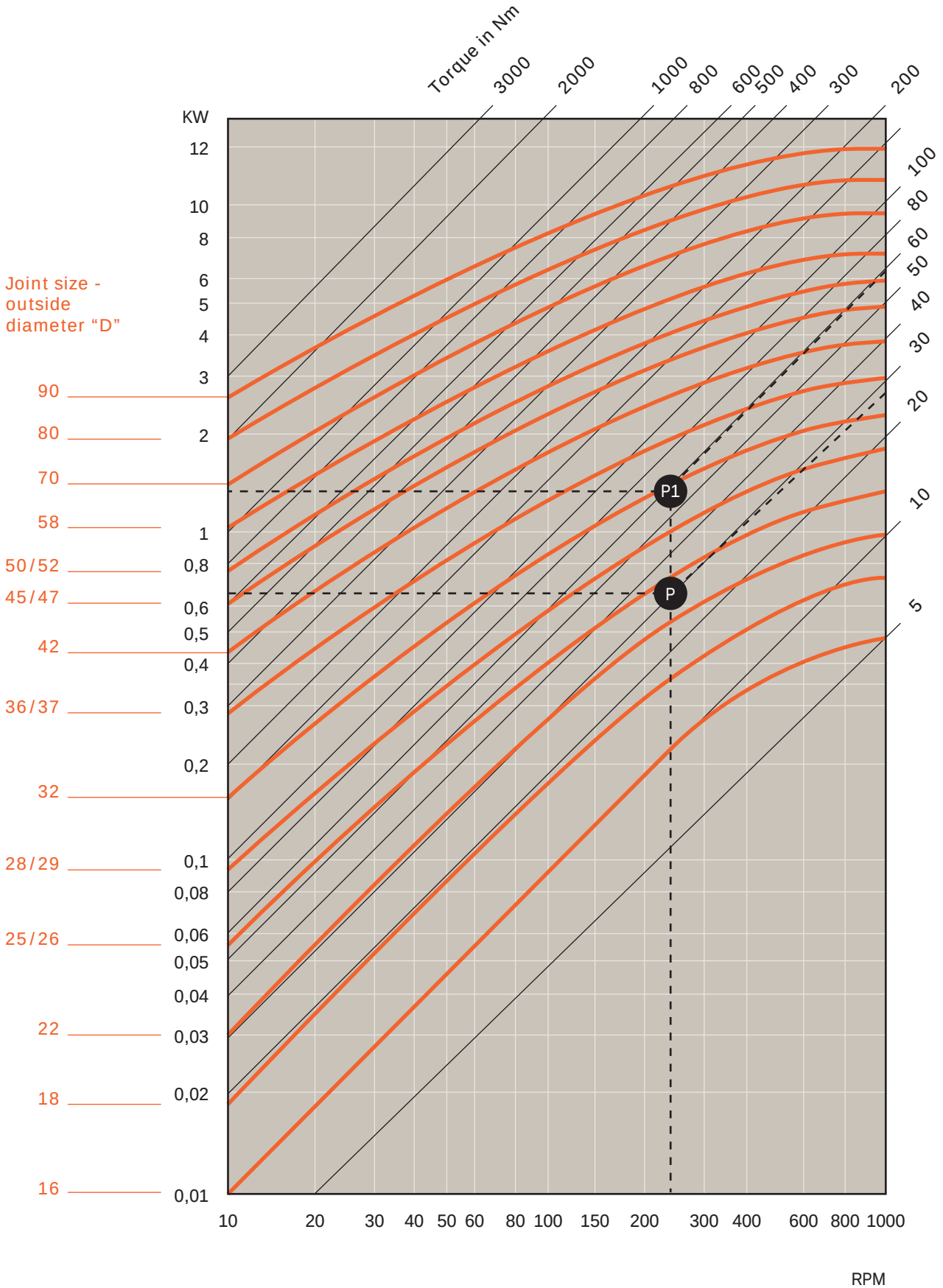
$$\text{Torque in Nm} = 7020 \times \frac{\text{Power (HP)}}{\text{RPM}}$$

Note: 1 KW = 1,35 HP and HP = 0,736 KW
Note: 1 Kgm = 9,81 Nm and Nm = 0,102 Kgm

Technical Information

Torque Ratings for Plain Bearing Universal Joints

Plain Bearings Single & Double



*For double reduce Torque by 15%

ov-universal-joints-torque-ratings-b-lnh- Updated - 29-03-2023

Working angle a°	Correction value F
5°	1,25
10°	1,00
15°	0,90
20°	0,80
25°	0,70
30°	0,50
35°	0,40
40°	0,30
45°	0,25

Torque Calculation

Power: 0,55 KW, RPM: 2300

With working angle a 10° Value F = 1 we get point P. Torque = 23 Nm corresponding to joint size "D" = 28mm. = Type R3686.014

With working angle a 25° Value F = 0.70 (Kw 5,5: 0,70 = 7,85Kw) we get point P1 Torque = 33 Nm corresponding to joint size "D" = 32mm. = Type R3686.016

Consider that:

$$\text{Torque in Nm} = 9550 \times \frac{\text{Power (KW)}}{\text{RPM}}$$

$$\text{Torque in Nm} = 7020 \times \frac{\text{Power (HP)}}{\text{RPM}}$$

Note: 1 KW = 1,35 HP and HP = 0,736 KW
Note: 1 Kgm = 9,81 Nm and 1Nm = 0,102 Kgm

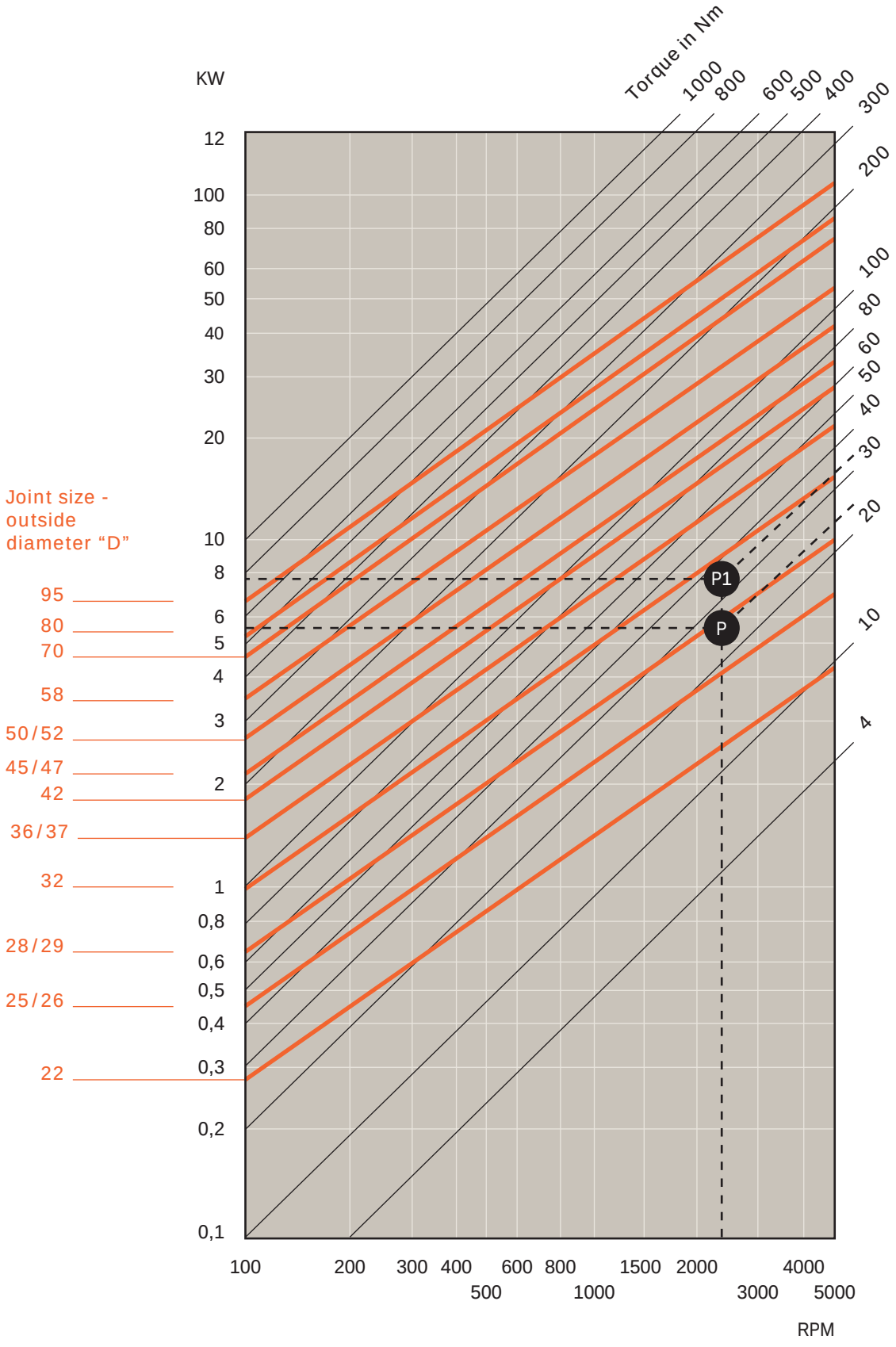
Factor in a safety factor for shock load, recipricating methods, start up shocks etc.

Universal Joints from Automotion Components

Technical Information

Torque Ratings for Needle Roller Bearings Universal Joints

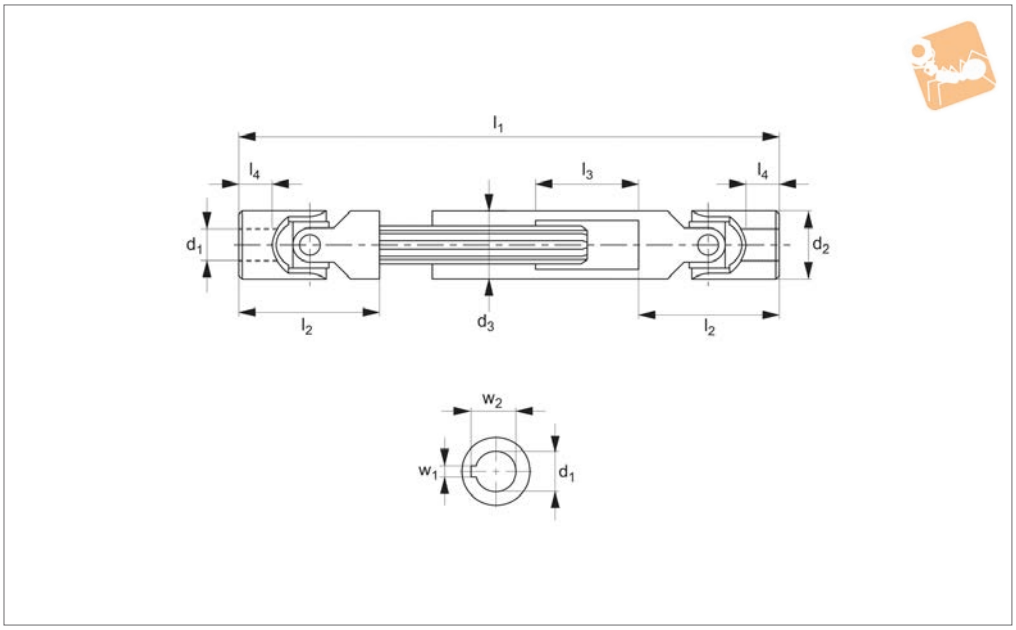
Needle Roller Bearing Single & Double



*For double reduce Torque by 15%

Automotion AN ESSENTRA COMPANY

ov-universal-joints-torque-rating-needle-bearing-b-Inh- Updated - 29-03-2023





R3680

Material
Steel (9SMnPb28k, no. 10718, greased).
Bearing type: plain bearing.

Technical Notes
To DIN 808.

Maximum bending angle 45° per joint. The drive speed of universal joints with journal bearings must not exceed 1000 rpm.

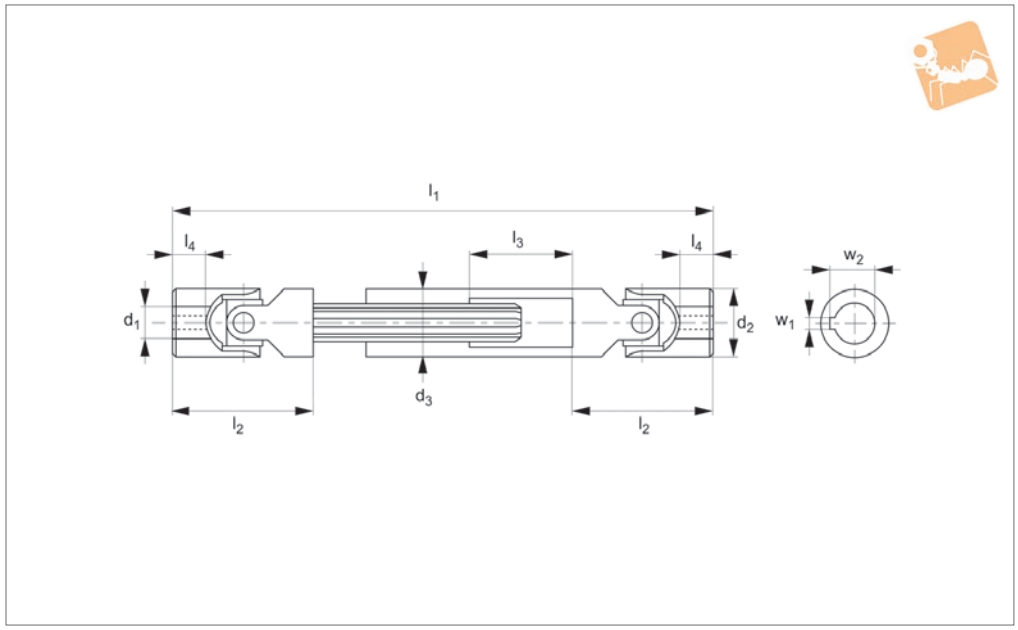
Tips
Double universal joints are used where large bending angles are required or where two shafts offset in relation to each other. Zinc plated available on request.

Order No.	d_1 tol. H7	d_2	d_3	l_1 min.	l_1 max.	l_2	l_3 stroke	l_4	w_1 tol. JS9	w_2	Shaft	Weight g
R3680.10-140-170	10	22	22	140	170	48	30	12	3	11.4	11x14x6	310
R3680.10-160-200	10	22	22	160	200	48	40	12	3	11.4	11x14x6	360
R3680.10-180-240	10	22	22	180	240	48	60	12	3	11.4	11x14x6	380
R3680.10-230-330	10	22	22	230	330	48	100	12	3	11.4	11x14x6	500
R3680.12-160-190	12	25	26	160	190	56	30	13	4	13.8	13x16x6	500
R3680.12-180-225	12	25	26	180	225	56	45	13	4	13.8	13x16x6	560
R3680.12-200-270	12	25	26	200	270	56	70	13	4	13.8	13x16x6	620
R3680.12-220-300	12	25	26	220	300	56	80	13	4	13.8	13x16x6	670
R3680.12-250-355	12	25	26	250	355	56	105	13	4	13.8	13x16x6	760
R3680.12-280-420	12	25	26	280	420	56	140	13	4	13.8	13x16x6	840
R3680.12-300-450	12	25	26	300	450	56	150	13	4	13.8	13x16x6	900
R3680.14-170-200	14	28	29	170	200	60	30	14	5	16.3	13x16x6	620
R3680.14-180-220	14	28	29	180	220	60	40	14	5	16.3	13x16x6	640
R3680.14-200-260	14	28	29	200	260	60	60	14	5	16.3	13x16x6	720
R3680.14-220-300	14	28	29	220	300	60	80	14	5	16.3	13x16x6	780
R3680.14-250-350	14	28	29	250	350	60	100	14	5	16.3	13x16x6	870
R3680.14-280-420	14	28	29	280	420	60	140	14	5	16.3	13x16x6	960
R3680.14-300-450	14	28	29	300	450	60	150	14	5	16.3	13x16x6	1030
R3680.14-350-550	14	28	29	350	550	60	200	14	5	16.3	13x16x6	1170
R3680.14-400-650	14	28	29	400	650	60	250	14	5	16.3	13x16x6	1330
R3680.16-190-220	16	32	32	190	220	68	30	16	5	18.3	16x20x6	900
R3680.16-210-250	16	32	32	210	250	68	40	16	5	18.3	16x20x6	980
R3680.16-240-320	16	32	32	240	320	68	80	16	5	18.3	16x20x6	1100
R3680.16-250-350	16	32	32	250	350	68	100	16	5	18.3	16x20x6	1140
R3680.16-275-390	16	32	32	275	390	68	115	16	5	18.3	16x20x6	1240
R3680.16-300-430	16	32	32	300	430	68	130	16	5	18.3	16x20x6	1330
R3680.16-380-590	16	32	32	380	590	68	210	16	5	18.3	16x20x6	1600
R3680.16-400-630	16	32	32	400	630	68	230	16	5	18.3	16x20x6	1730
R3680.18-230-280	18	36	37	230	280	74	50	17	6	20.8	18x22x6	1350
R3680.18-250-320	18	36	37	250	320	74	70	17	6	20.8	18x22x6	1460
R3680.18-270-370	18	36	37	270	370	74	100	17	6	20.8	18x22x6	1550
R3680.18-290-400	18	36	37	290	400	74	110	17	6	20.8	18x22x6	1660

Telescopic Universal Joints



Order No.	d_1 tol. H7	d_2	d_3	l_1 min.	l_1 max.	l_2	l_3 stroke	l_4	w_1 tol. JS9	w_2	Shaft	Weight g
R3680.18-300-415	18	36	37	300	415	74	115	17	6	20.8	18x22x6	1710
R3680.18-400-620	18	36	37	400	620	74	220	17	6	20.8	18x22x6	2230
R3680.18-500-820	18	36	37	500	820	74	320	17	6	20.8	18x22x6	2750
R3680.30-400-510	30	58	58	400	510	122	110	29	8	33.3	32x38x8	5850
R3680.30-450-620	30	58	58	450	620	122	170	29	8	33.3	32x38x8	6480
R3680.30-500-720	30	58	58	500	720	122	220	29	8	33.3	32x38x8	7140
R3680.30-540-795	30	58	58	540	795	122	255	29	8	33.3	32x38x8	7690
R3680.20-290-380	20	42	42	290	380	82	90	18	6	22.8	21x25x6	2250
R3680.20-500-800	20	42	42	500	800	82	300	18	6	22.8	21x25x6	3660
R3680.25-380-500	25	50	52	380	500	108	120	26	8	28.3	26x32x6	4200
R3680.22-290-350	22	45	47	290	350	95	60	22	6	24.8	23x28x6	2670
R3680.30-330-380	30	58	58	330	380	122	50	29	8	33.3	32x38x8	4900
R3680.25-420-590	25	50	52	420	590	108	170	26	8	28.3	26x32x6	4590
R3680.25-295-345	25	50	52	295	345	108	50	26	8	28.3	26x32x6	3390
R3680.22-330-430	22	45	47	330	430	95	100	22	6	24.8	23x28x6	3000
R3680.20-320-440	20	42	42	320	440	82	120	18	6	22.8	21x25x6	2460
R3680.20-250-300	20	42	42	250	300	82	50	18	6	22.8	21x25x6	1990
R3680.30-350-420	30	58	58	350	420	122	70	29	8	33.3	32x38x8	5170
R3680.20-380-560	20	42	42	380	560	82	180	18	6	22.8	21x25x6	2860
R3680.25-460-660	25	50	52	460	660	108	200	26	8	28.3	26x32x6	4980
R3680.22-250-280	22	45	47	250	280	95	30	22	6	24.8	23x28x6	2350
R3680.25-310-375	25	50	52	310	375	108	65	26	8	28.3	26x32x6	3520
R3680.22-350-470	22	45	47	350	470	95	120	22	6	24.8	23x28x6	3160
R3680.25-500-745	25	50	52	500	745	108	245	26	8	28.3	26x32x6	5370
R3680.20-420-640	20	42	42	420	640	82	220	18	6	22.8	21x25x6	3130
R3680.25-350-450	25	50	52	350	450	108	100	26	8	28.3	26x32x6	3920
R3680.30-370-455	30	58	58	370	455	122	85	29	8	33.3	32x38x8	5420
R3680.22-270-320	22	45	47	270	320	95	50	22	6	24.8	23x28x6	2510
R3680.20-270-340	20	42	42	270	340	82	70	18	6	22.8	21x25x6	2120
R3680.22-470-710	22	45	47	470	710	95	240	22	6	24.8	23x28x6	4130





R3681

Material
Stainless steel (AISI 304), bearing type: plain bearing.

Technical Notes
To DIN 808, maximum bending angle 45° per joint.
The drive speed of universal joints with journal bearings must not exceed 1000 rpm.

Tips
Double universal joints are used where large bending angles are required or where two shafts offset in relation to each other.
Zinc plated available on request.

Order No.	d_1 tol. h7	d_2	d_3	l_1 min.	l_1 max.	l_2	l_3 stroke	l_4	w_1 tol. JS9	w_2	Shaft	Weight g
R3681.10-140-170	10	20	20	140	170	48	30	12	3	11.4	11x14x6	310
R3681.10-160-200	10	20	20	160	200	48	40	12	3	11.4	11x14x6	360
R3681.10-180-240	10	20	20	180	240	45	60	12	3	11.4	11x14x6	380
R3681.10-230-330	10	20	20	230	330	48	100	12	3	11.4	11x14x6	500
R3681.12-160-190	12	23	23	195	265	50	70	14	4	13.8	13x16x6	500
R3681.12-180-225	12	23	23	180	225	56	45	13	4	13.8	13x16x6	560
R3681.12-200-270	12	23	23	200	270	56	70	13	4	13.8	13x16x6	620
R3681.12-220-300	12	23	23	220	300	56	80	13	4	13.8	13x16x6	670
R3681.12-250-355	12	23	23	250	355	56	105	13	4	13.8	13x16x6	760
R3681.12-280-420	12	23	23	280	420	56	140	13	4	13.8	13x16x6	840
R3681.14-170-200	14	25	25	170	200	60	30	14	5	16.3	13x16x6	620
R3681.14-180-220	14	25	25	180	220	60	40	14	5	16.3	13x16x6	640
R3681.14-200-260	14	25	25	200	260	60	60	14	5	16.3	13x16x6	720
R3681.14-220-300	14	25	25	220	300	60	80	14	5	16.3	13x16x6	780
R3681.14-250-350	14	25	25	250	350	60	100	14	5	16.3	13x16x6	870
R3681.14-280-420	14	25	25	280	420	60	140	14	5	16.3	13x16x6	960
R3681.14-300-450	14	25	25	300	450	60	150	14	5	16.3	13x16x6	1030
R3681.14-350-550	14	25	25	350	550	60	200	14	5	16.3	13x16x6	1170
R3681.14-400-650	14	25	25	400	650	60	250	14	5	16.3	13x16x6	1330
R3681.16-190-220	16	29	29	190	220	68	30	16	5	18.3	16x20x6	900
R3681.16-210-250	16	29	29	210	250	68	40	16	5	18.3	16x20x6	980
R3681.16-240-320	16	29	29	240	320	68	80	16	5	18.3	16x20x6	1100
R3681.16-250-350	16	29	29	250	350	68	100	16	5	18.3	16x20x6	1140
R3681.16-275-390	16	29	29	275	390	68	115	16	5	18.3	16x20x6	1240
R3681.16-300-430	16	29	29	300	430	68	130	16	5	18.3	16x20x6	1330
R3681.16-380-590	16	29	29	380	590	68	210	16	5	18.3	16x20x6	1600
R3681.16-400-630	16	29	29	400	630	68	230	16	5	18.3	16x20x6	1730
R3681.18-230-280	18	32	32	230	280	74	50	17	6	20.8	18x22x6	1350
R3681.18-250-320	18	32	32	250	320	74	70	17	6	20.8	18x22x6	1460
R3681.18-270-370	18	32	32	270	370	74	100	17	6	20.8	18x22x6	1550
R3681.18-290-400	18	32	32	290	400	74	110	17	6	20.8	18x22x6	1660
R3681.18-300-415	18	32	32	300	415	74	115	17	6	20.8	18x22x6	1710

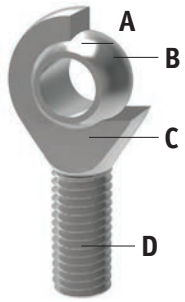
Stainless Telescopic Universal Joints



Order No.	d_1 tol. h7	d_2	d_3	l_1 min.	l_1 max.	l_2	l_3 stroke	l_4	w_1 tol. JS9	w_2	Shaft	Weight g
R3681.18-400-620	18	32	32	400	620	74	220	17	6	20.8	18x22x6	2230
R3681.18-500-820	18	32	32	500	820	74	320	17	6	20.8	18x22x6	2750
R3681.20-250-300	20	35	32	250	300	82	50	18	6	22.8	21x25x6	1990
R3681.20-270-340	20	35	32	270	340	82	70	18	6	22.8	21x25x6	2120
R3681.20-290-380	20	35	32	290	380	82	90	18	6	22.8	21x25x6	2250
R3681.20-320-440	20	35	32	320	440	82	120	18	6	22.8	21x25x6	2460
R3681.20-380-560	20	35	32	380	560	82	180	18	6	22.8	21x25x6	2860
R3681.20-420-640	20	35	32	420	640	82	220	18	6	22.8	21x25x6	3130
R3681.20-500-800	20	35	32	500	800	82	300	18	6	22.8	21x25x6	3660
R3681.22-250-280	22	40	35	250	280	95	30	22	6	24.8	23x28x6	2350
R3681.22-270-320	22	40	35	270	320	95	50	22	6	24.8	23x28x6	2510
R3681.22-290-350	22	40	35	290	350	95	60	22	6	24.8	23x28x6	2670
R3681.22-330-430	22	40	35	330	430	95	100	22	6	24.8	23x28x6	3000
R3681.22-350-470	22	40	35	350	470	95	120	22	6	24.8	23x28x6	3160
R3681.22-470-710	22	40	35	470	710	95	240	22	6	24.8	23x28x6	4130
R3681.25-295-345	25	45	40	295	345	108	50	26	8	28.3	26x32x6	3390
R3681.25-310-375	25	45	40	310	375	108	65	26	8	28.3	26x32x6	3520
R3681.25-350-450	25	45	40	350	450	108	100	26	8	28.3	26x32x6	3920
R3681.25-380-500	25	45	40	380	500	108	120	26	8	28.3	26x32x6	4200
R3681.25-420-590	25	45	40	420	590	108	170	26	8	28.3	26x32x6	4590
R3681.25-460-660	25	45	40	460	660	108	200	26	8	28.3	26x32x6	4980
R3681.25-500-745	25	45	40	500	745	108	245	26	8	28.3	26x32x6	5370
R3681.30-330-380	30	50	45	330	380	122	50	29	8	33.3	32x38x8	4900
R3681.30-350-420	30	50	45	350	420	122	70	29	8	33.3	32x38x8	5170
R3681.30-370-455	30	50	45	370	455	122	85	29	8	33.3	32x38x8	5420
R3681.30-400-510	30	50	45	400	510	122	110	29	8	33.3	32x38x8	5850
R3681.30-450-620	30	50	45	450	620	122	170	29	8	33.3	32x38x8	6480
R3681.30-500-720	30	50	45	500	720	122	220	29	8	33.3	32x38x8	7140
R3681.30-540-795	30	50	45	540	795	122	255	29	8	33.3	32x38x8	7690

All of our rod ends incorporate either a plain spherical bearing, ball bearing, or roller bearing. Below is an overview of each type.

Plain spherical bearings



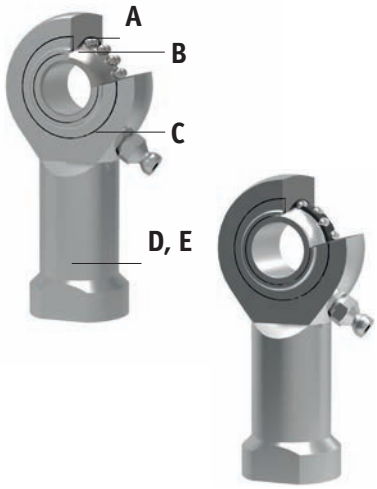
A Made from Polyamid-PTFE-fibreglass-compound, maintenance free, absorbs any foreign particles

B Ball made of bearing steel, hardened, ground, polished and hard chromium plated, ensures reliable corrosion wwprotection

C No clearance - radial clearance 0-10µm

D All rod ends housings made of forged steel, tempered, extremely high loads resistant

Ball and roller bearings



A Radial clearance: 10-30µm, low friction

B Inner ring made of bearing steel, hardened ball grooves polished

C Shields on both sides protect against rough dirt penetration

D All rod ends housings are made of forged steel, case hardened bearing race

E Low maintenance due to long-term greasing, especially suitable for high speed large swiveling angles or rotating movements

Rod ends and water



Stainless steel versions

Most of our rod ends are available in stainless steel as standard

High grade AISI 316 stainless steel available on request

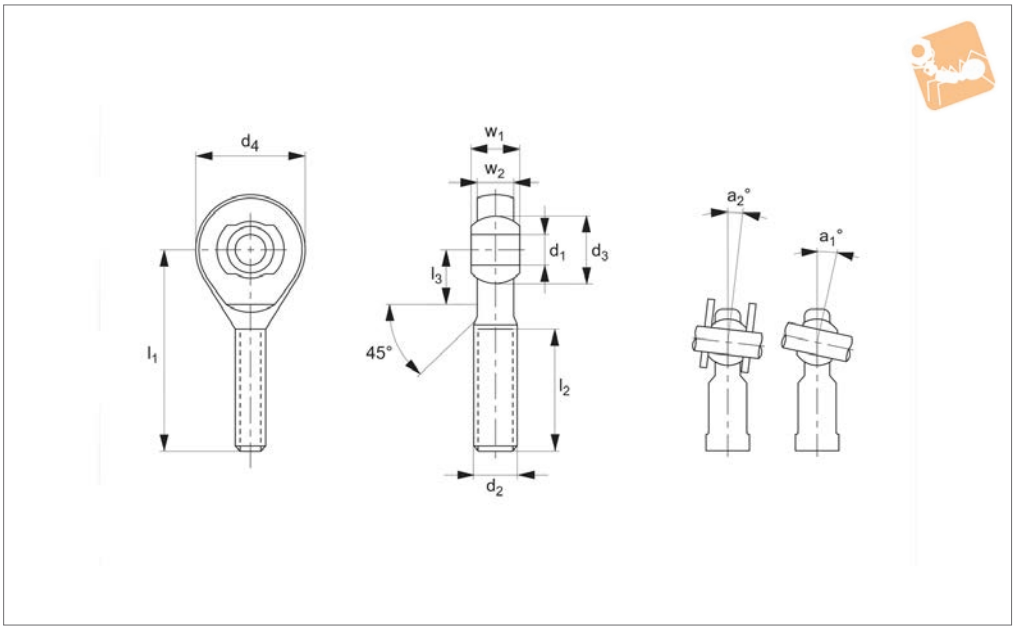
Rod Ends from Automotion Components

ROD ENDS

Heavy-Duty Rod Ends - Male
with integral spherical plain bearing



R3550



Material
Housing - forged steel, tempered, rolled thread, surface galvanized.
Joint ball - ball bearing steel, hardened and ground.
Race - nylon/teflon/glass compound.

Technical Notes
Maintenance free, sizes according to DIN ISO 12240-4, series K, for tolerances see technical pages.

Tips
Standard thread is right hand thread.

Important Notes
*Denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	l_2	d_4	a_1 °	Weight g
R3550.R005	Right	5	33	M5	11.11	20	18	13.0	14
R3550.R006	Right	6	36	M6	12.70	22	20	13.0	20
R3550.R008	Right	8	42	M8	15.87	25	24	14.5	38
R3550.R010	Right	10	48	M10	19.05	29	28	13.5	60
R3550.R012	Right	12	54	M12	22.22	33	32	13.0	92
R3550.R014	Right	14	60	M14	25.40	36	36	16.0	127
R3550.R016	Right	16	66	M16	28.57	40	42	15.5	202
R3550.R018	Right	18	72	M18x1,5*	31.75	44	46	15.0	250
R3550.R020	Right	20	78	M20x1,5*	34.92	47	50	14.5	327
R3550.R022	Right	22	84	M22x1,5*	38.10	51	54	15.5	440
R3550.R025	Right	25	94	M24x2*	42.85	57	60	15.0	630
R3550.R030	Right	30	110	M30x2*	50.75	66	70	17.0	1015
R3550.L005	Left	5	33	M5	11.11	20	18	13.0	14
R3550.L006	Left	6	36	M6	12.70	22	20	13.0	20
R3550.L008	Left	8	42	M8	15.87	25	24	14.5	38
R3550.L010	Left	10	48	M10	19.05	29	28	13.5	60
R3550.L012	Left	12	54	M12	22.22	33	32	13.0	92
R3550.L014	Left	14	60	M14	25.40	36	36	16.0	127
R3550.L016	Left	16	66	M16	28.57	40	42	15.5	202
R3550.L018	Left	18	72	M18x1,5*	31.75	44	46	15.0	250
R3550.L020	Left	20	78	M20x1,5*	34.92	47	50	14.5	327
R3550.L022	Left	22	84	M22x1,5*	38.10	51	54	15.5	440
R3550.L025	Left	25	94	M24x2*	42.85	57	60	15.0	630
R3550.L030	Left	30	110	M30x2*	50.80	66	70	17.0	1015

Order No.	a_2 °	l_3	w_1	w_2	Dyn. load C kN max.	Static load C_0 kN max.
R3550.R005	7.5	9	8	6.00	3.9	5.6
R3550.R006	6.5	12	9	6.75	4.6	7.8
R3550.R008	7.5	15	12	9.00	7.0	14.3
R3550.R010	8.0	15	14	10.50	10.4	22.6

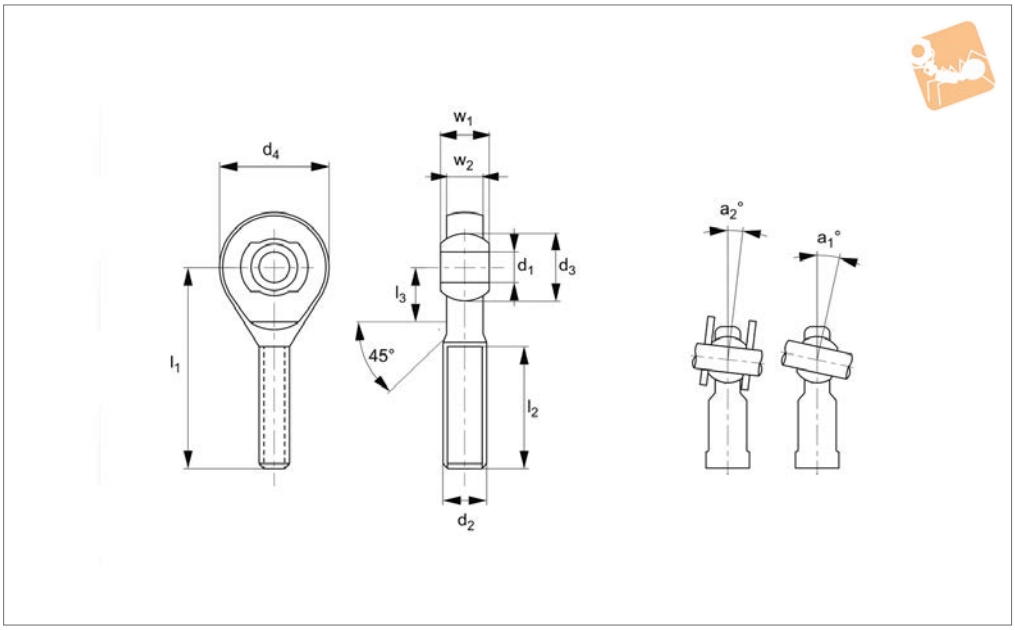
Order No.	a_2 °	l_3	w_1	w_2	Dyn. load C kN max.	Static load C_0 kN max.
R3550.R012	8.0	19	16	12.00	12.4	32.8
R3550.R014	9.5	20	19	13.50	15.4	41.3
R3550.R016	8.5	22	21	15.00	22.4	56.6
R3550.R018	9.5	25	23	16.50	26.3	69.7
R3550.R020	9.0	28	25	18.00	30.8	82.2
R3550.R022	10.0	26	28	20.00	38.2	95.6
R3550.R025	10.0	30	31	22.00	45.3	118.6
R3550.R030	10.5	35	37	25.00	55.0	145.6
R3550.L005	7.5	9	8	6.00	3.9	5.6
R3550.L006	6.5	12	9	6.75	4.6	7.8
R3550.L008	7.5	15	12	9.00	7.0	14.3
R3550.L010	8.0	15	14	10.50	10.4	22.6
R3550.L012	8.0	19	16	12.00	12.4	32.8
R3550.L014	9.5	20	19	13.50	15.4	41.3
R3550.L016	8.5	22	21	15.00	22.4	56.6
R3550.L018	9.5	25	23	16.50	26.325	69.700
R3550.L020	9.0	28	25	18.00	30.805	82.200
R3550.L022	10.0	26	28	20.00	38.2	95.6
R3550.L025	10.0	30	31	22.00	45.3	118.6
R3550.L030	10.5	35	37	25.00	55.0	145.6

Heavy-Duty Rod Ends - Male

Imperial, with integral spherical plain bearing



R3550.i



Material

Rod end housing - forged steel, tempered, rolled thread, surface galvanized.
Joint ball - ball bearing steel, hardened and ground.
Race - nylon/teflon/glass compound.

Technical Notes

Male thread maintenance free adapter sizes according to DIN ISO 12240-4, series K.

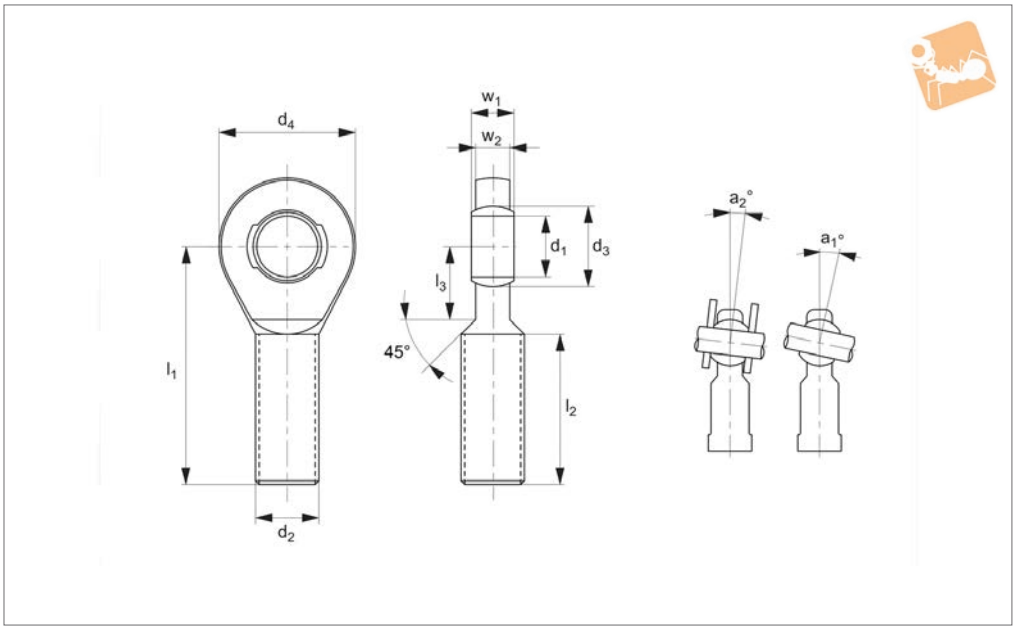
Tips

Standard thread is Right hand thread.

Important Notes

*Denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	l_2	d_4	a °	l_3	w_1	w_2	Dyn. load C kN max.	Static load C_0 kN max.	Weight g
R3550.I250	Right	0.250	1.594	1/4-28	0.516	1.000	0.750	13.0	0.511	0.374	0.283	3.6	13.5	22
R3550.I375	Right	0.375	1.948	3/8-24	0.719	1.240	1.000	9.5	0.629	0.499	0.405	7.7	21.0	49
R3550.I500	Right	0.500	2.460	1/2-20	0.876	1.500	1.311	13.0	0.846	0.624	0.472	14.7	40.3	109
R3550.I625	Right	0.625	2.618	5/8-18	1.125	1.574	1.654	15.5	0.944	0.827	0.590	22.4	56.0	202
R3550.I750	Right	0.750	2.893	3/4-16	1.249	1.750	1.750	11.0	1.023	0.874	0.688	24.9	62.2	249
R3550.I1000	Right	1.000	3.720	1-12	1.688	2.244	2.362	15.5	1.200	1.220	0.866	45.4	113.4	562
R3550.I1001	Right	1.000	3.720	1-14	1.688	2.244	2.362	15.5	1.200	1.220	0.866	45.4	113.4	562
R3550.IL250	Left	0.250	1.594	1/4-28	0.516	1.000	0.750	13.0	0.511	0.374	0.283	3.6	13.5	22
R3550.IL375	Left	0.375	1.948	3/8-24	0.719	1.240	1.000	9.5	0.629	0.499	0.405	7.7	21.0	49
R3550.IL500	Left	0.500	2.460	1/2-20	0.876	1.500	1.311	13.0	0.846	0.624	0.472	14.7	40.3	109
R3550.IL625	Left	0.625	2.618	5/8-18	1.125	1.574	1.654	15.5	0.944	0.827	0.590	22.4	56.0	202
R3550.IL750	Left	0.750	2.893	3/4-16	1.249	1.750	1.750	11.0	1.023	0.874	0.688	24.9	62.2	249
R3550.IL1000	Left	1.000	3.720	1-12	1.688	2.244	2.362	15.5	1.200	1.220	0.866	45.4	113.4	562
R3550.IL1001	Left	1.000	3.720	1-14	1.688	2.244	2.362	15.5	1.200	1.220	0.866	45.4	113.4	562





R3553

Material
Housing - forged steel, tempered, rolled thread, surface galvanized.
Joint ball - ball bearing steel, hardened and ground, surface superfinished and chromium plated.
Race - nylon/teflon/glass compound.

Technical Notes
Maintenance free, sizes according to DIN ISO 12240-4, series E, for tolerances technical pages.

Tips
Standard thread is right hand thread.

Important Notes
*Denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	l_2	d_4	a_1 °	Weight g
R3553.R006	Right	6	36	M6	10.0	22	20	13.0	14
R3553.R008	Right	8	42	M8	13.0	25	23	15.0	24
R3553.R010	Right	10	48	M10	16.0	29	28	12.0	41
R3553.R012	Right	12	54	M12	18.0	33	32	10.5	67
R3553.R015	Right	15	63	M14	22.0	33	38	8.5	110
R3553.R017	Right	17	69	M16	25.0	40	44	10.0	163
R3553.R020	Right	20	78	M20x1,5*	29.0	47	51	9.0	270
R3553.R025	Right	25	94	M24x2*	35.5	57	62	7.5	508
R3553.R030	Right	30	110	M30x2*	40.7	66	70	6.0	785
R3553.R035	Right	35	140	M36x3*	47.0	92	82	6.5	1330
R3553.R040	Right	40	145	M42x3*	53.0	94	92	7.0	1890
R3553.R041	Right	40	150	M39x3*	53.0	99	92	7.0	1785
R3553.R045	Right	45	165	M45x3*	60.0	100	102	7.5	2620
R3553.R046	Right	45	163	M42x3*	60.0	98	102	7.5	2430
R3553.R050	Right	50	195	M52x3*	66.0	120	112	6.5	3865
R3553.R051	Right	50	185	M45x3*	66.0	110	112	6.5	3225
R3553.R060	Right	60	225	M60x4*	80.0	140	135	6.5	6400
R3553.R061	Right	60	210	M60x4*	80.0	125	-	6.5	5430
R3553.L006	Left	6	36	M6	10.0	22	20	13.0	14
R3553.L008	Left	8	42	M8	13.0	25	23	15.0	24
R3553.L010	Left	10	48	M10	16.0	29	28	12.0	41
R3553.L012	Left	12	54	M12	18.0	33	32	10.5	67
R3553.L015	Left	15	63	M14	22.0	33	38	8.5	110
R3553.L017	Left	17	69	M16	25.0	40	44	10.0	163
R3553.L020	Left	20	78	M20x1,5*	29.0	47	51	9.0	270
R3553.L025	Left	25	94	M24x2*	35.5	57	62	7.5	508
R3553.L030	Left	30	110	M30x2*	40.7	66	70	6.0	785
R3553.L035	Left	35	140	M36x3*	47.0	92	82	6.5	1330
R3553.L040	Left	40	145	M42x3*	53.0	94	92	7.0	1890
R3553.L041	Left	40	150	M39x3*	53.0	99	92	7.0	1785
R3553.L045	Left	45	165	M45x3*	60.0	100	102	7.5	2620
R3553.L046	Left	45	163	M42x3*	60.0	98	102	7.5	2430

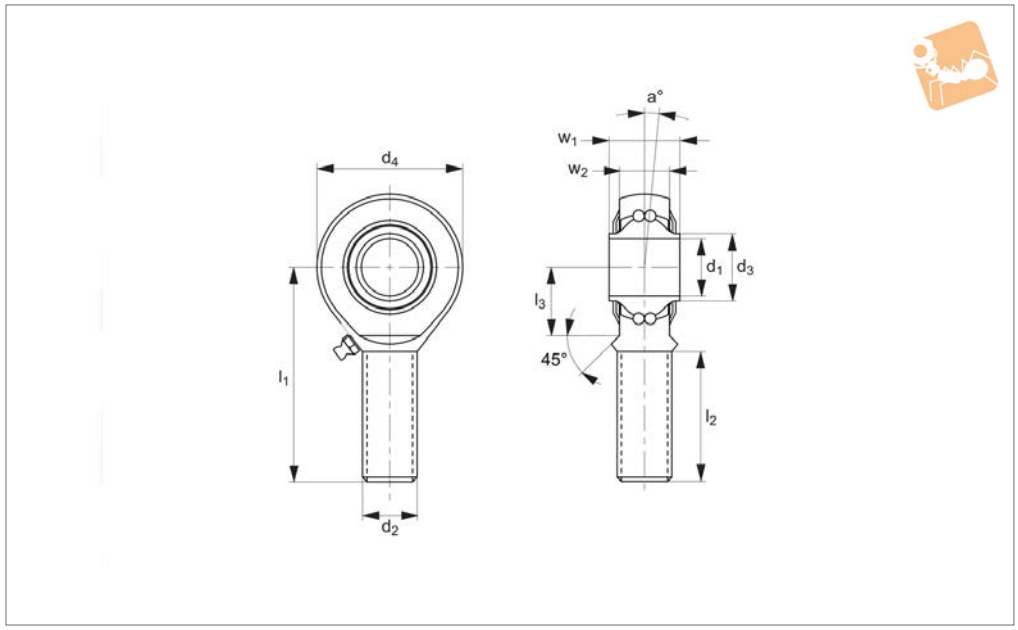
Heavy-Duty Rod Ends - Male

with integral spherical plain bearing



Order No.	Thread hand	d_1	l_1	d_2	d_3	l_2	d_4	a_1 °	Weight g
R3553.L050	Left	50	195	M52x3,0*	66.0	120	112	6.5	3865
R3553.L051	Left	50	185	M45x3,0*	66.0	110	112	6.5	3225
R3553.L060	Left	60	225	M60x4,0*	80.0	140	135	6.5	6400
R3553.L061	Left	60	210	M52x3,0*	80.0	125	135	6.5	5430

Order No.	a_2 °	l_3	w_1	w_2	Dyn. load C kN max.	Static load C_0 kN max.
R3553.R006	6.5	11	6	4	2.5	6.4
R3553.R008	8.0	12	8	5	4.2	11.0
R3553.R010	6.0	15	9	6	6.4	16.8
R3553.R012	5.0	15	10	7	9.2	23.0
R3553.R015	4.5	18	12	9	13.4	39.6
R3553.R017	5.5	23	14	10	19.2	54.1
R3553.R020	4.5	25	16	12	25.2	76.7
R3553.R025	3.5	32	20	16	42.4	119.1
R3553.R030	3.0	35	22	18	54.0	141.8
R3553.R035	3.5	38	25	20	70.4	180.8
R3553.R040	3.5	42	28	22	86.0	222.6
R3553.R041	3.5	42	28	22	86.0	222.6
R3553.R045	4.0	50	32	25	107.0	276.2
R3553.R046	4.0	50	32	25	107.0	276.2
R3553.R050	3.0	60	35	28	132.0	339.2
R3553.R051	3.0	60	35	28	132.0	339.2
R3553.R060	3.5	70	44	36	208.0	532.1
R3553.R061	3.5	70	44	36	208.0	532.1
R3553.L006	6.5	11	6	4	2.5	6.4
R3553.L008	8.0	12	8	5	4.2	11.0
R3553.L010	6.0	15	9	6	6.4	16.8
R3553.L012	5.0	15	10	7	9.2	23.0
R3553.L015	4.5	18	12	9	13.4	39.6
R3553.L017	5.5	23	14	10	19.2	54.1
R3553.L020	4.5	25	16	12	25.2	76.7
R3553.L025	3.5	32	20	16	42.4	119.1
R3553.L030	3.0	35	22	18	54.0	141.8
R3553.L035	3.5	38	25	20	70.4	180.8
R3553.L040	3.5	42	28	22	86.0	222.6
R3553.L041	3.5	42	28	22	86.0	222.6
R3553.L045	4.0	50	32	25	107.0	276.2
R3553.L046	4.0	50	32	25	107.0	276.2
R3553.L050	3.0	60	35	28	132.0	339.2
R3553.L051	3.0	60	35	28	132.0	339.2
R3553.L060	3.5	70	44	36	208.0	532.1
R3553.L061	3.5	70	44	36	208.0	532.1





R3556

Material
Housing - forged steel, tempered, case hardened bearing race, ground and lapped, rolled thread, surface galvanized. Inner ring - ball bearing steel, hardened, superfine ground, lubrication - calcium-complex-soap-grease, temp range -20°C to +120°C.

Lubrication nipple - DIN 3405 D1/A (sizes 6 to 10) DIN 71412 H1 (sizes 12 to 30).

Technical Notes
Low maintenance. Sizes according to DIN ISO 12240-4 series K, for tolerances see technical pages.

Tips
Standard thread is right hand thread.

Important Notes
*Denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	l_2	d_4	a °	l_3	w_1	Weight g
R3556.R006	Right	6	36	M6	9.0	22	20	8.0	12	9	19
R3556.R008	Right	8	42	M8	10.5	25	24	8.5	15	12	36
R3556.R010	Right	10	48	M10	12.0	29	28	8.0	15	14	60
R3556.R012	Right	12	54	M12	14.5	33	32	7.5	19	16	87
R3556.R014	Right	14	60	M14	17.0	36	36	6.0	20	19	135
R3556.R016	Right	16	66	M16	19.0	40	42	8.0	22	21	190
R3556.R018	Right	18	72	M18x1,5*	21.5	44	46	8.5	25	23	270
R3556.R020	Right	20	78	M20x1,5*	24.5	47	50	7.0	28	25	338
R3556.R022	Right	22	84	M22x1,5*	26.0	51	54	8.0	26	28	450
R3556.R025	Right	25	94	M24x2*	29.5	57	64	5.0	30	31	602
R3556.R030	Right	30	110	M30x2*	34.5	66	70	7.5	35	37	922
R3556.L006	Left	6	36	M6	9.0	22	20	8.0	12	9	19
R3556.L008	Left	8	42	M8	10.5	25	24	8.5	15	12	36
R3556.L010	Left	10	48	M10	12.0	29	28	8.0	15	14	60
R3556.L012	Left	12	54	M12	14.5	33	32	7.5	19	16	87
R3556.L014	Left	14	60	M14	17.0	36	36	6.0	20	19	135
R3556.L016	Left	16	66	M16	19.0	40	42	8.0	22	21	190
R3556.L018	Left	18	72	M18x1,5*	21.5	44	46	8.5	25	23	270
R3556.L020	Left	20	78	M20x1,5*	24.5	47	50	7.0	28	25	338
R3556.L022	Left	22	84	M22x1,5*	26.0	51	54	8.0	26	28	450
R3556.L025	Left	25	94	M24x2*	29.5	57	64	5.0	30	31	602
R3556.L030	Left	30	110	M30x2*	34.5	66	70	7.5	35	37	922

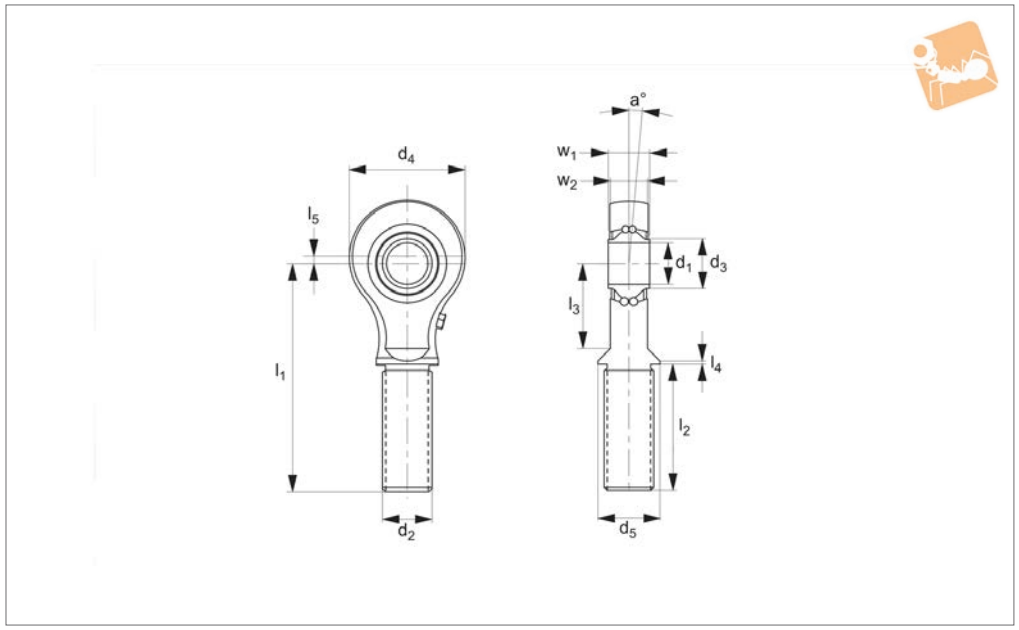
Order No.	w_2	Calc. factor Y	Calc. factor Y_0	Dyn. load C kN max.	Speed rpm max.	Static load C_0 kN max.
R3556.R006	6.75	2.19	2.09	2.75	1350	0.65
R3556.R008	9.00	1.89	1.80	4.00	1300	1.00
R3556.R010	10.50	1.81	1.90	4.45	1225	1.45

Heavy-Duty Rod Ends - Male

with integral ball bearing



Order No.	w_2	Calc. factor Y	Calc. factor Y_0	Dyn. load C kN max.	Speed rpm max.	Static load C_0 kN max.
R3556.R012	12.00	1.82	1.74	4.95	1125	1.80
R3556.R014	13.50	2.48	2.36	5.60	1025	2.00
R3556.R016	15.00	2.35	2.24	6.25	975	2.35
R3556.R018	16.50	2.31	2.21	7.10	900	2.90
R3556.R020	18.00	2.58	2.46	7.90	825	3.45
R3556.R022	20.00	2.24	2.35	9.30	725	3.98
R3556.R025	22.00	2.12	2.02	11.03	600	5.68
R3556.R030	25.00	2.35	2.24	14.15	450	7.45
R3556.L006	6.75	2.19	2.09	2.75	1350	0.65
R3556.L008	9.00	1.89	1.80	4.00	1300	1.00
R3556.L010	10.50	1.81	1.90	4.45	1225	1.45
R3556.L012	12.00	1.82	1.74	4.95	1125	1.80
R3556.L014	13.50	2.48	2.36	5.60	1025	2.00
R3556.L016	15.00	2.35	2.24	6.25	975	2.35
R3556.L018	16.50	2.31	2.21	7.10	900	2.90
R3556.L020	18.00	2.58	2.46	7.90	825	3.45
R3556.L022	20.00	2.24	2.35	9.30	725	3.98
R3556.L025	22.00	2.12	2.02	11.03	600	5.68
R3556.L030	25.00	2.35	2.24	14.15	450	7.45





R3559

Material
Housing - forged steel, tempered, case hardened bearing race, ground and lapped, surface galvanized.
Inner ring - ball bearing steel, hardened, superfine ground.
Lubrication - calcium-complex-soap-grease, temp range -20°C to +120°C, lubrication nipple - DIN 3405 D1/A.

Technical Notes
Low maintenance, for tolerances see technical pages.

Tips
Standard thread is right hand thread.

Important Notes
*Denotes fine pitch thread.

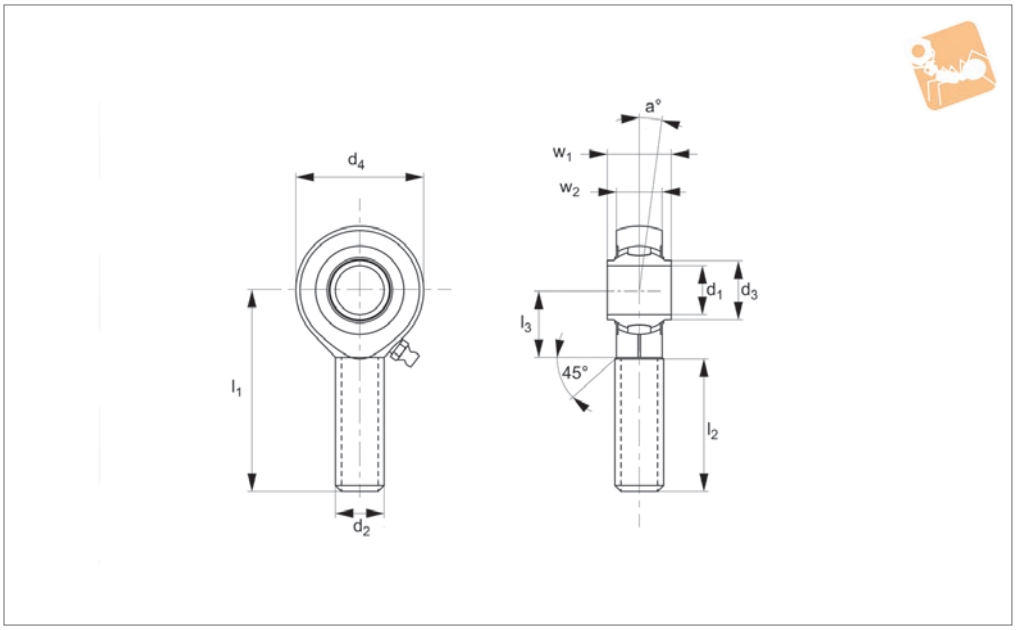
Order No.	Thread hand	d_1	l_1	d_2	d_3	l_2	d_4	d_5	a °	l_3	Weight g
R3559.R006	Right	6	64.0	M10x1	8.5	42.5	24	14	10.5	17	62
R3559.R007	Right	6	40.5	M10x1	8.5	19	24	14	10.5	17	57
R3559.R008	Right	8	72.0	M12x1,5	11.0	46.5	30	17	8.5	20	97
R3559.R009	Right	8	48.5	M12x1,5	11.0	23	30	17	8.5	20	88
R3559.R010	Right	10	82.0	M14x1,5	13.5	49.5	36	19	9.5	28	168
R3559.R011	Right	10	58.5	M14x1,5	13.5	26	36	19	9.5	28	154
R3559.R012	Right	12	90.0	M16x1,5	15.0	53.5	40	21	7.5	31	226
R3559.R013	Right	12	65.5	M16x1,5	15.0	29	40	21	7.5	31	204
R3559.R015	Right	15	100.0	M20x1,5	18.5	62.5	42	26	6.5	30	310
R3559.R016	Right	15	73.5	M20x1,5	18.5	36	42	26	6.5	30	273
R3559.R017	Right	17	105.0	M20x1,5	21.0	62.5	48	26	7.0	36	401
R3559.R018	Right	17	78.5	M20x1,5	21.0	36	48	26	7.0	36	354
R3559.R020	Right	20	117.0	M24x1,5	24.0	68.5	56	30	5.5	41	587
R3559.R021	Right	20	89.5	M24x1,5	24.0	41	56	30	5.5	41	519
R3559.L006	Left	6	64.0	M10x1	8.5	42.5	24	14	10.5	17	62
R3559.L007	Left	6	40.5	M10x1	8.5	19	24	14	10.5	17	57
R3559.L008	Left	8	72.0	M12x1,5	11.0	46.5	30	17	8.5	20	97
R3559.L009	Left	8	48.5	M12x1,5	11.0	23	30	17	8.5	20	88
R3559.L010	Left	10	82.0	M14x1,5	13.5	49.5	36	19	9.5	28	168
R3559.L011	Left	10	58.5	M14x1,5	13.5	26	36	19	9.5	28	154
R3559.L012	Left	12	90.0	M16x1,5	15.0	53.5	40	21	7.5	31	226
R3559.L013	Left	12	65.5	M16x1,5	15.0	29	40	21	7.5	31	204
R3559.L015	Left	15	100.0	M20x1,5	18.5	62.5	42	26	6.5	30	310
R3559.L016	Left	15	73.5	M20x1,5	18.5	36	42	26	6.5	30	273
R3559.L017	Left	17	105.0	M20x1,5	21.0	62.5	48	26	7.0	36	401
R3559.L018	Left	17	78.5	M20x1,5	21.0	36	48	26	7.0	36	354
R3559.L020	Left	20	117.0	M24x1,5	24.0	68.5	56	30	5.5	41	587
R3559.L021	Left	20	89.5	M24x1,5	24.0	41	56	30	5.5	41	519

Heavy-Duty Rod Ends - Male

with integral ball bearing



Order No.	l_4	l_5	w_1	w_2	Calc. factor Y	Calc. factor Y_0	Dyn. load C kN max.	Speed rpm max.	Static load C_0 kN max.
R3559.R006	2.5	1.5	14	10	1.28	1.34	2.44	1300	0.76
R3559.R007	2.5	1.5	14	10	1.28	1.34	2.44	1300	0.76
R3559.R008	2.5	2.0	15	10	1.9	1.81	2.60	1225	0.98
R3559.R009	2.5	2.0	15	10	1.9	1.81	2.60	1225	0.98
R3559.R010	2.5	2.5	20	14	1.69	1.77	5.12	1100	1.90
R3559.R011	2.5	2.5	20	14	1.69	1.77	5.12	1100	1.90
R3559.R012	2.5	3.0	20	14	1.81	1.90	5.34	1050	2.06
R3559.R013	2.5	3.0	20	14	1.81	1.90	5.34	1050	2.06
R3559.R015	2.5	3.0	20	14	2.07	2.17	5.48	975	3.27
R3559.R016	2.5	3.0	20	14	2.07	2.17	5.48	975	3.27
R3559.R017	2.5	3.5	22	16	2.35	2.46	5.57	875	2.68
R3559.R018	2.5	3.5	22	16	2.35	2.46	5.57	875	2.68
R3559.R020	3.0	3.5	24	18	2.76	2.90	6.16	775	3.14
R3559.R021	3.0	3.5	24	18	2.76	2.90	6.16	775	3.14
R3559.L006	2.5	1.5	14	10	1.28	1.34	2.44	1300	0.76
R3559.L007	2.5	1.5	14	10	1.28	1.34	2.44	1300	0.76
R3559.L008	2.5	2.0	15	10	1.9	1.81	2.60	1225	0.98
R3559.L009	2.5	2.0	15	10	1.9	1.81	2.60	1225	0.98
R3559.L010	2.5	2.5	20	14	1.69	1.77	5.12	1100	1.90
R3559.L011	2.5	2.5	20	14	1.69	1.77	5.12	1100	1.90
R3559.L012	2.5	3.0	20	14	1.81	1.90	5.34	1050	2.06
R3559.L013	2.5	3.0	20	14	1.81	1.90	5.34	1050	2.06
R3559.L015	2.5	3.0	20	14	2.07	2.17	5.48	975	3.27
R3559.L016	2.5	3.0	20	14	2.07	2.17	5.48	975	2.68
R3559.L017	2.5	3.5	22	16	2.35	2.46	5.57	875	2.68
R3559.L018	2.5	3.5	22	16	2.35	2.46	5.57	875	2.68
R3559.L020	3.0	3.5	24	18	2.76	2.90	6.16	775	3.14
R3559.L021	3.0	3.5	24	18	2.76	2.90	6.16	775	3.14





R3561

Material
Rod end housing - forged steel, tempered, case hardened bearing race, ground and lapped, surface galvanized.
Inner ring - ball bearing steel, hardened, superfine ground.
Lubrication - calcium-complex-soap-grease, temp. range -20°C to +120°C, lubrication nipple - DIN 71412 HZ.

Technical Notes
Low maintenance. Sizes according to DIN ISO 12240-4, series K, for tolerances see technical pages.

Tips
Standard thread is right hand thread.

Important Notes
*Denotes fine pitch thread.

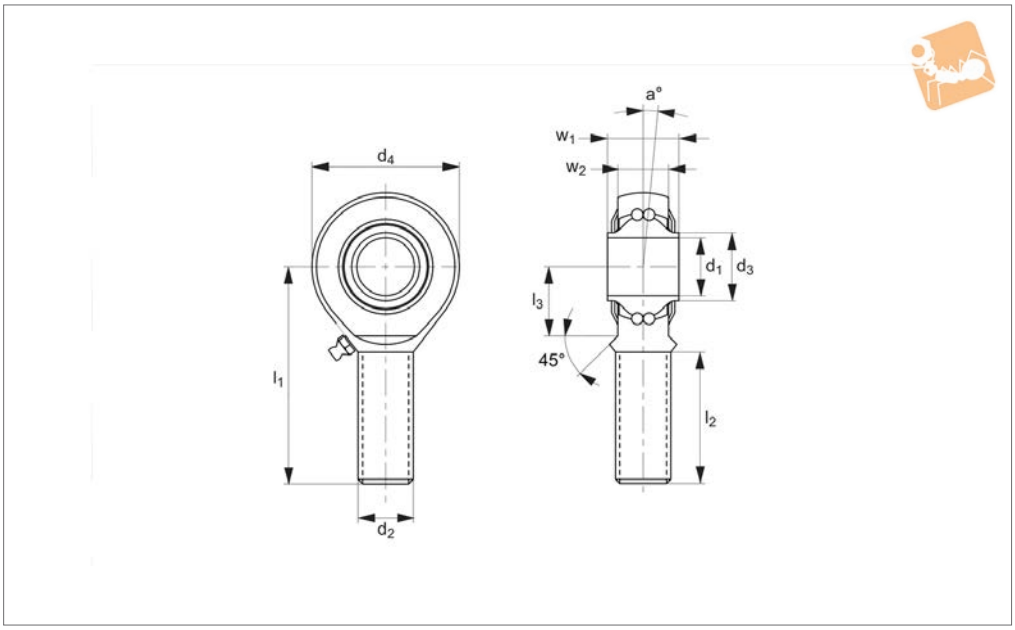
Order No.	Thread hand	d_1	l_1	d_2	d_3	l_2	d_4	a °	Weight g
R3561.R012	Right	12	54	M12	14.5	33	32	7.5	88
R3561.R016	Right	16	66	M16	19.0	40	42	7.0	185
R3561.R020	Right	20	78	M20x1,5*	24.5	47	50	7.0	340
R3561.R025	Right	25	94	M24x2*	29.5	57	64	5.0	596
R3561.R030	Right	30	110	M30x2*	34.5	66	70	7.5	912
R3561.L012	Left	12	54	M12	14.5	33	32	7.5	88
R3561.L016	Left	16	66	M16	19.0	40	42	7.0	185
R3561.L020	Left	20	78	M20x1,5*	24.5	47	50	7.0	340
R3561.L025	Left	25	94	M24x2*	29.5	57	64	5.0	596
R3561.L030	Left	30	110	M30x2*	34.5	66	70	7.5	912

Order No.	l_3	w_1	w_2	Dyn. load C kN max.	Speed rpm max.	Static load C_0 kN max.
R3561.R012	19	16	12	10.25	1125	6.6
R3561.R016	22	21	15	13.3	975	8.9
R3561.R020	28	25	18	17.0	825	11.7
R3561.R025	30	31	22	24.90	600	18.5
R3561.R030	35	37	25	32.5	450	24.8
R3561.L012	19	16	12	10.25	1125	6.6
R3561.L016	22	21	15	13.3	975	8.9
R3561.L020	28	25	18	17.0	825	11.7
R3561.L025	30	31	22	24.9	600	18.5
R3561.L030	35	37	25	32.5	450	24.8

Stainless Heavy-Duty Rod Ends - Male
with integral ball bearing



R3563



Material
Housing - stainless steel (AISI 304), forged, hardened bearing race, superfinished, rolled thread.
Inner ring - stainless steel (AISI 304), hardened, superfine finish.
Lubrication - aluminium-complex-soap-grease, temp range -45°C to +120°C.

Lubrication nipple - DIN 3405 D1/A (until size 10) DIN 71412 H1 (from size 12).

Technical Notes
Low maintenance, sizes according to DIN ISO 12240-4 series K, for tolerances see technical pages.

Tips
Standard thread is right hand thread.

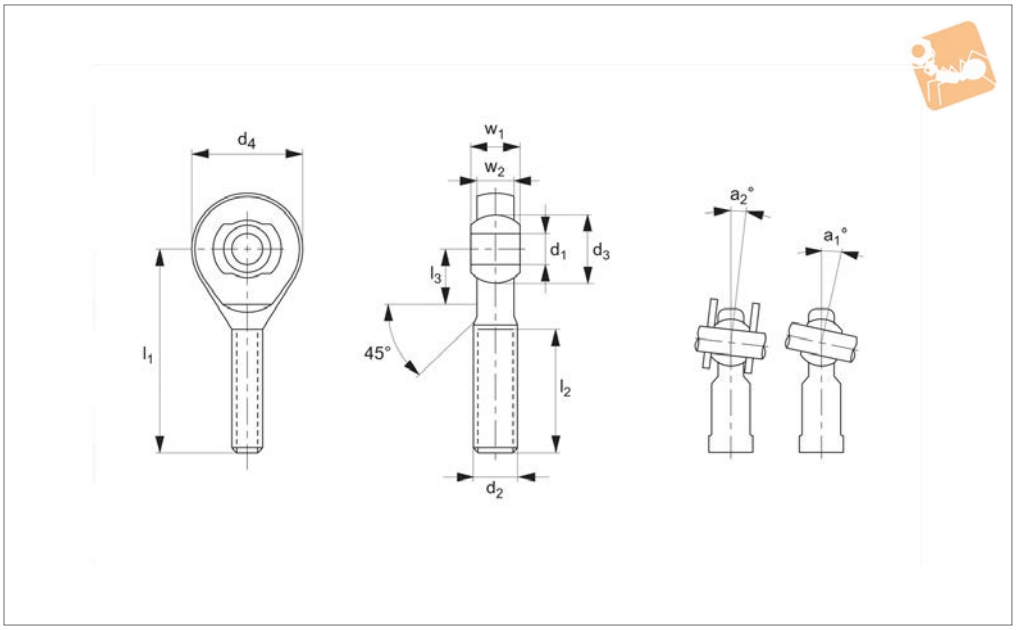
Important Notes
*Denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	l_2	d_4	a °	l_3	w_1	Weight g
R3563.R008	Right	8	42	M8	10.5	25	24	8.5	15	12	36
R3563.R010	Right	10	48	M10	12.0	29	28	8.0	15	14	60
R3563.R012	Right	12	54	M12	14.5	33	32	7.5	19	16	87
R3563.R016	Right	16	66	M16	19.0	40	42	8.0	22	21	190
R3563.R020	Right	20	78	M20x1,5*	24.5	47	50	7.0	28	25	338
R3563.L008	Left	8	42	M8	10.5	25	24	8.5	15	12	36
R3563.L010	Left	10	48	M10	12.0	29	28	8.0	15	14	60
R3563.L012	Left	12	54	M12	14.5	33	32	7.5	19	16	87
R3563.L016	Left	16	66	M16	19.0	40	42	8.0	22	21	190
R3563.L020	Left	20	78	M20x1,5*	24.5	47	50	7.0	28	25	338

Order No.	w_2	Calc. factor Y	Calc. factor Y_0	Dyn. load C kN max.	Speed rpm max.	Static load C_0 kN max.
R3563.R008	9.00	1.89	1.80	0.7	1300	2.8
R3563.R010	10.50	1.81	1.90	1.0	1225	3.1
R3563.R012	12.00	1.82	1.74	1.3	1125	3.5
R3563.R016	15.00	2.35	2.24	1.6	975	4.3
R3563.R020	18.00	2.58	2.46	2.3	825	5.4
R3563.L008	9.00	1.89	1.80	0.7	1300	2.8
R3563.L010	10.50	1.81	1.90	1.0	1225	3.1
R3563.L012	12.00	1.82	1.74	1.3	1125	3.5
R3563.L016	15.00	2.35	2.24	1.6	975	4.3
R3563.L020	18.00	2.58	2.46	2.3	825	5.4

Stainless Heavy-Duty Rod Ends - Male

with integral spherical plain bearing





R3565

Material

Rod end housing: Stainless steel DIN 1.4301 (AISI 304), forged, rolled thread
Joint ball: Stainless steel 1.4412, hardened and ground, surface polished.
Race: Nylon/Teflon/glass compound.

Technical Notes

Maintenance free, for tolerances see technical page 123, standard thread is right hand thread.

Tips

A2 stainless steel provides good corrosion resistance to a wide range of atmospheric conditions and corrosive media.
It is considered resistant to potable water.

Important Notes

*Denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	l_2	d_4	a_1 °	Weight g
R3565.R005	Right	5	33	M5	11.11	20	18	13.0	14
R3565.R006	Right	6	36	M6	12.70	22	20	13.0	20
R3565.R008	Right	8	42	M8	15.87	25	24	14.5	38
R3565.R010	Right	10	48	M10	19.05	29	28	13.5	60
R3565.R012	Right	12	54	M12	22.22	33	32	13.0	92
R3565.R014	Right	14	60	M14	25.40	36	36	16.0	127
R3565.R016	Right	16	66	M16	28.57	40	42	15.5	202
R3565.R018	Right	18	72	M18x1,5*	31.75	44	46	15.0	250
R3565.R020	Right	20	78	M20x1,5*	34.92	47	50	14.5	327
R3565.R022	Right	22	84	M22x1,5*	38.10	51	54	15.5	440
R3565.R025	Right	25	94	M24x2*	42.85	57	60	15.0	630
R3565.R030	Right	30	110	M30x2*	50.80	66	70	17.0	1015
R3565.L005	Left	5	33	M5	11.11	20	18	13.0	14
R3565.L006	Left	6	36	M6	12.70	22	20	13.0	20
R3565.L008	Left	8	42	M8	15.87	25	24	14.5	38
R3565.L010	Left	10	48	M10	19.05	29	28	13.5	60
R3565.L012	Left	12	54	M12	22.22	33	32	13.0	92
R3565.L014	Left	14	60	M14	25.40	36	36	16.0	127
R3565.L016	Left	16	66	M16	28.57	40	42	15.5	202
R3565.L018	Left	18	72	M18x1,5*	31.75	44	46	15.0	250
R3565.L020	Left	20	78	M20x1,5*	34.92	47	50	14.5	327
R3565.L022	Left	22	84	M22x1,5*	38.10	51	54	15.5	440
R3565.L025	Left	25	94	M24x2*	42.85	57	60	15.0	630
R3565.L030	Left	30	110	M30x2*	50.80	66	70	17.0	1015

Order No.	a_2 °	l_3	w_1	w_2	Dyn. load C kN max.	Static load C_0 kN max.
R3565.R005	7.5	9	8	6.00	3.9	3.9

Stainless Heavy-Duty Rod Ends - Male

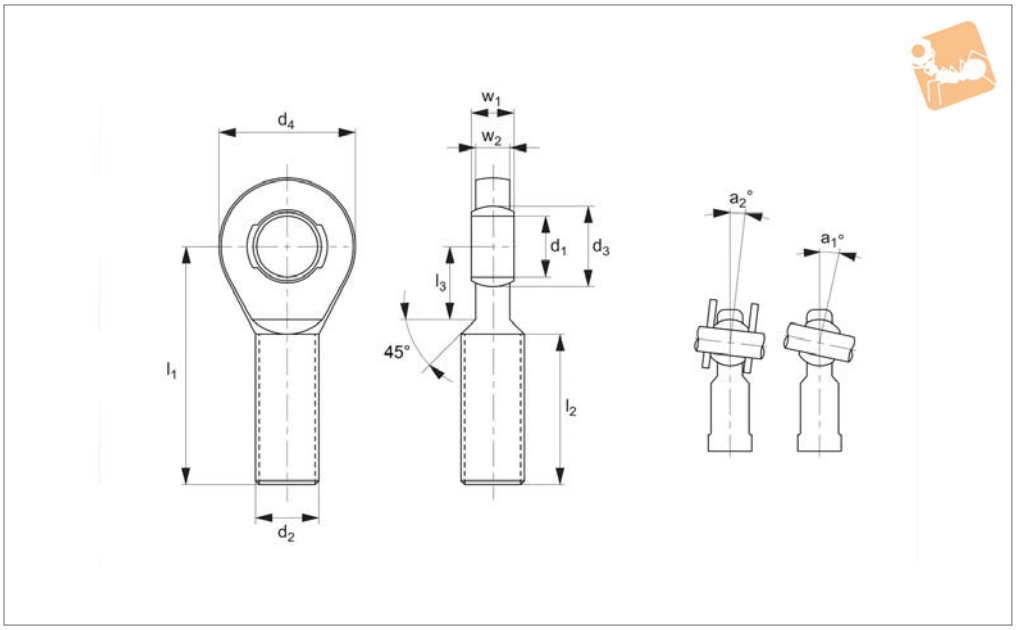
with integral spherical plain bearing



Order No.	a_2 °	l_3	w_1	w_2	Dyn. load C kN max.	Static load C_0 kN max.
R3565.R006	6.5	12	9	6.75	4.6	5.4
R3565.R008	7.5	15	12	9.00	7.0	9.7
R3565.R010	8.0	15	14	10.50	10.4	15.4
R3565.R012	8.0	19	16	12.00	12.4	22.3
R3565.R014	9.5	20	19	13.50	15.4	30.4
R3565.R016	8.5	22	21	15.00	22.4	41.5
R3565.R018	9.5	25	23	16.50	26.3	51.2
R3565.R020	9.0	28	25	18.00	30.8	60.3
R3565.R022	10.0	26	28	20.00	38.2	70.0
R3565.R025	10.0	30	31	22.00	45.4	87.0
R3565.R030	10.5	35	37	25.00	55.0	106.8
R3565.L005	7.5	9	8	6.00	3.9	3.9
R3565.L006	6.5	12	9	6.75	4.6	5.4
R3565.L008	7.5	15	12	9.00	7.0	9.7
R3565.L010	8.0	15	14	10.50	10.4	15.4
R3565.L012	8.0	19	16	12.00	12.4	22.3
R3565.L014	9.5	20	19	13.50	15.4	30.4
R3565.L016	8.5	22	21	15.00	22.4	41.5
R3565.L018	9.5	25	23	16.50	26.3	51.2
R3565.L020	9.0	28	25	18.00	30.8	60.3
R3565.L022	10.0	26	28	20.00	38.2	70.0
R3565.L025	10.0	30	31	22.00	45.4	87.0
R3565.L030	10.5	35	37	25.00	55.0	106.8

Stainless Heavy-Duty Rod Ends - Male

with integral spherical plain bearing





R3567

Material
Housing - stainless steel DIN 1.4301 (AISI 304), forged, rolled thread.
Joint ball - stainless steel DIN 1.4125 (AISI 440C), hardened and ground, polished
Race - polyamid-PTFE-fibreglass-compound.

Technical Notes
Maintenance free, sizes according to DIN ISO 12240-4, series E, for tolerances technical pages.

Tips
Standard thread is right hand thread.

Important Notes
*denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	l_2	d_4	Weight g
R3567.R006	Right	6	36	M6	10.0	22	20	14
R3567.R008	Right	8	42	M8	13.0	25	23	24
R3567.R010	Right	10	48	M10	16.0	29	28	41
R3567.R012	Right	12	54	M12	18.0	33	32	67
R3567.R015	Right	15	63	M14	22.0	33	38	110
R3567.R017	Right	17	69	M16	25.0	40	44	163
R3567.R020	Right	24	78	M20x1,5*	29.0	47	51	270
R3567.R025	Right	25	94	M24x2*	35.5	57	62	508
R3567.R030	Right	30	110	M30x2*	40.7	66	70	785
R3567.R035	Right	35	140	M36x3*	47.0	92	82	1330
R3567.R040	Right	40	145	M42x3*	53.0	94	92	1890
R3567.R041	Right	40	150	M39x3*	53.0	99	92	1785
R3567.R045	Right	45	165	M45x3*	60.0	100	102	2620
R3567.R046	Right	45	163	M42x3*	60.0	98	102	2430
R3567.R050	Right	50	195	M52x3*	66.0	120	112	3865
R3567.R051	Right	50	185	M45x3*	66.0	110	112	3225
R3567.R060	Right	60	225	M60x4*	80.0	140	135	6400
R3567.R061	Right	60	210	M52x3*	80.0	125	135	5430
R3567.L006	Left	6	36	M6	10.0	22	20	14
R3567.L008	Left	8	42	M8	13.0	25	23	24
R3567.L010	Left	10	48	M10	16.0	29	28	41
R3567.L012	Left	12	54	M12	18.0	33	32	67
R3567.L015	Left	15	63	M14	22.0	33	38	110
R3567.L017	Left	17	69	M16	25.0	40	44	163
R3567.L020	Left	20	78	M20x1,5*	29.0	47	51	270
R3567.L025	Left	25	94	M24x2*	35.5	57	62	508
R3567.L030	Left	30	110	M30x2*	40.7	66	70	785
R3567.L035	Left	35	140	M36x3*	47.0	92	82	1330
R3567.L040	Left	40	145	M42x3*	53.0	94	92	1890
R3567.L041	Left	40	150	M39x3*	53.0	99	92	1785
R3567.L045	Left	45	165	M45x3*	60.0	100	102	2620
R3567.L046	Left	45	163	M42x3*	60.0	98	102	2430

Stainless Heavy-Duty Rod Ends - Male

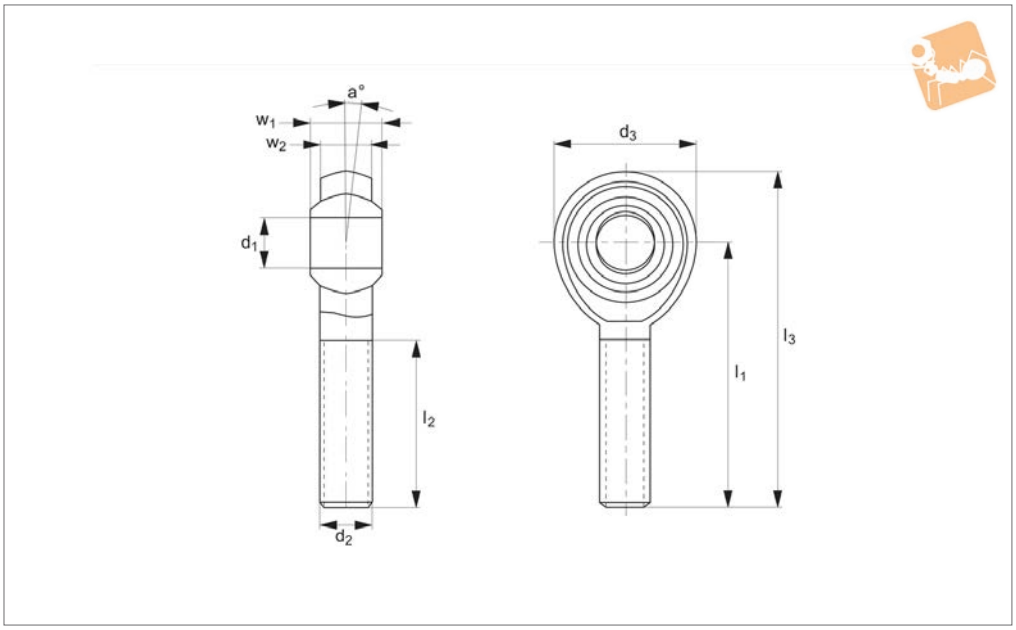
with integral spherical plain bearing



Order No.	Thread hand	d_1	l_1	d_2	d_3	l_2	d_4	Weight g
R3567.L050	Left	50	195	M52x3*	66.0	120	112	3865
R3567.L051	Left	50	185	M45x3*	66.0	110	112	3225
R3567.L060	Left	60	225	M60x4*	80.0	140	135	6400
R3567.L061	Left	60	210	M52x3*	80.0	125	135	5430

Order No.	a °	l_3	w_1	w_2	Dyn. load C kN max.	Static load C_0 kN max.
R3567.R006	13.0	11	6	4	2.5	3.0
R3567.R008	15.0	12	8	5	4.2	5.0
R3567.R010	12.0	15	9	6	6.4	7.6
R3567.R012	10.5	15	10	7	9.2	10.4
R3567.R015	8.5	18	12	9	13.4	17.6
R3567.R017	10.0	23	14	10	19.2	24.3
R3567.R020	9.0	25	16	12	25.2	34.5
R3567.R025	7.5	32	20	16	42.4	53.6
R3567.R030	6.0	35	22	18	54.0	63.8
R3567.R035	6.5	38	25	20	70.4	81.4
R3567.R040	7.0	42	28	22	86.0	100.2
R3567.R041	7.0	42	28	22	86.0	100.2
R3567.R045	7.5	50	32	25	107.0	124.3
R3567.R046	7.5	50	32	25	107.0	124.3
R3567.R050	6.5	60	35	28	132.0	152.6
R3567.R051	6.5	60	35	28	132.0	152.6
R3567.R060	6.5	70	44	36	208.0	239.5
R3567.R061	6.5	70	44	36	208.0	239.5
R3567.L006	13.0	11	6	4	2.5	3.0
R3567.L008	15.0	12	8	5	4.2	5.0
R3567.L010	12.0	15	9	6	6.4	7.6
R3567.L012	10.5	15	10	7	9.2	10.4
R3567.L015	8.5	18	12	9	13.4	17.8
R3567.L017	10.0	23	14	10	19.2	24.3
R3567.L020	9.0	25	16	12	25.2	34.5
R3567.L025	7.5	32	20	16	42.4	53.6
R3567.L030	6.0	35	22	18	54.0	63.8
R3567.L035	6.5	38	25	20	70.4	81.4
R3567.L040	7.0	42	28	22	86.0	100.2
R3567.L041	7.0	42	28	22	86.0	100.2
R3567.L045	7.5	50	32	25	107.0	124.3
R3567.L046	7.5	50	32	25	107.0	124.3
R3567.L050	6.5	60	35	28	132.0	152.6
R3567.L051	6.5	60	35	28	132.0	152.6
R3567.L060	6.5	70	44	36	208.0	239.5
R3567.L061	6.5	70	44	36	208.0	239.5

Low Cost Rod End - Male
with teflon bearing race





R3571

Material
Ball: low carbon steel, surface hardened. Silver zinc plated.
Housing: low carbon steel, zinc plated for corrosion resistance.
Bearing race: teflon.
Brass bearing with PTFE composite lining.

Technical Notes
Standard thread is right hand thread.

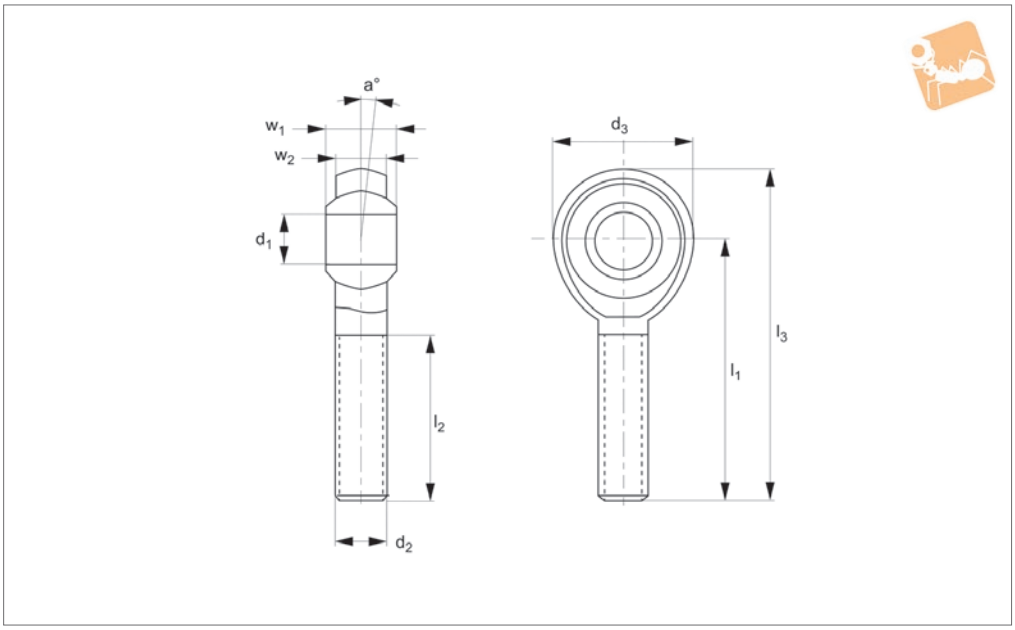
Order No.	Thread hand	d_1 tol. H7	l_1	d_2	d_3	l_2	a °	l_3	w_1	w_2	Static load C_0 kN max.
R3571.R005	Right	5	33	M5	18	19	13	42	8	6.00	3.9
R3571.R006	Right	6	36	M6	20	21	13	46	9	6.75	6.0
R3571.R008	Right	8	42	M8	24	25	14	54	12	9.00	10.0
R3571.R010	Right	10	48	M10	28	28	13	62	14	10.50	16.0
R3571.R012	Right	12	54	M12	32	32	13	70	16	12.00	23.0
R3571.R016	Right	16	66	M16	42	37	15	87	21	15.00	44.0
R3571.L005	Left	5	33	M5	18	19	13	42	8	6.00	3.9
R3571.L006	Left	6	36	M6	20	21	13	46	9	6.75	6.0
R3571.L008	Left	8	42	M8	24	25	14	54	12	9.00	10.0
R3571.L010	Left	10	48	M10	28	28	13	62	14	10.50	16.0
R3571.L012	Left	12	54	M12	32	32	13	70	16	12.00	23.0
R3571.L016	Left	16	66	M16	42	37	15	87	21	15.00	44.0

Low Cost Rod End - Male

with teflon bearing race



R3572.M



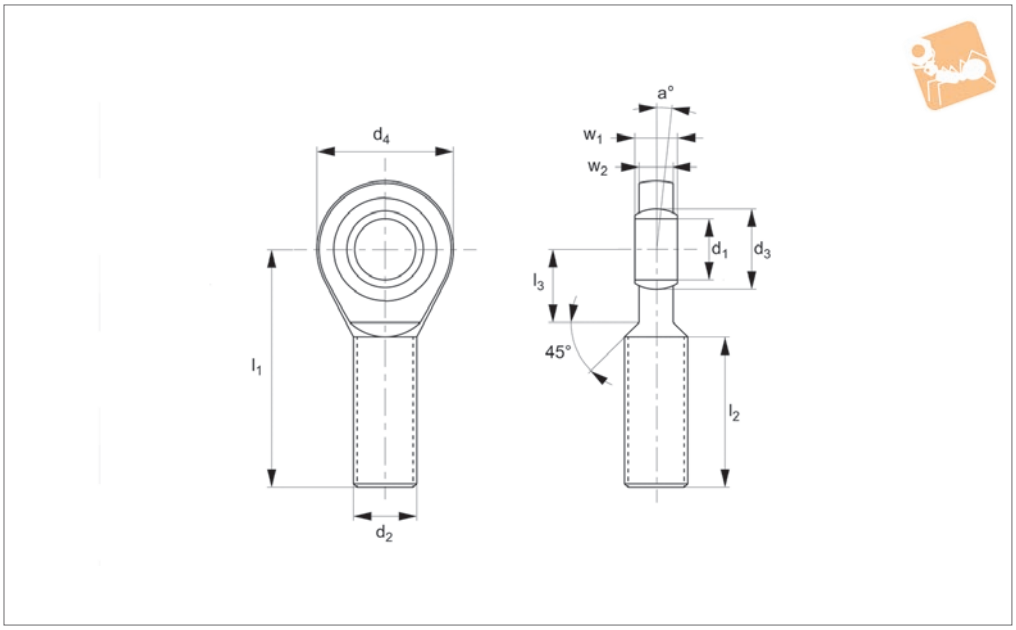
Material

Ball: low carbon steel, surface hardened.
Silver zinc plated.
Housing: low carbon steel, zinc plated for corrosion resistance.

Technical Notes

Standard thread is right hand thread.

Order No.	Thread hand	d_1 tol. H7	l_1	d_2	d_3	l_2	a °	l_3	w_1	w_2	Static load C_0 kN max.
R3572.MR005	Right	5	33	M 5	16	20	13	41	8	6.0	4.6
R3572.MR006	Right	6	36	M 6	18	22	13	45	9	6.75	5.8
R3572.MR008	Right	8	42	M 8	22	25	14	53	12	9.0	9.3
R3572.MR010	Right	10	48	M10	26	29	13	61	14	10.5	11.6
R3572.MR012	Right	12	54	M12	30	33	13	69	16	12.0	13.6
R3572.MR013	Right	12	54	M12x1,25	30	33	13	69	16	12.0	13.6
R3572.MR014	Right	14	60	M14	34	36	16	77	19	13.5	19.2
R3572.MR016	Right	16	66	M16	40	40	15	86	21	15.0	22.8
R3572.MR017	Right	16	66	M16x1,5	40	40	15	86	21	15.0	22.8
R3572.MR018	Right	18	72	M18x1,5	44	44	15	94	23	16.5	34.0
R3572.MR020	Right	20	78	M20x1,5	50	47	14	103	25	18.0	42.0
R3572.MR022	Right	22	84	M22x1,5	54	51	15	111	28	20.0	45.6
R3572.MR025	Right	25	94	M25x2	60	57	15	124	31	22.0	54.4
R3572.MR030	Right	30	110	M30x2	70	66	17	145	37	25.0	70.4





R3573

Material
Housing: Heat treated steel, surface galvanized, free of Cr VI. Outer ring: heat treated steel, hardened, single split, bonded with PTFE fabric. Joint Ball: Ball bearing steel, hardened, ground, polished up to size 12, hard chromium plated.

Technical Notes
For tolerances see technical pages.
Standard thread is right hand thread.

Series E,
Maintenance free

Important Notes
*Denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	Weight g
R3573.R006	Right	6	36	M 6	10.0	17
R3573.R008	Right	8	42	M 8	13.0	29
R3573.R010	Right	10	48	M 10	16.0	51
R3573.R012	Right	12	54	M 12	18.0	86
R3573.R015	Right	15	63	M 14	22.0	140
R3573.R017	Right	17	69	M 16	25.0	190
R3573.R020	Right	20	78	M 20x1.5*	29.0	310
R3573.R025	Right	25	94	M 24x2*	35.5	560
R3573.R030	Right	30	110	M 30x2*	40.70	890
R3573.R035	Right	35	140	M 36x3*	47.0	1400
R3573.R040	Right	40	150	M 39x3*	53.0	1800
R3573.R041	Right	40	150	M 42x3*	53.0	1850
R3573.R045	Right	45	163	M 42x3*	60.0	2600
R3573.R046	Right	45	163	M 45x3*	60.0	2660
R3573.R050	Right	50	185	M 45x3*	66.0	3400
R3573.R051	Right	50	185	M 52x3*	66.0	3500
R3573.R060	Right	60	210	M 52x3*	80.0	5900
R3573.R061	Right	60	210	M 60x4*	80.0	6020
R3573.R070	Right	70	235	M 56x4*	92.0	8200
R3573.R071	Right	70	235	M 72x4*	92.0	8380
R3573.R080	Right	80	270	M 64x4*	105.0	12000
R3573.R081	Right	80	270	M 80x4*	105.0	12200
R3573.L006	Left	6	36	M 6	10.0	17
R3573.L008	Left	8	42	M 8	13.0	29
R3573.L010	Left	10	48	M 10	16.0	51
R3573.L012	Left	12	54	M 12	18.0	86
R3573.L015	Left	15	63	M 14	22.0	140
R3573.L017	Left	17	69	M 16	25.0	190
R3573.L020	Left	20	78	M 20x1.5*	29.0	310
R3573.L025	Left	25	94	M 24x2*	35.5	560
R3573.L030	Left	30	110	M 30x2*	40.7	890
R3573.L035	Left	35	140	M 36x3*	47.0	1400

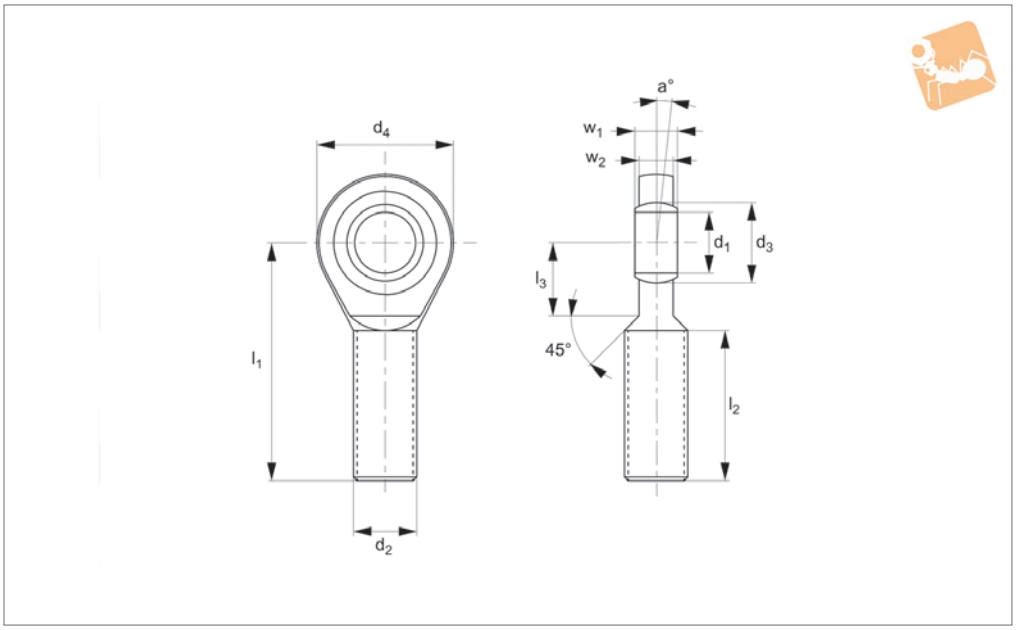
Low Cost Rod End - Male

with integral spherical plain bearing



Order No.	Thread hand	d_1	l_1	d_2	d_3	Weight g
R3573.L040	Left	40	150	M 39x3*	53.0	1800
R3573.L041	Left	40	150	M 42x3*	53.0	1850
R3573.L045	Left	45	163	M 42x3*	60.0	2600
R3573.L046	Left	45	163	M 45x3*	60.0	2660
R3573.L050	Left	50	185	M 45x3*	66.0	3400
R3573.L051	Left	50	185	M 52x3*	66.0	3500
R3573.L060	Left	60	210	M 52x3*	80.0	5900
R3573.L061	Left	60	210	M 60x4*	80.0	6020
R3573.L070	Left	70	235	M 56x4*	92.0	8200
R3573.L071	Left	70	235	M 72x4*	92.0	8380
R3573.L080	Left	80	270	M 64x4*	105.0	12000
R3573.L081	Left	80	270	M 80x4*	105.0	12200

Order No.	l_2	d_4	a °	l_3	w_1	w_2	Static load C_0 kN max.
R3573.R006	18	21	13	12	6	4.4	6.6
R3573.R008	22	24	15	14	8	6.0	10.3
R3573.R010	26	29	12	15	9	7.0	14.1
R3573.R012	28	34	11	18	10	8.0	19.6
R3573.R015	34	40	8	20	12	10.0	28.8
R3573.R017	36	46	10	23	14	11.0	36.0
R3573.R020	43	53	9	27	16	13.0	48.0
R3573.R025	53	64	7	32	20	17.0	66.4
R3573.R030	65	73	6	37	22	19.0	88.0
R3573.R035	82	82	6	42	25	21.0	116.8
R3573.R040	86	92	7	48	28	23.0	144.0
R3573.R041	86	92	7	48	28	23.0	144.0
R3573.R045	94	102	7	52	32	94.0	192.0
R3573.R046	94	102	7	52	32	27.0	192.0
R3573.R050	107	112	6	60	35	30.0	232.0
R3573.R051	107	112	6	60	35	30.0	232.0
R3573.R060	115	135	6	75	44	38.0	360.0
R3573.R061	115	135	6	75	44	38.0	360.
R3573.R070	125	160	6	87	49	42.0	488.0
R3573.R071	125	160	6	87	49	42.0	488.0
R3573.R080	140	180	6	100	55	47.0	600.0
R3573.R081	140	180	6	100	55	47.0	600.0
R3573.L006	18	21	13	12	6	4.4	6.6
R3573.L008	22	24	15	14	8	6.0	10.3
R3573.L010	26	29	12	15	9	7.0	14.1
R3573.L012	28	34	11	18	10	8.0	19.6
R3573.L015	34	40	8	20	12	10.0	28.8
R3573.L017	36	46	10	23	14	11.0	36.0
R3573.L020	43	53	9	27	16	13.0	48.0
R3573.L025	53	64	7	32	20	17.0	66.4
R3573.L030	65	73	6	37	22	19.0	88.8
R3573.L035	82	82	6	42	25	21.0	116.8
R3573.L040	86	92	7	48	28	23.0	144.0
R3573.L041	86	92	7	48	28	23.0	144.0
R3573.L045	94	102	7	52	32	94.0	192.0
R3573.L046	94	102	7	52	32	27.0	192.0
R3573.L050	107	112	6	60	35	30.0	232.0
R3573.L051	107	112	6	60	35	30.0	232.0
R3573.L060	115	135	6	75	44	38.0	360.0
R3573.L061	115	135	6	75	44	38.0	360.0
R3573.L070	125	160	6	87	49	42.0	488.0
R3573.L071	125	160	6	87	49	42.0	488.0
R3573.L080	140	180	6	100	55	47.0	600.0
R3573.L081	140	180	6	100	55	47.0	600.0





R3575.M

Material
Housing: Heat treated steel, surface galvanized, free of Cr VI. Outer ring: heat treated steel,
hardened, single split, bonded with PTFE fabric.

Joint Ball: Ball bearing steel, hardened, ground, polished up to size 12, hard chromium plated.

Technical Notes
For tolerances see technical pages, maintenance required.

Tips
Standard thread is right hand thread.

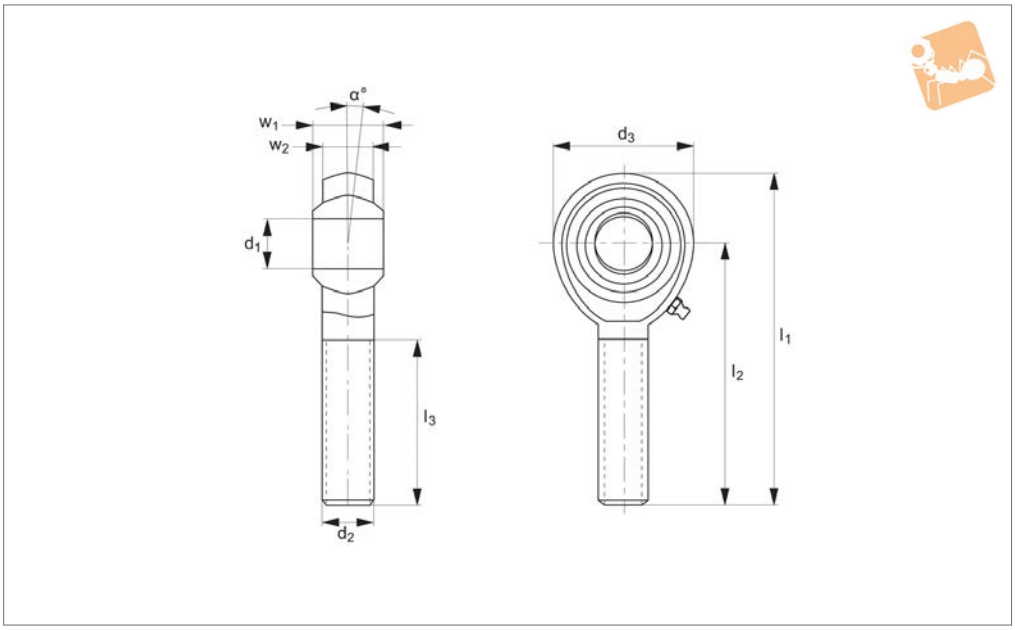
Important Notes
*Denotes fine pitch thread.

Order No.	Thread hand	Type	d_1 tol. H7	l_1	d_2	d_3	l_2	d_4	a °	l_3	w_1	w_2	Static load C_0 kN max.	Weight g
R3575.MR006	Right	Male	6	36	M 6	10	18	21	13	12	6	4.4	6.6	17
R3575.MR008	Right	Male	8	42	M 8	13	22	24	15	14	8	6	10.3	29
R3575.MR010	Right	Male	10	48	M10	16	26	29	12	15	9	7	14.1	51
R3575.MR012	Right	Male	12	54	M12	18	28	34	11	18	10	8	19.6	86
R3575.MR015	Right	Male	15	63	M14	22	34	40	8	20	12	10	28.8	140
R3575.MR017	Right	Male	17	69	M16	25	36	46	10	23	14	11	36.0	190
R3575.MR020	Right	Male	20	78	M20x1,5*	29	43	53	9	27	16	13	48.0	310
R3575.MR025	Right	Male	25	94	M24x2*	35.5	53	64	7	32	20	17	66.4	560
R3575.MR030	Right	Male	30	110	M30x2*	40.7	65	73	6	37	22	19	88	890
R3575.MR035	Right	Male	35	140	M36x3*	47	82	82	6	42	25	21	116.8	1400
R3575.MR040	Right	Male	40	150	M39x3*	53	86	92	7	48	28	23	144	1800
R3575.MR041	Right	Male	40	150	M42x3*	53	86	92	7	48	28	23	144	1850
R3575.MR045	Right	Male	45	163	M42x3*	60	94	102	7	52	32	27	192	2600
R3575.MR046	Right	Male	45	163	M45x3*	60	94	102	7	52	32	27	192	2660
R3575M.R050	Right	Male	50	185	M45x3*	66	107	112	6	60	35	30	232	3400
R3575.MR051	Right	Male	50	185	M52x3*	66	107	112	6	60	35	30	232	3500
R3575.MR060	Right	Male	60	210	M52x3*	80	115	135	6	75	44	38	360	5900
R3575.MR061	Right	Male	60	210	M60x4*	80	115	135	6	75	44	38	360	6020
R3575.MR070	Right	Male	70	235	M56x4*	92	125	160	6	87	49	42	488	8200
R3575.MR071	Right	Male	70	235	M72x4*	92	125	160	6	87	49	42	488	8380
R3575.MR080	Right	Male	80	270	M64x4*	105	140	180	6	100	55	47	600	12000
R3575.MR081	Right	Male	80	270	M80x4*	105	140	180	6	100	55	47	600	12200

Stainless Low Cost Rod Ends
Male



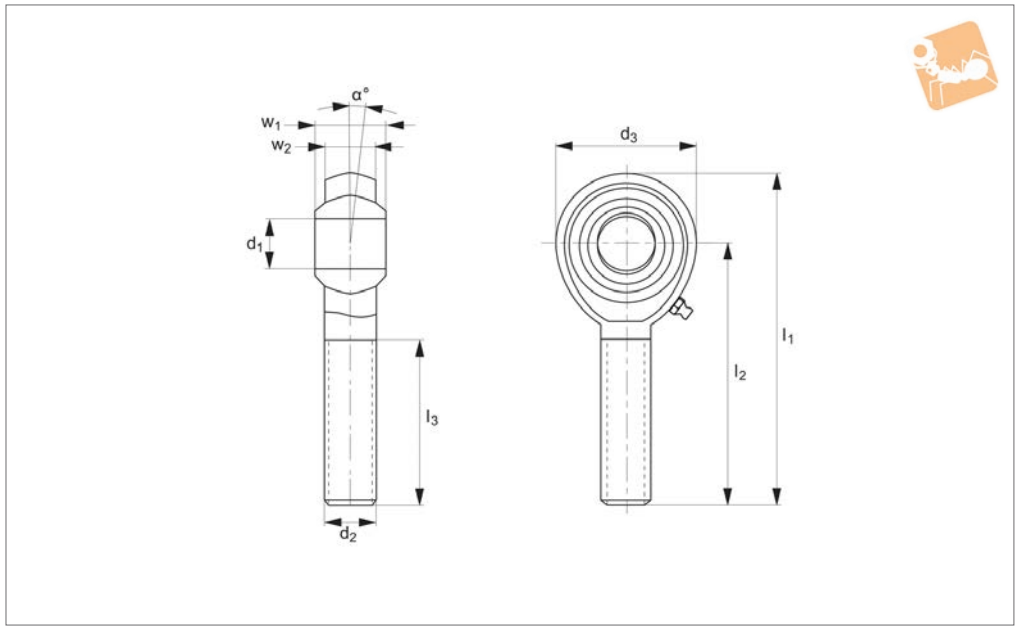
R3577.A2



Material
Housing: stainless steel (AISI 303)
Ball: stainless steel, hardened, ground and polished.
Race: teflon or PTFE liner.
Stainless steel bearing ring lined with bronze and PTFE Composite

Technical Notes
Standard thread is right hand thread.

Order No.	Thread hand	d_1 tol. H7	l_1	d_2	d_3	l_2	a °	l_3	w_1	w_2	Static load kN max.	Weight g
R3577.R005-A2	Right	5	42	M 5	18	33	13	19	8	6.00	4.8	13
R3577.R006-A2	Right	6	46	M 6	20	36	13	21	9	6.75	6.2	20
R3577.R008-A2	Right	8	54	M 8	24	42	14	25	12	9.00	10.3	38
R3577.R010-A2	Right	10	62	M 10	28	48	13	28	14	10.50	14.4	55
R3577.R012-A2	Right	12	70	M 12	32	54	13	32	16	12.00	19.2	85
R3577.R016-A2	Right	16	87	M 16	42	66	15	37	21	15.00	31.2	210
R3577.L005-A2	Left	5	42	M 5	18	33	13	19	8	6.00	4.8	13
R3577.L006-A2	Left	6	46	M 6	20	36	13	21	9	6.75	6.2	20
R3577.L008-A2	Left	8	54	M 8	24	42	14	25	12	9.00	10.3	38
R3577.L010-A2	Left	10	62	M 10	28	48	13	28	14	10.50	14.4	55
R3577.L012-A2	Left	12	70	M 12	32	54	13	32	16	12.00	19.2	85
R3577.L016-A2	Left	16	87	M 16	42	66	15	37	21	15.00	31.2	210





R3577.A4

Material
Housing: stainless steel (AISI 316)
Ball: stainless steel, 1,4571
Race: PTFE liner.

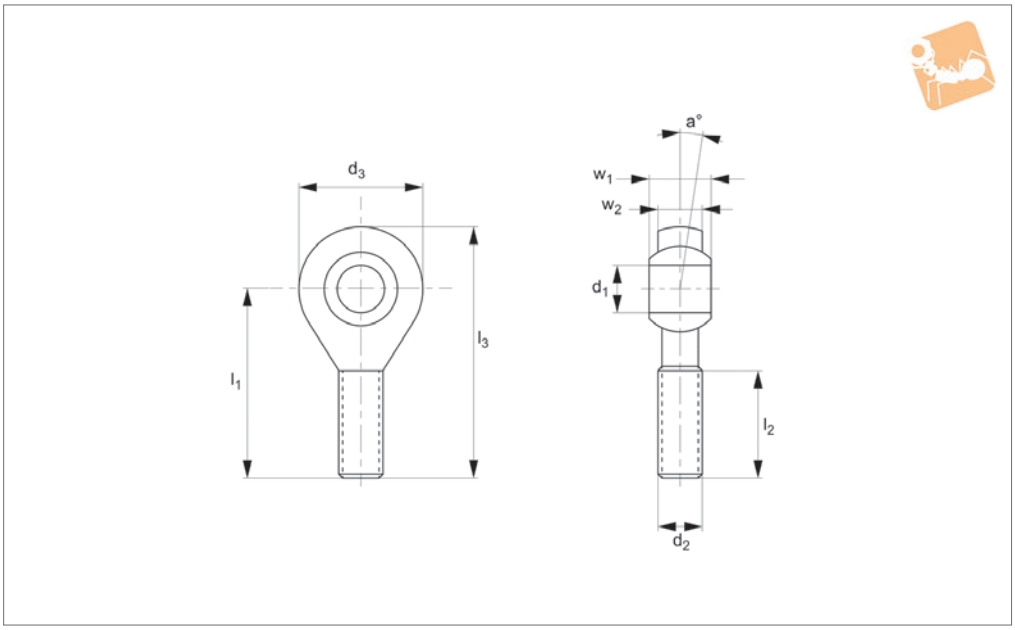
Technical Notes
Standard thread is right hand thread.

Order No.	Thread hand	d_1 tol. H7	l_1	d_2	d_3	l_2	l_3	w_1	w_2	α	Static load kN max.
R3577.R005-A4	Right	5	42	M 5	18	33	19	8	6.00	13	4.8
R3577.R006-A4	Right	6	46	M 6	20	36	21	9	6.75	13	6.2
R3577.R008-A4	Right	8	54	M 8	24	42	25	12	9.00	14	10.3
R3577.R010-A4	Right	10	62	M 10	28	48	28	14	10.50	13	14.4
R3577.R012-A4	Right	12	70	M 12	32	54	32	16	12.00	13	19.2
R3577.R016-A4	Right	16	87	M 16	42	66	37	21	15.00	15	31.2
R3577.L005-A4	Left	5	42	M 5	18	33	19	8	6.00	13	4.8
R3577.L006-A4	Left	6	46	M 6	20	36	21	9	6.75	13	5.2
R3577.L008-A4	Left	8	54	M 8	24	42	25	12	9.00	14	7.0
R3577.L010-A4	Left	10	62	M 10	28	48	28	14	10.50	13	10.4
R3577.L012-A4	Left	12	70	M 12	32	54	32	16	12.00	13	13.0
R3577.L016-A4	Left	16	87	M 16	42	66	37	21	15.00	15	31.2

Plastic Rod End Male



R3580



Material
Housing: Black plastic (Igumid G)
Spherical bearing: Iglidur W300.

Technical Notes
Resistant to dirt and dust, resistant to corrosion and chemicals.

High vibration dampening capacity suitable for rotating, oscillating and linear movements.
Available with a metal sleeve to take a higher torque (Add -MS to part No.)
Standard thread is right hand thread.

Important Notes
Dimensional series K according to standard DIN ISO 12240. *Denotes fine pitch thread.
Short term max axial strength is up to 20 minutes. Any length of time greater than this is considered long term.

Order No.	Thread hand	d_1 tol. E10	l_1	d_2	d_3	l_2	a °	l_3	w_1	w_2	Radial load (long term) N max.
R3580.R005	Right	5	33	M5	18	19	15	42	8.0	6.0	40
R3580.R006	Right	6	36	M6	20	21	14.5	46	9.0	7.0	50
R3580.R008	Right	8	42	M8	24	25	12.5	55	12.0	9.0	100
R3580.R010	Right	10	48	M10	30	28	12.5	63	14.0	10.5	150
R3580.R011	Right	10	48	M10 x 1,25*	30	28	12.5	63	14.0	10.5	150
R3580.R012	Right	12	54	M12	34	32	12.5	71	16.0	12.0	200
R3580.R013	Right	12	54	M12 x 1,25*	34	32	12.5	71	16.0	12.0	200
R3580.R014	Right	14	61	M14	38	36	12.5	79	19.0	13.5	350
R3580.R016	Right	16	66	M16	42	37	11.5	88	21.0	15.0	400
R3580.R017	Right	16	66	M16 x 1,5*	42	37	11.5	88	21.0	15.0	400
R3580.R018	Right	18	72	M18 x 1,5*	46	41	11.5	96	23.0	16.5	500
R3580.R020	Right	20	78	M20 x 1,5*	50	45	11.5	104	25.0	18.0	650
R3580.R021	Right	20	78	M20 x 2,5	50	45	11.5	104	25.0	18.0	650
R3580.R022	Right	22	84	M22 x 1,5*	56	48	11	112	28.0	20.0	750
R3580.R025	Right	25	95	M24 x 2*	61	55	11	126	31.0	22.0	950
R3580.R030	Right	30	112	M30 x 2*	71	66	11	147	37.0	25.0	1150
R3580.L005	Left	5	33	M5	18	19	15	42	8.0	6.0	40
R3580.L006	Left	6	36	M6	20	21	14.5	46	9.0	7.0	50
R3580.L008	Left	8	42	M8	24	25	12.5	55	12.0	9.0	100
R3580.L010	Left	10	48	M10	30	28	12.5	63	14.0	10.5	150
R3580.L011	Left	10	48	M10 x 1,25*	30	28	12.5	63	14.0	10.5	150
R3580.L012	Left	12	54	M12	34	32	12.5	71	16.0	12.0	200
R3580.L013	Left	12	54	M12 x 1,25*	34	32	12.5	71	16.0	12.0	200
R3580.L014	Left	14	61	M14	38	36	12.5	79	19.0	13.5	350
R3580.L016	Left	16	66	M16	42	37	11.5	88	21.0	15.0	400
R3580.L017	Left	16	66	M16 x 1,5*	42	37	11.5	88	21.0	15.0	400
R3580.L018	Left	18	72	M18 x 1,5*	46	41	11.5	96	23.0	16.5	500
R3580.L020	Left	20	78	M20 x 1,5*	50	45	11.5	104	25.0	18.0	650
R3580.L021	Left	20	78	M20 x 2,5	50	45	11.5	104	25.0	18.0	650
R3580.L022	Left	22	84	M22 x 1,5*	56	48	11	112	28.0	20.0	750

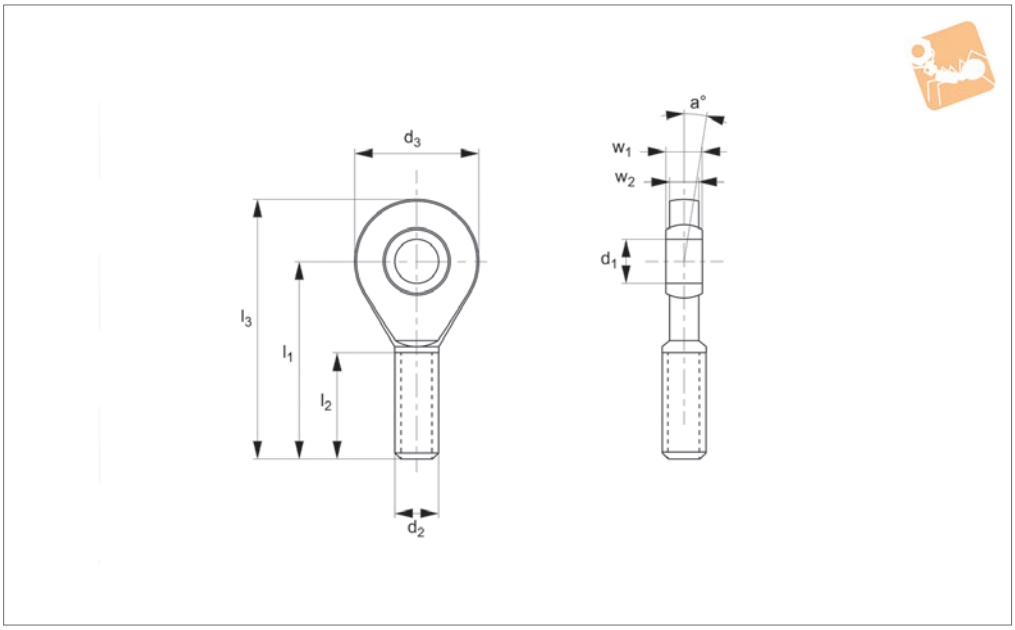
Order No.	Thread hand	d_1 tol. E10	l_1	d_2	d_3	l_2	a °	l_3	w_1	w_2	Radial load (long term) N max.
R3580.L025	Left	25	95	M24 x 2*	61	55	11	126	31.0	22.0	950
R3580.L030	Left	30	112	M30 x 2*	71	66	11	147	37.0	25.0	1150

Order No.	Radial load (short term) N max.	Static strength (long term) N max.	Static strength (short term) N max.	Thread depth min.	Torque thread strength Nm max.	Torque through ball MS Nm max.	Torque through ball standard Nm max.
R3580.R005	80	400	800	13	0.4	12	5
R3580.R006	100	500	1000	15	0.5	15	10
R3580.R008	200	850	1700	18	2.0	40	12
R3580.R010	300	1250	2500	20	5.0	50	20
R3580.R011	300	1250	2500	20	3.0	50	20
R3580.R012	400	1350	2700	22	6.0	70	30
R3580.R013	400	1350	2700	22	6.0	70	30
R3580.R014	700	1700	3400	25	12.0	75	35
R3580.R016	800	1950	3900	26	17.0	110	40
R3580.R017	800	1950	3900	26	17.0	110	40
R3580.R018	1000	2100	4200	29	20.0	150	45
R3580.R020	1300	3000	6000	32	25.0	200	55
R3580.R021	1300	3000	6000	32	25.0	200	55
R3580.R022	1500	3600	7200	34	25.0	225	60
R3580.R025	1900	3750	7500	39	45.0	260	65
R3580.R030	2300	4400	8800	46	85.0	300	70
R3580.L005	80	400	800	13	0.4	12	5
R3580.L006	100	500	1000	15	0.5	15	10
R3580.L008	200	850	1700	18	2.0	40	12
R3580.L010	300	1250	2500	20	5.0	50	20
R3580.L011	300	1250	2500	20	3.0	50	20
R3580.L012	400	1350	2700	22	6.0	70	30
R3580.L013	400	1350	2700	22	6.0	70	30
R3580.L014	700	1700	3400	25	12.0	75	35
R3580.L016	800	1950	3900	26	17.0	110	40
R3580.L017	800	1950	3900	26	17.0	110	40
R3580.L018	1000	2100	4200	29	20.0	150	45
R3580.L020	1300	3000	6000	32	25.0	200	55
R3580.L021	1300	3000	6000	32	25.0	200	55
R3580.L022	1500	3600	7200	34	25.0	225	60
R3580.L025	1900	3750	7500	39	45.0	260	65
R3580.L030	2300	4400	8800	46	85.0	300	70

Plastic Rod End Male



R3583



Material
Housing: Black plastic (Igumid G).
Spherical Bearing: Iglidur w300.

Technical Notes
Maintenance free, self lubricating. High strength under impact loads. Very high tensile strength for varying loads. Resistant to dirt and dust, resistant to corrosion and chemicals, standard thread is right hand thread.
High vibration dampening capacity, suitable for rotating, oscillating and linear movements.
Available with a metal sleeve to take a higher torque, (add -MS to part No.)
Suitable for use with R3409 clevis joints.

Important Notes
Dimensional series E.*Denotes fine pitch thread.
Short term max axial strength is up to 20 minutes. Any length of time greater than this is considered long term.

Order No.	Thread hand	d_1 tol. E10	l_1	d_2	d_3	l_2	a °	l_3	w_1
R3583.R005	Right	5	36	M5	19	20	16.5	45.5	6
R3583.R006	Right	6	36	M6	21	20	13.5	46.5	6
R3583.R008	Right	8	41	M8	24	24	12	53.0	8
R3583.R010	Right	10	47.5	M10	29	27	12	62.0	9
R3583.R011	Right	10	47.5	M10 x 1,25*	9	27	12	62.0	9
R3583.R012	Right	12	54	M12	34	29	10.5	71.0	10
R3583.R013	Right	12	54	M12 x 1,25*	34	29	10.5	71.0	10
R3583.R015	Right	15	63	M14	40	34	10.5	83.0	12
R3583.R017	Right	17	69	M16	46	37	9	92.0	14
R3583.R018	Right	17	69	M16 x 1,5*	46	37	9	92.0	14
R3583.R020	Right	20	80	M20 x 1,5*	53	43	8	106.5	16
R3583.R021	Right	20	80	M20 x 2,5	53	53	8	106.5	16
R3583.R025	Right	25	97	M24 x 2*	64	53	8	129.0	20
R3583.R030	Right	30	113	M30 x 2*	73	65	12.5	149.5	22
R3583.L005	Left	5	36	M5	19	20	16.5	45.5	6
R3583.L006	Left	6	36	M6	21	20	13.5	46.5	6
R3583.L008	Left	8	41	M8	24	24	12	53.0	8
R3583.L010	Left	10	47.5	M10	29	27	12	62.0	9
R3583.L011	Left	10	47.5	M10 x 1,25*	9	27	12	62.0	9
R3583.L012	Left	12	54	M12	34	29	10.5	71.0	10
R3583.L013	Left	12	54	M12 x 1,25*	34	29	10.5	71.0	10
R3583.L015	Left	15	63	M14	40	34	10.5	83.0	12
R3583.L017	Left	17	69	M16	46	37	9	92.0	14
R3583.L018	Left	17	69	M16 x 1,5*	46	37	9	92.0	14
R3583.L020	Left	20	80	M20 x 1,5*	53	43	8	106.5	16
R3583.L021	Left	20	80	M20 x 2,5	53	53	8	106.5	16
R3583.L025	Left	25	97	M24 x 2*	64	53	8	129.0	20
R3583.L030	Left	30	113	M30 x 2*	73	65	6.5	149.5	22

Order No.	w_2	Radial load (long term) N max.	Radial load (short term) N max.	Static strength (long term) N max.	Static strength (short term) N max.	Thread depth min.	Torque strength outside thread Nm max.	Torque through ball Nm max.
R3583.R005	4.4	25	50	275	550	14	0.4	2.0
R3583.R006	4.4	40	80	425	850	14	0.5	2.5
R3583.R008	6.0	80	160	800	1600	17	2.0	7.0
R3583.R010	7.0	125	250	1300	2600	19	5.0	14.0
R3583.R011	7.0	125	250	1300	2600	19	3.0	14.0
R3583.R012	8.0	150	300	1550	3100	20	6.0	25.0
R3583.R013	8.0	150	300	1550	3100	20	6.0	25.0
R3583.R015	10.0	300	600	1700	3400	24	12.5	30.0
R3583.R017	11.0	450	900	1800	3600	26	17.5	35.0
R3583.R018	11.0	450	900	1800	3600	26	21.0	35.0
R3583.R020	13.0	850	1700	3400	6800	30	25.0	40.0
R3583.R021	13.0	850	1700	3400	6800	30	25.0	40.0
R3583.R025	17.0	500	1000	3500	7000	37	45.0	55.0
R3583.R030	19.0	1000	2000	3500	7000	46	85.0	70.0
R3583.L005	4.4	25	50	275	550	14	0.4	2.0
R3583.L006	4.4	40	80	425	850	14	0.5	2.5
R3583.L008	6.0	80	160	800	1600	17	2.0	7.0
R3583.L010	7.0	125	250	1300	2600	19	5.0	14.0
R3583.L011	7.0	125	250	1300	2600	19	3.0	14.0
R3583.L012	8.0	150	300	1550	3100	20	6.0	25.0
R3583.L013	8.0	150	300	1550	3100	20	6.0	25.0
R3583.L015	10.0	300	600	1700	3400	24	12.5	30.0
R3583.L017	11.0	450	900	1800	3600	26	17.5	35.0
R3583.L018	11.0	450	900	1800	3600	26	21.0	35.0
R3583.L020	13.0	850	1700	3400	6800	30	25.0	40.0
R3583.L021	13.0	850	1700	3400	6800	30	25.0	40.0
R3583.L025	17.0	500	1000	3500	7000	37	45.0	55.0
R3583.L030	19.0	1000	2000	3500	7000	46	85.0	70.0



Pages 106 - 109

Heavy Duty Rod Ends - integral spherical plain bearing

Male and female series K rod ends, maintenance free. These are our most popular range of heavy duty rod ends.

Sizes Bore diameters 5mm up to 30mm.



Pages 110 - 113

Heavy Duty Rod Ends - integral spherical plain bearing

Male and female series E rod ends, maintenance free.

Sizes Bore diameters 6mm up to 60mm.



Pages 114 - 1120

Heavy Duty Rod Ends - integral ball bearing

Male and female series K rod ends. R3559 and R3560 have different bore sizes in relation to the thread size. All require maintenance.

Sizes Bore diameters 6mm up to 30mm.



Pages 121- 123

Heavy Duty Rod Ends - integral roller bearings

Male and female series E rod ends, require maintenance.

Sizes Bore diameters 12mm up to 30mm.



Pages 129 - 135

Stainless Steel Heavy Duty Rod Ends - integral spherical plain bearing

Male and female rod ends maintenance free. R3565 and R3566 K series rod ends, R3567 and R3568 E series rod ends.

Sizes R3565 and R3566 bore diameters 5mm up to 30mm. R3567 and R3568 bore diameters 6mm up to 60mm.



Pages 136 - 138

Low Cost Rod Ends - with spherical plain bearing

These are our most popular male and female rod ends. Maintenance free.

Sizes Female-bore diameters 5mm up to 12mm; Male-bore diameters 5mm up to 16mm.

ov-rod-ends-overview-a-lnh- Updated - 28-03-2023

Low Cost Rod Ends - spherical plain bearing

Male and female series E rod ends, maintenance free.

Sizes Bore diameters 6mm up to 80mm.



Pages 139 - 145

Stainless Steel Low Cost Rod Ends - spherical plain bearing

Male and Female Series K rod ends, maintenance free.

Sizes Bore diameters 5mm up to 20mm.



Pages 146 - 147

Plastic Rod Ends

Male and female rod ends, Series K and Series E rod ends.

Sizes Bore diameters 2mm up to 30mm.



Pages 150 - 157

Rod Ends with Studs

Steel and Stainless steel, male and female maintenance free.

Sizes M6 up to M16.

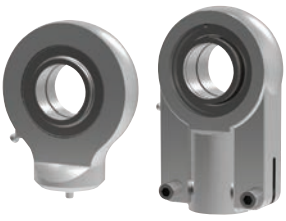


Pages 158 - 165

Hydraulic Rod Ends - spherical plain bearings

Various options from Weld on base through to female thread, require maintenance.

Sizes Bore diameters up to 160mm.

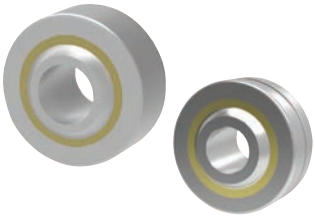


Pages 166 - 179

Spherical Plain Bearings - steel and stainless steel

Series K and series E spherical bearings. R3640 are our lowest cost, most popular option. R3641 and stainless steel R3642 require maintenance. R3640, R3644, and stainless steel R3645 are maintenance free.

Sizes Bore diameters 5mm up to 30mm.



Pages 182 - 186

Technical Information

Rod End Bearings



Rod ends with integral maintenance-free spherical plain bearings

In many cases heavy-duty rod ends with integral spherical plain bearings are most often used. They are above all used for small swivelling or tilting movements at low speeds. They stand out for their high load capacity and can also be used for shock-like loads. The rod end ball slides on a plastic bearing shell consisting of a glass fibre-filled nylon/teflon compound. This design assures a maintenance-free rod end. Heavy-duty plain bearing rod ends have slight initial movement friction and virtually no clearance. The plastic material used has another advantage in that it can absorb many foreign particles so that no damage can occur. The balls of heavy-duty rod ends with integral spherical plain bearings are hard chrome plated. This reliable corrosion protection ensures that the function of the rod end will not be affected by a corroded ball surface under humid operating conditions.

Rod ends with integral ball bearings

This design is especially suitable for high speeds, large swivelling angles or rotating movements with relatively low or medium loads. Prominent technical features are the low bearing friction, long-time greasing as well as the sealing against some dirt penetration (by means of shields on both sides). Under normal operating conditions the rod ends are maintenance-free.

Greasing nipples are provided for lubrication in case of rough operations and maximum loads. To avoid incompatibility with the production lubrication, we recommend lubrication with a calcium-complex-soap-grease. A special heat treatment procedure gives the rod end housing a raceway hardness adapted to the antifriction bearing, ensuring at the same time high stability with changing loads.

Rod ends with integral roller bearings

This design based on the structure of a self-aligning roller bearing is preferably used for high speed, large tilting angles or rotating movements under high loads. Compared to rod ends with ball bearings, rod ends with self-aligning roller bearings have essentially higher basic load ratings. This design is equipped with a cage to minimise the rolling friction and heat build-up. These rod ends, with long-time lubrication are under normal operating conditions maintenance-free.

Greasing nipples are provided for lubrication in case of rough operations and maximum loads. To avoid incompatibility with the production lubrication, we recommend lubricating with a calcium-complex-soap-grease.

Shields on both sides limit dirt particles from penetrating into the bearing. The rod ends with roller bearings are, subjected to a special heat treatment to obtain a raceway hardness adapted to the antifriction bearings, ensuring at the same time a high stability with changing loads.

Static load capacity C_0 (plain bearings)

The static load capacity C_0 is the radially acting static load which does not cause any permanent deformation of the components when the spherical bearing or rod end is stationary, (i.e. the load condition without pivoting, swivelling or tilting movements).
It is also a precondition here that the operating temperature must be at normal room temperature and the surrounding components must possess sufficient stability.

The values specified in the tables are determined by static tension tests on a representative number of series components at 20°C normal room temperature. The static load capacity may vary with lower or higher temperature depending on the material.

In the case of all rod ends with plain bearings, the static load rating refers to the maximum permissible static load of the rod end housing in a tensile direction up to which no permanent deformation occurs at the weakest housing cross-section. The value in the product tables has a safety factor of 1.2 times the tensile strength of the rod ends housing material.

Static load capacity C_0 (roller and ball bearings)

For our rod ends with roller and ball bearings, the static load rating is the load at which the bearing can operate at room temperature without its performance being impaired as a result of deformations, fracture, or damage to the sliding contact surfaces (max 1/10,000th of the ball diameter).

Dynamic load capacity C (plain bearings)

Dynamic load ratings serve as values for calculation of the service life of dynamically-loaded spherical bearings and rod ends. The values themselves do not provide any information about the effective dynamic load capacity of the spherical bearing or rod end. To obtain this information, it is necessary to take into account the additional influencing factors such as load type, swivel or tilt angle, speed characteristic, max. permitted bearing clearance, max. permitted bearing friction, lubrication conditions and temperature, etc.

Dynamic load capacities depend on the definition used to calculate them. Comparison of values is not always possible owing to the different definitions used by various manufacturers, and because the load capacities are often determined under completely different test conditions.

Dynamic load capacity C (roller and ball bearings)

For our rod ends with roller and ball bearings, the dynamic load capacity is the load at which 90% of a large quantity of identical rod ends reach 1 million revolutions before they fail (due to fatigue of the rolling surfaces).



Rod Ends from Automotion Components

Permissible load

The maximum load is defined by the static basic load rating C_0. If static loads are a combination of radial and axial loads, the equivalent static load will have to be calculated.

Permissible load:

$$P_0 \leq C_0 \text{ (N)}$$

Where: P_0 = Static equivalent load (kN)

Self-aligning ball bearing = $P_0 = F_r + Y_0 \cdot F_a$

Self-aligning roller bearing = $P_0 = F_r + 5 \cdot F_a$

F_a = Axial load

F_r = Radial load

Y_0 = Axial factor, static, see individual product pages

C_0 = Basic static load rating (kN), see individual product pages

Nominal service life

Rod Ends with integral self-aligning ball bearing R3556, R3557, R3559, R3560, R3563, R3564.

Rotating:

$$G_{h_{rot.}} = 10^6 \frac{\left(\frac{C}{P}\right)^3}{60 \cdot n} \text{ (h)}$$

Oscillating:

$$G_{h_{osc.}} = 10^6 \frac{\left(\frac{C}{P \sqrt[3]{\frac{ß}{90}}}\right)^3}{60 \cdot f} \text{ (h)}$$

Where: P = Dynamic equivalent load (kN)

Self-aligning ball bearing = $P = F_r + Y \cdot F_a$

Self-aligning roller bearing = $P = F_r + 9.5 \cdot F_a$

C = Basic dynamic load (kN), see individual product pages

Y = axial factor, dynamic, see individual product pages

$Gh_{rot.}$ = nominal service life for rotation (hours of operation)

$Gh_{osc.}$ = nominal service life for rotation (hours of operation)

ß = half of swivelling angle (degree), ß = 90 should be used for rotation. **Condition:** Swivelling angle ß ≦ 3°. For swivelling angles ß<3° we recommend the use of heavy-duty spherical plain bearing rod ends

n = rotation speed (rpm)

f = frequency of oscillation (rpm)

h = hours

ov-rod-ends-selection-calculation-a-lnh- Updated - 28-03-2023

Nominal service life
Rod ends with integral self-aligning roller bearing R3561, R3562.

Rotating:

$$G_{h\,rot.} = 10^6 \frac{\left(\frac{C}{P}\right)^{3{,}333}}{60 \cdot n}\ (h)$$

Oscillating:

$$G_{h\,osc.} = 10^6 \frac{\left(\frac{C}{P \sqrt[3]{\frac{ß}{90}}}\right)^{3{,}333}}{60 \cdot f}\ (h)$$

See table on page 114 for key to symbols

Calculation example
At the rotating side of a crank mechanism a ball or roller bearing rod end should be installed. The expected service life amounts to at least 5000 hours.

Known: rotation speed n = 300 rpm, radial load F_r = 0,75 kN
Selected: R3557.R008 = 4,0 kN

$$G_{h\,rot.} = 10^6 \frac{\left(\frac{C}{P}\right)^3}{60 \cdot n}$$

$$= 10^6 \frac{\left(\frac{4{,}0}{0{,}75}\right)^3}{60 \cdot 300} = \underline{\underline{8428\ h > 5000\ h}}\ \boxtimes$$



Rod Ends from Automotion Components

Permissible load

The maximum permissible load is calculated by using equation **1**. If static loads are a combination of radial and axial loads, the equivalent static load will have to be calculated using equation **2**.

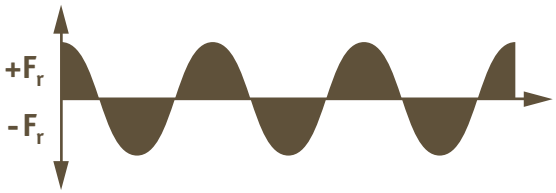
Permissible load:

Equation **1** $P_{max.} = C_0 \cdot C_2 \cdot C_4$

Equation **2** $P = F_r + F_a \leqq P_{max.}$

Where:
- P_{max} = Maximum permissable load (kN)
- C_0 = static basic load (kN), see individual product pages
- C_2 = Temperature factor, see below
- C_4 = Factor for type of load, see below
- P = Equivalent dynamic load (kN)
- F_r = Radial load
- F_a = Axial load (kN), **condition:** $F_a \leqq 0.2 \cdot F_r$

Load factor C_4 :

		C_4 :
Constant:		1,0
Pulsating:		0,3
Alternating:		0,2

Temperature factor C_2:

Up to 60°C	1,0
60°C to 80°C	0,8
80°C to 100°C	0,7
100°C to 120°C	0,8

ov-rod-ends-selection-calculation-c-lnh- Updated - 28-03-2023

Permissible sliding velocity
The permissible sliding velocity of heavy-duty rod ends mainly depends on the load and temperature conditions. Heat generated by friction in the rod end housing is the main limitation on sliding velocity. When selecting the rod end size, it is necessary to determine the sliding velocity and the pv-value, which is a product of the specific bearing load p (N/mm²) and the sliding velocity v (m/s).

Specific bearing load:

$$p = k \cdot \frac{P}{C}$$

Permissible pv-value = 0,5 N/mm² · m/s

Where: P = Specific bearing load (N/mm²)
C = Basic dynamic load rating (N), see individual product pages
k = Specific load factor (N/mm²) for tribological pairing
k = 50 N/mm²

Mean sliding velocity:

$$V_m = 5{,}82 \cdot 10^{-7} \cdot d_3 \cdot ß \cdot f$$

Permissible sliding velocity $v_{max.}$ = 0,15 m/s

Where: V_m = Mean sliding velocity (m/s)
d_3 = Pivot ball diameter (mm), see individual product pages
ß = Half swivelling angle (degree), for swivelling angle > 180° ß = 90° to be used
f = Frequency of oscillation (rpm)

Nominal service life:

$$G = C_1 \cdot C_2 \cdot C_3 \cdot \frac{3}{d_3 \cdot ß} \cdot \frac{C}{P} \cdot 10^8$$

$$G_h = C_1 \cdot C_2 \cdot C_3 \cdot \frac{5}{d_3 \cdot ß \cdot f} \cdot \frac{C}{P} \cdot 10^6$$

Where: G = Nominal service life (number of oscillations or revolutions)
G_h = Nominal service life (hours)
C_1 = Load direction factor, see table on next page
C_2 = Temperature factor, see previous page
C_3 = Material factor, see alignment chart on next page

Where: C_1 = Load direction factor

$C_1 = 1,0$ = Single load direction

Alternating load direction at f < 30 rpm: $C_1 = 0,250$

Alternating load direction at f > 30 rpm: $C_1 = 0,125$

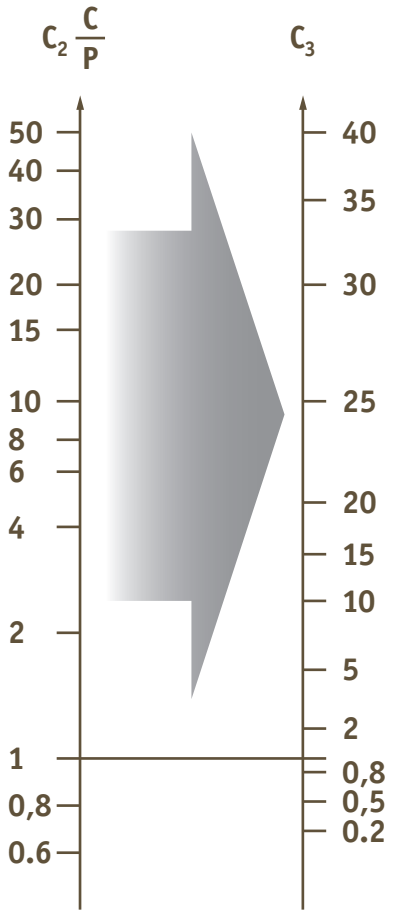
Alignment:

To find C_3 calculate $C_2 \cdot \frac{C}{P}$ then using this value on the chart below, read across to C_3

Where: C_2 = Temperature factor

C = basic dynamic load rating (N) see individual product pages

P = Specific bearing load (N/mm²)



Rod Ends from Automotion Components

ov-rod-ends-selection-calculation-e-lnh- Updated - 28-03-2023

Calculation example
The rod end assembly of conveyor equipment calls for heavy-duty rod end with a service life of 7000 hours in conjunction with an alternating acting load of 5 kN. 25 swivelling moments with a swivelling angle of 20° take place per minute. The operating temperature amounts to approx. 60° C. The choice is a heavy-duty rod end R3554.R015 with: C = 13,4 kN, d_3 = 22mm.

Checking the permissible load of the rod end:

$$P_{max.} = C_0 \cdot C_2 \cdot C_4$$

$$P_{max.} = 41 \cdot 0{,}2 \cdot 1{,}0 = 8{,}2 \text{ kN} > 5{,}0 \text{ kN}$$

Where: C_0 = 41 kN
C_2 = 1,0 (temperature 60° C)
C_4 = 0,2 (alternating load)

Checking the permissible sliding velocity:

$$V_m = 5{,}82 \cdot 10^{-7} \cdot d_3 \cdot ß \cdot f = 5{,}82 \cdot 10^{-7} \cdot 22 \cdot 10 \cdot 25$$

$$= \underline{0{,}0032 \text{ m/s} < 0{,}15 \text{ m/s}} \ \boxtimes$$

Checking the p · V -value:

$$pV = p \cdot V_m$$

$$pV = 18{,}66 \cdot 0{,}0032$$

$$= 0{,}06 \text{ N/mm}^2 \cdot \text{m/s} < 0{,}5 \text{ N/mm}^2 \cdot \text{m/s} \ \boxtimes$$

$$p = k \cdot \frac{P}{C} = 50 \cdot \frac{5000}{13400} \ 18{,}66 \text{ N/mm}^2$$

Nominal service life:

$$G_h = C_1 \cdot C_2 \cdot C_3 \cdot \frac{5}{d_3 \cdot ß \cdot f} \cdot \frac{C}{P} \cdot 10^6$$

$$G_h = 0{,}25 \cdot 1.0 \cdot 12 \cdot \frac{5}{22 \cdot 10 \cdot 25} \cdot \frac{13{,}4}{5{,}0} \cdot 10^6$$

$$= \underline{7308 \text{ h} > 7000 \text{ h}} \ \boxtimes$$

Where: C_1 = 0,25 (alternating load direction, f = 25 rpm < 30 rpm)

$$C_3 = C_2 \cdot \frac{C}{P} = 1{,}0 \cdot \frac{13{,}4}{5{,}0} = 2{,}68$$

See alignment chart (on page 118) C_3 = 12

Where: d_3 = 22
f = 25 rpm
ß = 10° (half the swivelling angle 20° = 10°)
C = 13,4 kN
P = 5,0 kN

Rod Ends from Automotion Components



Rod Ends from Automotion Components

Low cost rod ends load ratings

The ultimate radial static load rating is measured as the failure point when a load is increasingly applied to a pin through the rod end's bore and pulled straight up while the rod end is held in place. Note that the actual rating is determined by calculating the lowest of the following three values:

1: Raceway material comprehensive strength (R value):

$$R = E \times T \times X$$

2: Rod end head strength (H value, cartridge type construction):

$$H = \left[\left(\frac{T}{2}\sqrt{D^2 - T^2}\right) + \left(\frac{D^2}{2} \times \text{SIN}^{-1}\frac{T}{2}\right) - \left(\text{O.D. of Bearing} \times T\right)\right] \times X$$

Angle of $\frac{T}{2}$ expressed in radians

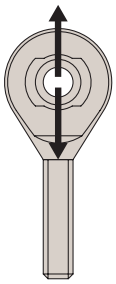
3: Shank strength (S Value) male threaded rod end:

$$S = [(\text{root diameter of thread}^2 \times .78) - (N^2 \times .78)] \times X$$

female threaded rod end:

$$S_2 = [(J^2 \times .78) + (\text{major diameter of thread} \times .78)] \times X$$

Where:
- E = Ball diameter
- T = Housing width
- X = Allowable stress
- D = Head diameter
- N = Diameter of drilled hole in shank of male rod end
- J = Shank diameter of female rod end

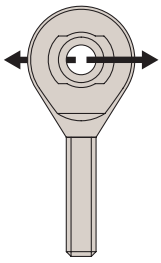


The axial static load capacity is measured as the force required to cause failure via a load parallel to the axis of the bore. Depending on the material types and construction methods, the ultimate axial load is generally 10-20% of the ultimate radial static load. The formula does not account for the bending of the shank due to a moment of force, nor the strength of the stake in cartridge-type construction.

Axial strength (A Value):

$$A = .78\ [\ (E + .176T)^2 - E2\ ] \times X$$

Where:
- X = Allowable stress (see table below)
- E = Ball diameter
- T = Housing width



Material	Allowable stress (PSI)
300 Series Stainless Steel	35,000
Low Carbon Steel	52,000

ov-rod-ends-spherical-plain-bearings-lnh- Updated - 29-03-2023

Operating temperatures

Heavy-duty ball and roller bearing rod ends can be used for operating temperatures between -20°C and +120°C. The temperature range of heavy-duty rod ends with integral spherical plain bearing is between -30°C and +60°C, without affecting the load capacity. Higher temperatures will reduce the load capacity taken into account for the calculation of the 'working life' under the temperature factor C_2 on page 116.

Loads

The decisive parameters for the selection and calculation of heavy-duty rod ends are size, direction and type of load.

Radial or combined loads

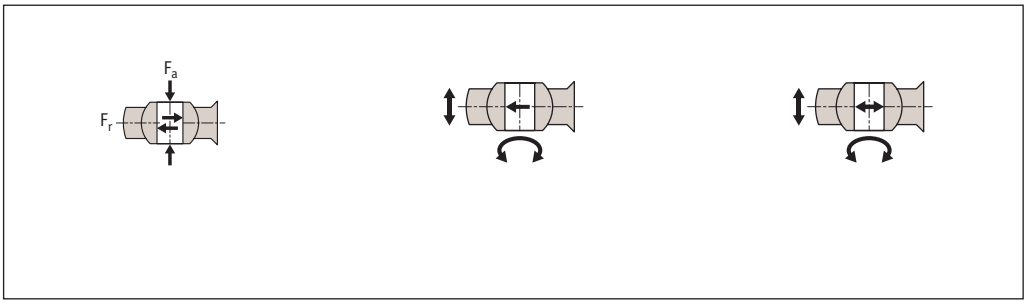
The heavy-duty rod ends have been especially designed to cope with high radial loads. They can be used for combined loads, the axial load share of which does not exceed 20% of the corresponding radial load.

Unilaterally acting load

In this case the load acts only in the same direction, which means that the load area is always in the same bearing section.

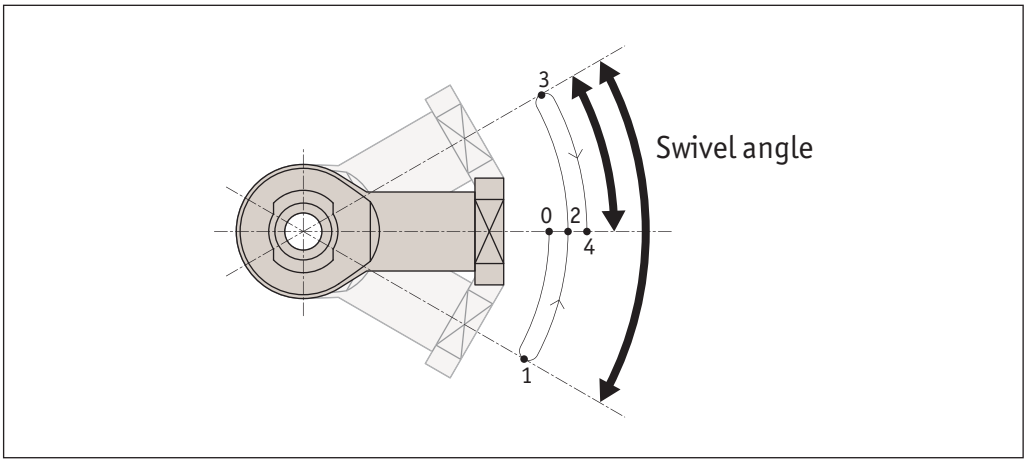
Alternately acting load

In case of alternating loads, the load areas facing each other are alternately loaded and/or relieved, which means that the load changes its direction constantly by approximately 180°.



Swivelling angle

The swivelling angle is the movement of the rod end from one final position to the other. Half the swivelling angle a° is used to calculate the service or 'working life'.

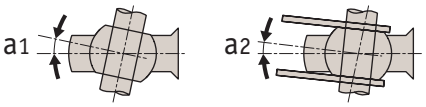




Angle of tilt

The angle of tilt, also called setting angle, refers to the movement of the joint ball and/or the inner ring to the rod end axis (in degrees). The tilting angle (a) indicated in the table for the heavy-duty ball and roller bearing rod ends corresponds to the maximum possible movement being limited by the shields on both sides. It is important that this tilting angle is not exceeded either during installation or operation, as otherwise the shields may be damaged. For heavy-duty plain bearing rod ends a distinction is made between the tilting angles (a1 and a2).

If the movement is not limited by adjacent components, then angle a1 can fully be used without affecting the rod end capacity. Tilting angle a2 is the movement limit when connecting a forked component.



Nominal service life

The term 'nominal service life' is used for heavy-duty ball and roller bearing rod ends and represents the number of swivelling motions or rotations and/or the number of service hours the rod end performs before showing the first signs of material fatigue on the raceway or roller bodies. In view of many factors that are difficult or impossible to assess, the service life of several apparently identical bearings differ under the same operating conditions.

For this reason, the following method for the service life determination of heavy-duty ball and roller rod ends results in a nominal service life being achieved or exceeded by at least 90% of a large quantity of identical rod ends.

Working life

The term 'working life' is used with heavy-duty plain bearing rod ends. It represents the number of swivelling motions or rotations and/ or the number of service hours the heavy duty plain bearing rod end performs before becoming unserviceable due to material fatigue, wear, increased bearing clearance or increase of the bearing friction moment.

The 'working life' is not only influenced by the size and the type of load, it is also affected by a number of factors, which are difficult to assess. A calculation of the exact service life is therefore impossible. Field-experienced standard values for the approximate 'working life' can nevertheless be determined by using the following calculation procedure which is based on numerous results from endurance test runs and values from decades of experience. The values determined by this formula are achieved, if not exceeded, by the majority of the heavy-duty rod ends.

Heavy-duty rod ends (R3550, R3551, R3556, R3557, R3561, R3562, R3563, R3564, R3565, R3566, R3610, R3611, R3613, R3614)

d1		d1mp Tolerance Limit		V_{d1p}	V_{d1mp}	b1s Tolerance Limit		hs, h1s, h2s Tolerance Limit	
over	icl.	upper	lower	max.	max.	upper	lower	upper	lower
	6	+0,012	0	0,012	0,009	0	-0,12	+0,8	-1,2
6	10	+0,015	0	0,015	0,011	0	-0,12	+0,8	-1,2
10	18	+0,018	0	0,018	0,014	0	-0,12	+1,0	-1,7
18	30	+0,021	0	0,021	0,016	0	-0,12	+1,4	-2,1
30	50	+0,025	0	0,025	0,019	0	-0,12	+1,8	-2,7

Heavy-duty rod ends (R3553, R3554, R3559, R3560, R3567, R3568)

d1		d1mp Tolerance Limit		V_{d1p}	V_{d1mp}	b1s Tolerance Limit		hs, h1s, h2s Tolerance Limit	
over	icl.	upper	lower	max.	max.	upper	lower	upper	lower
	10	0	-0,008	0,008	0,006	0	-0,12	+0,8	-1,2
10	18	0	-0,008	0,008	0,006	0	-0,12	+0,8	-1,2
18	30	0	-0,010	0,010	0,008	0	-0,12	+1,0	-1,7
30	50	0	-0,012	0,012	0,009	0	-0,12	+1,4	-2,1
50	80	0	-0,015	0,015	0,011	0	-0,15	+1,8	-2,7

Dimensions and tolerance symbols

d_1 = nominal bore diameter of the inner ring or joint ball.

d_{1mp} = mean bore diameter deviation in one plane, arithmetical mean of the largest and smallest bore diameter.

V_{d1p} = bore diameter variation in one plane, difference between the largest and smallest bore diameter.

V_{d1mp} = mean bore diameter variation, difference between the largest and smallest bore diameter of one inner ring or joint ball.

b_{1s} = single inner ring or joint ball width deviation.

h, h_1, h_2 = single length from inner ring or ball bore centre to shank end.

h_s, h_{1s}, h_{s2} = single length variation of a single rod end.

Technical Information

Plastic Rod Ends



Load

The load capacity of the maintenance free bearing element parts is very high at normal ambient temperatures. These bearings absorb high forces and weigh only one fifth of traditional, metal bearing housings. The excellent dampening properties are based on the fact that the polymer material of the two part bearing can absorb vibrations differently than steel.

However, plastic specific properties, such as dependence on temperature and behaviour under long term stress must be taken into consideration when using these bearings.
The load capacity of the rod end bearing should therefore be checked in a practical test, particularly if it will be used under continuous high loads and at elevated temperatures.

Chemical resistance

The moisture absorption is approximately 1.3% of weight in standard atmosphere.
The saturation limit in water is 6.5%. This must be taken into account for these types of applications.
The housing made of igumid G is resistant to weak alkalines, acids and fuels, as well as all types of lubricants.

Medium	Resistance
Alcohol	+ to 0
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	0 to -
Strong acids	-
Diluted alkalines	+
Strong alkalines	0

Chemical resistance of plain bearings.

+ resistant
0 conditionally resistant
- not resistant.

All data given at room temperature (20°C).

Radiation resistance

Self aligning plain bearings are resistant to radiation up to an intensity of 3 x 102 Gy.

Application temperatures

These bearings can be used in temperatures from -30°C to + 80°C. The table below shows the effect of temperature on the load capacity of the bearings.

Minimum	-30°C
Maximum, long term	-80°C
Maximum, short term	+120°C

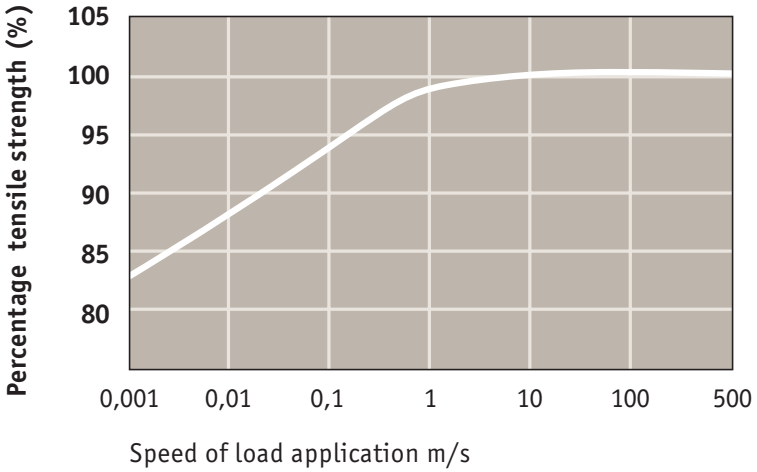
Coefficients of sliding friction and speed

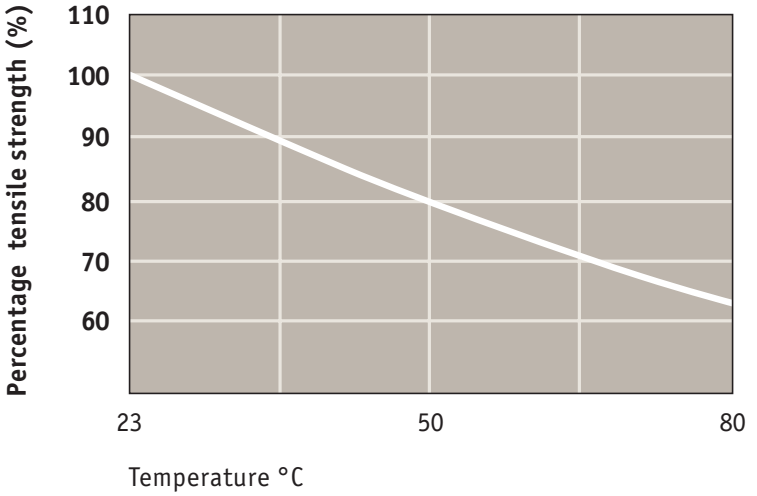
One important advantage of plastic spherical bearings is that rapid, rotary movements of a mounted shaft take place directly in the spherical portion. In metallic rod ends, rotary motion takes place between the race and the spherical bearing. High speeds can be achieved with plastic bearings.

These bearings are used in such a way that the angular movements of the spherical bearings take place at the outer diameter. By contrast, rotations of the shaft are supported directly in the I.D. of the spherical portion. The advantage therefore lies in the polymer vs. steel relationship. Polymer produces lower friction and permits high speeds, even when running dry.

UV resistance

The corrosion resistance of these bearings makes them very useful for outside applications. They are permanently resistant to UV radiation. A small change in colour (dark colouration) of the spherical ball due to UV radiation does not affect the mechanical electrical or thermal properties.





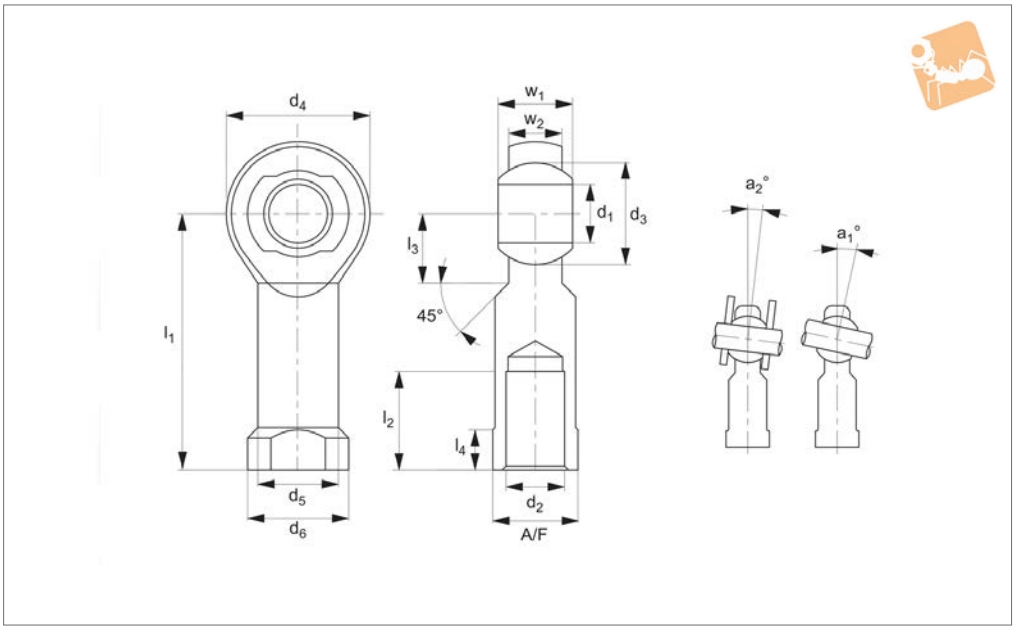
Rod Ends from Automotion Components

Heavy-Duty Rod Ends - Female

with integral spherical plain bearing



R3551



Material

Rod end housing - forged steel, tempered, surface galvanized.
Joint ball - ball bearing steel, hardened and ground, polished and chromium plated.

Race - nylon/teflon/glass compound.

Technical Notes

Maintenance free, sizes according to DIN ISO 12240-4, series K, thread according to Cetop RP 103 P.

For tolerances see technical pages.

Tips

Standard thread is right hand thread.

Important Notes

* Denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	d_6	l_2	Weight g
R3551.R004	Right	5	27	M4	11.11	18	9.0	11	10	18
R3551.R005	Right	5	27	M5	11.11	18	9.0	11	10	18
R3551.R006	Right	6	30	M6	12.70	20	10.0	13	12	24
R3551.R008	Right	8	36	M8	15.87	24	12.5	16	16	45
R3551.R010	Right	10	43	M10	19.05	28	15.0	19	20	74
R3551.R011	Right	10	43	M10x1,25*	19.05	28	15.0	19	20	74
R3551.R012	Right	12	50	M12	22.22	32	17.5	22	22	109
R3551.R013	Right	12	50	M12x1,25*	22.22	32	17.5	22	22	109
R3551.R014	Right	14	57	M14	25.40	36	20.0	25	25	155
R3551.R016	Right	16	64	M16	28.57	42	22.0	27	28	233
R3551.R017	Right	16	64	M16x1,5*	28.57	42	22.0	27	28	233
R3551.R018	Right	18	71	M18x1,5*	31.75	46	25.0	31	32	310
R3551.R020	Right	20	77	M20x1,5*	34.92	50	27.5	34	33	386
R3551.R022	Right	22	84	M22x1,5*	38.10	54	30.0	38	37	520
R3551.R025	Right	25	94	M24x2*	42.85	60	33.5	42	42	705
R3551.R030	Right	30	110	M30x2*	50.80	70	40.0	50	51	1084
R3551.R031	Right	30	110	M27x2*	50.80	70	40.0	50	51	1084
R3551.L004	Left	5	27	M4	11.11	18	9.0	11	10	18
R3551.L005	Left	5	27	M5	11.11	18	9.0	11	10	18
R3551.L006	Left	6	30	M6	12.70	20	10.0	13	12	24
R3551.L008	Left	8	36	M8	15.87	24	12.5	16	16	45
R3551.L010	Left	10	43	M10	19.05	28	15.0	19	20	74
R3551.L011	Left	10	43	M10x1,25*	19.05	28	15.0	19	20	74
R3551.L012	Left	12	50	M12	22.22	32	17.5	22	22	109
R3551.L013	Left	12	50	M12x1,25*	22.22	32	17.5	22	22	109
R3551.L014	Left	14	57	M14	25.40	36	20.0	25	25	155
R3551.L016	Left	16	64	M16	28.57	42	22.0	27	28	233
R3551.L017	Left	16	64	M16x1,5*	28.57	42	22.0	27	28	233
R3551.L018	Left	18	71	M18x1,5*	31.75	46	25.0	31	32	310
R3551.L020	Left	20	77	M20x1,5*	34.92	50	27.5	34	33	386
R3551.L022	Left	22	84	M22x1,5*	38.10	54	30.0	38	37	520
R3551.L025	Left	25	94	M24x2*	42.85	60	33.5	42	42	705

Heavy-Duty Rod Ends - Female

with integral spherical plain bearing

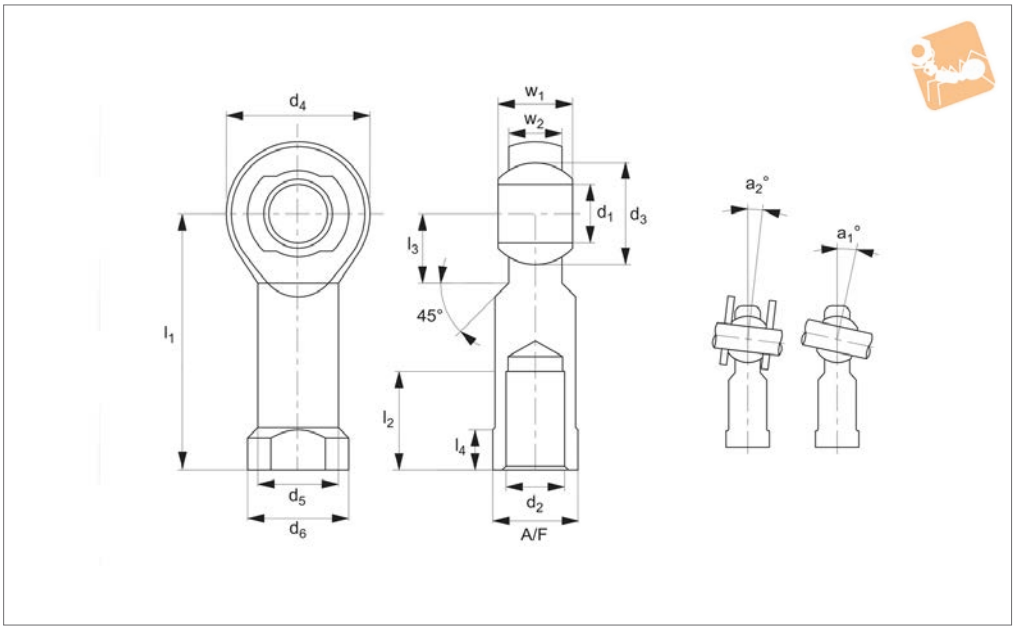
Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	d_6	l_2	Weight g
R3551.L030	Left	30	110	M30x2*	50.80	70	40.0	50	51	1084
R3551.L031	Left	30	110	M27x2*	50.80	70	40.0	50	51	1084

Order No.	l_3	l_4	w_1	w_2	A/F	a_1 °	a_2 °	Dyn. load C kN max.	Static load C_0 kN max.
R3551.R004	10	4.0	8	6.00	9	13.0	7.5	3.91	10.8
R3551.R005	10	4.0	8	6.00	9	13.0	7.5	3.91	10.8
R3551.R006	12	5.0	9	6.75	11	13.0	6.5	4.59	12.8
R3551.R008	12	5.0	12	9.00	14	14.5	7.5	6.965	19.2
R3551.R010	15	6.5	14	10.50	17	13.5	8.0	10.42	27.4
R3551.R011	15	6.5	14	10.50	17	13.5	8.0	10.42	27.4
R3551.R012	16	6.5	16	12.00	19	13.0	8.0	12.42	33.4
R3551.R013	16	6.5	16	12.00	19	13.0	8.0	12.42	33.4
R3551.R014	20	8.0	19	13.50	22	16.0	9.5	15.44	41.3
R3551.R016	22	8.0	21	15.00	22	15.5	8.5	22.41	59.6
R3551.R017	22	8.0	21	15.00	22	15.5	8.5	22.41	59.6
R3551.R018	24	10.0	23	16.50	27	15.0	9.5	26.32	69.7
R3551.R020	26	10.0	25	18.00	30	14.5	9.0	30.80	82.2
R3551.R022	26	12.0	28	20.00	32	15.5	10.0	38.23	95.60
R3551.R025	30	12.0	31	22.00	36	15.0	10.0	45.35	118.6
R3551.R030	35	15.0	37	25.00	41	17.0	10.5	55.01	145.6
R3551.R031	35	15.0	37	25.0	41	17.0	10.5	55.01	145.6
R3551.L004	10	4.0	8	6.00	9	13.0	7.5	3.91	10.8
R3551.L005	10	4.0	8	6.00	9	13.0	7.5	3.91	10.8
R3551.L006	12	5.0	9	6.75	11	13.0	6.5	4.59	12.8
R3551.L008	12	5.0	12	9.00	14	14.5	7.5	6.965	19.2
R3551.L010	15	6.5	14	10.50	17	13.5	8.0	10.42	27.4
R3551.L011	15	6.5	14	10.50	17	13.5	8.0	10.42	27.4
R3551.L012	16	6.5	16	12.00	19	13.0	8.0	12.42	33.4
R3551.L013	16	6.5	16	12.00	19	13.0	8.0	12.42	33.4
R3551.L014	20	8.0	19	13.50	22	16.0	9.5	15.44	41.3
R3551.L016	22	8.0	21	15.00	22	15.5	8.5	22.41	59.6
R3551.L017	22	8.0	21	15.00	22	15.5	8.5	22.41	59.6
R3551.L018	24	10.0	23	16.50	27	15.0	9.5	26.32	69.7
R3551.L020	26	10.0	25	18.00	30	14.5	9.0	30.80	82.2
R3551.L022	26	12.0	28	20.00	32	15.5	10.0	38.23	95.6
R3551.L025	30	12.0	31	22.00	36	15.0	10.0	45.35	118.6
R3551.L030	35	15.0	37	25.00	41	17.0	10.5	55.01	145.6
R3551.L031	35	15.0	37	25.00	41	17.0	10.5	55.01	145.6

Imperial Heavy Duty Rod End
Female



R3551.i



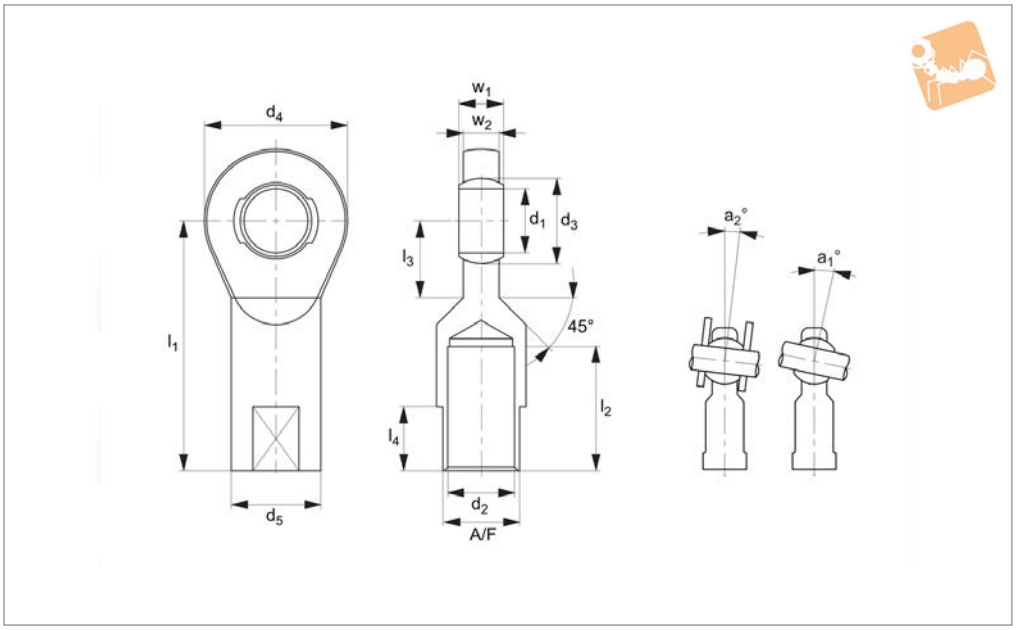
Material
Rod end housing - forged steel, tempered, surface galvanized.
Joint ball - ball bearing steel, hardened and ground, polished and chromium plated.
Race - nylon/teflon/glass compound.

Technical Notes
Female thread maintenance free adapter sizes according to DIN ISO 12240-4, series K, thread according to Cetop RP 103P.

Tips
Standard thread is right hand thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	d_6	Weight g
R3551.I250	Right	0.250	1.338	1/4-28	0.516	0.750	0.374	0.469	27
R3551.I375	Right	0.375	1.641	3/8-24	0.719	1.000	0.567	0.689	59
R3551.I500	Right	0.500	2.145	1/2-20	0.876	1.311	0.748	0.874	127
R3551.I625	Right	0.625	2.539	5/8-18	1.125	1.653	0.866	1.063	231
R3551.I750	Right	0.625	2.905	3/4-16	1.249	1.750	1.000	1.126	229
R3551.I1000	Right	1.000	3.720	1-12	1.688	2.362	1.319	1.654	663
R3551.I1001	Right	1.000	3.720	1-14	1.688	2.362	1.319	1.654	663
R3551.IL250	Left	0.250	1.338	1/4-28	0.516	0.750	0.374	0.469	27
R3551.IL375	Left	0.375	1.641	3/8-24	0.719	1.000	0.567	0.689	59
R3551.IL500	Left	0.500	2.145	1/2-20	0.876	1.311	0.748	0.874	127
R3551.IL625	Left	0.625	2.539	5/8-18	1.125	1.653	0.866	1.063	231
R3551.IL750	Left	0.625	2.905	3/4-16	1.249	1.750	1.000	1.126	229
R3551.IL1000	Left	1.000	3.720	1-12	1.688	2.362	1.319	1.654	663
R3551.IL1001	Left	1.000	3.720	1-14	1.688	2.362	1.319	1.654	663

Order No.	l_2	l_3	l_4	l_5	w_1	w_2	A/F	a °	Dyn. load C kN max.	Static load C_0 kN max.
R3551.I250	0.716	0.385	0.185	1.713	0.374	0.283	0.381	17.5	4.3	12.5
R3551.I375	0.847	0.503	0.275	2.141	0.499	0.405	0.570	9.5	7.7	22.3
R3551.I500	1.161	0.649	0.279	2.801	0.624	0.472	0.757	13.0	14.7	42.9
R3551.I625	1.102	0.885	0.350	3.366	0.826	0.590	0.866	15.5	22.4	59.6
R3551.I750	1.718	0.854	0.311	3.780	0.874	0.688	1.007	11.0	24.9	66.2
R3551.I1000	1.653	1.200	0.511	4.901	1.220	0.866	1.417	15.5	45.4	118.6
R3551.I1001	1.653	1.200	0.511	4.901	1.220	0.866	1.417	15.5	45.4	118.6
R3551.IL250	0.716	0.385	0.85	1.713	0.374	0.283	0.381	17.5	4.3	12.5
R3551.IL375	0.847	0.503	0.275	2.141	0.499	0.405	0.570	9.5	7.7	22.3
R3551.IL500	1.161	0.649	0.279	2.801	0.624	0.472	0.757	13.0	14.7	42.9
R3551.IL625	1.102	0.885	0.350	3.366	0.826	0.590	0.866	15.5	22.4	59.6
R3551.IL750	1.718	0.854	0.311	3.780	0.874	0.688	1.007	11.0	24.9	66.2
R3551.IL1000	1.653	1.200	0.511	4.901	1.220	0.866	1.417	15.5	45.4	118.6
R3551.IL1001	1.653	1.200	0.511	4.901	1.220	0.866	1.417	15.5	45.4	118.6





R3554

Material
Rod end housing - forged steel, tempered, surface galvanized.
Joint ball - ball bearing steel, hardened and ground, polished and chromium plated.

Race - nylon/teflon/glass compound.

Technical Notes
Female thread maintenance free adapter sizes according to DIN ISO 12240-4, series E.

For tolerances see technical pages.

Tips
Standard thread is right hand thread.

Important Notes
*Denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	l_2	l_3	Weight g
R3554.R006	Right	6	30	M6	10.0	20	10	12	11	17
R3554.R008	Right	8	36	M8	13.0	23	13	16	12	31
R3554.R010	Right	10	43	M10	16.0	28	16	20	13	54
R3554.R011	Right	10	43	M10x1,25*	16.0	28	16	20	13	54
R3554.R012	Right	12	50	M12	18.0	32	19	22	15	86
R3554.R013	Right	12	50	M12x1,25*	18.0	32	19	22	15	86
R3554.R015	Right	15	61	M14	22.0	38	22	25	18	142
R3554.R017	Right	17	67	M16	25.0	44	25	28	20	208
R3554.R020	Right	20	77	M20x1,5*	29.0	51	28	33	23	290
R3554.R025	Right	25	94	M24x2*	35.5	62	35	42	30	573
R3554.R030	Right	30	110	M30x2*	40.7	70	42	51	32	908
R3554.R035	Right	35	125	M36x3*	47.0	82	50	61	38	1230
R3554.R036	Right	35	130	M36x2*	47.0	82	50	66	38	1230
R3554.R040	Right	40	145	M42x3*	53.0	92	58	71	42	2075
R3554.R041	Right	40	142	M39x3*	53.0	92	52	66	42	1880
R3554.R045	Right	45	165	M45x3*	60.0	102	67	76	50	3085
R3554.R046	Right	45	145	M42x3*	60.0	102	58	66	50	2500
R3554.R050	Right	50	195	M52x3*	66.0	112	70	89	60	3975
R3554.R051	Right	50	160	M45x3*	66.0	112	62	69	60	3200
R3554.R060	Right	60	225	M60x4*	80.0	135	82	103	70	7300
R3554.R061	Right	60	175	M52x3*	80.0	135	71	71	70	5900
R3554.L006	Left	6	30	M6	10.0	20	10	12	11	17
R3554.L008	Left	8	36	M8	13.0	23	13	16	12	31
R3554.L010	Left	10	43	M10	16.0	28	16	20	13	54
R3554.L011	Left	10	43	M10x1,25*	16.0	28	16	20	13	54
R3554.L012	Left	12	50	M12	18.0	32	19	22	15	86
R3554.L013	Left	12	50	M12x1,25*	18.0	32	19	22	15	86
R3554.L015	Left	15	61	M14	22.0	38	22	25	18	142
R3554.L017	Left	17	67	M16	25.0	44	25	28	20	208
R3554.L020	Left	20	77	M20x1,5*	29.0	51	28	33	23	290
R3554.L025	Left	25	94	M24x2*	35.5	62	35	42	30	573
R3554.L030	Left	30	110	M30x2*	40.7	70	42	51	32	908

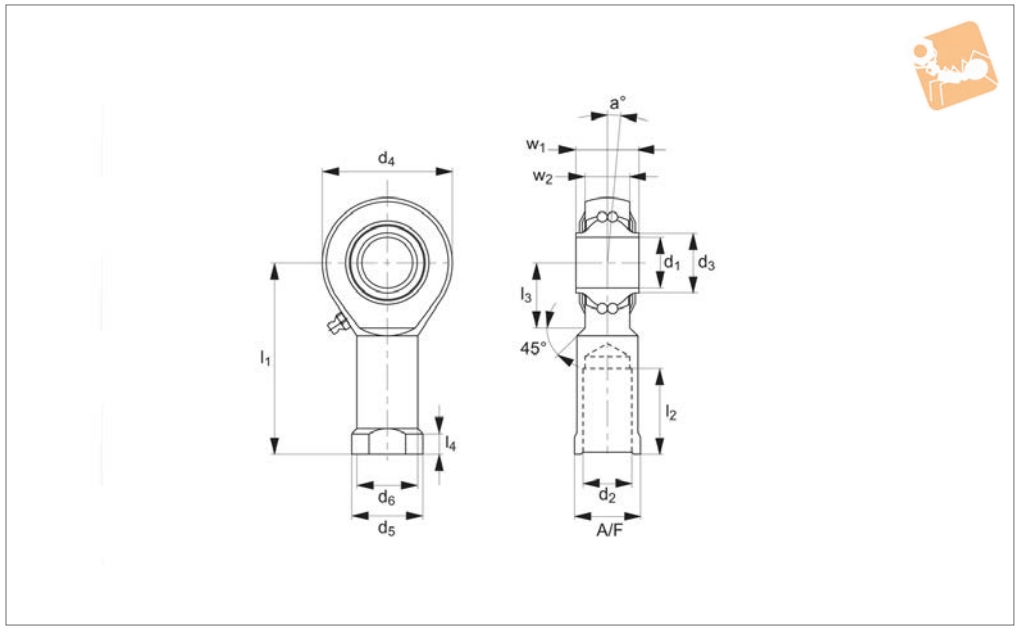
Heavy-Duty Rod Ends - Female

with integral spherical plain bearing



Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	l_2	l_3	Weight g
R3554.L035	Left	35	125	M36x3*	47.0	82	50	61	38	1230
R3554.L036	Left	35	130	M36x2*	47.0	82	50	66	38	1230
R3554.L040	Left	40	145	M42x3*	53.0	92	58	71	42	2075
R3554.L041	Left	40	142	M39x3*	53.0	92	52	66	42	1880
R3554.L045	Left	45	165	M45x3*	60.0	102	67	76	50	3085
R3554.L046	Left	45	145	M42x3*	60.0	102	58	66	50	2500
R3554.L050	Left	50	195	M52x3*	66.0	112	70	89	60	3975
R3554.L051	Left	50	160	M45x3*	66.0	112	62	69	60	3200
R3554.L060	Left	60	225	M60x4*	80.0	135	82	103	70	7300
R3554.L061	Left	60	175	M52x3*	80.0	135	71	71	70	5900

Order No.	l_4	w_1	w_2	A/F	a_1 °	a_2 °	Dyn. load C kN max.	Static load C_0 kN max.
R3554.R006	-	6	4	9	13.0	6.5	2.5	10.6
R3554.R008	-	8	5	11	15.0	8.0	4.2	13.1
R3554.R010	-	9	6	14	12.0	6.0	6.4	18.8
R3554.R011	-	9	6	14	12.0	6.0	6.4	18.8
R3554.R012	-	10	7	17	10.5	5.0	9.2	28.0
R3554.R013	-	10	7	17	10.5	5.0	9.2	28.0
R3554.R015	-	12	9	19	8.5	4.5	13.4	41.0
R3554.R017	-	14	10	22	10.0	5.5	19.2	57.9
R3554.R020	-	16	12	24	9.0	4.5	25.2	76.7
R3554.R025	-	20	16	30	7.5	3.5	42.4	119.1
R3554.R030	-	22	18	36	6.0	3.0	54.0	141.8
R3554.R035	36	25	20	41	6.5	3.5	70.4	180.8
R3554.R036	41	25	20	41	6.5	3.5	70.4	180.8
R3554.R040	42	28	22	50	7.0	3.5	86.0	222.6
R3554.R041	39	28	22	46	7.0	3.5	86.0	222.6
R3554.R045	45	32	25	55	7.5	4.0	107.0	276.2
R3554.R046	42	32	25	50	7.5	4.0	107.0	276.2
R3554.R050	52	35	28	60	6.5	3.0	132.0	339.2
R3554.R051	45	35	28	55	6.5	3.0	132.0	339.2
R3554.R060	60	44	36	70	6.5	3.5	208.0	532.1
R3554.R061	52	44	36	60	6.5	3.5	208.0	532.1
R3554.L006	-	6	4	9	13.0	6.5	2.5	10.6
R3554.L008	-	8	5	11	15.0	8.0	4.2	13.1
R3554.L010	-	9	6	14	12.0	6.0	6.4	18.8
R3554.L011	-	9	6	14	12.0	6.0	6.4	18.8
R3554.L012	-	10	7	17	10.5	5.0	9.2	28.0
R3554.L013	-	10	7	17	10.5	5.0	9.2	28.0
R3554.L015	-	12	9	19	8.5	4.5	13.4	41.0
R3554.L017	-	14	10	22	10.0	5.5	19.2	57.9
R3554.L020	-	16	12	24	9.0	4.5	25.2	76.7
R3554.L025	-	20	16	30	7.5	3.5	42.4	119.1
R3554.L030	-	22	18	36	6.0	3.0	54.0	141.8
R3554.L035	36	25	20	41	6.5	3.5	70.4	180.8
R3554.L036	41	25	20	41	6.5	3.5	70.4	180.8
R3554.L040	42	28	22	50	7.0	3.5	86.0	222.6
R3554.L041	39	28	22	46	7.0	3.5	86.0	222.6
R3554.L045	45	32	25	55	7.5	4.0	107.0	276.2
R3554.L046	42	32	25	50	7.5	4.0	107.0	276.2
R3554.L050	52	35	28	60	6.5	3.0	132.0	339.2
R3554.L051	45	35	28	55	6.5	3.0	132.0	339.2
R3554.L060	60	44	36	70	6.5	3.5	208.0	532.1
R3554.L061	52	44	36	60	6.5	3.5	208.0	532.1





R3557

Material
Rod end housing - forged steel, tempered, case hardened bearing race, ground and lapped, surface galvanized.
Inner ring - ball bearing steel, hardened, superfine ground.
Lubrication - calcium-complex-soap-grease, temp range -20°C to +120°C.
Lubrication nipple - DIN 3405 D1/A (sizes 6 to 10) DIN 71412 H1 (sizes 12 to 30).

Technical Notes
Low maintenance. Sizes according to DIN ISO 12240-4 series K, for tolerances see technical pages.

Tips
Standard thread is right hand thread.

Important Notes
*Denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	d_6	l_2	l_3	l_4	Weight g
R3557.R006	Right	6	30	M6	9.0	20	10.0	13	12	10	5.0	24
R3557.R008	Right	8	36	M8	10.5	24	12.5	16	16	12	5.0	44
R3557.R010	Right	10	43	M10	12.0	28	15.0	19	20	15	6.5	72
R3557.R012	Right	12	50	M12	14.5	32	17.5	22	22	16	6.5	107
R3557.R014	Right	14	57	M14	17.0	36	20.0	25	25	20	8.0	160
R3557.R016	Right	16	64	M16	19.0	42	22.0	27	28	22	8.0	224
R3557.R018	Right	18	71	M18X1,5*	21.5	46	25.0	31	32	24	10.0	293
R3557.R020	Right	20	77	M20X1,5*	24.5	50	27.5	34	33	26	10.0	367
R3557.R022	Right	22	84	M22X1,5*	26.0	54	30.0	38	37	26	12.0	480
R3557.R025	Right	25	94	M24X2*	29.5	64	30.0	35	42	32	10.0	572
R3557.R030	Right	30	110	M30X2*	34.5	70	40.0	50	51	35	15.0	978
R3557.L006	Left	6	30	M6	9.0	20	10.0	13	12	10	5.0	24
R3557.L008	Left	8	36	M8	10.5	24	12.5	16	16	12	5.0	44
R3557.L010	Left	10	43	M10	12.0	28	15.0	19	20	15	6.5	72
R3557.L012	Left	12	50	M12	14.5	32	17.5	22	22	16	6.5	107
R3557.L016	Left	16	64	M16	19.0	42	22.0	27	28	22	8.0	224
R3557.L014	Left	14	57	M14	17.0	36	20.0	25	25	20	8.0	160
R3557.L018	Left	18	71	M18X1,5*	21.5	46	25.0	31	32	24	10.0	293
R3557.L020	Left	20	77	M20X1,5*	24.5	50	27.5	34	33	26	10.0	367
R3557.L022	Left	22	84	M22X1,5*	26.0	54	30.0	38	37	26	12.0	480
R3557.L025	Left	25	94	M24X2*	29.5	64	30.0	35	42	32	10.0	572
R3557.L030	Left	30	110	M30X2*	34.5	70	40.0	50	51	35	15.0	978

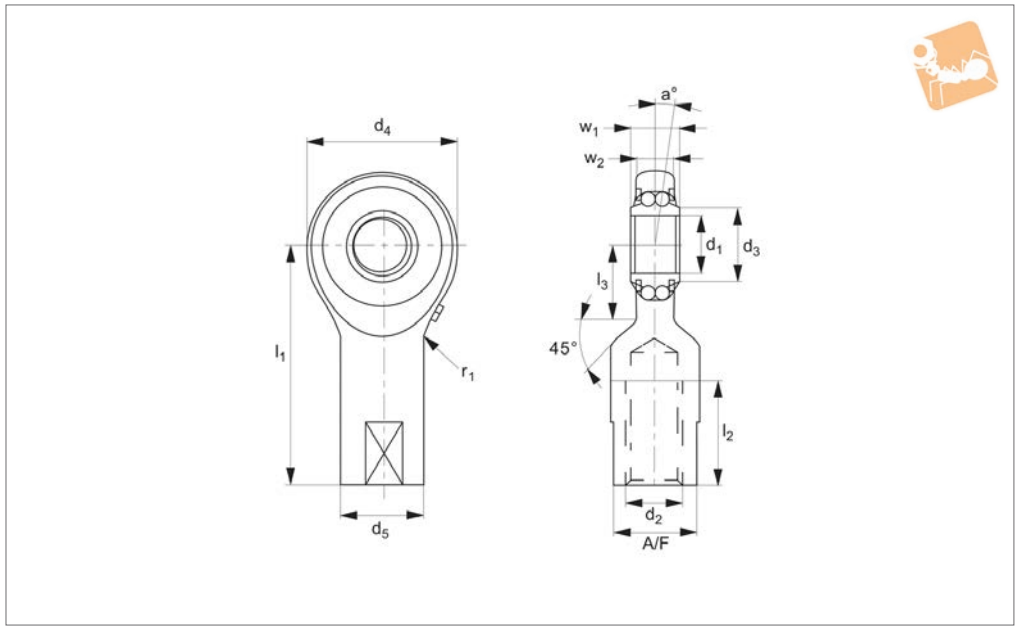
Order No.	w_1	w_2	A/F	a °	Calc. factor Y	Dyn. load C kN max.	Calc. factor Y_0	Speed rpm max.	Static load C_0 kN max.
R3557.R006	9	6.75	11	8.0	2.09	2.8	2.19	1350	0.7
R3557.R008	12	9.00	14	8.5	1.80	4.0	1.89	1300	1.0
R3557.R010	14	10.50	17	8.0	1.90	4.5	1.81	1225	1.5
R3557.R012	16	12.00	19	7.5	1.74	5.6	1.82	1125	2.0

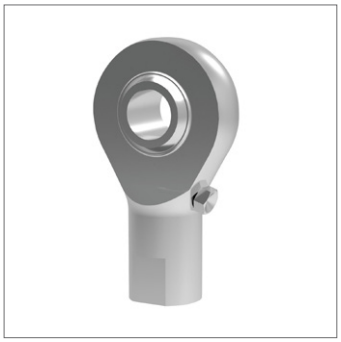
Heavy-Duty Rod Ends - Female

with integral ball bearing



Order No.	w_1	w_2	A/F	a °	Calc. factor Y	Dyn. load C kN max.	Calc. factor Y_0	Speed rpm max.	Static load C_0 kN max.
R3557.R014	19	13.50	22	6.0	2.36	7.1	2.48	1025	2.9
R3557.R016	21	15.00	22	8.0	2.24	7.9	2.35	975	3.5
R3557.R018	23	16.50	27	8.5	2.21	11.0	2.31	900	5.7
R3557.R020	25	18.00	30	7.0	2.46	14.2	2.58	825	7.5
R3557.R022	28	20.00	32	8.0	2.35	14.2	2.24	725	7.5
R3557.R025	31	22.00	30	5.0	2.02	14.2	2.12	600	7.5
R3557.R030	37	25.00	41	7.5	2.24	14.2	2.35	450	7.5
R3557.L006	9	6.75	11	8.0	2.09	2.8	2.19	1350	0.7
R3557.L008	12	9.00	14	8.5	1.80	4.0	1.89	1300	1.0
R3557.L010	14	10.50	17	8.0	1.90	4.5	1.81	1225	1.5
R3557.L012	16	12.00	19	7.5	1.74	5.6	1.82	1125	2.0
R3557.L016	21	15.00	22	8.0	2.24	7.9	2.35	1025	3.5
R3557.L014	19	13.50	22	6.0	2.36	7.1	2.48	975	2.9
R3557.L018	23	16.50	27	8.5	2.21	11.0	2.31	900	5.7
R3557.L020	25	18.00	30	7.0	2.46	14.2	2.58	825	7.5
R3557.L022	28	20.00	32	8.0	2.35	14.2	2.24	725	7.5
R3557.L025	31	22.00	30	5.0	2.02	14.2	2.12	600	7.5
R3557.L030	37	25.00	41	7.5	2.24	14.2	2.35	425	7.5





R3560

Material
Rod end housing - forged steel, tempered, case hardened bearing race, ground and lapped, surface galvanized.
Inner ring - ball bearing steel, hardened, superfine ground.

Lubrication - calcium-complex-soap-grease, temp range -20°C to +120°C, lubrication nipple - DIN 3405 D1/A.

Technical Notes
Low maintenance, for tolerances see technical pages.

Tips
Standard thread is right hand thread.

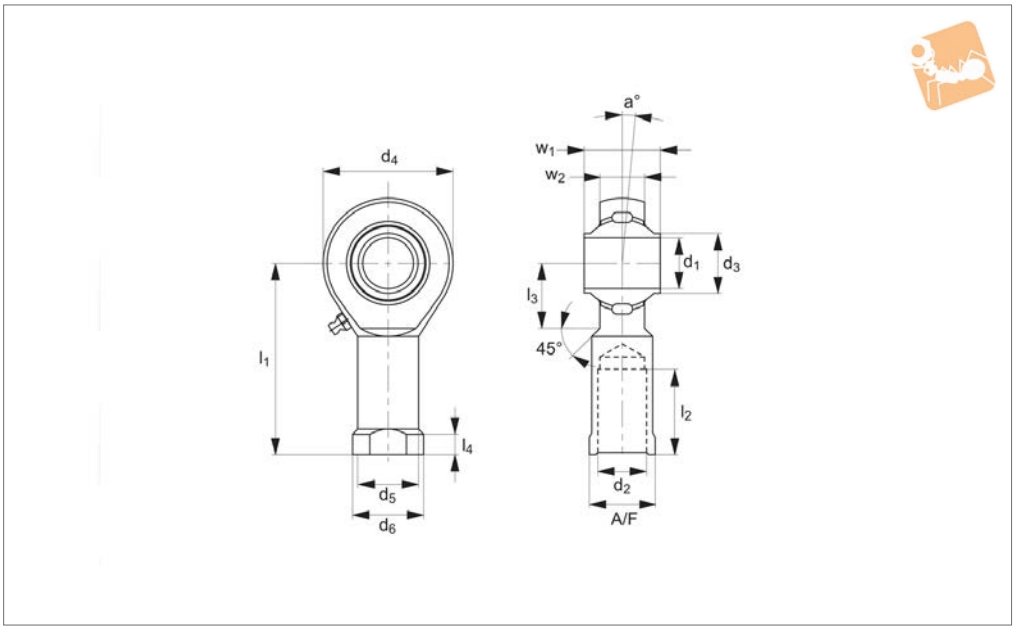
Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	l_2	l_3	w_1	w_2	R	Weight g
R3560.R010	Right	10	38	M8	13.0	30	15	17	14.5	13.0	9	10	63
R3560.R015	Right	15	51	M12	17.5	40	19	24	20.0	16.5	12	15	140
R3560.R020	Right	20	65	M16	24.0	48	22	32	22.0	20.5	15	20	223
R3560.L010	Left	10	38	M8	13.0	30	15	917	14.5	13.0	9	10	63
R3560.L015	Left	15	51	M12	17.5	40	19	24	20.0	16.5	12	15	140
R3560.L020	Left	20	65	M16	24.0	48	22	32	22.0	20.5	15	20	223

Order No.	A/F	a °	Calc. factor Y	Dyn. load C kN max.	Calc. factor Y_0	Speed rpm max.	Static load C_0 kN max.
R3560.R010	13	7.0	1.90	2.6	1.81	1225	1.0
R3560.R015	17	7.0	2.30	5.0	2.41	1025	1.9
R3560.R020	19	6.5	2.34	6.1	2.45	850	3.0
R3560.L010	13	7.0	1.90	2.6	1.81	1225	1.0
R3560.L015	17	7.0	2.30	5.0	2.41	1025	1.9
R3560.L020	19	6.5	2.34	6.1	2.45	850	3.0

Heavy-Duty Rod Ends - Female
with integral roller bearing



R3562



Material
Rod end housing - forged steel, tempered, case hardened bearing race, ground and lapped, surface galvanized.
Inner ring - ball bearing steel, hardened, superfine ground.
Lubrication - calcium-complex-soap-grease, temp. range -20°C to +120°C, lubrication nipple - DIN 71412 HZ.

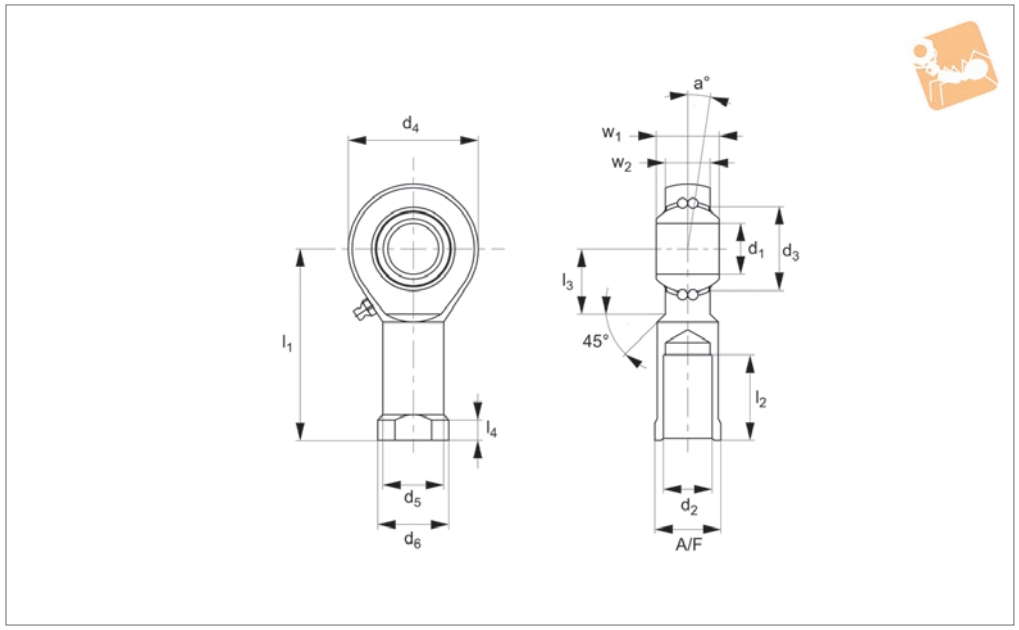
Technical Notes
Low maintenance. Sizes according to DIN ISO 12240-4, series K, for tolerances see technical pages.

Tips
Standard thread is right hand thread.

Important Notes
*Denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	d_6	l_2	Weight g
R3562.R012	Right	12	50.0	M12	14.5	32	17.5	22	22.0	109
R3562.R016	Right	16	64.0	M16	19.0	42	22.0	27	28.0	220
R3562.R020	Right	20	77.0	M20x1,5*	24.5	50	27.5	34	33.0	361
R3562.R025	Right	25	94.0	M24x2*	29.5	64	30.0	35	42.0	565
R3562.R030	Right	30	110.0	M30x2*	34.5	70	40.0	50	51.0	1000
R3562.L012	Left	12	50.0	M12	14.5	32	17.5	22	22.0	109
R3562.L016	Left	16	64.0	M16	19.0	42	22.0	27	28.0	220
R3562.L020	Left	20	77.0	M20x1,5*	24.5	50	27.5	34	33.0	361
R3562.L025	Left	25	94.0	M24x2*	29.5	64	30.0	35	42.0	565
R3562.L030	Left	30	110.0	M30x2*	34.5	70	40.0	50	51.0	1000

Order No.	l_3	l_4	w_1	w_2	A/F	a °	Dyn. load C kN max.	Speed rpm max.	Static load C_0 kN max.
R3562.R012	16	6.5	16	12	19	7.5	10.3	1125	6.6
R3562.R016	22	8.0	21	15	22	7.0	13.3	975	8.9
R3562.R020	26	10.0	25	18	30	7.0	17.0	825	11.7
R3562.R025	32	10.0	31	22	30	5.0	24.9	600	18.5
R3562.R030	35	15.0	37	25	41	7.5	32.5	450	24.9
R3562.L012	16	6.5	16	12	19	7.5	10.3	1125	6.6
R3562.L016	22	8.0	21	15	22	7.0	13.3	975	8.9
R3562.L020	26	10.0	25	18	30	7.0	17.0	825	11.7
R3562.L025	32	10.0	31	22	30	5.0	24.9	600	18.5
R3562.L030	35	15.0	37	25	41	7.5	32.5	450	24.9





R3564

Material
Rod end housing - stainless forged steel (AISI 304), case hardened bearing race
Inner ring - ball bearing stainless steel (AISI 304), hardened, polished.
Lubrication - aluminium-complex-soap-grease, temp range -45°C to +120°C.

Lubrication nipple - DIN 3405 D1/A (until size 10) DIN 71412 H1 (from size 12).

Technical Notes
Low maintenance, sizes according to DIN ISO 12240-4 series K, for tolerances see technical pages.

Tips
Standard thread is right hand thread.

Important Notes
*Denotes fine pitch thread.

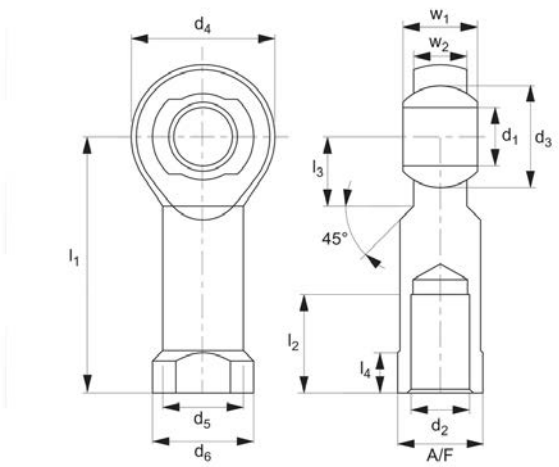
Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	d_6	l_2	l_3	l_4	Weight g
R3564.R006	Right	6	30	M6	9.0	20	10.0	13	12	10	5.0	24
R3564.R008	Right	8	36	M8	10.5	24	12.5	16	16	12	5.0	44
R3564.R010	Right	10	43	M10	12.0	28	15.0	19	20	15	6.5	72
R3564.R012	Right	12	50	M12	14.5	32	17.5	22	22	16	6.5	107
R3564.R016	Right	16	64	M16	19.0	42	22.0	27	28	22	8.0	224
R3564.R020	Right	20	77	M20X1,5*	24.5	50	27.5	34	33	26	10.0	367
R3564.L006	Left	6	30	M6	9.0	20	10.0	13	12	10	5.0	24
R3564.L008	Left	8	36	M8	10.5	24	12.5	16	16	12	5.0	44
R3564.L010	Left	10	43	M10	12.0	28	15.0	19	20	15	6.5	72
R3564.L012	Left	12	50	M12	14.5	32	17.5	22	22	16	6.5	107
R3564.L016	Left	16	64	M16	19.0	42	22.0	27	28	22	8.0	224
R3564.L020	Left	20	77	M20X1,5*	24.5	50	27.5	34	33	26	10.0	367

Order No.	w_1	w_2	A/F	a °	Calc. factor Y	Dyn. load C kN max.	Calc. factor Y_0	Speed rpm max.	Static load C_0 kN max.
R3564.R006	9	6.75	11	8.0	2.09	1.9	2.19	1350	0.5
R3564.R008	12	9.00	14	8.5	1.80	2.8	1.89	1300	0.7
R3564.R010	14	10.50	17	8.0	1.90	3.1	1.81	1225	1.0
R3564.R012	16	12.00	19	7.5	1.74	3.5	1.82	1125	1.3
R3564.R016	21	15.00	22	8.0	2.24	4.3	2.35	975	1.6
R3564.R020	25	18.00	30	7.0	2.46	5.4	2.58	825	2.3
R3564.L006	9	6.75	11	8.0	2.09	1.9	2.19	13550	0.5
R3564.L008	12	9.00	14	8.5	1.80	2.8	1.89	1300	0.7
R3564.L010	14	10.50	17	8.0	1.90	3.1	1.81	1225	1.0
R3564.L012	16	12.00	19	7.5	1.74	3.5	1.82	1125	1.3
R3564.L016	21	15.00	22	8.0	2.24	4.3	2.35	975	1.6
R3564.L020	25	18.00	30	7.0	2.46	5.4	2.58	825	2.3

Stainless Heavy-Duty Rod Ends -
with integral spherical plain bearing



R3566



Material
Rod end housing: Stainless steel DIN 12240-4 (AISI 304).
Joint Ball: Stainless steel 1.4412, hardened and ground, surface polished.
Race: nylon/teflon/glass compound.

Technical Notes
Maintenance free, for tolerances see technical page 123, standard thread is right hand thread.

Tips
A2 stainless steel provides good corrosion resistance to a wide range of atmospheric conditions and corrosive media.
It is considered resistant to potable water.

Important Notes
*Denotes fine pitch thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	d_6	l_2	Weight g
R3566.R004	Right	5	27	M4	11.11	18	9.0	11	10	18
R3566.R005	Right	5	27	M5	11.11	18	9.0	11	10	18
R3566.R006	Right	6	30	M6	12.70	20	10.0	13	12	24
R3566.R008	Right	8	36	M8	15.87	24	12.5	16	16	45
R3566.R010	Right	10	43	M10	19.05	28	15.0	19	20	74
R3566.R011	Right	10	43	M10x1,25*	19.05	28	15.0	19	20	74
R3566.R012	Right	12	50	M12	22.22	32	17.5	22	22	109
R3566.R013	Right	12	50	M12x1,25*	22.22	32	17.5	22	22	109
R3566.R014	Right	14	57	M14	25.40	36	20.0	25	25	155
R3566.R016	Right	16	64	M16	28.57	42	22.0	27	28	233
R3566.R017	Right	16	64	M16x1,5*	28.57	42	22.0	27	28	233
R3566.R018	Right	18	71	M18x1,5*	31.75	46	25.0	31	32	310
R3566.R020	Right	20	77	M20x1,5*	34.92	50	27.5	34	33	386
R3566.R022	Right	22	84	M22x1,5*	38.10	54	30.0	38	37	520
R3566.R025	Right	25	94	M24x2*	42.85	60	33.5	42	42	705
R3566.R030	Right	30	110	M30x2*	50.80	70	40.0	50	51	1084
R3566.R031	Right	30	110	M27x2*	50.80	70	40.0	50	51	1084
R3566.L004	Left	5	27	M4	11.11	18	9.0	11	10	18
R3566.L005	Left	5	27	M5	11.11	18	9.0	11	10	18
R3566.L006	Left	6	30	M6	12.70	20	10.0	13	12	24
R3566.L008	Left	8	36	M8	15.87	24	12.5	16	16	45
R3566.L010	Left	10	43	M10	19.05	28	15.0	19	20	74
R3566.L011	Left	10	43	M10x1,25*	19.05	28	15.0	19	20	74
R3566.L012	Left	12	50	M12	22.22	32	17.5	22	22	109
R3566.L013	Left	12	50	M12x1,25*	22.22	32	17.5	22	22	109
R3566.L014	Left	14	57	M14	25.40	36	20.0	25	25	155
R3566.L016	Left	16	64	M16	28.57	42	22.0	27	28	233
R3566.L017	Left	16	64	M16x1,5*	28.57	42	22.0	27	28	233
R3566.L018	Left	18	71	M18x1,5*	31.75	46	25.0	31	32	310

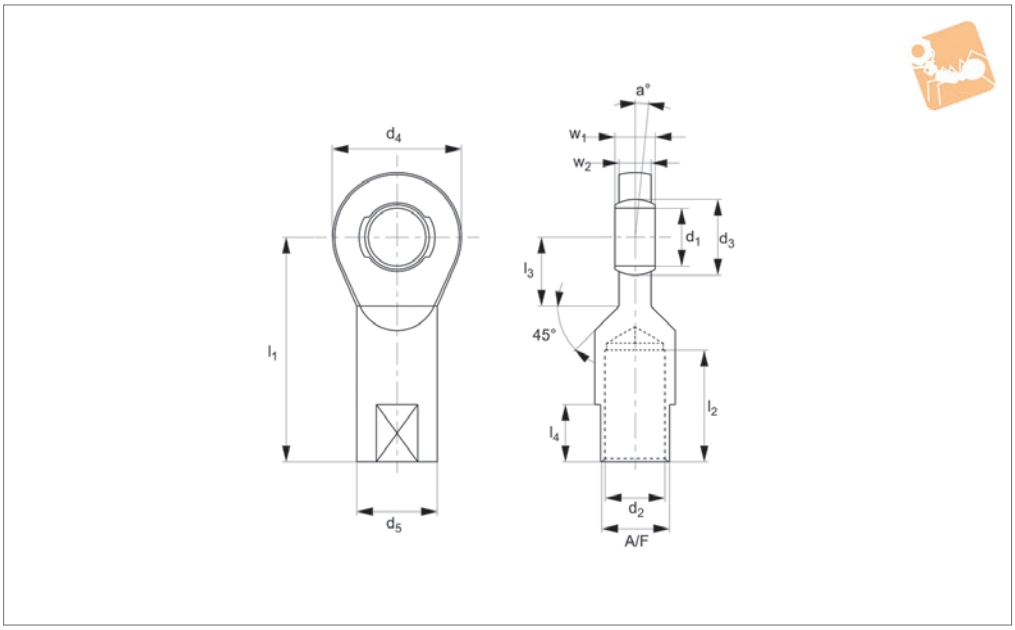
Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	d_6	l_2	Weight g
R3566.L020	Left	20	77	M20x1,5*	34.92	50	27.5	34	33	386
R3566.L022	Left	22	84	M22x1,5*	38.10	54	30.0	38	37	520
R3566.L025	Left	25	94	M24x2*	42.85	60	33.5	42	42	705
R3566.L030	Left	30	110	M30x2*	50.80	70	40.0	50	51	1084
R3566.L031	Left	30	110	M27x2*	50.80	70	40.0	50	51	1084

Order No.	l_3	l_4	w_1	w_2	A/F	$a_{°1}$	$a_{°2}$	Dyn. load C kN max.	Static load C_0 kN max.
R3566.R004	10	4.0	8	6.00	9	13.0	7.5	3.9	7.9
R3566.R005	10	4.0	8	6.00	9	13.0	7.5	3.9	7.9
R3566.R006	12	5.0	9	6.75	11	13.0	6.5	4.6	9.4
R3566.R008	12	5.0	12	9.00	14	14.5	7.5	7.0	14.1
R3566.R010	15	6.5	14	10.50	17	13.5	8.0	10.4	20.1
R3566.R011	15	6.5	14	10.50	17	13.5	8.0	10.4	20.1
R3566.R012	16	6.5	16	12.00	19	13.0	8.0	12.4	24.5
R3566.R013	16	6.5	16	12.00	19	13.0	8.0	12.4	24.5
R3566.R014	20	8.0	19	13.50	22	16.0	9.5	15.4	30.4
R3566.R016	22	8.0	21	15.00	22	15.5	8.5	22.4	43.7
R3566.R017	22	8.0	21	15.00	22	15.5	8.5	22.4	43.7
R3566.R018	24	10.0	23	16.50	27	15.0	9.5	26.3	51.2
R3566.R020	26	10.0	25	18.00	30	14.5	9.0	30.8	60.3
R3566.R022	26	12.0	28	20.00	32	15.5	10.0	38.2	70.0
R3566.R025	30	12.0	31	22.00	36	15.0	10.0	45.4	87.0
R3566.R030	35	15.0	37	25.00	41	17.0	10.5	55.0	106.8
R3566.R031	35	15.0	37	25.0	41	17.0	10.5	55.0	106.8
R3566.L004	10	4.0	8	6.00	9	13.0	7.5	3.9	7.9
R3566.L005	10	4.0	8	6.00	9	13.0	7.5	3.9	7.9
R3566.L006	12	5.0	9	6.75	11	13.0	6.5	4.6	9.4
R3566.L008	12	5.0	12	9.00	14	14.5	7.5	7.0	14.1
R3566.L010	15	6.5	14	10.50	17	13.5	8.0	10.4	20.1
R3566.L011	15	6.5	14	10.50	17	13.5	8.0	10.4	20.1
R3566.L012	16	6.5	16	12.00	19	13.0	8.0	12.4	24.5
R3566.L013	16	6.5	16	12.00	19	13.0	8.0	12.4	24.5
R3566.L014	20	8.0	19	13.50	22	16.0	9.5	15.4	30.4
R3566.L016	22	8.0	21	15.00	22	15.5	8.5	22.4	43.7
R3566.L017	22	8.0	21	15.00	22	15.5	8.5	22.4	43.7
R3566.L018	24	10.0	23	16.50	27	15.0	9.5	26.3	51.2
R3566.L020	26	10.0	25	18.00	30	14.5	9.0	30.8	60.3
R3566.L022	26	12.0	28	20.00	32	15.5	10.0	38.2	70.0
R3566.L025	30	12.0	31	22.00	36	15.0	10.0	45.4	87.0
R3566.L030	35	15.0	37	25.00	41	17.0	10.5	55.0	106.8
R3566.L031	35	15.0	37	25.00	41	17.0	10.5	55.0	106.8

Stainless Heavy-Duty Rod Ends -
with integral spherical plain bearing



R3568



Material
Rod end housing - forged stainless steel DIN 1.4301 (AISI 304).
Joint ball - stainless steel (AISI 304), hardened, polished and ground
Race - polyamid-PTFE-fibreglass-compound.

Technical Notes
Maintenance free, sizes according to DIN ISO 12240-4, series E, for tolerances technical pages.

Tips
Standard thread is right hand thread.

Important Notes
*Denotes fine pitch thread

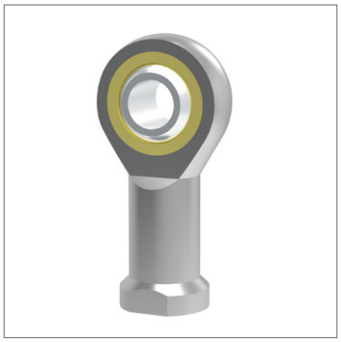
Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	l_2	Weight g
R3568.R006	Right	6	30	M6	10.0	20	10	12	17
R3568.R008	Right	8	36	M8	13.0	23	13	16	31
R3568.R010	Right	10	43	M10	16.0	28	16	20	54
R3568.R011	Right	10	43	M10x1,25*	16.0	28	16	20	54
R3568.R012	Right	12	50	M12	18.0	32	19	22	86
R3568.R013	Right	12	50	M12x1,25*	18.0	32	19	22	86
R3568.R015	Right	15	61	M14	22.0	38	22	25	142
R3568.R017	Right	17	67	M16	25.0	44	25	28	208
R3568.R020	Right	20	77	M20x1,5*	29.0	51	28	33	290
R3568.R025	Right	25	94	M24x2*	35.5	62	35	42	573
R3568.R030	Right	30	110	M30x2*	40.7	70	42	51	908
R3568.R035	Right	35	125	M36x3*	47.0	82	50	61	1230
R3568.R036	Right	35	130	M36x2*	47.0	82	50	66	1230
R3568.R040	Right	40	145	M42x3*	53.0	92	58	71	2075
R3568.R041	Right	40	142	M39x3*	53.0	92	52	66	1880
R3568.R045	Right	45	165	M45x3*	60.0	102	67	76	3085
R3568.R046	Right	45	145	M42x3*	60.0	102	58	66	2500
R3568.R050	Right	50	195	M52x3*	66.0	112	70	89	3975
R3568.R051	Right	50	160	M45x3*	66.0	112	62	69	3200
R3568.R060	Right	60	225	M60x4*	80.0	135	82	103	7300
R3568.R061	Right	60	175	M52x3*	80.0	135	71	71	5900
R3568.L006	Left	6	30	M6	10.0	20	10	12	17
R3568.L008	Left	8	36	M8	13.0	23	13	16	31
R3568.L010	Left	10	43	M10	16.0	28	16	20	54
R3568.L011	Left	10	43	M10x1,25*	16.0	28	16	20	54
R3568.L012	Left	12	50	M12	18.0	32	19	22	86
R3568.L013	Left	12	50	M12x1,25*	18.0	32	19	22	86
R3568.L015	Left	15	61	M14	22.0	38	22	25	142
R3568.L017	Left	17	67	M16	25.0	44	25	28	208
R3568.L020	Left	20	77	M20x1,5*	29.0	51	28	33	290
R3568.L025	Left	25	94	M24x2*	35.5	62	35	42	573
R3568.L030	Left	30	110	M30x2*	40.7	70	42	51	908

Order No.	Thread hand	d_1	l_1	d_2	d_3	d_4	d_5	l_2	Weight g
R3568.L035	Left	35	125	M36x3*	47.0	82	50	61	1230
R3568.L036	Left	35	130	M36x2*	47.0	82	50	66	1230
R3568.L040	Left	40	145	M42x3*	53.0	92	58	71	2075
R3568.L041	Left	40	142	M39x3*	53.0	92	52	66	1880
R3568.L045	Left	45	165	M45x3*	60.0	102	67	76	3085
R3568.L046	Left	45	145	M42x3*	60.0	102	58	66	2500
R3568.L050	Left	50	195	M52x3*	66.0	112	70	89	3975
R3568.L051	Left	50	160	M45x3*	66.0	112	62	69	3200
R3568.L060	Left	60	225	M60x4*	80.0	135	82	103	7300
R3568.L061	Left	60	175	M52x3*	80.0	135	71	71	5900

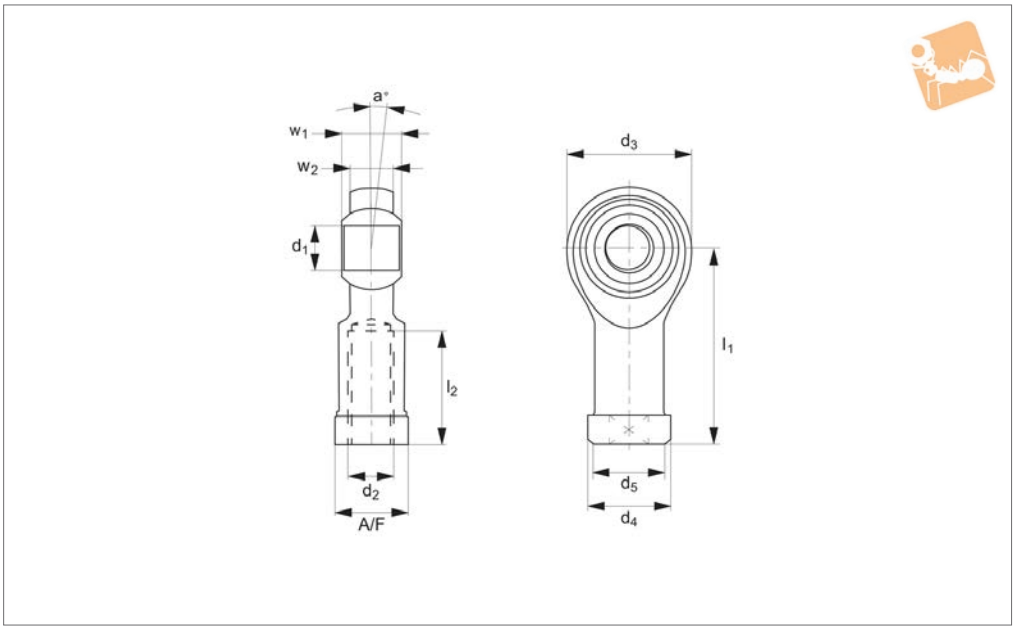
Order No.	l_3	l_4	w_1	w_2	A/F	a °	Dyn. load C kN max.	Static load C_0 kN max.
R3568.R006	11	-	6	4	9	13.0	2.5	4.8
R3568.R008	12	-	8	5	11	15.0	4.2	5.9
R3568.R010	13	-	9	6	14	12.0	6.4	8.5
R3568.R011	13	-	9	6	14	12.0	6.4	8.5
R3568.R012	15	-	10	7	17	10.5	9.2	12.6
R3568.R013	15	-	10	7	17	10.5	9.2	12.6
R3568.R015	18	-	12	9	19	8.5	13.4	18.5
R3568.R017	20	-	14	10	22	10.0	19.2	26.0
R3568.R020	23	-	16	12	24	9.0	25.2	34.5
R3568.R025	30	-	20	16	30	7.5	42.4	54.0
R3568.R030	32	-	22	18	36	6.0	54.0	63.8
R3568.R035	38	36	25	20	41	6.5	70.4	81.4
R3568.R036	38	41	25	20	41	6.5	70.4	81.4
R3568.R040	42	42	28	22	50	7.0	86.0	100.2
R3568.R041	42	39	28	22	46	7.0	86.0	100.2
R3568.R045	50	45	32	25	55	7.5	86.0	124.3
R3568.R046	50	42	32	25	50	7.5	107.0	124.3
R3568.R050	60	52	35	28	60	6.5	132.0	152.6
R3568.R051	60	45	35	28	55	6.5	132.0	152.6
R3568.R060	70	60	44	36	70	6.5	208.0	239.5
R3568.R061	70	52	44	36	60	6.5	208.0	239.5
R3568.L006	11	-	6	4	9	13.0	2.5	4.8
R3568.L008	12	-	8	5	11	15.0	4.2	5.9
R3568.L010	13	-	9	6	14	12.0	6.4	8.5
R3568.L011	13	-	9	6	14	12.0	6.4	8.5
R3568.L012	15	-	10	7	17	10.5	9.2	12.6
R3568.L013	15	-	10	7	17	10.5	9.2	12.6
R3568.L015	18	-	12	9	19	8.5	13.4	18.5
R3568.L017	20	-	14	10	22	10.0	19.2	26.0
R3568.L020	23	-	16	12	24	9.0	25.2	34.5
R3568.L025	30	-	20	16	30	7.5	42.4	54.0
R3568.L030	32	-	22	18	36	6.0	54.0	63.8
R3568.L035	38	36	25	20	41	6.5	70.4	81.4
R3568.L036	38	41	25	20	41	6.5	70.4	81.4
R3568.L040	42	42	28	22	50	7.0	86.0	100.2
R3568.L041	42	39	28	22	46	7.0	86.0	100.2
R3568.L045	50	45	32	25	55	7.5	107.0	124.3
R3568.L046	50	42	32	25	50	7.5	107.0	124.3
R3568.L050	60	52	35	28	60	6.5	132.0	152.6
R3568.L051	60	45	35	28	55	6.5	132.0	152.6
R3568.L060	70	60	44	36	70	6.5	208.0	239.5
R3568.L061	70	52	44	36	60	6.5	208.0	239.5

Low Cost Rod End - Female

with teflon bearing race



R3570



Material

Ball: low carbon steel, surface hardened. Silver zinc plated.
Housing: low carbon steel, zinc plated for corrosion resistance.
Bearing race: teflon.
Brass bearing with PTFE composite lining.

Technical Notes

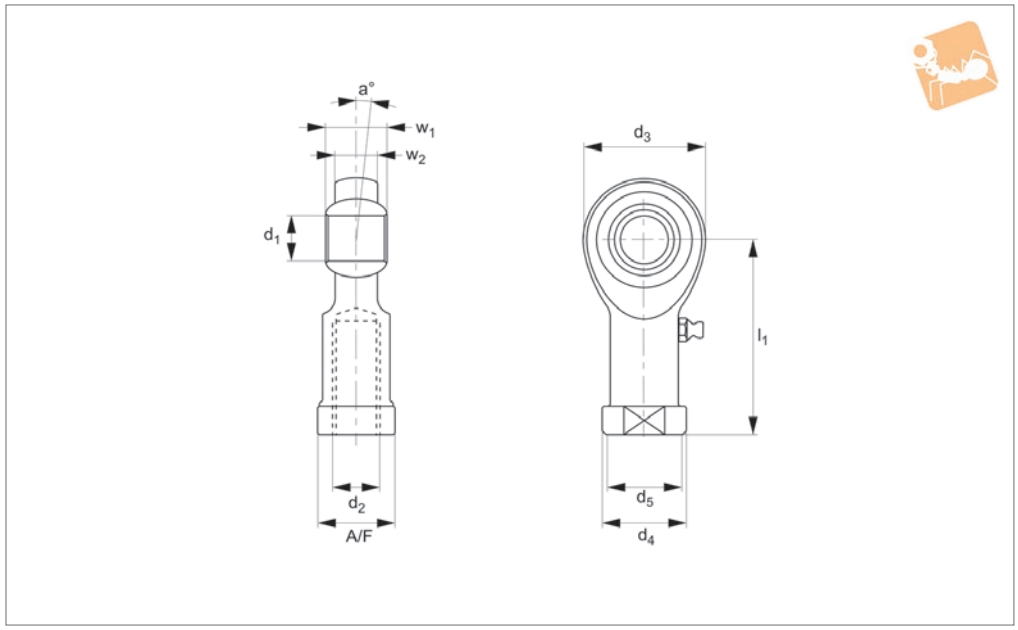
Standard thread is right hand thread.

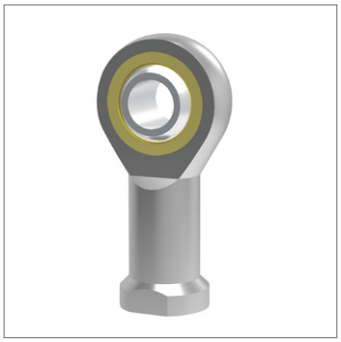
Important Notes

Housing styles are subject to change.

Order No.	Thread hand	d_1 tol. H7	l_1	d_2	d_3	d_4	d_5
R3570.R005	Right	5	27	M 5	18	11	9.0
R3570.R006	Right	6	30	M 6	20	13	10.0
R3570.R008	Right	8	36	M 8	24	16	12.5
R3570.R010	Right	10	43	M 10	28	19	15.0
R3570.R012	Right	12	50	M 12	34	22	17.5
R3570.R016	Right	16	64	M 16	42	27	22.0
R3570.L005	Left	5	27	M 5	18	11	9.0
R3570.L006	Left	6	30	M 6	20	13	10.0
R3570.L008	Left	8	36	M 8	24	16	12.5
R3570.L010	Left	10	43	M 10	28	19	15.0
R3570.L012	Left	12	50	M 12	34	22	17.50
R3570.L016	Left	16	64	M 16	42	27	22.0

Order No.	l_2	w_1	w_2	A/F	a °	Static load C_0 kN max.
R3570.R005	10	8	6.00	9	13	4.8
R3570.R006	12	9	6.75	11	13	6.2
R3570.R008	16	12	9.00	13	14	10.3
R3570.R010	20	14	10.50	17	13	14.4
R3570.R012	22	16	12.00	19	13	19.2
R3570.R016	28	21	15.00	22	15	31.2
R3570.L005	10	8	6.00	9	13	4.8
R3570.L006	12	9	6.75	11	13	6.2
R3570.L008	16	12	9.00	13	14	10.3
R3570.L010	20	14	10.50	17	13	14.4
R3570.L012	22	16	12.00	19	13	19.2
R3570.L016	28	21	15.00	22	15	31.2





R3572.F

Material
Ball: low carbon steel, surface hardened.
Silver zinc plated.
Housing: low carbon steel, zinc plated for corrosion resistance.

Technical Notes
Standard thread is right hand thread.

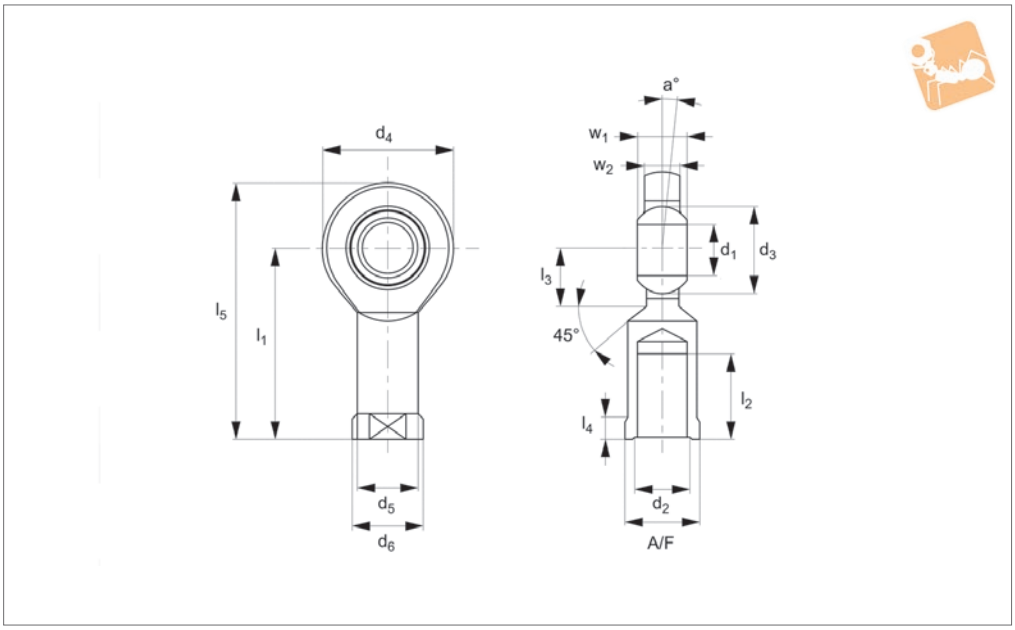
Order No.	Thread hand	d_1 tol. H7	l_1	d_2	d_3	d_4	d_5	l_2	l_3	w_1	w_2	A/F	a °	Static load C_0 kN max.
R3572.FL005	Left	5	27	M 5	16	11	8.5	10	35	8	6.0	9	13	4.6
R3572.FL006	Left	6	30	M 6	18	13	10.0	12	39	9	6.75	11	13	5.8
R3572.FL008	Left	8	36	M 8	22	16	12.5	16	47	12	9.0	14	14	9.3
R3572.FL010	Left	10	43	M10	26	19	15.0	20	56	14	10.5	17	13	11.6
R3572.FL012	Left	12	50	M12	30	22	17.5	22	65	16	12.0	19	13	13.6
R3572.FL013	Left	12	50	M12x1,25	30	22	17.5	22	65	16	12.0	19	13	13.6
R3572.FL014	Left	14	57	M14	34	25	20.0	25	74	19	13.5	22	16	19.2
R3572.FL016	Left	16	64	M16	40	27	22.0	28	84	21	15.0	24	15	22.8
R3572.FL017	Left	16	64	M16x1,5	40	27	22.0	28	84	21	15.0	24	15	22.8
R3572.FL018	Left	18	71	M18x1,5	44	31	25.0	32	93	23	16.5	27	15	34.0
R3572.FL020	Left	20	77	M20x1,5	50	34	27.5	33	102	25	18.0	30	14	42.0
R3572.FL022	Left	22	84	M22x1,5	54	38	30.0	37	111	28	20.0	32	15	45.6
R3572.FL025	Left	25	94	M24x2	60	42	33.5	42	124	31	22.0	36	15	54.4
R3572.FL030	Left	30	110	M30x2	70	50	40.0	51	145	37	25.0	41	17	70.4

Low Cost Rod End - Female

with integral spherical plain bearings



R3574



Material

Housing: Heat treated steel, surface galvanized, free of Cr VI. Outer ring: heat treated steel,
hardened, single split, bonded with PTFE fabric.

Joint Ball: Ball bearing steel, hardened, ground, polished up to size 12, hard chromium plated.

Technical Notes

Standard thread is right hand thread, series E, maintenance free.

Tips

For tolerances see technical page 123

Important Notes

*Denotes fine pitch thread.

Order No.	Thread hand	d_1 tol. K6	l_1	d_2	d_3	d_4	d_5	d_6	Weight g
R3574.R006	Right	6	30	M6	10	21	10.0	13	21
R3574.R008	Right	8	36	M8	13	24	12.5	16	39
R3574.R010	Right	10	43	M10	16	29	15	19	61
R3574.R012	Right	12	50	M12	18	34	17.5	22	96
R3574.R015	Right	15	61	M14	22	40	21	26	180
R3574.R017	Right	17	67	M16	25	46	24	30	220
R3574.R020	Right	20	77	M20x1,5*	29	53	27.5	35	350
R3574.R025	Right	25	94	M24x2*	35.5	64	33.5	42	640
R3574.R030	Right	30	110	M30x2*	40.7	73	40	50	930
R3574.R035	Right	35	125	M36x3*	47	82	47	58	1300
R3574.R040	Right	40	142	M39x3*	53	92	52	65	2000
R3574.R041	Right	40	142	M42x3*	53	92	52	65	1960
R3574.R045	Right	45	145	M42x3*	60	102	58	70	2500
R3574.R046	Right	45	145	M45x3*	60	102	58	70	2440
R3574.R050	Right	50	160	M45x3*	66	112	62	75	3500
R3574.R051	Right	50	160	M52x3*	66	112	62	75	3400
R3574.R060	Right	60	175	M52x3*	80	135	70	88	5500
R3574.R061	Right	60	175	M60x4*	80	135	70	88	5380
R3574.R070	Right	70	200	M56x4*	92	160	80	98	8600
R3574.R071	Right	70	200	M72x4*	92	160	80	98	8420
R3574.R080	Right	80	230	M64x4*	105	180	95	110	12000
R3574.R081	Right	80	230	M80x4*	110	180	95	110	11800
R3574.L006	Left	6	30	M6	10	21	10.0	13	21
R3574.L008	Left	8	36	M8	13	24	12.5	16	39
R3574.L010	Left	10	43	M10	16	29	15	19	61
R3574.L012	Left	12	50	M12	18	34	17.5	22	96
R3574.L015	Left	15	61	M14	22	40	21	26	180
R3574.L017	Left	17	67	M16	25	46	24	30	220
R3574.L020	Left	20	77	M20x1,5*	29	53	27.5	35	350
R3574.L025	Left	25	94	M24x2*	35.5	64	33.5	42	640
R3574.L030	Left	30	110	M30x2*	40.7	73	40	50	930
R3574.L035	Left	35	125	M36x3*	47	82	47	58	1300

Low Cost Rod End - Female

with integral spherical plain bearings

Order No.	Thread hand	d_1 tol. K6	l_1	d_2	d_3	d_4	d_5	d_6	Weight g
R3574.L040	Left	40	142	M39x3*	53	92	52	65	2000
R3574.L041	Left	40	142	M42x3*	53	92	52	65	1960
R3574.L045	Left	45	145	M42x3*	60	102	58	70	2500
R3574.L046	Left	45	145	M45x3*	60	102	58	70	2440
R3574.L050	Left	50	160	M45x3*	66	112	62	75	3500
R3574.L051	Left	50	160	M52x3*	66	112	62	75	3400
R3574.L060	Left	60	175	M52x3*	80	135	70	88	5500
R3574.L061	Left	60	175	M60x4*	80	135	70	88	5380
R3574.L070	Left	70	200	M56x4*	92	160	80	98	8600
R3574.L071	Left	70	200	M72x4*	92	160	80	98	8420
R3574.L080	Left	80	230	M64x4*	105	180	95	110	12000
R3574.L081	Left	80	230	M80x4*	110	180	95	110	11800

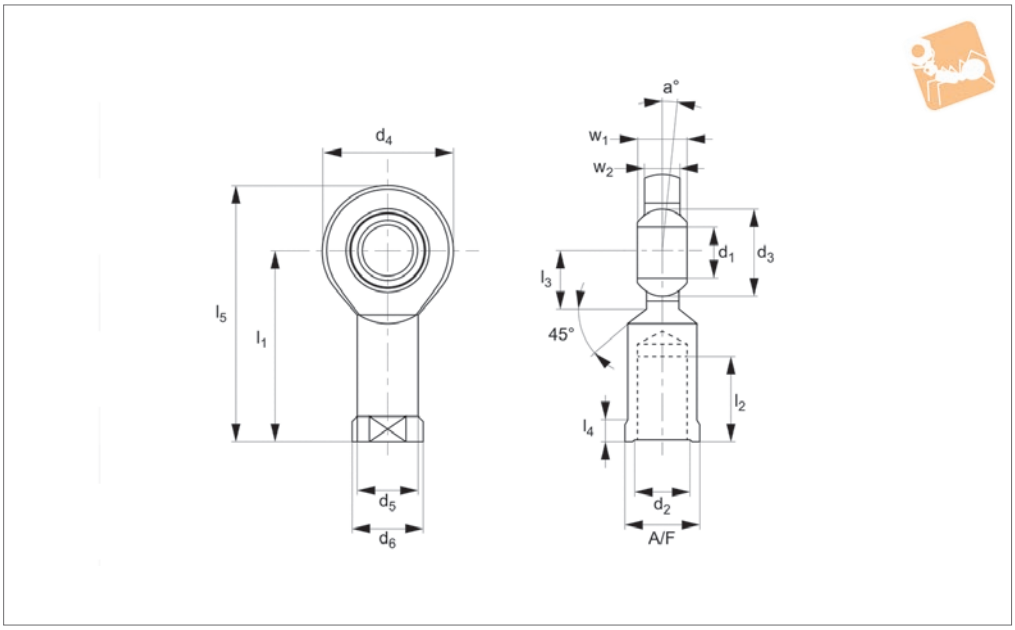
Order No.	l_2	l_3	l_4	l_5	w_1	w_2	A/F	a °	Static load C_0 kN max.
R3574.R006	11	12	5	40.5	6	4.4	11	13	6.6
R3574.R008	15	14	5	48	8	6	14	15	10.3
R3574.R010	20	15	6.5	57.5	9	7	17	12	14.1
R3574.R012	23	18	6.5	67	10	8	19	11	19.6
R3574.R015	30	20	8	81	12	10	22	8	28.8
R3574.R017	34	23	10	90	14	11	27	10	36.0
R3574.R020	40	27	10	103.5	16	13	32	9	48.0
R3574.R025	48	32	12	126	20	17	36	7	66.4
R3574.R030	56	37	15	146.5	22	19	41	6	88.0
R3574.R035	60	42	15	166	25	21	50	6	117
R3574.R040	65	48	18	188	28	23	55	7	144
R3574.R041	65	48	18	188	28	23	55	7	144
R3574.R045	65	52	20	196	32	27	60	7	192
R3574.R046	65	52	50	196	32	27	60	7	192
R3574.R050	68	60	20	216	35	30	65	6	232
R3574.R051	68	60	20	216	35	30	65	6	232
R3574.R060	70	75	20	242.5	44	38	75	6	360
R3574.R061	70	75	20	242.5	44	38	75	6	360
R3574.R070	80	87	20	280	49	42	85	6	488
R3574.R071	80	87	20	280	49	42	85	6	488
R3574.R080	85	100	24	320	55	47	100	6	600
R3574.R081	85	100	25	320	55	47	100	6	600
R3574.L006	11	12	5	40.5	6	4.4	11	13	6.6
R3574.L008	15	14	5	48	8	6	14	15	10.3
R3574.L010	20	15	6.5	57.5	9	7	17	12	14.1
R3574.L012	23	18	6.5	67	10	8	19	11	19.6
R3574.L015	30	20	8	81	12	10	22	8	28.8
R3574.L017	34	23	10	90	14	11	27	10	36.0
R3574.L020	40	27	10	103.5	16	13	32	9	48.0
R3574.L025	48	32	12	126	20	17	36	7	66.4
R3574.L030	56	37	15	146.5	22	19	41	6	88.0
R3574.L035	60	42	15	166	25	21	50	6	117
R3574.L040	65	48	18	188	28	23	55	7	144
R3574.L041	65	48	18	188	28	23	55	7	144
R3574.L045	65	52	20	196	32	27	60	7	192
R3574.L046	65	52	50	196	32	27	60	7	192
R3574.L050	68	60	20	216	35	30	65	6	232
R3574.L051	68	60	20	216	35	30	65	6	232
R3574.L060	70	75	20	242.5	44	38	75	6	360
R3574.L061	70	75	20	242.5	44	38	75	6	360
R3574.L070	80	87	20	280	49	42	85	6	488
R3574.L071	80	87	20	280	49	42	85	6	488
R3574.L080	85	100	24	320	55	47	100	6	600
R3574.L081	85	100	25	320	55	47	100	6	600

Low Cost Rod End - Female

with integral spherical plain bearing



R3575.F



Material

Housing: Heat treated steel, surface galvanized, free of Cr VI. Outer ring: heat treated steel,
hardened, single split, bonded with PTFE fabric.

Joint Ball: Ball bearing steel, hardened, ground, polished up to size 12, hard chromium plated.

Technical Notes

For tolerances see technical pages, maintenance required.

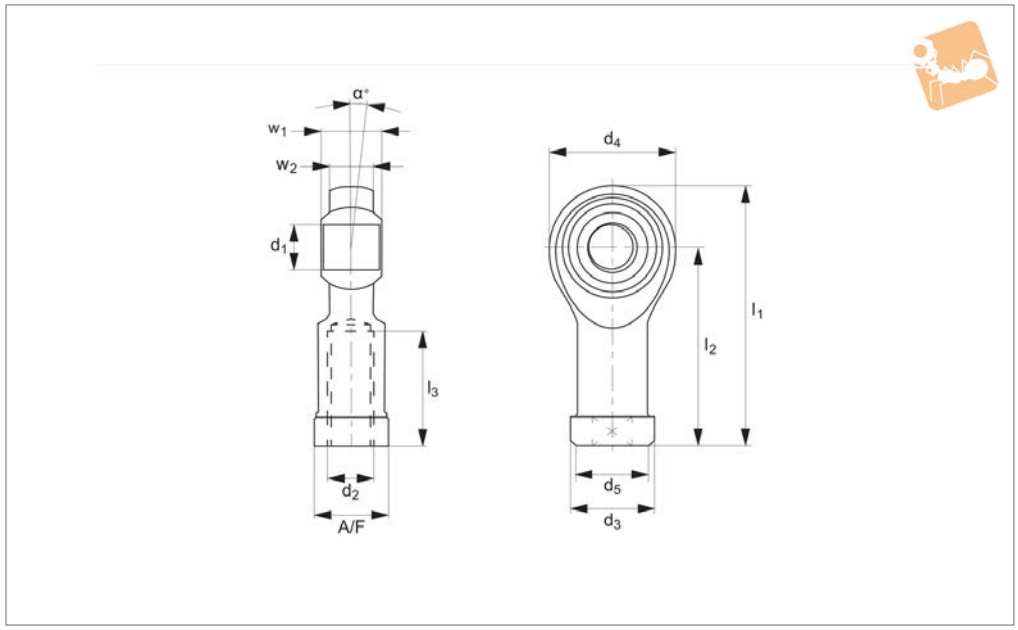
Tips

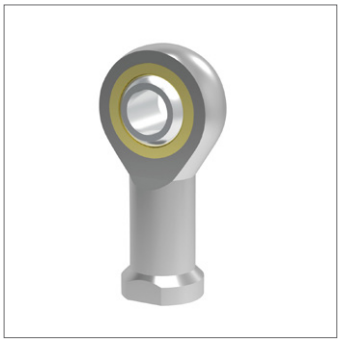
Standard thread is right hand thread.

Important Notes

*Denotes fine pitch thread.

Order No.	Thread hand	Type	d_1 tol. H7	l_1	d_2	d_3	d_4	l_2	l_3	w_1	w_2	a °	Static load C_0 kN max.	Weight g
R3575.FL006	Left	Female	6	36	M 6	10	21	18	12	6	4.4	13	6.6	17
R3575.FL008	Left	Female	8	42	M 8	13	24	22	14	8	6	15	10.3	29
R3575.FL010	Left	Female	10	48	M10	16	29	26	15	9	7	12	14.1	51
R3575.FL012	Left	Female	12	54	M12	18	34	28	18	10	8	11	19.6	86
R3575.FL015	Left	Female	15	63	M14	22	40	34	20	12	10	8	28.8	140
R3575.FL017	Left	Female	17	69	M16	25	46	36	23	14	11	10	36.0	190
R3575.FL020	Left	Female	20	78	M20x1,5*	29	53	43	27	16	13	9	48.0	310
R3575.FL025	Left	Female	25	94	M24x2*	35.5	64	53	32	20	17	7	66.4	560
R3575.FL030	Left	Female	30	110	M30x2*	40.7	73	65	37	22	19	6	88.0	890
R3575.FL035	Left	Female	35	140	M36x3*	47	82	82	42	25	21	6	116.8	1400
R3575.FL040	Left	Female	40	150	M39x3*	53	92	86	48	28	23	7	144	1800
R3575.FL041	Left	Female	40	150	M42x3*	53	92	86	48	28	23	7	144	1850
R3575.FL045	Left	Female	45	163	M43x3*	60	102	94	52	32	27	7	192	2600
R3575.FL046	Left	Female	45	163	M45x3*	60	102	94	52	32	27	7	192	2660
R3575.FL050	Left	Female	50	185	M45x3*	66	112	107	60	35	30	6	232	3400
R3575.FL051	Left	Female	50	185	M52x3*	66	112	107	60	35	30	6	232	3500
R3575.FL060	Left	Female	60	210	M52x3*	80	135	115	75	44	38	6	360	5900
R3575.FL061	Left	Female	60	210	M60x4*	80	135	115	75	44	38	6	360	6020
R3575.FL070	Left	Female	70	235	M56x4*	92	160	125	87	49	42	6	488	8200
R3575.FL071	Left	Female	70	235	M72x4*	92	160	125	87	49	42	6	488	8380
R3575.FL080	Left	Female	80	270	M64x4*	105	180	140	100	55	47	6	600	12000
R3575.FL081	Left	Female	80	270	M80x4*	105	180	140	100	55	47	6	600	12200





R3576.A2

Material
Housing: stainless steel (AISI 303)
Ball: Stainless steel, hardened ground and polished stainless steel bearing rings

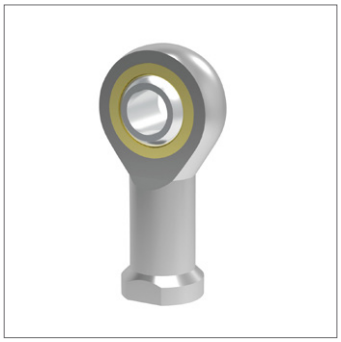
Technical Notes
Standard thread is right hand thread, series K, maintenance free.

Order No.	Thread hand	d_1 tol. H7	l_1	d_2	d_3	d_4	d_5	Weight g
R3576.R005-A2	Right	5	36	M 5	18	11	8.5	16
R3576.R006-A2	Right	6	40	M 6	20	13	10.0	22
R3576.R008-A2	Right	8	48	M 8	16	24	12.5	47
R3576.R010-A2	Right	10	57	M 10	28	19	15.0	77
R3576.R012-A2	Right	12	66	M 12	32	22	17.5	100
R3576.R016-A2	Right	16	85	M 16	42	27	22.0	220
R3576.L005-A2	Left	5	36	M 5	18	11	8.5	16
R3576.L006-A2	Left	6	40	M 6	20	13	10.5	22
R3576.L008-A2	Left	8	48	M 8	16	24	12.5	47
R3576.L010-A2	Left	10	57	M 10	28	19	15.0	77
R3576.L012-A2	Left	12	66	M 12	32	22	17.5	100
R3576.L016-A2	Left	16	85	M 16	42	27	22.0	220

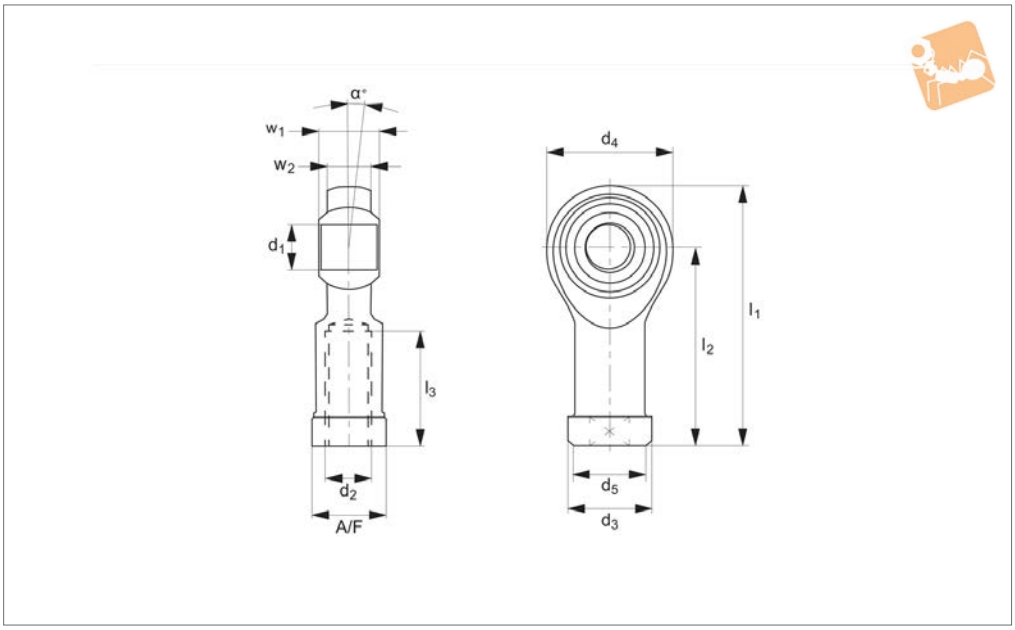
Order No.	l_2	l_3	w_1	w_2	A/F	a °	Static load C_0 kN max.
R3576.R005-A2	27	10	8	6.00	9	13	4.8
R3576.R006-A2	30	12	9	6.75	11	13	6.2
R3576.R008-A2	36	16	12	9.00	14	14	10.3
R3576.R010-A2	43	20	14	10.50	17	13	14.4
R3576.R012-A2	50	22	16	12.00	19	13	19.2
R3576.R016-A2	64	28	21	15.00	22	15	31.2
R3576.L005-A2	27	10	8	6.00	9	13	4.8
R3576.L006-A2	30	12	9	6.75	11	13	6.2
R3576.L008-A2	36	16	12	9.00	14	14	10.3
R3576.L010-A2	43	20	14	10.50	17	13	14.4
R3576.L012-A2	50	22	16	12.00	19	13	19.2
R3576.L016-A2	64	28	21	15.00	22	15	31.2

Stainless Low Cost Rod Ends

Female - A4 stainless steel



R3576.A4



Material
Housing: stainless steel (AISI 316) Ball: Stainless steel, 1,4571 and polished stainless steel bearing rings.

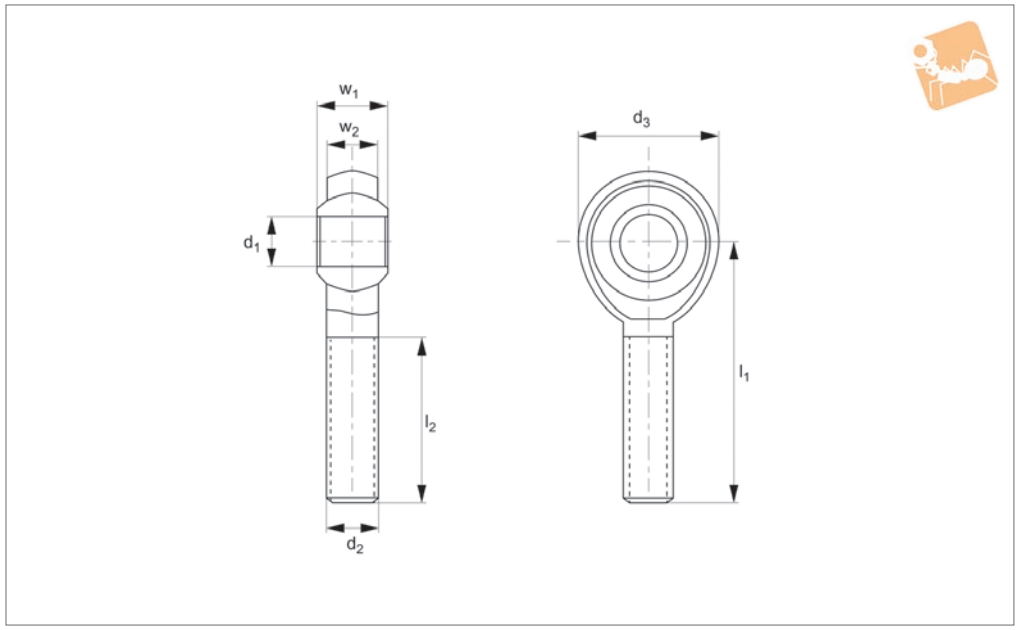
Race: PTFE liner

Technical Notes
Standard thread is right hand thread, series K, maintenance free.

Order No.	Thread hand	d_1 tol. H7	l_1	d_2	d_3	d_4	d_5	l_2	l_3	w_1	w_2	α	A/F	Static load C_0 kN max.	Weight g
R3576.R005-A4	Right	5	36	M 5	18	11	8.5	27	10	8	6.00	13	9	4.8	16
R3576.R006-A4	Right	6	40	M 6	20	13	10	30	12	9	6.75	13	11	6.2	22
R3576.R008-A4	Right	8	48	M 8	16	24	12.5	36	16	12	9.00	14	14	10.3	47
R3576.R010-A4	Right	10	57	M10	28	19	15	43	20	14	10.50	13	17	14.4	77
R3576.R012-A4	Right	12	66	M12	32	22	17.5	50	22	16	12.00	13	19	19.2	100
R3576.R016-A4	Right	16	85	M16	42	27	22	64	28	21	15.00	15	22	31.2	220
R3576.L005-A4	Left	5	36	M 5	18	11	8.5	27	10	8	6.00	13	9	4.8	16
R3576.L006-A4	Left	6	40	M 6	20	13	10	30	12	9	6.75	13	11	6.2	22
R3576.L008-A4	Left	8	48	M 8	16	24	12.5	36	16	12	9.00	14	14	10.3	47
R3576.L010-A4	Left	10	57	M10	28	19	15	43	20	14	10.50	13	17	14.4	77
R3576.L012-A4	Left	12	66	M12	32	22	17.5	50	22	16	12.00	13	19	19.2	100
R3576.L016-A4	Left	16	85	M16	42	27	22	64	28	21	15.00	15	22	31.2	220

Imperial Low Cost Rod End

Male, with Nylon bearing race





R3578.mi

Material

Housing: Yellow zinc plated steel.
Ball: Zinc plated, surface hardened steel.

Technical Notes

Features a reinforced nylon race that is injection molded between the ball and forged housing.
The nylon race resists vibration, exhibits low hygroscopic properties and helps dampen structural vibration and noise.

As per SAE specification J1120 type B, yellow zinc is not RoHS Compliant.

Tips

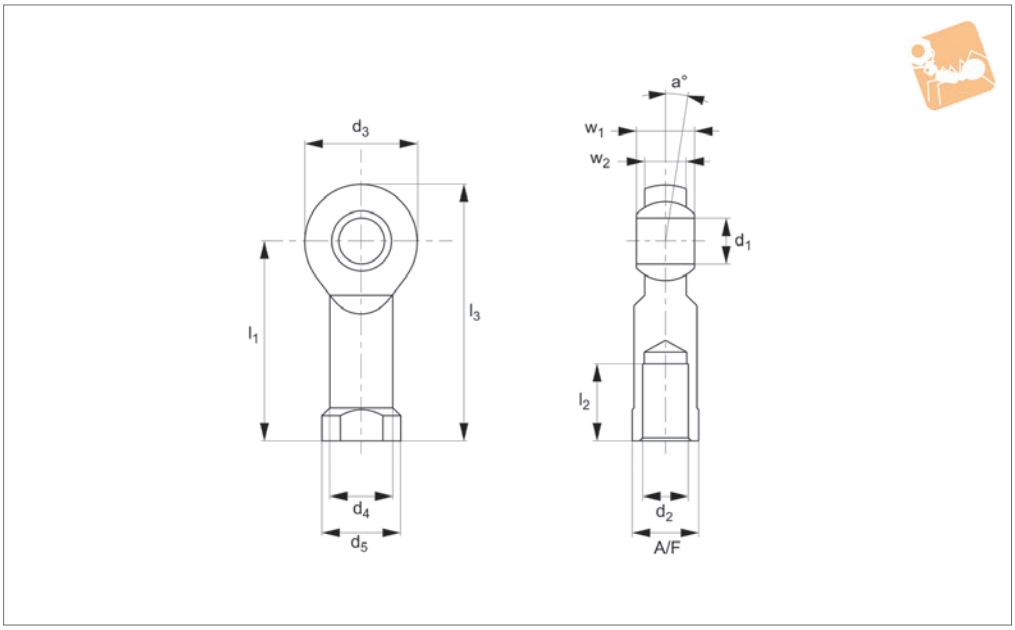
Standard thread is right hand thread.

Order No.	Thread hand	d_1	l_1	d_2	d_3	l_2	w_1	w_2
R3578.MIR190	Right	0.190	1.250	10-32	0.625	0.750	0.312	0.250
R3578.MIR250	Right	0.251	1.562	1/4-28	0.750	1.000	0.375	0.281
R3578.MIR313	Right	0.3135	1.875	5/16-24	0.875	1.250	0.437	0.344
R3578.MIR375	Right	0.376	2.000	3/8-24	1.090	1.250	0.500	0.406
R3578.MIR500	Right	0.501	2.437	1/2-20	1.380	1.500	0.625	0.500
R3578.MIR625	Right	0.626	2.625	5/8-18	1.500	1.625	0.750	0.562
R3578.MIR750	Right	0.751	2.875	3/4-16	1.750	1.750	0.875	0.687
R3578.MIL375	Left	0.376	2.000	3/8-24	1.090	1.250	0.500	0.406
R3578.MIL500	Left	0.501	2.437	1/2-20	1.380	1.500	0.625	0.500
R3578.MIL190	Left	0.190	1.250	10-32	0.625	0.750	0.312	0.250
R3578.MIL250	Left	0.251	1.562	1/4-28	0.750	1.000	0.3751	0.280
R3578.MIL625	Left	0.626	2.625	5/8-18	1.500	1.625	0.750	0.562
R3578.MIL313	Left	0.3135	1.875	5/16-24	0.875	1.250	0.437	0.344
R3578.MIL750	Left	0.751	2.875	3/4-16	1.750	1.750	0.875	0.687

Plastic Rod End Female



R3579



Material
Housing: Black plastic (Igumid G)
Spherical bearing: Iglidur w300.

Technical Notes
Resistant to corrosion and chemicals, standard thread is right hand thread.

High vibration dampening capacity suitable for rotating, oscillating and linear movements.
Available with a metal sleeve to take a higher torque (Add -MS to part No.).

Important Notes
Dimensional series K according to standard DIN ISO 12240. *Denotes fine pitch thread. Short term max axial strength is up to 20 minutes. Any length of time greater than this is considered long term.

Order No.	Thread hand	d_1 tol. E10	l_1	d_2	d_3	d_4	d_5	l_2	l_3	w_1	w_2
R3579.R002	Right	2	12.5	M2	9	4.0	4.6	6	17	4	3.0
R3579.R003	Right	3	18.5	M3	13	6.5	8.0	8	25	6	4.5
R3579.R004	Right	5	27	M4	18	9.0	12.0	10	36	8	6.0
R3579.R005	Right	5	27	M5	18	9.0	12.0	10	36	8	6.0
R3579.R006	Right	6	30	M6	20	10.0	13.0	12	40	9	7.0
R3579.R008	Right	8	36	M8	24	13.0	16.0	16	48	12	9.0
R3579.R010	Right	10	43	M10	30	15.0	19.0	20	58	14	10.5
R3579.R011	Right	10	43	M10 x 1,25*	30	15.0	19.0	20	58	14	10.5
R3579.R012	Right	12	50	M12	34	18.0	22.0	22	67	16	12.0
R3579.R013	Right	12	50	M12 x 1,25*	34	18.0	22.0	22	67	16	12.0
R3579.R014	Right	14	57	M14	38	20.0	25.0	25	76	19	13.5
R3579.R016	Right	16	64	M16	42	22.0	27.0	28	85	21	15.0
R3579.R017	Right	16	64	M16 x 1,5*	42	22.0	27.0	28	85	21	15.0
R3579.R018	Right	18	71	M18 x 1,5*	46	25.0	31.0	32	94	23	16.5
R3579.R020	Right	20	77	M20 x 1,5*	50	28.0	34.0	33	102	25	18.0
R3579.R021	Right	20	77	M20 x 2,5	50	28.0	34.0	33	102	25	18.0
R3579.R022	Right	22	84	M22 x 1,5*	56	30.0	37.0	37	112	28	20.0
R3579.R025	Right	25	94	M24 x 2*	60	32.0	41.0	94	124	31	22.0
R3579.R030	Right	30	110	M30 x 2*	70	37.0	50.0	51	145	37	25.0
R3579.L002	Left	2	12.5	M2	9	4.0	4.6	6	17	6	3.0
R3579.L003	Left	3	18.5	M3	13	6.5	8.0	8	25	8	4.5
R3579.L004	Left	5	27	M4	18	9.0	12.0	10	36	10	6.0
R3579.L005	Left	5	27	M5	18	9.0	12.0	10	36	10	6.0
R3579.L006	Left	6	30	M6	20	10.0	13.0	12	40	12	7.0
R3579.L008	Left	8	36	M8	24	13.0	16.0	16	48	16	9.0
R3579.L010	Left	10	43	M10	30	15.0	19.0	20	58	20	10.5
R3579.L011	Left	10	43	M10 x 1,25*	30	15.0	19.0	20	58	20	10.5
R3579.L012	Left	12	50	M12	34	18.0	22.0	22	67	22	12.0
R3579.L013	Left	12	50	M12 x 1,25*	34	18.0	22.0	22	67	22	12.0
R3579.L014	Left	14	57	M14	38	20.0	25.0	25	76	25	13.5
R3579.L016	Left	16	64	M16	42	22.0	27.0	28	85	28	15.0

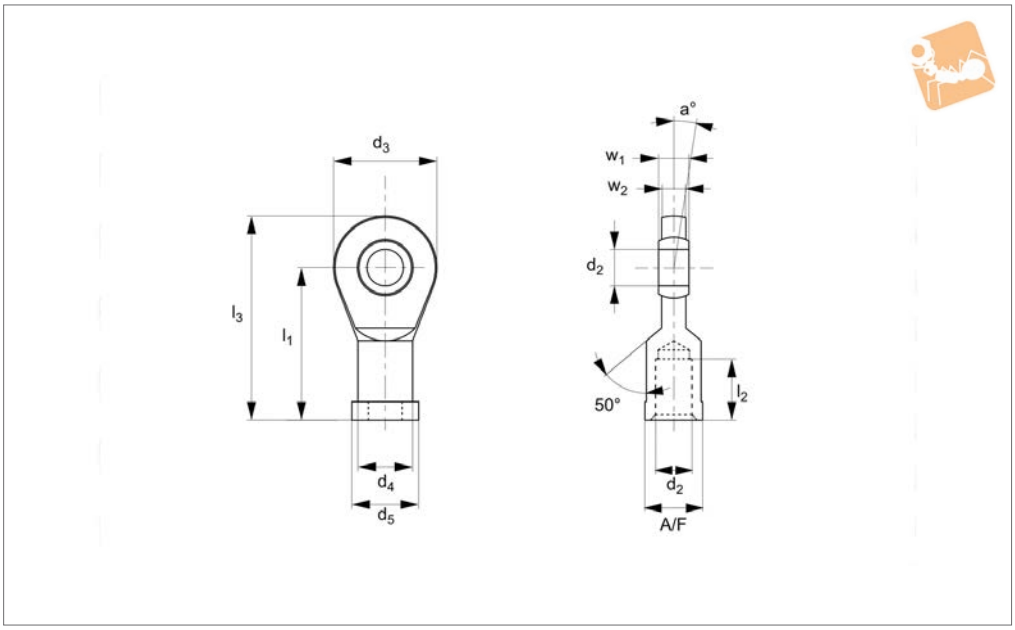
Order No.	Thread hand	d_1 tol. E10	l_1	d_2	d_3	d_4	d_5	l_2	l_3	w_1	w_2
R3579.L017	Left	16	64	M16 x 1,5*	42	22.0	27.0	28	85	28	15.0
R3579.L018	Left	18	71	M18 x 1,5*	46	25.0	31.0	32	94	32	16.5
R3579.L020	Left	20	77	M20 x 1,5*	50	28.0	34.0	33	102	33	18.0
R3579.L021	Left	20	77	M20 x 2,5	50	28.0	34.0	33	102	33	18.0
R3579.L022	Left	22	84	M22 x 1,5*	56	30.0	37.0	37	112	37	20.0
R3579.L025	Left	25	94	M24 x 2*	60	32.0	41.0	42	124	42	22.0
R3579.L030	Left	30	110	M30 x 2*	70	37.0	50.0	51	110	51	25.0

Order No.	A/F	a °	Static strength (long term) N max.	Radial load (short term) N max.	Radial load (long term) N max.	Static strength (short term) N max.	Thread depth min.	Torque strength in thread max.	Torque through ball max.	Torque through ball MS Nm max.
R3579.R002	04	15	200	50	25	200	4	0.30	1	2
R3579.R003	06	15	100	400	50	800	5	0.50	2	4
R3579.R004	09	15	500	250	125	1000	7	0.75	5	12
R3579.R005	09	15	500	250	125	1000	7	1.00	5	12
R3579.R006	11	14.5	700	400	200	1400	8	1.50	10	15
R3579.R008	14	12.5	1050	700	350	2100	11	10.0	12	40
R3579.R010	17	12.5	1550	800	400	3100	13	15.0	20	50
R3579.R011	17	12.5	1550	800	400	3100	13	6.00	20	50
R3579.R012	19	12.5	1800	900	450	3600	15	20.0	30	70
R3579.R013	19	12,5°	1800	900	450	3600	15	15.0	30	70
R3579.R014	22	11.5	2000	1000	500	4000	17	25.0	35	75
R3579.R016	22	11.5	2100	1300	650	4200	19	30.0	40	110
R3579.R017	22	11.5	2100	1300	650	4200	19	27.5	40	110
R3579.R018	27	11.5	2300	1600	800	4600	21	45.0	45	150
R3579.R020	30	11.5	2700	2100	1050	5400	22	60.0	55	200
R3579.R021	30	11.5	2700	2100	1050	5400	22	60.0	55	200
R3579.R022	32	11	3500	2200	1100	7000	25	75.0	60	225
R3579.R025	36	11	4250	2300	1150	8500	28	120.0	60	260
R3579.R030	41	11	5250	2500	1250	10500	34	135.0	60	300
R3579.L002	04	15	200	50	25	200	4	0.30	1	2
R3579.L003	06	15	100	400	50	800	5	0.50	2	4
R3579.L004	09	15	500	250	125	1000	7	0.75	5	12
R3579.L005	09	15	500	250	125	1000	7	1.00	5	12
R3579.L006	11	14.5	700	400	200	1400	8	1.50	10	15
R3579.L008	14	12.5	1050	700	350	2100	11	10.0	12	40
R3579.L010	17	12.5	1550	800	400	3100	13	15.0	20	50
R3579.L011	17	12.5	1550	800	400	3100	13	6.00	20	50
R3579.L012	19	12.5	1800	900	450	3600	15	20.0	30	70
R3579.L013	19	12.5	1800	900	450	3600	15	15.0	30	70
R3579.L014	22	11.5	2000	1000	500	4000	17	25.0	35	75
R3579.L016	22	11.5	2100	1300	650	4200	19	30.0	40	110
R3579.L017	22	11.5	2100	1300	650	4200	19	27.5	40	110
R3579.L018	27	11.5	2300	1600	800	4600	21	45.0	45	150
R3579.L020	30	11.5	2700	2100	1050	5400	22	60.0	22	200
R3579.L021	30	11.5	2700	2100	1050	5400	22	60.0	55	200
R3579.L022	32	11	3500	2200	1100	7000	25	75.0	60	225
R3579.L025	36	11	4250	2300	1150	8500	28	120.0	60	260
R3579.L030	41	11	5250	2500	1250	10500	34	135.0	60	300

Plastic Rod End Female



R3582



Material
Housing: Black plastic (Igumid G)
Spherical Bearing: Iglidur w300

Technical Notes
Maintenance free, self lubricating. High strength under impact loads. Very high tensile strength for varying loads. Resistant to dirt and dust, resistant to corrosion and chemicals, standard thread is right hand thread.
High vibration dampening capacity, suitable for rotating, oscillating and linear movements.
Available with a metal sleeve to take a higher torque, (add -MS to part No.)
Suitable for use with R3409 clevis joints.

Important Notes
Dimensional series E.*Denotes fine pitch thread.
Short term max axial strength is up to 20 minutes. Any length of time greater than this is considered long term.

Order No.	Thread hand	d_1 tol. E10	l_1	d_2	d_3	d_4	d_5	l_2	l_3	w_1	w_2
R3582.R004	Right	4	22.5	M4	15	8.0	9.2	9.5	30.0	5	3.5
R3582.R005	Right	5	30.0	M5	19	9.0	11	12	39.5	6	4.4
R3582.R006	Right	6	30.0	M6	21	11.0	13	12	40.5	6	4.4
R3582.R008	Right	8	36.0	M8	24	13.0	16	16	48.0	8	6.0
R3582.R010	Right	10	43.0	M10	29	15.0	19	18	57.5	9	7.0
R3582.R011	Right	10	43.0	M10 x 1,25*	29	15.0	19	18	57.5	9	7.0
R3582.R012	Right	12	50.0	M12	34	18.0	22	20	67.0	10	8.0
R3582.R013	Right	12	50.0	M12 x 1,25*	34	18.0	22	20	67.0	10	8.0
R3582.R015	Right	15	61.0	M14	40	21.0	26	26	81.0	12	10.0
R3582.R017	Right	17	67.0	M16	46	24.0	30	27	90.0	14	11.0
R3582.R018	Right	17	67.0	M16 x 1,5*	46	24.0	30	27	90.0	14	11.0
R3582.R020	Right	20	77.0	M20 x 1,5*	53	27.0	34	31	103.5	16	13.0
R3582.R021	Right	20	77.0	M20 x 2,5	53	27.0	34	31	103.5	16	13.0
R3582.R025	Right	25	94.0	M24 x 2*	64	34.0	41	38	126.5	20	17.0
R3582.R030	Right	30	110.0	M30 x 2*	73	41.0	48	47	146.5	22	19.0
R3582.L004	Left	4	22.5	M4	15	8.0	9.2	9.5	30.0	5	3.5
R3582.L005	Left	5	30.0	M5	19	9.0	11	12	39.5	6	4.4
R3582.L006	Left	6	30.0	M6	21	11.0	13	12	40.5	6	4.4
R3582.L008	Left	8	36.0	M8	24	13.0	16	16	48.0	8	6.0
R3582.L010	Left	10	43.0	M10	29	15.0	19	18	57.5	9	7.0
R3582.L011	Left	10	43.0	M10 x 1,25*	29	15.0	19	18	57.5	9	7.0
R3582.L012	Left	12	50.0	M12	34	18.0	22	20	67.0	10	8.0
R3582.L013	Left	12	50.0	M12 x 1,25*	34	18.0	22	20	67.0	10	8.0
R3582.L015	Left	15	61.0	M14	40	21.0	26	26	81.0	12	10.0
R3582.L017	Left	17	67.0	M16	46	24.0	30	27	90.0	14	11.0
R3582.L018	Left	17	67.0	M16 x 1,5*	46	24.0	30	27	90.0	14	11.0
R3582.L020	Left	20	77.0	M20 x 1,5*	53	27.0	34	31	103.5	16	13.0
R3582.L021	Left	20	77.0	M20 x 2,5	53	27.0	34	31	103.5	16	13.0
R3582.L025	Left	25	94.0	M24 x 2*	64	34.0	41	38	126.5	20	17.0

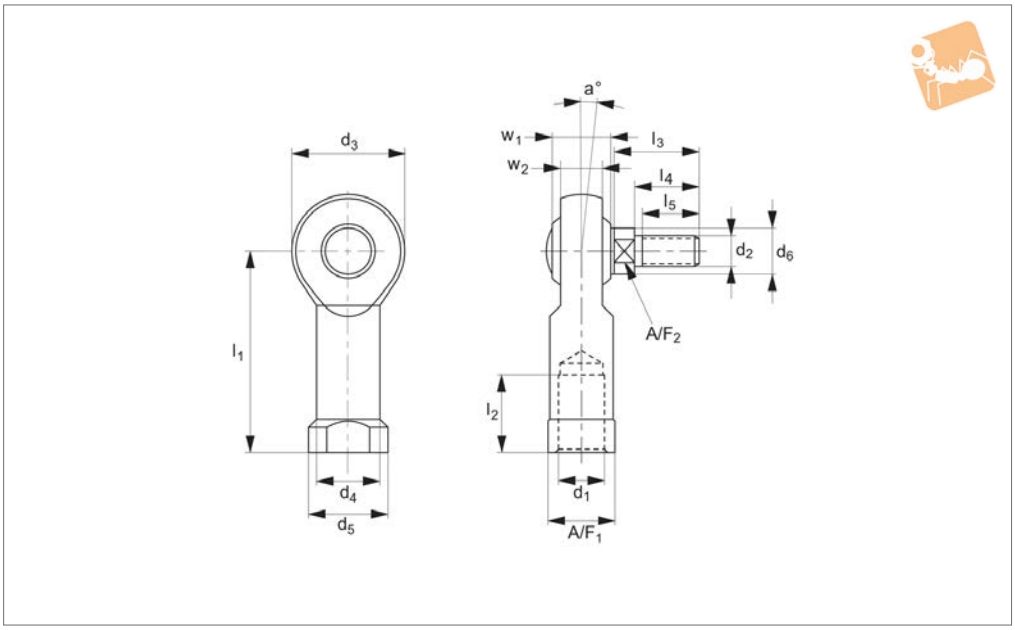
Order No.	Thread hand	d_1 tol. E10	l_1	d_2	d_3	d_4	d_5	l_2	l_3	w_1	w_2
R3582.L030	Left	30	110.0	M30 x 2*	73	41.0	48	47	146.5	22	19.0

Order No.	A/F	a °	Static strength (long term) N max.	Radial load (short term) N max.	Radial load (long term) N max.	Static strength (short term) N max.	Thread depth min.	Torque inside thread Nm max.	Torque through ball Nm max.
R3582.R004	08	16.5	400	100	50	800	7	0.4	2.0
R3582.R005	09	16.5	650	150	75	1300	8	0.5	2.0
R3582.R006	11	13.5	750	200	100	1500	8	1.5	2.5
R3582.R008	14	12	1000	450	225	2000	11	5.0	7.0
R3582.R010	17	12	1150	500	250	2300	13	15.0	14.0
R3582.R011	17	12	1150	500	250	2300	13	6.0	14.0
R3582.R012	19	10.5	1650	550	275	3300	14	20.0	25.0
R3582.R013	19	10.5	1650	550	275	3300	14	15.0	25.0
R3582.R015	22	10.5	2400	800	400	4800	18	25.0	30.0
R3582.R017	27	9	2650	1100	550	5300	19	30.0	35.0
R3582.R018	27	9	2650	1100	550	5300	19	27.5	35.0
R3582.R020	30	8	3600	1800	900	7200	22	60.0	40.0
R3582.R021	30	8	3600	1800	900	7200	22	60.0	40.0
R3582.R025	36	8	5000	2600	1300	10000	27	115.0	55.0
R3582.R030	41	6.5	5250	3000	1300	10500	33	130.0	70.0
R3582.L004	08	16.5	400	100	50	800	7	0.4	2.0
R3582.L005	09	16.5	650	150	75	1300	8	0.5	2.0
R3582.L006	11	13.5	750	200	100	1500	8	1.5	2.5
R3582.L008	14	12	1000	450	225	2000	11	5.0	7.0
R3582.L010	17	12	1150	500	250	2300	13	15.0	14.0
R3582.L011	17	12	1150	500	250	2300	13	6.0	14.0
R3582.L012	19	10.5	1650	550	275	3300	14	20.0	25.0
R3582.L013	19	10.5	1650	550	275	3300	14	15.0	25.0
R3582.L015	22	10.5	2400	800	400	4800	18	25.0	30.0
R3582.L017	27	9	2650	1100	550	5300	19	30.0	35.0
R3582.L018	27	9	2650	1100	550	5300	19	27.5	35.0
R3582.L020	30	8	3600	1800	900	7200	22	60.0	40.0
R3582.L021	30	8	3600	1800	900	7200	22	60.0	40.0
R3582.L025	36	8	5000	2600	1300	10000	27	115.0	55.0
R3582.L030	41	6.5	5250	3000	1300	10500	33	130.0	70.0

Rod End with Stud - Female



R3610



Material
Body: surface zinc plated
Race: steel/ bronze - PTFE composite.
Inner ring: bearing steel, hardened ground and spherical surface chromium plates.
Outer ring: brass body pressed around, outer race lined with bronze - PTFE composite.

Technical Notes
Maintenance free. Sizes according to DIN ISO 12240-4 series K.

Tips
Standard thread is right hand thread.
Rod end studs are all right hand threads.

Important Notes
*Denotes fine pitch threads.

Order No.	Thread hand	d_1	d_2	l_1	w_1	d_3	d_4	d_5	d_6	l_2	Weight g
R3610.R006	Right	M 6	M 6	30	9	20	10.0	13	9.0	12	22
R3610.R008	Right	M 8	M 8	36	12	24	12.5	16	10.5	16	47
R3610.R010	Right	M 10	M 10	43	14	28	15.0	19	13.0	20	77
R3610.R011	Right	M 10 x 1.25*	M 10	43	14	28	15.0	19	13.0	20	77
R3610.R012	Right	M 12	M 12	50	16	32	17.5	22	15.0	22	100
R3610.R013	Right	M 12 x 1.25*	M 12	50	16	32	17.5	22	15.0	22	100
R3610.R014	Right	M 14	M 14	57	19	36	20.0	25	17.0	25	160
R3610.R015	Right	M 14 x 1.5*	M 14	57	19	36	20.0	25	17.0	25	160
R3610.R016	Right	M 16	M 16	64	21	42	22.0	27	19.0	28	220
R3610.R017	Right	M 16 x 1.5*	M 16	64	21	42	22.0	27	19.0	28	220
R3610.L006	Left	M 6	M 6	30	9	20	10.0	13	9.0	12	22
R3610.L008	Left	M 8	M 8	36	12	24	12.5	16	10.5	16	47
R3610.L010	Left	M 10	M 10	43	14	28	15.0	19	13.0	20	77
R3610.L011	Left	M 10 x 1.25*	M 10	43	14	28	15.0	19	13.0	20	77
R3610.L012	Left	M 12	M 12	50	16	32	17.5	22	15.0	22	100
R3610.L013	Left	M 12 x 1.25*	M 12	50	16	32	17.5	22	15.0	22	100
R3610.L014	Left	M 14	M 14	57	19	36	20.0	25	17.0	25	160
R3610.L015	Left	M 14 x 1.50*	M 14	57	19	36	20.0	25	17.0	25	160
R3610.L016	Left	M 16	M 16	64	21	42	22.0	27	19.0	28	220
R3610.L017	Left	M 16 x 1.50*	M 16	64	21	42	22.0	27	19.0	28	220

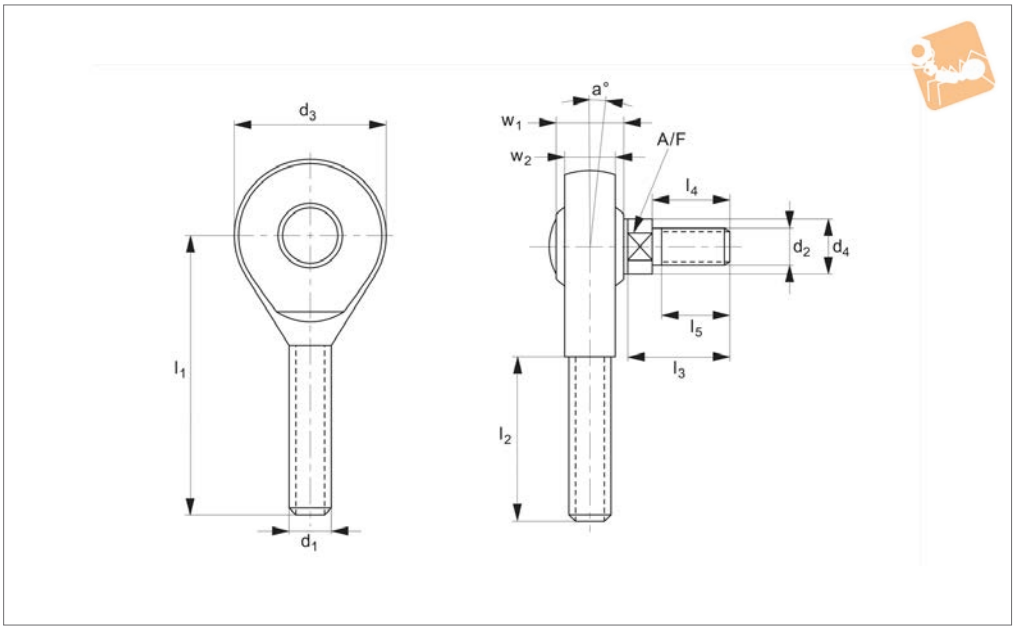
Order No.	l_3	l_4	l_5	w_2	A/F_1	A/F_2	a °	Static load C_0 kN max.
R3610.R006	18.5	13	10	6.75	11	8	13	7.7
R3610.R008	23.5	17	13	9.00	14	8	14	12.9
R3610.R010	28.0	21	17	10.50	17	12	13	18.0
R3610.R011	28.0	21	17	10.50	17	12	13	18.0
R3610.R012	32.5	25	20	12.00	19	14	13	24.0
R3610.R013	32.5	25	20	12.00	19	14	13	24.0
R3610.R014	37.5	29	22	13.50	22	14	16	31.0
R3610.R015	37.5	29	22	13.50	22	14	16	31.0

Order No.	l_3	l_4	l_5	w_2	A/F_1	A/F_2	a °	Static load C_0 kN max.
R3610.R016	42.5	33	24	15.00	22	17	15	39.0
R3610.R017	42.5	33	24	15.00	22	17	15	39.0
R3610.L006	18.5	13	10	6.75	11	8	13	7.7
R3610.L008	23.5	17	13	9.00	14	8	14	12.9
R3610.L010	28.0	21	17	10.50	17	12	13	18.0
R3610.L011	28.0	21	17	10.50	17	12	13	18.0
R3610.L012	32.5	25	20	12.00	19	14	13	24.0
R3610.L013	32.5	25	20	12.00	19	14	13	24.0
R3610.L014	37.5	29	22	13.50	22	14	16	31.0
R3610.L015	37.5	29	22	13.50	22	14	16	31.0
R3610.L016	42.5	33	24	15.00	22	17	15	39.0
R3610.L017	42.5	33	24	15.00	22	17	15	39.0

Rod End with Stud - Male



R3611



Material
Body: surface zinc plated.
Race: steel/ bronze - PTFE composite.
Inner ring: bearing steel, hardened ground and spherical surface chromium plates.
Outer ring: brass body pressed around, outer race lined with bronze - PTFE composite.

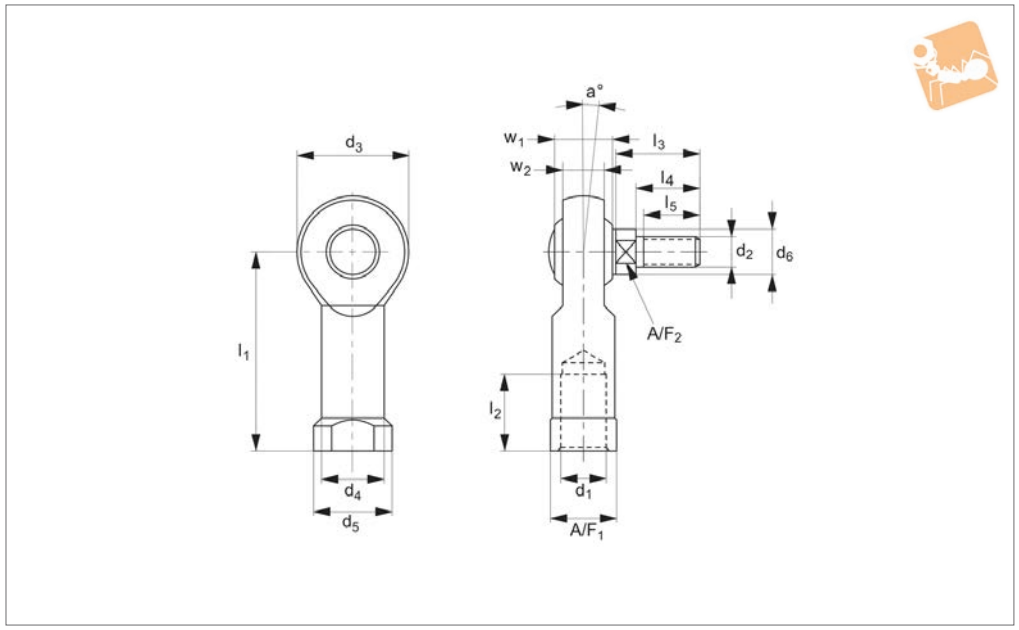
Technical Notes
Maintenance free, sizes according to DIN ISO 12230-4 series K.

Tips
Standard thread is right hand thread.
Rod end studs are all right hand threads.

Order No.	Thread hand	d_1	d_2	l_1	w_1	d_3	d_4	l_2	l_3	Weight g
R3611.R006	Right	M6	M6	36	9	20	9.0	21	18.5	20
R3611.R008	Right	M8	M8	42	12	24	10.5	25	23.5	38
R3611.R010	Right	M10	M10	48	14	28	13.0	28	28.5	55
R3611.R012	Right	M12	M12	54	16	32	15.0	32	32.5	85
R3611.R014	Right	M14	M14	60	19	36	17.0	36	37.5	140
R3611.R016	Right	M16	M16	66	21	42	19.0	37	42.5	210
R3611.L006	Left	M6	M6	36	9	20	9.0	21	18.5	20
R3611.L008	Left	M8	M8	42	12	24	10.5	25	23.5	38
R3611.L010	Left	M10	M10	48	14	28	13.0	28	28.5	55
R3611.L012	Left	M12	M12	54	16	32	15.0	32	32.5	85
R3611.L014	Left	M14	M14	60	19	36	17.0	36	37.5	140
R3611.L016	Left	M16	M16	66	21	42	19.0	37	42.5	210

Order No.	l_4	l_5	w_2	A/F	a °	Static load C_0 kN max.
R3611.R006	13	10	6.75	8	13	7.7
R3611.R008	17	13	9.00	8	14	12.9
R3611.R010	21	17	10.50	12	13	18.0
R3611.R012	25	20	12.00	14	13	24.0
R3611.R014	29	22	13.50	14	16	31.0
R3611.R016	33	24	15.00	17	15	39.0
R3611.L006	13	10	6.75	8	13	7.7
R3611.L008	17	13	9.00	8	14	12.9
R3611.L010	21	17	10.50	12	13	18.0
R3611.L012	25	20	12.00	14	13	24.0
R3611.L014	29	22	13.50	14	16	31.0
R3611.L016	33	24	15.00	17	15	39.0

Stainless Rod End with Stud
Female





R3613

Material
Body: stainless steel (AISI 304)
Race: steel/ bronze - PTFE composite.
Inner ring: stainless steel, hardened and ground (AISI 304).
Outer ring: brass body pressed around, outer race lined with bronze - PTFE composite.
Joint ball: stainless steel (AISI 440C)

Technical Notes
Maintenance free. Sizes according to DIN ISO 12740-4, series K

Tips
Standard thread is right hand thread.
Rod end studs are all right hand threads.

Important Notes
*denotes fine pitch threads.

Order No.	Thread hand	d_1	d_2	l_1	w_1	d_3	d_4	d_5	d_6	l_2	Weight g
R3613.R006	Right	M6	M6	30	9	20	10.0	13	9.0	12	22
R3613.R008	Right	M8	M8	36	12	24	12.5	16	10.5	16	47
R3613.R010	Right	M10	M10	43	14	28	15.0	19	13.0	20	77
R3613.R011	Right	M10 x 1,25*	M10	43	14	28	15.0	19	13.0	20	100
R3613.R012	Right	M12	M12	50	16	32	17.5	22	15.0	22	100
R3613.R013	Right	M12 x 1,25*	M12	50	16	32	17.5	22	15.0	22	100
R3613.R014	Right	M14	M14	57	19	36	20.0	25	17.0	25	160
R3613.R015	Right	M14 x 1,5*	M14	57	19	36	20.0	25	17.0	25	160
R3613.R016	Right	M16	M16	64	21	42	22.0	27	19.0	28	220
R3613.R017	Right	M16 x 1,5*	M16	64	21	42	22.0	27	19.0	28	220
R3613.L006	Left	M6	M6	30	9	20	10.0	13	9.0	12	22
R3613.L008	Left	M8	M8	36	12	24	12.5	16	10.5	16	47
R3613.L010	Left	M10	M10	43	14	28	15.0	19	13.0	20	77
R3613.L011	Left	M10 x 1,25*	M10	43	14	28	15.0	19	13.0	20	100
R3613.L012	Left	M12	M12	50	16	32	17.5	22	15.0	22	100
R3613.L013	Left	M12 x 1,25*	M12	50	16	32	17.5	22	15.0	22	100
R3613.L014	Left	M14	M14	57	19	36	20.0	25	17.0	25	160
R3613.L015	Left	M14 x 1,50*	M14	57	19	36	20.0	25	17.0	25	160
R3613.L016	Left	M16	M16	64	21	42	22.0	27	19.0	28	220
R3613.L017	Left	M16 x 1,50*	M16	64	21	42	22.0	27	19.0	28	220

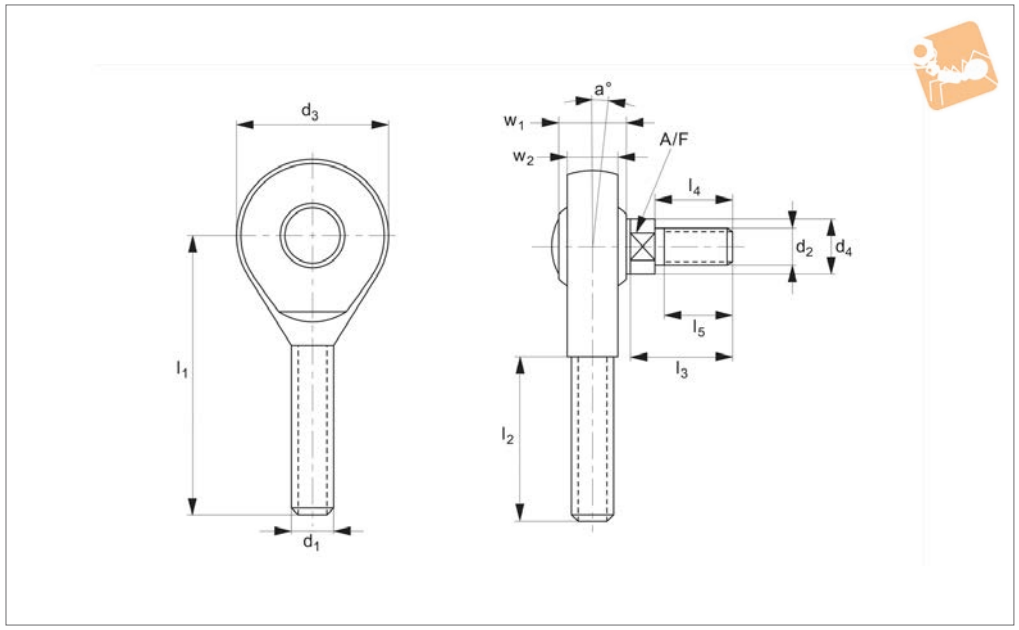
Order No.	l_3	l_4	l_5	w_2	A/F_1	A/F_2	a °	Static load C_0 kN max.
R3613.R006	18.5	13	10	6.75	11	8	13	7.7
R3613.R008	23.5	17	13	9.00	14	8	14	12.9
R3613.R010	28.0	21	17	10.50	17	12	13	18.0
R3613.R011	28.0	21	17	10.50	17	12	13	18.0
R3613.R012	32.5	25	20	12.00	19	14	13	24.0
R3613.R013	32.5	25	20	12.00	19	14	13	24.0

Stainless Rod End with Stud

Female



Order No.	l_3	l_4	l_5	w_2	A/F_1	A/F_2	a °	Static load C_0 kN max.
R3613.R014	37.5	29	22	13.50	22	14	16	31.0
R3613.R015	37.5	29	22	13.50	22	14	16	31.0
R3613.R016	42.5	33	24	15.00	22	17	15	39.0
R3613.R017	42.5	33	24	15.00	22	17	15	39.0
R3613.L006	18.5	13	10	6.75	11	8	13	7.7
R3613.L008	23.5	17	13	9.00	14	8	14	12.9
R3613.L010	28.0	21	17	10.50	17	12	13	18.0
R3613.L011	28.0	21	17	10.50	17	12	13	18.0
R3613.L012	32.5	25	20	12.00	19	14	13	24.0
R3613.L013	32.5	25	20	12.00	19	14	13	24.0
R3613.L014	37.5	29	22	13.50	22	14	16	31.0
R3613.L015	37.5	29	22	13.50	22	14	16	31.0
R3613.L016	42.5	33	24	15.00	22	17	15	39.0
R3613.L017	42.5	33	24	15.00	22	17	15	39.0





R3614

Material
Body: stainless steel (AISI 304)
Race: steel/ bronze - PTFE composite.
Inner ring: stainless steel, hardened and ground (AISI 304)
Outer ring: brass body pressed around, outer race lined with bronze - PTFE composite.
Joint ball: stainless steel (AISI 440C)

Technical Notes
Maintenance free, sizes according to DIN ISO 12240-4 series K.

Tips
Standard thread is right hand thread.
Rod end studs are all right hand threads.

Order No.	Thread hand	d_1	d_2	l_1	w_1	d_3	d_4	Weight g
R3614.R006	Right	M6	M6	36	9	20	9.0	20
R3614.R008	Right	M8	M8	42	12	24	10.5	38
R3614.R010	Right	M10	M10	48	14	28	13.0	55
R3614.R012	Right	M12	M12	54	16	32	15.0	85
R3614.R014	Right	M14	M14	60	19	36	17.0	140
R3614.R016	Right	M16	M16	66	21	42	19.0	210
R3614.L006	Left	M6	M6	36	9	20	9.0	20
R3614.L008	Left	M8	M8	42	12	24	10.5	38
R3614.L010	Left	M10	M10	48	14	28	13.0	55
R3614.L012	Left	M12	M12	54	16	32	15.0	85
R3614.L014	Left	M14	M14	60	19	36	17.0	140
R3614.L016	Left	M16	M16	66	21	42	19.0	210

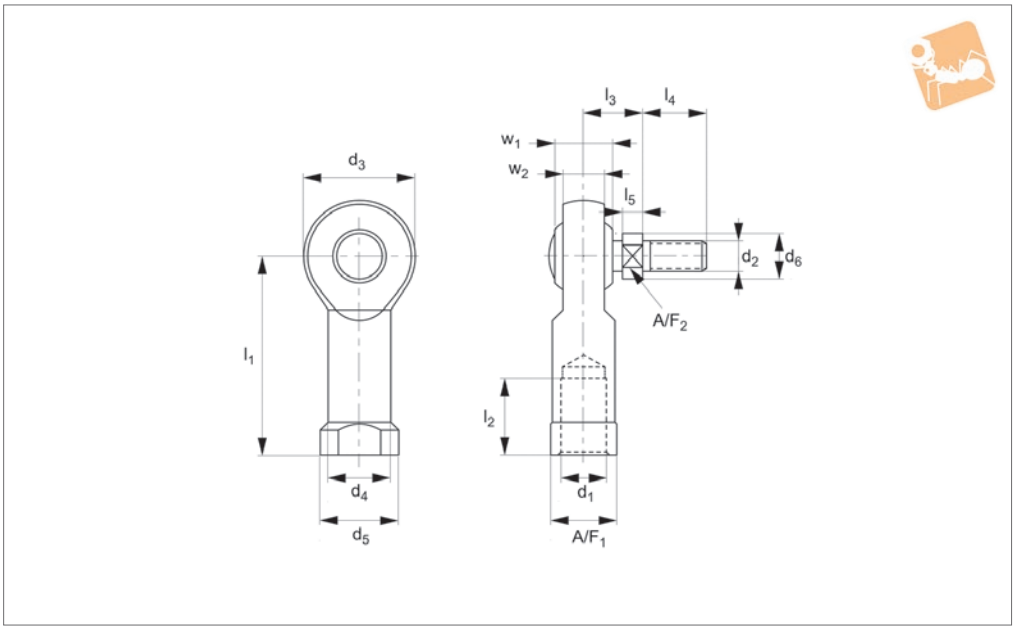
Order No.	l_2	l_3	l_4	l_5	w_2	A/F	a °	Static load C_0 kN max.
R3614.R006	21	18.5	13	10	6.75	8	13	7.7
R3614.R008	25	23.5	17	13	9.00	8	14	12.9
R3614.R010	28	28.5	21	17	10.50	12	13	18.0
R3614.R012	32	32.5	25	20	12.00	14	13	24.0
R3614.R014	36	37.5	29	22	13.50	14	16	31.0
R3614.R016	37	42.5	33	24	15.00	17	15	39.0
R3614.L006	21	18.5	13	10	6.75	8	13	7.7
R3614.L008	25	23.5	17	13	9.00	8	14	12.9
R3614.L010	28	28.5	21	17	10.50	12	13	18.0
R3614.L012	32	32.5	25	20	12.00	14	13	24.0
R3614.L014	36	37.5	29	22	13.50	14	16	31.0
R3614.L016	37	42.5	33	24	15.00	17	15	39.0

Imperial Female Rod End with Stud

with Nylon bearing race



R3616.i



Material
Housing and Stud: Yellow zinc plated steel.
Ball: Zinc plated, surface hardened steel

Technical Notes
Features an injection molded, fibre reinforced nylon bearing race.
Female thread, Maintenance free, yellow zinc is not RoHS Compliant.

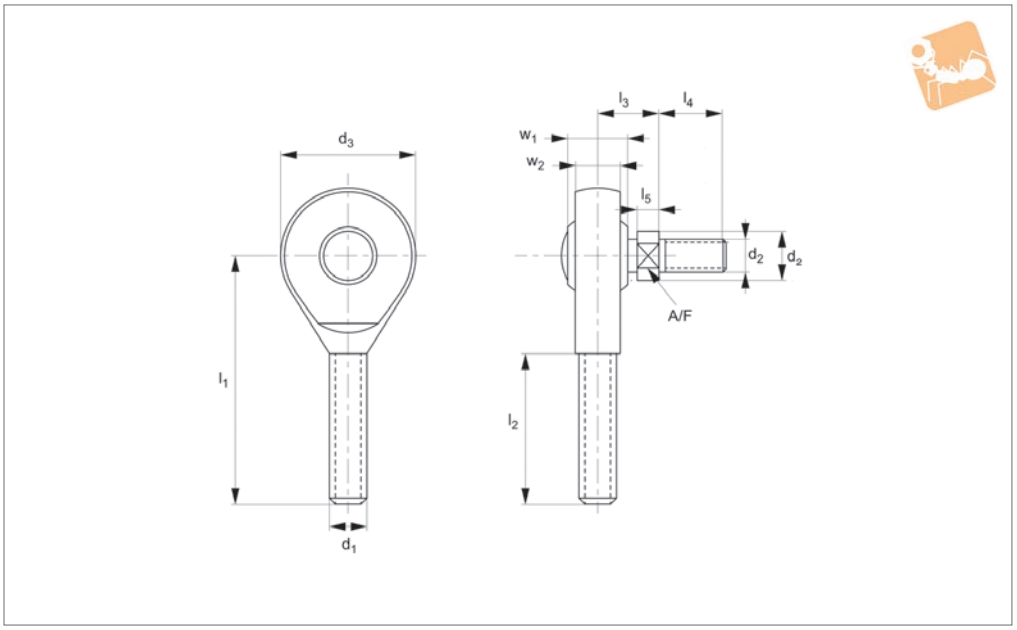
Tips
Standard thread is Right hand thread.
Rod end studs are all right hand threads.

Order No.	Thread hand	d_1	d_2	l_1	w_1	d_3	d_4
R3616.I190	Right	10-32	10-32	1.062	0.312	0.625	0.406
R3616.I250	Right	1/4-28	1/4-28	1.312	0.375	0.750	0.469
R3616.I313	Right	5/16-24	5/16-24	1.375	0.437	0.875	0.500
R3616.I375	Right	3/8-24	3/8-24	1.625	0.500	1.000	0.687
R3616.I500	Right	1/2-20	1/2-20	2.125	0.625	1.312	0.875
R3616.I625	Right	5/8-18	5/8-18	2.500	0.750	1.500	1.000
R3616.I750	Right	3/4-16	3/4-16	2.875	0.875	1.750	1.125
R3616.IL190	Left	10-32	10-32	1.062	0.312	0.625	0.406
R3616.IL250	Left	1/4-28	1/4-28	1.312	0.375	0.750	0.469
R3616.IL313	Left	5/16-24	5/16-24	1.375	0.437	0.875	0.500
R3616.IL375	Left	3/8-24	3/8-24	1.625	0.500	1.000	0.687
R3616.IL500	Left	1/2-20	1/2-20	2.125	0.625	1.312	0.875

Order No.	d_5	l_2	l_3	l_4	l_5	w_2	A/F_1	A/F_2	a °
R3616.I190	0.187	0.562	0.437	0.437	0.125	0.250	0.312	0.321	25
R3616.I250	0.304	0.750	0.469	0.562	0.125	0.281	0.375	0.375	25
R3616.I313	0.356	0.750	0.531	0.687	0.125	0.344	0.437	0.437	25
R3616.I375	0.424	0.937	0.644	0.906	0.187	0.406	0.562	0.500	25
R3616.I500	0.564	1.187	0.875	1.125	0.250	0.500	0.750	0.625	25
R3616.I625	0.622	1.500	1.000	1.125	0.375	0.562	0.875	0.750	25
R3616.I750	0.747	1.562	1.187	1.812	0.375	0.687	1.000	1.000	25
R3616.IL190	0.187	0.562	0.437	0.437	0.125	0.250	0.312	0.321	25
R3616.IL250	0.304	0.750	0.469	0.562	0.125	0.281	0.375	0.375	25
R3616.IL313	0.356	0.750	0.531	0.687	0.125	0.344	0.437	0.437	25
R3616.IL375	0.424	0.937	0.644	0.906	0.187	0.406	0.562	0.500	25
R3616.IL500	0.564	1.187	0.875	1.125	0.250	0.500	0.750	0.625	25

Imperial Male Rod End with Stud

with Nylon bearing race





R3617.i

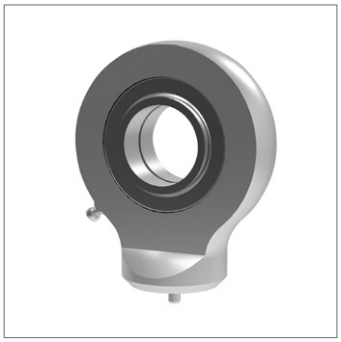
Material
Housing and Stud: Yellow zinc plated steel.
Ball: Zinc plated, surface hardened steel.

Technical Notes
Features an injection molded, fibre reinforced nylon bearing race.
Female thread, Maintenance free, yellow zinc is not RoHS Compliant.

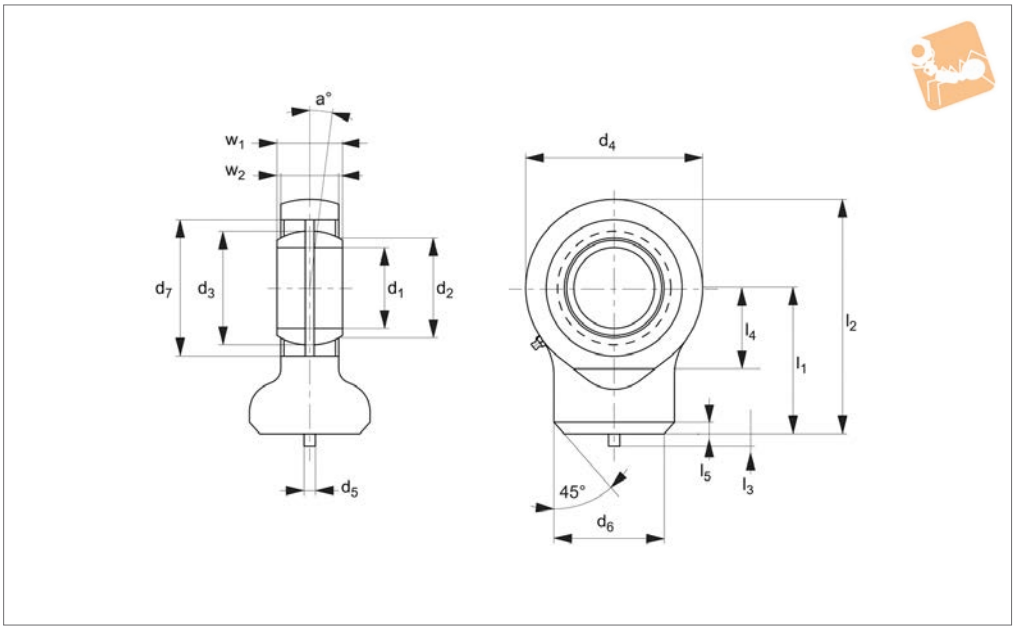
Tips
Standard thread is Right hand thread, rod end studs are all Right hand threads.

Order No.	Thread hand	d_1	d_2	l_1	w_1	d_3	d_4	l_2	l_3	l_4	l_5	w_2	A/F	a °
R3617.I250	Right	10-32	10-32	1.562	0.375	0.750	0.304	1.000	0.469	0.562	0.125	0.281	0.375	25
R3617.I313	Right	5/16-24	5/16-24	1.875	0.437	0.875	0.356	1.250	0.531	0.687	0.125	0.344	0.437	25
R3617.I375	Right	3/8-24	3/8-24	2.000	0.500	1.090	0.424	1.250	0.644	0.906	0.187	0.406	0.500	25
R3617.I500	Right	1/2-20	1/2-20	2.437	0.625	1.380	0.564	1.500	0.875	1.125	0.250	0.500	0.625	25
R3617.I625	Right	5/8-18	5/8-18	2.625	0.750	1.500	0.622	1.625	1.000	1.125	0.375	0.562	0.750	25
R3617.I750	Right	3/4-16	3/4-16	2.875	0.875	1.750	0.747	1.750	1.187	1.812	0.375	0.687	1.000	25
R3617.IL250	Left	10-32	10-32	1.562	0.375	0.750	0.304	1.000	0.469	0.562	0.125	0.281	0.375	25
R3617.IL313	Left	5/16-24	5/16-24	1.875	0.437	0.875	0.356	1.250	0.531	0.687	0.125	0.344	0.437	25
R3617.IL375	Left	3/8-24	3/8-24	2.000	0.500	1.090	0.424	1.250	0.644	0.906	0.187	0.406	0.500	25
R3617.IL500	Left	1/2-20	1/2-20	2.437	0.625	1.380	0.564	1.500	0.875	1.125	0.250	0.500	0.625	25

Hydraulic Rod Ends
weld-on base



R3620



Material
Housing: forged steel (st 52-3).
Steel on steel bearing requiring lubrication.

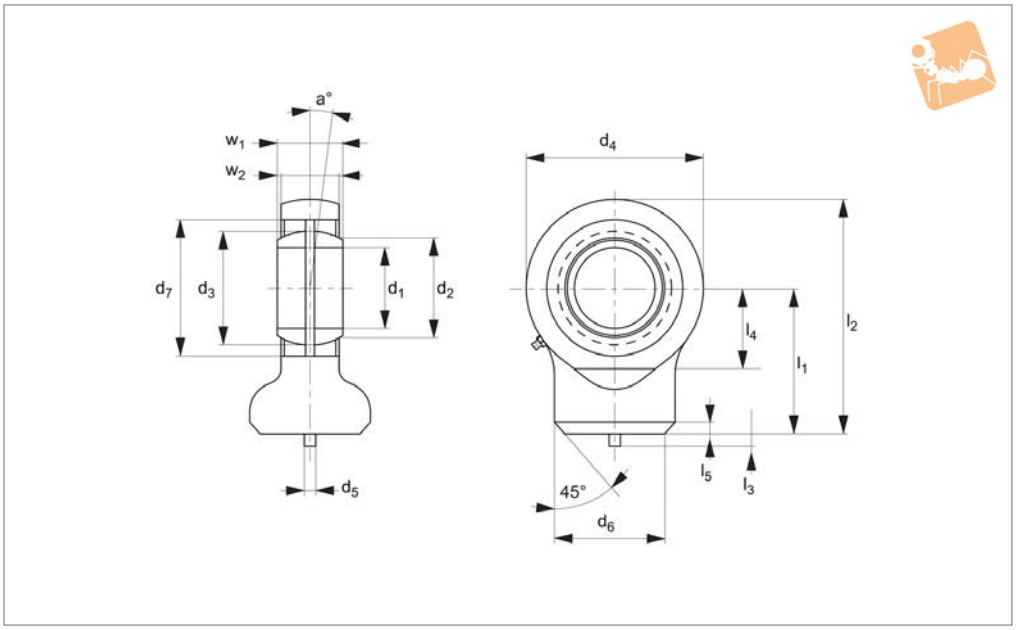
Spherical plain bearing.

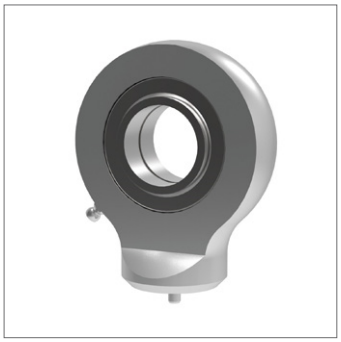
Technical Notes
Sizes up to 12 not regreasable, rod ends series E to DIN ISO 12240-4.

Tips
For weld-on piston rod ends.

Order No.	d_1	l_1	d_2	d_3	d_4	d_5	d_6	d_7	Weight g
R3620.010	10	24	13.2	16	29	3	15	19	41
R3620.012	12	27	15	18	34	3	17.5	22	66
R3620.015	15	31	18.4	22	40	4	21	26	120
R3620.017	17	35	20.7	25	46	4	24	30	190
R3620.020	20	38	24.2	29	53	4	27.5	35	230
R3620.025	25	45	29.3	35.5	64	4	35.5	42	430
R3620.030	30	51	34.2	40.7	73	4	40	47	640
R3620.035	35	61	39.8	47	82	4	47	55	960
R3620.040	40	69	45.0	53	92	4	52	62	1300
R3620.045	45	77	50.8	60	102	6	58	68	1800
R3620.050	50	88	55.9	66	112	6	62	75	2500
R3620.060	60	100	66.8	80	135	6	70	90	3900
R3620.070	70	115	77.9	92	160	6	80	105	6600
R3620.080	80	141	89.4	105	180	6	95	120	8700

Order No.	Dyn. load C_0 N max.	l_2	l_3	l_4	l_5	Static load C_0 kN max.	w_1	w_2	a °
R3620.010	8.15	38.5	6	15.0	2	12.48	9	7	12
R3620.012	10.8	44	6	18.0	2	17.28	10	8	11
R3620.015	17.00	51	6	20.0	2.5	25.60	12	10	8
R3620.017	21.20	58	6	23.0	3	32.00	14	11	10
R3620.020	30.00	64.5	6	27.5	3	43.20	16	13	9
R3620.025	48.00	77	6	33	4	57.60	20	17	7
R3620.030	62.00	87.5	6	37.5	4	76.00	22	19	6
R3620.035	80.00	102	6	43	4	100.00	25	21	6
R3620.040	100.00	115	6	48	5	124.80	28	23	7
R3620.045	127.00	128	6	52.0	5	166.40	32	27	7
R3620.050	156.00	144	6	59.0	6	200.00	35	30	6
R3620.060	245.00	167.5	6	72.5	8	312.00	44	38	6
R3620.070	315.00	195	6	86	10	408.00	49	42	6
R3620.080	400.00	231	6	98	10	496.00	55	47	6





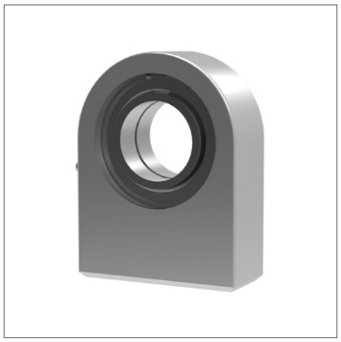
R3621

Material
Housing: stainless steel (AISI 316).
Bearing stainless steel (AISI 420C) and PTFE fabric.

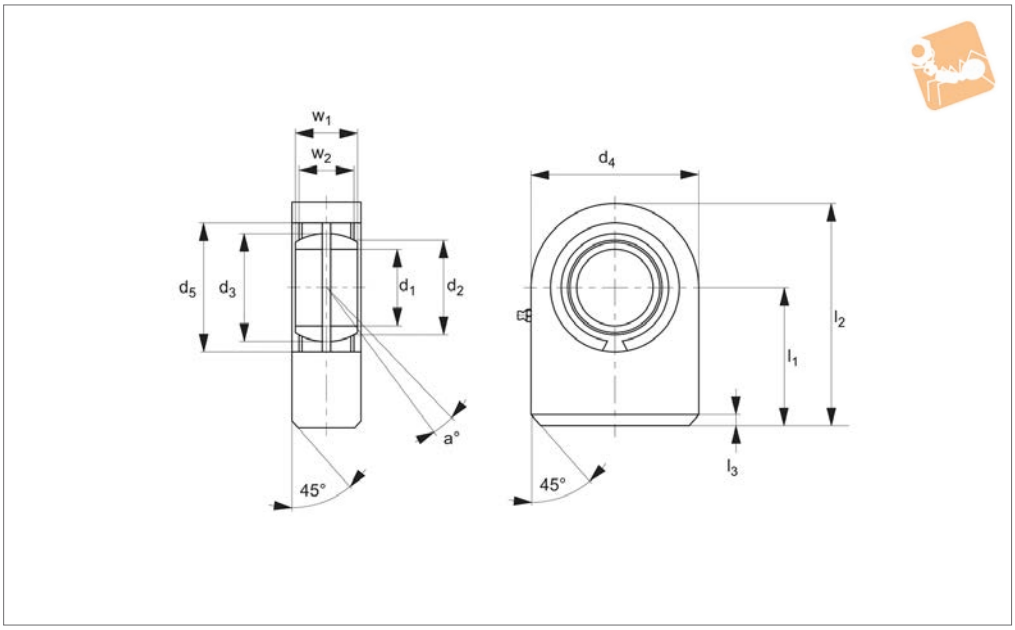
Order No.	d_1 tol. M7	l_1	d_2	d_3	d_4	d_5	d_6	d_7	Weight g
R3621.020	20	38	24.1	29	53	4	27.5	35	250
R3621.025	25	45	29.3	35.5	64	4	33.5	42	450
R3621.030	30	51	34.2	40.7	73	4	40	47	675
R3621.035	35	61	39.7	47	82	4	47	55	950
R3621.040	40	69	45.0	53	92	4	52	62	1400
R3621.045	45	77	50.7	60	102	6	58	68	1910
R3621.050	50	88	56.0	66	112	6	62	75	2650

Order No.	Dyn. load C_0 N max.	l_2	l_3	l_4	l_5	Static load C_0 N max.	w_1	w_2	a °
R3621.020	30.00	64.5	6	27.5	3	54.00	16	13	9
R3621.025	48.00	77	6	33	4	72.00	20	17	7
R3621.030	62.00	87.5	6	37.5	4	95.00	22	19	6
R3621.035	80.00	102	6	43	4	125.00	25	21	6
R3621.040	100.00	115	6	48	5	156.00	28	23	7
R3621.045	127.00	128	6	52.0	5	208.00	32	27	7
R3621.050	156.00	144	6	59.0	6	250.00	35	30	6

Hydraulic Rod Ends
weld-on base



R3622



Material
Housing: forged steel (st 52-3), steel on steel bearing requiring lubrication, spherical plain bearing.

Technical Notes
Fitted with hydraulic grease nipple to DIN 71412

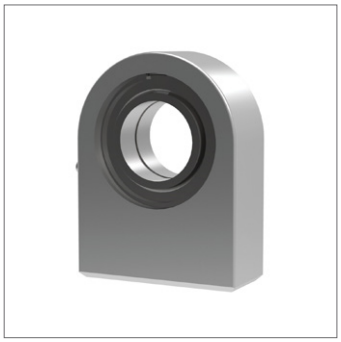
Tips
Rod ends with rectangular surface for weld-on, spherical plain bearings fixed with snap rings.

Order No.	d_1 tol. M7	l_1	d_2	d_3	d_4	d_5	Weight g
R3622.020	20	38	24.1	29.0	50	35	350
R3622.025	25	45	29.3	35.5	55	42	530
R3622.030	30	51	34.2	40.7	65	47	870
R3622.035	35	61	39.7	47.0	83	55	1500
R3622.040	40	69	45	53.0	100	62	2400
R3622.045	45	77	50.7	60.0	110	68	3400
R3622.050	50	88	56	66.0	123	75	4400
R3622.060	60	100	66.8	80.0	140	90	7100
R3622.070	70	115	77.8	92.0	164	105	10500
R3622.080	80	141	89.4	105	180	120	15000
R3622.090	90	150	98.1	115	226	130	23500
R3622.100	100	170	109.5	130	250	150	31500
R3622.110	110	185	121.2	140	295	160	48500
R3622.120	120	210	135.5	160	360	180	79000

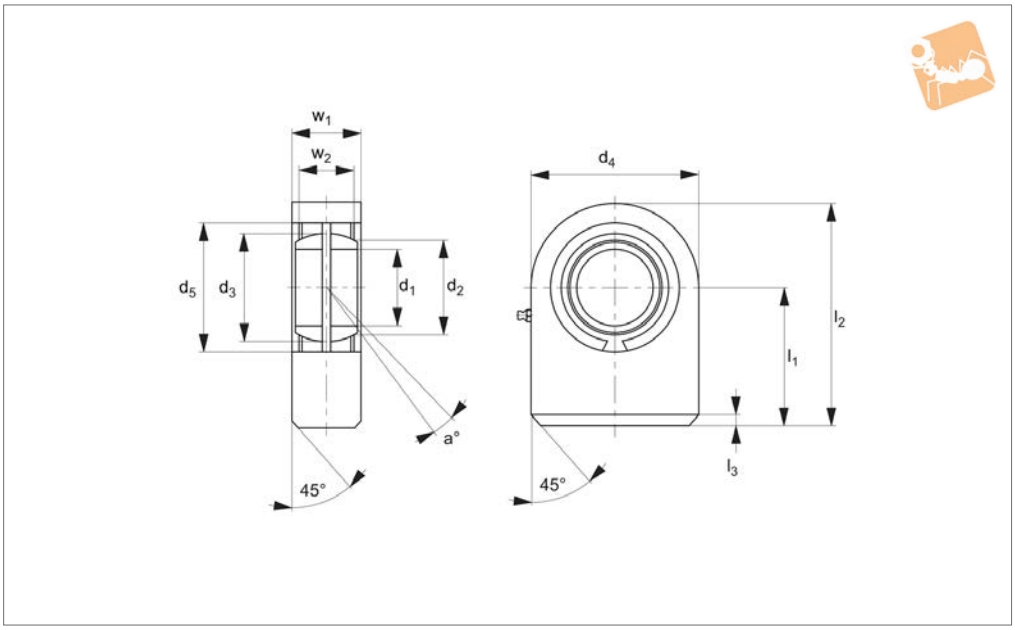
Order No.	Dyn. load C kN max.	l_2	l_3	Static load C_0 kN max.	w_1	w_2	a °
R3622.020	30.00	63.0	2	67.00	19	16	9
R3622.025	48.00	72.5	2	69.50	23	20	7
R3622.030	62.00	83.5	2	118.00	28	22	6
R3622.035	80.00	102.5	2	196.00	30	25	6
R3622.040	100.00	119	3	300.00	35	28	7
R3622.045	127.00	132	3	380.00	40	32	7
R3622.050	156.00	149.5	3	440.00	40	35	6
R3622.060	245.00	170	4	570.00	50	44	6
R3622.070	315.00	197	4	695.00	55	49	6
R3622.080	400.00	231	4	780.00	60	55	6
R3622.090	490.00	263	4	1340.00	65	60	5
R3622.100	610.00	295	4	1500.00	70	70	7
R3622.110	655.00	332.5	4	2160.00	80	70	6

Order No.	Dyn. load C kN max.	l_2	l_3	Static load C_0 kN max.	w_1	w_2	a °
R3622.120	950.00	390	4	3250.00	90	85	6

Hydraulic Rod Ends
stainless steel



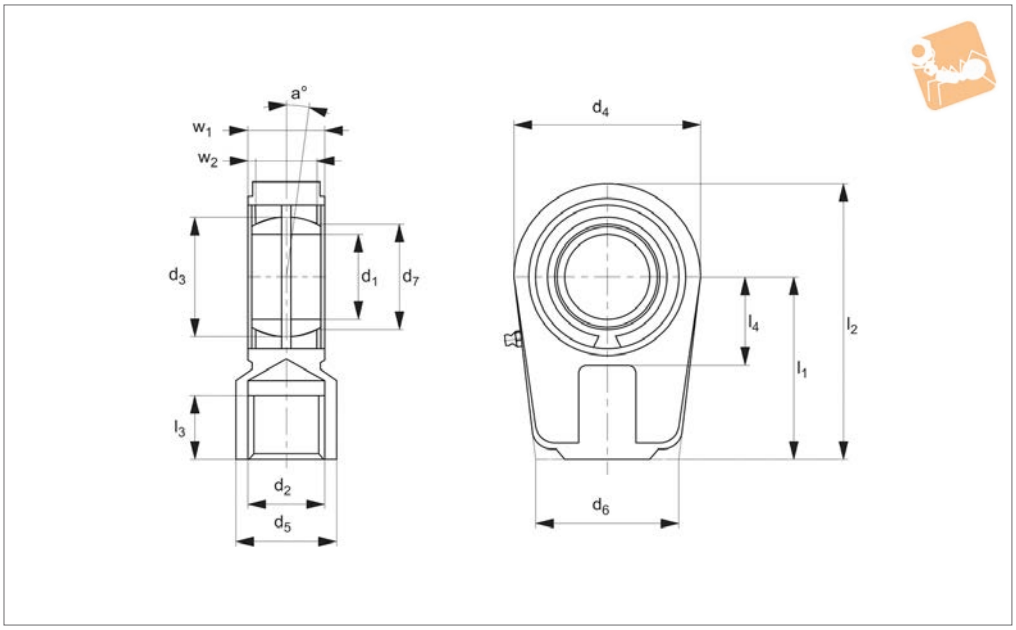
R3623

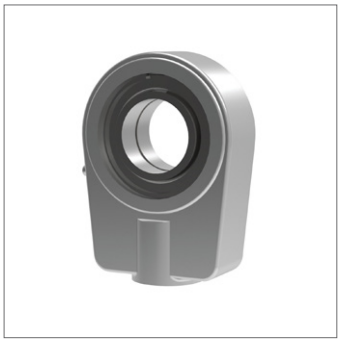


Material
Housing: stainless steel (AISI 316).
Bearing: stainless steel (AISI 420C) and PTFE fabric.

Order No.	d_1 tol. M7	l_1	d_2	d_3	d_4	d_5	Weight g
R3623.020	20	38	24.1	29.0	50	35	325
R3623.025	25	45	29.3	35.5	55	42	500
R3623.030	30	51	34.2	40.7	65	47	825
R3623.035	35	61	39.7	47.0	83	55	1475
R3623.040	40	69	45	53.0	100	62	2480
R3623.045	45	77	50.7	60.0	110	68	3450
R3623.050	50	88	56	66.0	123	75	4450

Order No.	Dyn. load C kN max.	l_2	l_3	Static load C_0 kN max.	w_1	w_2	a °
R3623.020	30.00	63.0	2	67.00	19	16	9
R3623.025	48.00	72.5	2	69.50	23	20	7
R3623.030	62.00	83.5	2	118.00	28	22	6
R3623.035	80.00	102.5	2	196.00	30	25	6
R3623.040	100.00	119	3	300.00	35	28	7
R3623.045	127.00	132	3	380.00	40	32	7
R3623.050	156.00	149.5	3	440.00	40	35	6





R3624

Material
Housing: Up to size 60 - Heat-treated steel (C45).
From size 70 cast iron (GS400).
Steel on steel bearing requiring lubrication, spherical plain bearing.

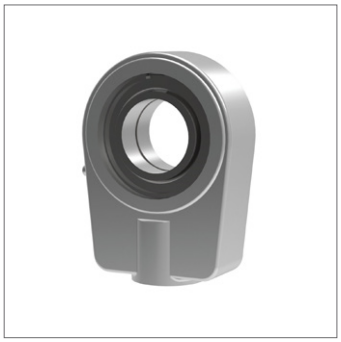
Technical Notes
Fitted with hydraulic grease nipples to DIN71412, rod ends with short thread, particularly suited to hydraulic cylinders. Spherical plain bearing fixed with snap rings.

Tips
For use with shortest relay distances and maximum stroke utilization.

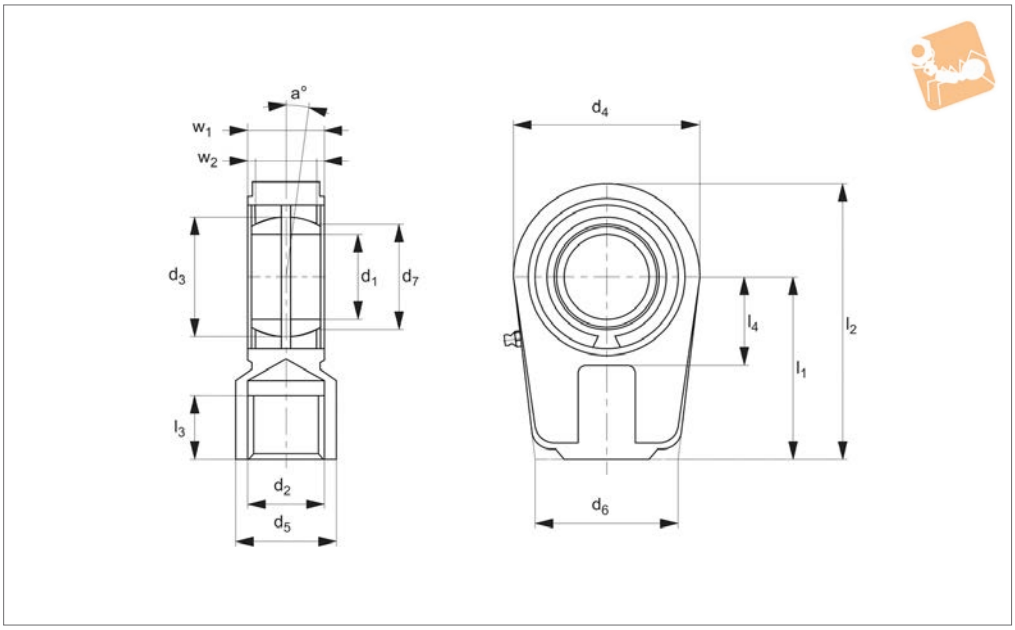
Order No.	d_1 tol. M7	l_1	d_2 tol. 6H	d_3	d_4	d_5	d_6	d_7	Dyn. load C kN max.	Weight g
R3624.020	20	50	M16x1,5	29	56	25	46	24.2	30.00	430
R3624.025	25	50	M16x1,5	35.5	56	25	46	29.3	48.00	480
R3624.030	30	60	M22x1,5	40.7	64	32	50	34.2	62.00	740
R3624.035	35	70	M28x1,5	47	78	40	66	39.8	80.00	1200
R3624.040	40	85	M35x1,5	53	94	49	76	45	100.00	2000
R3624.050	50	105	M45x1,5	66	116	61	90	55.9	156.00	3800
R3624.060	60	130	M58x1,5	80	130	75	120	66.8	245.00	5400
R3624.070	70	150	M65x1,5	92	154	86	130	77.9	245.00	5400
R3624.080	80	170	M80x2,0	105	176	105	160	89.4	400.00	12000
R3624.090	90	210	M100x2,0	115	206	124	180	98.1	490.00	21500
R3624.100	100	235	M110x2,0	130	230	138	200	109.5	610.00	27500
R3624.110	110	265	M120x3,0	140	265	152	220	121.2	655.00	40500
R3624.120	120	310	M130x3,0	160	340	172	257	135.5	950.00	76000

Order No.	l_2	l_3	l_4	Static load C_0 kN max.	w_1	w_2	a °
R3624.020	80	17	25	72.00	19	16	9
R3624.025	80	17	28	72.00	23	20	7
R3624.030	94	23	30	106.00	28	22	6
R3624.035	112	29	38	153.00	30	25	6
R3624.040	135	36	45	250.00	35	28	7
R3624.050	168	46	55	365.00	40	35	6
R3624.060	200	59	65	400.00	50	44	6
R3624.070	237	66	75	400.00	55	49	6
R3624.080	265	81	80	670.00	60	55	6
R3624.090	323	101	90	980.00	65	60	5
R3624.100	360	111	105	1120.00	70	70	7
R3624.110	407.5	125	115	1700.00	80	80	6
R3624.120	490	135	140	2900.00	90	90	6

Hydraulic Rod Ends
stainless steel



R3625

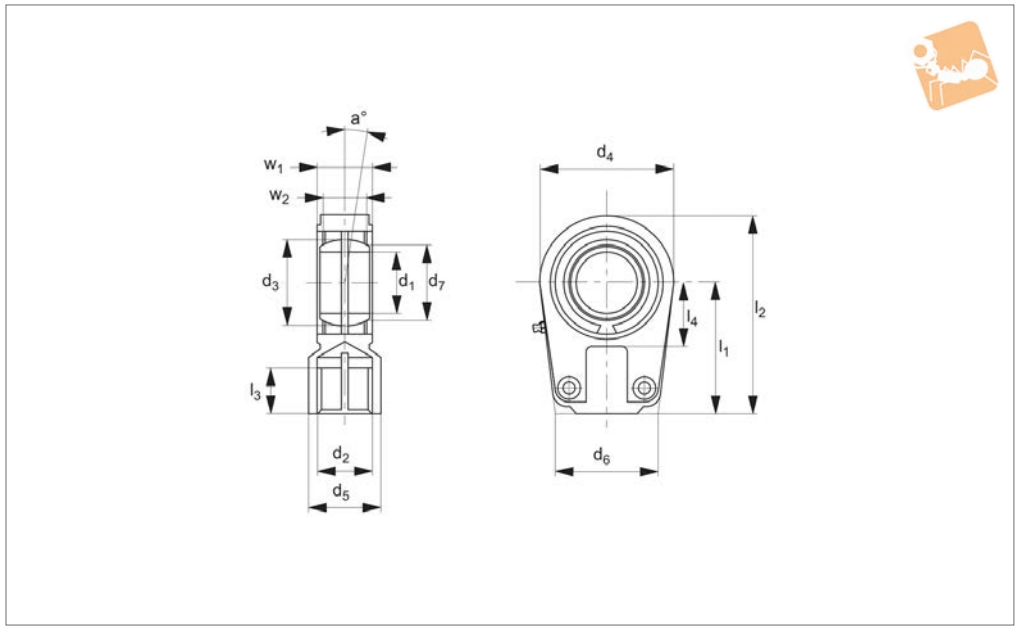


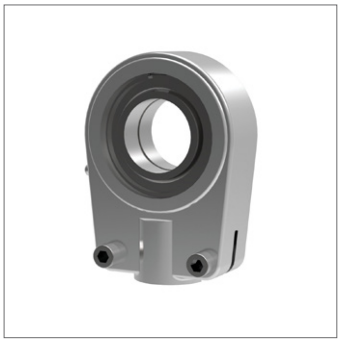
Material
Housing: stainless steel (AISI 316.)
Bearing stainless steel (AISI 420C) and PTFE fabric.

Tips
Standard thread is right hand thread.

Order No.	d_1 tol. M7	l_1	d_2 tol. 6H	d_3	d_4	d_5	d_6	d_7	Dyn. load C kN max.	Weight g
R3625.020	20	50	M16x1,5	29	56	25	46	24.1	30.00	400
R3625.025	25	50	M16x1,5	35.5	56	25	46	29.3	48.00	475
R3625.030	30	60	M22x1,5	40.7	64	32	50	34.2	62.00	700
R3625.035	35	70	M28x1,5	47	78	40	66	39.7	80.00	1150
R3625.040	40	85	M35x1,5	53	94	49	76	45	100.00	2075
R3625.050	50	105	M45x1,5	66	116	61	90	56	156.00	3575

Order No.	l_2	l_3	l_4	Static load C_0 kN max.	w_1	w_2	a °
R3625.020	80	17	25	72.00	19	16	9
R3625.025	80	17	28	72.00	23	20	7
R3625.030	94	23	30	106.00	28	22	6
R3625.035	112	29	38	153.00	30	25	6
R3625.040	135	36	45	250.00	35	28	7
R3625.050	168	46	55	365.00	40	35	6





R3626

Material
Housing: Up to size 60 - Heat-treated steel (C45).
From size 70 cast iron (GS400).
Steel on steel bearing requiring lubrication.

Spherical plain bearing.

Technical Notes
Fitted with hydraulic grease nipples to DIN71412.
Hex socket cap screw to DIN912-12.9,

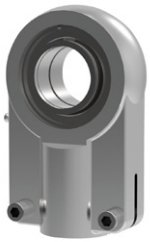
spherical plain bearings fixed with snap rings.

Tips
For use with shortest relay distances and maximum stroke utilization.

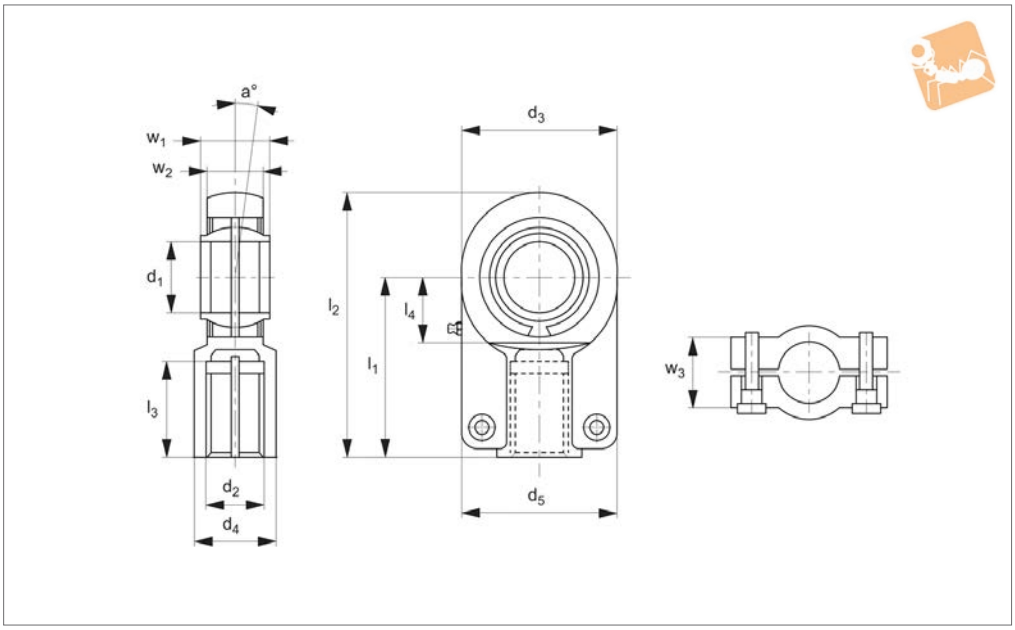
Order No.	d_1 tol. M7	l_1	d_2 tol. 6H	d_3	d_4	d_5	d_6	d_7	Dyn. load C kN max.	Weight g
R3626.020	20	50	M16x1,5	29	56	25	46	24.2	30.00	430
R3626.025	25	50	M16x1,5	35.5	56	25	46	29.3	48.00	480
R3626.030	30	60	M22x1,5	40.7	64	32	50	34.2	62.00	740
R3626.035	35	70	M28x1,5	47	78	40	66	39.8	80.00	1200
R3626.040	40	85	M35x1,5	53	94	49	76	45	100.00	2000
R3626.050	50	105	M45x1,5	66	116	61	90	55.9	156.00	3800
R3626.060	60	130	M58x1,5	80	130	75	120	66.8	245.00	5400
R3626.070	70	150	M65x1,5	92	154	86	130	77.9	245.00	8500
R3626.080	80	170	M80x2,0	105	176	105	160	89.4	400.00	12000
R3626.090	90	210	M100x2,0	115	206	124	180	98.1	490.00	21500
R3626.100	100	235	M110x2,0	130	230	138	200	109.5	610.00	27500
R3626.110	110	265	M120x3,0	140	265	152	220	121.2	655.00	40500
R3626.120	120	310	M130x3,0	160	340	172	257	135.5	950.00	76000

Order No.	l_2	l_3	l_4	Static load C_0 kN max.	w_1	w_2	a °
R3626.020	80	17	25	72.00	19	16	9
R3626.025	80	17	28	72.00	23	20	7
R3626.030	94	23	30	106.00	28	22	6
R3626.035	112	29	38	153.00	30	25	6
R3626.040	135	36	45	250.00	35	28	7
R3626.050	168	46	55	365.00	40	35	6
R3626.060	200	59	65	400.00	50	44	6
R3626.070	237	66	75	400.00	55	49	6
R3626.080	265	81	80	670.00	60	55	6
R3626.090	323	101	90	980.00	65	60	5
R3626.100	360	111	105	1120.00	70	70	7
R3626.110	407.5	125	115	1700.00	80	80	6
R3626.120	490	135	140	2900.00	90	90	6

Hydraulic Rod Ends
with female thread and locking nuts



R3628



Material
Housing: Up to size 60 - Heat-treated steel (C45).
From size 70 cast iron (GS400).
Bearing: steel on steel requiring lubrication.

Technical Notes
DIN24338/ISO6982.

For standard hydraulic cylinders, fastened by hexagon socket cap screws to DIN912-12.9.
Spherical plain bearings, regreasable, fixed with snap rings, sizes up to 12 not regreasable.

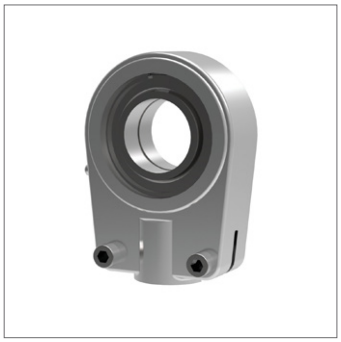
Tips
Standard thread is right hand thread, left hand thread available on request.

Order No.	d_1 tol. H7	l_1	d_2 tol. 6H	d_3	d_4	d_5	Dyn. load C kN max.	l_2	l_3	Weight g
R3628.012	12	38	M12x1,25	32	16.5	32	10.80	54	17	100
R3628.016	16	44	M14x1,5	40	21	40	17.60	64	19	200
R3628.020	20	52	M16x1,5	47	25	47	30.00	77	23	400
R3628.025	25	65	M20x1,5	58	30	54	48.00	96	29	660
R3628.032	32	80	M27x2,0	71	38	66	67.00	118.5	37	1200
R3628.040	40	97	M33x2,0	90	47	80	100.00	146	46	2100
R3628.050	50	120	M42x2,0	109	58	96	156.00	179.5	57	4400
R3628.063	63	140	M48x2,0	136	70	114	255.00	213	64	7600
R3628.070	70	160	M56x2,0	155	80	135	315.00	245	76	9500
R3628.080	80	180	M64x3,0	168	90	148	400.00	270	86	14500
R3628.090	90	195	M72x3,0	185	100	160	490.00	296	91	17000
R3628.100	100	210	M80x3,0	210	110	178	610.00	322	96	28000
R3628.110	110	235	M90x3,0	235	125	190	655.00	364	106	32000
R3628.125	125	102	M100x3,0	260	135	200	950.00	405	113	43000

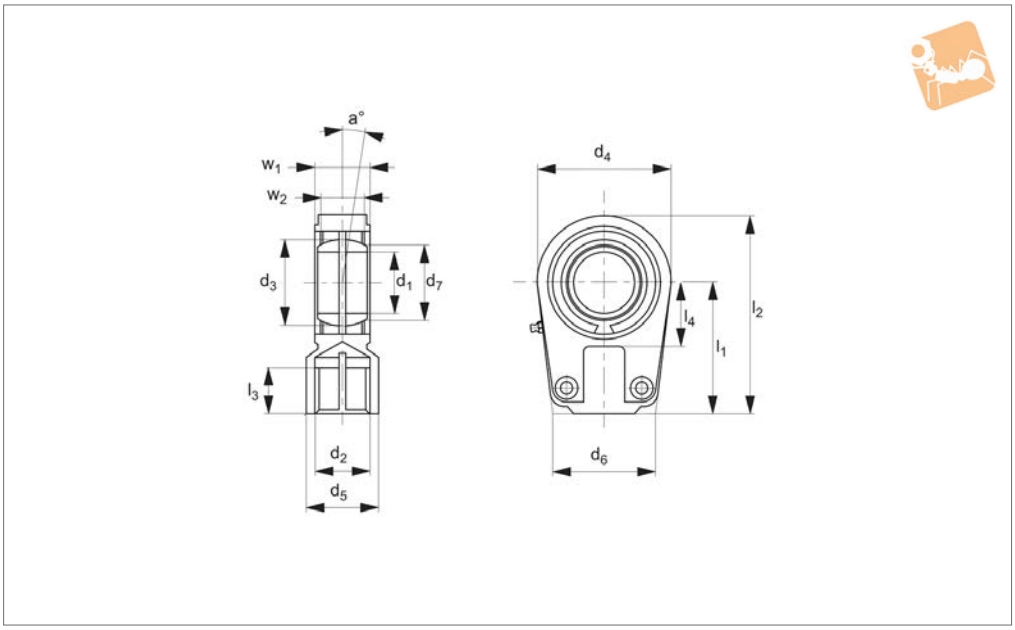
Order No.	l_4	Static load C_0 kN max.	w_1	w_2	w_3	a °
R3628.012	14	17.60	12	11	11	4
R3628.016	18	36.50	16	14	14	4
R3628.020	22	48.00	20	17	17	4
R3628.025	27	78.00	25	22	19	4
R3628.032	32	114.00	32	28	22	4
R3628.040	41	204.00	40	33	26	4
R3628.050	50	310.00	50	41	32	4
R3628.063	62	430.00	63	53	38	4
R3628.070	70	540.00	70	57	42	4
R3628.080	78	695.00	80	66	48	4

Order No.	l_4	Static load C_0 kN max.	w_1	w_2	w_3	a °
R3628.090	85	750.00	90	72	52	4
R3628.100	98	1060.00	100	84	62	4
R3628.110	105	1200.00	110	88	62	4
R3628.125	120	1430.00	125	102	72	4

Hydraulic Rod Ends
stainless steel



R3627



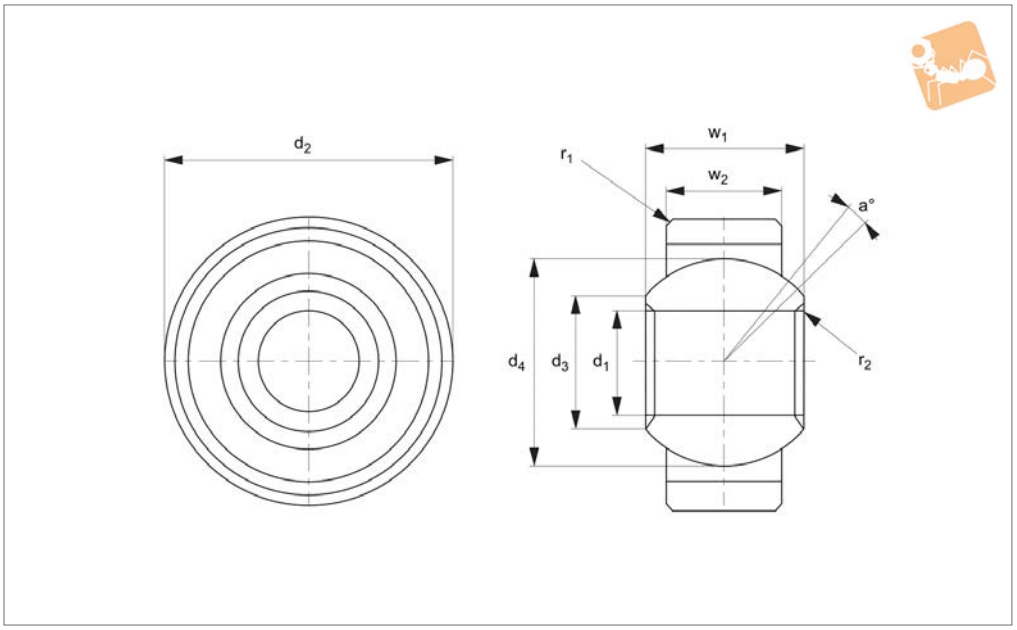
Material
Housing: stainless steel (AISI 316). Bearing stainless steel (AISI 420C) and PTFE fabric.

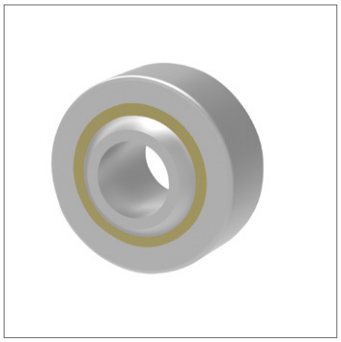
Technical Notes
Hex socket cap screw to DIN912-12.9. Spherical plain bearings fixed with snap rings, maintanance free.

Tips
Standard thread is right hand thread.

Order No.	d_1 tol. M7	l_1	d_2 tol. 6H	d_3	d_4	d_5	d_6	d_7	Dyn. load C kN max.	Weight g
R3627.020	20	50	M16x1,5	29	56	25	46	24.1	30.00	400
R3627.025	25	50	M16x1,5	35.5	56	25	46	29.3	48.00	475
R3627.030	30	60	M22x1,5	40.7	64	32	50	34.2	62.00	700
R3627.035	35	70	M28x1,5	47	78	40	66	39.7	80.00	1150
R3627.040	40	85	M35x1,5	53	94	49	76	45	100.00	2075
R3627.050	50	105	M45x1,5	66	116	61	90	56	156.00	3575

Order No.	l_2	l_3	l_4	Static load C_0 kN max.	w_1	w_2	a °
R3627.020	80	17	25	72.00	19	16	9
R3627.025	80	17	28	72.00	23	20	7
R3627.030	94	23	30	106.00	28	22	6
R3627.035	112	29	38	153.00	30	25	6
R3627.040	135	36	45	250.00	35	28	7
R3627.050	168	46	55	365.00	40	35	6





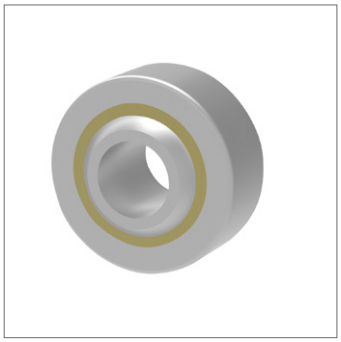
R3640

Material
Housing: undercut steel 11SMnPb30K (1.0718) turned silver zinc plated.
Ball: ball bearing steel 100Cr6 hardened, surface condition polished.
Race: teflon.

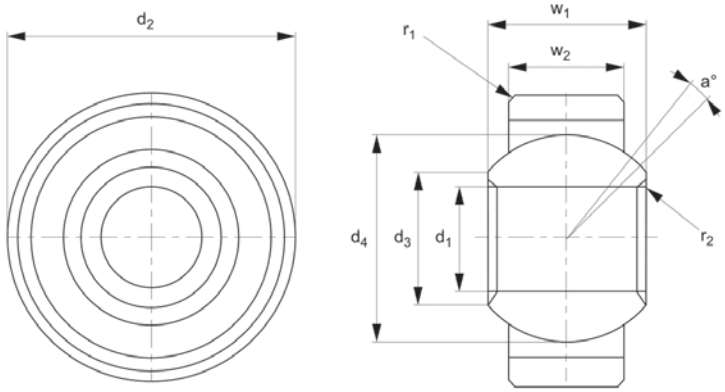
Technical Notes
To DIN 12240-1

Tips
For stainless steel version see R3641

Order No.	a °	d_1 tol. H7	d_2	d_3	d_4	r_1	r_2	w_1	w_2	Static load C_0 kN max.	Weight g
R3640.005	13	5	16	7.7	11.10	0.3	1.2	8	6	17	9
R3640.006	13	6	18	8.9	12.70	0.3	1.2	9	6.75	22	13
R3640.008	13	8	22	10.3	15.88	0.3	1.2	12	9	36	24
R3640.010	13	10	26	12.9	19.05	0.3	1.2	14	10.5	50	40
R3640.012	13	12	30	15.4	22.23	0.4	1.2	16	12	67	80
R3640.016	15	16	38	19.3	28.58	0.4	1.5	21	15	107	130

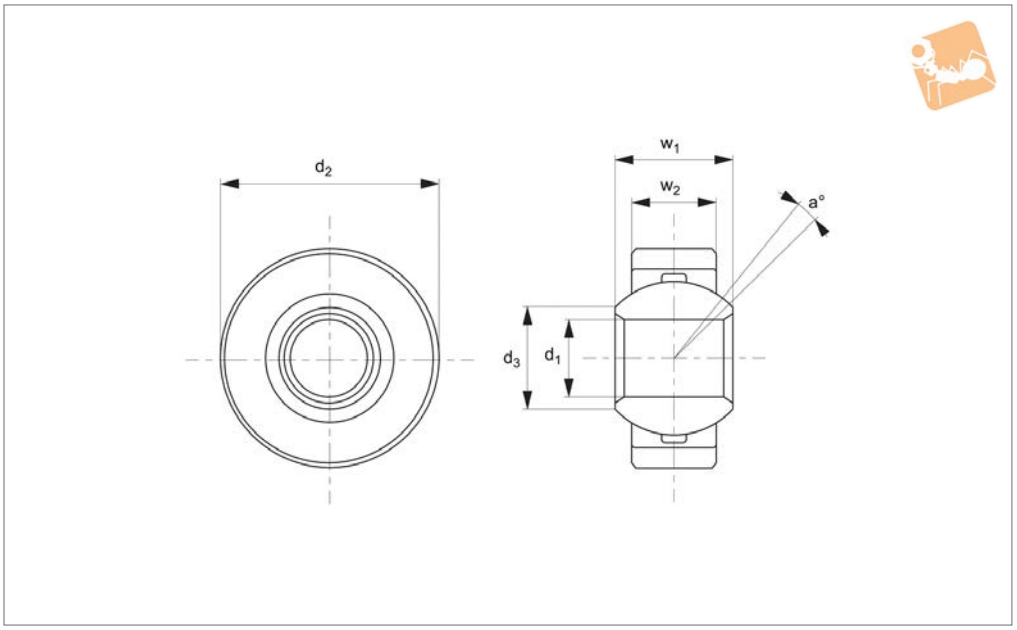


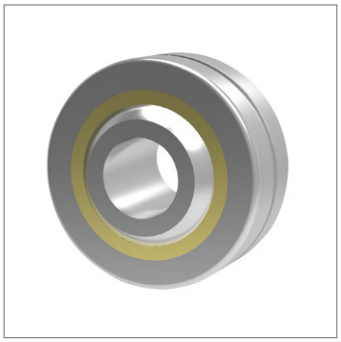
R3640.i



Material
Zinc - plated steel, Teflon or PTFE bearing race.

Order No.	a °	d_1	d_2	d_3	d_4	r_1	w_1	w_2	Radial static load kN max.	Weight g
R3640.0190	11,0°	0.1900	0.5625	0.293	0.406	0.015	0.281	0.218	21.6	5
R3640.0250	13,5°	0.2500	0.6562	0.364	0.5	0.022	0.343	0.25	33.0	9
R3640.0313	12,0°	0.3125	0.75	0.419	0.562	0.032	0.375	0.281	43.2	14
R3640.0375	10,0°	0.3750	0.8125	0.516	0.656	0.032	0.406	0.312	56.0	18
R3640.0438	8,0°	0.4375	0.9062	0.53	0.687	0.032	0.437	0.343	63.0	22
R3640.0500	9,5°	0.5000	1	0.64	0.813	0.032	0.5	0.39	88.4	31
R3640.0563	9,5°	0.5625	1.0937	0.71	0.906	0.032	0.562	0.437	110.9	40
R3640.0625	8,5°	0.6250	1.1875	0.78	1	0.032	0.625	0.5	141.9	49
R3640.0750	9,0°	0.7500	1.4375	0.92	1.187	0.044	0.75	0.593	213.0	90
R3640.0875	9,5°	0.8750	1.5265	0.98	1.312	0.044	0.875	0.703	279.9	118
R3640.1000	10,0°	1.0000	1.75	1.118	1.5	0.044	1	0.797	368.3	177





R3642

Material
Housing: stainless steel (1.4305) turned.
Bearing shell: special brass CuSn8 surface coated with a PTFE foil.
Ball: ball bearing steel 100Cr6 hardened, surface condition polished, hard chrome plated.
Upon request: stainless steel (1.4034) hardened, surface condition polished.

Stainless steel (1.4401) not hardened, surface condition polished.

Technical Notes
Suitable for low speeds and high dynamic loads.

Maintenance free, series K similar to DIN 12240-1 (DIN 648)

Important Notes
Working range -50°C to +200°C
Recommended shaft tolerance: g6

External diameter of pivoting bearing: h6

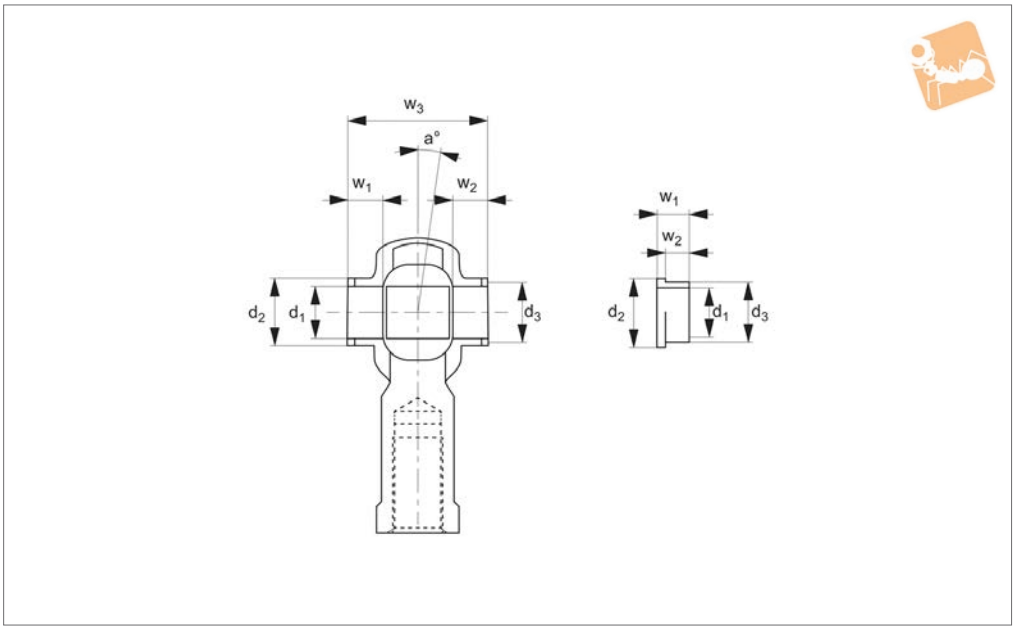
Recommended housing tolerance: J7

Order No.	a °	d_1 tol. H7	d_2	d_3	w_1	w_2	Admissible rpm min.	Static load C_0 kN max.	Weight g
R3642.005	13	5	16	7.7	8	6	600	12.5	8
R3642.006	13	6	18	8.9	9	6.75	530	15.5	12
R3642.008	14	8	22	10.4	12	9	420	27.8	23
R3642.010	13	10	26	12.9	14	10.5	350	39	38
R3642.012	13	12	30	15.4	16	12	300	53.5	58
R3642.016	15	16	38	19.3	21	15	230	88	115

Rubber Protector Cap



R3630

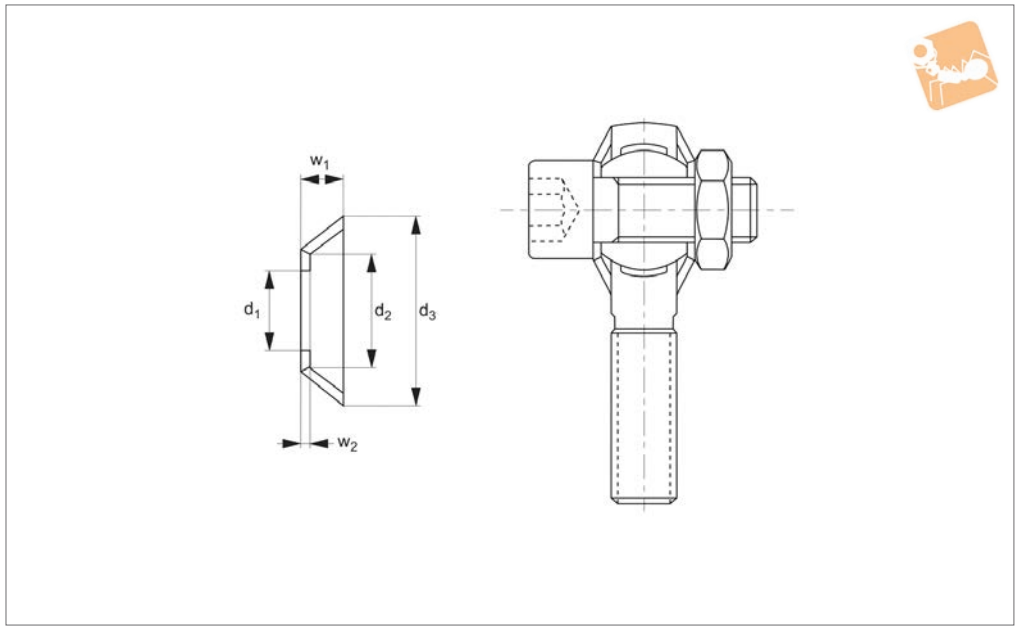


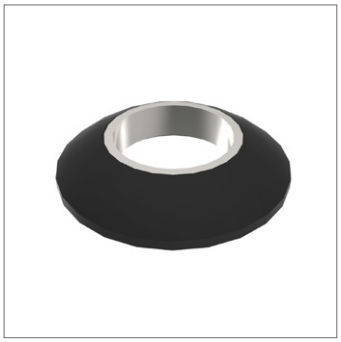
Material
Rubber

Technical Notes
Rubber protector caps for additional protection of rod ends. For use with maintenance free series K rod ends.
Brass spacer bush available on request.
Temperature range: -20°C to + 110°C.

Tips
Mounted easily with retaining pliers.

Order No.	Suitable for steel rod ends	Suitable for stainless steel rod ends	d_1	d_2	d_3	w_1	w_2	w_3	a °	Weight g
R3630.006	R3550/R3551.006	R3565/R3566.006	6	11	8.7	6	4	21	13	3
R3630.008	R3550/R3551.008	R3565/R3566.008	8	12	10.3	6	4	24	14	3
R3630.010	R3550/R3551.010	R3565/R3566.010	10	14	12.5	6	4	26	14	5
R3630.012	R3550/R3551.012	R3565/R3566.012	12	17	15.0	8	6	32	13	5
R3630.014	R3550/R3551.014	R3565/R3566.014	14	19	16.8	8	6	35	16	7
R3630.016	R3550/R3551.016	R3565/R3566.016	16	21	19.0	8	6	37	15	7
R3630.018	R3550/R3551.018	R3565/R3566.018	18	25	21.8	8	6	39	15	7
R3630.020	R3550/R3551.020	R3565/R3566.020	20	28	24.3	10	8	45	15	40
R3630.022	R3550/R3551.022	R3565/R3566.022	22	29	25.7	10	8	48	15	40
R3630.025	R3550/R3551.025	R3565/R3566.025	25	33	29.7	10	8	51	15	40





R3631

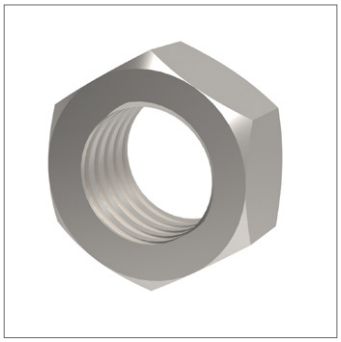
Material
Seal: neoprene rubber.
Washer: stainless steel.

Technical Notes
Washers for additional protection of bearing for use with series K rod ends.
Consisting of grease, oil, saltwater, as well as several chemicals.
Temperature range -20°C to +110°C

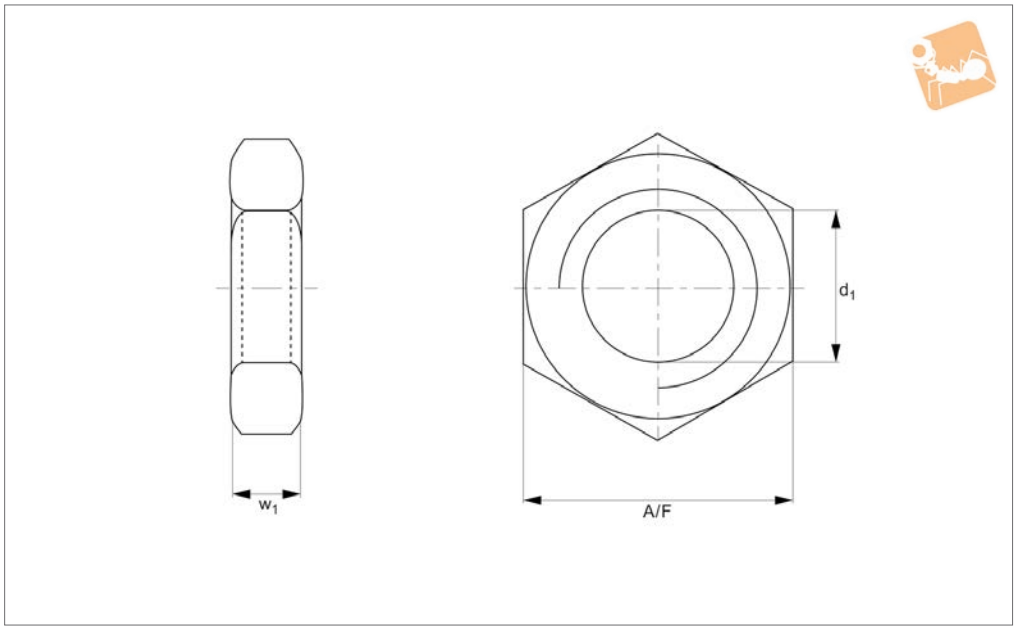
Tips
Before installation, fill cup half full with waterpump grease.

Order No.	Suitable for rod end bore size	d_1 ±0.13	d_2 ±0.13	d_3 ±0.25	w_1 ±0.25	w_2 ±0.13	Weight g
R3631.005	5	5.25	8.28	11.22	2.41	0.50	1
R3631.006	6	6.25	9.53	12.7	3.05	0.69	1
R3631.008	8	8.25	12.37	17.78	5.08	1.20	2
R3631.010	10	10.25	13.46	20.32	5.59	1.20	2
R3631.012	12	12.25	18.54	28.58	6.35	1.20	3
R3631.014	14	14.25	20.32	29.21	6.86	1.20	3
R3631.016	16	16.25	22.4	31.7	6.8	1.20	4
R3631.018	18	18.25	22.6	32.69	8.25	1.20	5
R3631.020	20	20.25	25.15	38.1	10.16	1.20	6
R3631.025	25	25.25	33.8	53.3	12.7	1.50	9
R3631.030	30	30.25	35.56	55.88	19.97	1.53	11

Steel Lock Nuts



R3670



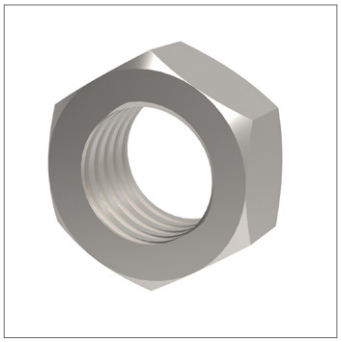
Material
Mild steel, silver zinc plated

Technical Notes
Hexagonal lock nuts to DIN 936

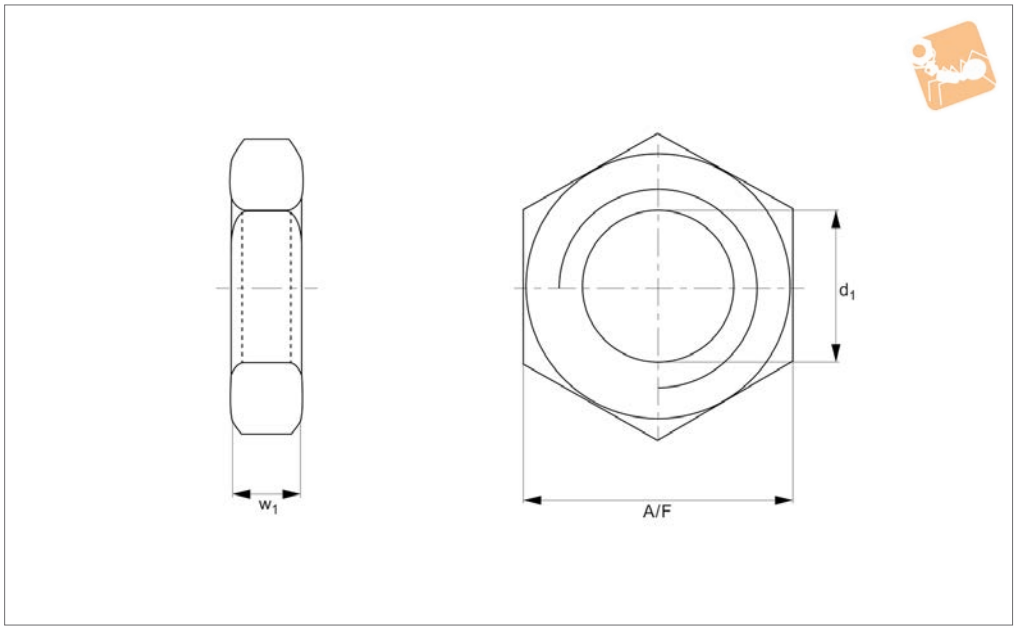
Order No.	Thread hand	d	A/F	w	Weight g
R3670.R005	Right	M5	8	2.7	2
R3670.R006	Right	M6	10	3.2	3
R3670.R008	Right	M8	13	5	4
R3670.R010	Right	M10	17	6	8
R3670.R011	Right	M10x1,25	17	6	8
R3670.R012	Right	M12	19	7	10
R3670.R013	Right	M12x1,25	19	7	10
R3670.R014	Right	M14	22	8	16
R3670.R015	Right	M14x1,5	22	8	16
R3670.R016	Right	M16	24	8	18
R3670.R017	Right	M16x1,5	24	8	18
R3670.R018	Right	M18x1,5	27	9	28
R3670.R020	Right	M20x1,5	30	9	32
R3670.R022	Right	M22x1,5	32	10	40
R3670.R024	Right	M24x2	36	10	52
R3670.R027	Right	M27x2	41	12	102
R3670.R030	Right	M30x2	46	12	102
R3670.R036	Right	M36x3	55	18	175
R3670.R039	Right	M39x3	60	16	240
R3670.R042	Right	M42x3	65	16	290
R3670.R045	Right	M45x3	70	18	380
R3670.R052	Right	M52x3	80	26	535
R3670.R060	Right	M60x4	90	27	860
R3670.L005	Left	M5	8	2.7	2
R3670.L006	Left	M6	10	3.2	3
R3670.L008	Left	M8	13	5	4
R3670.L010	Left	M10	17	6	8
R3670.L011	Left	M10x1,25	17	6	8
R3670.L012	Left	M12	19	7	10
R3670.L013	Left	M12x1,25	19	7	10
R3670.L014	Left	M14	22	8	16
R3670.L015	Left	M14x1,5	22	8	16
R3670.L016	Left	M16	24	8	18
R3670.L017	Left	M16x1,5	24	8	18

Order No.	Thread hand	d	A/F	w	Weight g
R3670.L018	Left	M18x1,5	27	9	28
R3670.L020	Left	M20x1,5	30	9	32
R3670.L022	Left	M22x1,5	32	10	40
R3670.L024	Left	M24x2	36	10	52
R3670.L027	Left	M27x2	41	12	102
R3670.L030	Left	M30x2	46	12	102
R3670.L036	Left	M36x3	55	18	175
R3670.L039	Left	M39x3	60	16	240
R3670.L042	Left	M42x3	65	16	290
R3670.L045	Left	M45x3	70	18	380
R3670.L052	Left	M52x3	80	26	535
R3670.L060	Left	M60x4	90	27	860

Stainless Lock Nuts



R3671



Material
Stainless steel (A2)

8675 (DIN 439/936)

Technical Notes
Hexagonal lock nuts similar to ISO 4035/

Tips
Stainless steel (A4) available on request.

Order No.	Thread hand	d	A/F	w	Weight g
R3671.R005	Right	M5	8	2.7	2
R3671.R006	Right	M6	10	3.2	3
R3671.R008	Right	M8	13	4	4
R3671.R009	Right	M8x1,0	13	4	4
R3671.R010	Right	M10	17	5	8
R3671.R011	Right	M10x1,25	17	6	8
R3671.R012	Right	M12	19	6	10
R3671.R013	Right	M12x1,25	19	6	10
R3671.R014	Right	M14	22	7	18
R3671.R015	Right	M14x1,5	22	7	18
R3671.R016	Right	M16	24	8	20
R3671.R017	Right	M16x1,5	24	8	20
R3671.R018	Right	M18	27	9	30
R3671.R019	Right	M18x1,5	27	9	30
R3671.R020	Right	M20	30	10	32
R3671.R021	Right	M20x1,5	30	10	32
R3671.R022	Right	M22	34	11	40
R3671.R023	Right	M22x1,5	34	11	40
R3671.R024	Right	M24	36	12	52
R3671.R025	Right	M24x2,0	36	12	52
R3671.R027	Right	M27	41	13.5	90
R3671.R028	Right	M27x2,0	41	13.5	90
R3671.R030	Right	M30	46	15	110
R3671.R031	Right	M30x2,0	46	15	110
R3671.R033	Right	M33	50	16.5	155
R3671.R036	Right	M36	55	18	190
R3671.L006	Left	M6	10	4	3
R3671.L008	Left	M8	13	5	4
R3671.L010	Left	M10	17	6	8
R3671.L012	Left	M12	19	7	10
R3671.L016	Left	M16	24	8	20
R3671.L020	Left	M20	30	9	32

Order No.	Thread hand	d	A/F	w	Weight g
R3671.L022	Left	M24	32	10	40
R3671.L030	Left	M30	46	15	110
R3671.L036	Left	M36	55	18	190

Overview

Clevis Joints



Pages 16 - 38

Clevis Joints

Stocked to DIN 71752 in steel and stainless steel. Plain clevis joints or clevis joints and pin assemblies available in right and left hand threads zinc plated steel and stainless steel.

Sizes Steel from M4 up to M48, stainless from M4 up to M27.



Pages 40 - 43

Male Clevis Joints

Stocked in zinc plated steel and stainless steel, right and left hand threads.

Sizes M6 up to M20.



Pages 44 - 47

Clevis Mating Pieces

These are designed to fit in between our clevis joints to create a linkage where an angular offset is required. Available in zinc plated steel and stainless steel.

Sizes M4 up to M20.



Pages 49- 50

Clevis Retention Clips

These are the most popular type of clip used with our clevis joints. They create a neat compact assembly, only available in zinc plated steel.

Sizes Available for clevis joints from 4mm up to 20mm.

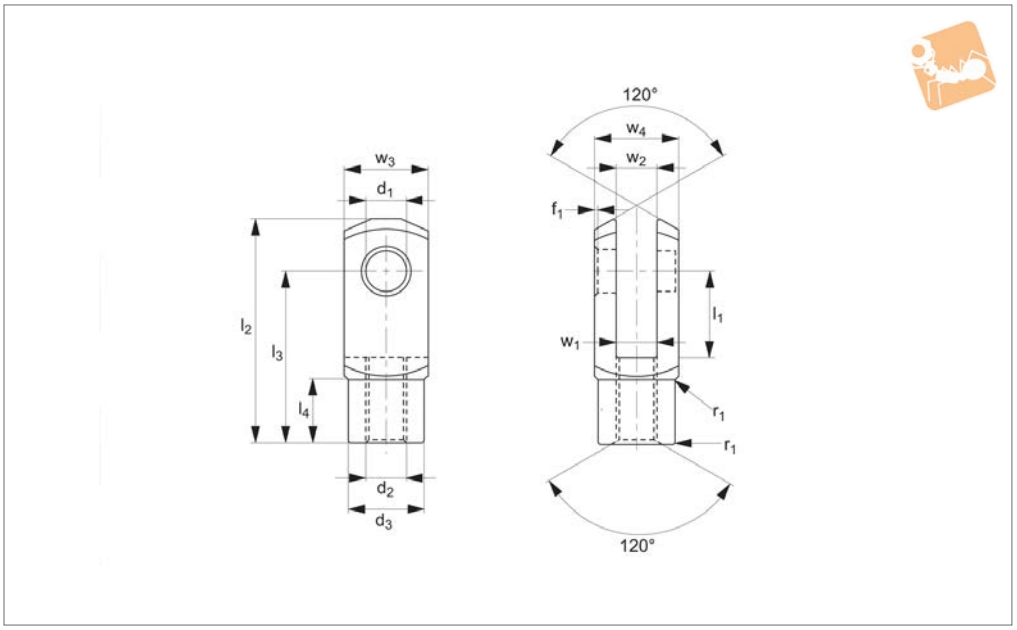


Pages 51 - 62

Clevis Pins and Clips

Various styles of pins and clips to suit clevis joints in zinc plated steel and stainless steel.

Sizes Available to suit all sizes of clevis joints we offer.





R3385

Material
Steel 1.0718 (11SMnPb30k), silver zinc plated.

Technical Notes
M4-M16: DIN 71 752/DIN ISO 8140.
M18-M48: Similar to DIN 71 752/DIN ISO 8140 and according to CETOP standard.

Tips
For left hand, see R3386.

Important Notes
For sizes M4-M12, f_1 and r_1 =0,5, for sizes M14-M16, f_1 and r_1 =1
For sizes M18-M20, f_1=1, r_1 = 1,5, for M24 f_1 and r_1 = 1,5, for sizes M27-M30, f_1 = 1,5, r_1 = 2
For M36 f_1 = 2, r_1 = 3, for sizes M42-M48, f_1 = 3, r_1 = 5, for r_1, radius or 45° bevelling.
Other Tolerances:-
w_4: M4-M16 = +0,3 -0,16
M18-M48 = +0,5 -0,2
w_2: size 4x8-10x20 = B13
All others +0,7 +0,15
d_3: M4-M16 = ±0,3
l_2: size 4x8-6x12 = ±0,3
All others ±0,4
l_3: M4-M16 = ±0,2
M18-M48 = ±0,3
r_1: M18-M48 = ±0,5

Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3385.R040	4x8	Right	Coarse	4	8	M4	8	21	16	6.0	4	4	8	8	5
R3385.R041	4x16	Right	Coarse	4	16	M4	8	29	24	6.0	4	4	8	8	7
R3385.R051	5x10	Right	Coarse	5	10	M5	9	26	20	7.5	5	5	10	10	9
R3385.R052	5x20	Right	Coarse	5	20	M5	9	36	30	7.5	5	5	10	10	13
R3385.R061	6x12	Right	Coarse	6	12	M6	10	31	24	9.0	6	6	12	12	15
R3385.R062	6x24	Right	Coarse	6	24	M6	10	43	36	9.0	6	6	12	12	21
R3385.R081	8x16	Right	Coarse	8	16	M8	14	42	32	12.0	8	8	16	16	37
R3385.R082	8x16	Right	Fine	8	16	M8x1	14	42	32	12.0	8	8	16	16	37
R3385.R083	8x32	Right	Coarse	8	32	M8	14	58	48	12.0	8	8	16	16	54
R3385.R084	8x32	Right	Fine	8	32	M8x1	14	58	48	12.0	8	8	16	16	54
R3385.R102	10x20	Right	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3385.R103	10x20	Right	Fine	10	20	M10x1,25	18	52	40	15.0	10	10	20	20	74
R3385.R104	10x40	Right	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3385.R105	10x40	Right	Fine	10	40	M10x1,25	18	72	60	15.0	10	10	20	20	116
R3385.R122	12x24	Right	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3385.R123	12x24	Right	Fine	12	24	M12x1,25	20	62	48	18.0	12	12	24	24	121
R3385.R124	12x48	Right	Coarse	12	48	M12	20	86	72	18.0	12	12	24	24	175
R3385.R125	12x48	Right	Fine	12	48	M12x1,25	20	86	72	18.0	12	12	24	24	175
R3385.R142	14x28	Right	Coarse	14	28	M14	24	72	56	22.5	14	14	27	27	178
R3385.R143	14x28	Right	Fine	14	28	M14x1,5	24	72	56	22.5	14	14	27	27	178
R3385.R145	14x56	Right	Coarse	14	56	M14	24	101	85	22.5	14	14	27	27	258
R3385.R146	14x56	Right	Fine	14	56	M14x1,5	24	101	85	22.5	14	14	27	27	258
R3385.R163	16x32	Right	Coarse	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3385.R164	16x32	Right	Fine	16	32	M16x1,5	26	83	64	24.0	16	16	32	32	282
R3385.R166	16x64	Right	Coarse	16	64	M16	26	115	96	24.0	16	16	32	32	411
R3385.R167	16x64	Right	Fine	16	64	M16x1,5	26	115	96	24.0	16	16	32	32	411
R3385.R183	18x36	Right	Coarse	18	36	M18	30	94	72	27.0	18	18	36	36	390

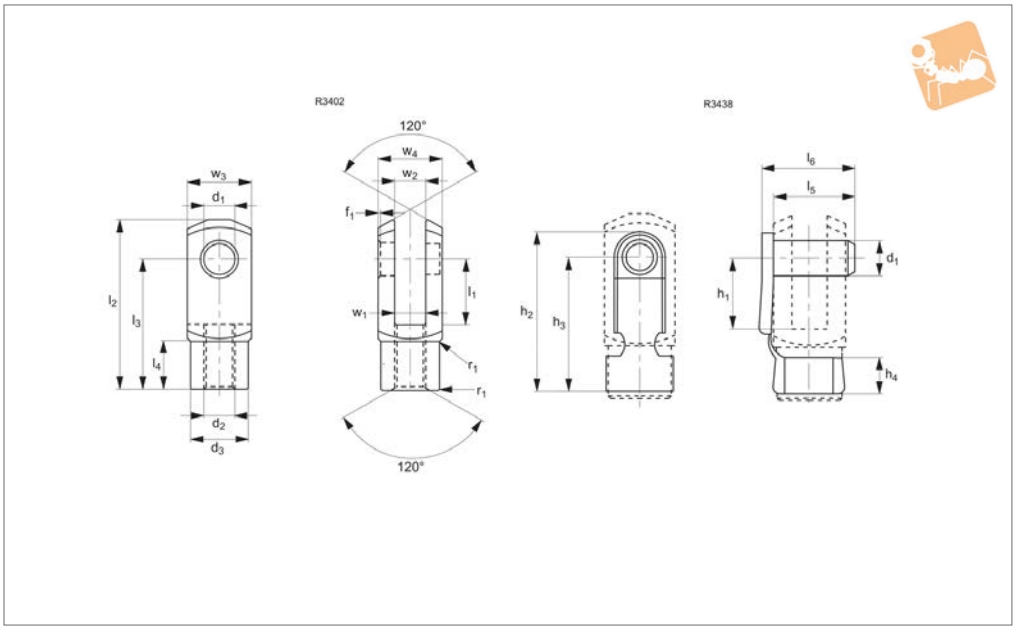
Steel Clevis Joints

silver zinc plated



Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3385.R184	18x36	Right	Fine	18	36	M18x1,5	30	94	72	27.0	18	18	36	36	390
R3385.R204	20x40	Right	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550
R3385.R205	20x40	Right	Fine	20	40	M20x1,5	34	105	80	30.0	20	20	40	40	550
R3385.R208	20x80	Right	Coarse	20	80	M20	34	145	120	30.0	20	20	40	40	800
R3385.R209	20x80	Right	Fine	20	80	M20x1,5	34	145	120	30.0	20	20	40	40	800
R3385.R255	25x50	Right	Coarse	25	50	M24	42	132	100	36.0	25	25	50	50	1100
R3385.R256	25x50	Right	Fine	25	50	M24x2	42	132	100	36.0	25	25	50	50	1100
R3385.R285	28x56	Right	Coarse	28	56	M27	48	148	112	40.0	28	28	55	55	1500
R3385.R286	28x56	Right	Fine	28	56	M27x2	48	148	112	40.0	28	28	55	55	1500
R3385.R305	30x54	Right	Fine	30	54	M27x2	48	148	110	40.0	30	30	55	55	1440
R3385.R306	30x60	Right	Coarse	30	60	M30	52	160	120	42.0	30	30	60	60	1970
R3385.R307	30x60	Right	Fine	30	60	M30x2	52	160	120	42.0	30	30	60	60	1970
R3385.R355	35x54	Right	Fine	35	54	M36x2	60	188	144	54.0	35	35	70	70	2930
R3385.R357	35x72	Right	Coarse	35	72	M36	60	188	144	54.0	35	35	70	70	2930
R3385.R358	35x72	Right	Fine	35	72	M36x2	60	188	144	54.0	35	35	70	70	2930
R3385.R367	36x72	Right	Coarse	35	72	M36	60	188	144	54.0	36	36	70	70	2930
R3385.R368	36x72	Right	Fine	35	72	M36x2	60	188	144	54.0	36	36	70	70	2930
R3385.R408	40x84	Right	Fine	40	84	M42x2	70	232	168	63.5	40	40	85	85	5640
R3385.R428	42x84	Right	Coarse	42	84	M42	70	232	168	63.5	42	42	85	85	5340
R3385.R429	42x84	Right	Fine	42	84	M42x2	70	232	168	63.5	42	42	85	85	5340
R3385.R509	50x96	Right	Coarse	50	96	M48	82	265	192	73.0	50	50	96	96	7860
R3385.R510	50x96	Right	Fine	50	96	M48x2	82	265	192	73.0	50	50	96	96	7860

RH Clevis Joints with Retention Clip
Stainless Steel





R3400

Material
Stainless steel 1.4305 AISI 303.

Technical Notes
M4-M16: DIN 71 752/DIN ISO 8140.
M20: Similar to DIN 71 752/DIN ISO 8140 and according to CETOP standard.

Tips
For left hand, see R3401.

Assembly made up using R3402 clevis joint and R3438 clevis retention clip.

Important Notes
For sizes M 4-M 12, f1 and r1 =0.5, for sizes M 14-M 16, f1 and r1 =1
For sizes M 18-M 20, f1=1, r1 = 1.5 Other Tolerances:-
w4: M 4-M 16 = +0.3 -0.16
M 20
w2: size 4x8-10x20 = B13
All others +0.7 +0.15
d3: M 4-M 16 = ±0.3
l2: size 4x8-6x12 = ±0.3
All others ±0.4
l3: M 4-M 16 = ±0.2
M 20

Order No.	Size	Thread hand	Thread type	d_1	l_1	d_2	d_3	l_2	l_3	Weight g
R3400.R051	5x10	right	Coarse	5	10	M 5	9	26	20	12
R3400.R052	5x20	Right	Coarse	5	20	M 5	9	36	30	16
R3400.R061	6x12	Right	Coarse	6	12	M 6	10	31	24	20
R3400.R062	6x24	Right	Coarse	6	24	M 6	10	43	36	27
R3400.R081	9x16	Right	Coarse	6	16	M 8	14	42	32	48
R3400.R082	8x16	Right	Fine	8	16	M 8x1	14	42	32	48
R3400.R083	8x32	Right	Coarse	8	32	M 8	14	58	48	54
R3400.R084	8x32	Right	Fine	8	32	M 8x1	14	58	48	54
R3400.R102	10x20	Right	Coarse	10	20	M 10	18	52	40	74
R3400.R103	10x20	Right	Fine	10	20	M 10x1.25	18	50	40	74
R3400.R104	10x40	Right	Coarse	10	40	M 10	18	72	60	116
R3400.R105	10x40	Right	Fine	10	40	M 10x1.25	18	72	60	116
R3400.R122	12x24	Right	Coarse	12	24	M 12	20	62	48	121
R3400.R123	12x24	Right	Fine	12	24	M 12x1.25	20	62	48	121
R3400.R124	12x48	Right	Coarse	12	45	M 12	20	86	72	175
R3400.R125	12x48	Right	Fine	12	48	M 12x1.25	20	86	72	175
R3400.R163	16x32	Right	Coarse	16	32	M 16	26	83	64	282
R3400.R164	16x32	Right	Fine	16	32	M 16x1.5	26	83	64	282
R3400.R204	20x40	Right	Coarse	20	40	M 20	34	105	80	550
R3400.R205	20x40	Right	Fine	20	40	M 20x1.5	34	105	80	550

Order No.	l_4	l_5	l_6	h_1	h_2	h_3	h_4	w_1	w_2	w_3	w_4
R3400.R051	7.5	9	15	10	23	19	4.5	5	5	10	10
R3400.R052	7.5	12	14	20	33	29	4.5	5	5	10	10
R3400.R061	9.0	14	16	12	28	23	6.0	6	6	12	12
R3400.R062	9.0	14	16	24	40	35	6.0	6	6	12	12
R3400.R081	12.0	19	23	16	37	31	8.0	8	8	16	16
R3400.R082	12.0	19	23	16	37	31	8.0	8	8	16	16

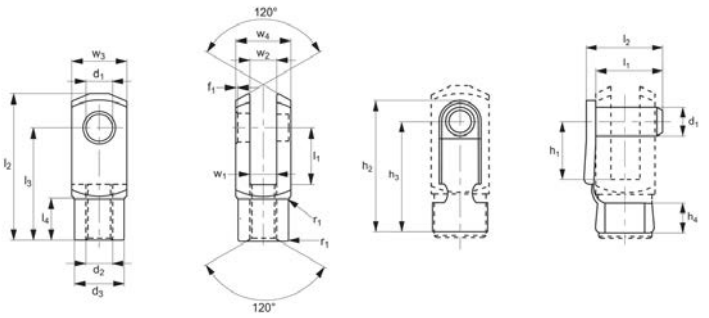
RH Clevis Joints with Retention Clip

Stainless Steel



Order No.	l_4	l_5	l_6	h_1	h_2	h_3	h_4	w_1	w_2	w_3	w_4
R3400.R083	12.0	19	23	32	53	47	8.0	8	8	16	16
R3400.R084	12.0	19	23	32	53	47	8.0	8	8	16	16
R3400.R102	15.0	23	27	20	46	39	10.0	10	10	20	20
R3400.R103	15.0	23	27	20	46	39	10.0	10	10	20	20
R3400.R104	15.0	23	27	40	66	59	10.0	10	10	20	20
R3400.R105	15.0	23	27	40	66	59	10.0	10	10	20	20
R3400.R122	18.0	28	32	24	55	46	12.0	12	12	24	24
R3400.R123	18.0	28	32	24	55	46	12.0	12	12	24	24
R3400.R124	18.0	28	32	48	79	71	12.0	12	12	24	24
R3400.R125	18.0	28	32	48	79	71	12.0	12	12	24	24
R3400.R163	24.0	36	40	32	72	62	16.0	16	16	32	32
R3400.R164	24.0	36	40	32	72	62	16.0	16	16	32	32
R3400.R204	30.0	44	48	40	88	72	16.0	20	20	40	40
R3400.R205	30.0	44	48	40	88	72	16.0	20	20	40	40

LH Clevis Joints with Retention Clip
stainless steel





R3401

Material
Stainless steel 1.4305

Technical Notes
M 4-M 16: DIN 71 752/DIN ISO 8140.
M 20: Similar to DIN 71 752/DIN ISO 8140 and according to CETOP standard.

Tips
For right hand, see R3400. Assembly made up using R3403 clevis joint and R3438 clevis retention clip.

Important Notes
For sizes M 4-M 12, f1 and r1 =0.5, for sizes M 14-M 16, f1 and r1 =1
For sizes M 18-M 20, f1=1, r1 = 1.5 Other Tolerances:-
w4: M 4-M 16 = +0.3 -0.16
M 20
w2: size 4x8-10x20 = B13
All others +0.7 +0.15
d3: M 4-M 16 = ±0.3
l2: size 4x8-6x12 = ±0.3
All others ±0.4
l3: M 4-M 16 = ±0.2
M 20

Order No.	Size	Thread hand	Thread type	d_1	l_1	d_2	d_3	l_2	Weight g
R3401.L051	5x10	Left	Coarse	5	12	M 5	9	26	12
R3401.L052	5x20	Left	Coarse	5	20	M 5	9	36	16
R3401.L061	6x12	Left	Coarse	6	12	M 6	10	31	20
R3401.L062	6x24	Left	Coarse	6	24	M 6	10	43	54
R3401.L081	8x16	Left	Coarse	8	16	M 8	14	42	48
R3401.L082	8x16	Left	Fine	8	16	M 8x1	14	42	48
R3401.L083	8x32	Left	Coarse	8	32	M 8	14	58	54
R3401.L084	8x32	Left	Fine	8	32	M 8x1	14	58	54
R3401.L102	10x20	Left	Coarse	10	20	M10	18	52	74
R3403.L103	10x20	Left	Coarse	10	20	M 10x1.25	18	52	74
R3401.L104	10x40	Left	Coarse	10	40	M10	18	72	116
R3401.L105	10x40	Left	Fine	10	40	M 10x1.25	18	72	116
R3401.L122	12x24	Left	Coarse	12	24	M 12	20	62	121
R3401.L123	12x24	Left	Fine	12	24	M 12x1.25	20	62	121
R3401.L124	12x48	Left	Coarse	12	48	M 12	20	86	175
R3401.L125	12x48	Left	Fine	12	48	M 12x1.25	20	86	175
R3401.L163	16x32	Left	Coarse	16	32	M 16	26	83	282
R3401.L164	16x32	Left	Fine	16	32	M 16x1.5	26	83	282
R3401.L204	20x40	Left	Coarse	20	40	M 20	34	105	550
R3401.L205	20x40	Left	Fine	20	40	M 20x1.5	34	105	550

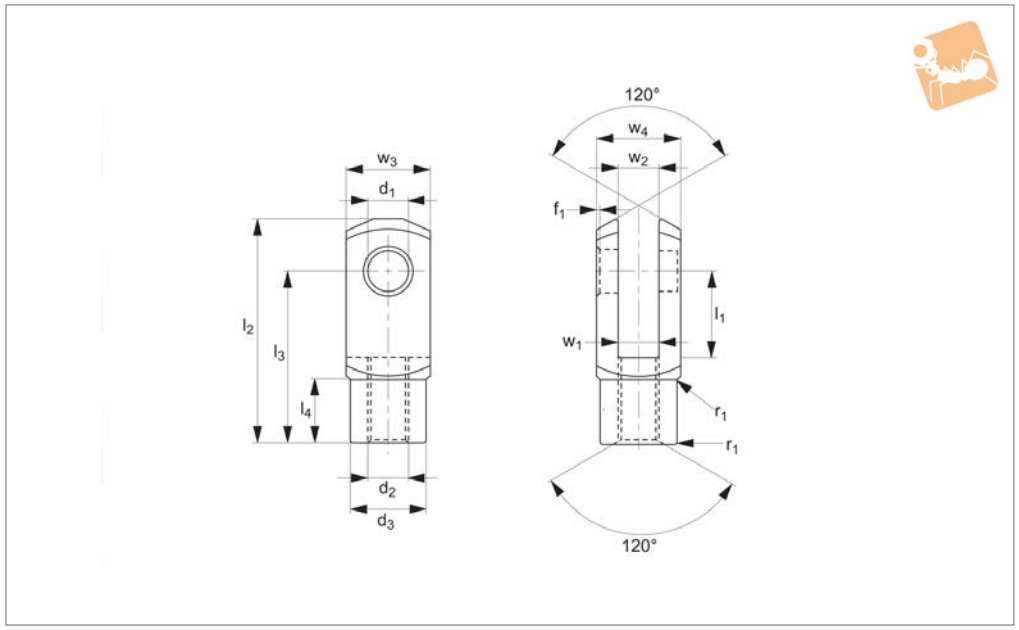
Order No.	l_3	l_4	l_5	l_6	h_1	h_2	h_3	h_4	w_1	w_2	w_3	w_4
R3401.L051	30	7.5	9	14	10	23	19	4.5	5	5	10	10
R3401.L052	30	7.5	12	14	20	33	29	4.5	5	5	10	10
R3401.L061	24	9.0	14	16	12	28	23	6.0	6	6	12	12
R3401.L062	36	9.0	14	16	24	40	35	6.0	6	6	12	12
R3401.L081	32	12.0	19	23	16	37	31	8.0	8	8	16	16
R3401.L082	32	12.0	19	23	16	37	31	8.0	8	8	16	16

LH Clevis Joints with Retention Clip

stainless steel



Order No.	l_3	l_4	l_5	l_6	h_1	h_2	h_3	h_4	w_1	w_2	w_3	w_4
R3401.L083	48	12.0	19	23	32	53	47	8.0	8	8	16	16
R3401.L084	48	12.0	19	23	32	53	47	8.0	8	8	16	16
R3401.L102	40	15.0	23	27	20	46	39	10.0	10	10	20	20
R3403.L103	40	15.0	23	27	20	46	39	10.0	10	10	20	20
R3401.L104	60	15.0	23	27	40	66	59	10.0	10	10	20	20
R3401.L105	60	15.0	23	27	40	66	59	10.0	10	10	20	20
R3401.L122	48	18.0	28	32	24	55	46	12.0	12	12	24	24
R3401.L123	48	18.0	28	32	24	55	46	12.0	12	12	24	24
R3401.L124	72	18.0	28	32	48	79	71	12.0	12	12	24	24
R3401.L125	72	18.0	28	32	48	79	71	12.0	12	12	24	24
R3401.L163	64	24.0	36	40	32	72	62	16.0	16	16	32	32
R3401.L164	64	24.0	36	40	32	72	62	16.0	16	16	32	32
R3401.L204	80	30.0	44	48	40	88	72	16.0	20	20	40	40
R3401.L205	80	30.0	44	48	40	88	72	16.0	20	20	40	40





R3386

Material
Steel 1.0718 (11SMnPb30k), silver zinc plated.

Technical Notes
M4-M16: DIN 71 752/DIN ISO 8140.
M18-M48: Similar to DIN 71 752/DIN ISO 8140 and according to CETOP standard.

Important Notes
For sizes M4-M12, f_1 and r_1 =0,5, for sizes M14-M16, f_1 and r_1 =1
For sizes M18-M20, f_1=1, r_1 = 1,5, for M24 f_1 and r_1 = 1,5, for sizes M27-M30, f_1 = 1,5, r_1 = 2
For M36 f_1 = 2, r_1 = 3, for sizes M42-M48, f_1 = 3, r_1 = 5, for r_1, radius or 45° bevelling.
Other Tolerances:-
w_4: M4-M16 = +0,3 -0,16
M18-M48 = +0,5 -0,2
w_2: size 4x8-10x20 = B13
All others +0,7 +0,15
d_3: M4-M16 = ±0,3
l_2: size 4x8-6x12 = ±0,3
All others ±0,4
l_3: M4-M16 = ±0,2
M18-M48 = ±0,3
r_1: M18-M48 = ±0,5

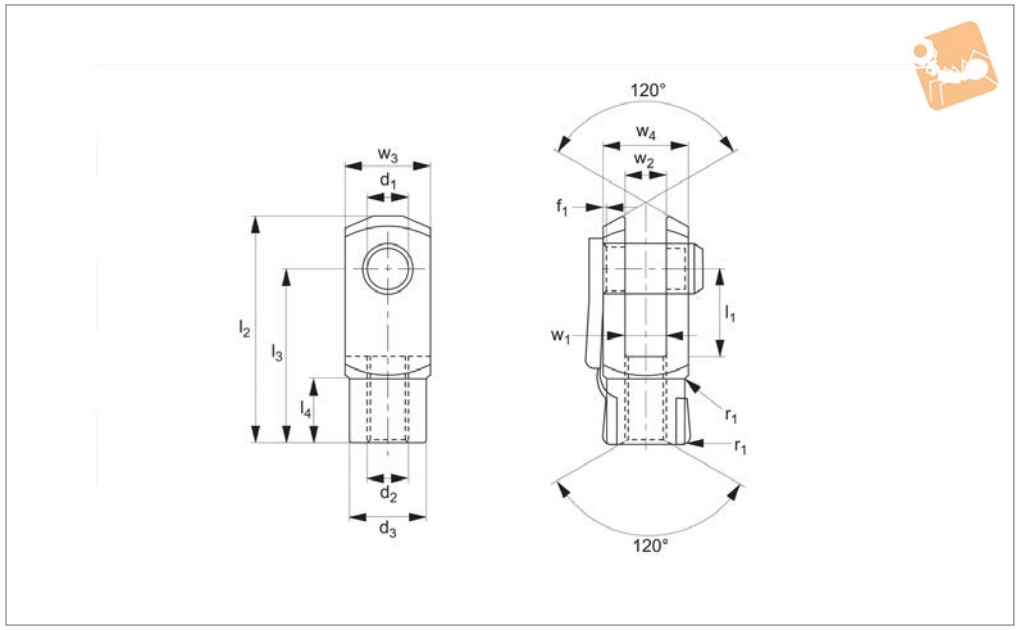
Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3386.L040	4x8	Left	Coarse	4	8	M4	8	21	16	6.0	4	4	8	8	5
R3386.L041	4x16	Left	Coarse	4	16	M4	8	29	24	6.0	4	4	8	8	7
R3386.L051	5x10	Left	Coarse	5	10	M5	9	26	20	7.5	5	5	10	10	9
R3386.L052	5x20	Left	Coarse	5	20	M5	9	36	30	7.5	5	5	10	10	13
R3386.L061	6x12	Left	Coarse	6	12	M6	10	31	24	9.0	6	6	12	12	15
R3386.L062	6x24	Left	Coarse	6	24	M6	10	43	36	9.0	6	6	12	12	21
R3386.L081	8x16	Left	Coarse	8	16	M8	14	42	32	12.0	8	8	16	16	37
R3386.L082	8x16	Left	Fine	8	16	M8x1	14	42	32	12.0	8	8	16	16	37
R3386.L083	8x32	Left	Coarse	8	32	M8	14	58	48	12.0	8	8	16	16	54
R3386.L084	8x32	Left	Fine	8	32	M8x1	14	58	48	12.0	8	8	16	16	54
R3386.L102	10x20	Left	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3386.L103	10x20	Left	Fine	10	20	M10x1,25	18	52	40	15.0	10	10	20	20	74
R3386.L104	10x40	Left	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3386.L105	10x40	Left	Fine	10	40	M10x1,25	18	72	60	15.0	10	10	20	20	116
R3386.L122	12x24	Left	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3386.L123	12x24	Left	Fine	12	24	M12x1,25	20	62	48	18.0	12	12	24	24	121
R3386.L124	12x48	Left	Coarse	12	48	M12	20	86	72	18.0	12	12	24	24	175
R3386.L125	12x48	Left	Fine	12	48	M12x1,25	20	86	72	18.0	12	12	24	24	175
R3386.L142	14x28	Left	Coarse	14	28	M14	24	72	56	22.5	14	14	27	27	178
R3386.L143	14x28	Left	Fine	14	28	M14x1,5	24	72	56	22.5	14	14	27	27	178
R3386.L145	14x56	Left	Coarse	14	56	M14	24	101	85	22.5	14	14	27	27	258
R3386.L146	14x56	Left	Fine	14	56	M14x1,5	24	101	85	22.5	14	14	27	27	258
R3386.L163	16x32	Left	Coarse	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3386.L164	16x32	Left	Fine	16	32	M16x1,5	26	83	64	24.0	16	16	32	32	282
R3386.L166	16x64	Left	Coarse	16	64	M16	26	115	96	24.0	16	16	32	32	411
R3386.L167	16x64	Left	Fine	16	64	M16x1,5	26	115	96	24.0	16	16	32	32	411
R3386.L183	18x36	Left	Coarse	18	36	M18	30	94	72	27.0	18	18	36	36	390

Steel Clevis Joints

left hand - silver zinc plated



Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3386.L184	18x36	Left	Fine	18	36	M18x1,5	30	94	72	27.0	18	18	36	36	390
R3386.L204	20x40	Left	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550
R3386.L205	20x40	Left	Fine	20	40	M20x1,5	34	105	80	30.0	20	20	40	40	550
R3386.L208	20x80	Left	Coarse	20	80	M20	34	145	120	30.0	20	20	40	40	800
R3386.L209	20x80	Left	Fine	20	80	M20x1,5	34	145	120	30.0	20	20	40	40	800
R3386.L255	25x50	Left	Coarse	25	50	M24	42	132	100	36.0	25	25	50	50	1100
R3386.L256	25x50	Left	Fine	25	50	M24x2	42	132	100	36.0	25	25	50	50	1100
R3386.L285	28x56	Left	Coarse	28	56	M27	48	148	112	40.0	28	28	55	55	1500
R3386.L286	28x56	Left	Fine	28	56	M27x2	48	148	112	40.0	28	28	55	55	1500
R3386.L305	30x54	Left	Fine	30	54	M27x2	48	148	110	40.0	30	30	55	55	1440
R3386.L306	30x60	Left	Coarse	30	60	M30	52	160	120	42.0	30	30	60	60	1970
R3386.L307	30x60	Left	Fine	30	60	M30x2	52	160	120	42.0	30	30	60	60	1970
R3386.L355	35x54	Left	Fine	35	54	M36x2	60	188	144	54.0	35	35	70	70	2930
R3386.L357	35x72	Left	Coarse	35	72	M36	60	188	144	54.0	35	35	70	70	2930
R3386.L358	35x72	Left	Fine	35	72	M36x2	60	188	144	54.0	35	35	70	70	2930
R3386.L367	36x72	Left	Coarse	35	72	M36	60	188	144	54.0	36	36	70	70	2930
R3386.L368	36x72	Left	Fine	35	72	M36x2	60	188	144	54.0	36	36	70	70	2930
R3386.L408	40x84	Left	Fine	40	84	M42x2	70	232	168	63.5	40	40	85	85	5640
R3386.L428	42x84	Left	Coarse	42	84	M42	70	232	168	63.5	42	42	85	85	5340
R3386.L429	42x84	Left	Fine	42	84	M42x2	70	232	168	63.5	42	42	85	85	5340
R3386.L509	50x96	Left	Coarse	50	96	M48	82	265	192	73.0	50	50	96	96	7860
R3386.L510	50x96	Left	Fine	50	96	M48x2	82	265	192	73.0	50	50	96	96	7860





R3387

Material
Steel 1.0718 (11SMnPb30k), silver zinc plated.

Technical Notes
M4-M16: DIN 71 752/DIN ISO 8140.
M20: Similar to DIN 71 752/DIN ISO 8140 and according to CETOP standard.

Tips
For yellow zinc plated version see R3398, standard thread is right hand, (for left hand, see R3388).

Assembly made up using R3385 clevis joint and R3435 clevis retention clip.

Important Notes
For sizes M4-M12, f_1 and r_1 =0,5, for sizes M14-M16, f_1 and r_1 =1
For sizes M18-M20, f_1=1, r_1 = 1,5, for M24 f_1 and r_1 = 1,5, for sizes M27-M30, f_1 = 1,5, r_1 = 2
For M36 f_1 = 2, r_1 = 3, for sizes M42-M48, f_1 = 3, r_1 = 5, for r_1, radius or 45° bevelling.
Other Tolerances:-

w_4: M4-M16 = +0,3 -0,16
M18-M48 = +0,5 -0,2
w_2: size 4x8-10x20 = B13
All others +0,7 +0,15
d_3: M4-M16 = ±0,3
l_2: size 4x8-6x12 = ±0,3
All others ±0,4
l_3: M4-M16 = ±0,2
M18-M48 = ±0,3
r_1: M18-M48 = ±0,5

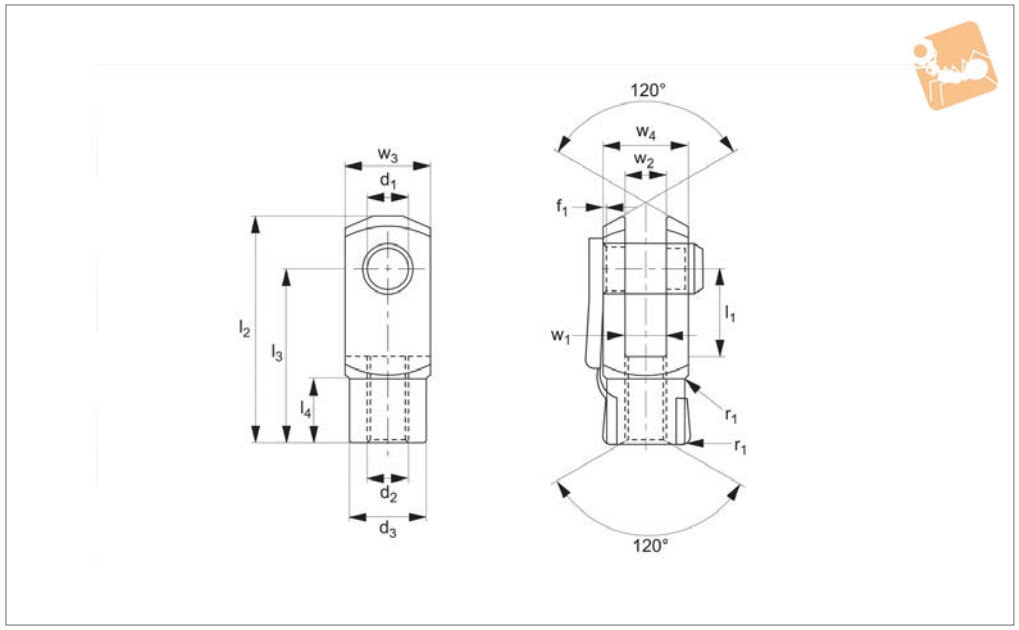
Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3387.R040	4x8	Right	Coarse	4	8	M4	8	21	16	6.0	4	4	8	8	5
R3387.R051	5x10	Right	Coarse	5	10	M5	9	26	20	7.5	5	5	10	10	9
R3387.R052	5x20	Right	Coarse	5	20	M5	9	36	30	7.5	5	5	10	10	13
R3387.R061	6x12	Right	Coarse	6	12	M6	10	31	24	9.0	6	6	12	12	15
R3387.R062	6x24	Right	Coarse	6	24	M6	10	43	36	9.0	6	6	12	12	21
R3387.R081	8x16	Right	Coarse	8	16	M8	14	42	32	12.0	8	8	16	16	37
R3387.R082	8x16	Right	Fine	8	16	M8x1	14	42	32	12.0	8	8	16	16	37
R3387.R083	8x32	Right	Coarse	8	32	M8	14	58	48	12.0	8	8	16	16	54
R3387.R084	8x32	Right	Fine	8	32	M8x1	14	58	48	12.0	8	8	16	16	54
R3387.R102	10x20	Right	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3387.R103	10x20	Right	Fine	10	20	M10x1,25	18	52	40	15.0	10	10	20	20	74
R3387.R104	10x40	Right	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3387.R105	10x40	Right	Fine	10	40	M10x1,25	18	72	60	15.0	10	10	20	20	116
R3387.R122	12x24	Right	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3387.R123	12x24	Right	Fine	12	24	M12x1,25	20	62	48	18.0	12	12	24	24	121
R3387.R124	12x48	Right	Coarse	12	48	M12	20	86	72	18.0	12	12	24	24	175
R3387.R125	12x48	Right	Fine	12	48	M12x1,25	20	86	72	18.0	12	12	24	24	175
R3387.R142	14x28	Right	Coarse	14	28	M14	24	72	56	22.5	14	14	27	27	178
R3387.R143	14x28	Right	Fine	14	28	M14x1,5	24	72	56	22.5	14	14	27	27	178
R3387.R145	14x56	Right	Coarse	14	56	M14	24	101	85	22.5	14	14	27	27	258
R3387.R146	14x56	Right	Fine	14	56	M14x1,5	24	101	85	22.5	14	14	27	27	258
R3387.R163	16x32	Right	Coarse	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3387.R164	16x32	Right	Fine	16	32	M16x1,5	26	83	64	24.0	16	16	32	32	282
R3387.R166	16x64	Right	Coarse	16	64	M16	26	115	96	24.0	16	16	32	32	411
R3387.R167	16x64	Right	Fine	16	64	M16x1,5	26	115	96	24.0	16	16	32	32	411

Steel Clevis Joints with Retention

silver zinc plated



Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3387.R204	20x40	Right	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550
R3387.R205	20x40	Right	Fine	20	40	M20x1,5	34	105	80	30.0	20	20	40	40	550





R3388

Material
Steel 1.0718 (11SMnPb30k), silver zinc plated.

Technical Notes
M4-M16: DIN 71 752/DIN ISO 8140.
M20: Similar to DIN 71 752/DIN ISO 8140 and according to CETOP standard.

Tips
For yellow zinc plated version see R3399, assembly made up using R3386 clevis joint and R3435 clevis retention clip.

Important Notes
For sizes M4-M12, f_1 and r_1 =0,5
For sizes M4-M16, f_1 and r_1 =1
For sizes M20, f_1=1, r_1 = 1,5
For r_1, radius or 45° bevelling.

Other Tolerances:-

w_4: M4-M16 = +0,3 -0,16
M20 = +0,5 -0,2
w_2: size 4x8-10x20 = B13
All others +0,7 +0,15
d_3: M4-M16 = ±0,3
l_2: size 4x8-6x12 = ±0,3
All others ±0,4
l_3: M4-M16 = ±0,2
M20 = ±0,3
r_1: M20 = ±0,5

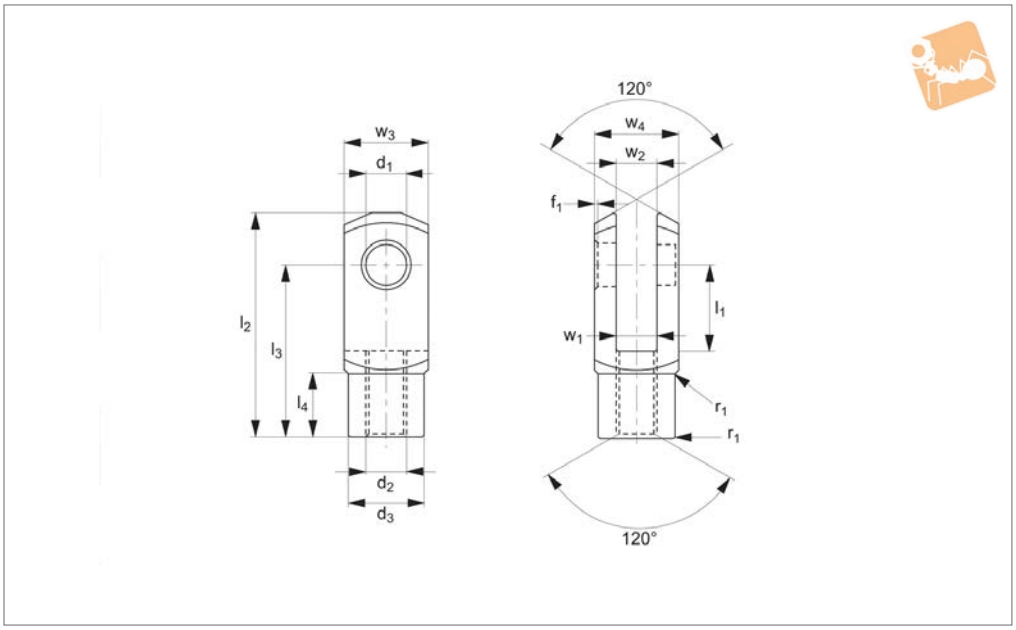
Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3388.L040	4x8	Left	Coarse	4	8	M4	8	21	16	6.0	4	4	8	8	5
R3388.L051	5x10	Left	Coarse	5	10	M5	9	26	20	7.5	5	5	10	10	9
R3388.L052	5x20	Left	Coarse	5	20	M5	9	36	30	7.5	5	5	10	10	13
R3388.L061	6x12	Left	Coarse	6	12	M6	10	31	24	9.0	6	6	12	12	15
R3388.L062	6x24	Left	Coarse	6	24	M6	10	43	36	9.0	6	6	12	12	21
R3388.L081	8x16	Left	Coarse	8	16	M8	14	42	32	12.0	8	8	16	16	37
R3388.L082	8x16	Left	Fine	8	16	M8x1	14	42	32	12.0	8	8	16	16	37
R3388.L083	8x32	Left	Coarse	8	32	M8	14	58	48	12.0	8	8	16	16	54
R3388.L084	8x32	Left	Fine	8	32	M8x1	14	58	48	12.0	8	8	16	16	54
R3388.L102	10x20	Left	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3388.L103	10x20	Left	Fine	10	20	M10x1,25	18	52	40	15.0	10	10	20	20	74
R3388.L104	10x40	Left	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3388.L105	10x40	Left	Fine	10	40	M10x1,25	18	72	60	15.0	10	10	20	20	116
R3388.L122	12x24	Left	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3388.L123	12x24	Left	Fine	12	24	M12x1,25	20	62	48	18.0	12	12	24	24	121
R3388.L124	12x48	Left	Course	12	48	M12	20	86	72	18.0	12	12	24	24	175
R3388.L125	12x48	Left	Fine	12	48	M12x1,25	20	86	72	18.0	12	12	24	24	175
R3388.L142	14x28	Left	Course	14	28	M14	24	72	56	22.5	14	14	27	27	178
R3388.L143	14x28	Left	Fine	14	28	M14x1,5	24	72	56	22.5	14	14	27	27	178
R3388.L145	14x56	Left	Coarse	14	56	M14	24	101	85	22.5	14	14	27	27	258
R3388.L146	14x56	Left	Fine	14	56	M14x1,5	24	101	85	22.5	14	14	27	27	258
R3388.L163	16x32	Left	Course	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3388.L164	16x32	Left	Fine	16	32	M16x1,5	26	83	64	24.0	16	16	32	32	282
R3388.L166	16x64	Left	Coarse	16	64	M16	26	115	96	24.0	16	16	32	32	411
R3388.L167	16x64	Left	Fine	16	64	M16x1,5	26	115	96	24.0	16	16	32	32	411
R3388.L204	20x40	Left	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550

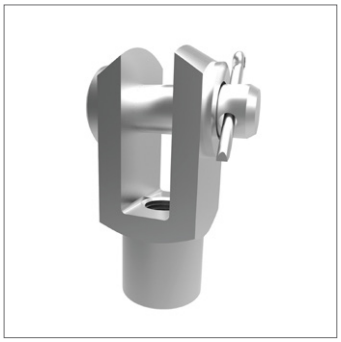
Steel Clevis Joints with Retention

left hand thread - silver zinc plated



Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3388.L205	20x40	Left	Fine	20	40	M20x1,5	34	105	80	30.0	20	20	40	40	550





R3389

Material
Steel 1.0718 (11SMnPb30k), silver zinc plated.

Technical Notes
M5-M16: DIN 71 752/DIN ISO 8140.
M18-M48: Similar to DIN 71 752/DIN ISO 8140 and according to CETOP standard.

Tips
Standard thread is right hand, (for left hand, see R3390).
Assembly is made up using R3385 clevis joint, R3455 clevis pin, P0330 washer, and P1240 split cotter pin.

Important Notes
For sizes M4-M12, f_1 and r_1 =0,5, for sizes M14-M16, f_1 and r_1 =1
For sizes M18-M20, f_1=1, r_1 = 1,5, for M24 f_1 and r_1 = 1,5, for sizes M27-M30, f_1 = 1,5, r_1 = 2
For M36 f_1 = 2, r_1 = 3, for sizes M42-M48, f_1 = 3, r_1 = 5, for r_1, radius or 45° bevelling.
Other Tolerances:-
w_4: M4-M16 = +0,3 -0,16
M18-M48 = +0,5 -0,2
w_2: size 4x8-10x20 = B13
All others +0,7 +0,15
d_3: M4-M16 = ±0,3
l_2: size 4x8-6x12 = ±0,3
All others ±0,4
l_3: M4-M16 = ±0,2
M18-M48 = ±0,3
r_1: M18-M48 = ±0,5

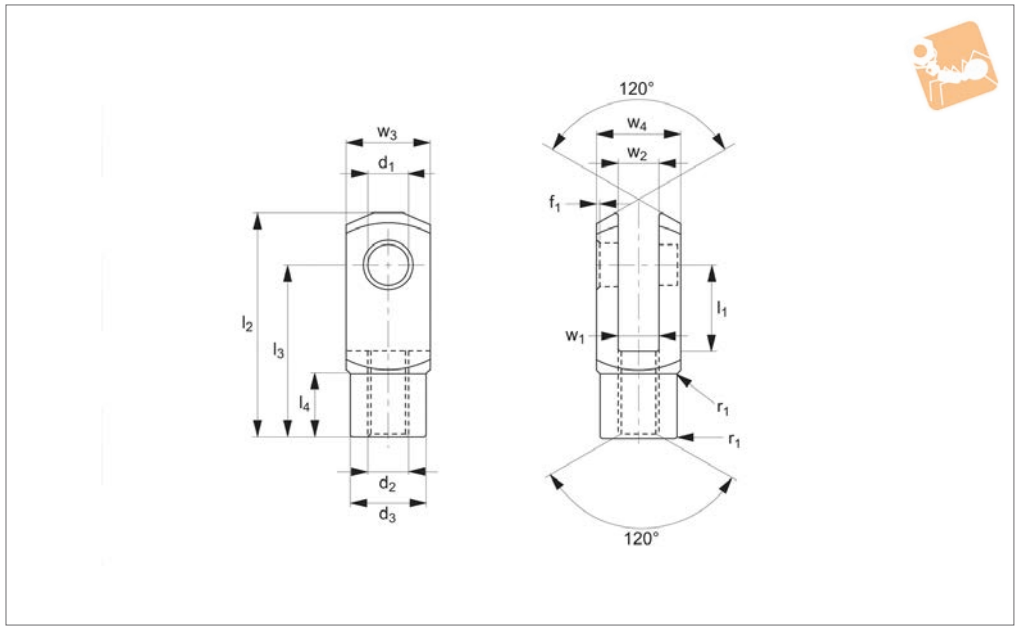
Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3389.R051	5x10	Right	Coarse	5	10	M5	9	26	20	7.5	5	5	10	10	9
R3389.R052	5x20	Right	Coarse	5	20	M5	9	36	30	7.5	5	5	10	10	13
R3389.R061	6x12	Right	Coarse	6	12	M6	10	31	24	9.0	6	6	12	12	15
R3389.R062	6x24	Right	Coarse	6	24	M6	10	43	36	9.0	6	6	12	12	21
R3389.R081	8x16	Right	Coarse	8	16	M8	14	42	32	12.0	8	8	16	16	37
R3389.R082	8x16	Right	Fine	8	16	M8x1	14	42	32	12.0	8	8	16	16	37
R3389.R083	8x32	Right	Coarse	8	32	M8	14	58	48	12.0	8	8	16	16	54
R3389.R084	8x32	Right	Fine	8	32	M8x1	14	58	48	12.0	8	8	16	16	54
R3389.R102	10x20	Right	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3389.R103	10x20	Right	Fine	10	20	M10x1,25	18	52	40	15.0	10	10	20	20	74
R3389.R104	10x40	Right	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3389.R105	10x40	Right	Fine	10	40	M10x1,25	18	72	60	15.0	10	10	20	20	116
R3389.R122	12x24	Right	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3389.R123	12x24	Right	Fine	12	24	M12x1,25	20	62	48	18.0	12	12	24	24	121
R3389.R124	12x48	Right	Coarse	12	48	M12	20	86	72	18.0	12	12	24	24	175
R3389.R125	12x48	Right	Fine	12	48	M12x1,25	20	86	72	18.0	12	12	24	24	175
R3389.R142	14x28	Right	Coarse	14	28	M14	24	72	56	22.5	14	14	27	27	178
R3389.R143	14x28	Right	Fine	14	28	M14x1,5	24	72	56	22.5	14	14	27	27	178
R3389.R145	14x56	Right	Coarse	14	56	M14	24	101	85	22.5	14	14	27	27	258
R3389.R146	14x56	Right	Fine	14	56	M14x1,5	24	101	85	22.5	14	14	27	27	258
R3389.R163	16x32	Right	Coarse	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3389.R164	16x32	Right	Fine	16	32	M16x1,5	26	83	64	24.0	16	16	32	32	282
R3389.R166	16x64	Right	Coarse	16	64	M16	26	115	96	24.0	16	16	32	32	411
R3389.R167	16x64	Right	Fine	16	64	M16x1,5	26	115	96	24.0	16	16	32	32	411
R3389.R183	18x36	Right	Coarse	18	36	M18	30	94	72	27.0	18	18	36	36	390

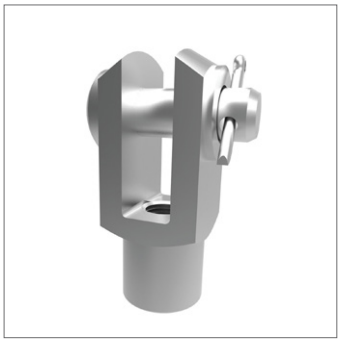
Steel Clevis Joint with Pin

silver zinc plated



Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3389.R184	18x36	Right	Fine	18	36	M18x1,5	30	94	72	27.0	18	18	36	36	390
R3389.R204	20x40	Right	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550
R3389.R205	20x40	Right	Fine	20	40	M20x1,5	34	105	80	30.0	20	20	40	40	550
R3389.R208	20x80	Right	Coarse	20	80	M20	34	145	120	30.0	20	20	40	40	800
R3389.R209	20x80	Right	Fine	20	80	M20x1,5	34	145	120	30.0	20	20	40	40	800
R3389.R255	25x50	Right	Course	25	50	M24	42	132	100	36.0	25	25	50	50	1100
R3389.R256	25x50	Right	Fine	25	50	M24x2	42	132	100	36.0	25	25	50	50	1100
R3389.R285	28x56	Right	Coarse	28	56	M27	48	148	112	40.0	28	28	55	55	1500
R3389.R286	28x56	Right	Fine	28	56	M27x2	48	148	112	40.0	28	28	55	55	1500
R3389.R305	30x54	Right	Fine	30	54	M27x2	48	148	110	40.0	30	30	55	55	1440
R3389.R306	30x60	Right	Coarse	30	60	M30	52	160	120	42.0	30	30	60	60	1970
R3389.R307	30x60	Right	Fine	30	60	M30x2	52	160	120	42.0	30	30	60	60	1970
R3389.R355	35x54	Right	Fine	35	54	M36x2	60	188	144	54.0	35	35	70	70	2930
R3389.R357	35x72	Right	Coarse	35	72	M36	60	188	144	54.0	35	35	70	70	2930
R3389.R358	35x72	Right	Fine	35	72	M36x2	60	188	144	54.0	35	35	70	70	2930
R3389.R367	36x72	Right	Coarse	35	72	M36	60	188	144	54.0	36	36	70	70	2930
R3389.R368	36x72	Right	Fine	35	72	M36x2	60	188	144	54.0	36	36	70	70	2930
R3389.R408	40x84	Right	Fine	40	84	M42x2	70	232	168	63.5	40	40	85	85	5640
R3389.R428	42x84	Right	Coarse	42	84	M42	70	232	168	63.5	42	42	85	85	5340
R3389.R429	42x84	Right	Fine	42	84	M42x2	70	232	168	63.5	42	42	85	85	5340
R3389.R509	50x96	Right	Coarse	50	96	M48	82	265	192	73.0	50	50	96	96	7860
R3389.R510	50x96	Right	Fine	50	96	M48x2	82	265	192	73.0	50	50	96	96	7860





R3390

Material
Steel 1.0718 (11SMnPb30k), silver zinc plated.

Technical Notes
M5-M16: DIN 71 752/DIN ISO 8140.
M18-M48: Similar to DIN 71 752/DIN ISO 8140 and according to CETOP standard.

Tips
Assembly is made up using the R3386 clevis joint, R3455 clevis pin, P0330 washer, and P1240 split cotter pin.

Important Notes
For sizes M4-M12, f_1 and r_1 =0,5, for sizes M14-M16, f_1 and r_1 =1
For sizes M18-M20, f_1=1, r_1 = 1,5, for M24 f_1 and r_1 = 1,5, for sizes M27-M30, f_1 = 1,5, r_1 = 2
For M36 f_1 = 2, r_1 = 3, for sizes M42-M48, f_1 = 3, r_1 = 5, for r_1, radius or 45° bevelling.

Other Tolerances:-
w_4: M4-M16 = +0,3 -0,16
M18-M48 = +0,5 -0,2
w_2: size 4x8-10x20 = B13
All others +0,7 +0,15
d_3: M4-M16 = ±0,3
l_2: size 4x8-6x12 = ±0,3
All others ±0,4
l_3: M4-M16 = ±0,2
M18-M48 = ±0,3
r_1: M18-M48 = ±0,5

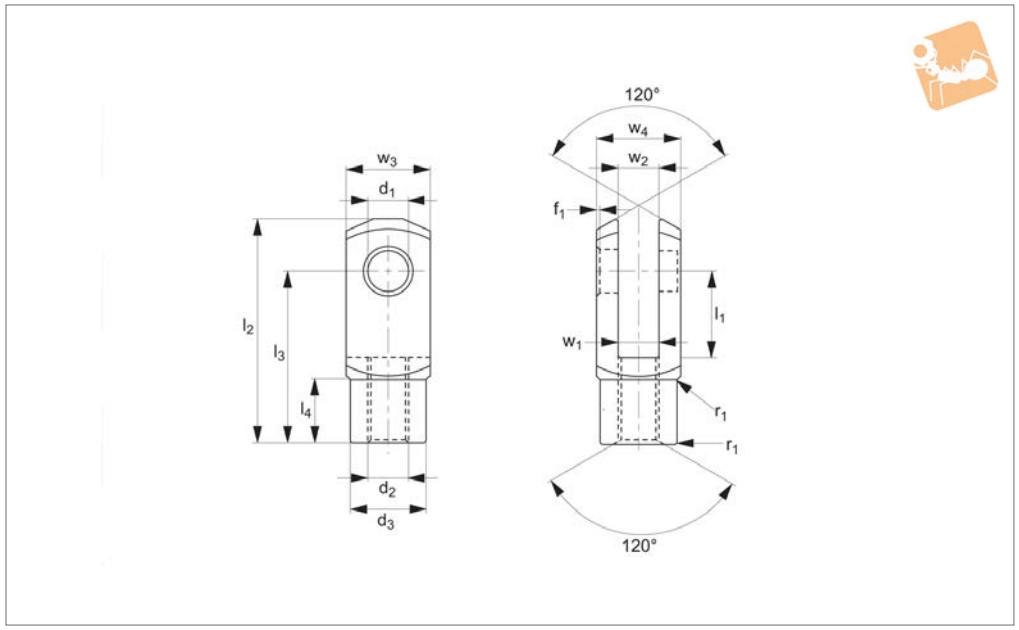
Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3390.L051	5x10	Left	Coarse	5	10	M5	9	26	20	7.5	5	5	10	10	9
R3390.L052	5x20	Left	Coarse	5	20	M5	9	36	30	7.5	5	5	10	10	13
R3390.L061	6x12	Left	Coarse	6	12	M6	10	31	24	9.0	6	6	12	12	15
R3390.L062	6x24	Left	Coarse	6	24	M6	10	43	36	9.0	6	6	12	12	21
R3390.L081	8x16	Left	Coarse	8	16	M8	14	42	32	12.0	8	8	16	16	37
R3390.L082	8x16	Left	Fine	8	16	M8x1	14	42	32	12.0	8	8	16	16	37
R3390.L083	8x32	Left	Coarse	8	32	M8	14	58	48	12.0	8	8	16	16	54
R3390.L084	8x32	Left	Fine	8	32	M8x1	14	58	48	12.0	8	8	16	16	54
R3390.L102	10x20	Left	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3390.L103	10x20	Left	Fine	10	20	M10x1,25	18	52	40	15.0	10	10	20	20	74
R3390.L104	10x40	Left	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3390.L105	10x40	Left	Fine	10	40	M10x1,25	18	72	60	15.0	10	10	20	20	116
R3390.L122	12x24	Left	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3390.L123	12x24	Left	Fine	12	24	M12x1,25	20	62	48	18.0	12	12	24	24	121
R3390.L124	12x48	Left	Coarse	12	48	M12	20	86	72	18.0	12	12	24	24	175
R3390.L125	12x48	Left	Fine	12	48	M12x1,25	20	86	72	18.0	12	12	24	24	175
R3390.L142	14x28	Left	Coarse	14	28	M14	24	72	56	22.5	14	14	27	27	178
R3390.L143	14x28	Left	Fine	14	28	M14x1,5	24	72	56	22.5	14	14	27	27	178
R3390.L145	14x56	Left	Coarse	14	56	M14	24	101	85	22.5	14	14	27	27	258
R3390.L146	14x56	Left	Fine	14	56	M14x1,5	24	101	85	22.5	14	4	27	27	258
R3390.L163	16x32	Left	Coarse	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3390.L164	16x32	Left	Fine	16	32	M16x1,5	26	83	64	24.0	16	16	32	32	282
R3390.L166	16x64	Left	Coarse	16	64	M16	26	115	96	24.0	16	16	32	32	411
R3390.L167	16x64	Left	Fine	16	64	M16x1,5	26	115	96	24.0	16	16	32	32	411
R3390.L183	18x36	Left	Coarse	18	36	M18	30	94	72	27.0	18	18	36	36	390
R3390.L184	18x36	Left	Fine	18	36	M18x1,5	30	94	72	27.0	18	18	36	36	390

Steel Clevis Joints with Pin

left hand thread - silver zinc plated



Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3390.L204	20x40	Left	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550
R3390.L205	20x40	Left	Fine	20	40	M20x1,5	34	105	80	30.0	20	20	40	40	550
R3390.L208	20x80	Left	Coarse	20	80	M20	34	145	120	30.0	20	20	40	40	800
R3390.L209	20x80	Left	Fine	20	80	M20x1,5	34	145	120	30.0	20	20	40	40	800
R3390.L255	25x50	Left	Coarse	25	50	M24	42	132	100	36.0	25	25	50	50	1100
R3390.L256	25x50	Left	Fine	25	50	M24x2	42	132	100	36.0	25	25	50	50	1100
R3390.L285	28x56	Left	Coarse	28	56	M27	48	148	112	40.0	28	28	55	55	1500
R3390.L286	28x56	Left	Fine	28	56	M27x2	48	148	112	40.0	28	28	55	55	1500
R3390.L305	30x54	Left	Fine	30	54	M27x2	48	148	110	40.0	30	30	55	55	1440
R3390.L306	30x60	Left	Coarse	30	60	M30	52	160	120	42.0	30	30	60	60	1970
R3390.L307	30x60	Left	Fine	30	60	M30x2	52	160	120	42.0	30	30	60	60	1970
R3390.L355	35x54	Left	Fine	35	54	M36x2	60	188	144	54.0	35	35	70	70	2930
R3390.L357	35x72	Left	Course	35	72	M36	60	188	144	54.0	35	35	70	70	2930
R3390.L358	35x72	Left	Fine	35	72	M36x2	60	188	144	54.0	35	35	70	70	2930
R3390.L367	36x72	Left	Course	35	72	M36	60	188	144	54.0	36	36	70	70	2930
R3390.L368	36x72	Left	Fine	35	72	M36x2	60	188	144	54.0	36	36	70	70	2930
R3390.L408	40x84	Left	Fine	40	84	M42x2	70	232	168	63.5	40	40	85	85	5640
R3390.L428	42x84	Left	Coarse	42	84	M42	70	232	168	63.5	42	42	85	85	5340
R3390.L429	42x84	Left	Fine	42	84	M42x2	70	232	168	63.5	42	42	85	85	5340
R3390.L509	50x96	Left	Coarse	50	96	M48	82	265	192	73.0	50	50	96	96	7860
R3390.L510	50x96	Left	Fine	50	96	M48x2	82	265	192	73.0	50	50	96	96	7860





R3402

Material
Stainless steel (1.4305 AISI 303 X8CrNiS18-9).

Technical Notes
M4-M16: DIN 71 752/DIN ISO 8140.
M20-M27: Similar to DIN 71 752 and according to CETOP standard.

Tips
Standard thread is right hand, (for left hand, see R3403).

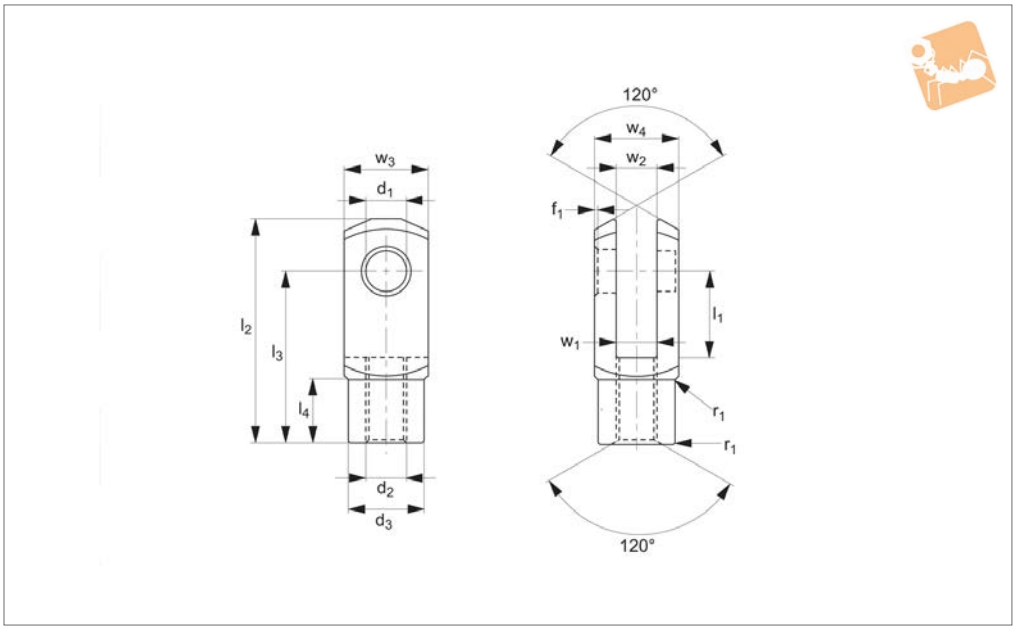
Important Notes
For sizes M4-M12, f_1 and r_1 = 0,5, for sizes M14-M16, f_1 and r_1 = 1, for size M20, f_1=1, r_1 = 1,5
For M24, f_1 and r_1 = 1,5, for M27, f_1 = 1,5, r_1 = 2, for r_1, radius or 45° bevelling.
Other Tolerances:-
w_4: M4-M16 = +0,3 -0,16
M20-M27 = +0,5 - 0,2
w_2: Size 4x8-10x20 = B13
Size 10x40-30x54 = +0,7 +0,15
l_3: up to size 6x12 = ±0,3
From size 6x24 = ±0,4

Order No.	Size	Thread hand	Thread type	d_1 tol. h9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 ±0.5	w_2	w_3 tol. h11	w_4	Weight g
R3402.R040	4x8	Right	Coarse	4	8	M 4	8	21	16	6.0	4	4	8	8	5
R3402.R041	4x16	Right	Coarse	4	16	M 4	8	29	24	6.0	4	4	8	8	7
R3402.R051	5x10	Right	Coarse	5	10	M 5	9	26	20	7.5	5	5	10	10	9
R3402.R052	5x20	Right	Coarse	5	20	M 5	9	36	30	7.5	5	5	10	10	13
R3402.R061	6x12	Right	Coarse	6	12	M 6	10	31	24	9.0	6	6	12	12	15
R3402.R062	6x24	Right	Coarse	6	24	M 6	10	43	36	9.0	6	6	12	12	21
R3402.R081	8x16	Right	Coarse	8	16	M 8	14	42	32	12.0	8	8	16	16	37
R3402.R082	8x16	Right	Fine	8	16	M 8x1	14	42	32	12.0	8	8	16	16	37
R3402.R083	8x32	Right	Coarse	8	32	M 8	14	58	48	12.0	8	8	16	16	54
R3402.R084	8x32	Right	Fine	8	32	M 8x1	14	58	48	12.0	8	8	16	16	54
R3402.R102	10x20	Right	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3402.R103	10x20	Right	Fine	10	20	M10x1,25	18	52	40	15.0	10	10	20	20	74
R3402.R104	10x40	Right	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3402.R105	10x40	Right	Fine	10	40	M10x1,25	18	72	60	15.0	10	10	20	20	116
R3402.R122	12x24	Right	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3402.R123	12x24	Right	Fine	12	24	M12x1,25	20	62	48	18.0	12	12	24	24	121
R3402.R124	12x48	Right	Coarse	12	48	M12	20	86	72	18.0	12	12	24	24	175
R3402.R125	12x48	Right	Fine	12	48	M12x1,25	20	86	72	18.0	12	12	24	24	175
R3402.R142	14x28	Right	Coarse	14	28	M14	24	72	56	22.5	14	14	27	27	178
R3402.R143	14x28	Right	Fine	14	28	M14x1,5	24	72	56	22.5	14	14	27	27	178
R3402.R145	14x56	Right	Coarse	14	56	M14	24	101	85	22.5	14	14	27	27	258
R3402.R146	14x56	Right	Fine	14	56	M14x1,5	24	101	85	22.5	14	14	27	27	258
R3402.R163	16x32	Right	Coarse	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3402.R164	16x32	Right	Fine	16	32	M16x1,5	26	83	64	24.0	16	16	32	32	282
R3402.R166	16x64	Right	Coarse	16	64	M16	26	115	96	24.0	16	16	32	32	411
R3402.R167	16x64	Right	Fine	16	64	M16x1,5	26	115	96	24.0	16	16	32	32	411
R3402.R204	20x40	Right	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550

Stainless Clevis Joint



Order No.	Size	Thread hand	Thread type	d_1 tol. h9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 ±0.5	w_2	w_3 tol. h11	w_4	Weight g
R3402.R205	20x40	Right	Fine	20	40	M20x1,5	34	105	80	30.0	20	20	40	40	550
R3402.R255	25x50	Right	Coarse	25	50	M24	42	132	100	36.0	25	25	50	50	1100
R3402.R256	25x50	Right	Fine	25	50	M24x2	42	132	100	36.0	25	25	50	50	1100
R3402.R305	30x54	Right	Fine	30	54	M27x2	48	148	110	40.0	30	30	55	55	1440





R3402.A4

Material
Stainless steel (1,4404, AISI 316).

Technical Notes
M4-M16: DIN 71 752/DIN ISO 8140.
M20: Similar to DIN 71 752 and according to CETOP standard.

Tips
Standard thread is right hand, (for left hand, see R3403).

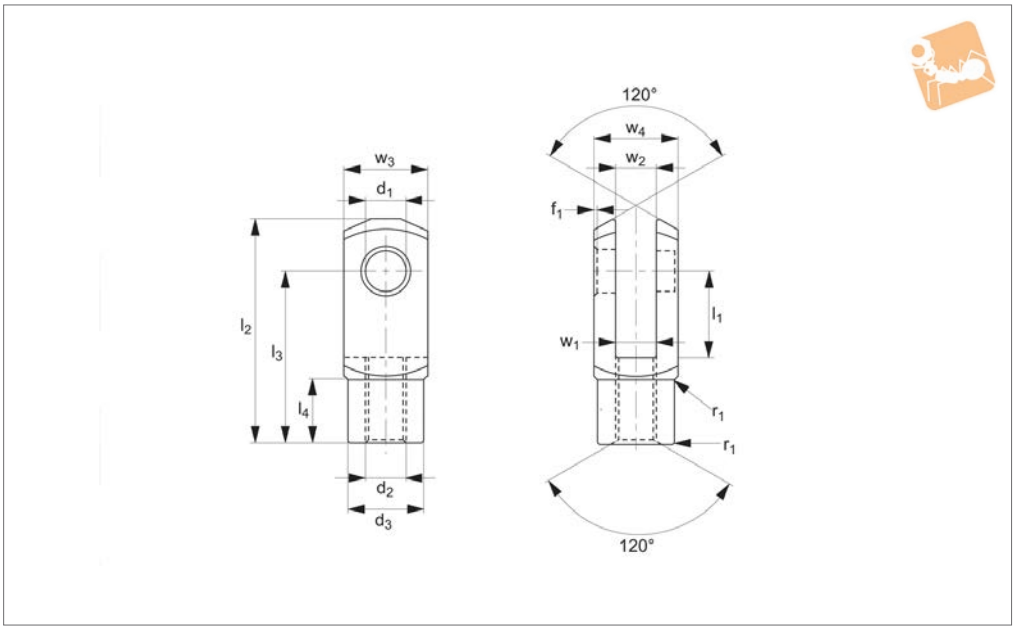
Important Notes
For sizes M4-M12, f and r = 0,5, for sizes M14-M16, f and r = 1, for size M20, f=1, r = 1,5
Other Tolerances:-
w_4: M4-M16 = +0,3 -0,16
M20 = +0,5 - 0,2
w_2: Size 4x8-10x20 = B13
Size 10x40-30x54 = +0,7 +0,15
l_3: up to size 6x12 = ±0,3
From size 6x24 = ±0,4

Order No.	Size	Thread hand	Thread type	d_1 tol. h9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 ±0.5	w_2	w_3 tol. h11	w_4	Weight g
R3402.R040-A4	4x8	Right	Coarse	4	8	M4	8	21	16	6.0	4	4	8	8	5
R3402.R051-A4	5x10	Right	Coarse	5	10	M5	9	26	20	7.5	5	5	10	10	9
R3402.R061-A4	6x12	Right	Coarse	6	12	M6	10	31	24	9.0	6	6	12	12	15
R3402.R081-A4	8x16	Right	Coarse	8	16	M8	14	42	32	12.0	8	8	16	16	37
R3402.R083-A4	8x32	Right	Coarse	8	32	M8	14	58	48	12.0	8	8	16	16	54
R3402.R102-A4	10x20	Right	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3402.R104-A4	10x40	Right	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3402.R122-A4	12x24	Right	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3402.R142-A4	14x28	Right	Coarse	14	28	M14	24	72	56	22.5	14	14	27	27	178
R3402.R163-A4	16x32	Right	Coarse	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3402.R204-A4	20x40	Right	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550

Stainless Clevis Joints
left hand thread



R3403



Material
Stainless steel (1.4305 AISI 303 X8CrNiS18-9)

Technical Notes
M4-M16: DIN 71 752/DIN ISO 8140.
M20-M27: Similar to DIN 71 752 and according to CETOP standard.

Important Notes
For sizes M4-M12, f_1 and r_1 = 0,5, for sizes M14-M16, f_1 and r_1 = 1, for size M20, f_1=1, r_1 = 1,5
For M24, f_1 and r_1 = 1,5, for M27, f_1=1,5, r_1 = 2, for r_1, radius or 45° bevelling.
Other Tolerances:-
w_4: M4-M16 = +0,3 -0,16
M20-M27 = +0,5 - 0,2
w_2: Size 4x8-10x20 = B13
Size 10x40-30x54 = +0,7 +0,15
l_3: up to size 6x12 = ±0,3
From size 6x24 = ±0,4

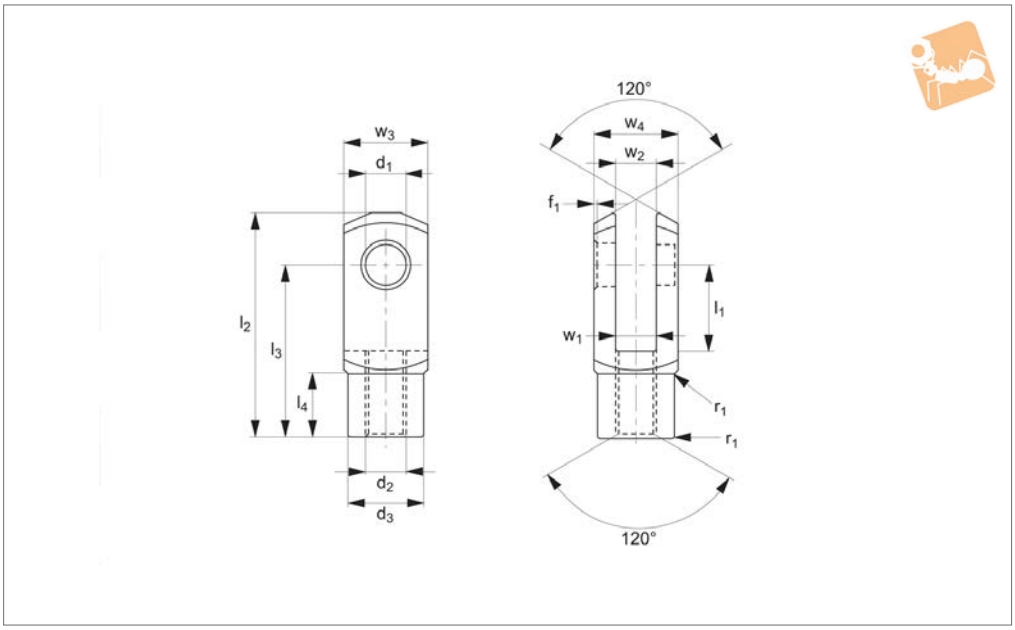
Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3403.L040	4x8	Left	Coarse	4	8	M4	8	21	16	6.0	4	4	8	8	5
R3403.L041	4x16	Left	Coarse	4	16	M4	8	29	24	6.0	4	4	8	8	7
R3403.L051	5x10	Left	Coarse	5	10	M5	9	26	20	7.5	5	5	10	10	9
R3403.L052	5x20	Left	Coarse	5	20	M5	9	36	30	7.5	5	5	10	10	13
R3403.L061	6x12	Left	Coarse	6	12	M6	10	31	24	9.0	6	6	12	12	15
R3403.L062	6x24	Left	Coarse	6	24	M6	10	43	36	9.0	6	6	12	12	21
R3403.L081	8x16	Left	Coarse	8	16	M8	14	42	32	12.0	8	8	16	16	37
R3403.L082	8x16	Left	Fine	8	16	M8x1	14	42	32	12.0	8	8	16	16	37
R3403.L083	8x32	Left	Coarse	8	32	M8	14	58	48	12.0	8	8	16	16	54
R3403.L084	8x32	Left	Fine	8	32	M8x1	14	58	48	12.0	8	8	16	16	54
R3403.L102	10x20	Left	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3403.L103	10x20	Left	Fine	10	20	M10x1,25	18	52	40	15.0	10	10	20	20	74
R3403.L104	10x40	Left	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3403.L105	10x40	Left	Fine	10	40	M10x1,25	18	72	60	15.0	10	10	20	20	116
R3403.L122	12x24	Left	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3403.L123	12x24	Left	Fine	12	24	M12x1,25	20	62	48	18.0	12	12	24	24	121
R3403.L124	12x48	Left	Coarse	12	48	M12	20	86	72	18.0	12	12	24	24	175
R3403.L125	12x48	Left	Fine	12	48	M12x1,25	20	86	72	18.0	12	12	24	24	175
R3403.L142	14x28	Left	Coarse	14	28	M14	24	72	56	22.5	14	14	27	27	178
R3403.L143	14x28	Left	Fine	14	28	M14x1,5	24	72	56	22.5	14	14	27	27	178
R3403.L145	14x56	Left	Coarse	14	56	M14	24	101	85	22.5	14	14	27	27	258
R3403.L146	14x56	Left	Fine	14	56	M14x1,5	24	101	85	22.5	14	4	27	27	258
R3403.L163	16x32	Left	Coarse	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3403.L164	16x32	Left	Fine	16	32	M16x1,5	26	83	64	24.0	16	16	32	32	282
R3403.L166	16x64	Left	Coarse	16	64	M16	26	115	96	24.0	16	16	32	32	411
R3403.L167	16x64	Left	Fine	16	64	M16x1,5	26	115	96	24.0	16	16	32	32	411
R3403.L204	20x40	Left	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550
R3403.L205	20x40	Left	Fine	20	40	M20x1,5	34	105	80	30.0	20	20	40	40	550
R3403.L255	25x50	Left	Coarse	25	50	M24	42	132	100	36.0	25	25	50	50	1100
R3403.L256	25x50	Left	Fine	25	50	M24x2	42	132	100	36.0	25	25	50	50	1100

Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3403.L305	30x54	Left	Fine	30	54	M27x2	48	148	110	40.0	30	30	55	55	1440

Stainless Clevis Joint with Pin



R3404



Material
Stainless steel (1.4305 AISI 303 X8CrNiS18-9)

Technical Notes
M5-M16: DIN 71 752/DIN ISO 8140.
M20-M24: Similar to DIN 71 752 and according to CETOP standard.

Tips
Standard thread is right hand (for left hand, see R3405).
Assembly is made up using R3402 clevis joint, R3456 pin, DIN 125A washer, and P1241 split cotter pin.

Important Notes
For sizes M5-M12, f_1 and r_1 = 0,5, for sizes M14-M16, f_1 and r_1 = 1
For size M20, f_1=1, r_1 = 1,5, for M24, f_1 and r_1 = 1,5, for r_1, radius or 45° bevelling.

Other Tolerances:-
w_4: M4-M16 = +0,3 -0,16
M20-M24 = +0,5 - 0,2
w_2: Size 4x8-10x20 = B13
Size 10x40-25x50 = +0,7 +0,15
l_3: up to size 6x12 = ±0,3
From size 6x24 = ±0,4

Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 ±0.5	w_2	w_3 tol. h11	w_4	Weight g
R3404.R051	5x10	Right	Coarse	5	10	M5	9	26	20	7.5	5	5	10	10	9
R3404.R052	5x20	Right	Coarse	5	20	M5	9	36	30	7.5	5	5	10	10	13
R3404.R061	6x12	Right	Coarse	6	12	M6	10	31	24	9.0	6	6	12	12	15
R3404.R062	6x24	Right	Coarse	6	24	M6	10	43	36	9.0	6	6	12	12	21
R3404.R081	8x16	Right	Coarse	8	16	M8	14	42	32	12.0	8	8	16	16	37
R3404.R082	8x16	Right	Fine	8	16	M8x1	14	42	32	12.0	8	8	16	16	37
R3404.R083	8x32	Right	Coarse	8	32	M8	14	58	48	12.0	8	8	16	16	54
R3404.R084	8x32	Right	Fine	8	32	M8x1	14	58	48	12.0	8	8	16	16	54
R3404.R102	10x20	Right	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3404.R103	10x20	Right	Fine	10	20	M10x1,25	18	52	40	15.0	10	10	20	20	74
R3404.R104	10x40	Right	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3404.R105	10x40	Right	Fine	10	40	M10x1,25	18	72	60	15.0	10	10	20	20	116
R3404.R122	12x24	Right	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3404.R123	12x24	Right	Fine	12	24	M12x1,25	20	62	48	18.0	12	12	24	24	121
R3404.R124	12x48	Right	Coarse	12	48	M12	20	86	72	18.0	12	12	24	24	175
R3404.R125	12x48	Right	Fine	12	48	M12x1,25	20	86	72	18.0	12	12	24	24	175
R3404.R142	14x28	Right	Coarse	14	28	M14	24	72	56	22.5	14	14	27	27	178
R3404.R143	14x28	Right	Fine	14	28	M14x1,5	24	72	56	22.5	14	14	27	27	178
R3404.R145	14x56	Right	Coarse	14	56	M14	24	101	85	22.5	14	14	27	27	258
R3404.R146	14x56	Right	Fine	14	56	M14x1,5	24	101	85	22.5	14	14	27	27	258
R3404.R163	16x32	Right	Coarse	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3404.R164	16x32	Right	Fine	16	32	M16x1,5	26	83	64	24.0	16	16	32	32	282
R3404.R166	16x64	Right	Coarse	16	64	M16	26	115	96	24.0	16	16	32	32	411
R3404.R167	16x64	Right	Fine	16	64	M16x1,5	26	115	96	24.0	16	16	32	32	411
R3404.R204	20x40	Right	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550
R3404.R205	20x40	Right	Fine	20	40	M20x1,5	34	105	80	30.0	20	20	40	40	550
R3404.R255	25x50	Right	Coarse	25	50	M24	42	132	100	36.0	25	25	50	50	1100

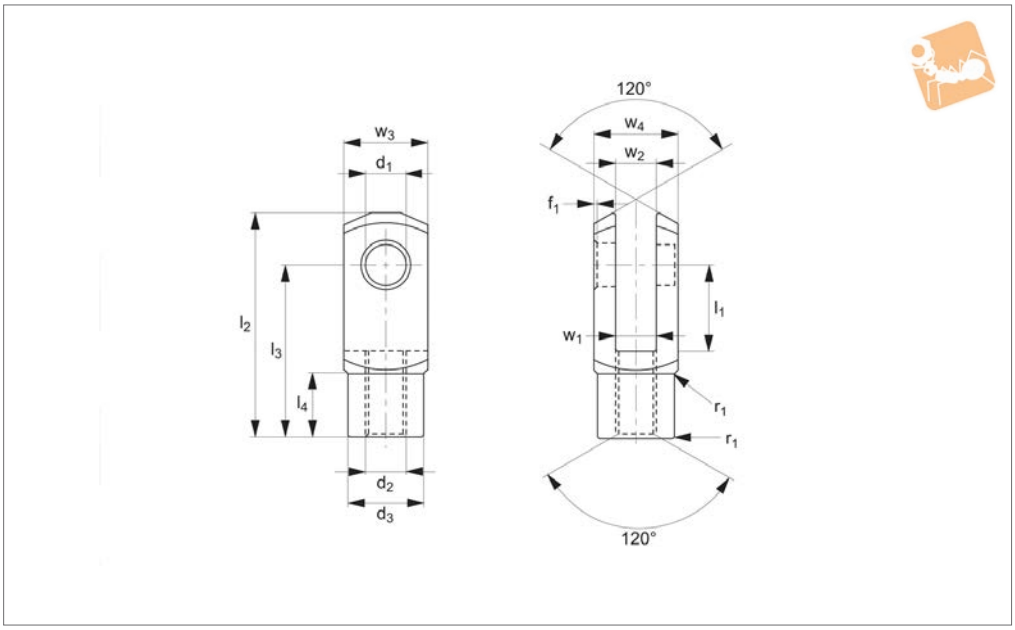
Stainless Clevis Joint with Pin

Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 ±0.5	w_2	w_3 tol. h11	w_4	Weight g
R3404.R256	25x50	Right	Fine	25	50	M24x2	42	132	100	36.0	25	25	50	50	1100

Stainless Clevis Joints with Pin
left hand thread



R3405



Material
Stainless steel (1.4305 AISI 303 X8CrNiS18-9)

Technical Notes
M5-M16: DIN 71 752/DIN ISO 8140.
M20-M24: Similar to DIN 71 752 and according to CETOP standard.

Tips
Assembly is made up using R3403 clevis joint, R3456 pin, P0330 washer, and P1241 split cotter pin.

Important Notes
For sizes M5-M12, f_1 and r_1 = 0,5, for sizes M14-M16, f_1 and r_1 = 1
For size M20, f_1=1, r_1 = 1,5, for M24, f_1 and r_1 = 1,5, for r_1, radius or 45° bevelling.
Other Tolerances:-
w_4: M4-M16 = +0,3 -0,16
M20-M27 = +0,5 - 0,2
w_2: Size 4x8-10x20 = B13
Size 10x40-30x54 = +0,7 +0,15
l_3: up to size 6x12 = ±0,3
From size 6x24 = ±0,4

Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3405.L051	5x10	Left	Coarse	5	10	M5	9	26	20	7.5	5	5	10	10	9
R3405.L052	5x20	Left	Coarse	5	20	M5	9	36	30	7.5	5	5	10	10	13
R3405.L061	6x12	Left	Coarse	6	12	M6	10	31	24	9.0	6	6	12	12	15
R3405.L062	6x24	Left	Coarse	6	24	M6	10	43	36	9.0	6	6	12	12	21
R3405.L081	8x16	Left	Coarse	8	16	M8	14	42	32	12.0	8	8	16	16	37
R3405.L082	8x16	Left	Fine	8	16	M8x1	14	42	32	12.0	8	8	16	16	37
R3405.L083	8x32	Left	Coarse	8	32	M8	14	58	48	12.0	8	8	16	16	54
R3405.L084	8x32	Left	Fine	8	32	M8x1	14	58	48	12.0	8	8	16	16	54
R3405.L102	10x20	Left	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3405.L103	10x20	Left	Fine	10	20	M10x1,25	18	52	40	15.0	10	10	20	20	74
R3405.L104	10x40	Left	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3405.L105	10x40	Left	Fine	10	40	M10x1,25	18	72	60	15.0	10	10	20	20	116
R3405.L122	12x24	Left	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3405.L123	12x24	Left	Fine	12	24	M12x1,25	20	62	48	18.0	12	12	24	24	121
R3405.L124	12x48	Left	Coarse	12	48	M12	20	86	72	18.0	12	12	24	24	175
R3405.L125	12x48	Left	Fine	12	48	M12x1,25	20	86	72	18.0	12	12	24	24	175
R3405.L142	14x28	Left	Coarse	14	28	M14	24	72	56	22.5	14	14	27	27	178
R3405.L143	14x28	Left	Fine	14	28	M14x1,5	24	72	56	22.5	14	14	27	27	178
R3405.L145	14x56	Left	Coarse	14	56	M14	24	101	85	22.5	14	14	27	27	258
R3405.L146	14x56	Left	Fine	14	56	M14x1,5	24	101	85	22.5	14	14	27	27	258
R3405.L163	16x32	Left	Coarse	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3405.L164	16x32	Left	Fine	16	32	M16x1,5	26	83	64	24.0	16	16	32	32	282
R3405.L166	16x64	Left	Coarse	16	64	M16	26	115	96	24.0	16	16	32	32	411
R3405.L167	16x64	Left	Fine	16	64	M16x1,5	26	115	96	24.0	16	16	32	32	411
R3405.L204	20x40	Left	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550
R3405.L205	20x40	Left	Fine	20	40	M20x1,5	34	105	80	30.0	20	20	40	40	550
R3405.L255	25x50	Left	Coarse	25	50	M24	42	132	100	36.0	25	25	50	50	1100

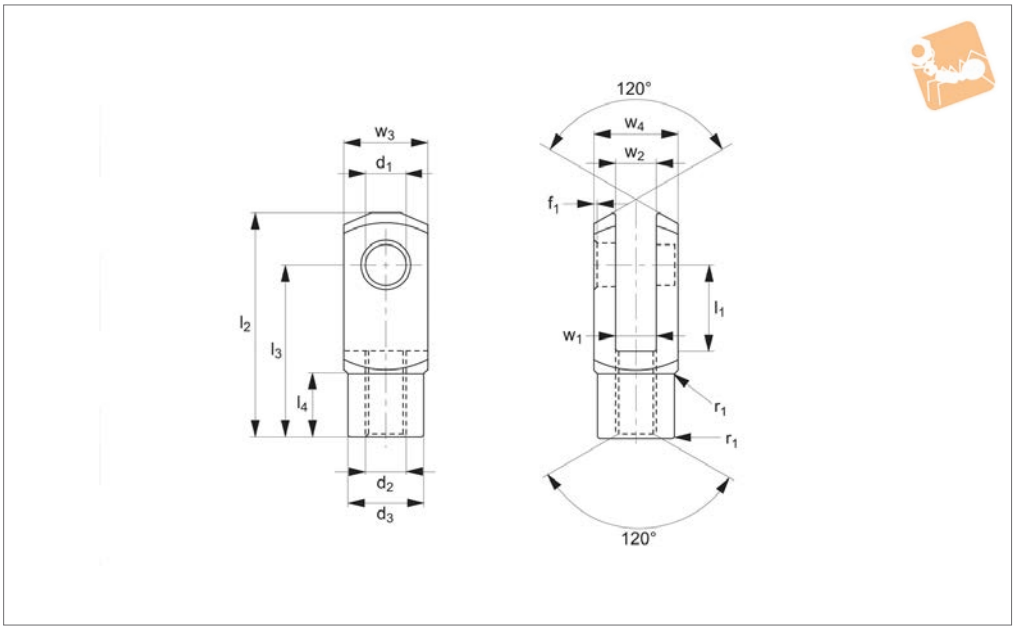
Stainless Clevis Joints with Pin
left hand thread

Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3405.L256	25x50	Left	Fine	25	50	M24x2	42	132	100	36.0	25	25	50	50	1100

Stainless Clevis Joints with Pin



R3406



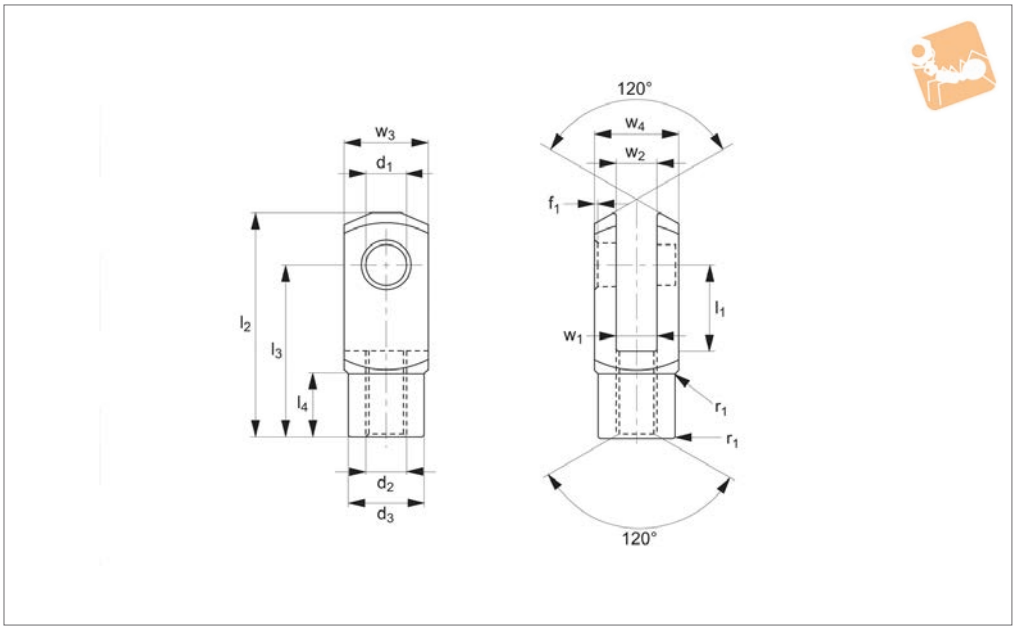
Material
Stainless steel (1.4305 AISI 303 X8CrNiS18-9)

Technical Notes
M5-M16: DIN 71 752/DIN ISO 8140.
M20: Similar to DIN 71 752 and according to CETOP standard.

Tips
Standard thread is right hand, (for left hand, see R3407).
Assembly is made up using R3402 clevis joint, R3454 pin, and 2 off R3447 circlips.

Important Notes
For sizes M5-M12, f_1 and r_1 = 0,5, for sizes M16, f_1 and r_1 = 1
For size M20, f_1=1, r_1 = 1,5, for r_1, radius or 45° bevelling.
Other Tolerances:-
w_4: M4-M16 = +0,3 -0,16
M20 = +0,5 - 0,2
w_2: Size 4x8-10x20 = B13
Size 10x40-20x40 = +0,7 +0,15
l_3: up to size 6x12 = ±0,3
From size 6x24 = ±0,4

Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 ±0.5	w_2	w_3 tol. h11	w_4	Weight g
R3406.R051	5x10	Right	Coarse	5	10	M5	9	26	20	7.5	5	5	10	10	9
R3406.R052	5x20	Right	Coarse	5	20	M5	9	36	30	7.5	5	5	10	10	13
R3406.R061	6x12	Right	Coarse	6	12	M6	10	31	24	9.0	6	6	12	12	15
R3406.R062	6x24	Right	Coarse	6	24	M6	10	43	36	9.0	6	6	12	12	21
R3406.R081	8x16	Right	Coarse	8	16	M8	14	42	32	12.0	8	8	16	16	37
R3406.R082	8x16	Right	Fine	8	16	M8x1	14	42	32	12.0	8	8	16	16	37
R3406.R083	8x32	Right	Coarse	8	32	M8	14	58	48	12.0	8	8	16	16	54
R3406.R084	8x32	Right	Fine	8	32	M8x1	14	58	48	12.0	8	8	16	16	54
R3406.R102	10x20	Right	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3406.R103	10x20	Right	Fine	10	20	M10x1,25	18	52	40	15.0	10	10	20	20	74
R3406.R104	10x40	Right	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3406.R105	10x40	Right	Fine	10	40	M10x1,25	18	72	60	15.0	10	10	20	20	116
R3406.R122	12x24	Right	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3406.R123	12x24	Right	Fine	12	24	M12x1,25	20	62	48	18.0	12	12	24	24	121
R3406.R124	12x48	Right	Coarse	12	48	M12	20	86	72	18.0	12	12	24	24	175
R3406.R125	12x48	Right	Fine	12	48	M12x1,25	20	86	72	18.0	12	12	24	24	175
R3406.R163	16x32	Right	Coarse	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3406.R164	16x32	Right	Fine	16	32	M16x1,5	26	83	64	24.0	16	16	32	32	282
R3406.R166	16x64	Right	Coarse	16	64	M16	26	115	96	24.0	16	16	32	32	411
R3406.R167	16x64	Right	Fine	16	64	M16x1,5	26	115	96	24.0	16	16	32	32	411
R3406.R204	20x40	Right	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550
R3406.R205	20x40	Right	Fine	20	40	M20x1,5	34	105	80	30.0	20	20	40	40	550





R3407

Material
Stainless steel (1.4305 AISI 303 X8CrNiS18-9)

Technical Notes
M5-M16: DIN 71 752/DIN ISO 8140.
M20: Similar to DIN 71 752 and according to CETOP standard.

Tips
Assembly is made up using R3403 clevis joint, R3454 pin, and 2 off R3447 circlips.

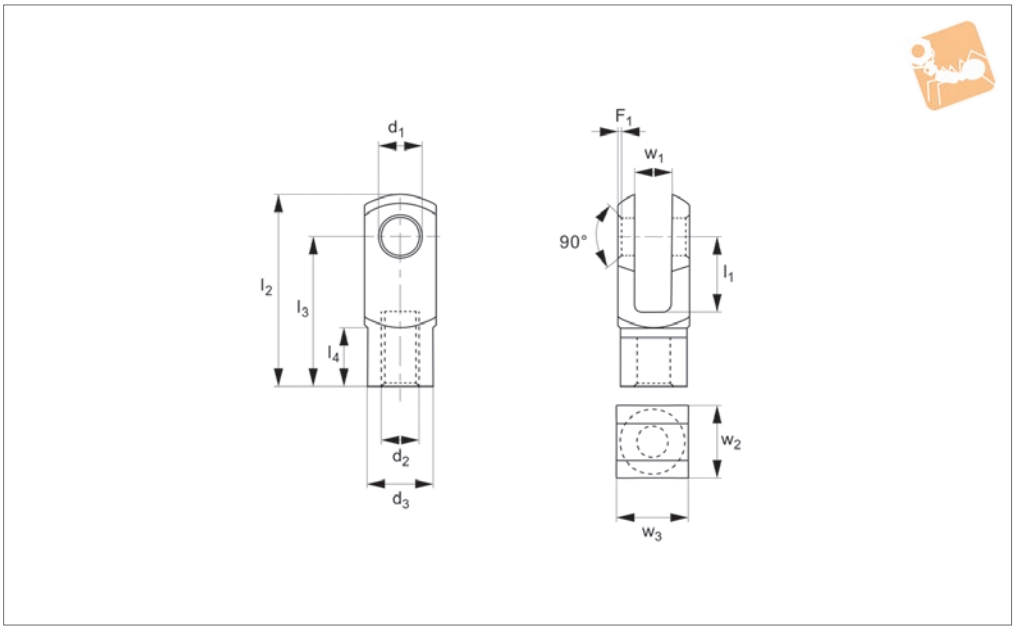
Important Notes
For sizes M5-M12, f_1 and r_1 = 0,5, for sizes M16, f_1 and r_1 = 1
For size M20, f_1=1, r_1 = 1,5, for r_1, radius or 45° bevelling.
Other Tolerances:-
w_4: M4-M16 = +0,3 -0,16
M20 = +0,5 - 0,2
w_2: Size 4x8-10x20 = B13
Size 10x40-20x40 = +0,7 +0,15
l_3: up to size 6x12 = ±0,3
From size 6x24 = ±0,4

Order No.	Size	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	d_3	l_2 ±0.5	l_3	l_4	w_1 tol. B13	w_2	w_3 tol. h11	w_4	Weight g
R3407.L051	5x10	Left	Coarse	5	10	M5	9	26	20	7.5	5	5	10	10	9
R3407.L052	5x20	Left	Coarse	5	20	M5	9	36	30	7.5	5	5	10	10	13
R3407.L061	6x12	Left	Coarse	6	12	M6	10	31	24	9.0	6	6	12	12	15
R3407.L062	6x24	Left	Coarse	6	24	M6	10	43	36	9.0	6	6	12	12	21
R3407.L081	8x16	Left	Coarse	8	16	M8	14	42	32	12.0	8	8	16	16	37
R3407.L082	8x16	Left	Fine	8	16	M8x1	14	42	32	12.0	8	8	16	16	37
R3407.L083	8x32	Left	Coarse	8	32	M8	14	58	48	12.0	8	8	16	16	54
R3407.L084	8x32	Left	Fine	8	32	M8x1	14	58	48	12.0	8	8	16	16	54
R3407.L102	10x20	Left	Coarse	10	20	M10	18	52	40	15.0	10	10	20	20	74
R3407.L103	10x20	Left	Fine	10	20	M10x1,25	18	52	40	15.0	10	10	20	20	74
R3407.L104	10x40	Left	Coarse	10	40	M10	18	72	60	15.0	10	10	20	20	116
R3407.L105	10x40	Left	Fine	10	40	M10x1,25	18	72	60	15.0	10	10	20	20	116
R3407.L122	12x24	Left	Coarse	12	24	M12	20	62	48	18.0	12	12	24	24	121
R3407.L123	12x24	Left	Fine	12	24	M12x1,25	20	62	48	18.0	12	12	24	24	121
R3407.L124	12x48	Left	Coarse	12	48	M12	20	86	72	18.0	12	12	24	24	175
R3407.L125	12x48	Left	Fine	12	48	M12x1,25	20	86	72	18.0	12	12	24	24	175
R3407.L163	16x32	Left	Coarse	16	32	M16	26	83	64	24.0	16	16	32	32	282
R3407.L164	16x32	Left	Fine	16	32	M16x1,5	26	83	64	24.0	16	16	32	32	282
R3407.L166	16x64	Left	Coarse	16	64	M16	26	115	96	24.0	16	16	32	32	411
R3407.L167	16x64	Left	Fine	16	64	M16x1,5	26	115	96	24.0	16	16	32	32	411
R3407.L204	20x40	Left	Coarse	20	40	M20	34	105	80	30.0	20	20	40	40	550
R3407.L205	20x40	Left	Fine	20	40	M20x1,5	34	105	80	30.0	20	20	40	40	550

Plastic Clevis Joints



R3409



Material
Black Plastic (Igumid G)

Technical Notes
Light weight, Universal corrosion resistance.
High tensile strength, vibration and noise dampening.
Can be used in conjunction with rod ends R3582 and R3583.

Tips
Standard thread is right hand thread.

Important Notes
For pins and clips, see R3453 and R3446.

Order No.	Size	Thread hand	Thread type	d_1 tol. h9	l_1 tol. h11	d_2 tol. 6H	d_3 +0.3|-0.3	f +0.3|-0.3	l_2 ±0.5	l_3 +0.3|-0.3	Weight g
R3409.R040	4x8	Right	Coarse	4	8	M3,5	8.0	0.5	21.0	16.0	0.8
R3409.R041	4x8	Right	Coarse	4	8	M4	8.0	0.5	21.0	16.0	0.8
R3409.R042	5x10	Right	Coarse	5	10	M4	9.0	0.5	25.5	20.0	1.5
R3409.R051	5x10	Right	Coarse	5	10	M5	9.0	0.5	25.5	20.0	1.5
R3409.R052	5x12	Right	Coarse	5	12	M5	10.0	0.5	30.6	24.0	2.7
R3409.R061	6x12	Right	Coarse	6	12	M6	10.0	0.5	30.6	24.0	2.7
R3409.R081	8x16	Right	Coarse	8	16	M8	14.0	0.5	41.6	32.0	6.3
R3409.R102	10x20	Right	Coarse	10	20	M10	18.0	0.5	51.3	40.0	13.1
R3409.R103	10x20	Right	Fine	10	20	M10x1,25	18.0	0.5	51.3	40.0	13.1
R3409.R122	12x24	Right	Coarse	12	24	M12	20.0	0.5	61.3	48.0	20.2
R3409.R123	12x24	Right	Fine	12	24	M12x1,25	20.0	0.5	61.3	48.0	20.2
R3409.R142	14x28	Right	Coarse	14	28	M14	24.0	0.5	71.3	56.0	29.6
R3409.R152	15x28	Right	Coarse	15	28	M14	24.0	0.5	71.3	56.0	30.0
R3409.R163	16x32	Right	Coarse	16	32	M16	26.0	1.0	81.9	64.0	43.3
R3409.R164	16x32	Right	Fine	16	32	M16x1,5	26.0	1.0	81.9	64.0	43.3
R3409.R173	17x32	Right	Coarse	17	32	M16	26.0	1.0	81.9	64.0	43.3
R3409.R174	17x32	Right	Fine	17	32	M16x1,5	26.0	1.0	83.0	64.0	43.3
R3409.R204	20x40	Right	Fine	20	40	M20x1,5	34.0	1.0	105.0	80.0	95.1
R3409.R205	20x40	Right	-	20	40	M20x2,5	34.0	1.0	105.0	80.0	95.1
R3409.L040	4x8	Left	Coarse	4	8	M3,5	8.0	0.5	21.0	16.0	0.8
R3409.L041	4x8	Left	Coarse	4	8	M4	8.0	0.5	21.0	16.0	0.8
R3409.L042	5x10	Left	Coarse	5	10	M4	9.0	0.5	25.5	20.0	1.5
R3409.L051	5x10	Left	Coarse	5	10	M5	9.0	0.5	25.5	20.0	1.5
R3409.L052	5x12	Left	Coarse	5	12	M5	10.0	0.5	30.6	24.0	2.7
R3409.L061	6x12	Left	Coarse	6	12	M6	10.0	0.5	30.6	24.0	2.7
R3409.L081	8x16	Left	Coarse	8	16	M8	14.0	0.5	41.6	32.0	6.3
R3409.L102	10x20	Left	Coarse	10	20	M10	18.0	0.5	51.3	40.0	13.1
R3409.L103	10x20	Left	Fine	10	20	M10x1,25	18.0	0.5	51.3	40.0	13.1
R3409.L122	12x24	Left	Coarse	12	24	M12	20.0	0.5	61.3	48.0	20.2
R3409.L123	12x24	Left	Fine	12	24	M12x1,25	20.0	0.5	61.3	48.0	20.2
R3409.L142	14x28	Left	Coarse	14	28	M14	24.0	0.5	71.3	56.0	29.6

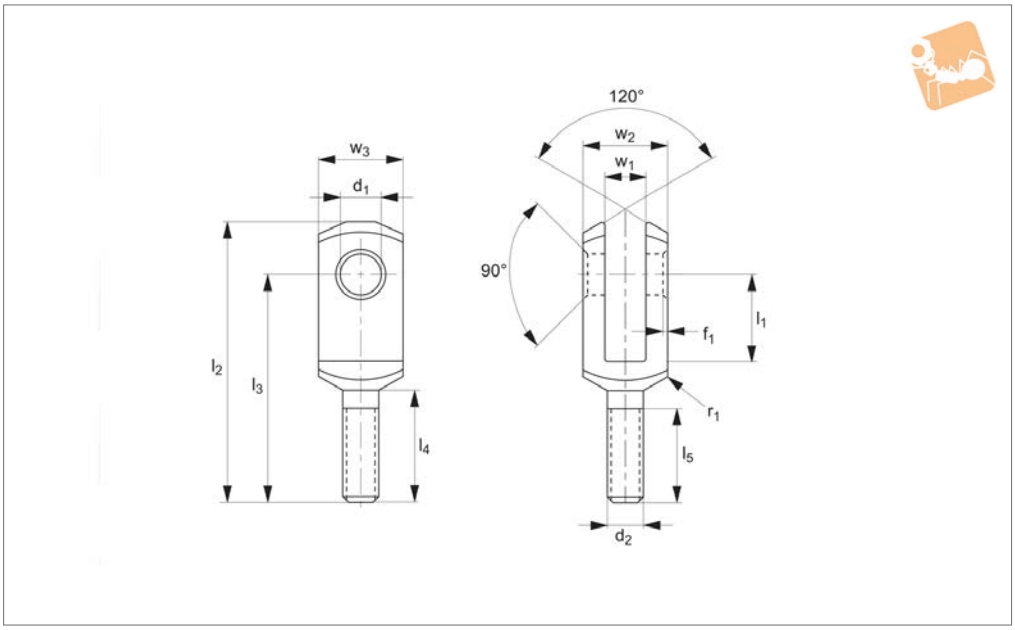
Order No.	Size	Thread hand	Thread type	d_1 tol. h9	l_1 tol. h11	d_2 tol. 6H	d_3 +0.3|-0.3	f +0.3|-0.3	l_2 ±0.5	l_3 +0.3|-0.3	Weight g
R3409.L152	15x28	Left	Coarse	15	28	M14	24.0	0.5	71.3	56.0	30.0
R3409.L163	16x32	Left	Coarse	16	32	M16	26.0	1.0	81.9	64.0	43.3
R3409.L164	16x32	Left	Fine	16	32	M16x1,5	26.0	1.0	81.9	64.0	43.3
R3409.L173	17x32	Left	Coarse	17	32	M16	26.0	1.0	83.0	64.0	43.3
R3409.L174	17x32	Left	Fine	17	32	M16x1,5	26.0	1.0	83.0	64.0	43.3
R3409.L204	20x40	Left	Fine	20	40	M20x1,5	34.0	1.0	105.0	80.0	95.1
R3409.L205	20x40	Left	Fine	20	40	M20x2,5	34.0	1.0	105.0	80.0	95.1

Order No.	l_4 ±0.2	w_1 tol. B13	w_2 +0.3|-0.16	w_3 tol. B13	Static axial tensile strength (short term) N max.	Static axial tensile strength (long term) N max.	Torque strength Nm max.
R3409.R040	6.0	4	8	8	650	325	0.4
R3409.R041	6.0	4	8	8	650	325	0.4
R3409.R042	7.5	5	10	10	1000	500	0.4
R3409.R051	7.5	5	10	10	1000	500	0.5
R3409.R052	9.0	6	12	12	1200	600	0.5
R3409.R061	9.0	6	12	12	1400	700	1.5
R3409.R081	12.0	8	16	16	2700	1350	5.0
R3409.R102	15.0	10	20	20	4700	2350	15.0
R3409.R103	15.0	10	20	20	4700	2350	6.0
R3409.R122	18.0	12	24	24	5700	2850	20.0
R3409.R123	18.0	12	24	24	5700	2850	15.0
R3409.R142	22.5	14	27	27	6600	3300	25.0
R3409.R152	22.5	14	27	27	3200	1600	25.0
R3409.R163	24.0	16	32	32	7500	3750	30.0
R3409.R164	24.0	16	32	32	7500	3750	27.5
R3409.R173	24.0	16	32	32	3600	1800	30.0
R3409.R174	24.0	16	32	32	3600	1800	27.5
R3409.R204	30.0	20	40	40	9500	4750	60.0
R3409.R205	30.0	20	40	40	9500	4750	80.0
R3409.L040	6.0	8	8	4	650	325	0.4
R3409.L041	6.0	8	8	4	650	325	0.4
R3409.L042	7.5	10	10	5	1000	500	0.4
R3409.L051	7.5	10	10	5	1000	500	0.5
R3409.L052	9.0	12	12	6	1200	600	0.5
R3409.L061	9.0	12	12	6	1400	700	1.5
R3409.L081	12.0	16	16	8	2700	1350	5.0
R3409.L102	15.0	20	20	10	4700	2350	15.0
R3409.L103	15.0	20	20	10	4700	2350	6.0
R3409.L122	18.0	24	24	12	5700	2850	20.0
R3409.L123	18.0	24	24	12	5700	2850	15.0
R3409.L142	22.5	27	27	14	6600	3300	25.0
R3409.L152	22.5	27	27	14	3200	1600	25.0
R3409.L163	24.0	32	32	16	7500	3750	30.0
R3409.L164	24.0	32	32	16	7500	3750	27.5
R3409.L173	24.0	32	32	16	3600	1800	30.0
R3409.L174	24.0	32	32	16	3600	1800	27.5
R3409.L204	30.0	40	40	20	9500	4750	60.0
R3409.L205	30.0	40	40	20	9500	4750	80.0

Male Clevis Joints
silver zinc plated



R3410



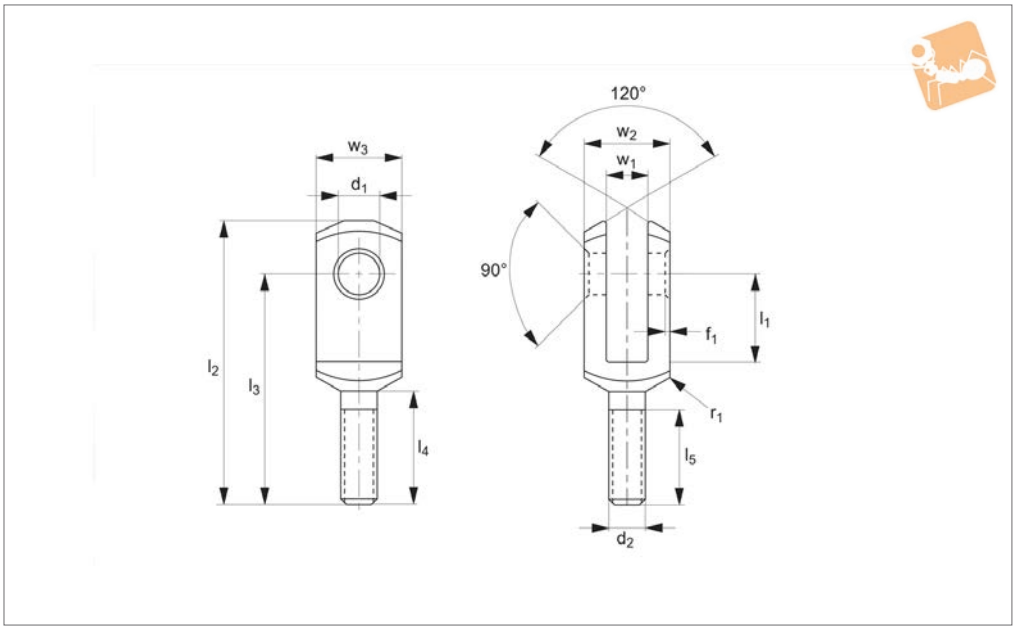
Material
Steel (1.0718) silver zinc plated.

Technical Notes
Similar to DIN 71 752/DIN ISO 8140/CETOP standard.

Tips
Standard thread is right hand, (for left hand, see R3411).

Other Tolerances: for r_1, radius or 45° bevelling.

Order No.	Size	Thread hand	d_1 tol. H9	l_1 ±0.5	d_2	l_2 ±0.2	l_3 ±0.4	l_4 ±0.2	l_5	w_1 +0.7|+0.15	w_2 +0.5|+0.2	w_3 tol. h11	f_1 ±0.2	r_1	Weight g
R3410.R006	6x12	Right	6	12	M6	44	37	20	15	6	12	12	0.5	0.8	15
R3410.R008	8x16	Right	8	16	M8	57	47	25	20	8	16	16	0.5	0.8	36
R3410.R010	10x20	Right	10	20	M10	69	57	30	25	10	20	20	0.5	0.8	68
R3410.R012	12x24	Right	12	24	M12	82	68	35	30	12	24	24	0.5	0.8	112
R3410.R014	14x28	Right	14	28	M14	94	78	40	35	14	27	27	1.0	1.2	171
R3410.R016	16x32	Right	16	32	M16	108	89	45	40	16	32	32	1.0	1.2	288
R3410.R020	20x40	Right	20	40	M20	134	109	55	50	20	40	40	1.0	1.5	550





R3411

Material
Steel (1.0718) silver zinc plated.

Technical Notes
Similar to DIN 71 752/DIN ISO 8140/CETOP standard.

Tips
Standard thread is right hand, (for left hand, see R3411).

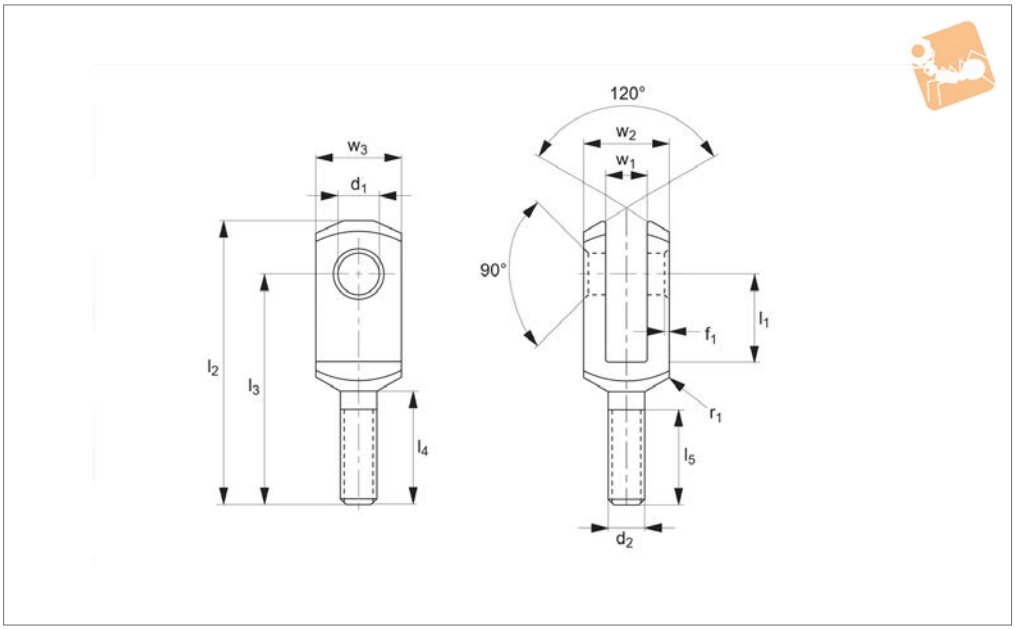
Other Tolerances: for r_1, radius or 45° bevelling.

Order No.	Size	Thread hand	d_1 tol. H9	l_1 ±0.5	d_2	l_2 ±0.2	l_3 ±0.4	l_4 ±0.2	l_5	w_1 +0.7|-0.15	w_2 +0.5|+0.2	w_3 tol. h11	f_1 ±0.2	r_1	Weight g
R3411.L006	6x12	Left	6	12	M6	44	37	20	15	6	12	12	0.5	0.8	15
R3411.L008	8x16	Left	8	16	M8	57	47	25	20	8	16	16	0.5	0.8	36
R3411.L010	10x20	Left	10	20	M10	69	57	30	25	10	20	20	0.5	0.8	68
R3411.L012	12x24	Left	12	24	M12	82	68	35	30	12	24	24	0.5	0.8	112
R3411.L014	14x28	Left	14	28	M14	94	78	40	35	14	27	27	1.0	1.2	171
R3411.L016	16x32	Left	16	32	M16	108	89	45	40	16	32	32	1.0	1.2	288
R3411.L020	20x40	Left	20	40	M20	134	109	55	50	20	40	40	1.0	1.5	550

Stainless Male Clevis Joints



R3416



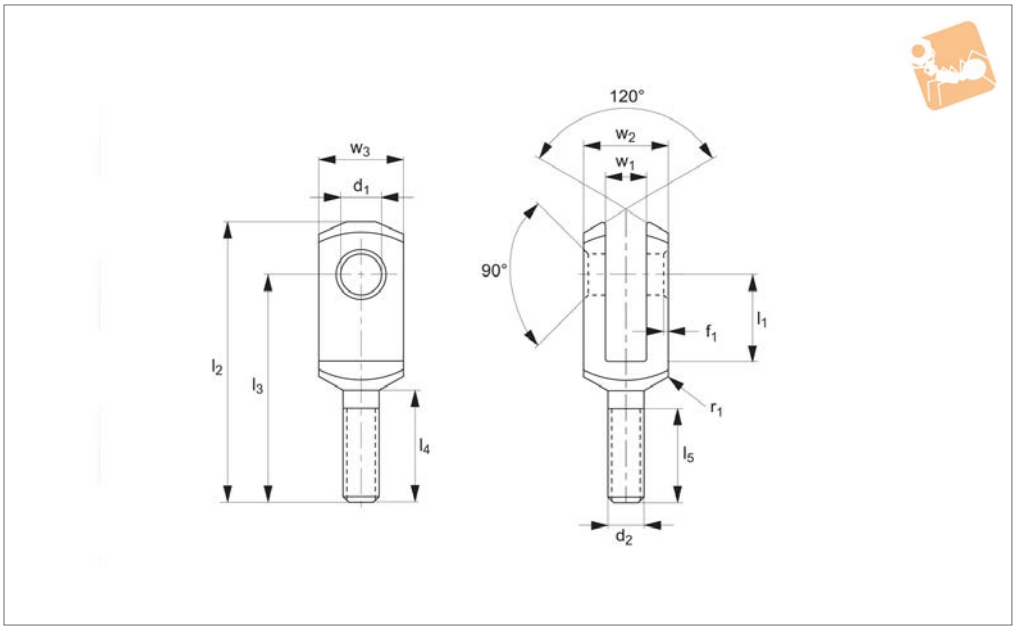
Material
Stainless steel (1,4305 AISI 303).

Technical Notes
Similar to DIN 71 752/DIN ISO 8140/CETOP standard.

Tips
Standard is right hand thread, (For left hand see R3417).

Other Tolerances: For r_1, radius or 45° bevelling.

Order No.	Size	Thread hand	d_1 tol. H9	l_1 ±0.5	d_2	l_2 ±0.2	l_3 ±0.4	l_4 ±0.2	l_5	w_1 +0.7|-0.15	w_2 +0.5|+0.2	w_3 tol. h11	f_1 ±0.2	r_1	Weight g
R3416.R006	6x12	Right	6	12	M 6	44	37	20	15	6	12	12	0.5	0.8	15
R3416.R008	8x16	Right	8	16	M 8	57	47	25	20	8	16	16	0.5	0.8	36
R3416.R010	10x20	Right	10	20	M10	69	57	30	25	10	20	20	0.5	0.8	68
R3416.R012	12x24	Right	12	24	M12	82	68	35	30	12	24	24	0.5	0.8	112
R3416.R014	14x28	Right	14	28	M14	94	78	40	35	14	27	27	1.0	1.2	171
R3416.R016	16x32	Right	16	32	M16	108	89	45	40	16	32	32	1.0	1.2	288
R3416.R020	20x40	Right	20	40	M20	134	109	55	50	20	40	40	1.0	1.5	550





R3417

Material
Stainless steel (1,4305 AISI 303).

Technical Notes
Similar to DIN 71 752/DIN ISO 8140/CETOP standard.

Tips
Other Tolerances: For r_1, radius or 45° bevelling.

Order No.	Size	Thread hand	d_1 tol. H9	l_1 ±0.5	d_2	l_2 ±0.2	l_3 ±0.4	l_4 ±0.2	l_5	w_1 +0.7|-0.15	w_2 +0.5|+0.2	w_3 tol. h11	f_1 ±0.2	r_1	Weight g
R3417.L006	6x12	Left	6	12	M6	44	37	20	15	6	12	12	0.5	0.8	15
R3417.L008	8x16	Left	8	16	M8	57	47	25	20	8	16	16	0.5	0.8	36
R3417.L010	10x20	Left	10	20	M10	69	57	30	25	10	20	20	0.5	0.8	68
R3417.L012	12x24	Left	12	24	M12	82	68	35	30	12	24	24	0.5	0.8	112
R3417.L014	14x28	Left	14	28	M14	94	78	40	35	14	27	27	1.0	1.2	171
R3417.L016	16x32	Left	16	32	M16	108	89	45	40	16	32	32	1.0	1.2	288
R3417.L020	20x40	Left	20	40	M20	134	109	55	50	20	40	40	1.0	1.5	550

Technical Information

Clevis Joint Set-up Options

Clevis Joints from Automotion Components

Zinc plated steel

Clevis with retention clip
R3385 and R3386



Clevis with R3450 clevis pin
R3440 safety fastener



Clevis with R3450 clevis pins
and R3447 circlip



Clevis with clevis pin, washer and
cotter pin R3389 and R3390



Stainless steel

Clevis with clevis pin and circlips
R3406 and R3407



Clevis with clevis pin, washer and
cotter pin R3404 and R3405



Assembly options

Clevis with R3420 mating piece
and R3435 clevis retention clip



Clevis with R3554 rod end and
R3435 clevis retention clip



ov-clevis-joints-technical-info-a-lnh-Updated-28-03-2023

Clevises M6 - M42

Clevis joints axially loaded.

Material

Leaded low carbon steel (AISI 12L14, 1.0718).

Clevis size	F min (kN)	F max (kN)	F average value (kN)	Avg. force when clevis starts to deform (kN)
6x24 M 6	16,0	19,5	17,6	15,3
8x32 M 8	33,2	35,6	34,6	29,3
10x40 M10	42,0	52,0	47,5	41,3
12x48 M12	53,0	68,5	61,1	50,2
14x56 M14	60,5	64,5	63,0	48,8
16x64 M16	133,5	146,0	140,2	115
20x40 M20	194,5	234,0	213,5	176
25x50 M25	311,0	336,0	328,0	260
30x60 M30	428,0	450,0	440,6	343
36x72 M36	566,0	573,0	569,5	300
35x72 M36	561,2	567,9	564,6	370
42x84 M42	904,6	904,6	904,6	420

Information

Important note: values in this table are indicative only and should only be used as a rough guide. The Company cannot foresee the intended applications of their products and we accept no liability for any actions taken by third parties. Customers are advised to use their own safety factors and/or perform their own testing on the clevis joint to ensure it meets requirements for their application.

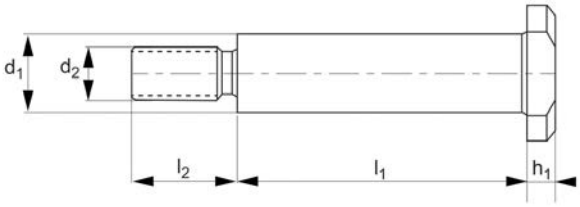
Clevis Joints from Automotion Components

Clevis Pin With Thread

To DIN 1445. 303 stainless steel



R3428

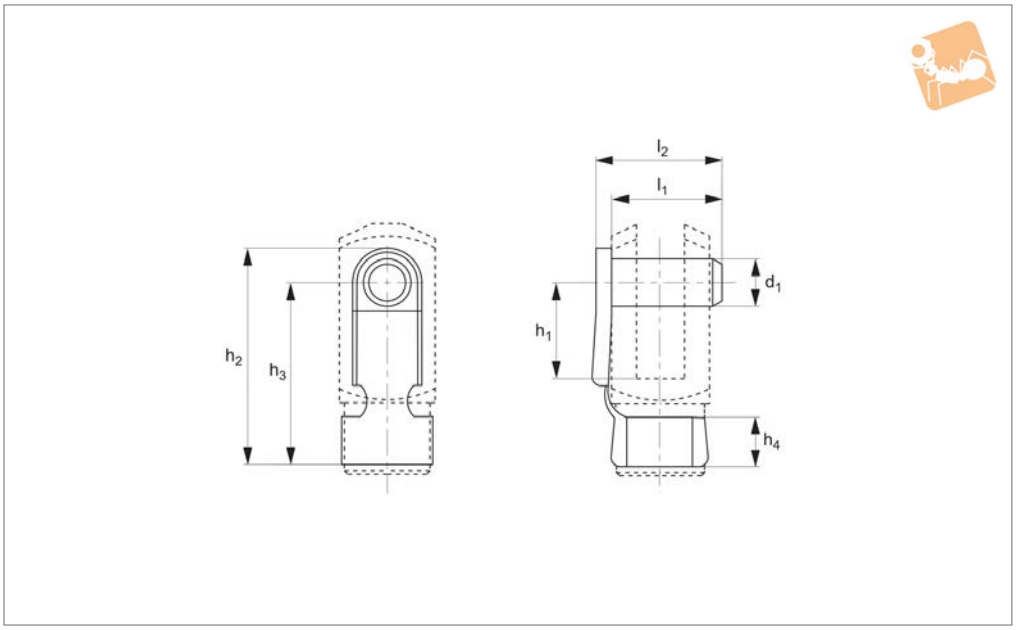


Material
AISI 303 Stainless Steel (1.4305)

Technical Notes
Designed for use with clevis joints. l1+l2 tol js15 To DIN 1445.

Tips
For use with clevis joints R3402 and R3403. For washers see part number P0330.A2.

Order No.	d_1 h11	d_2	d_3 h13	h_1 js14	l_1	l_2	w_1
R3428.080-016-A2	8	M6	14	3.0	16	11	11
R3428.080-020-A2	8	M6	14	3.0	20	11	11
R3428.080-025-A2	8	M6	14	3.0	25	11	11
R3428.080-030-A2	8	M6	14	3.0	30	11	11
R3428.100-020-A2	10	M8	18	4.0	20	14	13
R3428.100-025-A2	10	M8	18	4.0	25	14	13
R3428.100-030-A2	10	M8	18	4.0	30	14	13
R3428.100-035-A2	10	M8	18	4.0	35	14	13
R3428.120-024-A2	12	M10	20	4.0	24	17	17
R3428.120-030-A2	12	M10	20	4.0	30	17	17
R3428.120-035-A2	12	M10	20	4.0	35	17	17
R3428.120-040-A2	12	M10	20	4.0	40	17	17
R3428.140-027-A2	14	M12	22	4.0	27	20	19
R3428.140-030-A2	14	M12	22	4.0	30	20	19
R3428.140-035-A2	14	M12	22	4.0	35	20	19
R3428.140-040-A2	14	M12	22	4.0	40	20	19
R3428.160-032-A2	16	M12	25	4.5	32	20	22
R3428.160-035-A2	16	M12	25	4.5	35	20	22
R3428.160-040-A2	16	M12	25	4.5	40	20	22
R3428.160-045-A2	16	M12	25	4.5	45	20	22





R3438

Material
Stainless Steel 1.4305 AISI 303

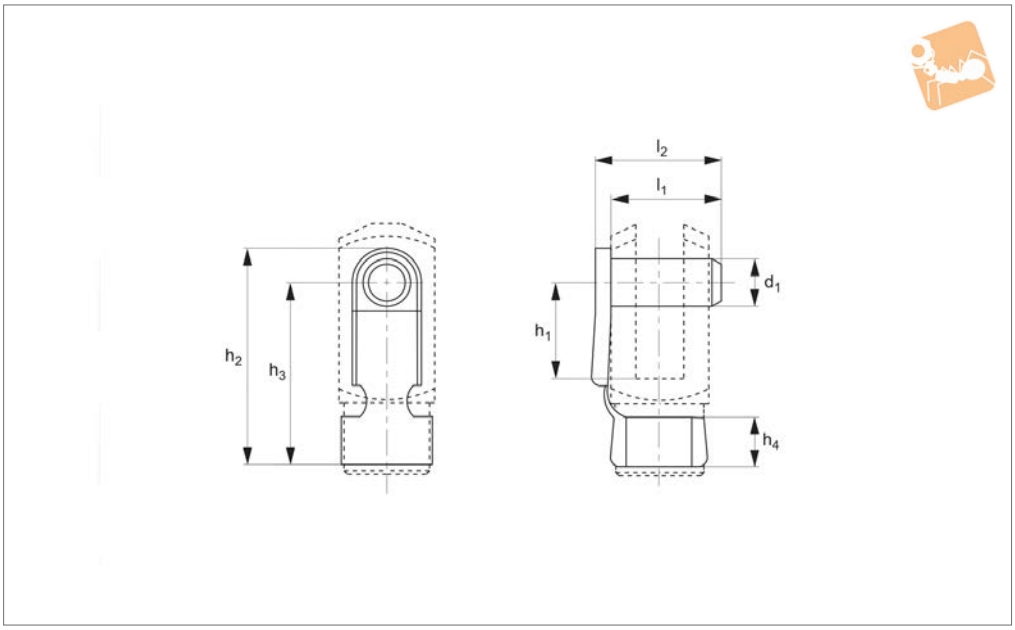
Tips
Clips on to base of clevis joint, for clevis joint see part numbers R3402 and R3403.

Order No.	Size	d_1	h_1	h_2	h_3	h_4	l_1	l_2	Weight g
R3438.051	5x10	5	10	23	19	4.5	9	14	3
R3438.052	5x20	5	20	33	29	4.5	12	14	3
R3438.061	6x12	6	12	28	23	6	14	16	5
R3438.062	6x24	6	24	40	35	6	14	16	6
R3438.081	8x16	8	16	37	31	8	19	23	11
R3438.083	8x32	8	32	53	47	8	19	23	12
R3438.102	10x20	10	20	46	39	10	23	27	19
R3438.104	10x40	10	40	66	59	10	23	27	20
R3438.122	12x24	12	24	55	46	12	28	32	32
R3438.124	12x48	12	48	79	71	12	28	32	34
R3438.142	14x28	14	28	62	52	14	31	34	47
R3438.145	14x56	14	56	92	82	14	31	34	50
R3438.163	16x32	16	32	72	62	16	36	41	67
R3438.166	16x64	16	64	103	92	16	36	39	74
R3438.204	20x40	20	40	88	72	16	44	49	130

Clevis Retention Clips
silver zinc plated



R3435



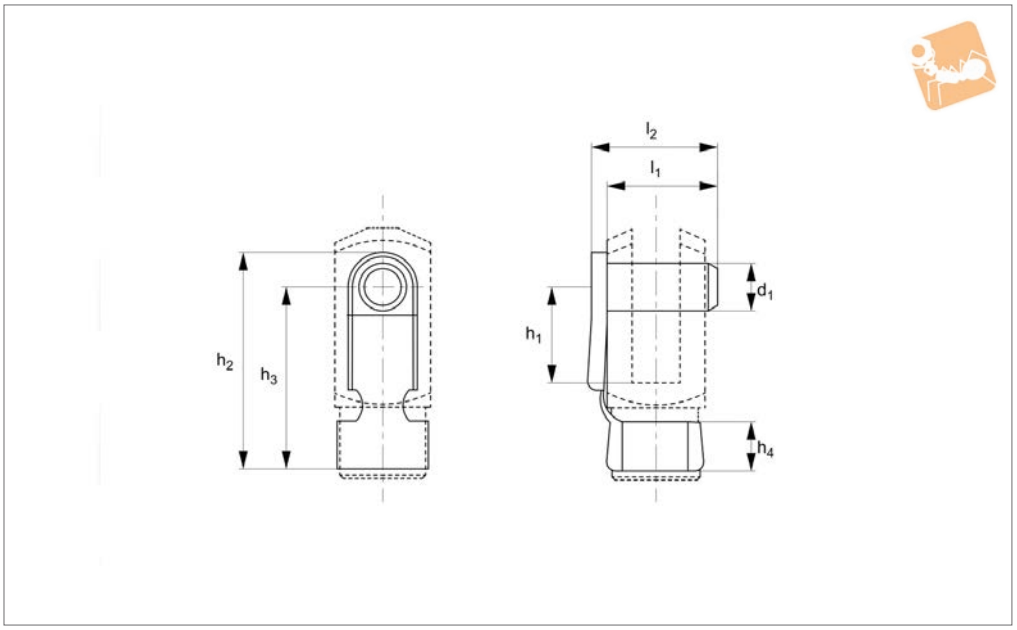
Material
Pin - steel (9SMnPb28), spring - carbon steel C70, silver zinc plated.

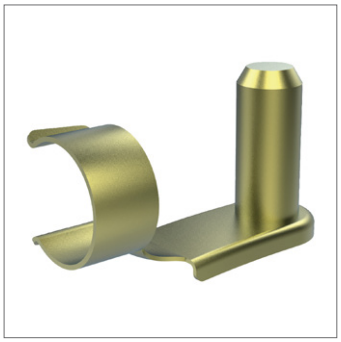
Tips
Clips on to base of clevis joint, for clevis joint see part numbers R3385 and R3386.

Order No.	Size	d_1 tol. H11	h_1	h_2	h_3	h_4	l_1	l_2	Weight g
R3435.048	4x8	4	8	19	15	4	9	11	2
R3435.051	5x10	5	10	23	19	4.5	12	14	3
R3435.052	5x20	5	20	33	29	4.5	12	14	3
R3435.061	6x12	6	12	28	23	6	14	16	5
R3435.062	6x24	6	24	40	35	6	14	16	5
R3435.081	8x16	8	16	37	31	8	19	23	11
R3435.083	8x32	8	32	53	47	8	19	23	12
R3435.102	10x20	10	20	46	39	10	23	27	19
R3435.104	10x40	10	40	66	59	10	23	27	20
R3435.122	12x24	12	24	55	46	12	28	32	32
R3435.124	12x48	12	48	79	71	12	28	32	34
R3435.142	14x28	14	28	62	52	14	31	34	47
R3435.145	14x56	14	56	92	82	14	31	34	50
R3435.163	16x32	16	32	72	62	16	36	41	67
R3435.166	16x64	16	64	103	92	16	36	39	74
R3435.204	20x40	20	40	88	72	16	44	49	130

Clevis Retention Clips - Imperial

(ESI + ESIL), for use with clevis joints





R3436.i

Material
Yellow zinc-plated steel

Technical Notes
Yellow zinc is not RoHS Compliant.

All measurements are in inches.

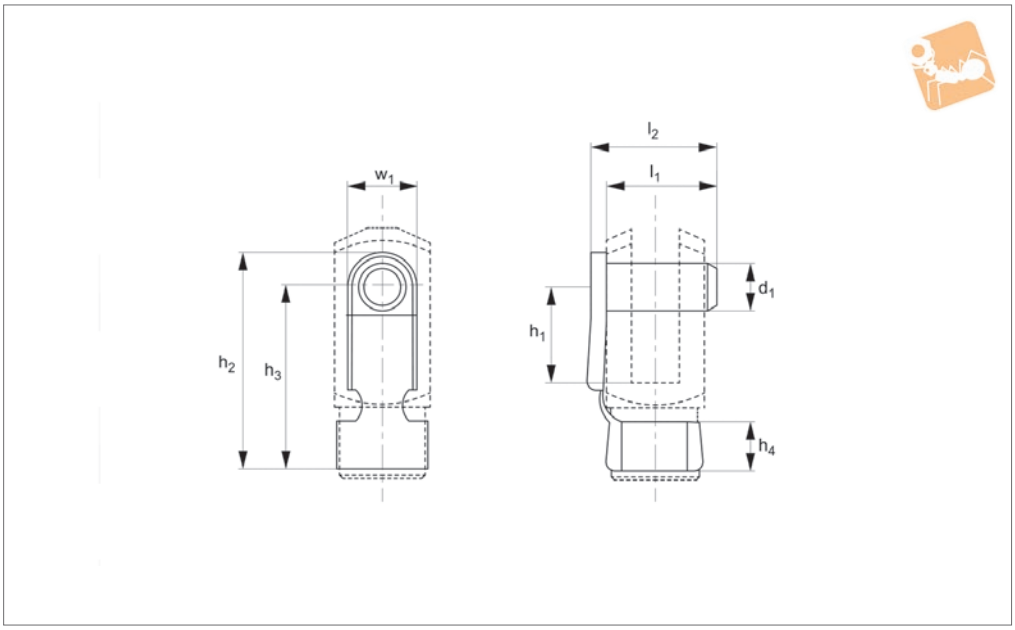
Tips
Equivalent to ESI and ESIL Springfix clips

Order No.	d	h_1	h_2	h_3	h_4	l_1	l_2	Weight g
R3436.I187	0.1875	0.394	0.90	0.75	0.22	0.43	0.49	3
R3436.IL187	0.1855	0.787	1.30	1.14	0.22	0.43	0.49	4
R3436.I250	0.2500	0.472	1.10	0.90	0.25	0.56	0.64	5
R3436.IL250	0.2470	0.945	1.57	1.38	0.25	0.56	0.64	6
R3436.I312	0.3125	0.630	1.43	1.18	0.31	0.70	0.79	11
R3436.IL312	0.3095	1.260	2.05	1.81	0.31	0.70	0.79	12
R3436.I375	0.3750	0.787	1.77	1.50	0.39	0.83	0.95	17
R3436.IL375	0.3720	1.575	2.56	2.28	0.39	0.83	0.95	18
R3436.I500	0.5000	1.102	2.44	2.05	0.55	1.09	1.21	40
R3436.IL500	0.4970	1.205	3.58	3.23	0.55	1.09	1.21	43

Plastic Clevis Retention Clips



R3437

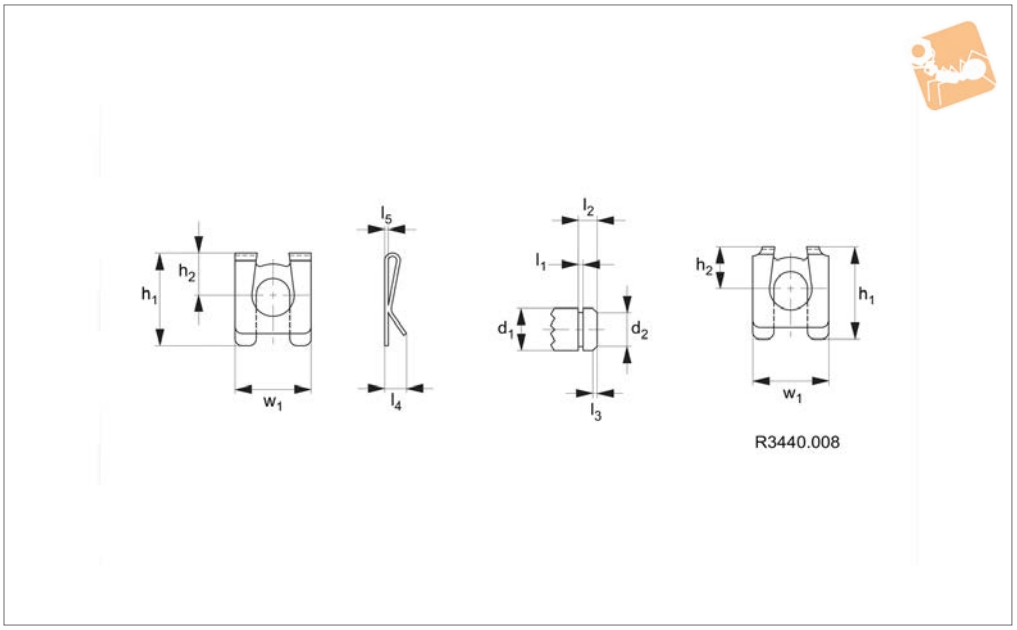


Material
Black plastic (Igumid G).

Technical Notes
Spring loaded pins.

Tips
Clips on to base of clevis joint, for clevis joint see part number R3409.

Order No.	Size	d_1 tol. h11	h_1 ±0.5	h_2	h_3	h_4	l_1	l_2	w_1
R3437.048	4x8	4	8	19.0	15	4.5	9.5	10.5	8
R3437.050	5x10	5	10	23.0	19	5.5	12	13.5	8
R3437.051	5x12	5	12	27.0	23	6.5	14	15.5	8
R3437.061	6x12	6	12	27.0	23	6.5	14	15.5	8
R3437.081	8x16	8	16	35.5	30	8.0	19	21.0	11
R3437.102	10x20	10	20	45.0	38	10.0	23	25.5	14
R3437.122	12x24	12	24	53.0	45	12.0	28	31.0	16
R3437.162	16x32	16	32	73.0	62	16.0	36	40.0	22





R3440

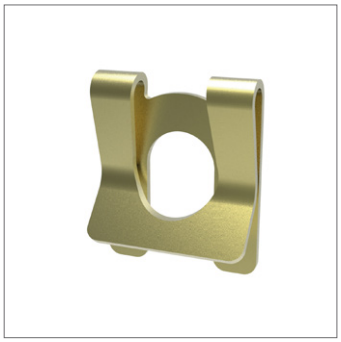
Material
Spring steel, silver zinc plated, hardened and annealed 1450 to 1600°C N/mm².

Tips
Easily assembled and removed by hand without special tools, compatible with clevis pins.
Safety lip prevents accidental removal.
Assembly „rattle“ is eliminated by the fasteners concave back holding the clevis pin under tension.

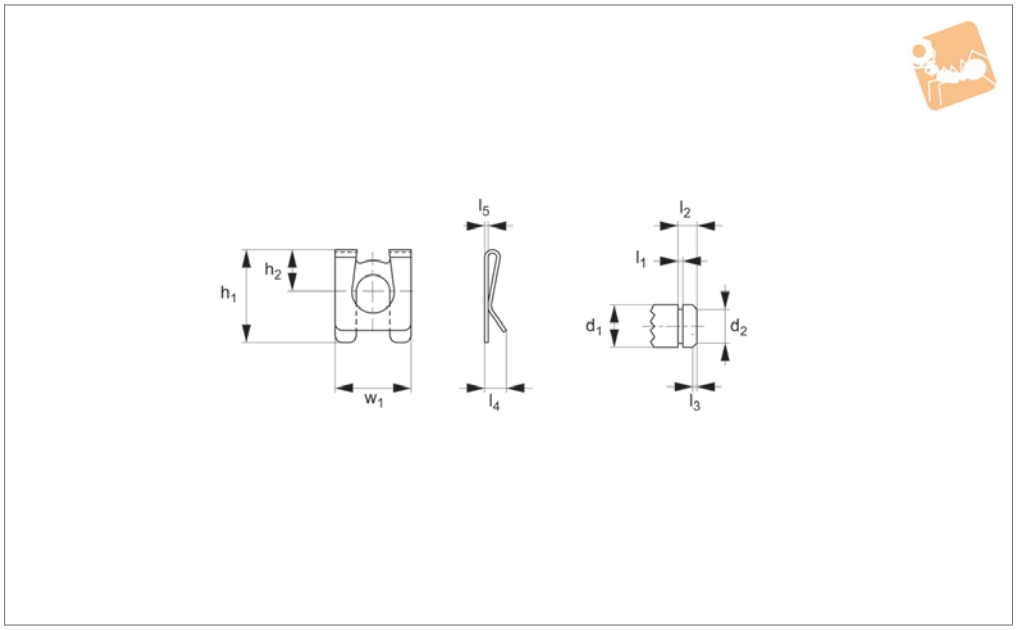
Order No.	d_1 tol. h11	d_2 tol. h11	h_1	h_2	l_1 +0.1	l_2	l_3	l_4	l_5	w_1	Axial thrust kN max.	Weight g
R3440.004	4	3.2	8.5	4.0	0.64	2.0	0.5	2.3	0.3	7	1.00	0.19
R3440.005	5	4.0	10.7	5.0	0.74	2.5	0.5	3.3	0.4	9	1.30	0.34
R3440.006	6	5.0	14.1	6.0	0.74	3.0	0.75	3.8	0.4	11	1.50	0.63
R3440.008	8	6.0	17.5	8.0	0.94	3.5	1.0	4.0	0.5	14	3.60	1.10
R3440.010	10	8.0	22.1	10.0	1.05	4.5	1.0	5.0	0.5	18	6.40	2.11
R3440.012	12	9.0	26.0	12.0	1.15	5.0	1.25	5.0	0.5	22	9.60	2.80
R3440.014	14	10.0	30.0	13.5	1.25	5.5	1.5	6.0	0.6	25	11.32	4.74
R3440.016	16	12.0	34.0	16.0	1.35	6.0	1.5	6.0	0.6	28	13.50	5.63

Safety Fastener - Imperial (SLI)

for bolts and shafts



R3441.i

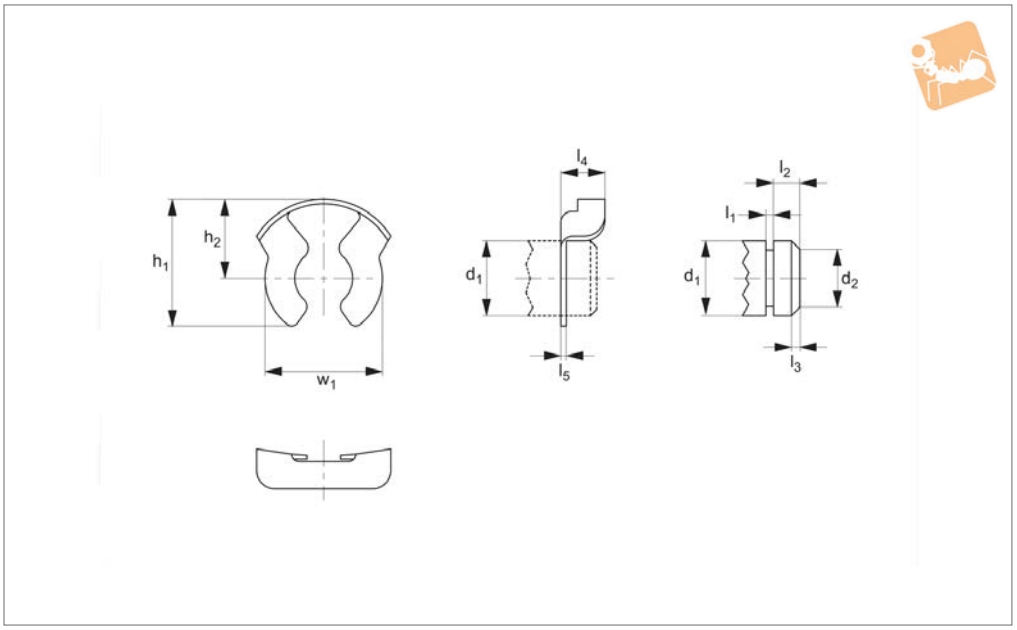


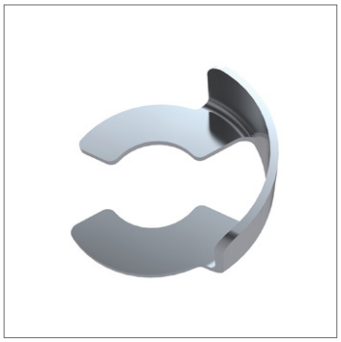
Material
Spring steel, yellow zinc plated, hardened and annealed 1450 to 160c N/mm² tensile strength.

Technical Notes
Yellow zinc is not RoHS Compliant

Tips
Easily assembled and removed by hand without special tools. Compatible with clevis pins. safety lip prevents accidental removal.
Assembly rattle is eliminated by the fasteners concave back holding the clevis pin under tension.

Order No.	d_1	d_2	h_1	h_2	l_1	l_2	l_3	l_4	l_5	w	Weight g
R3441.I187	0.1875	0.140	0.429	0.195	0.020	0.090	0.030	0.084	0.015	0.355	0.3
R3441.I250	0.250	0.193	0.562	0.245	0.026	0.110	0.030	0.130	0.018	0.437	0.6
R3441.I312	0.312	0.240	0.679	0.315	0.033	0.130	0.030	0.138	0.020	0.551	1.1
R3441.I375	0.375	0.301	0.844	0.385	0.037	0.167	0.037	0.211	0.020	0.710	2.2
R3441.I500	0.500	0.388	1.200	0.520	0.046	0.208	0.037	0.263	0.020	1.000	5.1





R3444

Material
Steel, silver zinc plated.

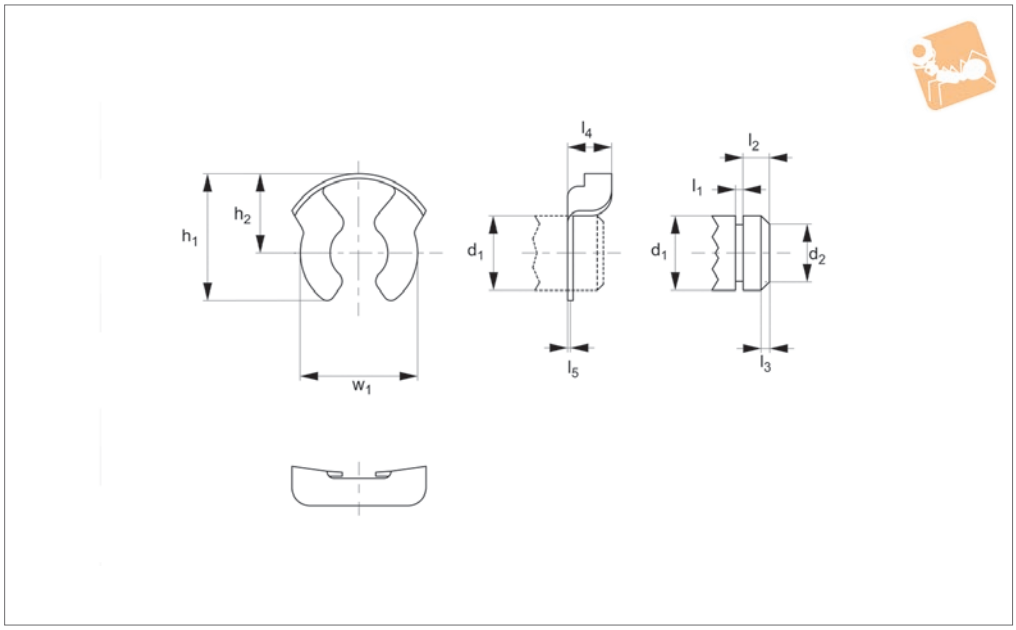
Tips
Easily assembled and removed by hand without special tools.

Order No.	d_1 tol. h11	d_2 tol. h11	h_1	h_2	l_1 +0.10	l_2	l_3	l_4	l_5	w	Axial force kN max.
R3444.004	4	3.2	7.2	4.3	0.64	2.0	0.5	2.8	0.4	6.6	1.50
R3444.005	5	4.0	8.4	5.2	0.74	2.5	0.5	2.8	0.5	7.5	3.00
R3444.006	6	5.0	11.25	6.8	0.74	3.0	0.75	3.5	0.5	10.6	4.85
R3444.008	8	6.0	11.9	7.4	0.94	3.5	1.0	4.5	0.5	11.5	5.50
R3444.010	10	8.0	16.3	9.5	1.05	4.5	1.0	5.9	0.6	15.5	9.50
R3444.012	12	9.0	18.0	10.5	1.15	5.5	1.25	6.2	0.6	16.8	10.70
R3444.014	14	10.0	20.0	12.2	1.25	5.5	1.5	6.8	0.7	19.2	12.70
R3444.016	16-18	12.0	24.0	14.3	1.35	5,5-6,0	1.5	7.6	0.8	22.7	14.00
R3444.024	20-25	16-18	34.0	19.0	1.80	5,5-6,5	1.5	9.8	1.0	34.0	16.00

Safety Fastener (KLM)
yellow zinc plated



R3445

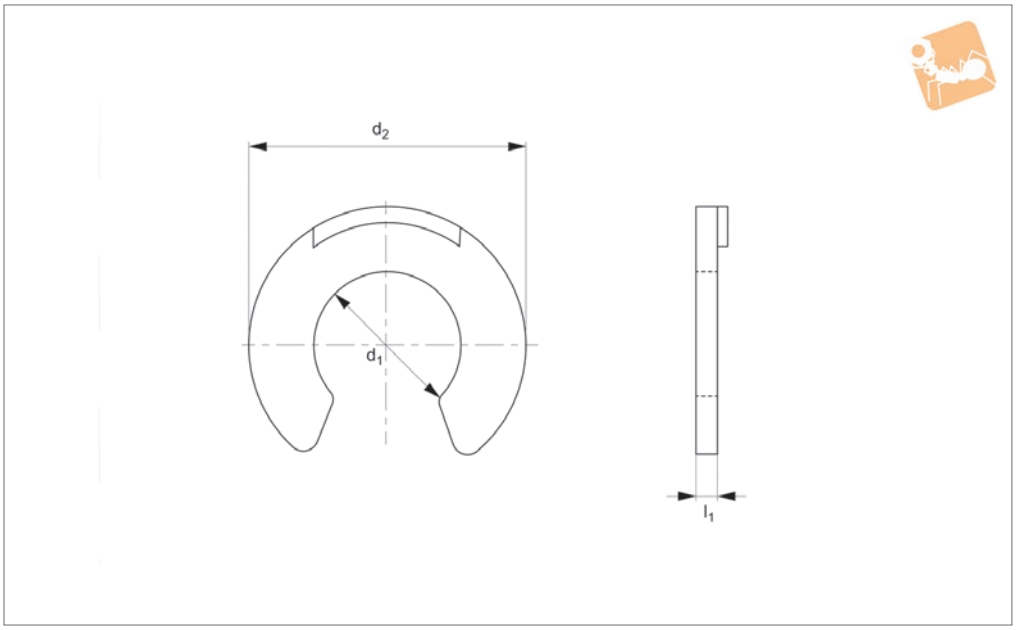


Material
Steel, yellow zinc plated.

Tips
Easily assembled and removed by hand

without special tools, for yellow zinc plated version see R3445.

Order No.	d_1 tol. h11	d_2 tol. h11	h_1	h_2	l_1 +0.10	l_2	l_3	l_4	l_5	w	Axial force kN max.
R3445.004	4	3.2	7.2	4.3	0.64	2.0	0.5	2.8	0.4	6.6	1.50
R3445.005	5	4.0	8.4	5.2	0.74	2.5	0.5	2.8	0.5	7.5	3.00
R3445.006	6	5.0	11.25	6.8	0.74	3.0	0.75	3.5	0.5	10.6	4.85
R3445.008	8	6.0	11.9	7.4	0.94	3.5	1.0	4.5	0.5	11.5	5.50
R3445.010	10	8.0	16.3	9.5	1.05	4.5	1.0	5.9	0.6	15.5	9.50
R3445.012	12	9.0	18.0	10.5	1.15	5.5	1.25	6.2	0.6	16.8	10.70
R3445.014	14	10.0	20.0	12.2	1.25	5.5	1.5	6.8	0.7	19.2	12.70
R3445.016	16-18	12.0	24.0	14.3	1.35	5,5-6,0	1.5	7.6	0.8	22.7	14.00
R3445.020	20-25	16-18	34.0	19.0	1.80	5,5-6,5	1.5	9.8	1.0	34.0	16.00





R3446

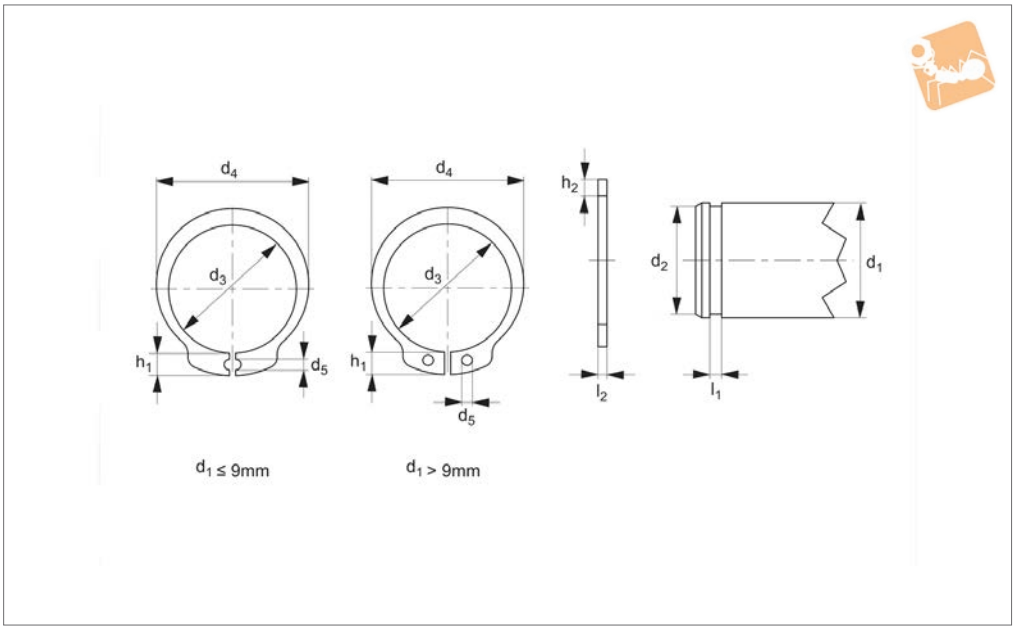
Material
Black plastic (POM).

Important Notes
For use with R3409 clevis joints and R3453 clevis pins.

Order No.	d_1	d_2	l_1
R3446.004	3.2	7.0	1.0
R3446.006	4.0	9.0	1.1
R3446.008	5.0	11.0	1.1
R3446.010	7.0	14.0	1.3
R3446.012	9.0	18.5	1.4
R3446.016	12.0	23.0	1.6
R3446.020	15.0	28.0	1.9



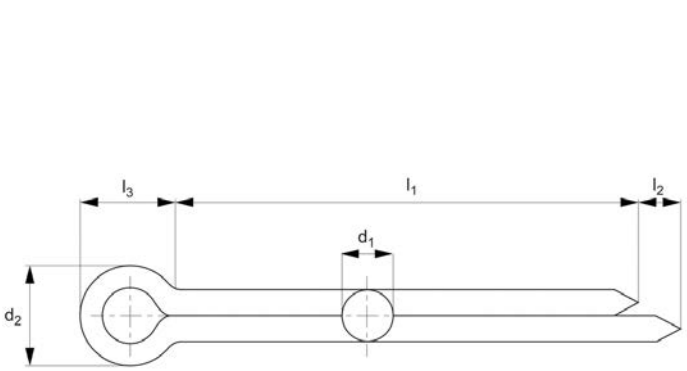
R3447



Material
Stainless steel (AISI 303).

Technical Notes
To DIN 471, for use with R3454 clevis pins and R3402-R3403 clevis joints.

Order No.	d_1	d_2	d_3	d_4	d_5 min.	h_1	h_2	l_1	l_2
R3447.005	5	4.8	3.7	6.2	1.0	2.5	1.1	0.7	0.6
R3447.006	6	5.7	5.6	7.5	1.15	2.7	1.3	0.8	0.7
R3447.008	8	7.6	7.4	9.6	1.2	3.2	1.5	1.1	0.8
R3447.010	10	9.6	9.3	12.7	1.7	3.3	1.8	1.1	1.0
R3447.012	12	11.5	11.0	7.7	1.7	3.3	1.8	1.1	1.0
R3447.016	16	15.2	14.7	12.2	1.7	3.7	2.2	1.1	1.0
R3447.020	20	19.0	18.5	16.2	2.0	4.0	2.6	1.3	1.2





R3448

Material
Mild steel, silver zinc plated.

Technical Notes
To DIN 94 (equivalent to ISO 1234).

Cotter pins require a loose fit, and as a result the metric versions can also be for inch sizes.

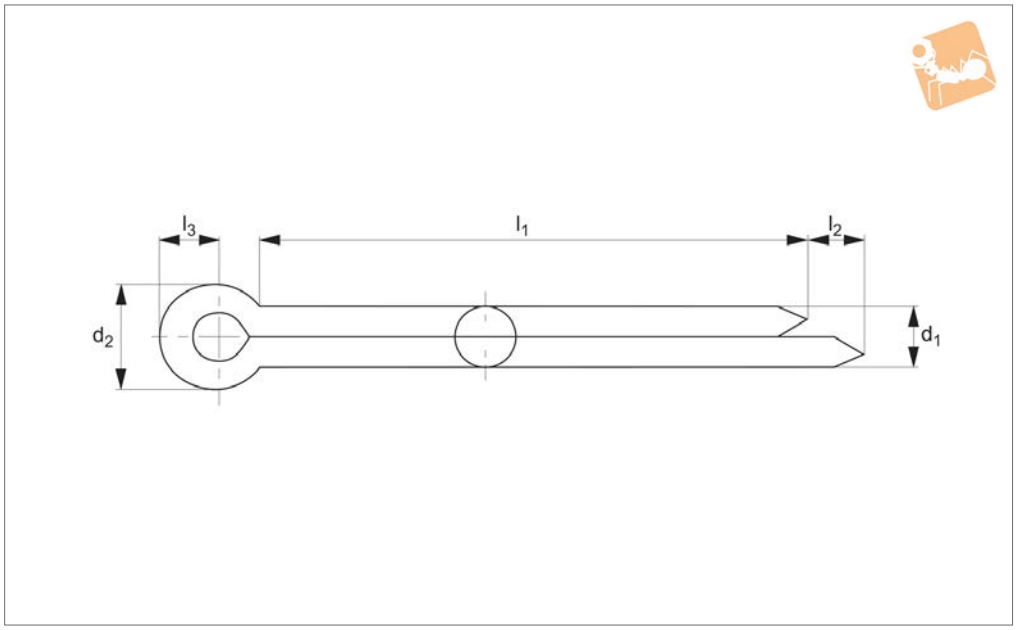
Tips
Used with clevis pins as denoted in product table, with clevis joints R3385 and R3386, and washers R3457.

Order No.	d_1 nom.	d_1 min.	d_1 max.	d_2 max.	l_1	l_2	l_3	For use with clevis pin
R3448.01.0-10	1.0	0.8	0.9	1.6	10	1.6	3.0	R3455.005
R3448.01.6-18	1.6	1.3	1.4	2.8	18	2.5	3.2	R3455.006
R3448.02-18	2.0	1.7	1.8	3.6	18	2.5	4.0	R3455.008
R3448.03.2-22	3.2	2.7	2.9	5.8	22	3.2	6.4	R3455.010
R3448.04-28	4.0	3.5	3.7	7.4	28	4.0	8.0	R3455.012-016
R3448.05-50	5.0	4.4	4.6	9.2	50	4.0	10.0	R3455.018-020
R3448.06.3-71	6.3	5.7	5.9	11.8	71	4.0	12.6	R3455.025-030
R3448.08-112	8.0	7.3	7.5	15.0	112	4.0	16.0	R3455.035-042
R3448.10-112	10.0	9.3	9.5	19.0	112	6.3	20.0	R3455.050

Stainless Cotter Pin



R3449



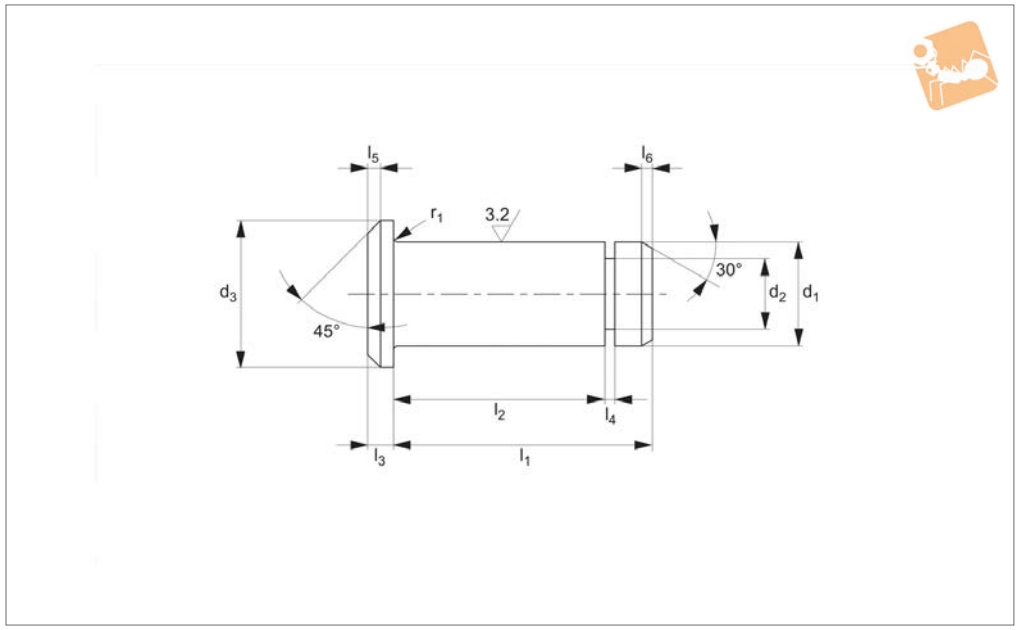
Material
Stainless steel (A2, DIN 1,4301).

Technical Notes
To DIN 94 (equivalent to ISO 1234).

Cotter pins require a loose fit, and as a result the metric versions can also be for inch sizes.

Tips
Used with clevis pins as denoted in product table, with clevis joints R3402 and R3403 and washer R3458.

Order No.	d_1 nom.	d_1 min.	d_1 max.	d_2 min.	d_2 max.	l_1	l_2	l_3	For use with clevis pin
R3449.01.0-10	1.0	0.8	0.9	0.8	1.6	10	1.6	3	R3456.004-005
R3449.01.6-18	1.6	1.3	1.4	1.25	2.5	18	2.5	3.2	R3456.006
R3449.02.0-18	2.0	1.7	1.8	1.25	2.5	18	1.25	2.5	R3456.008
R3449.03.2-22	3.2	2.7	2.9	1.6	3.2	22	3.2	6.4	R3456.010
R3449.04-28	4.0	3.5	3.7	2.0	4.0	28	4	8	R3456.012-016
R3449.05-50	5.0	4.4	4.6	2.0	4.0	50	4	10	R3456.020
R3449.06.3-71	6.3	5.7	5.9	2.0	4.0	71	4	12.6	R3456.025





R3450

Material
Steel (9SMnPb28), silver zinc plated.
Stainless steel (A2, AISI 303).

Technical Notes
Designed for use with clevis joints.

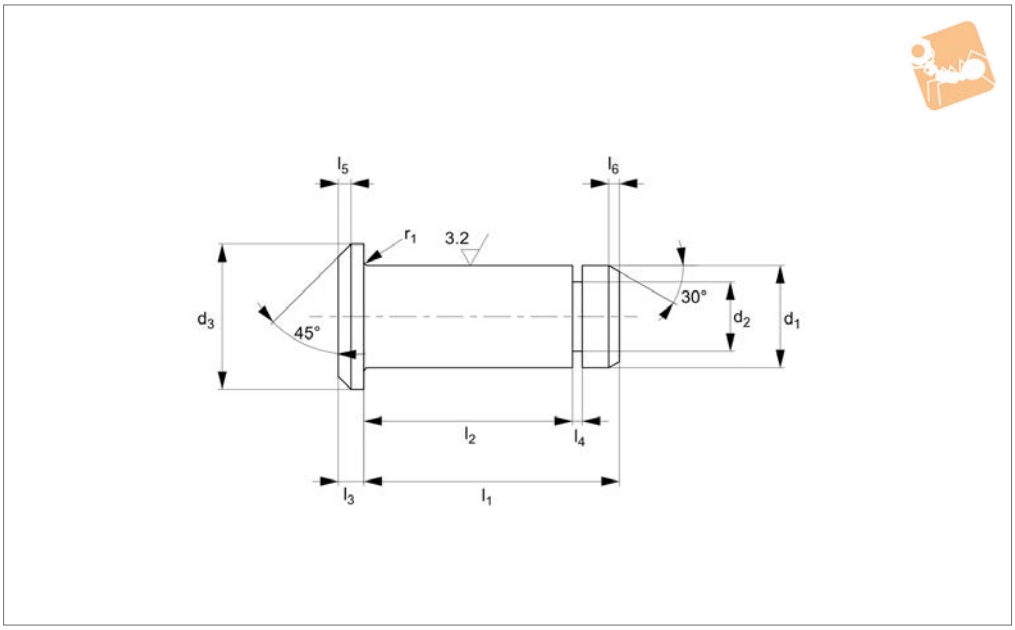
Tips
For safety fasteners, see R3440-R3445.

Order No.	d_1	d_2 h11	d_3 h12	l_1	l_2 +0.30	l_3 js14	l_4 0.10	l_5 0.5	l_6 0.5	R	Weight g
R3450.004-ZP	4	3.2	6	10.5	8.5	1.0	0.64	0.5	0.5	0.3	2
R3450.005-ZP	5	4.0	8	13.0	10.5	1.5	0.74	0.5	0.5	0.5	3
R3450.006-ZP	6	5.0	9	15.5	12.5	1.5	0.74	0.5	0.75	0.5	4
R3450.008-ZP	8	6.0	12	20.0	16.5	2.0	0.94	1.0	1.0	0.5	9
R3450.010-ZP	10	8.0	14	25.0	20.5	2.0	1.05	1.0	1.0	0.5	17
R3450.012-ZP	12	9.0	17	30.0	24.5	3.0	1.15	1.25	1.25	0.5	30
R3450.014-ZP	14	10.0	19	33.0	27.5	3.0	1.25	1.5	1.5	1.0	48
R3450.016-ZP	16	12.0	20	38.5	32.5	3.0	1.35	1.5	1.5	1.0	67
R3450.020-ZP	20	17.5	26	46.0	40.5	4.0	1.8	2.0	1.5	1.0	125
R3450.025-ZP	25	18.0	32	57.0	50.5	5.0	1.8	2.0	1.5	1.0	260
R3450.004-A2	4	3.2	6	10.5	8.5	1.0	0.64	0.5	0.5	0.3	2
R3450.005-A2	5	4.0	8	13.0	10.5	1.5	0.74	0.5	0.5	0.5	3
R3450.006-A2	6	5.0	9	15.5	12.5	1.5	0.74	0.5	0.75	0.5	4
R3450.008-A2	8	6.0	12	20.0	16.5	2.0	0.94	1.0	1.0	0.5	9
R3450.010-A2	10	8.0	14	25.0	20.5	2.0	1.05	1.0	1.0	0.5	17
R3450.012-A2	12	9.0	17	30.0	24.5	3.0	1.15	1.25	1.25	0.5	30
R3450.016-A2	16	12.0	20	38.5	32.5	3.0	1.35	1.5	1.5	1.0	67
R3450.020-A2	20	17.5	26	46.0	40.5	4.0	1.8	2.0	1.5	1.0	125
R3450.025-A2	25	18.0	32	57.0	50.5	5.0	1.8	2.0	1.5	1.0	260

Clevis Pins - Imperial (NBI)



R3451.i

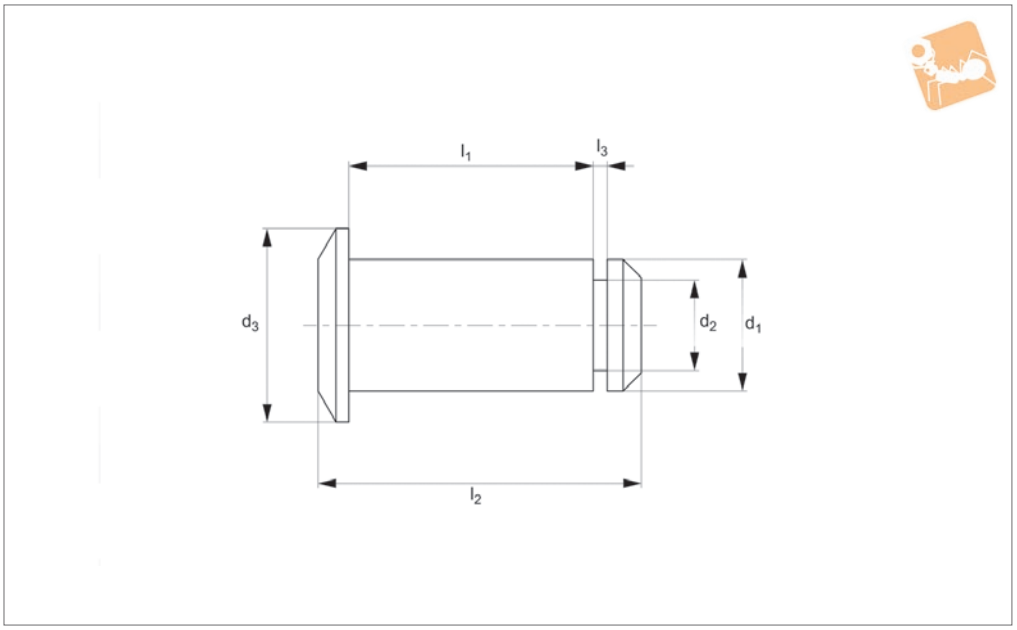


Material
Steel (9SMnPb28) yellow zinc plated.

Technical Notes
Equivalent to Springfix NBI, designed for use with clevis joints, yellow zinc is not RoHS Compliant.

Tips
For safety fasteners, see R3441.

Order No.	d_1	d_2	d_3	l_1	l_2	l_3	l_4	Weight g
R3451.I187	0.1875	0.140	0.250	0.475	0.380	0.050	0.020	3
R3451.I250	0.250	0.193	0.343	0.620	0.505	0.062	0.026	4
R3451.I312	0.312	0.240	0.437	0.765	0.630	0.078	0.033	10
R3451.I375	0.375	0.301	0.500	0.927	0.755	0.090	0.037	17
R3451.I500	0.500	0.388	0.625	1.218	1.005	0.110	0.046	30





R3453

Material
Black plastic (Igumid G).

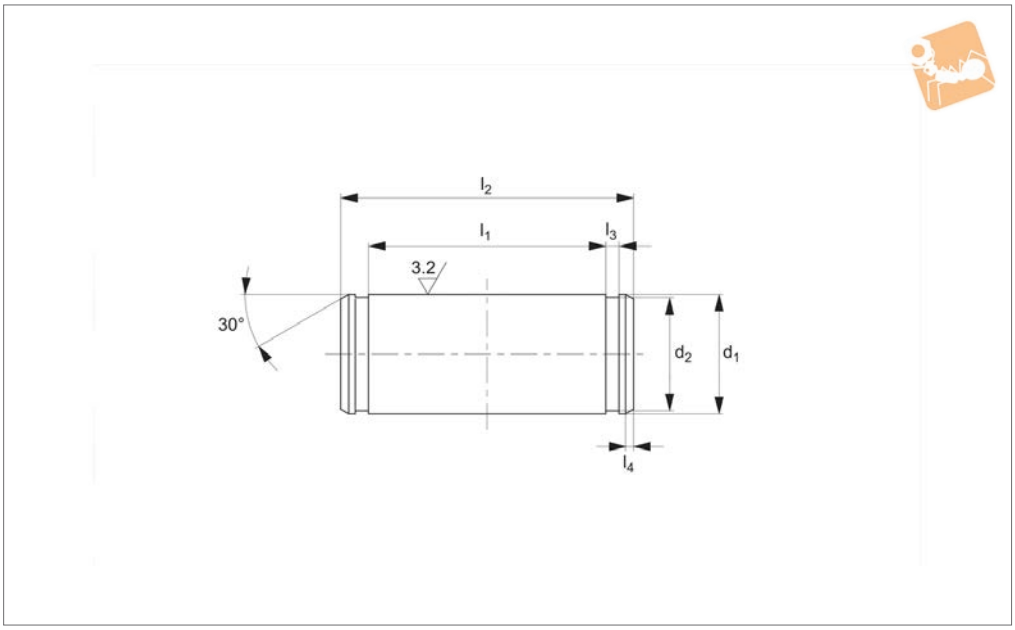
Important Notes
For use with R3409 clevis joints and R3446 circlips.

Order No.	d_1 tol. h11	d_2	d_3	l_1	l_2	l_3	Weight g
R3453.004	4	3.2	7	8	12.5	1.05	0.3
R3453.005	5	4.0	8	12	16.5	1.15	0.5
R3453.005-1	5	4.0	8	10	14.5	1.15	0.5
R3453.006	6	4.0	9	12	16.5	1.15	0.7
R3453.008	8	5.0	12	16	21.5	1.15	1.5
R3453.010	10	7.0	15	20	27.0	1.35	1.35
R3453.012	12	9.0	18	24	31.5	1.50	1.5
R3453.014	14	12.0	22	27	36.0	1.70	1.7
R3453.015	15	12.0	23	27	36.0	1.70	1.7
R3453.016	16	12.0	24	32	42.0	1.70	1.7
R3453.017	17	12.0	25	32	42.0	1.70	1.7
R3453.020	20	15.0	30	40	51.0	2.00	2.0

Stainless Clevis Pin



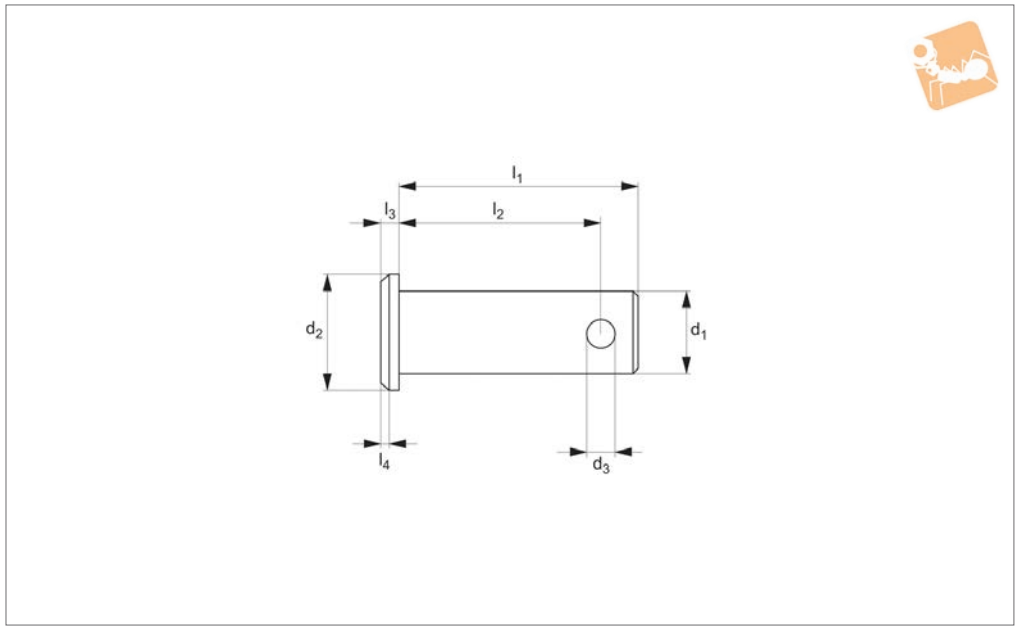
R3454



Material
Stainless steel (AISI 303).

Technical Notes
For use with R3402-R3403 clevis joints and R3447 circlips.

Order No.	d_1 tol. h11	d_2 tol. h11	l_1 +0.30	l_2 +0.40	l_3 tol. h13	l_4	Weight g
R3454.005	5	4.8	10.5	15	0.7	1	3
R3454.006	6	5.7	12.2	17	0.8	1	5
R3454.008	8	7.6	16.5	20	0.9	1	8
R3454.010	10	9.6	20.5	25	1.1	1	15
R3454.012	12	11.5	24.5	30	1.1	1	26
R3454.016	16	15.2	32.5	39	1.1	1	61
R3454.020	20	19.0	40.5	48	1.3	1	118





R3455

Material
Sizes 5-14 steel 1,0214 (QST 36-3).
Sizes 16-50 steel (1,0718 11SMnPb30+C).
Zinc-plated.

Technical Notes
Designed for use with clevis joints.

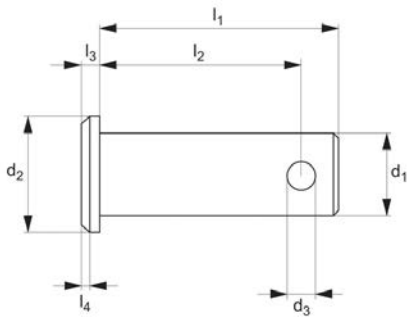
Tips
For use with clevis joints R3385 and R3386, for split cotter pins to suit see part number P1240.
For washers see part number P0330-ZP.

Order No.	d_1 tol. h11	d_2 tol. h14	d_3 tol. h14	l_1 tol. js15	l_2 +0.5	l_3 tol. js14	l_4	Weight g
R3455.005	5	8	1.0	15	12.3	1.5	0.5	2.6
R3455.006	6	9	1.6	18	15.3	1.5	0.5	4.6
R3455.008	8	12	2.0	23	19.5	2.0	1.0	10.0
R3455.010	10	14	3.2	29	24.5	2.0	1.0	19.0
R3455.012	12	17	4.0	35	29.5	3.0	1.5	34.0
R3455.014	14	19	4.0	40	32.5	3.0	1.5	53.0
R3455.016	16	20	4.0	45	38.2	3.5	1.5	72.0
R3455.018	18	25	5.0	50	43.5	3.5	1.5	104.0
R3455.020	20	28	5.0	53	47.0	4.0	1.5	139.0
R3455.025	25	34	6.3	67	59.0	5.5	1.5	266.0
R3455.028	28	34	6.3	72	63.2	5.5	2.0	361.0
R3455.030	30	36	6.3	77	68.2	5.5	2.0	428.0
R3455.035	35	45	8.0	87	76.5	7.0	2.0	677.0
R3455.040	40	48	8.0	100	90.0	6.0	5.0	1035.0
R3455.042	42	48	8.0	100	90.0	7.0	5.0	1151.0
R3455.050	50	58	10.0	115	103.0	7.0	6.0	1846.0

Stainless Clevis Pin With Hole



R3456

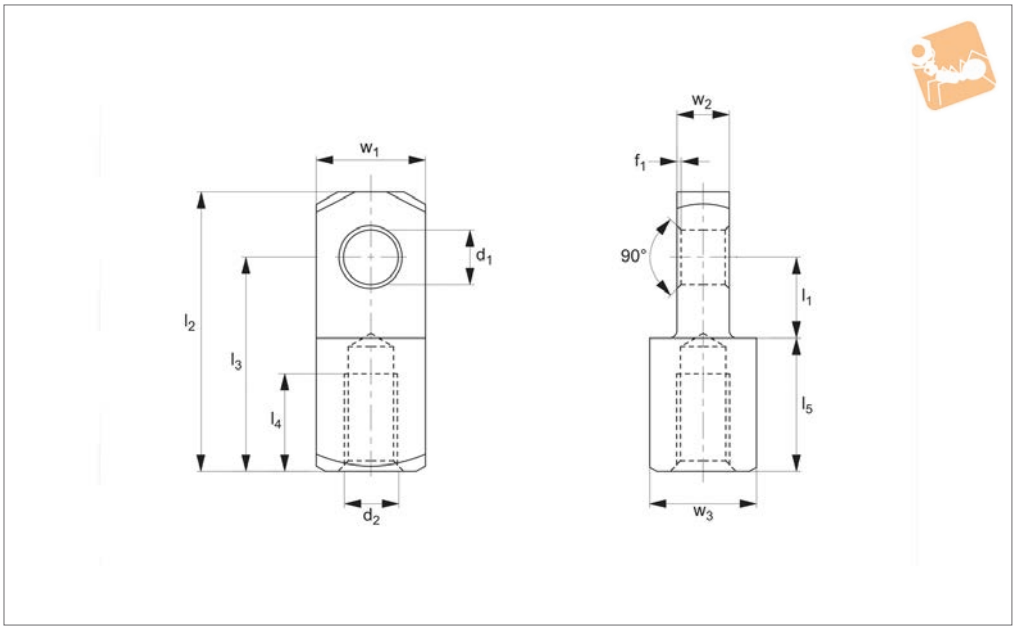


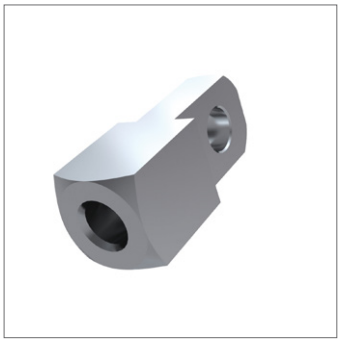
Material
Stainless steel (1.4305, X8CrNiS18-9), for sizes 6-8: stainless steel (1.4567, X3CrNiCu18-9-4).

Technical Notes
Designed for use with clevis joints.

Tips
For use with clevis joints R3402 and R3403, for split cotter pins to suit see part number P1241.
For washers see part number P0330.A2.

Order No.	d_1 tol. h11	d_2 tol. h14	d_3 tol. H14	l_1 tol. js15	l_2 +0.5	l_3 tol. js14	l_4	Weight g
R3456.005	5	8	1.2	15	12.3	1.5	0.5	2.6
R3456.006	6	9	1.6	18	15.3	1.5	0.5	4.6
R3456.008	8	12	2.0	23	19.5	2.0	1.0	10.0
R3456.010	10	14	3.2	29	24.5	2.0	1.0	19.0
R3456.012	12	17	4.0	35	29.5	3.0	1.5	34.0
R3456.014	14	19	4.0	40	32.5	3.0	1.5	53.0
R3456.016	16	21	4.0	45	38.2	3.0	-	73.0
R3456.020	20	28	5.0	53	47.0	4.0	-	139.0
R3456.025	25	34	6.3	67	59.0	5.5	-	266.0





R3420

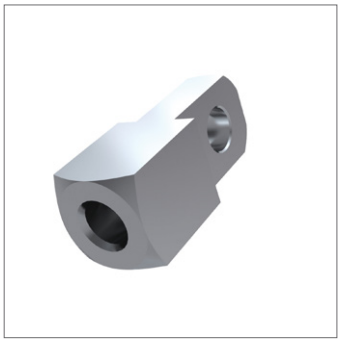
Material
Steel (1.0718), silver zinc plated.

Tips
Standard thread is right hand, (for left hand thread, see R3421).
Thin end of mating piece is designed to fit in between forks of clevis joint.
Designed so thread size matches clevis joint, (e.g. M5 mating piece will fit on M5 clevis joint).

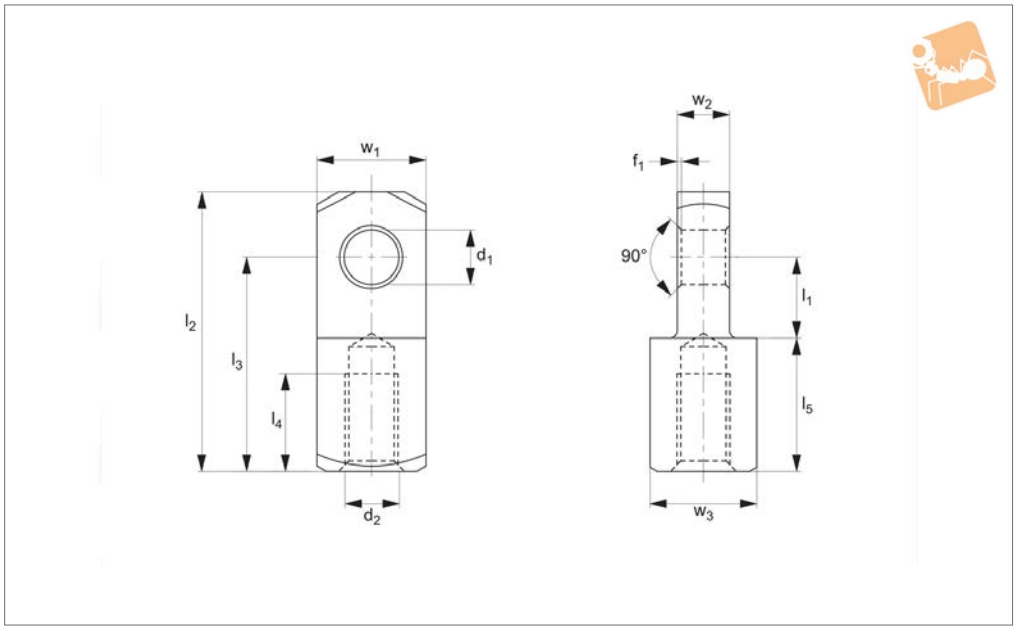
Order No.	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	l_2 ±0.5	l_3 ±0.5	l_4	l_5 ±0.2	w_1 tol. h11	w_2 -0,2	w_3 tol. h11	f_1 ±0.2	Weight g
R3420.R004	Right	Coarse	4	6.0	M4	21	16	6	10	8	4	8	0.5	6
R3420.R005	Right	Coarse	5	7.5	M5	26	20	8	12.5	10	5	10	0.5	12
R3420.R006	Right	Coarse	6	9.0	M6	31	24	11	15	12	6	12	0.5	21
R3420.R008	Right	Coarse	8	12.0	M8	42	32	14	20	16	8	16	0.5	51
R3420.R009	Right	Fine	8	12.0	M8x1	42	32	14	20	16	8	16	0.5	51
R3420.R010	Right	Coarse	10	15.0	M10	52	40	18	25	20	10	20	0.5	98
R3420.R011	Right	Fine	10	15.0	M10x1,25	52	40	18	25	20	10	20	0.5	98
R3420.R012	Right	Coarse	12	18.0	M12	62	48	22	30	24	12	24	0.5	168
R3420.R013	Right	Fine	12	18.0	M12x1,25	62	48	22	30	24	12	24	0.5	167
R3420.R014	Right	Coarse	14	21.0	M14	72	56	25	35	27	14	27	1.0	247
R3420.R015	Right	Fine	14	21.0	M14x1,5	72	56	25	35	27	14	27	1.0	245
R3420.R016	Right	Coarse	16	24.0	M16	83	64	30	40	32	16	32	1.0	397
R3420.R017	Right	Fine	16	24.0	M16x1,5	83	64	30	40	32	16	32	1.0	395
R3420.R020	Right	Coarse	20	30.0	M20	105	80	38	50	40	20	40	1.0	783
R3420.R021	Right	Fine	20	30.0	M20X1,5	105	80	38	50	40	20	40	1.0	776

Mating Piece for Clevis Joints

left hand thread - silver zinc plated



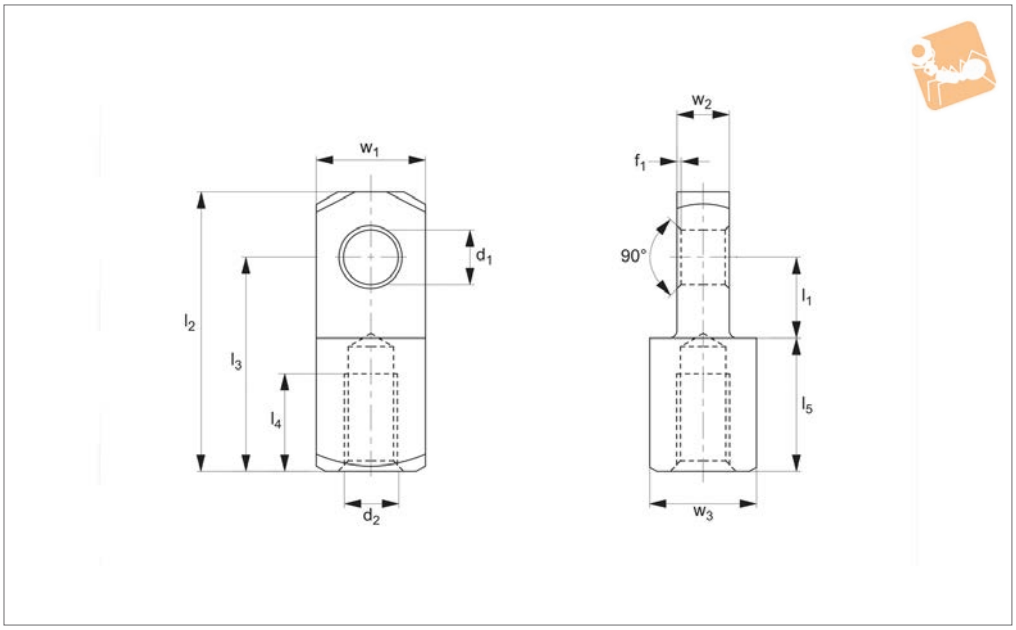
R3421

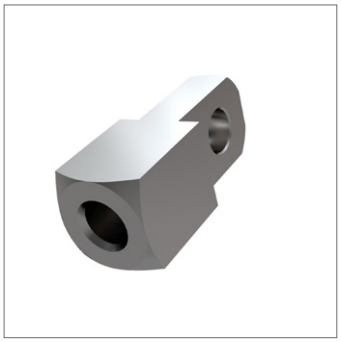


Material
Steel (1.0718), silver zinc plated.

Tips
Thin end of mating piece is designed to fit in between forks of clevis joint.
Designed so thread size matches clevis joint, (e.g. M5 mating piece will fit on M5 clevis joint).

Order No.	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	l_2 ±0.5	l_3 ±0.5	l_4	l_5 ±0.2	w_1 tol. h11	w_2 -0,2	w_3 tol. h11	f_1 ±0.2	Weight g
R3421.L004	Left	Coarse	4	6	M4	21	16	6	10.0	8	4	8	0.5	6
R3421.L005	Left	Coarse	5	7.5	M5	26	20	8	12.5	10	5	10	0.5	12
R3421.L006	Left	Coarse	6	9	M6	31	24	11	15.0	12	6	12	0.5	21
R3421.L008	Left	Coarse	8	12	M8	42	32	14	20.0	16	8	16	0.5	51
R3421.L009	Left	Fine	8	12	M8x1	42	32	14	20.0	16	8	16	0.5	51
R3421.L010	Left	Coarse	10	15	M10	52	40	18	25.0	20	10	20	0.5	98
R3421.L011	Left	Fine	10	15	M10x1,25	52	40	18	25.0	20	10	20	0.5	98
R3421.L012	Left	Coarse	12	18	M12	62	48	22	30.0	24	12	24	0.5	168
R3421.L013	Left	Fine	12	18	M12x1,25	62	48	22	30.0	24	12	24	0.5	167
R3421.L014	Left	Coarse	14	21	M14	72	56	25	35.0	27	14	27	1.0	247
R3421.L015	Left	Fine	14	21	M14x1,5	72	56	25	35.0	27	14	27	1.0	245
R3421.L016	Left	Coarse	16	24	M16	83	64	30	40.0	32	16	32	1.0	397
R3421.L017	Left	Fine	16	24	M16x1,5	83	64	30	40.0	32	16	32	1.0	395
R3421.L020	Left	Coarse	20	30	M20	105	80	38	50.0	40	20	40	1.0	783
R3421.L021	Left	Fine	20	30	M20X1,5	105	80	38	50.0	40	20	40	1.0	776





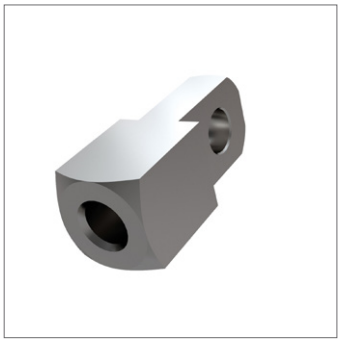
R3426

Material
Stainless steel (AISI 303 1.4305).

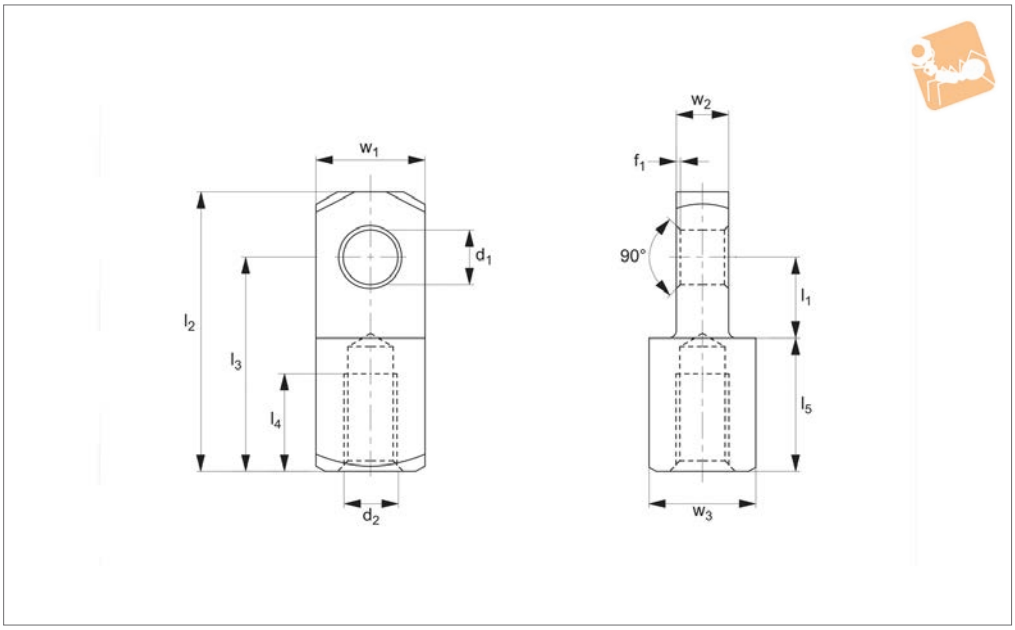
Tips
Standard thread is right hand, (for left hand thread see R3427).
Thin end of mating piece is designed to fit in between forks of clevis joint.
Designed so thread size matches clevis joint, (e.g. M5 mating piece will fit on M5 clevis joint).

Order No.	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	l_2 ±0.5	l_3 ±0.5	l_4	l_5 ±0.2	w_1 tol. h11	w_2 -0,2	w_3 tol. h11	f_1 ±0.2	Weight g
R3426.R004	Right	Coarse	4	6	M4	21	16	6	10.0	8	4	8	0.5	6
R3426.R005	Right	Coarse	5	7.5	M5	26	20	8	12.5	10	5	10	0.5	12
R3426.R006	Right	Coarse	6	9	M6	31	24	11	15.0	12	6	12	0.5	21
R3426.R008	Right	Coarse	8	12	M8	42	32	14	20.0	16	8	16	0.5	51
R3426.R009	Right	Fine	8	12	M8x1	42	32	14	20.0	16	8	16	0.5	51
R3426.R010	Right	Coarse	10	15	M10	52	40	18	25.0	20	10	20	0.5	98
R3426.R011	Right	Fine	10	15	M10x1,25	52	40	18	25.0	20	10	20	0.5	98
R3426.R012	Right	Coarse	12	18	M12	62	48	22	30.0	24	12	24	0.5	168
R3426.R013	Right	Fine	12	18	M12x1,25	62	48	22	30.0	24	12	24	0.5	167
R3426.R014	Right	Coarse	14	21	M14	72	56	25	35.0	27	14	27	1.0	247
R3426.R015	Right	Fine	14	21	M14x1,5	72	56	25	35.0	27	14	27	1.0	245
R3426.R016	Right	Coarse	16	24	M16	83	64	30	40.0	32	16	32	1.0	397
R3426.R017	Right	Fine	16	24	M16x1,5	83	64	30	40.0	32	16	32	1.0	395
R3426.R020	Right	Coarse	20	30	M20	105	80	38	50.0	40	20	40	1.0	783
R3426.R021	Right	Fine	20	30	M20X1,5	105	80	38	50.0	40	20	40	1.0	776

Stainless Mating Piece for Clevis
left hand thread



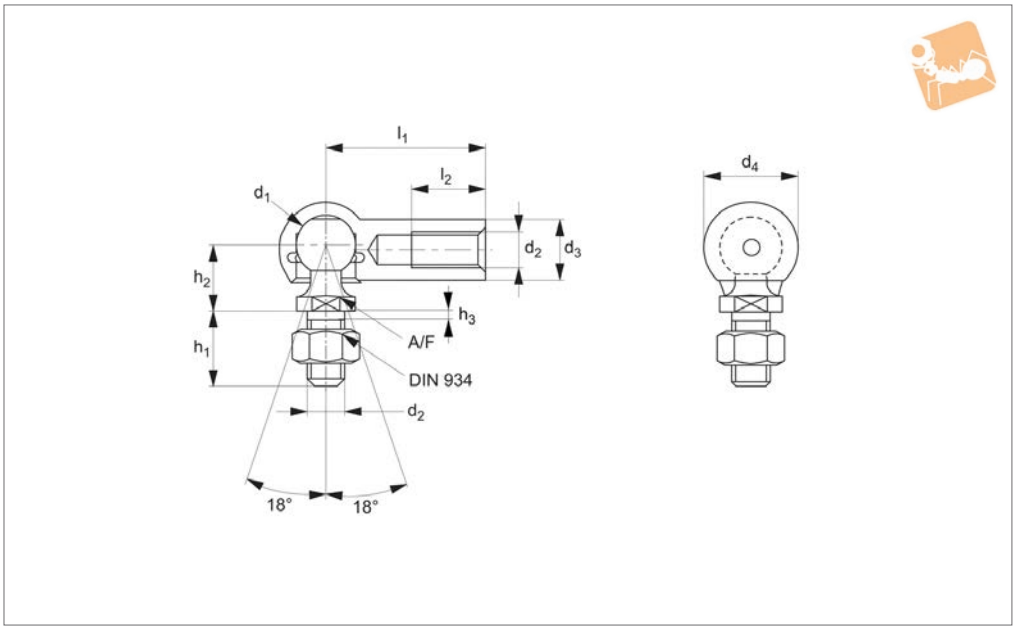
R3427



Material
Stainless steel (AISI 303 1.4305).

Tips
Thin end of mating piece is designed to fit in between forks of clevis joint.
Designed so thread size matches clevis joint, (e.g. M5 mating piece will fit on M5 clevis joint).

Order No.	Thread hand	Thread type	d_1 tol. H9	l_1 ±0.5	d_2	l_2 ±0.5	l_3 ±0.5	l_4	l_5 ±0.2	w_1 tol. h11	w_2 -0,2	w_3 tol. h11	f_1 ±0.2	Weight g
R3427.L004	Left	Coarse	4	6	M4	21	16	6	10.0	8	4	8	0.5	6
R3427.L005	Left	Coarse	5	7.5	M5	26	20	8	12.5	10	5	10	0.5	12
R3427.L006	Left	Coarse	6	9	M6	31	24	11	15.0	12	6	12	0.5	21
R3427.L008	Left	Coarse	8	12	M8	42	32	14	20.0	16	8	16	0.5	51
R3427.L009	Left	Fine	8	12	M8x1	42	32	14	20.0	16	8	16	0.5	51
R3427.L010	Left	Coarse	10	15	M10	52	40	18	25.0	20	10	20	0.5	98
R3427.L011	Left	Fine	10	15	M10x1,25	52	40	18	25.0	20	10	20	0.5	98
R3427.L012	Left	Coarse	12	18	M12	62	48	22	30.0	24	12	24	0.5	168
R3427.L013	Left	Fine	12	18	M12x1,25	62	48	22	30.0	24	12	24	0.5	167
R3427.L014	Left	Coarse	14	21	M14	72	56	25	35.0	27	14	27	1.0	247
R3427.L015	Left	Fine	14	21	M14x1,5	72	56	25	35.0	27	14	27	1.0	245
R3427.L016	Left	Coarse	16	24	M16	83	64	30	40.0	32	16	32	1.0	397
R3427.L017	Left	Fine	16	24	M16x1,5	83	64	30	40.0	32	16	32	1.0	395
R3427.L020	Left	Coarse	20	30	M20	105	80	38	50.0	40	20	40	1.0	783
R3427.L021	Left	Fine	20	30	M20X1,5	105	80	38	50.0	40	20	40	1.0	776





R3460

Material
Steel, silver zinc plated, ball stud: minimum tensile strength Rm=600N/mm². Housing: minimum tensile strength Rm=500N/mm².

Technical Notes
To DIN 71802 form CS, supplied with hexagon nut.

Safety ring aids the retention of the ball stud in the housing.
*M14x1,5 is a fine pitch thread.

Male Stud part is to DIN 71803 with diameter 14, Tolerance is 11 and length is between 5.0 - 10.8

Tips
For sealing cap version, see R3470.

Standard thread is right hand, (for left hand thread see R3461).

Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

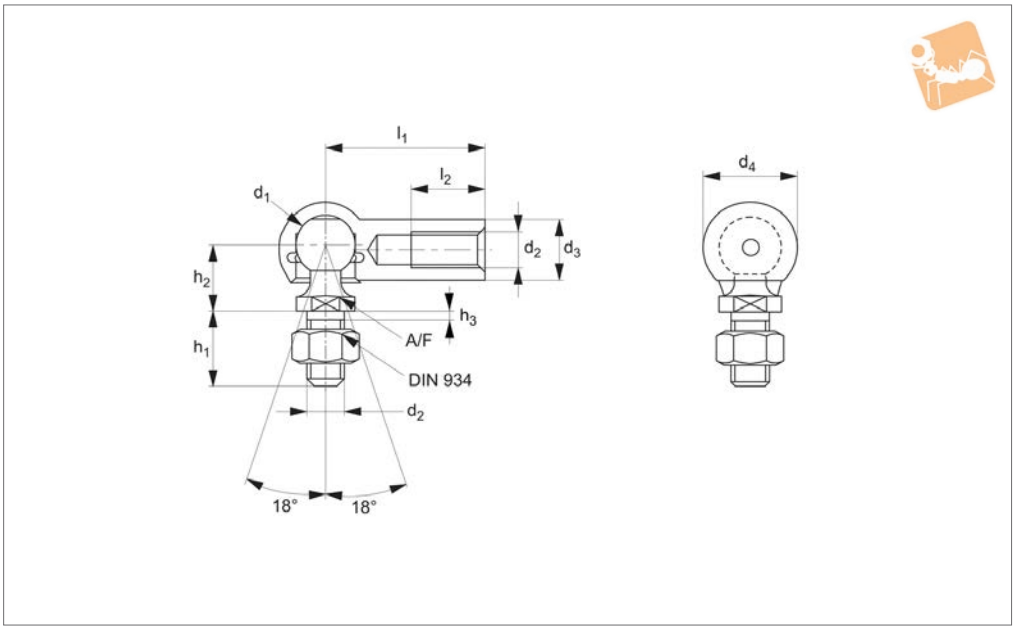
Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3	d_4	h_1 ±0.3	Weight g
R3460.R005	Right	8	22	M 5	8	12.8	10.2	15.2
R3460.R006	Right	10	25	M 6	10	14.8	12.5	25.2
R3460.R008	Right	13	30	M 8	13	19.3	16.5	53.1
R3460.R010	Right	16	35	M10	16	24.0	20.0	103.8
R3460.R012	Right	16	35	M12	16	24.0	20.0	103.8
R3460.R014	Right	19	45	M14x1,5*	22	30.0	28.0	220.9
R3460.R015	Right	19	45	M14	22	30.0	28.0	220.9
R3460.R016	Right	19	45	M16	22	30.0	28.0	220.9

Order No.	h_2 ±0.3	l_2 min.	A/F tol. h14	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3460.R005	9	10.2	7	3	50	20	3
R3460.R006	11	11.5	8	4	100	40	4
R3460.R008	13	14.0	11	6	200	80	6
R3460.R010	16	15.5	13	8	400	160	8
R3460.R012	16	15.5	13	8	400	160	8
R3460.R014	22	21.5	16	10	800	320	10
R3460.R015	22	21.5	16	10	800	320	10
R3460.R016	22	21.5	16	10	800	320	10

Ball and Socket Joints
left hand thread



R3461



Material
Steel, silver zinc plated, ball stud: minimum tensile strength Rm=600N/mm².
Housing: minimum tensile strength Rm=500N/mm².

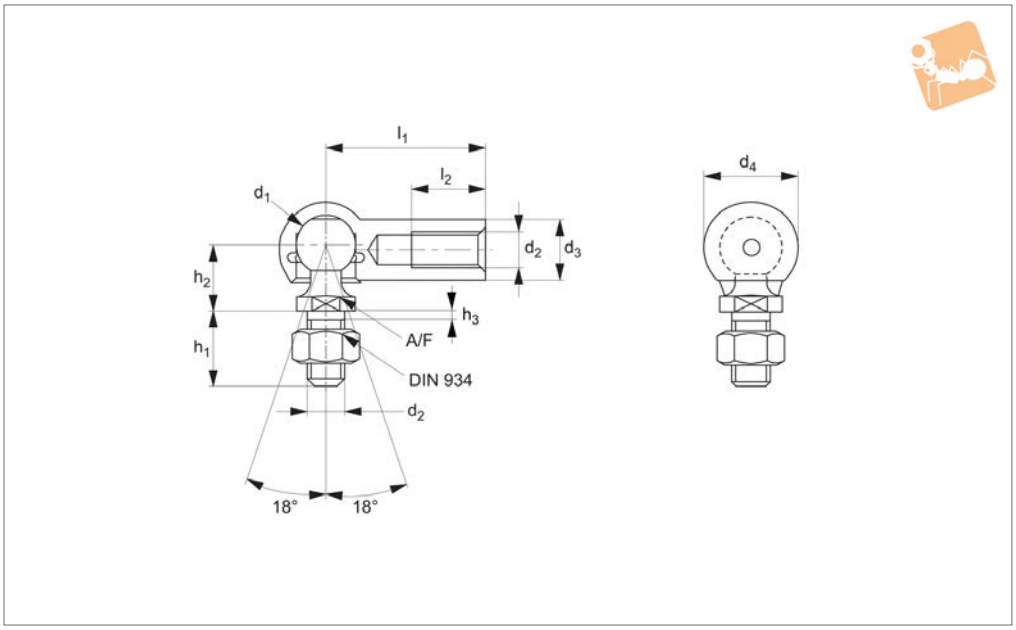
Technical Notes
To DIN 71802 form CS, supplied with hexagon nut.
Safety ring aids the retention of the ball stud in the housing.
*M14x1,5 is a fine pitch thread.

Tips
Stud: right hand thread.
Housing: left hand thread.
For sealing cap version, see R3471.

Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3	d_4	h_1 ±0.3	Weight g
R3461.L005	Left	8	22	M 5	8	12.8	10.2	15.2
R3461.L006	Left	10	25	M 6	10	14.8	12.5	25.2
R3461.L008	Left	13	30	M 8	13	19.3	16.5	53.1
R3461.L010	Left	16	35	M10	16	24.0	20.0	103.8
R3461.L012	Left	16	35	M12	16	24.0	20.0	103.8
R3461.L014	Left	19	45	M14x1,5*	22	30.0	28.0	220.9
R3461.L015	Left	19	45	M14	22	30.0	28.0	220.9
R3461.L016	Left	19	45	M16	22	30.0	28.0	220.9

Order No.	h_2 ±0.3	l_2 min.	A/F tol. h14	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3461.L005	9	10.2	7	3	50	20	3
R3461.L006	11	11.5	8	4	100	40	4
R3461.L008	13	14.0	11	6	200	80	6
R3461.L010	16	15.5	13	8	400	160	8
R3461.L012	16	15.5	13	8	400	160	8
R3461.L014	22	21.5	16	10	800	320	10
R3461.L015	22	21.5	16	10	800	320	10
R3461.L016	22	21.5	16	10	800	320	10





R3466

Material
Stainless steel (A2, AISI 303).

Technical Notes
To DIN 71802 form CS, supplied with hexagon nut.
Safety ring aids the retention of the ball stud in the housing.
*M14x1,5 is a fine pitch thread.

Tips
For sealing cap version, see R3476, standard thread is right hand, (for left hand thread see R3467).

Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

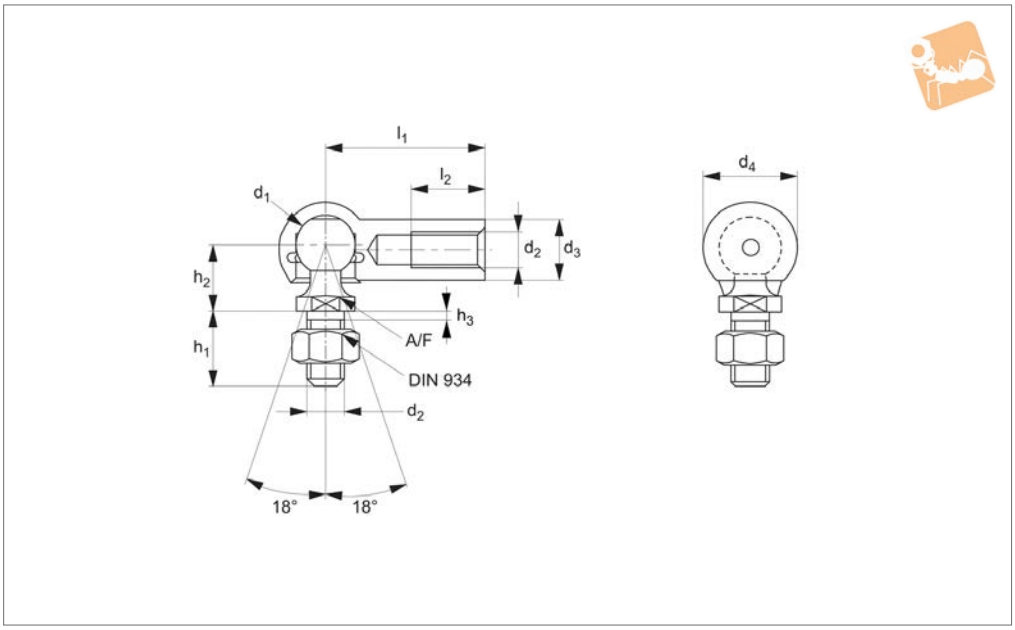
Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3	d_4	h_1 ±0.3	Weight g
R3466.R005	Right	8	22	M 5	8	12.8	10.2	15.2
R3466.R006	Right	10	25	M 6	10	14.8	12.5	25.2
R3466.R008	Right	13	30	M 8	13	19.3	16.5	53.1
R3466.R010	Right	16	35	M10	16	24.0	20.0	103.8
R3466.R012	Right	16	35	M12	16	24.0	20.0	103.8
R3466.R014	Right	19	45	M14x1,5*	22	30.0	28.0	220.9
R3466.R015	Right	19	45	M14	22	30.0	28.0	220.9
R3466.R016	Right	19	45	M16	22	30.0	28.0	220.9

Order No.	h_2 ±0.3	l_2 min.	A/F tol. h14	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3466.R005	9	10.2	7	3	50	20	3
R3466.R006	11	11.5	8	4	100	40	4
R3466.R008	13	14.0	11	6	200	80	6
R3466.R010	16	15.5	13	8	400	160	8
R3466.R012	16	15.5	13	8	400	160	8
R3466.R014	22	21.5	16	10	800	320	10
R3466.R015	22	21.5	16	10	800	320	10
R3466.R016	22	21.5	16	10	800	320	10

Stainless Ball and Socket Joints
left hand thread



R3467



Material
Stainless steel (A2, AISI 303).

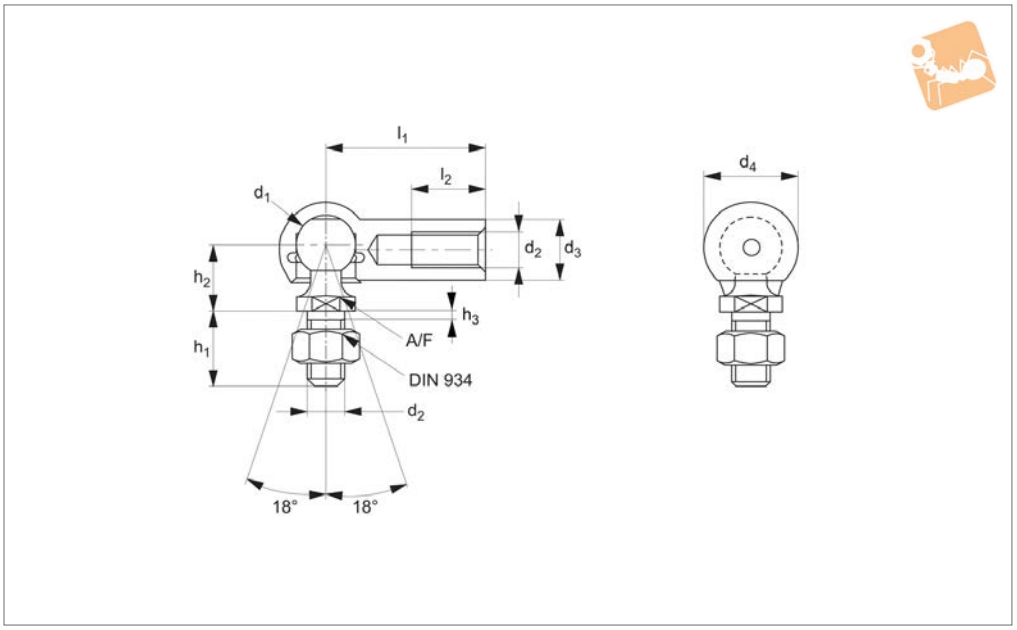
Technical Notes
To DIN 71802 form CS, supplied with hexagon nut.
Safety ring aids the retention of the ball stud in the housing.
*M14x1,5 is a fine pitch thread.

Tips
Stud: right hand thread.
Housing: left hand thread
For sealing cap version, see R3477.

Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3	d_4	h_1 ±0.3	Weight g
R3467.L005	Left	8	22	M 5	8	12.8	10.2	15.2
R3467.L006	Left	10	25	M 6	10	14.8	12.5	25.2
R3467.L008	Left	13	30	M 8	13	19.3	16.5	53.1
R3467.L010	Left	16	35	M10	16	24.0	20.0	103.8
R3467.L012	Left	16	35	M12	16	24.0	20.0	103.8
R3467.L014	Left	19	45	M14x1,5*	22	30.0	28.0	220.9
R3467.L015	Left	19	45	M14	22	30.0	28.0	220.9
R3467.L016	Left	19	45	M16	22	30.0	28.0	220.9

Order No.	h_2 ±0.3	l_2 min.	A/F tol. h14	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3467.L005	9	10.2	7	3	50	20	3
R3467.L006	11	11.5	8	4	100	40	4
R3467.L008	13	14.0	11	6	200	80	6
R3467.L010	16	15.5	13	8	400	160	8
R3467.L012	16	15.5	13	8	400	160	8
R3467.L014	22	21.5	16	10	800	320	10
R3467.L015	22	21.5	16	10	800	320	10
R3467.L016	22	21.5	16	10	800	320	10





R3468

Material
Stainless steel (A4, AISI 316).

Technical Notes
To DIN 71802 form CS, supplied with hexagon nut.
Safety ring aids the retention of the ball stud in the housing.

Tips
For sealing cap version, see R3476, standard thread is right hand, (for left hand thread see R3467).

Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

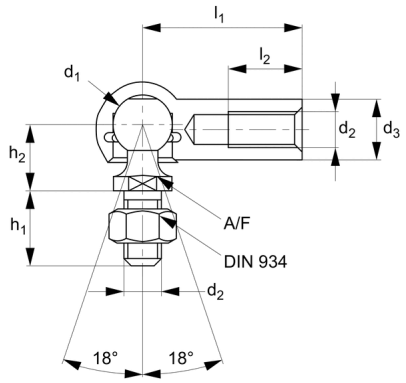
Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3	d_4	h_1 ±0.3	Weight g
R3468.R005	Right	8	22	M 5	8	12.8	10.2	15.2
R3468.R006	Right	10	25	M 6	10	14.8	12.5	25.2
R3468.R008	Right	13	30	M 8	13	19.3	16.5	53.1
R3468.R010	Right	16	35	M10	16	24.0	20.0	103.8

Order No.	h_2 ±0.3	l_2 min.	A/F tol. h14	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3468.R005	9	10.2	7	3	50	20	3
R3468.R006	11	11.5	8	4	100	40	4
R3468.R008	13	14.0	11	6	200	80	6
R3468.R010	16	15.5	13	8	400	160	8

Ball and Socket Joints
with sealing cap



R3470



Material
Steel, silver zinc plated, ball stud: steel minimum tensile strength Rm=600N/mm². Housing: steel minimum tensile strength Rm=500N/mm²), sealing cap: neoprene.

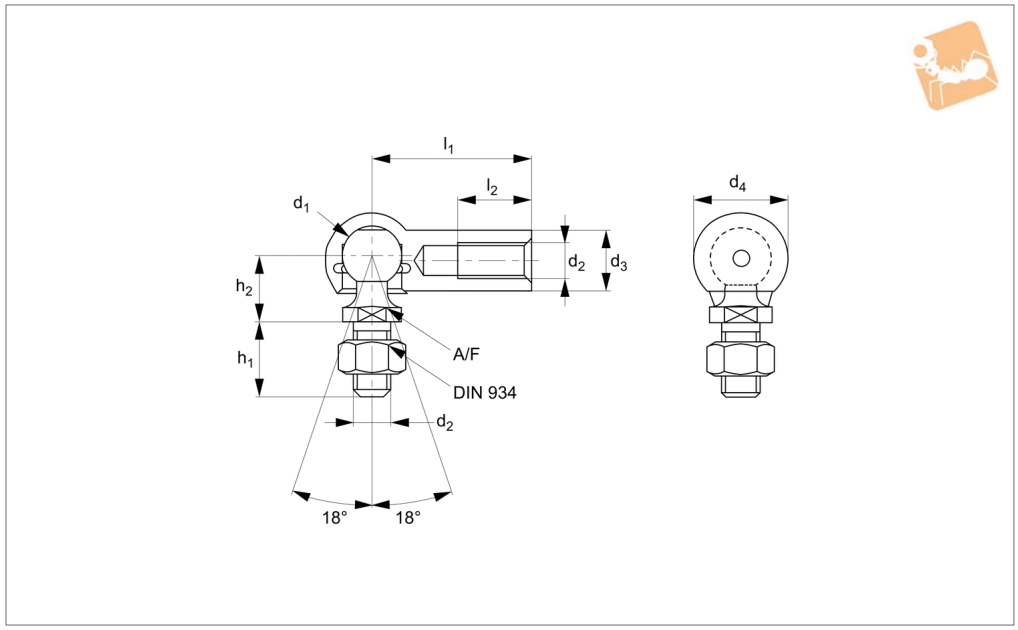
Technical Notes
To DIN 71802 form CS, supplied with hexagon nut.
Safety ring aids the retention of the ball stud in the housing.
*M14x1,5 is a fine pitch thread.

Tips
Standard thread is right hand, (for left hand thread see R3471).

Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3	d_4	h_1 ±0.3	Weight g
R3470.R005	Right	8	22	M 5	8	12.8	10.2	15.2
R3470.R006	Right	10	25	M 6	10	14.8	12.5	25.2
R3470.R008	Right	13	30	M 8	13	19.3	16.5	53.1
R3470.R010	Right	16	35	M10	16	24.0	20.0	103.8
R3470.R012	Right	16	35	M12	16	24.0	20.0	103.8
R3470.R014	Right	19	45	M14x1,5*	22	30.0	28.0	220.9
R3470.R015	Right	19	45	M14	22	30.0	28.0	220.9
R3470.R016	Right	19	45	M16	22	30.0	28.0	220.9

Order No.	h_2 ±0.3	l_2 min.	A/F tol. h14	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3470.R005	9	10.2	7	3	50	20	3
R3470.R006	11	11.5	8	4	100	40	4
R3470.R008	13	14.0	11	6	200	80	6
R3470.R010	16	15.5	13	8	400	160	8
R3470.R012	16	15.5	13	8	400	160	8
R3470.R014	22	21.5	16	10	800	320	10
R3470.R015	22	21.5	16	10	800	320	10
R3470.R016	22	21.5	16	10	800	320	10





R3471

Material
Silver zinc plated, ball stud: minimum tensile strength Rm=600N/mm².
Housing: minimum tensile strength Rm=500N/mm², sealing cap: Neoprene.

Technical Notes
To DIN 71802 form CS, supplied with hexagon nut.
Safety ring aids the retention of the ball stud in the housing.
*M14x1,5 is a fine pitch thread.

Tips
Stud: right hand thread.
Housing: left hand thread

Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

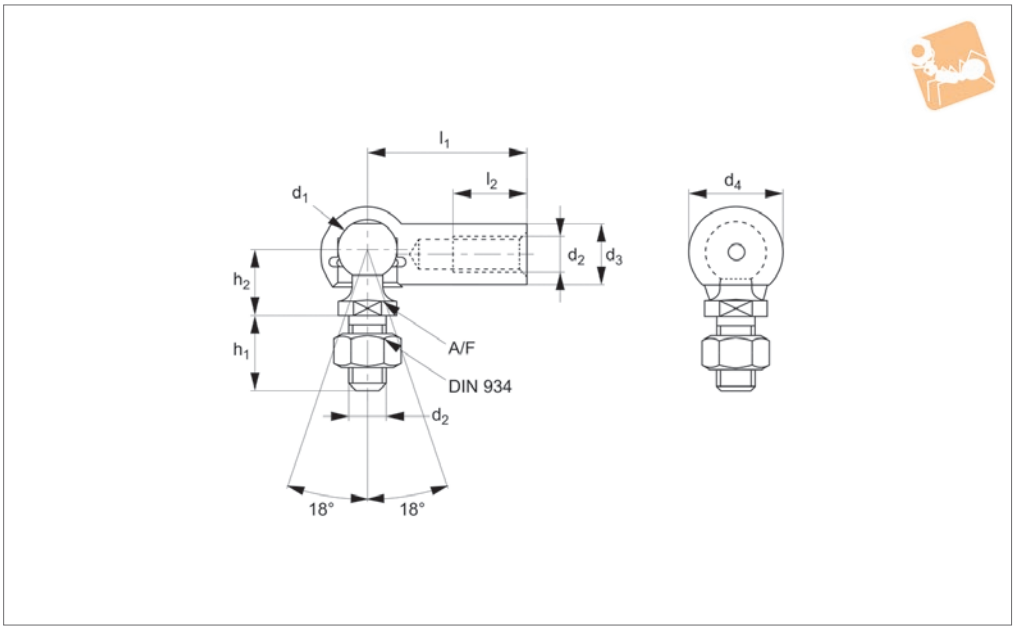
Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3	d_4	h_1 ±0.3	Weight g
R3471.L005	Left	8	22	M 5	8	12.8	10.2	15.2
R3471.L006	Left	10	25	M 6	10	14.8	12.5	25.2
R3471.L008	Left	13	30	M 8	13	19.3	16.5	53.1
R3471.L010	Left	16	35	M10	16	24.0	20.0	103.8
R3471.L012	Left	16	35	M12	16	24.0	20.0	103.8
R3471.L014	Left	19	45	M14x1,5*	22	30.0	28.0	220.9
R3471.L015	Left	19	45	M14	22	30.0	28.0	220.9
R3471.L016	Left	19	45	M16	22	30.0	28.0	220.9

Order No.	h_2 ±0.3	l_2 min.	A/F tol. h14	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3471.L005	9	10.2	7	3	50	20	3
R3471.L006	11	11.5	8	4	100	40	4
R3471.L008	13	14.0	11	6	200	80	6
R3471.L010	16	15.5	13	8	400	160	8
R3471.L012	16	15.5	13	8	400	160	8
R3471.L014	22	21.5	16	10	800	320	10
R3471.L015	22	21.5	16	10	800	320	10
R3471.L016	22	21.5	16	10	800	320	10

Stainless Ball and Socket Joint
with sealing cap



R3476



Material
Stainless steel (A2, AISI 303), sealing cap: neoprene.

Technical Notes
Supplied with hexagon nut.
Safety ring aids the retention of the ball stud in the housing.
*M14x1,5 is a fine pitch thread.

Tips
Standard thread is right hand, (for left hand see R3477).

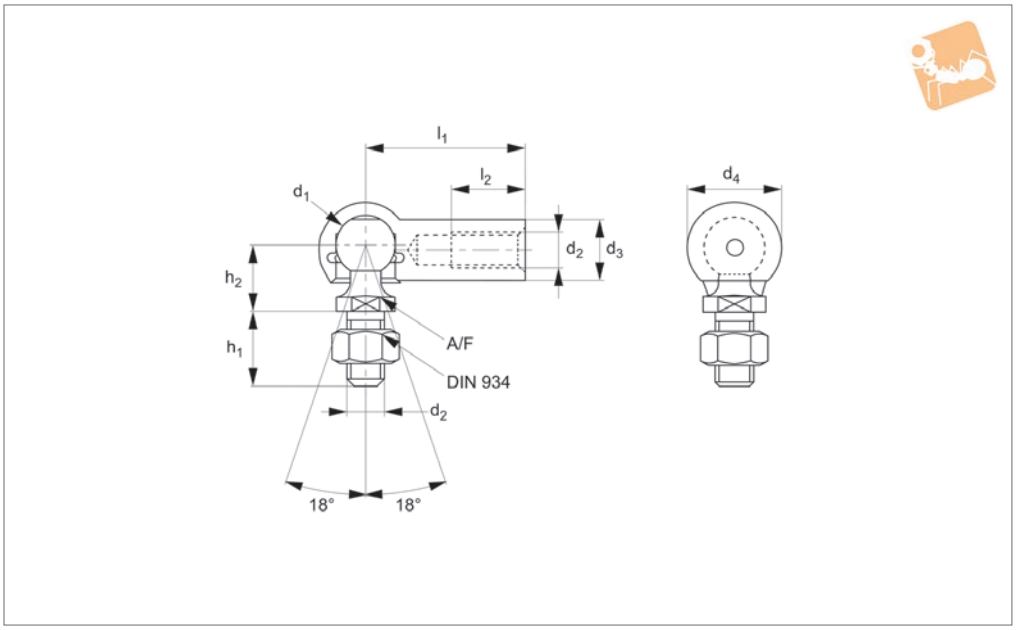
Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3	d_4	h_1 ±0.3	Weight g
R3476.R005	Right	8	22	M 5	8	12.8	10.2	15.2
R3476.R006	Right	10	25	M 6	10	14.8	12.5	25.2
R3476.R008	Right	13	30	M 8	13	19.3	16.5	53.1
R3476.R010	Right	16	35	M10	16	24.0	20.0	103.8
R3476.R012	Right	16	35	M12	16	24.0	20.0	103.8
R3476.R014	Right	19	45	M14x1,5*	22	30.0	28.0	220.9
R3476.R015	Right	19	45	M14	22	30.0	28.0	220.9
R3476.R016	Right	19	45	M16	22	30.0	28.0	220.9

Order No.	h_2 ±0.3	l_2 min.	A/F tol. h14	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3476.R005	9	10.2	7	3	50	20	3
R3476.R006	11	11.5	8	4	100	40	4
R3476.R008	13	14.0	11	6	200	80	6
R3476.R010	16	15.5	13	8	400	160	8
R3476.R012	16	15.5	13	8	400	160	8
R3476.R014	22	21.5	16	10	800	320	10
R3476.R015	22	21.5	16	10	800	320	10
R3476.R016	22	21.5	16	10	800	320	10

Stainless Ball and Socket Joint

with sealing cap - left hand thread





R3477

Material
Stainless steel (A2, AISI 303), sealing cap: neoprene.

Technical Notes
Supplied with hexagon nut.
Safety ring aids the retention of the ball stud in the housing.
*M14x1,5 is a fine pitch thread.

Tips
Stud: right hand thread.
Housing: left hand thread

Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

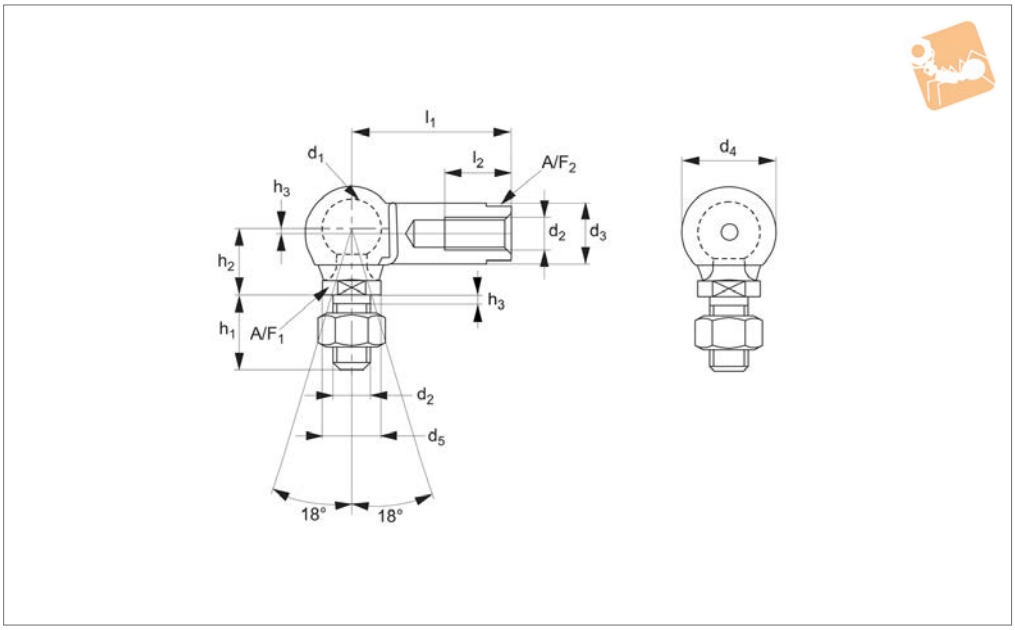
Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3	d_4	h_1 ±0.3	Weight g
R3477.L005	Left	8	22	M 5	8	12.8	10.2	15.2
R3477.L006	Left	10	25	M 6	10	14.8	12.5	25.2
R3477.L008	Left	13	30	M 8	13	19.3	16.5	53.1
R3477.L010	Left	16	35	M10	16	24.0	20.0	103.8
R3477.L012	Left	16	35	M12	16	24.0	20.0	103.8
R3477.L014	Left	19	45	M14x1,5*	22	30.0	28.0	220.9
R3477.L015	Left	19	45	M14	22	30.0	28.0	220.9
R3477.L016	Left	19	45	M16	22	30.0	28.0	220.9

Order No.	h_2 ±0.3	l_2 min.	A/F tol. h14	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3477.L005	9	10.2	7	3	50	20	3
R3477.L006	11	11.5	8	4	100	40	4
R3477.L008	13	14.0	11	6	200	80	6
R3477.L010	16	15.5	13	8	400	160	8
R3477.L012	16	15.5	13	8	400	160	8
R3477.L014	22	21.5	16	10	800	320	10
R3477.L015	22	21.5	16	10	800	320	10
R3477.L016	22	21.5	16	10	800	320	10

Ball and Socket Joint
with flats on housing



R3490



Material
Stud: carbon steel, sealing cap: neoprene. Housing: steel (9sMnPb28), silver zinc plated.

Technical Notes
To DIN 71802 form CS, supplied without hexagon nut.

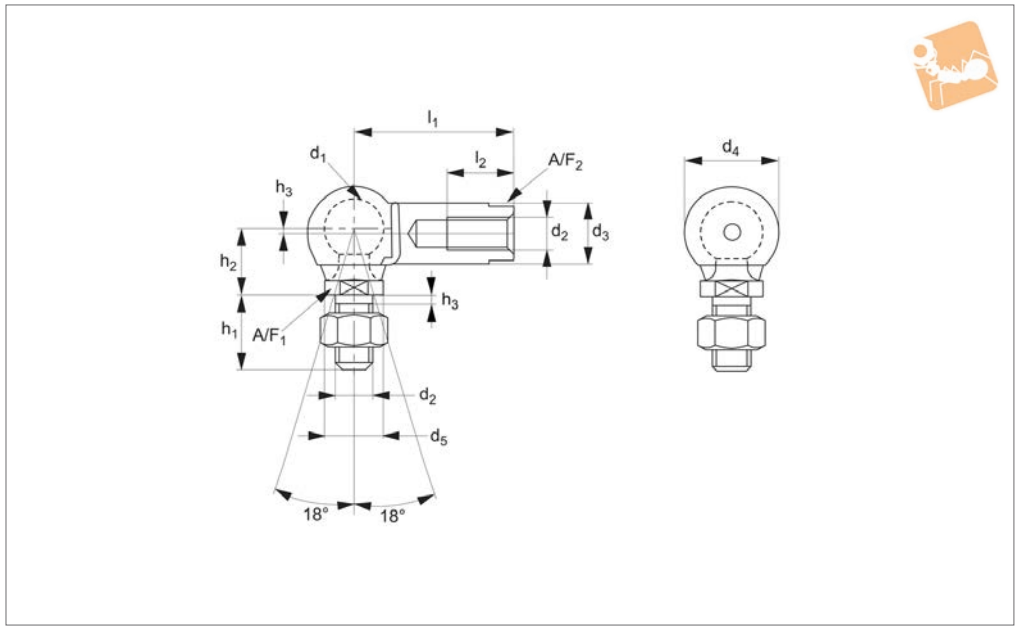
Safety ring aids the retention of the ball stud in the housing.
*M14x1,5 is a fine pitch thread.

Tips
Standard thread is right hand, (for left hand thread see R3491).

Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without a nut, then please consider a counterbore to accommodate the unthreaded shank.

Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3 ±0.5	d_4 ±0.5	d_5 ±0.5	Weight g
R3490.R005	Right	8	22	M 5	8	12.8	8	15.2
R3490.R006	Right	10	25	M 6	10	14.8	10	25.2
R3490.R008	Right	13	30	M 8	13	19.3	13	53.1
R3490.R010	Right	16	35	M10	16	24.0	16	103.8
R3490.R012	Right	16	35	M12	16	24.0	16	103.8
R3490.R014	Right	19	45	M14x1,5*	22	30.0	22	220.9
R3490.R015	Right	19	45	M14	22	30.0	22	220.9
R3490.R016	Right	19	45	M16	22	30.0	22	220.9

Order No.	h_1 ±0.3	h_2 ±0.3	h_3	l_2 min.	A/F_1	A/F_2	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3490.R005	10.0	9	0.65	10.2	7	-	3	50	20	3
R3490.R006	12.5	11	0.70	11.5	8	-	4	100	40	4
R3490.R008	16.5	13	1.15	14.0	11	-	6	200	80	6
R3490.R010	20.0	16	1.15	15.5	13	-	8	400	160	8
R3490.R012	20.0	16	1.15	15.5	13	-	8	400	160	8
R3490.R014	28.0	20	0.50	21.5	16	19	10	800	320	10
R3490.R015	28.0	20	0.50	21.5	16	19	10	800	320	10
R3490.R016	28.0	20	0.50	21.5	16	19	10	800	320	10





R3491

Material
Stud: carbon steel, sealing cap: neoprene.
Housing: steel (9sMnPb28), silver zinc plated.

Technical Notes
To DIN 71802 form CS, supplied with hexagon nut.

Safety ring aids the retention of the ball stud in the housing.
*M14x1,5 is a fine pitch thread.

Tips
Stud: right hand thread.
Housing: left hand thread

Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

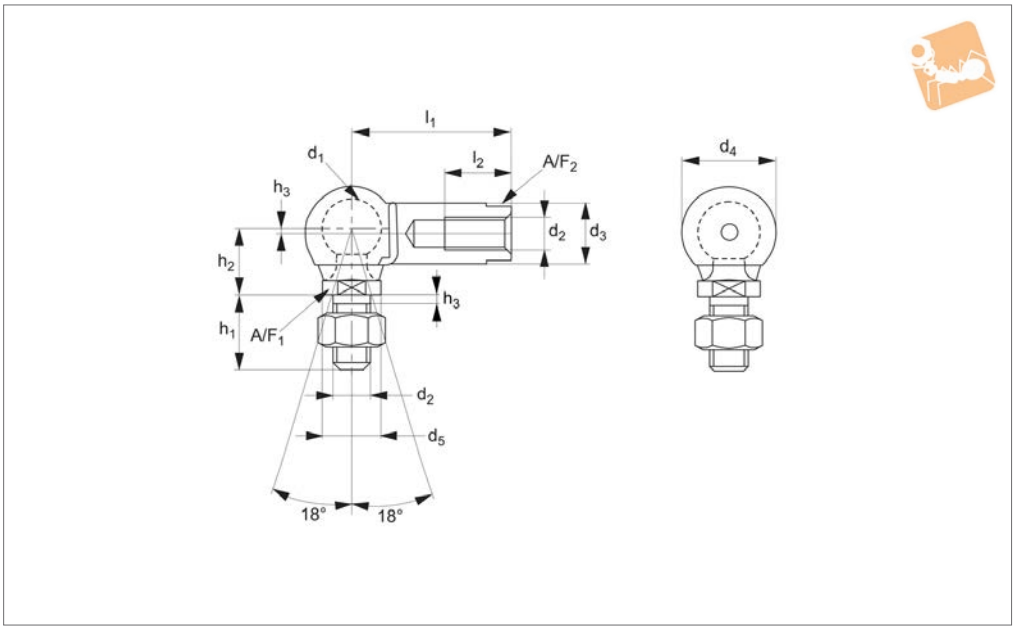
Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3 ±0.5	d_4 ±0.5	d_5 ±0.5	Weight g
R3491.L005	Left	8	22	M5	8	12.8	8	15.2
R3491.L006	Left	10	25	M6	10	14.8	10	25.2
R3491.L008	Left	13	30	M8	13	19.3	13	53.1
R3491.L010	Left	16	35	M10	16	24.0	16	103.8
R3491.L012	Left	16	35	M12	16	24.0	16	103.8
R3491.L014	Left	19	45	M14x1,5	22	30.0	22	220.9
R3491.L015	Left	19	45	M14	22	30.0	22	220.9
R3491.L016	Left	19	45	M16	22	30.0	22	220.9

Order No.	h_1 ±0.3	h_2 ±0.3	h_3	l_2 min.	A/F_1	A/F_2	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3491.L005	10.0	9	0.65	10.2	7	-	3	50	20	3
R3491.L006	12.5	11	0.70	11.5	8	-	4	100	40	4
R3491.L008	16.5	13	1.15	14.0	11	-	6	200	80	6
R3491.L010	20.0	16	1.15	15.5	13	-	8	400	160	8
R3491.L012	20.0	16	1.15	15.5	13	-	8	400	160	8
R3491.L014	28.0	20	0.50	21.5	16	19	10	800	320	10
R3491.L015	28.0	20	0.50	21.5	16	19	10	800	320	10
R3491.L016	28.0	20	0.50	21.5	16	19	10	800	320	10

Stainless Ball and Socket Joint
with flats on housing



R3496



Material
Stainless steel (A2, AISI 303), sealing cap: neoprene.

Technical Notes
To DIN 71802 form CS, supplied with hexagon nut.
Safety ring aids the retention of the ball stud in the housing.
*M14x1,5 is a fine pitch thread.

Tips
Standard thread is right hand, (for left hand thread see R3497).

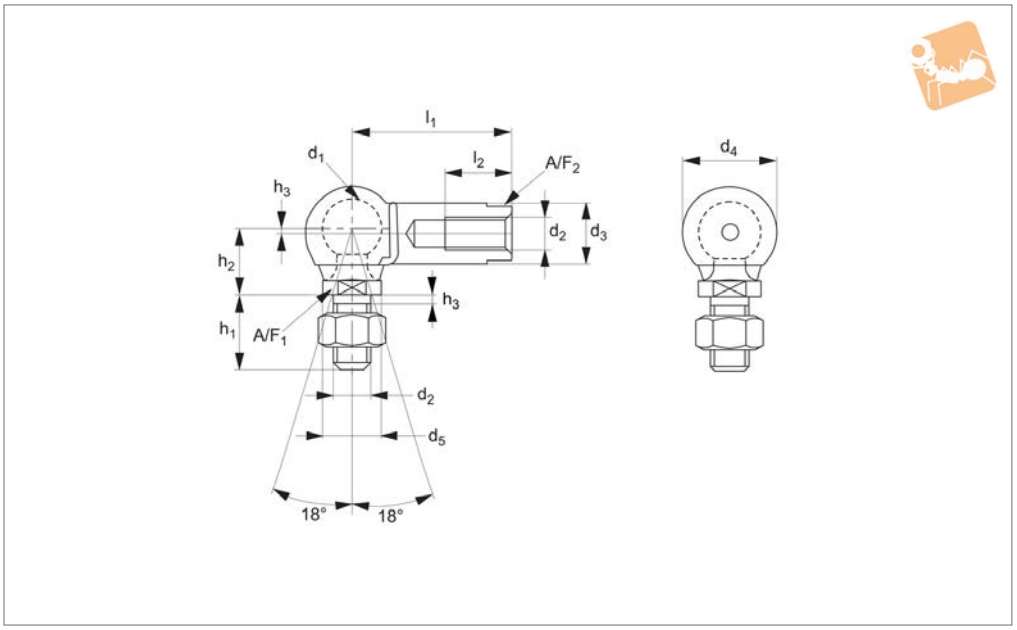
Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3 ±0.5	d_4 ±0.5	d_5 ±0.5	h_1 ±0.3	h_2 ±0.3	h_3	Weight g
R3496.R005	Right	8	22	M5	8	12.8	8	10.0	9	0.65	15.2
R3496.R006	Right	10	25	M6	10	14.8	10	12.5	11	0.70	25.2
R3496.R008	Right	13	30	M8	13	19.3	13	16.5	13	1.15	53.1
R3496.R010	Right	16	35	M10	16	24.0	16	20.0	16	1.15	103.8
R3496.R012	Right	16	35	M12	16	24.0	16	20.0	16	1.15	103.8
R3496.R014	Right	19	45	M14x1,5*	22	30.0	22	28.0	20	0.50	220.9
R3496.R015	Right	19	45	M14	22	30.0	22	28.0	20	0.50	220.9
R3496.R016	Right	19	45	M16	22	30.0	22	28.0	20	0.50	220.9

Order No.	l_2 min.	A/F_1	A/F_2	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3496.R005	10.2	7	-	3	50	20	3
R3496.R006	11.5	8	-	4	100	40	4
R3496.R008	14.0	11	-	6	200	80	6
R3496.R010	15.5	13	-	8	400	160	8
R3496.R012	15.5	13	-	8	400	160	8
R3496.R014	21.5	16	19	10	800	320	10
R3496.R015	21.5	16	19	10	800	320	10
R3496.R016	21.5	16	19	10	800	320	10

Stainless Ball and Socket Joint

left hand thread - with flats on housing





R3497

Material
Stainless steel (A2, AISI 303), sealing cap: neoprene.

Technical Notes
To DIN 71802 form CS, supplied with hexagon nut.

Safety ring aids the retention of the ball stud in the housing.
*M14x1,5 is a fine pitch thread.

Tips
Stud: right hand thread.
Housing: left hand thread

Important Notes
Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

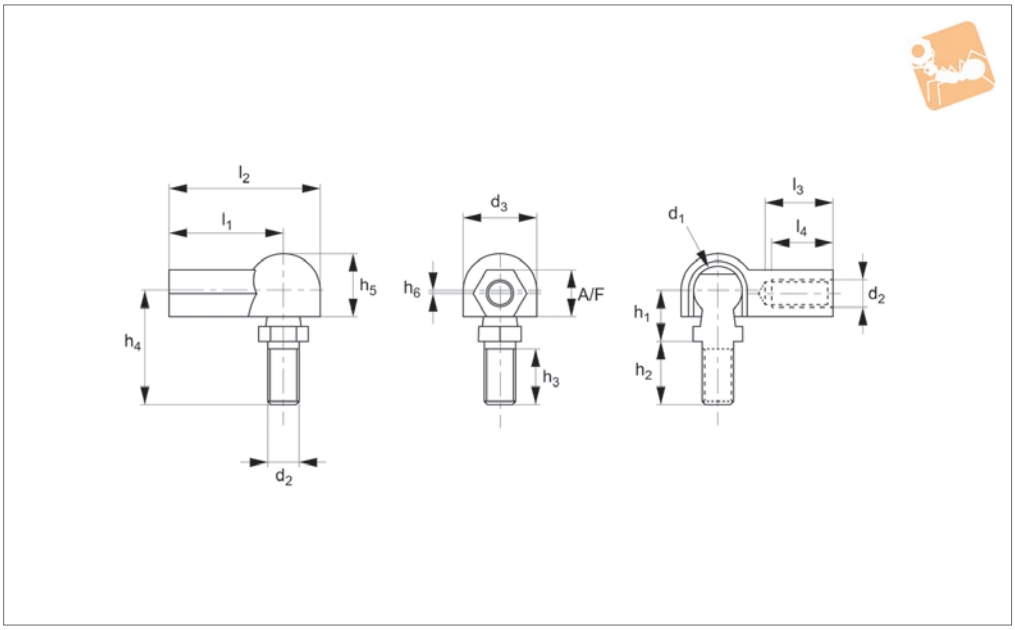
Order No.	Thread hand	d_1	l_1 ±0.3	d_2	d_3 ±0.5	d_4 ±0.5	d_5 ±0.5	h_1 ±0.3	h_2 ±0.3	h_3	Weight g
R3497.L005	Left	8	22	M5	8	12.8	8	10.0	9	0.65	15.2
R3497.L006	Left	10	25	M6	10	14.8	10	12.5	11	0.70	25.2
R3497.L008	Left	13	30	M8	13	19.3	13	16.5	13	1.15	53.1
R3497.L010	Left	16	35	M10	16	24.0	16	20.0	16	1.15	103.8
R3497.L012	Left	16	35	M12	16	24.0	16	20.0	16	1.15	103.8
R3497.L014	Left	19	45	M14x1,5*	22	30.0	22	28.0	20	0.50	220.9
R3497.L015	Left	19	45	M14	22	30.0	22	28.0	20	0.50	220.9
R3497.L016	Left	19	45	M16	22	30.0	22	28.0	20	0.50	220.9

Order No.	l_2 min.	A/F_1	A/F_2	Extraction force kg min.	Static load kg max.	Dyn. load C kg max.	Force required for movement kg max.
R3497.L005	10.2	7	-	3	50	20	3
R3497.L006	11.5	8	-	4	100	40	4
R3497.L008	14.0	11	-	6	200	80	6
R3497.L010	15.5	13	-	8	400	160	8
R3497.L012	15.5	13	-	8	400	160	8
R3497.L014	21.5	16	19	10	800	320	10
R3497.L015	21.5	16	19	10	800	320	10
R3497.L016	21.5	16	19	10	800	320	10

Plastic Ball and Socket Joint



R3520



Material
Housing: Black plastic (Igumid G).
Stud: Steel, silver zinc plated.

Technical Notes
Low weight.
Maintenance free.

Tips
Thread. Stud: Right Hand. Housing: .L for left hand, .R for right hand

Important Notes
Plastic stud available on request, (add -PS to part number). Thread is not full length. There is a min 1.5mm unthreaded shank. If using part without the supplied nut, then please consider a counterbore to accommodate the unthreaded shank.

Order No.	Thread (housing)	d_1 ±0.1	l_1 ±0.3	d_2	d_3 ±0.5	h_1 ±0.2	h_2 ±0.3	h_3 min.	h_4 ±0.5	h_5 ±0.4	Weight g
R3520.R005	Right	8.0	22.0	M 5	12.8	9.0	10.2	8.2	25.6	10.8	2.6
R3520.R006	Right	10.0	25.0	M 6	14.8	11.0	12.5	10.5	30.9	12.3	4.0
R3520.R008	Right	13.0	30.0	M 8	19.3	13.0	16.5	13.5	38.8	16.2	8.2
R3520.R010	Right	16.0	35.0	M10	24.0	16.0	20.0	16.0	47.0	20.0	13.8
R3520.L005	Left	8.0	22.0	M 5	12.8	9.0	10.2	8.2	25.6	10.8	2.6
R3520.L006	Left	10.0	25.0	M 6	14.8	11.0	12.5	10.5	30.9	12.3	4.0
R3520.L008	Left	13.0	30.0	M 8	19.3	13.0	16.5	13.5	38.8	16.2	8.2
R3520.L010	Left	16.0	35.0	M10	24.0	16.0	20.0	16.0	47.0	20.0	13.8

Order No.	h_6 ±0.5	l_2 ±0.5	l_3	l_4 ±0.5	A/F	Recommended pivot angle	Pivot angle max.
R3520.R005	0.65	28.4	14.0	11.0	8	18°	25°
R3520.R006	0.70	32.4	16.0	13.0	9	18°	25°
R3520.R008	1.15	39.7	18.0	16.0	12	18°	25°
R3520.R010	1.15	47.0	20.0	18.0	14	18°	25°
R3520.L005	0.65	28.4	14.0	11.0	8	18°	25°
R3520.L006	0.70	32.4	16.0	13.0	9	18°	25°
R3520.L008	1.15	39.7	18.0	16.0	12	18°	25°
R3520.L010	1.15	47.0	20.0	18.0	14	18°	25°

Ball and Socket Joints

Ball and socket joints to DIN 71802 available in zinc plated steel and stainless steel.
Right and left hand threads available.

Sizes M5 up to M16.



Pages 65 - 68

Ball and Socket Joints - with sealing caps

Ball and socket joints to DIN 71802 available in zinc plated steel and stainless steel.
Right and left hand threads available.

Sizes M5 up to M16.



Pages 69 - 72

Ball and Socket Joints - with sealing caps and spanner flats

Ball and socket joints to DIN 71802 available in zinc plated steel and stainless steel.
Right and left hand threads available. Spanner flats on housing to aid installation.

Sizes M5 up to M16.



Pages 73 - 76

Axial Ball and Socket Joints

In-line ball and socket joints to DIN 71802 available in zinc plated steel and stainless steel.

Sizes M5 up to M14 x 1,5.



Pages 77 - 80

Threaded Ball Studs

Threaded ball studs to DIN 71803 form C available in zinc plated steel.

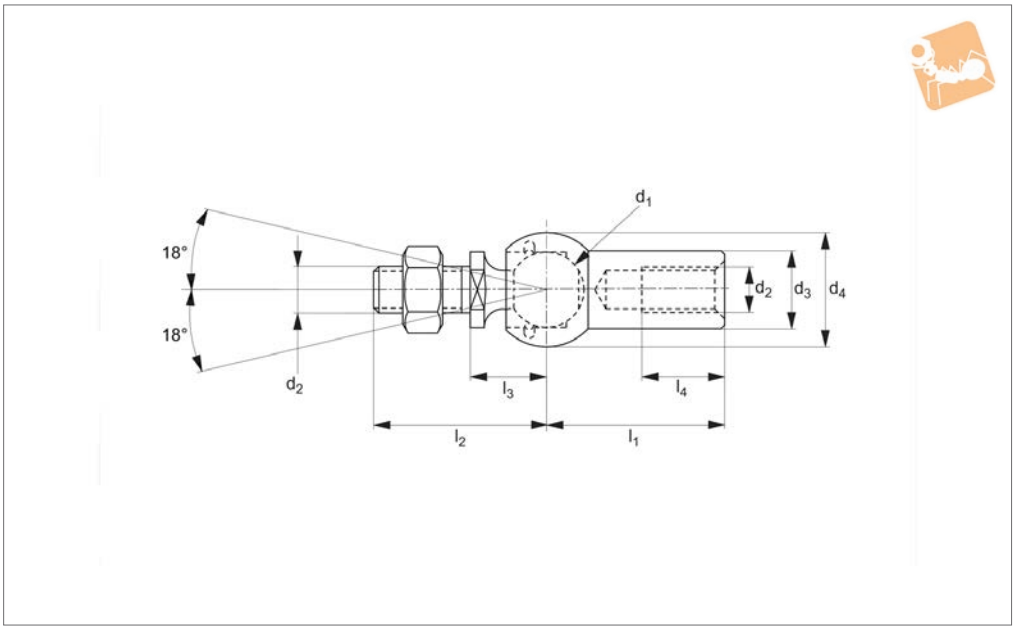
Sizes M5 up to M14.



Pages 87



R3500

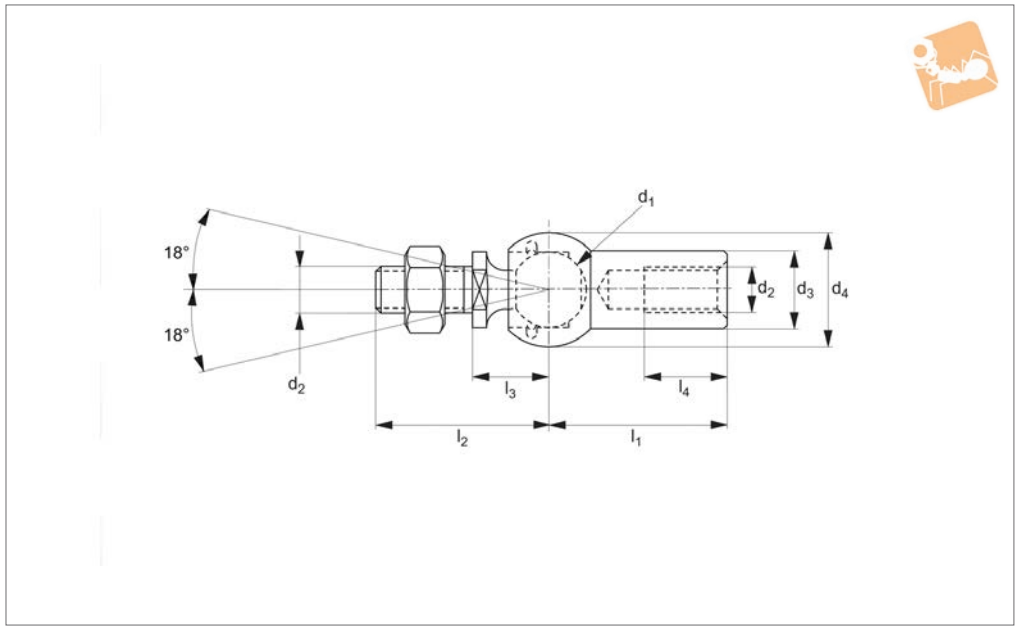


Material
Steel, silver zinc plated, ball stud: minimum tensile strength Rm=600N/mm².
Housing: minimum tensile strength Rm=500N/mm².

Technical Notes
Similar to DIN 71802, *M14x1,5 is a fine pitch thread.

Tips
Standard thread is right hand, (for left hand thread see R3501).
For stainless steel version see R3506.

Order No.	Thread hand	d_1 tol. h9	d_2	l_1	d_3 ±0.5	d_4 ±0.5	l_2	l_3	l_4	Extraction force N	Weight g
R3500.R005	Right	8	M 5	22	8	12.8	19.2	9	10.2	30	15.2
R3500.R006	Right	10	M 6	25	10	14.8	23.5	11	11.5	40	25.2
R3500.R008	Right	13	M 8	30	13	19.3	29.5	13	14.0	60	53.1
R3500.R010	Right	16	M10	35	16	24.0	36.0	16	15.5	80	103.8
R3500.R014	Right	19	M14x1,5*	45	22	30.0	48.0	20	21.5	100	220.9





R3501

Material
Steel, silver zinc plated, ball stud: minimum tensile strength Rm=600N/mm². Housing: minimum tensile strength Rm=500N/mm².

Technical Notes
Similar to DIN 71802, *M14x1,5 is a fine pitch thread.

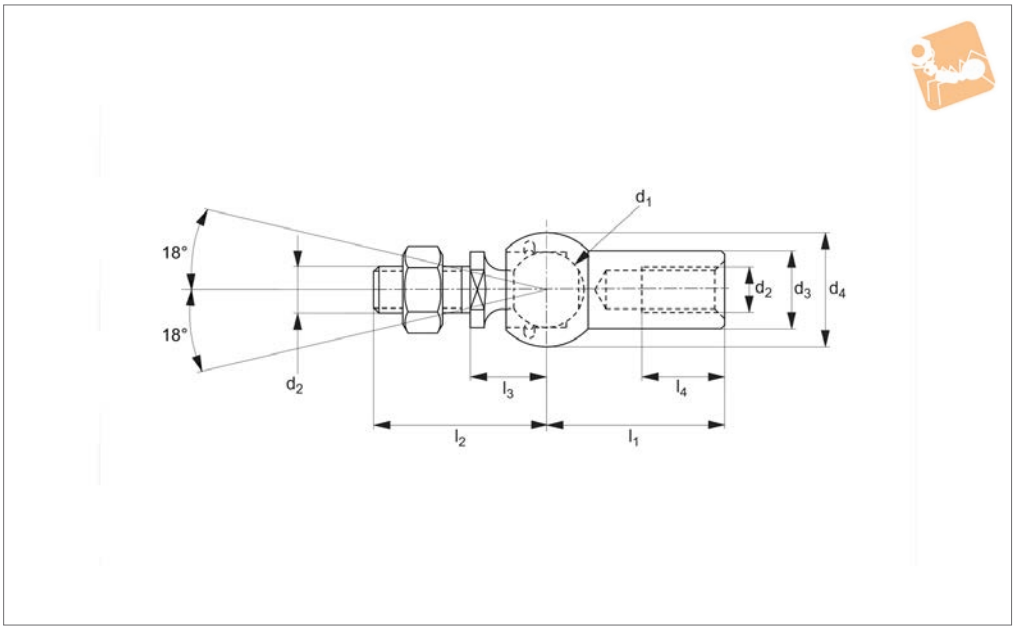
Tips
For stainless steel version see R3507.

Order No.	Thread hand	d_1 tol. h9	d_2	l_1	d_3 ±0.5	d_4 ±0.5	l_2	l_3	l_4	Extraction force N	Weight g
R3501.L005	Left	8	M5	22	8	12.8	19.2	9	10.2	30	15.2
R3501.L006	Left	10	M6	25	10	14.8	23.5	11	11.5	40	25.2
R3501.L008	Left	13	M8	30	13	19.3	29.5	13	14.0	60	53.1
R3501.L010	Left	16	M10	35	16	24.0	36.0	16	15.5	80	103.8
R3501.L014	Left	19	M14x1,5*	45	22	30.0	48.0	20	21.5	100	220.9

Stainless Axial Ball and Socket Joints



R3506

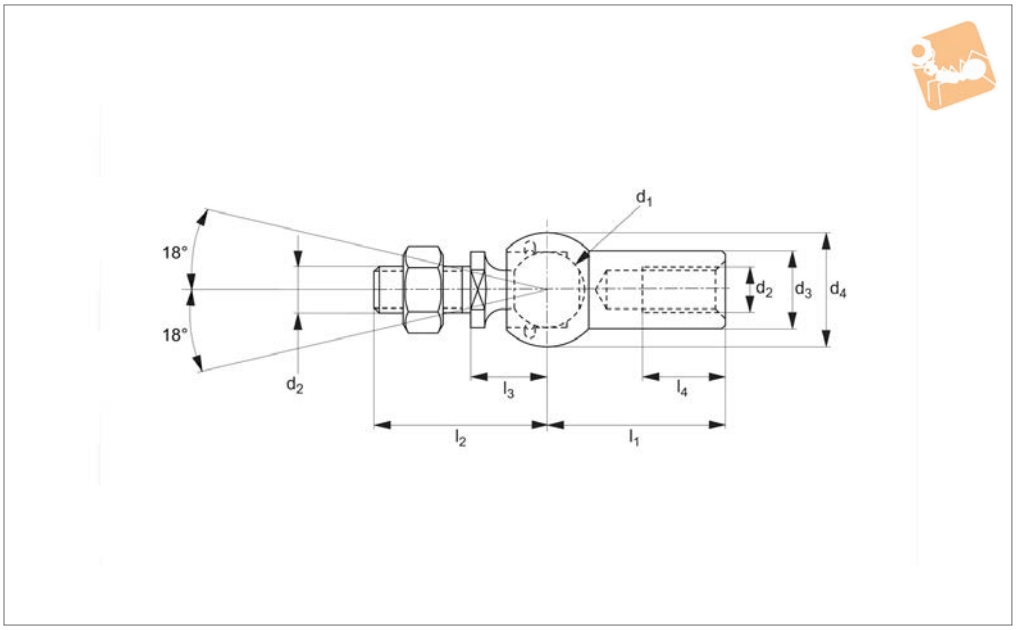


Material
Stainless steel (AISI 303).

Technical Notes
Similar to DIN 71802, *M14x1,5 is a fine pitch thread.

Tips
Standard thread is right hand, (for left hand thread see R3507).

Order No.	Thread hand	d_1 tol. h9	d_2	l_1	d_3 ±0.5	d_4 ±0.5	l_2	l_3	l_4	Extraction force N	Weight g
R3506.R005	Right	8	M5	22	8	12.8	19.2	9	10.2	30	15.2
R3506.R006	Right	10	M6	25	10	14.8	23.5	11	11.5	40	25.2
R3506.R008	Right	13	M8	30	13	19.3	29.5	13	14.0	60	53.1
R3506.R010	Right	16	M10	35	16	24.0	36.0	16	15.5	80	103.8
R3506.R014	Right	19	M14x1,5*	45	22	30.0	48.0	20	21.5	100	220.9





R3507

Material
Stainless steel (AISI 303).

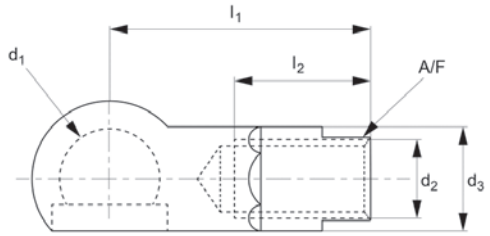
Technical Notes
Similar to DIN 71802, *M14x1,5 is a fine pitch thread.

Order No.	Thread hand	d_1 tol. h9	d_2	l_1	d_3 ±0.5	d_4 ±0.5	l_2	l_3	l_4	Extraction force N	Weight g
R3507.L005	Left	8	M5	22	8	12.8	19.2	9	10.2	30	15.2
R3507.L006	Left	10	M6	25	10	14.8	23.5	11	11.5	40	25.2
R3507.L008	Left	13	M8	30	13	19.3	29.5	13	14.0	60	53.1
R3507.L010	Left	16	M10	35	16	24.0	36.0	16	15.5	80	103.8
R3507.L014	Left	19	M14x1,5*	45	22	30.0	48.0	20	21.5	100	220.9

Ball Joint - Housing Only



R3524



Material
Low carbon steel, silver zinc plated.

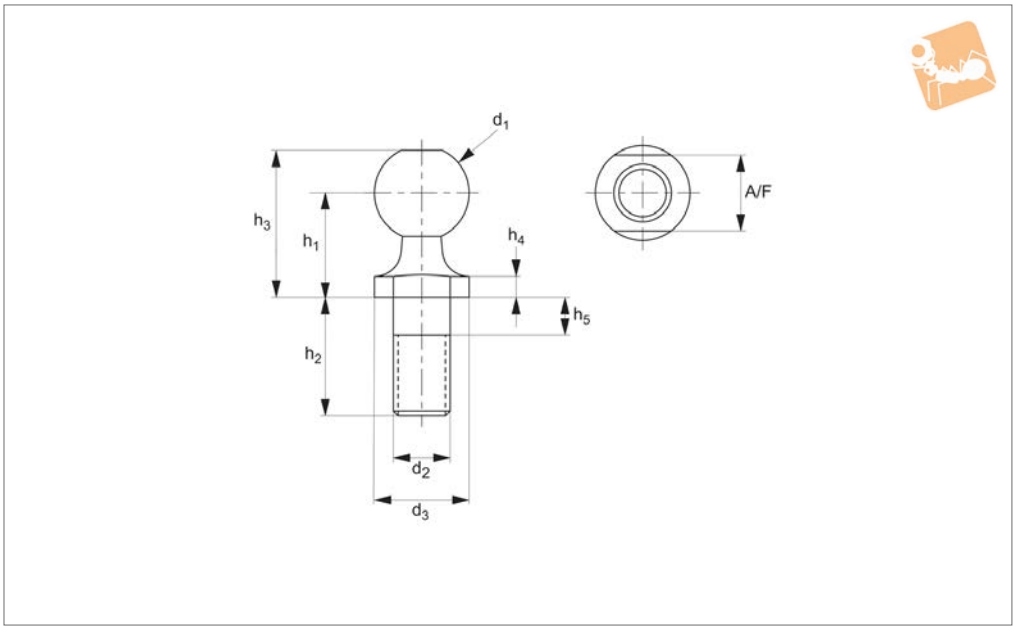
Technical Notes
To DIN 71802.

Tips
Standard thread is right hand thread.

Important Notes
These ball joints are used in light linkage applications where it is desired to have the ability to be able to remove the ball stud.

The ball joint is supplied WITHOUT the ball stud and retaining clip.

Order No.	Thread hand	d_1	d_2	l_1	l_2	d_3	A/F
R3524.R005	Right	8	M 5	22	10.2	8	7
R3524.R006	Right	10	M 6	25	11.5	10	9
R3524.R008	Right	13	M 8	30	14.0	13	11
R3524.R010	Right	16	M10	35	15.5	16	13
R3524.R012	Right	16	M12	35	15.5	16	13





R3526

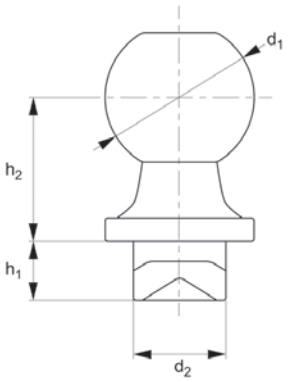
Material
Low carbon steel (1018), silver zinc plated.

Technical Notes
To DIN 71803 Form C, *M14x1.5 is a fine pitch thread.

Order No.	d_1 tol. h9	d_2	d_3 +0.0|-0.2	h_1 ±0.3	h_2 ±0.3	h_3 ±0.3	h_4 +0.4|-0.0	h_5 max.	A/F	Weight g
R3526.005	8.0	M5	8.0	9.0	10.2	12.5	2.0	4.0	7.0	4.5
R3526.006	10.0	M6	10.0	11.0	12.5	15.5	2.2	4.0	8.0	8.5
R3526.008	13.0	M8	13.0	13.0	16.5	18.5	2.4	5.3	11.0	17.7
R3526.010	16.0	M10	16.0	16.0	20.0	23.0	2.7	7.3	13.0	35.0
R3526.012	16.0	M12	16.0	16.0	20.0	23.0	2.7	7.3	13.0	35.0
R3526.014	19.0	M14 x 1.5*	19.0	20.0	28.0	28.5	3.0	10.8	16.0	71.2
R3526.015	19.0	M14	19.0	20.0	28.0	28.5	3.0	10.8	16.0	71.2
R3526.016	19.0	M16	19.0	20.0	28.0	28.5	3.0	10.8	16.0	71.2



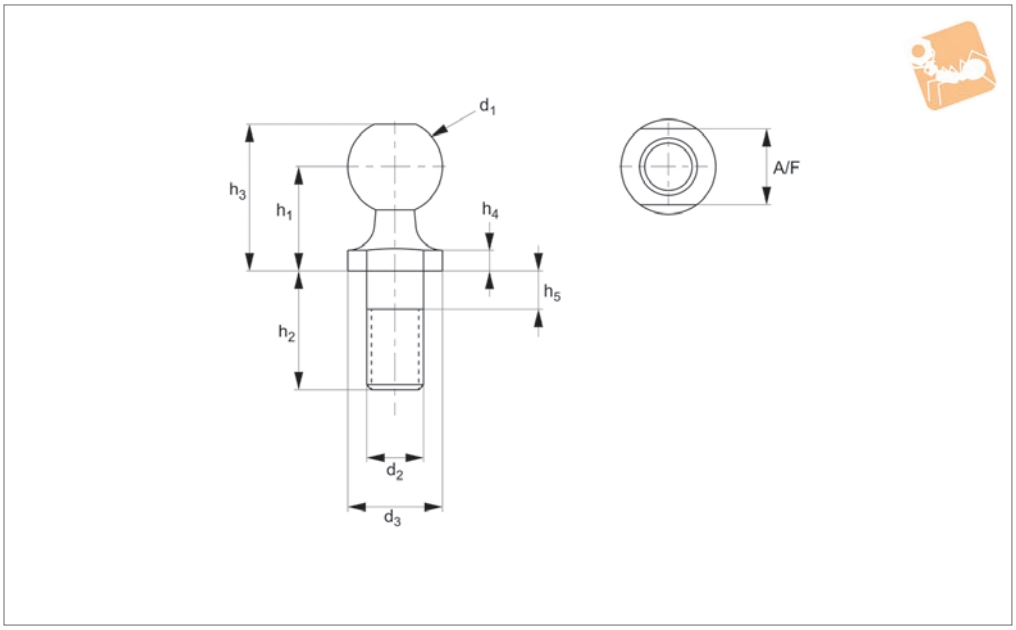
R3527



Material
Low carbon steel (1018), silver zinc plated.

Technical Notes
To DIN 71803 Form B
*M14x1.5 is a fine pitch thread.

Order No.	d_1	d_2 tol. h11	h_1 ±0.2	h_2 ±0.3
R3527.080-040	8.0	5.0	4.0	9.0
R3527.080-075	8.0	5.0	7.5	9.0
R3527.100-045	10.0	6.0	4.5	11.0
R3527.100-080	10.0	6.0	8.0	11.0
R3527.130-050	13.0	8.0	5.0	13.0
R3527.130-100	13.0	8.0	10.0	13.0
R3527.160-060	16.0	10.0	6.0	16.0
R3527.160-130	16.0	10.0	13.0	16.0



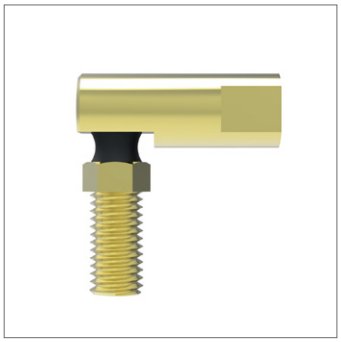


R3528

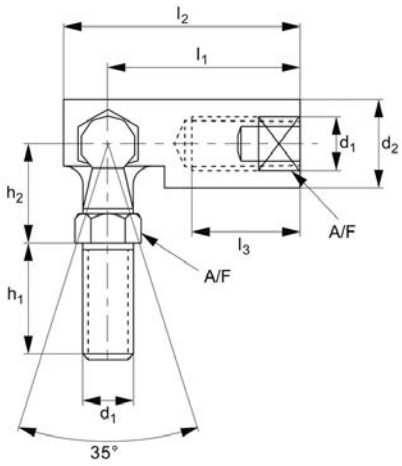
Material
Stainless steel (AISI 304)

Technical Notes
To DIN 71803 Form C
*M14x1.5 is a fine pitch thread.

Order No.	d_1 tol. H9	d_2	d_3 +0.0|-0.2	h_1 ±0.3	h_2 ±0.3	h_3 ±0.3	h_4 +0.4|-0.0	h_5 max.	A/F	Weight g
R3528.005	8.0	M5	8.0	9.0	10.2	12.5	2.0	4.0	7.0	4.5
R3528.006	10.0	M6	10.0	11.0	12.5	15.5	2.2	4.0	8.0	8.5
R3528.008	13.0	M8	13.0	13.0	16.5	18.5	2.4	5.3	11.0	17.7
R3528.010	16.0	M10	16.0	16.0	20.0	23.0	2.7	7.3	13.0	35.0
R3528.012	16.0	M12	16.0	16.0	20.0	23.0	2.7	7.3	13.0	35.0
R3528.014	19.0	M14 x 1.5*	19.0	20.0	28.0	28.5	3.0	10.8	16.0	71.2
R3528.015	19.0	M14	19.0	20.0	28.0	28.5	3.0	10.8	16.0	71.2
R3528.016	19.0	M16	19.0	20.0	28.0	28.5	3.0	10.8	16.0	71.2



R3530

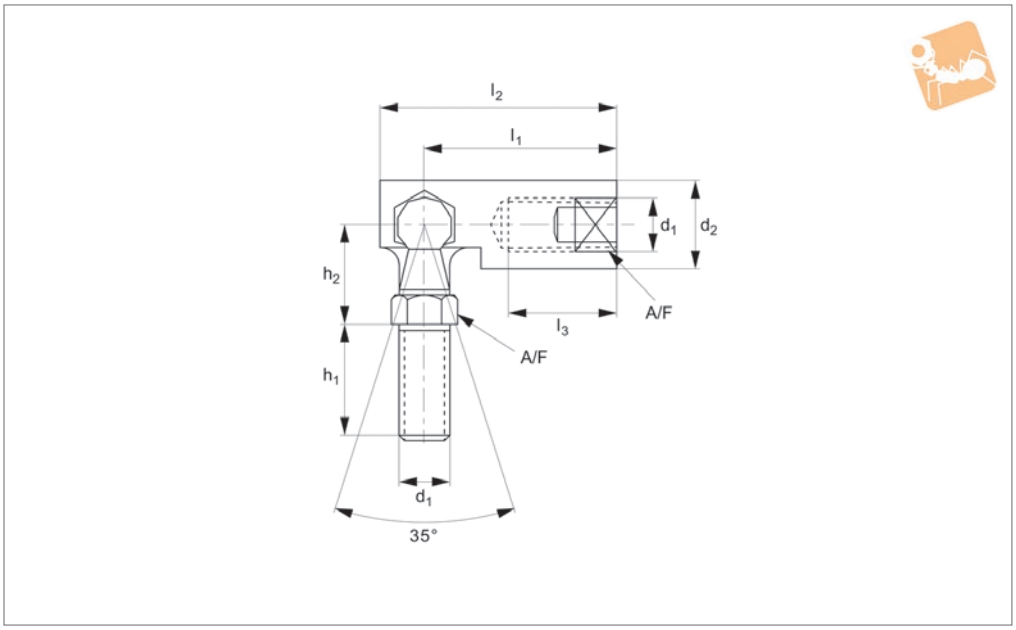


Material
Yellow zinc plated, ball stud is case hardened.
Body and ball stud low carbon steel (BS.970230M07Pb) or equivalent.

Technical Notes
The swaging of the body produces a permanent assembly and the fitted sealing cap helps resist dirt ingress.
The hexagon form of studs facilitates assembly, these are metric equivalents to SAE J490 Style 1.

Tips
Standard thread is right hand thread.

Order No.	Thread hand	d_1	d_2	l_1	l_2	h_1	h_2	l_3	A/F
R3530.R006	Right	M 6	11.13	24.61	30.96	14.30	11.91	12.70	9.53
R3530.R008	Right	M 8	12.70	28.58	35.71	17.48	13.49	14.30	11.13
R3530.R010	Right	M10	15.88	34.93	42.88	22.23	17.48	19.05	12.70
R3530.R012	Right	M12	19.05	49.23	60.33	28.58	22.23	25.40	15.88
R3530.L006	Left	M 6	11.13	24.61	30.96	14.30	11.91	12.70	9.53
R3530.L008	Left	M 8	12.70	28.58	35.71	17.48	13.49	14.30	11.13
R3530.L010	Left	M10	15.88	34.93	42.88	22.23	17.48	19.05	12.70
R3530.L012	Left	M12	19.05	49.23	60.33	28.58	22.23	25.40	15.88





R3532

Material
Stainless steel (AISI 303).

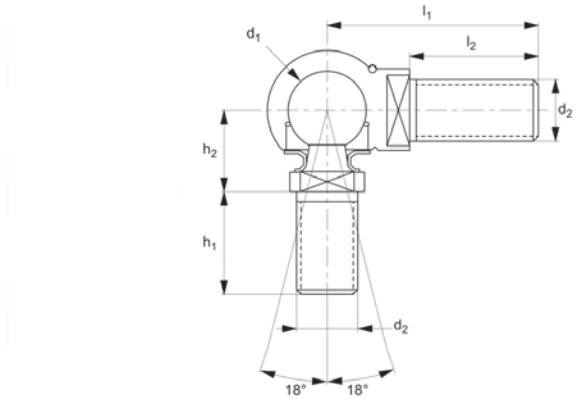
Technical Notes
The swaging of the body produces a permanent assembly and the fitted sealing cap helps resist dirt ingress.
The hexagon form of studs facilitates assembly.

Tips
Standard thread is right hand thread.

Order No.	Thread hand	d_1	d_2	l_1	l_2	h_1	h_2	l_3	A/F
R3532.R006	Right	M 6	11.13	24.61	30.96	14.30	11.91	12.70	9.53
R3532.R008	Right	M 8	12.70	28.58	35.71	17.48	13.49	14.30	11.13
R3532.R010	Right	M10	15.88	34.93	42.88	22.23	17.48	19.05	12.70
R3532.R012	Right	M12	19.05	49.23	60.33	28.58	22.23	25.40	15.88
R3532.L006	Left	M 6	11.13	24.61	30.96	14.30	11.91	12.70	9.53
R3532.L008	Left	M 8	12.70	28.58	35.71	17.48	13.49	14.30	11.13
R3532.L010	Left	M10	15.88	34.93	42.88	22.23	17.48	19.05	12.70
R3532.L012	Left	M12	19.05	49.23	60.33	28.58	22.23	25.40	15.88



R3538

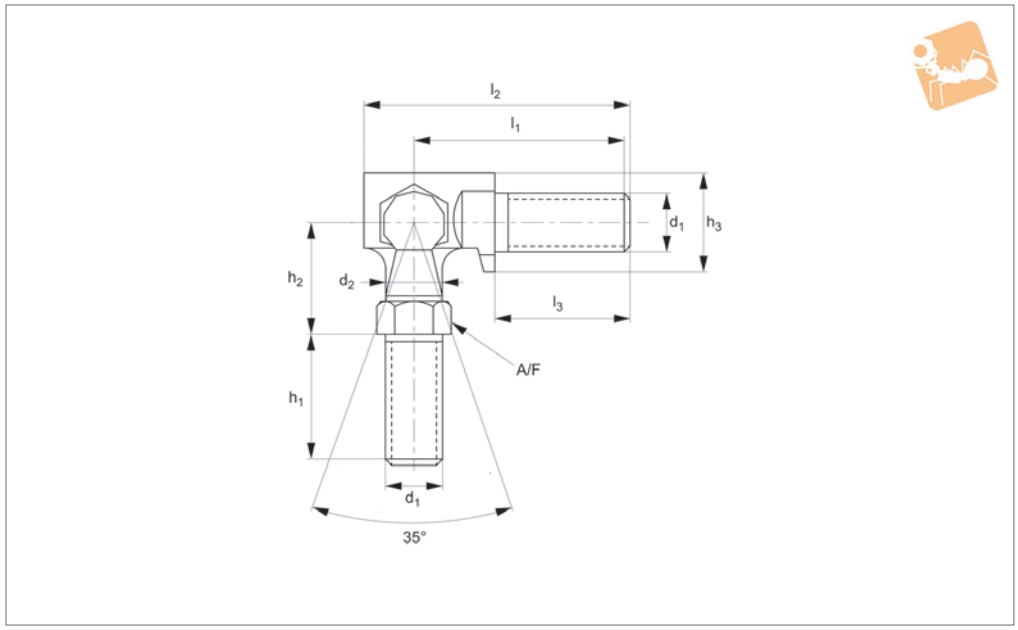


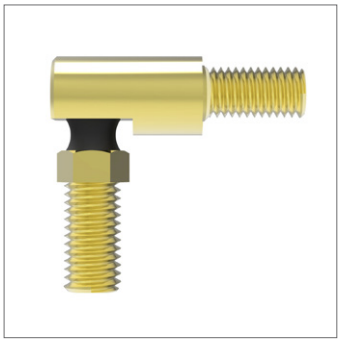
Material
Low carbon steel, silver zinc plated.

Technical Notes
Safety ring aids the retention of the ball stud in the housing.

Tips
Standard thread is right hand thread.

Order No.	Thread hand	d_1	d_2	l_1	l_2	h_1	h_2
R3538.R005	Right	8	M 5	22.5	12.0	10.2	9
R3538.R006	Right	10	M 6	25.0	13.5	12.5	11
R3538.R008	Right	13	M 8	31.5	17.5	16.5	13
R3538.R010	Right	16	M10	37.5	21.5	20.0	16
R3538.R012	Right	16	M12	42.0	25.5	20.0	16
R3538.L005	Left	8	M 5	22.5	12.0	10.2	9
R3538.L006	Left	10	M 6	25.0	13.5	12.5	11
R3538.L008	Left	13	M 8	31.5	17.5	16.5	13
R3538.L010	Left	16	M10	37.5	21.5	20.0	16
R3538.L012	Left	16	M12	42.0	25.5	20.0	16





R3539

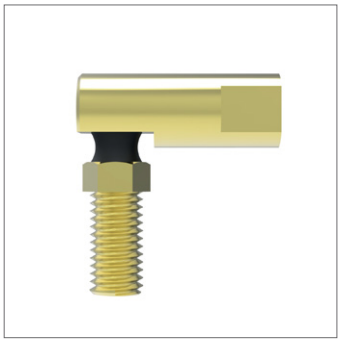
Material
Low carbon steel (1018), yellow zinc plated.

Technical Notes
The swaging of the body produces a permanent assembly and the fitted sealing cap helps resist dirt ingress.
The hexagon form of studs facilitates assembly.

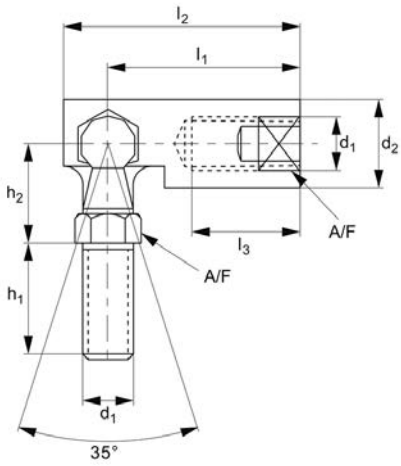
Tips
Standard thread is right hand thread.

Order No.	Thread hand	d_1	d_2	l_1	l_2	h_1	h_2	h_3	l_3	A/F
R3539.R005	Right	M 5	4.37	22.23	27.00	11.13	11.13	9.53	12.04	7.95
R3539.R006	Right	M 6	4.90	24.61	30.96	14.30	11.91	11.13	12.85	9.53
R3539.R008	Right	M 8	5.89	28.58	35.71	17.48	13.49	12.70	16.03	11.13
R3539.R010	Right	M10	7.54	34.93	42.88	22.23	17.48	15.88	19.05	12.70
R3539.R012	Right	M12	10.59	49.23	60.33	28.58	22.23	19.05	25.40	15.88
R3539.L005	Left	M 5	4.37	22.23	27.00	11.13	11.13	9.53	12.04	7.95
R3539.L006	Left	M 6	4.90	24.61	30.96	14.30	11.91	11.13	12.85	9.53
R3539.L008	Left	M 8	5.89	28.58	35.71	17.48	13.49	12.70	16.03	11.13
R3539.L010	Left	M10	7.54	34.93	42.88	22.23	17.48	15.88	19.05	12.70
R3539.L012	Left	M12	10.59	49.23	60.33	28.58	22.23	19.05	25.40	15.88

Ball and Socket Joints
Imperial (DIG)



R3530.i

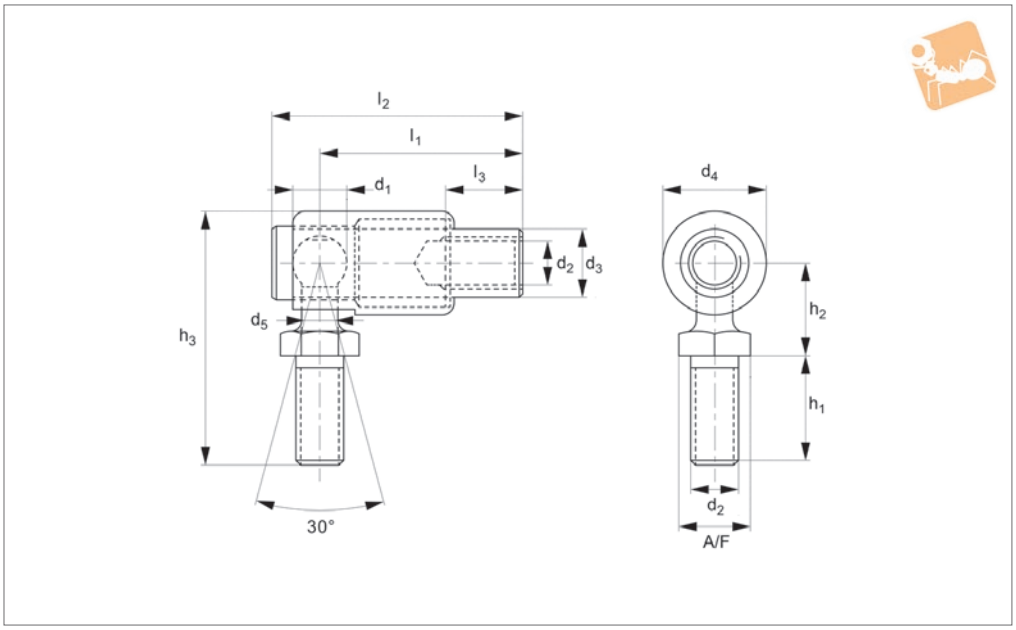


Material
Yellow zinc plated steel, ball stud is case hardened.

Technical Notes
The swaging of the body produces a permanent assembly and the fitted sealing cap helps resist dirt ingress.
The hexagon form of studs facilitates assembly, yellow zinc is not RoHS Compliant.

Tips
Standard Thread is Right hand thread, equivalent to Springfix DIG joints.

Order No.	Thread hand	d_1	d_2	l_1	l_2	h_1	h_2	l_3	A/F
R3530.I187	Right	10-32	0.375	0.875	1.063	0.438	0.438	0.438	0.313
R3530.I250	Right	1/4-28	0.438	0.969	1.219	0.563	0.469	0.500	0.375
R3530.I312	Right	5/16-24	0.500	1.125	1.406	0.688	0.531	0.563	0.438
R3530.I375	Right	3/8-24	0.625	1.375	1.688	0.875	0.688	0.750	0.500
R3530.I438	Right	7/16-20	0.750	1.938	2.375	1.125	0.875	1.000	0.625
R3530.I500	Right	1/2-20	0.750	1.938	2.375	1.125	0.875	1.000	0.625
R3530.I625	Right	5/8-18	0.875	2.063	2.578	1.125	1.000	1.000	0.750
R3530.IL187	Left	10-32 LH	0.375	0.875	1.063	0.438	0.438	0.438	0.313
R3530.IL250	Left	1/4-28 LH	0.438	0.969	1.219	0.563	0.469	0.500	0.375
R3530.IL312	Left	5/16-24 LH	0.500	1.125	1.406	0.688	0.531	0.563	0.438
R3530.IL375	Left	3/8-24 LH	0.625	1.375	1.688	0.875	0.688	0.750	0.500
R3530.IL438	Left	7/16-20 LH	0.750	1.938	2.375	1.125	0.875	1.000	0.625
R3530.IL500	Left	1/2-20 LH	0.750	1.938	2.375	1.125	0.875	1.000	0.625
R3530.IL625	Left	5/8-18 LH	0.875	2.063	2.578	1.125	1.000	1.000	0.750





R3535.i

Material
Silver/Clear zinc plated steel

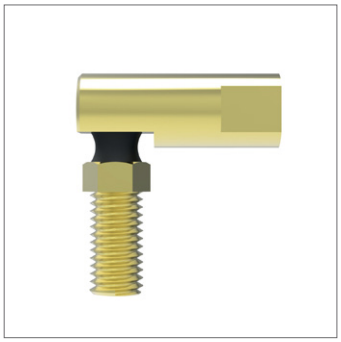
Technical Notes
The spring loaded outer shield allows both rapid release and reconnection of the ball stud.
Linkage assemblies can be installed or removed without disturbing pre-set centres.

Tips
Equivalent to Springfix QI ball joints

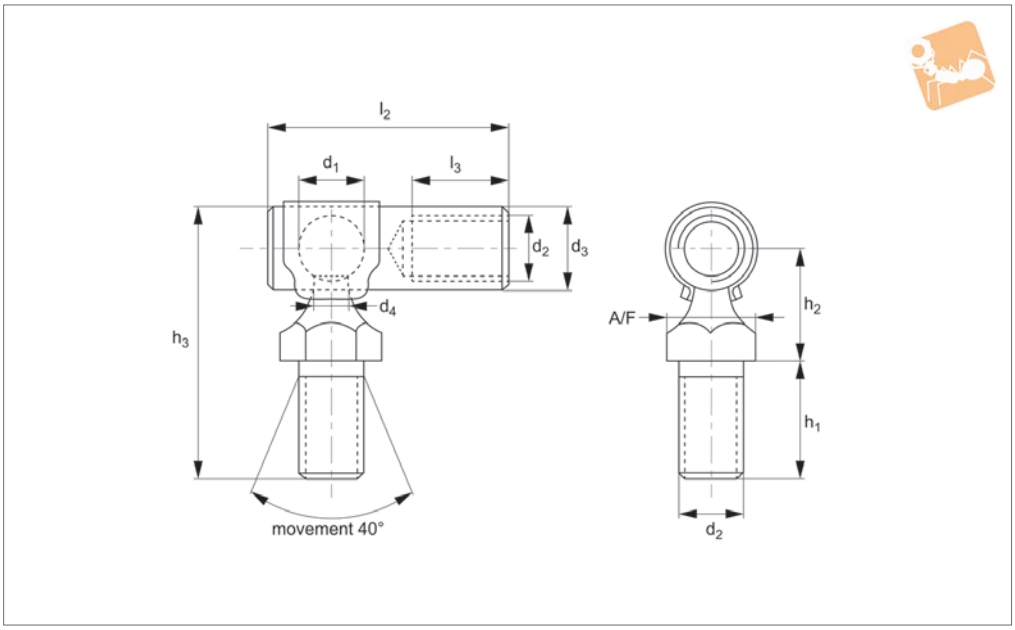
Order No.	d_1	d_2	l_1	l_2	d_3	d_4	d_5	h_1	h_2	h_3	l_3	A/F
R3535.I187	0.250	10-32	0.906	1.094	0.310	0.438	0.171	0.438	0.438	1.125	0.438	0.312
R3535.I250	0.311	1/4-28	0.969	1.250	0.370	0.562	0.194	0.562	0.469	1.312	0.531	0.375
R3535.I312	0.339	5/16-24	1.125	1.453	0.439	0.687	0.228	0.625	0.531	1.594	0.605	0.437
R3535.I375	0.421	3/8-24	1.375	1.750	0.556	0.875	0.269	0.750	0.687	1.969	0.812	0.500



Light Duty Quick Release Ball Joint



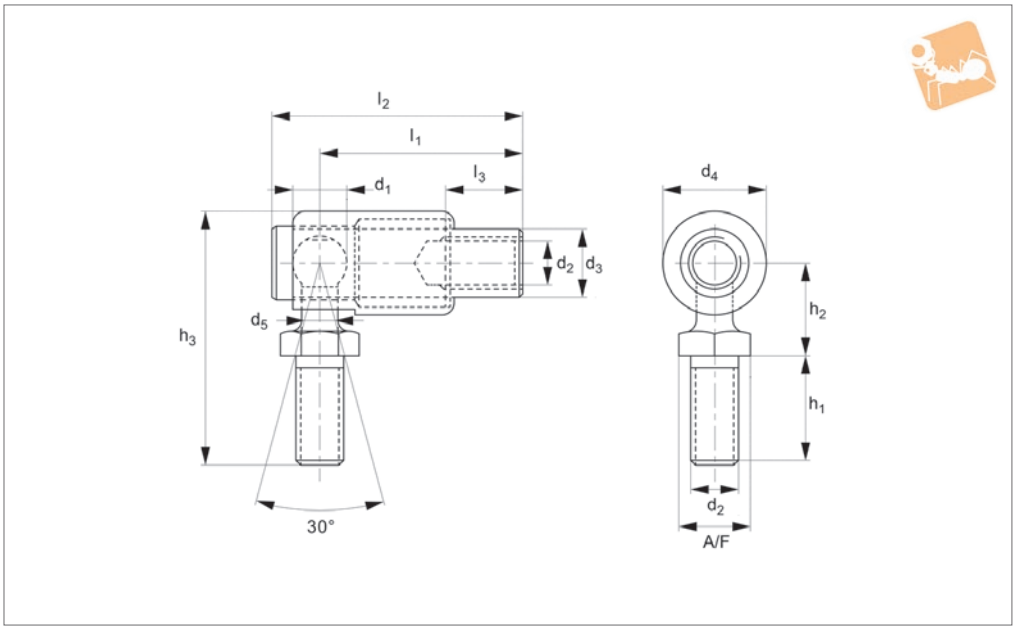
R3536.i



Material
Yellow zinc plated steel.

Technical Notes
Quick disconnect ball joints are used in light duty applications where the ball stud needs to be easily disconnected from the housing.
This is accomplished simply by pulling the ball stud out of the housing,
(takes approximately 10 to 20 pounds of force to remove the ball stud).
Quick disconnect ball joints are typically assembled in push-pull cables or rod linkages.

Order No.	d_1	d_2	l_1	l_2	d_3	d_4	h_1	h_2	h_3	l_3	A/F	Weight g
R3536.3-4	0.250	10-32	0.875	1.156	0.312	0.138	0.437	0.420	1.032	0.484	0.312	1300
R3536.4-4	0.250	10-32	0.875	1.156	0.312	0.138	0.562	0.420	1.156	0.484	0.312	1400
R3536.4-3	0.250	1/4	0.969	1.250	0.312	0.138	0.562	0.420	1.156	0.531	0.312	1300
R3536.4L-4L	0.250	1/4	0.969	1.250	0.312	0.138	0.437	0.420	1.032	0.531	0.312	1200
R3536.3-3	0.312	5/16	0.875	1.187	0.394	0.177	0.562	0.537	1.312	0.484	0.437	7200





R3535

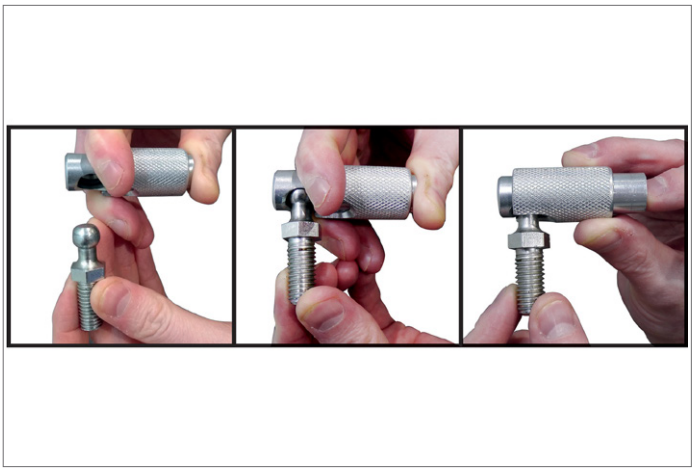
Material
Body: stainless steel (A2, AISI 303) or steel zinc-plated.
Shield and ball stud: carbon steel.
Body and ball stud: case hardened.
Spring: (302 S26) stainless steel or equivalent, zinc plated.

Technical Notes
The spring loaded outer shield allows both rapid release and reconnection of the ball stud.
Linkage assemblies can be installed or removed without disturbing pre-set centres.

These are metric equivalents to SAE J 490 Style 1 quick release detachable ball joints.

Tips
Standard thread is a right hand thread.

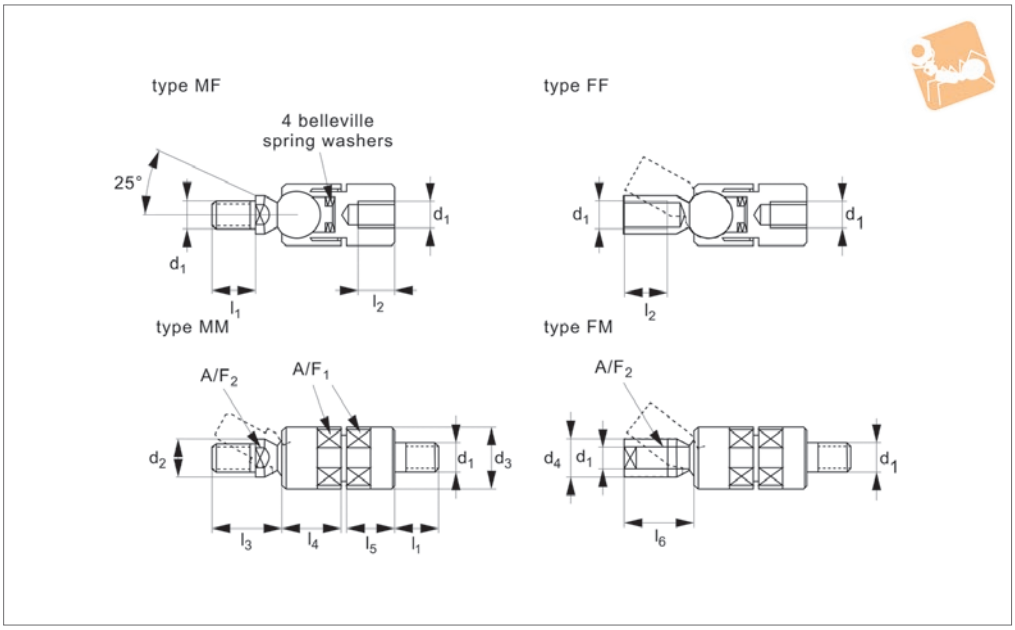
Order No.	Thread hand	d_1	d_2	l_1	l_2	d_3	d_4	d_5	h_1	h_2	h_3	l_3	A/F	Weight g
R3535.005-ZP	Right	6.35	M 5	23.0	28	7.9	11.1	4.35	11.1	11.9	28.6	11.1	8	17
R3535.006-ZP	Right	7.9	M 6	24.6	30	9.4	13.0	4.95	12.6	12.6	33.4	13.0	10	25
R3535.008-ZP	Right	8.6	M 8	31.7	40	11.1	16.0	5.8	15.2	15.2	40.6	14.3	11	48
R3535.010-ZP	Right	10.7	M10	39.7	49	14.1	19.0	6.85	19.8	19.8	51.4	27.0	13	78
R3535.011-ZP	Right	10.7	M10	39.7	49	14.1	19.0	6.85	19.8	19.8	51.4	20.0	13	78
R3535.005-A2	Right	6.35	M 5	23.0	28	7.9	11.1	4.35	11.1	11.9	28.6	11.1	8	17
R3535.006-A2	Right	7.9	M 6	24.6	30	9.4	13.0	4.95	12.6	12.6	33.4	13.0	10	25
R3535.008-A2	Right	8.6	M 8	31.7	40	11.1	16.0	5.8	15.2	15.2	40.6	14.3	11	48
R3535.010-A2	Right	10.7	M10	39.7	49	14.1	19.0	6.85	19.8	19.8	51.4	27.0	13	78
R3535.011-A2	Right	10.7	M10	39.7	49	14.1	19.0	6.85	19.8	19.8	51.4	20.0	13	78



Lockable Ball joint



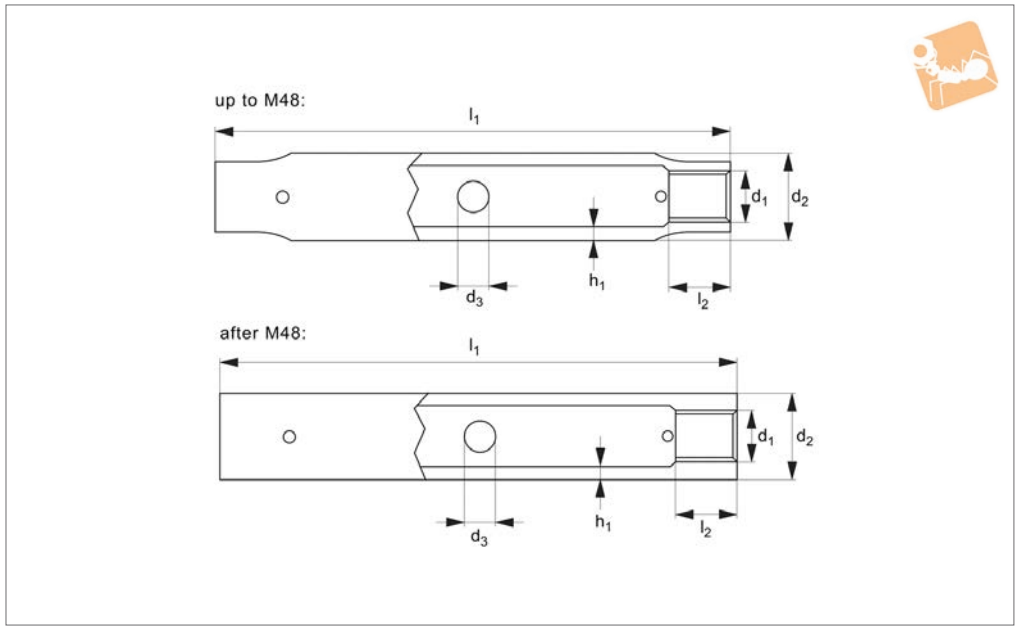
R3540



Material
Steel, (silver zinc plated). Brake piece technopolymer (polyamide PA).

Technical Notes
The clamping nut can be set to give a required thrust on the Belleville spring washers,
in order to increase resistance to the movement of the ball stud, the spring washers act as safety washers for the screws.
Once the max. thrust to the spring washers is reached the ball stud is firmly fixed in position.

Order No.	Type	d_1	l_1	d_2	d_3	l_2	l_3	l_4	l_5	l_6	A/F_1	A/F_2
R3540.MF008	MF	M8	12	11	19	10	19.5	18.5	15	-	17	9
R3540.MF010	MF	M10	15	13	21	12	23.5	21.5	17	-	19	11
R3540.MM008	MM	M8	12	11	19	-	19.5	18.5	15	-	17	9
R3540.MM010	MM	M10	15	13	21	-	23.5	21.5	17	-	19	11
R3540.FF008	FF	M8	-	11	19	10	19.5	18.5	15	-	17	9
R3540.FF010	FF	M10	-	13	21	12	23.5	21.5	17	-	19	11
R3540.FM008	FM	M8	12	11	19	-	19.5	18.5	15	18.5	17	9
R3540.FM010	FM	M10	15	13	21	-	23.5	21.5	17	20.5	19	11





R3800

Material
Steel (1.0037), zinc-plated.
Hot dip galvanized, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3800.006-FZ.

Technical Notes
To DIN 1478.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

Only suitable for use in tension.

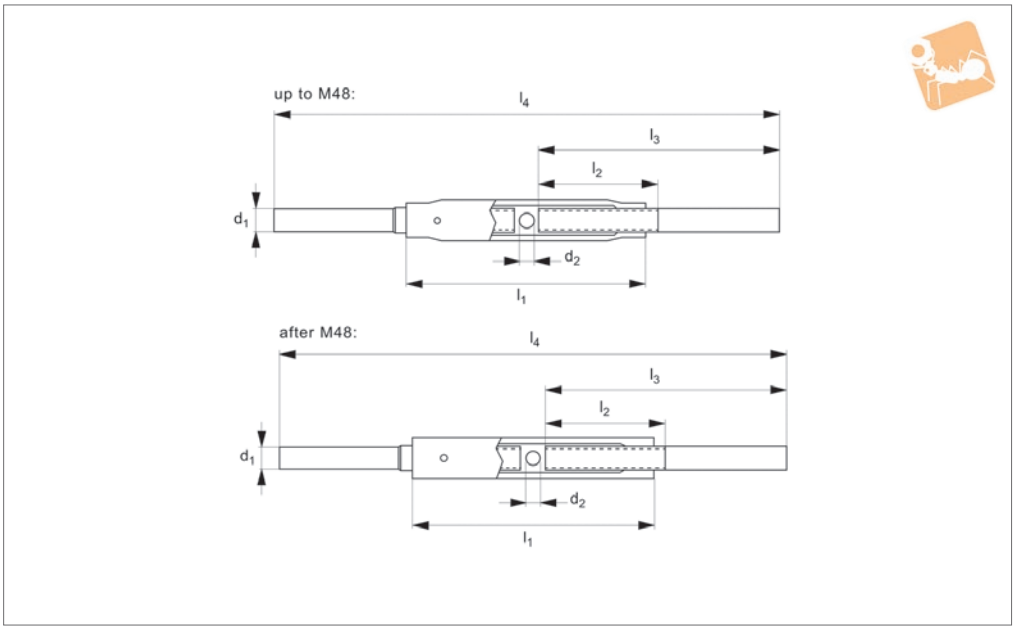
Order No.	d_1	l_1	d_2	d_3 min.	d_3 max.	h_1	l_2	Adjustment	Weight kg
R3800.006-ZP	M 6	110	17.2	5.7	6.3	2.9	7.5	90	0.13
R3800.008-ZP	M 8	110	17.2	7.5	8.5	3.6	10	85	0.13
R3800.010-ZP	M10	125	21.3	7.5	8.5	4.0	12	95	0.18
R3800.012-ZP	M12	125	25.0	9.5	10.5	4.0	15	90	0.25
R3800.016-ZP	M16	170	30.0	9.5	10.5	4.5	20	120	0.45
R3800.020-ZP	M20	200	33.7	11.5	12.5	5.0	24	140	0.56
R3800.024-ZP	M24	255	42.4	11.5	12.5	5.6	29	180	1.08
R3800.030-ZP	M30	255	51.0	15.5	16.5	6.3	36	160	1.61
R3800.036-ZP	M36	295	63.5	15.5	16.5	8.0	43	180	2.35
R3800.042-ZP	M42	330	70.0	19.5	20.5	8.8	51	200	4.30
R3800.048-ZP	M48	355	82.5	19.5	20.5	10.0	58	210	5.50
R3800.056-ZP	M56	355	90.0	24.5	25.5	15.0	68	190	9.60
R3800.064-ZP	M64	425	100	24.5	25.5	16	77	240	14.00
R3800.072-ZP	M72x6	425	110	29.5	30.5	17	87	210	17.00
R3800.080-ZP	M80x6	440	120	29.5	30.5	18	96	210	21.00

Stud End Pipe Body Turnbuckles

steel



R3804



Material

Steel (1.0037 up to M48 then 1.0052), zinc-plated.
Hot dip galvanized, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3804.006-FZ.

Technical Notes

To DIN 1478.

Tips

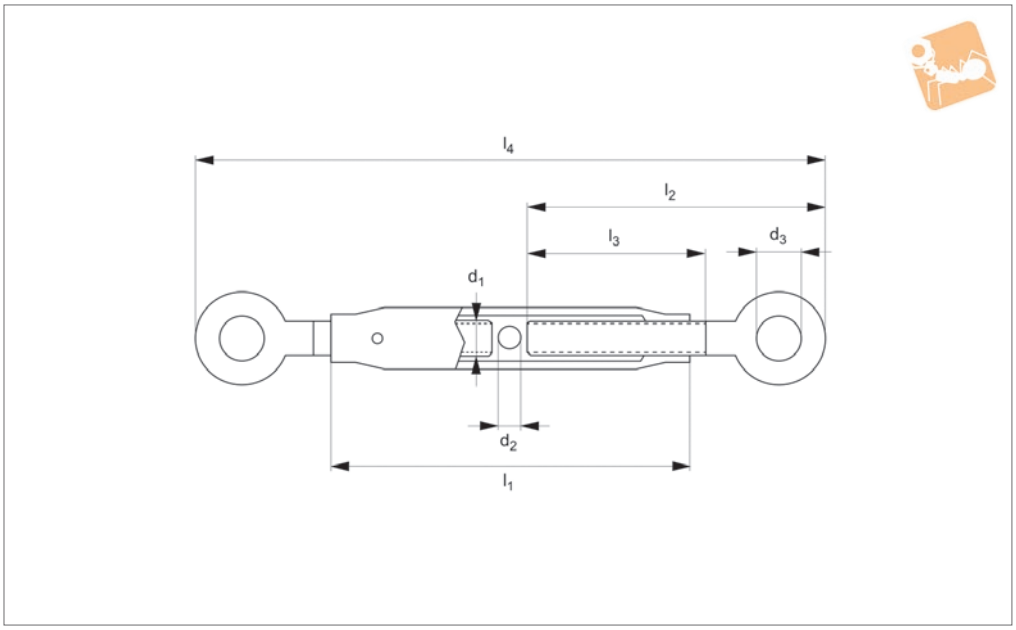
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes

Turnbuckles are not to be used for lifting. Only suitable for use in tension.

Order No.	d_1	l_1	d_2	l_2	l_3	l_4 min.	l_4 max.	Weight kg
R3804.006-ZP	M 6	110	6	60	120	246	336	0.17
R3804.008-ZP	M 8	110	8	65	120	248	333	0.20
R3804.010-ZP	M10	125	8	75	150	309	404	0.32
R3804.012-ZP	M12	125	10	75	150	311	401	0.45
R3804.016-ZP	M16	170	10	100	200	410	530	0.97
R3804.020-ZP	M20	200	12	120	220	452	592	1.48
R3804.024-ZP	M24	255	12	150	260	533	713	2.62
R3804.030-ZP	M30	255	16	160	260	537	697	4.01
R3804.036-ZP	M36	295	16	180	300	617	797	6.35
R3804.042-ZP	M42	330	20	200	350	720	920	10.50
R3804.048-ZP	M48	355	20	220	380	781	991	14.30
R3804.056-ZP	M56	355	25	230	380	785	975	21.60
R3804.064-ZP	M64	425	25	300	425	875	1015	32.40
R3804.072-ZP	M72	425	30	270	400	831	1041	42.00
R3804.080-ZP	M80	440	30	270	400	830	1040	51.00

Eye End Pipe Body Turnbuckles
steel





R3808

Material
Steel (1.0037), zinc-plated.
Hot dip galvanized, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3804.006-FZ.

Technical Notes
To DIN 1478.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

Only suitable for use in tension.

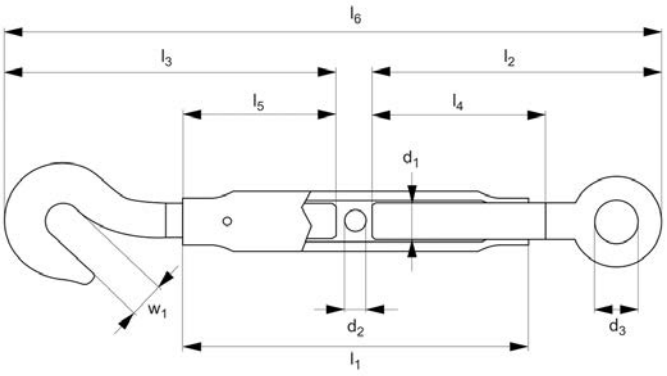
Order No.	d_1	l_1	d_2	d_3	l_2	l_3	l_4 min.	l_4 max	Weight kg
R3808.006-ZP	M 6	110	6	10	74	50	154	244	0.16
R3808.008-ZP	M 8	110	8	11	80	52	168	253	0.18
R3808.010-ZP	M10	125	8	15	95	59	199	294	0.28
R3808.012-ZP	M12	125	10	17	107	66	225	315	0.42
R3808.016-ZP	M16	170	10	22	146	85	302	422	0.91
R3808.020-ZP	M20	200	12	24	170	100	352	492	1.36
R3808.024-ZP	M24	255	12	33	213	134	437	619	2.60
R3808.030-ZP	M30	255	16	39	255	150	527	687	3.75
R3808.036-ZP	M36	295	16	37	260	150	537	717	6.35
R3808.042-ZP	M42	330	20	48	285	165	590	790	10.50
R3808.048-ZP	M48	355	20	58	335	185	691	901	15.50

Hook & Eye Pipe Body Turnbuckles

steel



R3812



Material

Steel (1.0037 up to M48 then 1.0052), zinc-plated.
Hot dip galvanized body, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3804.006-FZ.

Technical Notes

To DIN 1478.

Tips

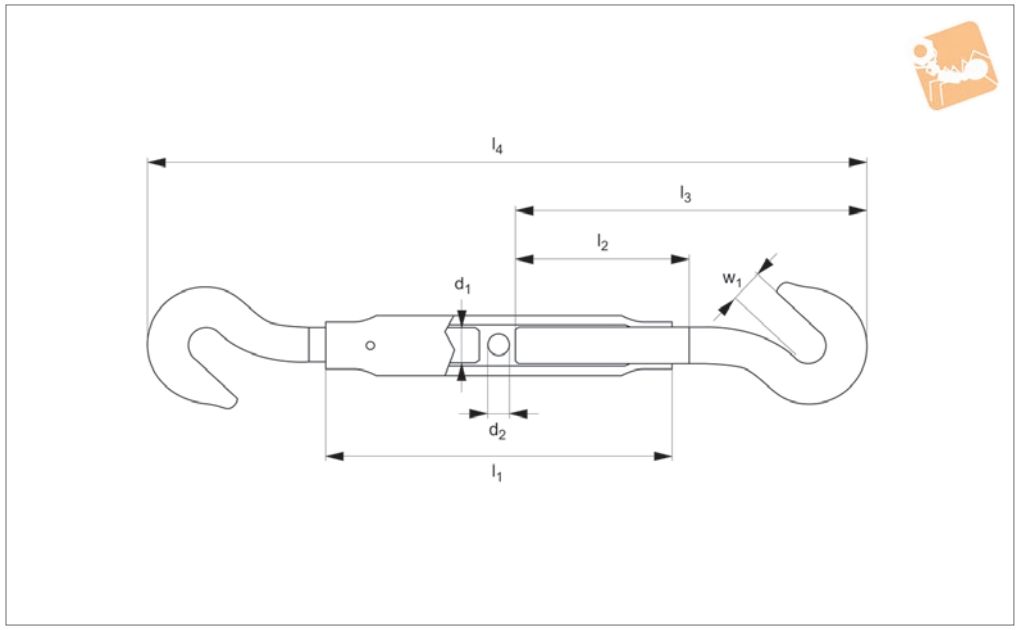
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes

Turnbuckles are not to be used for lifting. Only suitable for use in tension.

Order No.	d_1	l_1	d_2	d_3	l_2	l_3	l_4	l_5	l_6 min.	l_6 max.	w_1	Weight kg
R3812.006-ZP	M 6	110	6	10	74	77.0	50	50	157	247	9.5	0.16
R3812.008-ZP	M 8	110	8	11	80	98.0	52	60	186	271	11.0	0.19
R3812.010-ZP	M10	125	8	15	95	116.5	59	73	220	315	14.0	0.29
R3812.012-ZP	M12	125	10	17	107	146.0	66	90	264	354	18.0	0.45
R3812.016-ZP	M16	170	10	22	146	165.0	85	100	321	441	19.0	0.96
R3812.020-ZP	M20	200	12	24	170	180.0	100	105	362	502	21.0	1.38
R3812.024-ZP	M24	255	12	33	213	225.0	134	135	450	630	29.0	2.73
R3812.030-ZP	M30	255	16	39	255	255.0	150	140	527	687	31.0	3.92
R3812.036-ZP	M36	295	16	37	260	300.0	150	170	577	757	35.0	6.60

Hook End Pipe Body Turnbuckles
steel





R3816

Material
Steel (1.0037 up to M48 then 1.0052), zinc-plated.
Hot dip galvanized body, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3804.006-FZ.

Technical Notes
To DIN 1478.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting. Only suitable for use in tension.

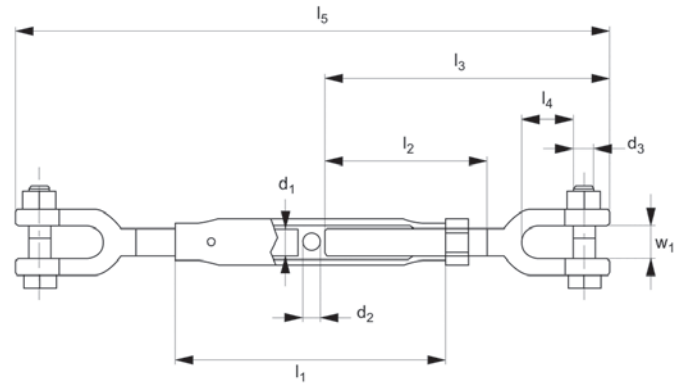
Order No.	d_1	l_1	d_2	l_2	l_3	l_4 min.	l_4 max.	w_1	Weight kg
R3816.006-ZP	M 6	110	6	50	77.0	160	250	9.5	0.16
R3816.008-ZP	M 8	110	8	60	98.0	204	289	11.0	0.20
R3816.010-ZP	M10	125	8	73	116.5	241	336	14.0	0.30
R3816.012-ZP	M12	125	10	90	146.0	303	393	18.0	0.47
R3816.016-ZP	M16	170	10	100	165.0	340	460	19.0	1.01
R3816.020-ZP	M20	200	12	105	180.0	372	512	21.0	1.40
R3816.024-ZP	M24	255	12	135	225.0	463	543	29.0	2.86
R3816.030-ZP	M30	255	16	140	225.0	527	687	31.0	4.09
R3816.036-ZP	M36	295	16	170	300.0	617	697	35.0	6.85

Jaw End Pipe Body Turnbuckles

steel



R3820



Material

Steel body(1.0037) Jaws (1.0503), zinc-plated.
Hot dip galvanized body, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3804.006-FZ.

Technical Notes

To DIN 1478.

Tips

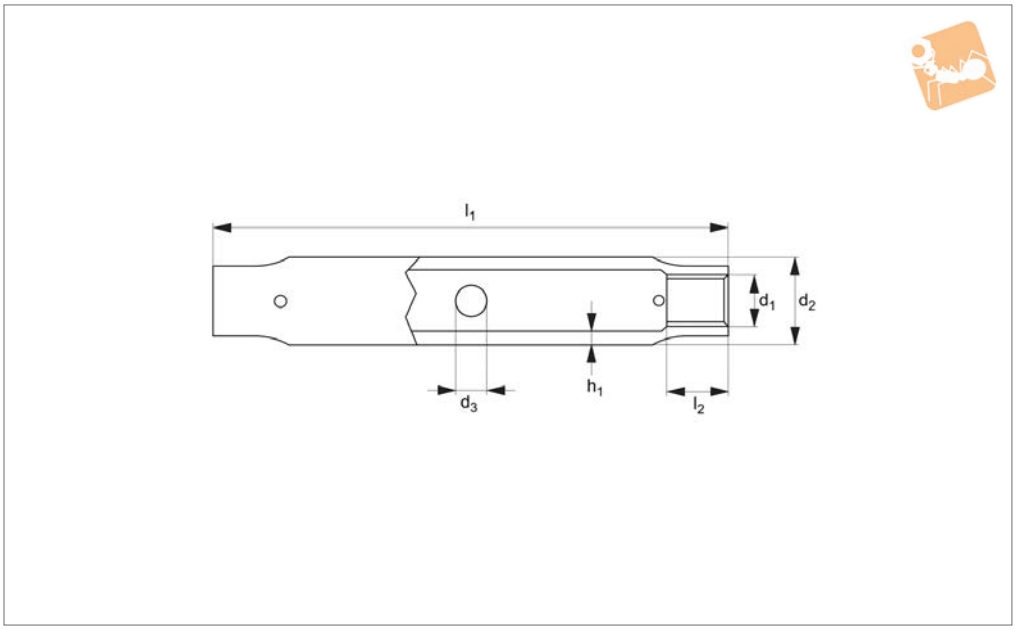
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes

Turnbuckles are not to be used for lifting. Only suitable for use in tension.

Order No.	d_1	l_1	d_2	d_3	l_2	l_3	l_4	l_5 min.	l_5 max.	w_1	Weight kg
R3820.008-ZP	M 8	110	8.5	8.5	68	125	28.75	258	343	9.0	0.30
R3820.010-ZP	M10	125	8.5	8.5	82	139	29.25	287	382	10.7	0.43
R3820.012-ZP	M12	125	10.5	10.5	90	160	44.75	331	421	15.5	0.69
R3820.016-ZP	M16	170	10.5	12.5	102	186	45.25	382	502	20.0	1.31
R3820.020-ZP	M20	200	12.5	17.0	115	205	59.5	422	562	23.5	2.02
R3820.024-ZP	M24	255	12.5	20.5	125	240	62.75	493	673	26.0	3.9
R3820.030-ZP	M30	255	16.5	25.0	150	290	89.5	613	773	34.0	7.01

Pipe Body Turnbuckles
stainless steel





R3802

Material
Stainless steel (A4)

Technical Notes
To DIN 1478.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

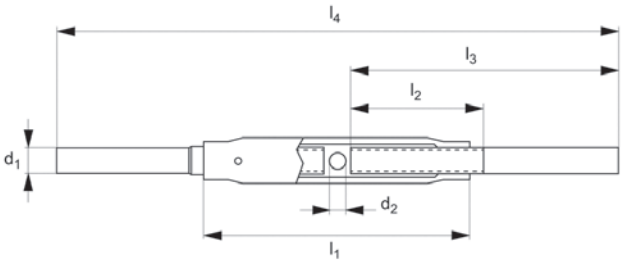
Only suitable for use in tension.

Order No.	d_1	d_2	d_3 min.	d_3 max.	h_1	l_1	l_2	Adjustment	Weight kg
R3802.006-A4	M 6	17.2	5.7	6.3	2.9	110	7.5	90	0.13
R3802.008-A4	M 8	17.2	7.5	8.5	3.6	110	10	85	0.13
R3802.010-A4	M10	21.3	7.5	8.5	4.0	125	12	95	0.18
R3802.012-A4	M12	25.0	9.5	10.5	4.0	125	15	90	0.25
R3802.016-A4	M16	30.0	9.5	10.5	4.5	170	20	120	0.45
R3802.020-A4	M20	33.7	11.5	12.5	5.0	200	24	140	0.56
R3802.024-A4	M24	42.4	11.5	12.5	5.6	255	29	180	1.08
R3802.030-A4	M30	51.0	15.5	16.5	6.3	255	36	160	1.61
R3802.036-A4	M36	63.5	15.5	16.5	8.0	295	43	180	2.35

Stud End Pipe Body Turnbuckles
stainless steel



R3806



Material
Stainless steel (A4)

Technical Notes
To DIN 1478.

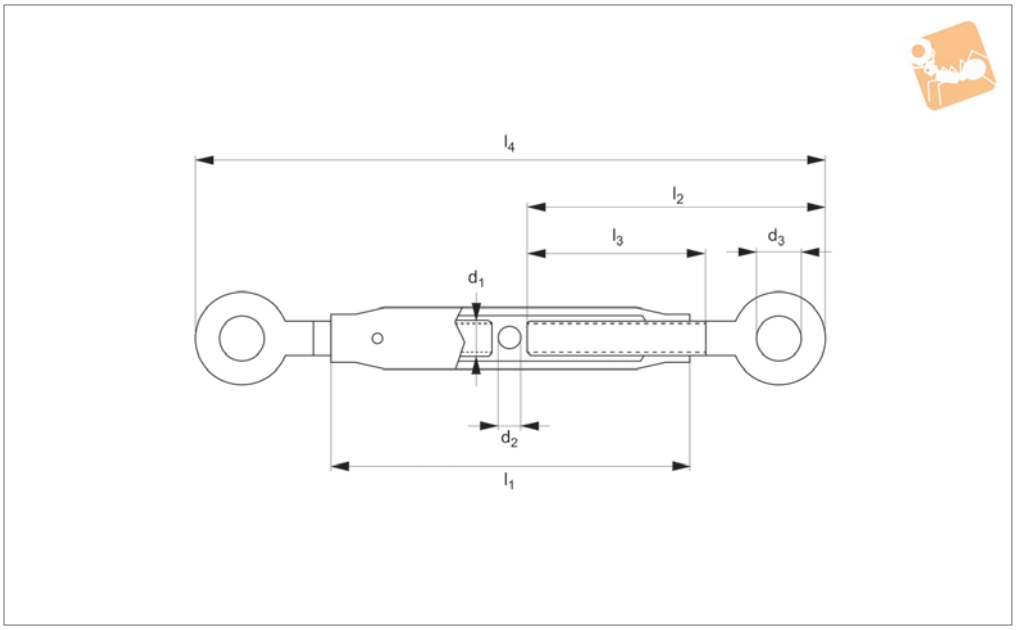
Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

Only suitable for use in tension.

Order No.	d_1	d_2	l_1	l_2	l_3	l_4 min.	l_4 max.	Weight kg
R3806.006-A4	M 6	6	110	60	120	246	336	0.17
R3806.008-A4	M 8	8	110	65	120	248	333	0.20
R3806.010-A4	M10	8	125	75	150	309	404	0.32
R3806.012-A4	M12	10	125	75	150	311	401	0.45
R3806.016-A4	M16	10	170	100	200	410	530	0.97
R3806.020-A4	M20	12	200	120	220	452	592	1.48
R3806.024-A4	M24	12	255	150	260	533	713	2.62
R3806.030-A4	M30	16	255	160	260	537	697	4.01
R3806.036-A4	M36	16	295	180	300	617	797	6.35

Eye End Pipe Body Turnbuckles
stainless steel





R3810

Material
Stainless steel (A4)

Technical Notes
To DIN 1478.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

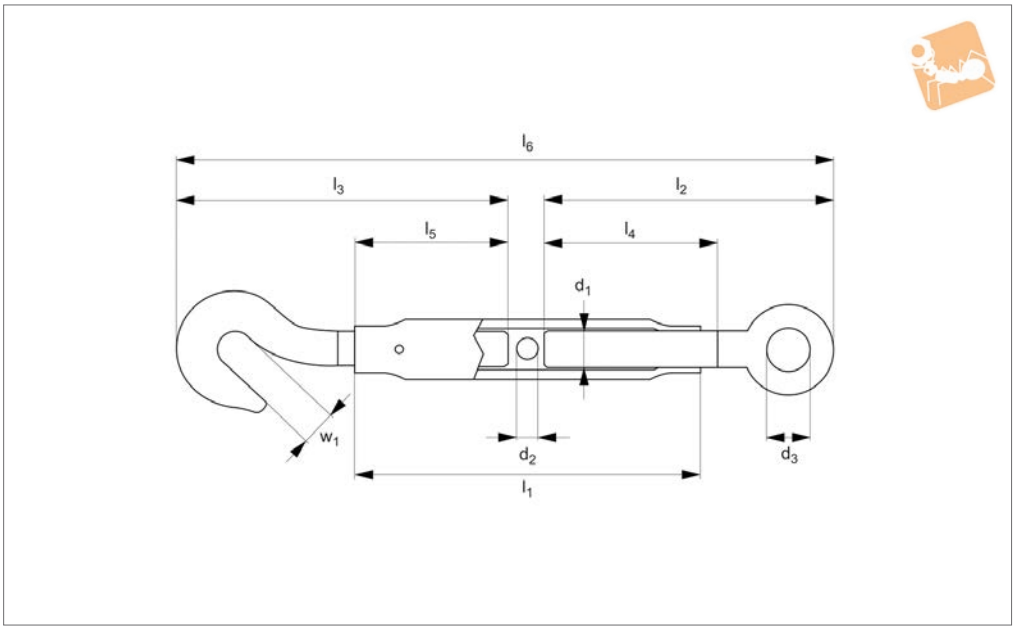
Only suitable for use in tension.

Order No.	d_1	d_2	d_3	l_1	l_2	l_3	l_4 min.	l_4 max.	Weight kg
R3810.006-A4	M 6	6	10	110	74	50	154	244	0.16
R3810.008-A4	M 8	8	11	110	80	52	168	253	0.18
R3810.010-A4	M10	8	15	125	95	59	199	294	0.28
R3810.012-A4	M12	10	17	125	107	66	225	315	0.42
R3810.016-A4	M16	10	22	170	146	85	302	422	0.91
R3810.020-A4	M20	12	24	200	170	100	352	492	1.36

Hook & Eye Pipe Body Turnbuckles
stainless steel



R3814



Material
Stainless steel (A4)

Technical Notes
To DIN 1478.

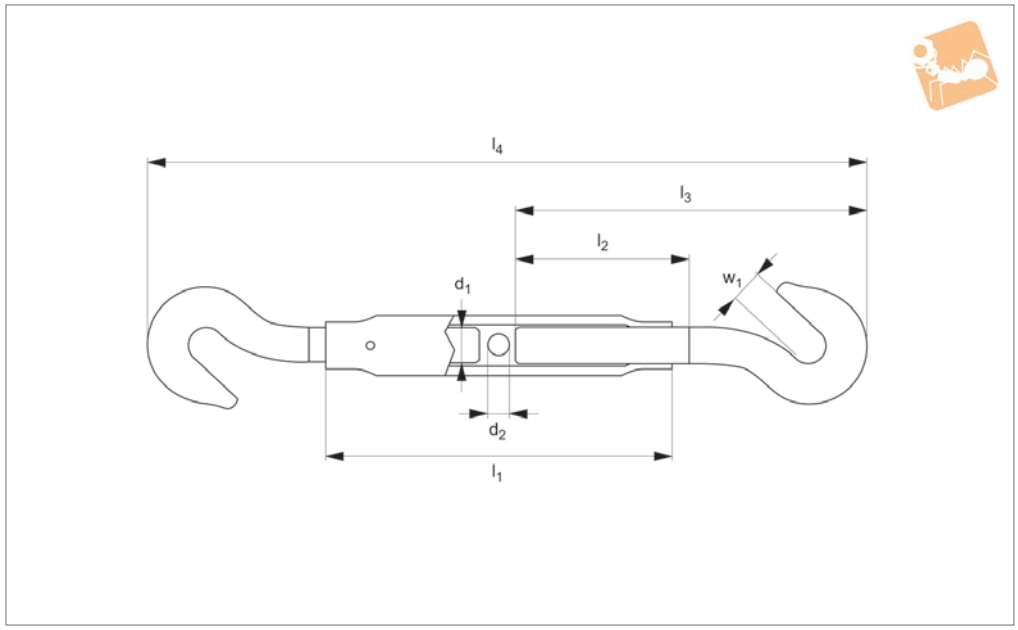
Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

Only suitable for use in tension.

Order No.	d_1	d_2	d_3	l_1	l_2	l_3	l_4	l_5	l_6 min.	l_6 max.	w_1	Weight kg
R3814.006-A4	M 6	6	10	110	74	77.0	50	50	157	247	9.5	0.16
R3814.008-A4	M 8	8	11	110	80	98.0	52	60	186	271	11.0	0.19
R3814.010-A4	M10	8	15	125	95	116.5	59	73	220	315	14.0	0.29
R3814.012-A4	M12	10	17	125	107	146.0	66	90	264	354	18.0	0.45
R3814.016-A4	M16	10	22	170	146	165.0	85	100	321	441	19.0	0.96

Hook End Pipe Body Turnbuckles
stainless steel





R3818

Material
Stainless steel (A4)

Technical Notes
To DIN 1478.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

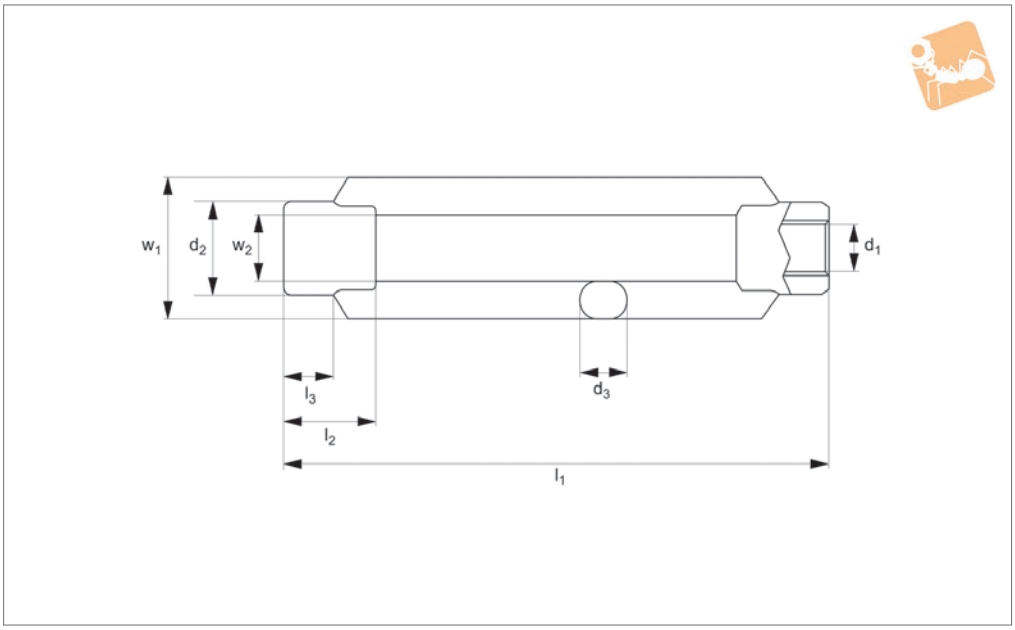
Only suitable for use in tension.

Order No.	d_1	d_2	l_1	l_2	l_3	l_4 min.	l_4 max.	w_1	Weight kg
R3818.006-A4	M 6	6	110	50	77.0	160	250	9.5	0.16
R3818.008-A4	M 8	8	110	60	98.0	204	289	11.0	0.20
R3818.010-A4	M10	8	125	73	116.5	241	336	14.0	0.30
R3818.012-A4	M12	10	125	90	146.0	303	393	18.0	0.47
R3818.016-A4	M16	10	170	100	165.0	340	460	19.0	1.01

Turnbuckles
steel



R3830



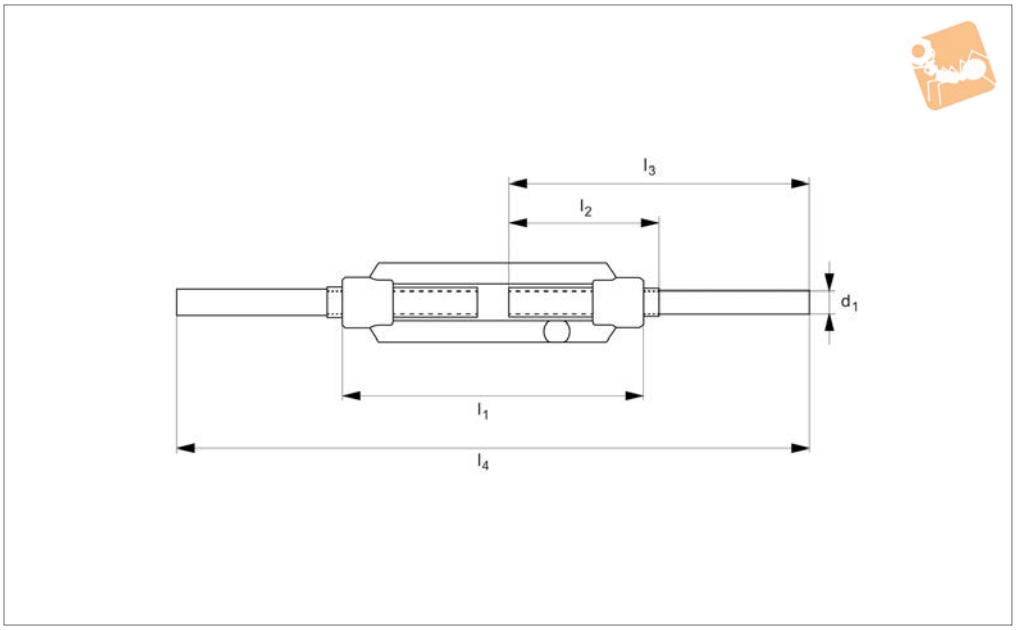
Material
Steel (1.0037), zinc-plated.
Hot dip galvanized, available on request providing increased protection against corrosion.

Technical Notes
To DIN 1480.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.
Only suitable for use in tension.

Order No.	d_1	l_1	l_2	l_3	d_2	d_3	w_1	w_2	Adjustment	Weight kg
R3830.006-ZP	M 6	110	12	6	12	6	19	9	80	0.06
R3830.008-ZP	M 8	110	15	8	15	8	23	11	75	0.09
R3830.010-ZP	M10	125	18	9	18	9	30	14	85	0.15
R3830.012-ZP	M12	125	21	11	21	11	34	16	80	0.20
R3830.016-ZP	M16	170	27	14	27	14	42	20	110	0.44
R3830.020-ZP	M20	200	34	17	34	17	52	24	130	0.44
R3830.024-ZP	M24	255	39	20	39	20	60	28	170	1.20
R3830.030-ZP	M30	255	45	23	45	23	74	34	160	1.80
R3830.036-ZP	M36	295	55	28	55	28	86	40	180	3.20
R3830.042-ZP	M42	330	63	32	63	32	104	50	200	4.50
R3830.048-ZP	M48	355	78	39	80	40	135	65	195	9.10
R3830.056-ZP	M56	355	78	39	80	40	135	65	195	8.00





R3834

Material
Steel (1.0037), zinc-plated.
Hot dip galvanized body, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3804.006-FZ.

Technical Notes
To DIN 1480 stub end.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

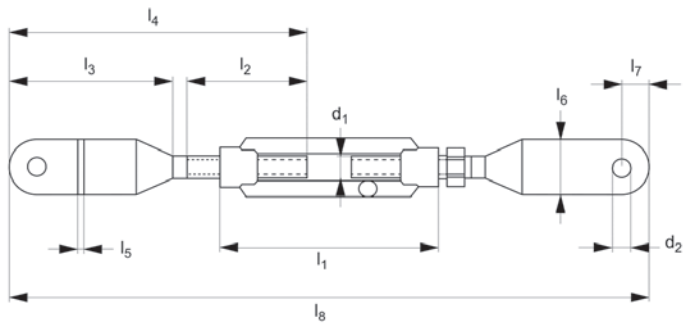
Only suitable for use in tension.

Order No.	d_1	l_1	l_2	l_3	l_4 min.	l_4 max.	Weight kg
R3834.006-ZP	M 6	110	60	120	240	320	0.10
R3834.008-ZP	M 8	110	65	120	240	315	0.16
R3834.010-ZP	M10	125	75	150	301	386	0.30
R3834.012-ZP	M12	125	75	150	301	381	0.40
R3834.016-ZP	M16	170	100	200	400	510	0.96
R3834.020-ZP	M20	200	120	220	440	570	1.74
R3834.024-ZP	M24	255	150	260	521	691	2.74
R3834.030-ZP	M30	255	160	260	521	681	4.20
R3834.036-ZP	M36	295	180	300	601	781	7.20
R3834.042-ZP	M42	330	200	350	700	900	10.70
R3834.048-ZP	M48	355	220	380	761	956	17.90
R3834.056-ZP	M56	355	230	380	761	956	20.00

Plain End Turnbuckles
steel



R3838



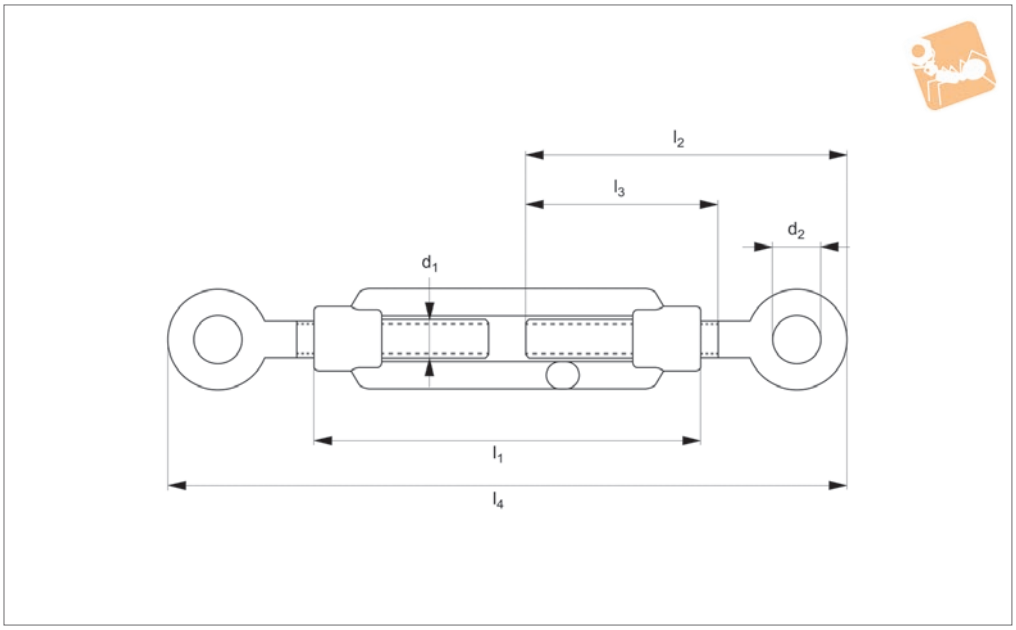
Material
Steel (1.0037 up to M48 then 1.0052), zinc-plated.
Hot dip galvanized body, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3804.006-FZ.

Technical Notes
To DIN 1480 plain ends.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting. Only suitable for use in tension.

Order No.	d_1	l_1	l_2	l_3	l_4	d_2	l_5	l_6	l_7	l_8 min.	l_8 max.	Weight kg
R3838.008-ZP	M 8	110	75	50	125	9.0	4	20	11	250	325	0.19
R3838.010-ZP	M10	110	90	60	150	10.5	4	25	13	300	385	0.30
R3838.012-ZP	M12	125	91	74	165	13.0	5	30	16	331	411	0.48
R3838.016-ZP	M16	125	105	135	240	14.0	8	40	20	481	591	1.14
R3838.020-ZP	M20	200	105	135	240	17.0	9	44	26	480	610	1.84
R3838.024-ZP	M24	255	160	145	305	22.0	10	70	43	611	781	3.10





R3840

Material
Steel (1.0037), zinc-plated.
Hot dip galvanized body, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3804.006-FZ.

Technical Notes
To DIN 1480 eye to eye.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

Only suitable for use in tension.

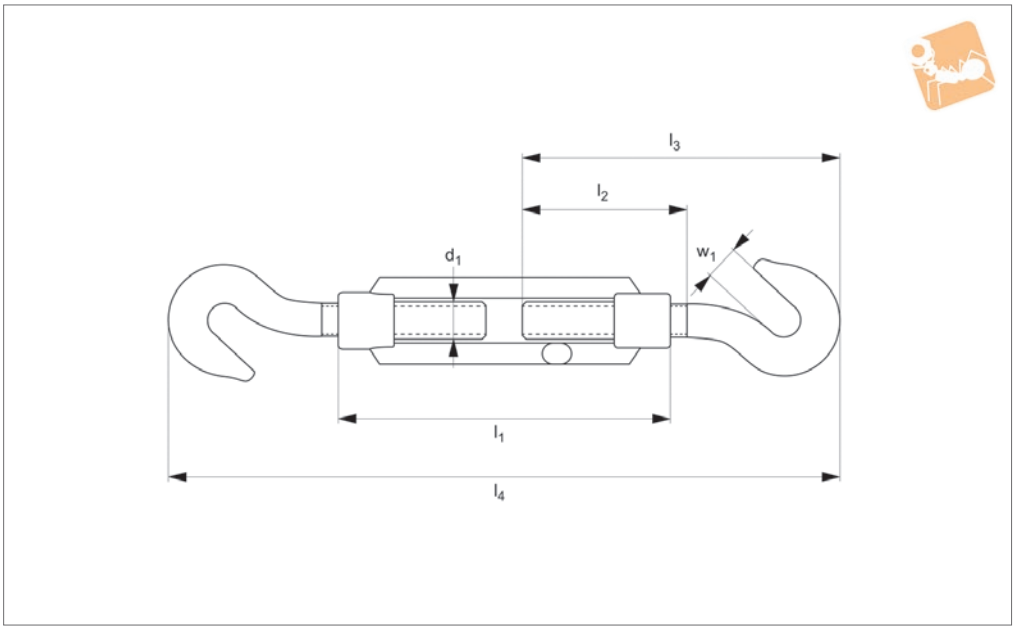
Order No.	d_1	l_1	l_2	l_3	l_4 min.	l_4 max.	d_2	Weight kg
R3840.006-ZP	M 6	110	74	50	148	228	10	0.09
R3840.008-ZP	M 8	110	80	52	160	235	11	0.14
R3840.010-ZP	M10	125	95	59	191	276	15	0.25
R3840.012-ZP	M12	125	107	66	215	295	17	0.37
R3840.016-ZP	M16	170	146	85	292	402	22	0.90
R3840.020-ZP	M20	200	170	100	340	470	24	1.62
R3840.024-ZP	M24	255	213	134	427	597	33	2.72
R3840.030-ZP	M30	255	255	150	511	671	39	3.94
R3840.036-ZP	M36	295	260	150	521	701	37	7.20
R3840.042-ZP	M42	330	285	165	570	770	48	10.70
R3840.048-ZP	M48	355	335	185	671	866	58	19.10

Hook End Turnbuckles

steel



R3844



Material
Steel (1.0037), zinc-plated.
Hot dip galvanized body, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3804.006-FZ.

Technical Notes
To DIN 1480 hook to hook.

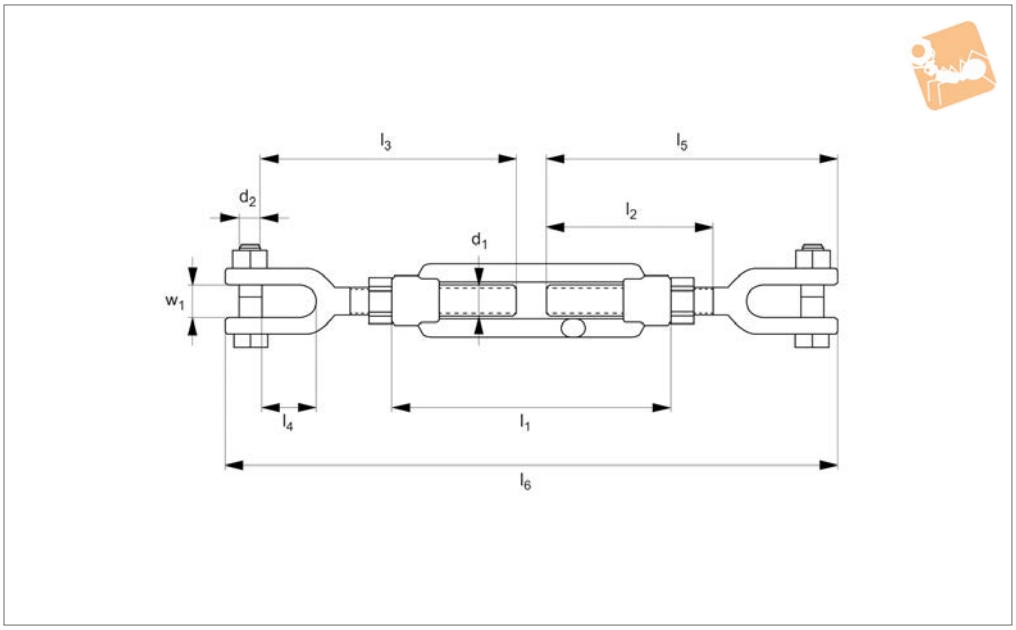
Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

Only suitable for use in tension.

Order No.	d_1	l_1	l_2	l_3	l_4 min.	l_4 max.	w_1	Weight kg
R3844.006-ZP	M 6	110	50	77.0	154	234	8.0	0.09
R3844.008-ZP	M 8	110	60	98.0	196	271	10.0	0.16
R3844.010-ZP	M10	125	73	116.5	233	318	12.5	0.27
R3844.012-ZP	M12	125	90	146.0	293	373	16.0	0.42
R3844.016-ZP	M16	170	100	165.0	330	440	16.0	1.00
R3844.020-ZP	M20	200	105	180.0	360	490	18.0	1.66
R3844.024-ZP	M24	255	135	225.0	451	621	30.0	2.98
R3844.030-ZP	M30	255	140	255.0	451	611	30.0	4.28
R3844.036-ZP	M36	295	170	300.0	601	781	32.0	7.70

Jaw End Turnbuckle
steel





R3848

Material
Steel body (1.0037), jaws (1.0503), zinc-plated.
Hot dip galvanized body, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3804.006-FZ.

Technical Notes
To DIN 1480 jaw to jaw.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

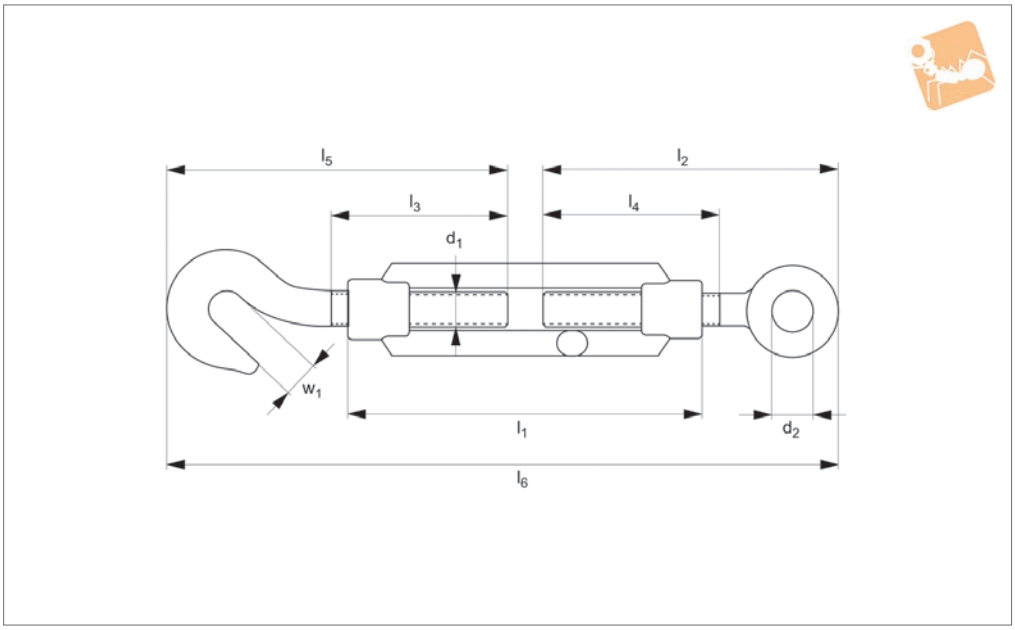
Important Notes
Turnbuckles are not to be used for lifting. Only suitable for use in tension.

Order No.	d_1	l_1	l_2	l_3	l_4	d_2	l_5	l_6 min.	l_6 max.	w	Weight kg
R3848.008-ZP	M 8	110	68	116	28.75	8.5	125	250	325	9.0	0.14
R3848.010-ZP	M10	125	82	130	29.25	8.5	139	279	364	10.7	0.26
R3848.012-ZP	M12	125	90	150	44.75	10.5	160	321	401	15.5	0.40
R3848.016-ZP	M16	170	102	172	45.25	12.5	186	372	482	20.0	0.64
R3848.020-ZP	M20	200	115	185	59.50	17.5	205	410	540	23.5	1.30
R3848.024-ZP	M24	255	125	215	62.75	20.5	240	481	651	29.0	2.28
R3848.030-ZP	M30	255	150	255	89.50	25.5	290	581	741	34.0	4.02

Hook & Eye Turnbuckles
steel



R3850



Material
Steel (1.0037),zinc-plated.
Hot dip galvanized body, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3804.006-FZ.

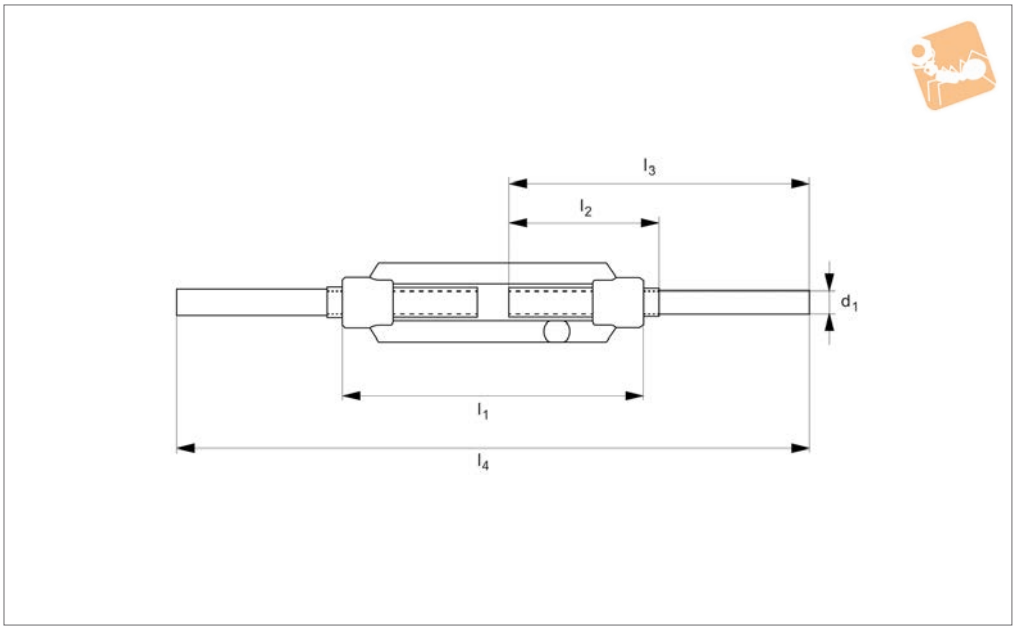
Technical Notes
To DIN 1480 hook & eye.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

Only suitable for use in tension.

Order No.	d_1	l_1	l_2	l_3	l_4	d_2	l_5	l_6 min.	l_6 max.	w_1	Weight kg
R3850.006-ZP	M 6	110	74	50	50	10	77.0	151	231	8.0	0.09
R3850.008-ZP	M 8	110	80	60	52	11	98.0	172	253	10.0	0.15
R3850.010-ZP	M10	125	95	73	59	15	116.5	212	297	12.5	0.26
R3850.012-ZP	M12	125	107	90	66	17	146.0	264	344	16.0	0.40
R3850.016-ZP	M16	170	146	100	85	22	165.0	311	421	16.0	0.95
R3850.020-ZP	M20	200	170	105	100	24	180.0	350	480	18.0	1.64
R3850.024-ZP	M24	255	213	135	120	33	225.0	439	609	30.0	2.85
R3850.030-ZP	M30	255	255	140	135	39	255.0	511	671	30.0	4.11
R3850.036-ZP	M36	295	260	170	140	37	300.0	561	741	32.0	7.45





R3836

Material
Stainless steel (A4).

Technical Notes
To DIN 1480 stub end.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

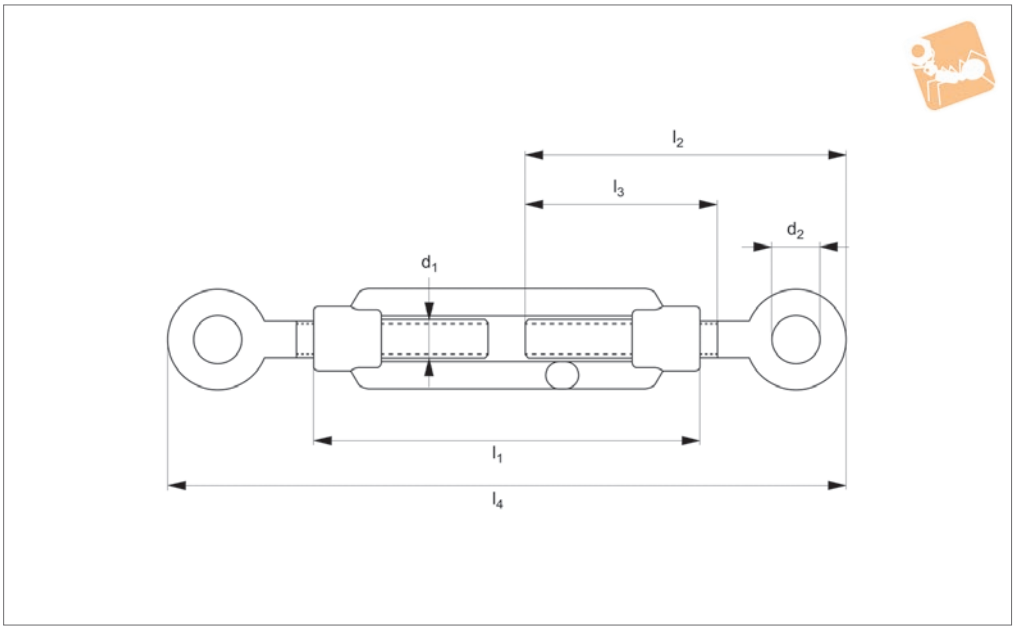
Only suitable for use in tension.

Order No.	d_1	l_1	l_2	l_3	l_4 min.	l_4 max.	Weight kg
R3836.006-A4	M 6	110	60	120	240	320	0.10
R3836.008-A4	M 8	110	65	120	240	315	0.16
R3836.010-A4	M10	125	75	150	301	386	0.30
R3836.012-A4	M12	125	75	150	301	381	0.40
R3836.016-A4	M16	170	100	200	400	510	0.96
R3836.020-A4	M20	200	120	220	440	570	1.74
R3836.024-A4	M24	255	150	260	521	691	2.74

Eye End Turnbuckles
stainless steel



R3842



Material
Stainless steel (A4).

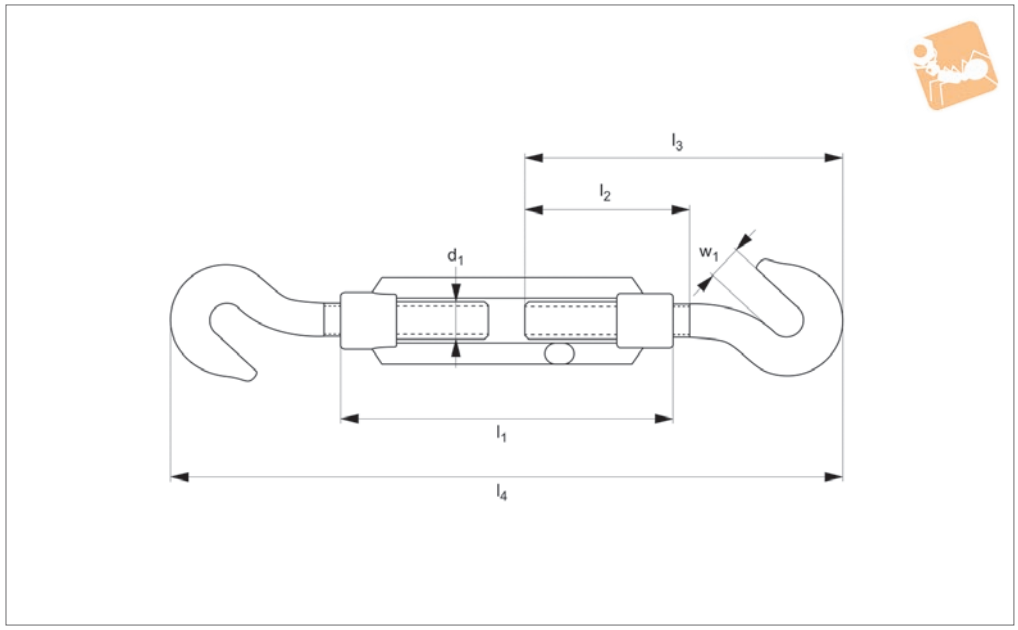
Technical Notes
To DIN 1480 eye to eye.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

Only suitable for use in tension.

Order No.	d_1	d_2	l_1	l_2	l_3	l_4 min.	l_4 max.	Weight kg
R3842.006-A4	M 6	10	110	74	50	148	228	0.09
R3842.008-A4	M 8	11	110	80	52	160	235	0.14
R3842.010-A4	M10	15	125	95	59	191	276	0.25
R3842.012-A4	M12	17	125	107	66	215	295	0.37
R3842.016-A4	M16	22	170	146	85	292	402	0.90
R3842.020-A4	M20	24	200	170	100	340	470	1.62





R3846

Material
Stainless steel (A4).

Technical Notes
To DIN 1480 hook to hook.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

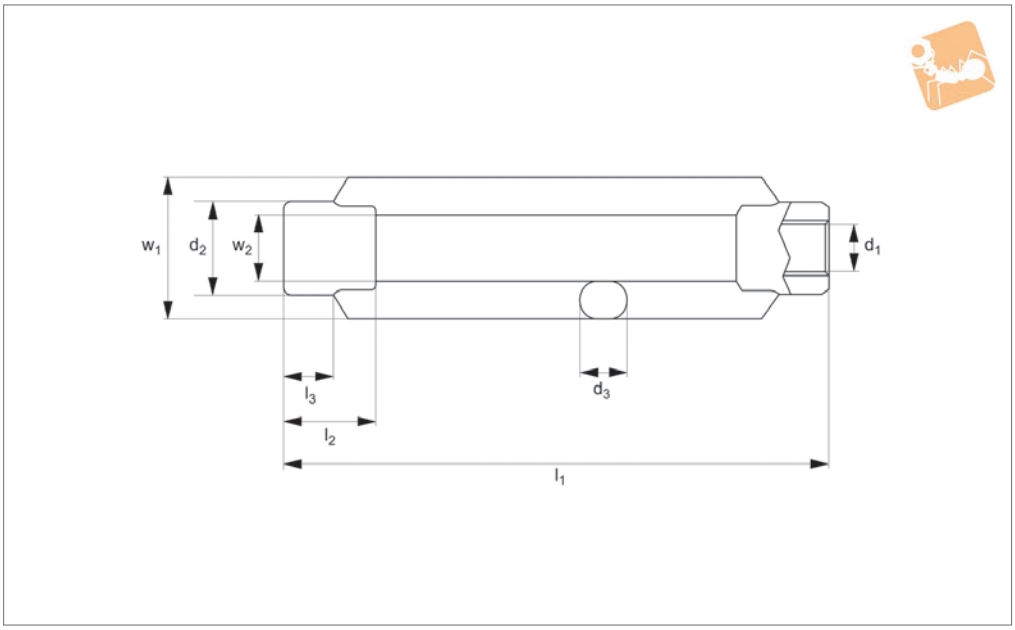
Only suitable for use in tension.

Order No.	d_1	l_1	l_2	l_3	l_4 min.	l_4 max.	w_1	Weight kg
R3846.006-A4	M 6	110	50	77.0	154	234	8.0	0.09
R3846.008-A4	M 8	110	60	98.0	196	271	10.0	0.16
R3846.010-A4	M10	125	73	116.5	233	318	12.5	0.27
R3846.012-A4	M12	125	90	146.0	293	373	16.0	0.42
R3846.016-A4	M16	170	100	165.0	330	440	16.0	1.00

Turnbuckles
stainless steel



R3832



Material
Stainless steel (A4).

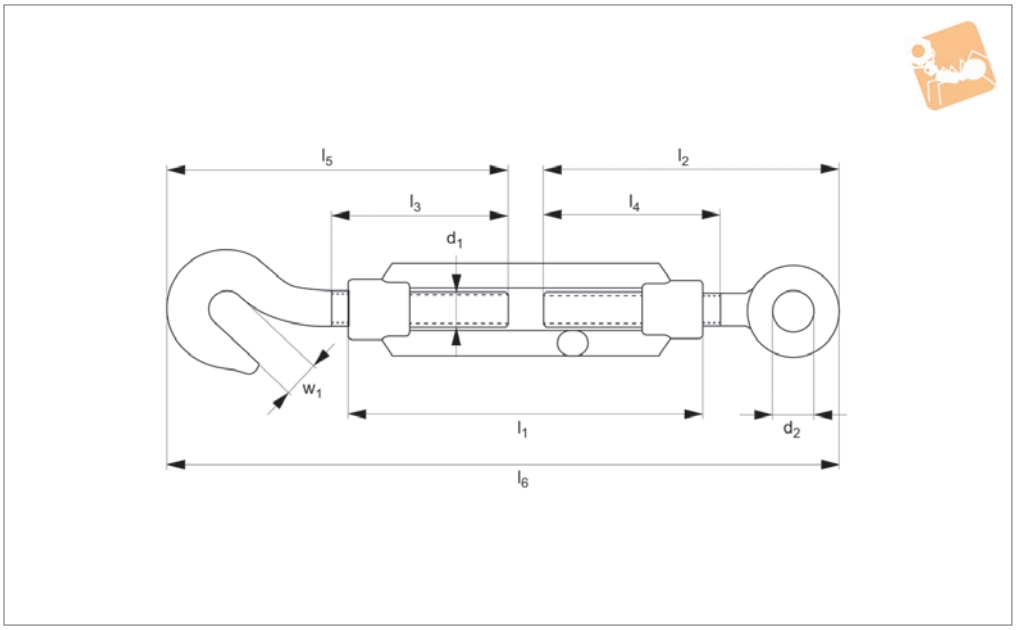
Technical Notes
To DIN 1480.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

Only suitable for use in tension.

Order No.	d_1	d_2	d_3	l_1	l_2	l_3	w_1	w_2	Adjustment	Weight kg
R3832.050-070-A4	M 5	-	-	70	-	-	-	-	-	
R3832.060-110-A4	M 6	12	6	110	12	6	19	9	80	0.06
R3832.060-090-A4	M 6	8	6	90	12	6	19	9	80	0.06
R3832.080-110-A4	M 8	15	8	110	15	8	23	11	75	0.09
R3832.100-125-A4	M10	18	9	125	18	9	30	14	85	0.15
R3832.100-150-A4	M10	16	9	150	18	9	30	14	85	0.15
R3832.120-125-A4	M12	21	11	125	21	11	34	16	80	0.20
R3832.120-200-A4	M12	18	11	200	21	11	34	16	80	0.20
R3832.160-170-A4	M16	27	14	170	27	14	42	20	110	0.44
R3832.160-250-A4	M16	26	14	250	27	14	42	20	110	0.44
R3832.200-200-A4	M20	34	17	200	34	17	52	24	130	0.44
R3832.200-300-A4	M20	30	17	300	34	17	52	24	130	0.44
R3832.240-255-A4	M24	39	20	255	39	20	60	28	170	1.20





R3852

Material
Stainless steel (A4).

Technical Notes
To DIN 1480 hook & eye.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
Turnbuckles are not to be used for lifting.

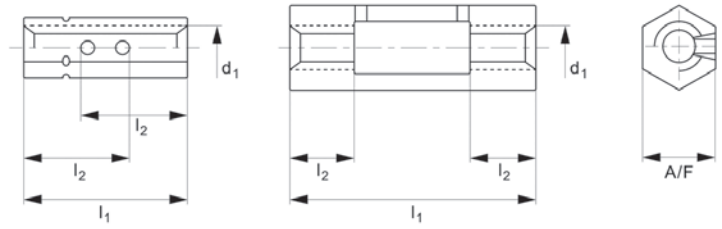
Only suitable for use in tension.

Order No.	d_1	d_2	l_1	l_2	l_3	l_4	l_5	l_6 min.	w_1	Weight kg
R3852.006-A4	M 6	10	110	74	50	50	77.0	151	8.0	0.09
R3852.008-A4	M 8	11	110	80	52	60	98.0	178	10.0	0.15
R3852.010-A4	M10	15	125	95	59	73	116.5	212	12.5	0.26
R3852.012-A4	M12	17	125	107	66	90	146.0	264	16.0	0.40
R3852.016-A4	M16	22	170	146	85	100	165.0	311	16.0	0.95

Hexagonal Body Turnbuckles
steel



R3825



Material
Steel (1.0037), zinc-plated.
Hot dip galvanized, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3804.006-FZ.

Technical Notes
To DIN 1479.

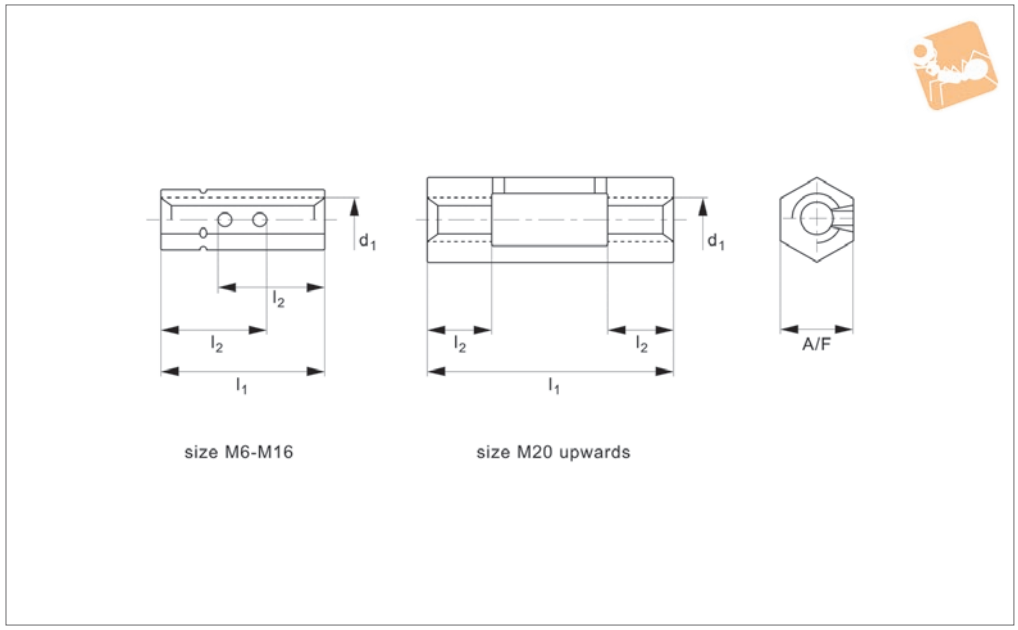
Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
L2 dimension indicates the length of thread from each end that has been overcut.
This means you can screw from one end a total of length l2. Please note if screwing in from both ends the length of thread is half l2.
Sizes M6-M16, have overlapping thread, from M20 middle part is relieved.

Turnbuckles are not to be used for lifting. Only suitable for use in tension.

Order No.	d_1	l_1	l_2	A/F	Adjustment	Weight kg
R3825.006-ZP	M 6	30	22.5	10	15	0.02
R3825.008-ZP	M 8	35	25.0	13	15	0.03
R3825.010-ZP	M10	45	33.0	16	21	0.06
R3825.012-ZP	M12	55	40.0	18	25	0.09
R3825.016-ZP	M16	75	55.0	24	35	0.18
R3825.020-ZP	M20	95	24.0	30	47	0.32
R3825.024-ZP	M24	115	29.0	36	57	0.53
R3825.030-ZP	M30	125	36.0	46	53	1.08

Hexagonal Body Turnbuckles
stainless steel





R3826

Material
Stainless steel (A4).

Technical Notes
To DIN 1479.

Tips
Turnbuckles consist of a metal frame with right hand thread one end and left hand thread the other end. Used for tensioning by rotating turnbuckle body without twisting attached rope or cable.

Important Notes
L2 dimension indicates the length of thread from each end that has been overcut.
This means you can screw from one end a total of length l2. Please note if screwing in from both ends the length of thread is half l2.
Sizes M6-M16, have overlapping thread, from M20 middle part is relieved.

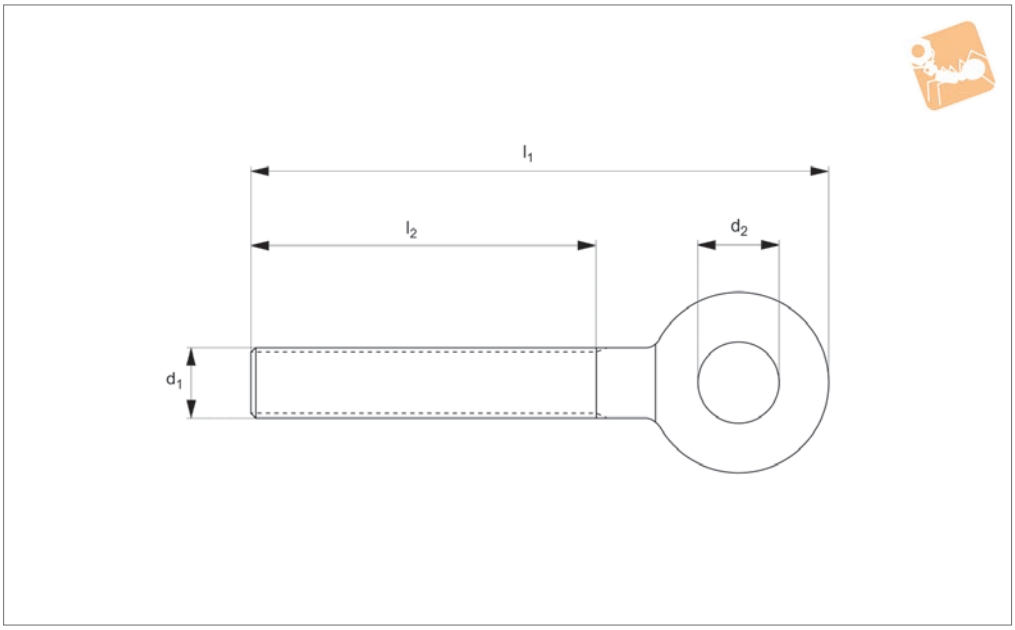
Turnbuckles are not to be used for lifting. Only suitable for use in tension.

Order No.	d_1	l_1	l_2	A/F	Adjustment	Weight kg
R3826.006-A4	M 6	30	22.5	10	15	0.02
R3826.008-A4	M 8	35	25.0	13	15	0.03
R3826.010-A4	M10	45	33.0	16	21	0.06
R3826.012-A4	M12	55	40.0	18	25	0.09
R3826.016-A4	M16	75	55.0	24	35	0.18
R3826.020-A4	M20	95	24.0	30	47	0.32
R3826.024-A4	M24	115	29.0	36	57	0.53
R3826.030-A4	M30	125	36.0	46	53	1.08

Eyes for Turnbuckles
steel



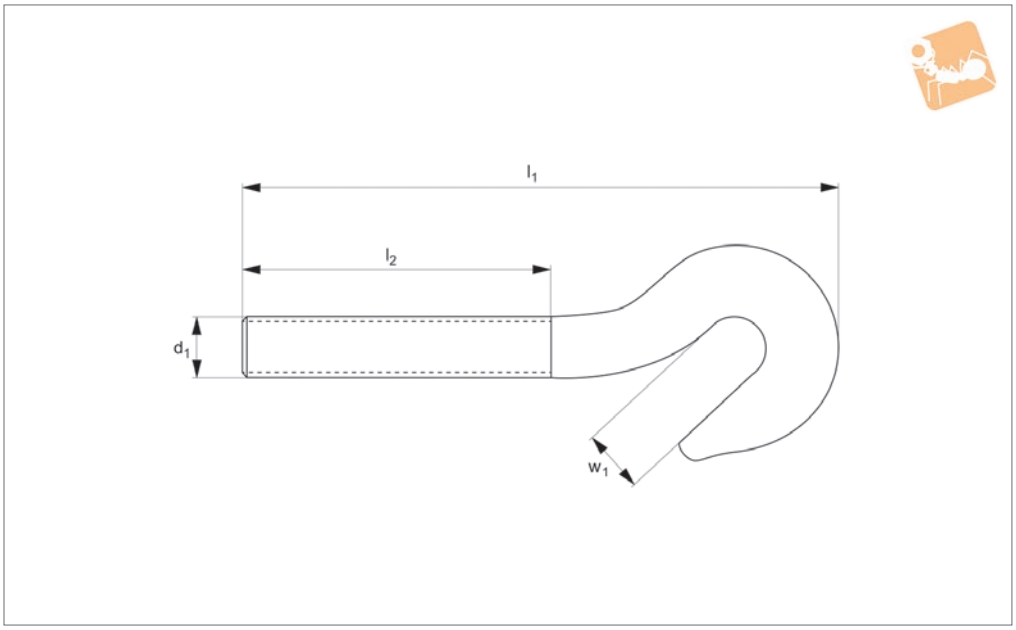
R3860



Material
Steel (1.0037), zinc-plated.
Hot dip galvanized version, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3860.R006-FZ.

Important Notes
Turnbuckles are not to be used for lifting.
Only suitable for use in tension.

Order No.	Thread hand	d_1	d_2	l_1	l_2	Weight kg
R3860.R006-ZP	Right	M 6	10	74	50	0.015
R3860.R008-ZP	Right	M 8	11	80	52	0.030
R3860.R010-ZP	Right	M10	15	95	59	0.050
R3860.R012-ZP	Right	M12	17	107	66	0.085
R3860.R014-ZP	Right	M14	18	158	85	0.130
R3860.R016-ZP	Right	M16	22	146	85	0.210
R3860.R020-ZP	Right	M20	24	170	100	0.380
R3860.R022-ZP	Right	M22	30	203	123	0.580
R3860.R024-ZP	Right	M24	33	213	134	0.830
R3860.R030-ZP	Right	M30	39	255	150	1.400
R3860.R036-ZP	Right	M36	37	260	150	2.180
R3860.R042-ZP	Right	M42	48	285	165	3.190
R3860.R048-ZP	Right	M48	58	335	185	4.970
R3860.L006-ZP	Left	M 6	10	74	50	0.015
R3860.L008-ZP	Left	M 8	11	80	52	0.030
R3860.L010-ZP	Left	M10	15	95	59	0.050
R3860.L012-ZP	Left	M12	17	107	66	0.085
R3860.L014-ZP	Left	M14	18	158	85	0.130
R3860.L016-ZP	Left	M16	22	146	85	0.210
R3860.L020-ZP	Left	M20	24	170	100	0.380
R3860.L022-ZP	Left	M22	30	203	123	0.580
R3860.L024-ZP	Left	M24	33	213	134	0.830
R3860.L030-ZP	Left	M30	39	255	150	1.400
R3860.L036-ZP	Left	M36	37	260	150	2.180
R3860.L042-ZP	Left	M42	48	285	165	3.190
R3860.L048-ZP	Left	M48	58	335	185	4.970





R3862

Material
Steel (1.0037).
Hot dip galvanized version, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3862.R006-FZ.

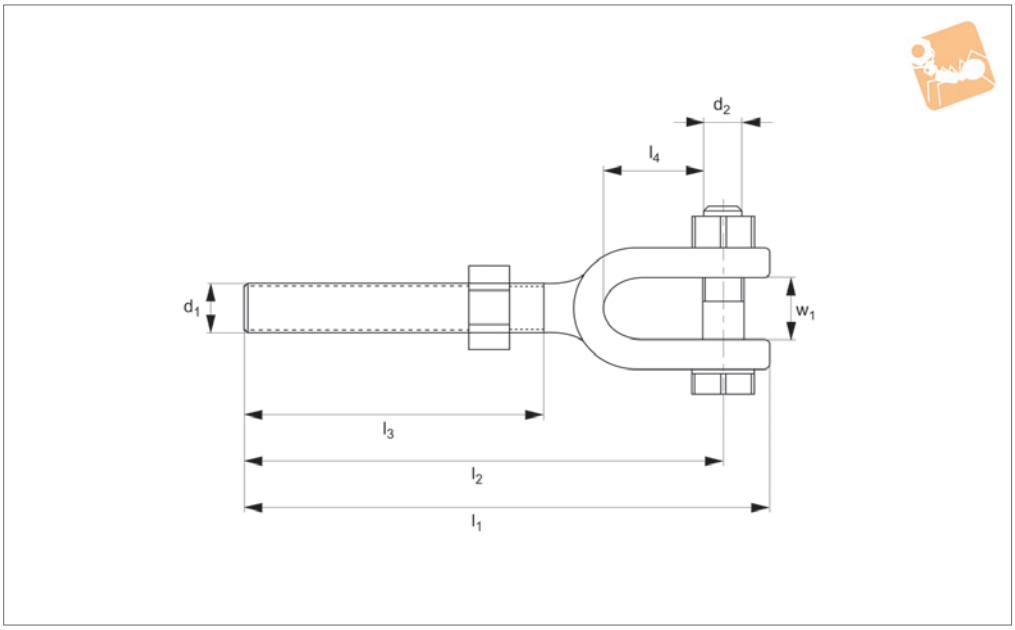
Important Notes
Turnbuckles are not to be used for lifting.
Only suitable for use in tension.

Order No.	Thread hand	d_1	l_1	l_2	w_1	S.W.L. kg	Weight kg
R3862.R006-ZP	Right	M 6	77.0	50	9.5	75	0.016
R3862.R008-ZP	Right	M 8	98.0	60	11.0	165	0.034
R3862.R010-ZP	Right	M10	116.5	73	14.0	235	0.060
R3862.R012-ZP	Right	M12	146.0	90	18.0	320	0.113
R3862.R014-ZP	Right	M14	140.0	80	16.0	420	0.170
R3862.R016-ZP	Right	M16	165.0	100	19.0	530	0.275
R3862.R020-ZP	Right	M20	180.0	105	21.0	730	0.440
R3862.R022-ZP	Right	M22	215.0	120	26.0	1120	0.685
R3862.R024-ZP	Right	M24	225.0	135	29.0	1550	0.765
R3862.R030-ZP	Right	M30	225.0	140	31.0	2240	1.325
R3862.R036-ZP	Right	M36	300.0	170	35.0	3530	2.285
R3862.L006-ZP	Left	M 6	77.0	50	9.5	75	0.016
R3862.L008-ZP	Left	M 8	98.0	60	11.0	165	0.034
R3862.L010-ZP	Left	M10	116.5	73	14.0	235	0.060
R3862.L012-ZP	Left	M12	146.0	90	18.0	320	0.113
R3862.L014-ZP	Left	M14	140.0	80	16.0	420	0.170
R3862.L016-ZP	Left	M16	165.0	100	19.0	530	0.275
R3862.L020-ZP	Left	M20	180.0	105	21.0	730	0.440
R3862.L022-ZP	Left	M22	215.0	120	26.0	1120	0.685
R3862.L024-ZP	Left	M24	225.0	135	29.0	1550	0.765
R3862.L030-ZP	Left	M30	225.0	140	31.0	2240	1.325
R3862.L036-ZP	Left	M36	300.0	170	35.0	3530	2.285

Jaws for Turnbuckles
steel



R3864

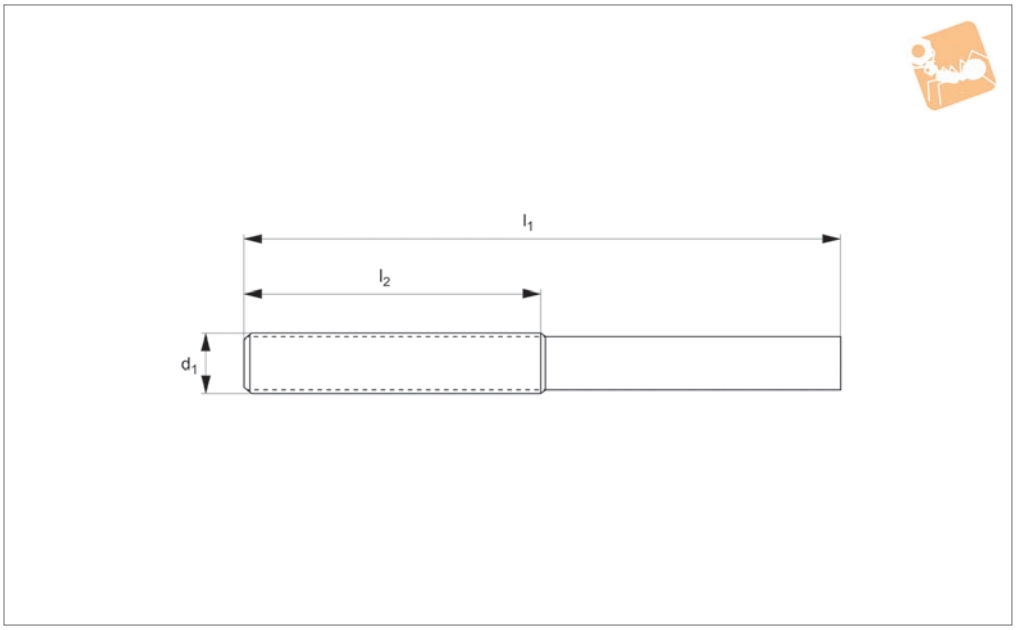


Material
Steel (C45, 1.0503), zinc-plated.
Hot dip galvanized version, above M12 available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3864.R008-FZ.

Important Notes
Turnbuckles are not to be used for lifting.

Only suitable for use in tension.

Order No.	Thread hand	d_1	d_2	l_1	l_2	l_3	l_4	w_1	Weight kg
R3864.R008-ZP	Right	M 8	8.5	125	116	68	28.75	9.0	0.095
R3864.R010-ZP	Right	M10	8.5	139	130	82	29.25	10.7	0.132
R3864.R012-ZP	Right	M12	10.5	160	150	90	44.75	15.5	0.215
R3864.R016-ZP	Right	M16	12.5	186	172	102	45.25	20.0	0.405
R3864.R020-ZP	Right	M20	17.0	205	185	115	59.50	23.5	0.812
R3864.R024-ZP	Right	M24	20.5	240	215	125	62.75	29.0	1.395
R3864.R030-ZP	Right	M30	25.0	290	255	150	89.50	34.0	2.690
R3864.L008-ZP	Left	M 8	8.5	125	116	68	28.75	9.0	0.095
R3864.L010-ZP	Left	M10	8.5	139	130	82	29.25	10.7	0.132
R3864.L012-ZP	Left	M12	10.5	160	150	90	44.75	15.5	0.215
R3864.L016-ZP	Left	M16	12.5	186	172	102	45.25	20.0	0.405
R3864.L020-ZP	Left	M20	17.0	205	185	115	59.50	23.5	0.812
R3864.L024-ZP	Left	M24	20.5	240	215	125	62.75	29.0	1.395
R3864.L030-ZP	Left	M30	25.0	290	255	150	89.5	34.0	2.690





R3866

Material
Steel (1.0037 up to M36, above M36 1.0052).
Hot dip galvanized version, available on request providing increased protection against corrosion. Please add -FZ for hot dip galvanized, e.g. R3866.R006-FZ.

Technical Notes
To DIN 34828.

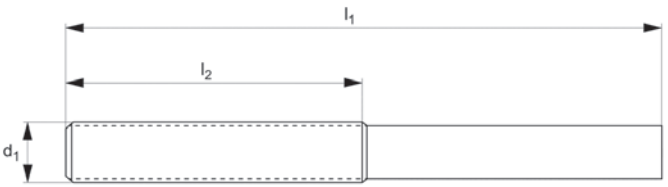
Important Notes
Turnbuckles are not to be used for lifting. Only suitable for use in tension.

Order No.	Thread hand	d	l_1	l_2	S.W.L. kg	Weight kg
R3866.R006-ZP	Right	M 6	120	60	0.02	0.02
R3866.R008-ZP	Right	M 8	120	65	0.04	0.04
R3866.R010-ZP	Right	M10	150	75	0.07	0.07
R3866.R012-ZP	Right	M12	150	75	0.11	0.11
R3866.R014-ZP	Right	M14	165	80	0.15	0.15
R3866.R016-ZP	Right	M16	200	100	0.26	0.26
R3866.R020-ZP	Right	M20	200	120	0.44	0.44
R3866.R024-ZP	Right	M24	260	150	0.76	0.76
R3866.R030-ZP	Right	M30	260	160	1.20	1.20
R3866.R036-ZP	Right	M36	300	180	2.10	2.10
R3866.R042-ZP	Right	M42	350	200	3.15	3.15
R3866.R048-ZP	Right	M48	380	220	4.60	4.60
R3866.R056-ZP	Right	M56	380	230	6.28	6.28
R3866.R064-ZP	Right	M64	425	300	9.16	9.16
R3866.R072-ZP	Right	M72	400	270	4.60	4.60
R3866.L006-ZP	Left	M 6	120	60	0.02	0.02
R3866.L008-ZP	Left	M 8	120	65	0.04	0.04
R3866.L010-ZP	Left	M10	150	75	0.07	0.07
R3866.L012-ZP	Left	M12	150	75	0.11	0.11
R3866.L014-ZP	Left	M14	165	80	0.15	0.15
R3866.L016-ZP	Left	M16	200	100	0.26	0.26
R3866.L020-ZP	Left	M20	200	120	0.44	0.44
R3866.L024-ZP	Left	M24	260	150	0.76	0.76
R3866.L030-ZP	Left	M30	260	160	1.20	1.20
R3866.L036-ZP	Left	M36	300	180	2.10	2.10
R3866.L042-ZP	Left	M42	350	200	3.15	3.15
R3866.L048-ZP	Left	M48	380	220	4.60	4.60
R3866.L056-ZP	Left	M56	380	230	6.28	6.28
R3866.L064-ZP	Left	M64	425	300	9.16	9.16
R3866.L072-ZP	Left	M72	400	270	4.60	4.60

Welding Studs
stainless steel



R3868

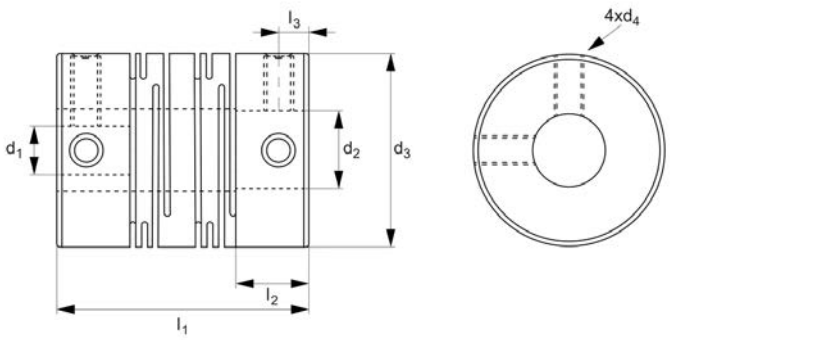


Material
Stainless steel (A4).

Technical Notes
To DIN 34828.

Important Notes
Turnbuckles are not to be used for lifting.
Only suitable for use in tension.

Order No.	Thread hand	d_1	l_1	l_2	Weight kg
R3868.R006-A4	Right	M 6	120	60	0.02
R3868.R008-A4	Right	M 8	120	65	0.04
R3868.R010-A4	Right	M10	150	75	0.07
R3868.R012-A4	Right	M12	150	75	0.11
R3868.R014-A4	Right	M14	165	80	0.15
R3868.R016-A4	Right	M16	200	100	0.26
R3868.R020-A4	Right	M20	220	120	0.44
R3868.R024-A4	Right	M24	260	150	0.76
R3868.R030-A4	Right	M30	260	160	1.20
R3868.R036-A4	Right	M36	300	180	2.10
R3868.L006-A4	Left	M 6	120	60	0.02
R3868.L008-A4	Left	M 8	120	65	0.04
R3868.L010-A4	Left	M10	150	75	0.07
R3868.L012-A4	Left	M12	150	75	0.11
R3868.L014-A4	Left	M14	165	80	0.15
R3868.L016-A4	Left	M16	200	100	0.26
R3868.L020-A4	Left	M20	220	120	0.44
R3868.L024-A4	Left	M24	260	150	0.76
R3868.L030-A4	Left	M30	260	160	1.20
R3868.L036-A4	Left	M36	300	180	2.10





R3003

Material
Stainless steel 1.4435 (AISI 316L)

Technical Notes
One piece construction, no mechanical joints.
No backlash.
Constant velocity.
Torsionally rigid.
High flexibility.
Temperature range -40°C to +120°C.
Central relief diameter may be smaller than bore in some cases.

Max Torque:
Select the size where max.torque exceeds the application target service factor.
Service Factors:
Shock + reversing = 2
Non reversing = 1,5
Steady load = 1

Max. rpm = 5,000

Torsional stiffness:
based on - bore diameter of minimum D_2 for size at load of (max torque/2).

Tips
Suitable for:
encoders, stepper motors, precision ball screws, robotics, scientific equipment, measuring systems, medical systems, pumps, servo systems etc.

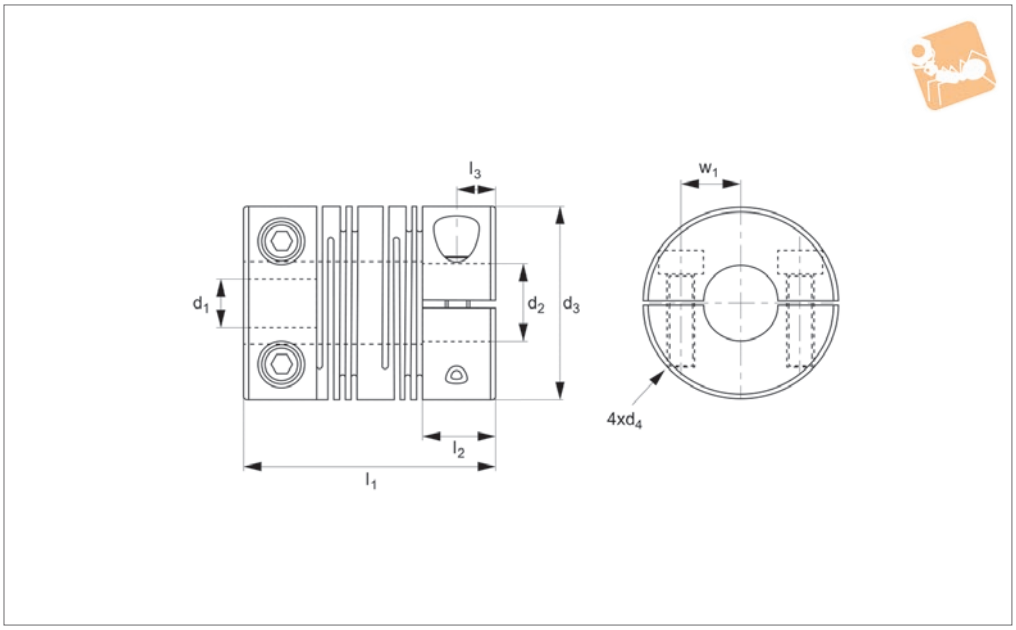
Order No.	d_1	d_2	d_3	d_4	l_1	l_2	n	Ang. offset	Par. offset mm	Torque Nm max.	Tors. stiffness Nm/rad	Weight g
R3003.A02-03	1.9	3	9.5	M2,5	22.9	2	5.3	3°	0.12	1	4	8
R3003.A02-04	1.9	4	9.5	M2,5	22.9	2	5.3	3°	0.12	1	4	8
R3003.A03-03	1.9	3	9.5	M2,5	22.9	3	5.3	3°	0.12	1	4	8
R3003.A03-04	1.9	3	9.5	M2,5	22.9	3	5.3	3°	0.12	1	4	8
R3003.A04-04	1.9	3	9.5	M2,5	22.9	3	5.3	3°	0.12	1	4	8
R3003.B03-04	2.8	4	12.7	M3	25.4	3	6.5	5°	0.17	3	20	18
R3003.B03-05	2.8	5	12.7	M3	25.4	3	6.5	5°	0.17	3	20	18
R3003.B03-06	2.8	6	12.7	M3	25.4	3	6.5	5°	0.17	3	20	18
R3003.B04-04	2.8	4	12.7	M3	25.4	4	6.5	5°	0.17	3	20	18
R3003.B04-05	2.8	5	12.7	M3	25.4	4	6.5	5°	0.17	3	20	18
R3003.B04-06	2.8	6	12.7	M3	25.4	4	6.5	5°	0.17	3	20	18
R3003.B05-05	2.8	5	12.7	M3	25.4	5	6.5	5°	0.17	3	20	18
R3003.B05-06	2.8	6	12.7	M3	25.4	5	6.5	5°	0.17	3	20	18
R3003.B06-06	2.8	6	12.7	M3	25.4	6	6.5	5°	0.17	3	20	18
R3003.C03-06	2.8	6	15.9	M4	25.4	3	6.5	5°	0.20	5	36	24
R3003.C03-08	2.8	8	15.9	M4	25.4	3	6.5	5°	0.20	5	36	24
R3003.C04-05	2.8	5	15.9	M4	25.4	4	6.5	5°	0.20	5	36	24
R3003.C04-06	2.8	6	15.9	M4	25.4	4	6.5	5°	0.20	5	36	24
R3003.C04-08	2.8	8	15.9	M4	25.4	4	6.5	5°	0.20	5	36	24
R3003.C05-05	2.8	5	15.9	M4	25.4	5	6.5	5°	0.20	5	36	24
R3003.C05-06	2.8	6	15.9	M4	25.4	5	6.5	5°	0.20	5	36	24
R3003.C05-08	2.8	8	15.9	M4	25.4	5	6.5	5°	0.20	5	36	24
R3003.C06-06	2.8	6	15.9	M4	25.4	6	6.5	5°	0.20	5	36	24
R3003.C06-08	2.8	8	15.9	M4	25.4	6	6.5	5°	0.20	5	36	24

Beamed Coupling - six beam

stainless steel, set screw type



Order No.	d_1	d_2	d_3	d_4	l_1	l_2	n	Ang. offset	Par. offset mm	Torque Nm max.	Tors. stiffness Nm/rad	Weight g
R3003.C08-08	2.8	8	15.9	M4	25.4	8	6.5	5°	0.20	5	36	24
R3003.D05-06	4.4	6	19.1	M4	28.0	5	6.5	7°	0.25	8	112	46
R3003.D05-08	4.4	8	19.1	M4	28.0	5	6.5	7°	0.25	8	112	46
R3003.D05-10	4.4	10	19.1	M4	28.0	5	6.5	7°	0.25	8	112	46
R3003.D06-06	4.4	6	19.1	M4	28.0	6	6.5	7°	0.25	8	112	46
R3003.D06-08	4.4	8	19.1	M4	28.0	6	6.5	7°	0.25	8	112	46
R3003.D06-10	4.4	10	19.1	M4	28.0	6	6.5	7°	0.25	8	112	46
R3003.D08-08	4.4	8	19.1	M4	28.0	8	6.5	7°	0.25	8	112	46
R3003.D08-10	4.4	8	19.1	M4	28.0	8	6.5	7°	0.25	8	112	46
R3003.D10-10	4.4	10	19.1	M4	28.0	10	6.5	7°	0.25	8	112	46
R3003.E06-08	5.8	8	25.4	M5	38.1	6	11	7°	0.37	16	158	120
R3003.E06-10	5.8	10	25.4	M5	38.1	6	11	7°	0.37	16	158	120
R3003.E06-12	5.8	12	25.4	M5	38.1	6	11	7°	0.37	16	158	120
R3003.E08-08	5.8	8	25.4	M5	38.1	8	11	7°	0.37	16	158	120
R3003.E08-10	5.8	10	25.4	M5	38.1	8	11	7°	0.37	16	158	120
R3003.E08-12	5.8	12	25.4	M5	38.1	8	11	7°	0.37	16	158	120
R3003.E10-10	5.8	10	25.4	M5	38.1	10	11	7°	0.37	16	158	120
R3003.E10-12	5.8	12	25.4	M5	38.1	10	11	7°	0.37	16	158	120
R3003.E12-12	5.8	12	25.4	M5	38.1	12	11	7°	0.37	16	158	120





R3004

Material
Anodized aluminium (DIN 1725), black.

Technical Notes
One piece construction, no mechanical joints.
No backlash.
Constant velocity.
Torsionally rigid.
High flexibility.
Temperature range -40°C to +120°C.
Central relief diameter may be smaller than bore in some cases.

Max Torque:
Select the size where max.torque exceeds the application target service factor.
Service Factors:
Shock + reversing = 2
Non reversing = 1,5
Steady load = 1

Max. rpm = 5,000

Torsional stiffness:
based on - bore diameter of minimum D_2 for size at load of (max torque/2).

Tips
Suitable for:
encoders, stepper motors, precision ball screws, robotics, scientific equipment, measuring systems, medical systems, pumps, servo systems etc.

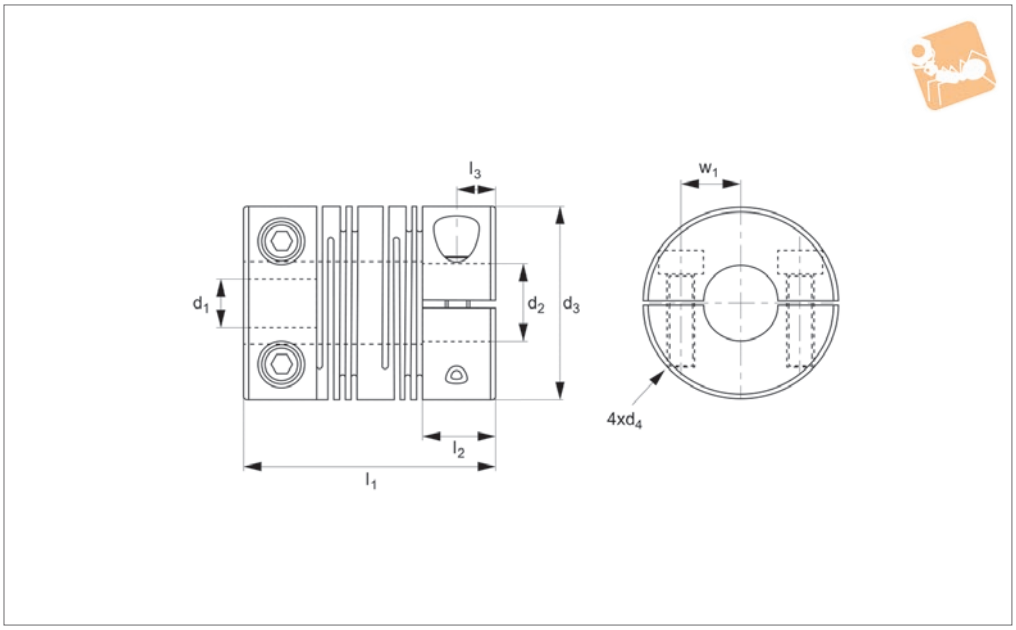
Order No.	d_1	d_2	d_3	d_4	l_1	l_2	Ang. offset	Par. offset mm	Torque Nm max.	Tors. stiffness Nm/rad	Weight g
R3004.A02-03	2	3	9.5	M1,6	19.6	5.3	3°	0.12	1	2	3
R3004.A02-04	2	4	9.5	M1,6	19.6	5.3	3°	0.12	1	2	3
R3004.A03-03	2	4	9.5	M1,6	19.6	5.3	3°	0.12	1	2	3
R3004.A03-04	3	4	9.5	M1,6	19.6	5.3	3°	0.12	1	2	3
R3004.A04-04	4	4	9.5	M1,6	19.6	5.3	3°	0.12	1	2	3
R3004.B03-04	3	4	12.7	M2,0	22.9	6.5	5°	0.17	2	14	7
R3004.B03-05	3	5	12.7	M2,0	22.9	6.5	5°	0.17	2	14	7
R3004.B03-06	3	6	12.7	M2,0	22.9	6.5	5°	0.17	2	14	7
R3004.B04-04	4	4	12.7	M2,0	22.9	6.5	5°	0.17	2	14	7
R3004.B04-05	4	5	12.7	M2,0	22.9	6.5	5°	0.17	2	14	7
R3004.B04-06	4	6	12.7	M2,0	22.9	6.5	5°	0.17	2	14	7
R3004.B05-05	5	6	12.7	M2,0	22.9	6.5	5°	0.17	2	14	7
R3004.B05-06	5	6	12.7	M2,0	22.9	6.5	5°	0.17	2	14	7
R3004.B06-06	6	6	12.7	M2,0	22.9	6.5	5°	0.17	2	14	7
R3004.C03-05	3	5	15.9	M2,5	25.4	6.5	5°	0.2	3.4	33	9
R3004.C03-06	3	6	15.9	M2,5	25.4	6.5	5°	0.2	3.4	33	9
R3004.C03-08	3	8	15.9	M2,5	25.4	6.5	5°	0.2	3.4	33	9
R3004.C04-05	4	5	15.9	M2,5	25.4	6.5	5°	0.2	3.4	33	9
R3004.C04-06	4	6	15.9	M2,5	25.4	6.5	5°	0.2	3.4	33	9
R3004.C04-08	4.8	8	15.9	M2,5	25.4	6.5	5°	0.2	3.4	33	9
R3004.C05-05	5	5	15.9	M2,5	25.4	6.5	5°	0.2	3.4	33	9
R3004.C05-06	5	6	15.9	M2,5	25.4	6.5	5°	0.2	3.4	33	9
R3004.C05-08	5	8	15.9	M2,5	25.4	6.5	5°	0.2	3.4	33	9
R3004.C06-06	6	6	15.9	M2,5	25.4	6.5	5°	0.2	3.4	33	9

Beamed Coupling - six beam

aluminium - clamp type



Order No.	d_1	d_2	d_3	d_4	l_1	l_2	Ang. offset	Par. offset mm	Torque Nm max.	Tors. stiffness Nm/rad	Weight g
R3004.C06-08	6	8	15.9	M2,5	25.4	6.5	5°	0.2	3.4	33	9
R3004.C08-08	8	8	15.9	M2,5	25.4	6.5	5°	0.2	3.4	33	9
R3004.D05-06	5	6	19.1	M2,5	26.5	6.5	7°	0.25	5.3	57	18
R3004.D05-08	5	8	19.1	M2,5	26.5	6.5	7°	0.25	5.3	57	18
R3004.D05-10	5	10	19.1	M2,5	26.5	6.5	7°	0.25	5.3	57	18
R3004.D06-06	6	6	19.1	M2,5	26.5	6.5	7°	0.25	5.3	57	18
R3004.D06-08	6	8	19.1	M2,5	26.5	6.5	7°	0.25	5.3	57	18
R3004.D06-10	6	10	19.1	M2,5	26.5	6.5	7°	0.25	5.3	57	18
R3004.D08-08	8	8	19.1	M2,5	26.5	6.5	7°	0.25	5.3	57	18
R3004.D08-10	8	10	19.1	M2,5	26.5	6.5	7°	0.25	5.3	57	18
R3004.D10-10	10	10	19.1	M2,5	26.5	6.5	7°	0.25	5.3	57	18
R3004.E06-08	6	8	25.4	M3,0	38.1	11	7°	0.37	10	80	45
R3004.E06-10	6	10	25.4	M3,0	38.1	11	7°	0.37	10	80	45
R3004.E06-12	6	12	25.4	M3,0	38.1	11	7°	0.37	10	80	45
R3004.E08-08	8	8	25.4	M3,0	38.1	11	7°	0.37	10	80	45
R3004.E08-10	8	10	25.4	M3,0	38.1	11	7°	0.37	10	80	45
R3004.E08-12	8	12	25.4	M3,0	38.1	11	7°	0.37	10	80	45
R3004.E10-10	10	10	25.4	M3,0	38.1	11	7°	0.37	10	80	45
R3004.E10-12	10	12	25.4	M3,0	38.1	11	7°	0.37	10	80	45
R3004.E12-12	12	12	25.4	M3,0	38.1	11	7°	0.37	10	80	45





R3005

Material
Stainless steel 1.4435 (AISI 316L)

Technical Notes
One piece construction, no mechanical joints.
No backlash.
Constant velocity.
Torsionally rigid.
High flexibility.
Temperature range -40°C to +120°C.
Central relief diameter may be smaller than bore in some cases.

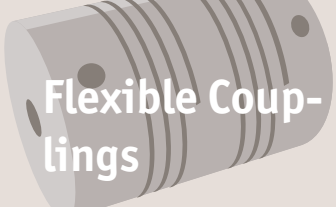
Max Torque:
Select the size where max.torque exceeds the application target service factor.
Service Factors:
Shock + reversing = 2
Non reversing = 1,5
Steady load = 1

Max. rpm = 5,000

Torsional stiffness:
based on - bore diameter of minimum D_2 for size at load of (max torque/2).

Tips
Suitable for:
encoders, stepper motors, precision ball screws, robotics, scientific equipment, measuring systems, medical systems, pumps, servo systems etc.

Order No.	d_1	d_2	d_3	d_4	l_1	l_2	n	Ang. offset	Par. offset mm	Torque Nm max.	Tors. stiffness Nm/rad	Weight g
R3005.B03-04	2.8	3	12.7	M2,0	25.4	4	6.5	5°	0.17	3	20	18
R3005.B03-05	2.8	3	12.7	M2,0	25.4	5	6.5	5°	0.17	3	20	18
R3005.B03-06	2.8	3	12.7	M2,0	25.4	6	6.5	5°	0.17	3	20	18
R3005.B04-04	2.8	4	12.7	M2,0	25.4	4	6.5	5°	0.17	3	20	18
R3005.B04-05	2.8	4	12.7	M2,0	25.4	5	6.5	5°	0.17	3	20	18
R3005.B04-06	2.8	4	12.7	M2,0	25.4	6	6.5	5°	0.17	3	20	18
R3005.B05-05	2.8	5	12.7	M2,0	25.4	5	6.5	5°	0.17	3	20	18
R3005.B05-06	2.8	5	12.7	M2,0	25.4	6	6.5	5°	0.17	3	20	18
R3005.B06-06	2.8	6	12.7	M2,0	25.4	6	6.5	5°	0.17	3	20	18
R3005.C03-06	2.8	3	15.9	M2,5	25.4	6	6.5	5°	0.20	5	36	24
R3005.C03-08	2.8	3	15.9	M2,5	25.4	8	6.5	5°	0.20	5	36	24
R3005.C04-05	2.8	4	15.9	M2,5	25.4	5	6.5	5°	0.20	5	36	24
R3005.C04-06	2.8	4	15.9	M2,5	25.4	6	6.5	5°	0.20	5	36	24
R3005.C04-08	2.8	4	15.9	M2,5	25.4	8	6.5	5°	0.20	5	36	24
R3005.C05-05	2.8	5	15.9	M2,5	25.4	5	6.5	5°	0.20	5	36	24
R3005.C05-06	2.8	5	15.9	M2,5	25.4	6	6.5	5°	0.20	5	36	24
R3005.C05-08	2.8	5	15.9	M2,5	25.4	8	6.5	5°	0.20	5	36	24
R3005.C06-06	2.8	6	15.9	M2,5	25.4	6	6.5	5°	0.20	5	36	24
R3005.C06-08	2.8	6	15.9	M2,5	25.4	8	6.5	5°	0.20	5	36	24
R3005.C08-08	2.8	8	15.9	M2,5	25.4	8	6.5	5°	0.20	5	36	24
R3005.D05-06	4.4	5	19.1	M2,5	28	6	6.5	7°	0.25	8	112	46
R3005.D05-08	4.4	5	19.1	M2,5	28	8	6.5	7°	0.25	8	112	46
R3005.D05-10	4.4	5	19.1	M2,5	28	10	6.5	7°	0.25	8	112	46
R3005.D06-06	4.4	6	19.1	M2,5	28	6	6.5	7°	0.25	8	112	46

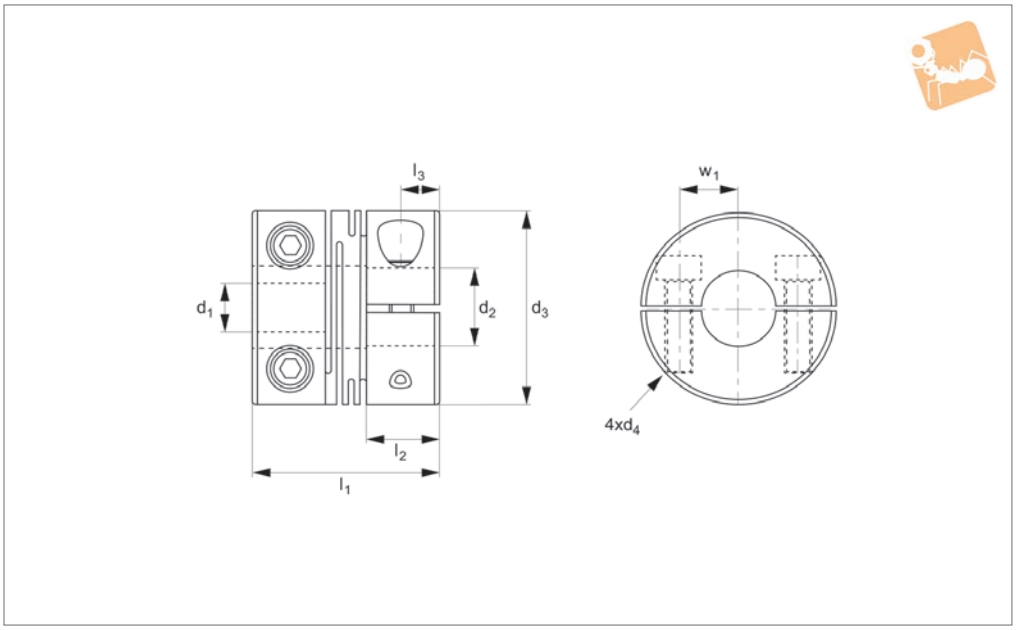


Beamed Coupling - six beam

stainless steel, clamp type



Order No.	d_1	d_2	d_3	d_4	l_1	l_2	n	Ang. offset	Par. offset mm	Torque Nm max.	Tors. stiffness Nm/rad	Weight g
R3005.D06-08	4.4	6	19.1	M2,5	28	8	6.5	7°	0.25	8	112	46
R3005.D06-10	4.4	6	19.1	M2,5	28	10	6.5	7°	0.25	8	112	46
R3005.D08-08	4.4	8	19.1	M2,5	28	8	6.5	7°	0.25	8	112	46
R3005.D08-10	4.4	8	19.1	M2,5	28	10	6.5	7°	0.25	8	112	46
R3005.D10-10	4.4	10	19.1	M2,5	28	10	6.5	7°	0.25	8	112	46
R3005.E06-08	5.8	6	25.4	M3,0	38.1	8	11	7°	0.37	16	158	120
R3005.E06-10	5.8	6	25.4	M3,0	38.1	10	11	7°	0.37	16	158	120
R3005.E06-12	5.8	6	25.4	M3,0	38.1	12	11	7°	0.37	16	158	120
R3005.E08-08	5.8	8	25.4	M3,0	38.1	8	11	7°	0.37	16	158	120
R3005.E08-10	5.8	8	25.4	M3,0	38.1	10	11	7°	0.37	16	158	120
R3005.E08-12	5.8	8	25.4	M3,0	38.1	12	11	7°	0.37	16	158	120
R3005.E10-10	5.8	10	25.4	M3,0	38.1	10	11	7°	0.37	16	158	120
R3005.E10-12	5.8	10	25.4	M3,0	38.1	12	11	7°	0.37	16	158	120
R3005.E12-12	5.8	12	25.4	M3,0	38.1	12	11	7°	0.37	16	158	120





R3006

Material
Anodized aluminium (DIN 1725), black.

Technical Notes
One piece construction, no mechanical joints.
No backlash.
Constant velocity.
Torsionally rigid.
High flexibility.
Temperature range -40°C to +120°C.
Central relief diameter may be smaller than bore in some cases.

Max Torque:
Select the size where max.torque exceeds the application target service factor.
Service Factors:
Shock + reversing = 2
Non reversing = 1,5
Steady load = 1

Max. rpm = 5,000

Torsional stiffness:
based on - bore diameter of minimum D_2 for size at load of (max torque/2).

Tips
Suitable for:
encoders, stepper motors, precision ball screws, robotics, scientific equipment, measuring systems, medical systems, pumps, servo systems etc.

Order No.	d_1	d_2	d_3	d_4	l_1	l_2	n	Ang. offset	Par. offset mm	Torque Nm max.	Tors. stiffness Nm/rad	Weight g
R3006.A02-03	1.9	3	9.5	M2,5	14.2	2	4.5	3°	0.100	0.4	2	2
R3006.A02-04	1.9	4	9.5	M2,5	14.2	2	4.5	3°	0.100	0.4	2	2
R3006.A03-03	1.9	3	9.5	M2,5	14.2	3	4.5	3°	0.100	0.4	2	2
R3006.A03-04	1.9	4	9.5	M2,5	14.2	3	4.5	3°	0.100	0.4	2	2
R3006.A04-04	1.9	4	9.5	M2,5	14.2	4	4.5	3°	0.100	0.4	2	2
R3006.B03-04	2.8	4	12.7	M3	19.1	3	6.0	5°	0.127	0.9	36	5
R3006.B03-05	2.8	5	12.7	M3	19.1	3	6.0	5°	0.127	0.9	36	5
R3006.B03-06	2.8	6	12.7	M3	19.1	3	6.0	5°	0.127	0.9	36	5
R3006.B04-04	2.8	4	12.7	M3	19.1	4	6.0	5°	0.127	0.9	36	5
R3006.B04-05	2.8	5	12.7	M3	19.1	4	6.0	5°	0.127	0.9	36	5
R3006.B04-06	2.8	6	12.7	M3	19.1	4	6.0	5°	0.127	0.9	36	5
R3006.B05-05	2.8	5	12.7	M3	19.1	5	6.0	5°	0.127	0.9	36	5
R3006.B05-06	2.8	6	12.7	M3	19.1	5	6.0	5°	0.127	0.9	36	5
R3006.B06-06	2.8	6	12.7	M3	19.1	6	6.0	5°	0.127	0.9	36	5
R3006.C03-04	2.8	4	15.9	M4	20.3	3	6.5	5°	0.127	1.5	63	8
R3006.C03-05	2.8	5	15.9	M4	20.3	3	6.5	5°	0.127	1.5	63	8
R3006.C03-06	2.8	6	15.9	M4	20.3	3	6.5	5°	0.127	1.5	63	8
R3006.C03-08	2.8	8	15.9	M4	20.3	3	6.5	5°	0.127	1.5	63	8
R3006.C04-05	2.8	5	15.9	M4	20.3	4	6.5	5°	0.127	1.5	63	8
R3006.C04-06	2.8	6	15.9	M4	20.3	4	6.5	5°	0.127	1.5	63	8
R3006.C04-08	2.8	8	15.9	M4	20.3	4	6.5	5°	0.127	1.5	63	8
R3006.C05-05	2.8	5	15.9	M4	20.3	5	6.5	5°	0.127	1.5	63	8
R3006.C05-06	2.8	6	15.9	M4	20.3	5	6.5	5°	0.127	1.5	63	8
R3006.C05-08	2.8	8	15.9	M4	20.3	5	6.5	5°	0.127	1.5	63	8

Beamed Coupling - three beam

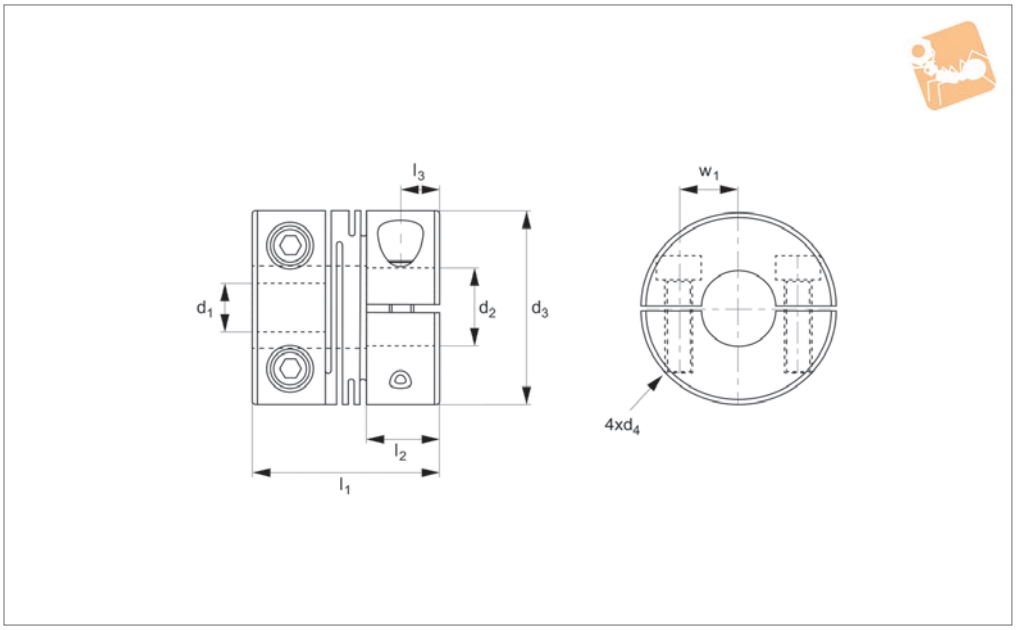
aluminium, set screw type



Order No.	d_1	d_2	d_3	d_4	l_1	l_2	n	Ang. offset	Par. offset mm	Torque Nm max.	Tors. stiffness Nm/rad	Weight g
R3006.C06-06	2.8	6	15.9	M4	20.3	6	6.5	5°	0.127	1.5	63	8
R3006.C06-08	2.8	8	15.9	M4	20.3	6	6.5	5°	0.127	1.5	63	8
R3006.C08-08	2.8	8	15.9	M4	20.3	8	6.5	5°	0.127	1.5	63	8
R3006.D03-05	2.8	5	19.1	M4	22.9	3	6.5	5°	0.127	2.5	50	15
R3006.D03-06	2.8	6	19.1	M4	22.9	3	6.5	5°	0.127	2.5	50	15
R3006.D03-08	2.8	8	19.1	M4	22.9	5	6.5	5°	0.127	2.5	50	15
R3006.D04-05	2.8	5	19.1	M4	22.9	4	6.5	5°	0.127	2.5	50	15
R3006.D04-06	2.8	6	19.1	M4	22.9	4	6.5	5°	0.127	2.5	50	15
R3006.D04-08	2.8	8	19.1	M4	22.9	4	6.5	5°	0.127	2.5	50	15
R3006.D05-05	2.8	5	19.1	M4	22.9	5	6.5	5°	0.127	2.5	50	15
R3006.D05-06	2.8	6	19.1	M4	22.9	5	6.5	5°	0.127	2.5	50	15
R3006.D05-08	2.8	8	19.1	M4	22.9	5	6.5	5°	0.127	2.5	50	15
R3006.D06-06	2.8	8	19.1	M4	22.9	5	6.5	5°	0.127	2.5	50	15
R3006.D06-08	2.8	8	19.1	M4	22.9	5	6.5	5°	0.127	2.5	50	15
R3006.D08-08	2.8	8	19.1	M4	22.9	5	6.5	5°	0.127	2.5	50	15
R3006.E05-06	4.8	6	25.4	M5	31.8	5	9	5°	0.127	4	104	40
R3006.E05-08	4.8	8	25.4	M5	31.8	5	9	5°	0.127	4	104	40
R3006.E05-10	4.8	10	25.4	M5	31.8	5	9	5°	0.127	4	104	40
R3006.E06-06	4.8	6	25.4	M5	31.8	6	9	5°	0.127	4	104	40
R3006.E06-08	4.8	8	25.4	M5	31.8	6	9	5°	0.127	4	104	40
R3006.E06-10	4.8	10	25.4	M5	31.8	6	9	5°	0.127	4	104	40
R3006.E08-08	4.8	8	25.4	M5	31.8	8	9	5°	0.127	4	104	40
R3006.E08-10	4.8	10	25.4	M5	31.8	8	9	5°	0.127	4	104	40
R3006.E10-10	4.8	10	25.4	M5	31.8	10	9	5°	0.127	4	104	40

Beamed Coupling - three beam

stainless steel, set screw type





R3007

Material
Stainless steel 1.4435 (AISI 316L)

Technical Notes
One piece construction, no mechanical joints.
No backlash.
Constant velocity.
Torsionally rigid.
High flexibility.
Temperature range -40°C to +120°C.
Central relief diameter may be smaller than bore in some cases.

Max Torque:
Select the size where max.torque exceeds the application target service factor.
Service Factors:
Shock + reversing = 2
Non reversing = 1,5
Steady load = 1

Max. rpm = 5,000

Torsional stiffness:
based on - bore diameter of minimum D_2 for size at load of (max torque/2).

Tips
Suitable for:
encoders, stepper motors, precision ball screws, robotics, scientific equipment, measuring systems, medical systems, pumps, servo systems etc.

Order No.	d_1	d_2	d_3	d_4	l_1	l_2	n	Ang. offset	Par. offset mm	Torque Nm max.	Tors. stiffness Nm/rad	Weight g
R3007.A02-03	1.9	3	9.5	M2,5	14.2	2	4.5	3°	0.100	0.4	4	5
R3007.A02-04	1.9	4	9.5	M2,5	14.2	2	4.5	3°	0.100	0.4	4	5
R3007.A03-03	1.9	3	9.5	M2,5	14.2	3	4.5	3°	0.100	0.4	4	5
R3007.A03-04	1.9	4	9.5	M2,5	14.2	3	4.5	3°	0.100	0.4	4	5
R3007.A04-04	1.9	4	9.5	M2,5	14.2	4	4.5	3°	0.100	0.4	4	5
R3007.B03-04	2.8	4	12.7	M3	19.1	3	6.0	5°	0.127	1.0	63	13
R3007.B03-05	2.8	5	12.7	M3	19.1	3	6.0	5°	0.127	1.0	63	13
R3007.B04-04	2.8	4	12.7	M3	19.1	4	6.0	5°	0.127	1.0	63	13
R3007.B04-05	2.8	5	12.7	M3	19.1	4	6.0	5°	0.127	1.0	63	13
R3007.B04-06	2.8	6	12.7	M3	19.1	4	6.0	5°	0.127	1.0	63	13
R3007.B05-05	2.8	5	12.7	M3	19.1	5	6.0	5°	0.127	1.0	63	13
R3007.C03-04	2.8	4	15.9	M4	20.3	3	6.0	5°	0.127	1.8	100	21
R3007.C03-05	2.8	5	15.9	M4	20.3	3	6.0	5°	0.127	1.8	100	21
R3007.C03-06	2.8	6	15.9	M4	20.3	3	6.0	5°	0.127	1.8	100	21
R3007.C04-04	2.8	4	15.9	M4	20.3	4	6.0	5°	0.127	1.8	100	21
R3007.C04-05	2.8	5	15.9	M4	20.3	4	6.0	5°	0.127	1.8	100	21
R3007.C04-06	2.8	6	15.9	M4	20.3	4	6.0	5°	0.127	1.8	100	21
R3007.C05-04	2.8	4	15.9	M4	20.3	5	6.0	5°	0.127	1.8	100	21
R3007.C05-05	2.8	5	15.9	M4	20.3	5	6.0	5°	0.127	1.8	100	21
R3007.C05-06	2.8	6	15.9	M4	20.3	5	6.0	5°	0.127	1.8	100	21
R3007.C06-06	2.8	6	15.9	M4	20.3	6	6.0	5°	0.127	1.8	100	21
R3007.D03-05	2.8	5	19.1	M4	22.9	3	6.5	5°	0.127	2.7	80	40
R3007.D03-06	2.8	6	19.1	M4	22.9	3	6.5	5°	0.127	2.7	80	40
R3007.D03-08	2.8	8	19.1	M4	22.9	3	6.5	5°	0.127	2.7	80	40

Beamed Coupling - three beam

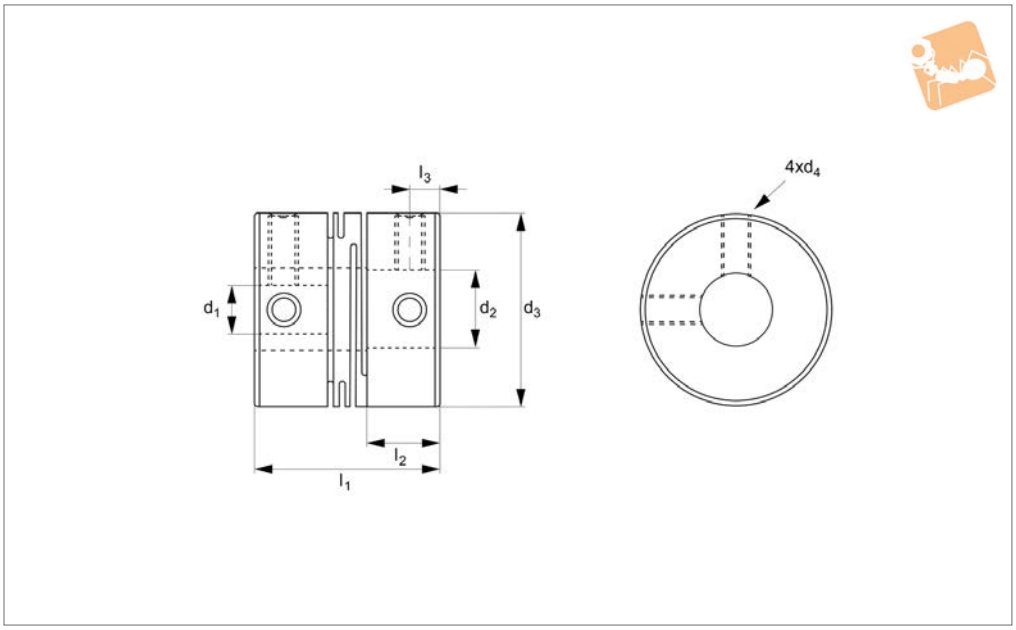
stainless steel, set screw type



Order No.	d_1	d_2	d_3	d_4	l_1	l_2	n	Ang. offset	Par. offset mm	Torque Nm max.	Tors. stiffness Nm/rad	Weight g
R3007.D04-05	2.8	5	19.1	M4	22.9	4	6.5	5°	0.127	2.7	80	40
R3007.D04-06	2.8	6	19.1	M4	22.9	4	6.5	5°	0.127	2.7	80	40
R3007.D04-08	2.8	8	19.1	M4	22.9	4	6.5	5°	0.127	2.7	80	40
R3007.D05-05	2.8	5	19.1	M4	22.9	5	6.5	5°	0.127	2.7	80	40
R3007.D05-06	2.8	6	19.1	M4	22.9	5	6.5	5°	0.127	2.7	80	40
R3007.D05-08	2.8	8	19.1	M4	22.9	5	6.5	5°	0.127	2.7	80	40
R3007.D06-06	2.8	6	19.1	M4	22.9	6	6.5	5°	0.127	2.7	80	40
R3007.D06-08	2.8	8	19.1	M4	22.9	6	6.5	5°	0.127	2.7	80	40
R3007.D08-08	2.8	8	19.1	M4	22.9	8	6.5	5°	0.127	2.7	80	40
R3007.E05-06	4.8	6	25.4	M5	31.8	5	9.0	5°	0.127	6.0	163	106
R3007.E05-08	4.8	8	25.4	M5	31.8	5	9.0	5°	0.127	6.0	163	106
R3007.E05-10	4.8	10	25.4	M5	31.8	5	9.0	5°	0.127	6.0	163	106
R3007.E06-06	4.8	6	25.4	M5	31.8	6	9.0	5°	0.127	6.0	163	106
R3007.E06-08	4.8	8	25.4	M5	31.8	6	9.0	5°	0.127	6.0	163	106
R3007.E06-10	4.8	10	25.4	M5	31.8	6	9.0	5°	0.127	6.0	163	106
R3007.E08-08	4.8	8	25.4	M5	31.8	8	9.0	5°	0.127	6.0	163	106
R3007.E08-10	4.8	10	25.4	M5	31.8	8	9.0	5°	0.127	6.0	163	106
R3007.E10-10	4.8	10	25.4	M5	31.8	10	9	5°	0.127	6.0	163	106

Beamed Coupling - three beam

stainless steel, clamp type





R3009

Material
Stainless steel 1.4435 (AISI 316L)

Technical Notes
One piece construction, no mechanical joints.
No backlash.
Constant velocity.
Torsionally rigid.
High flexibility.
Temperature range -40°C to +120°C.
Central relief diameter may be smaller than bore in some cases.

Max Torque:
Select the size where max.torque exceeds the application target service factor.
Service Factors:
Shock + reversing = 2
Non reversing = 1,5
Steady load = 1

Max. rpm = 5,000

Torsional stiffness:
based on - bore diameter of minimum D_2 for size at load of (max torque/2).

Tips
Suitable for:
encoders, stepper motors, precision ball screws, robotics, scientific equipment, measuring systems, medical systems, pumps, servo systems etc.

Order No.	d_1	d_2	d_3	d_4	l_1	l_2	n	Ang. offset	Par. offset mm	Torque Nm max.	Tors. stiffness Nm/rad	Weight g
R3009.A02-03	1.9	3	9.5	-	14.2	2	4.5	3°	0.1	0.4	4	5
R3009.A02-04	1.9	4	9.5	-	14.2	2	4.5	3°	0.1	0.4	4	5
R3009.A03-03	1.9	3	9.5	-	14.2	3	4.5	3°	0.1	0.4	4	5
R3009.A03-04	1.9	4	9.5	-	14.2	3	4.5	3°	0.1	0.4	4	5
R3009.A04-04	1.9	4	9.5	-	14.2	4	4.5	3°	0.1	0.4	4	5
R3009.B03-04	2.8	4	12.7	M2	19.1	3	6	5°	0.127	1.0	63	13
R3009.B03-05	2.8	5	12.7	M2	19.1	3	6	5°	0.127	1.0	63	13
R3009.B04-04	2.8	4	12.7	M2	19.1	4	6	5°	0.127	1.0	63	13
R3009.B04-05	2.8	5	12.7	M	19.1	4	6	5°	0.127	1.0	63	13
R3009.B04-06	2.8	6	12.7	M2	19.1	4	6	5°	0.127	1.0	63	13
R3009.B05-05	2.8	5	12.7	M2	19.1	5	6	5°	0.127	1.0	63	13
R3009.C03-04	2.8	4	15.9	M2,5	20.3	3	6.0	5°	0.127	1.8	100	21
R3009.C03-05	2.8	5	15.9	M2,5	20.3	3	6.0	5°	0.127	1.8	100	21
R3009.C03-06	2.8	6	15.9	M2,5	20.3	3	6.0	5°	0.127	1.8	100	21
R3009.C04-04	2.8	4	15.9	M2,5	20.3	4	6.0	5°	0.127	1.8	100	21
R3009.C04-05	2.8	5	15.9	M2,5	20.3	4	6.0	5°	0.127	1.8	100	21
R3009.C04-06	2.8	6	15.9	M2,5	20.3	4	6.0	5°	0.127	1.8	100	21
R3009.C05-04	2.8	4	15.9	M2,5	20.3	5	6.0	5°	0.127	1.8	100	21
R3009.C05-05	2.8	5	15.9	M2,5	20.3	5	6.0	5°	0.127	1.8	100	21
R3009.C05-06	2.8	6	15.9	M2,5	20.3	5	6.0	5°	0.127	1.8	100	21
R3009.C06-06	2.8	6	15.9	M2,5	20.3	6	6.0	5°	0.127	1.8	100	21
R3009.D03-05	2.8	5	19.1	M2,5	22.9	3	6.5	5°	0.127	2.7	80	40
R3009.D03-06	2.8	6	19.1	M2,5	22.9	3	6.5	5°	0.127	2.7	80	40
R3009.D03-08	2.8	8	19.1	M2,5	22.9	3	6.5	5°	0.127	2.7	80	40

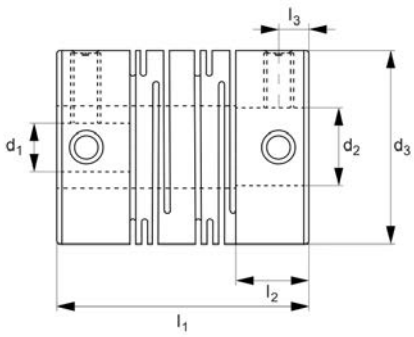
Beamed Coupling - three beam

stainless steel, clamp type



Order No.	d_1	d_2	d_3	d_4	l_1	l_2	n	Ang. offset	Par. offset mm	Torque Nm max.	Tors. stiffness Nm/rad	Weight g
R3009.D04-05	2.8	5	19.1	M2,5	22.9	4	6.5	5°	0.127	2.7	80	40
R3009.D04-06	2.8	6	19.1	M2,5	22.9	4	6.5	5°	0.127	2.7	80	40
R3009.D04-08	2.8	8	19.1	M2,5	22.9	4	6.5	5°	0.127	2.7	80	40
R3009.D05-05	2.8	5	19.1	M2,5	22.9	5	6.5	5°	0.127	2.7	80	40
R3009.D05-06	2.8	6	19.1	M2,5	22.9	5	6.5	5°	0.127	2.7	80	40
R3009.D05-08	2.8	8	19.1	M2,5	22.9	5	6.5	5°	0.127	2.7	80	40
R3009.D06-06	2.8	6	19.1	M2,5	22.9	6	6.5	5°	0.127	2.7	80	40
R3009.D06-08	2.8	8	19.1	M2,5	22.9	6	6.5	5°	0.127	2.7	80	40
R3009.D08-08	2.8	8	19.1	M2,5	22.9	8	6.5	5°	0.127	2.7	80	40
R3009.E05-06	4.8	6	25.4	M3	31.8	5	9.0	5°	0.127	6.0	163	106
R3009.E05-08	4.8	8	25.4	M3	31.8	5	9.0	5°	0.127	6.0	163	106
R3009.E05-10	4.8	10	25.4	M3	31.8	5	9.0	5°	0.127	6.0	163	106
R3009.E06-06	4.8	6	25.4	M3	31.8	6	9.0	5°	0.127	6.0	163	106
R3009.E06-08	4.8	8	25.4	M3	31.8	6	9.0	5°	0.127	6.0	163	106
R3009.E06-10	4.8	10	25.4	M3	31.8	6	9.0	5°	0.127	6.0	163	106
R3009.E08-08	4.8	8	25.4	M3	31.8	8	9.0	5°	0.127	6.0	163	106
R3009.E08-10	4.8	10	25.4	M3	31.8	8	9.0	5°	0.127	6.0	163	106
R3009.E10-10	4.8	10	25.4	M3	31.8	10	9.0	5°	0.127	6.0	163	106

Spiral Beam Coupling - Stainless Steel
set screw - long type





R3002.1

Material
Stainless steel, SUS303

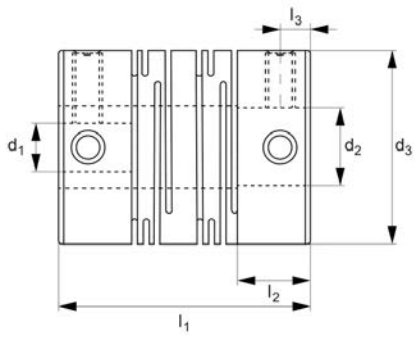
Technical Notes
Zero backlash.
The flexure allowed by the beam portion of the coupling is capable of accommodating parallel, angular and axial misalignment. High wrench torque rigidity and sensitivity. Rotation character of clockwise or anti-clockwise are exactly the same. Free maintenance, oil-resist and anti-corrosiveness.
Offset of angular, parallel or axial deviation are individual allowed value, so couple reasons of axial offset appearing at the same time would reduce unit allowable value.

Order No.	d_1	d_2	d_3	d_4	l_1	l_2	l_3
R3002.A-2-2	2	2	8	2.0	14.0	3.5	1.7
R3002.A-2-3	2	3	8	2.0	14.0	3.5	1.7
R3002.A-3-3	3	3	8	2.0	14.0	3.5	1.7
R3002.B-3-3	3	3	12	2.5	18.5	5.0	2.5
R3002.B-3-4	3	4	12	2.5	18.5	5.0	2.5
R3002.B-4-4	4	4	12	2.5	18.5	5.0	2.5
R3002.B-4-5	4	5	12	2.5	18.5	5.0	2.5
R3002.B-5-5	5	5	12	2.5	18.5	5.0	2.5
R3002.B-5-6	5	6	12	2.5	18.5	5.0	2.5
R3002.C-4-4	4	4	16	3	23.0	6.5	3
R3002.C-4-5	4	5	16	3	23.0	6.5	3
R3002.C-4-6	4	6	16	3	23.0	6.5	3
R3002.C-5-5	5	5	16	3	23.0	6.5	3
R3002.C-5-6	5	6	16	3	23.0	6.5	3
R3002.C-5-7	5	7	16	3	23.0	6.5	3
R3002.C-5-8	5	8	16	3	23.0	6.5	3
R3002.C-6-6	6	6	16	3	23.0	6.5	3
R3002.C-6-7	6	7	16	3	23.0	6.5	3
R3002.C-6-8	6	8	16	3	23.0	6.5	3
R3002.D-5-5	5	5	20	3	26.0	7.5	3
R3002.D-5-6	5	6	20	3	26.0	7.5	3
R3002.D-5-7	5	7	20	3	26.0	7.5	3
R3002.D-5-8	5	8	20	3	26.0	7.5	3
R3002.D-6-6	6	6	20	3	26.0	7.5	3
R3002.D-6-7	6	7	20	3	26.0	7.5	3
R3002.D-6-8	6	8	20	3	26.0	7.5	3
R3002.D-6-10	5	5	20	3	26.0	7.5	3
R3002.D-8-8	8	8	20	3	26.0	7.5	3
R3002.D-8-10	8	10	20	3	26.0	7.5	3
R3002.D-10-10	10	10	20	3	26.0	7.5	3

Spiral Beam Coupling - Stainless Steel
set screw - long type



R3002.2



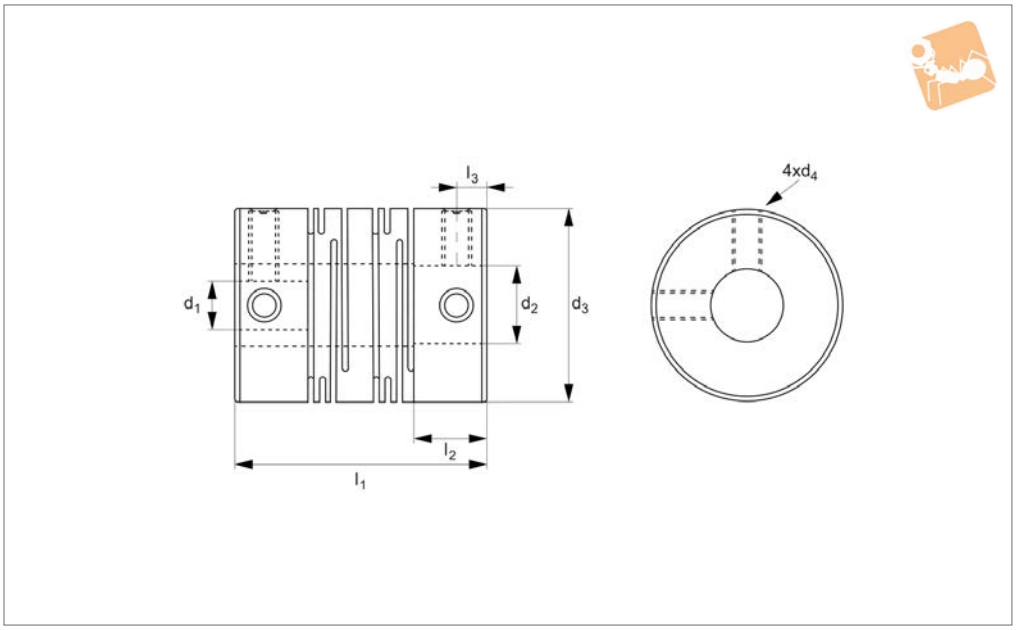
Material
Stainless steel, SUS303

Technical Notes
Zero backlash.
The flexure allowed by the beam portion of the coupling is capable of accommodating parallel,
angular and axial misalignment. High wrench torque rigidity and sensitivity.
Rotation character of clockwise or anti-clockwise are exactly the same.
Free maintenance, oil-resist and anti-corrosiveness.
Offset of angular, parallel or axial deviation are individual allowed value,
so couple reasons of axial offset appearing at the same time would reduce unit allowable value.

Order No.	d_1	d_2	d_3	d_4	l_1	l_2	l_3
R3002.E-5-6	5	6	25	4	31	8.5	4.0
R3002.E-6-6	6	6	25	4	31	8.5	4.0
R3002.E-6-8	6	8	25	4	31	8.5	4.0
R3002.E-6-10	6	10	25	4	31	8.5	4.0
R3002.E-8-8	8	8	25	4	31	8.5	4.0
R3002.E-8-10	8	10	25	4	31	8.5	4.0
R3002.E-8-12	58	12	25	4	31	8.5	4.0
R3002.E-10-10	10	10	25	4	31	8.5	4.0
R3002.E-10-11	10	11	25	4	31	8.5	4.0
R3002.E-10-12	10	12	25	4	31	8.5	4.0
R3002.E-12-12	12	12	25	4	31	8.5	4.0
R3002.F-6-8	6	8	32	4	41	12	6.0
R3002.F-8-8	8	8	32	4	41	12	6.0
R3002.F-8-10	8	10	32	4	41	12	6.0
R3002.F-8-12	8	12	32	4	41	12	6.0
R3002.F-10-10	10	10	32	4	41	12	6.0
R3002.F-10-11	10	11	32	4	41	12	6.0
R3002.F-10-12	10	12	32	4	41	12	6.0
R3002.F-10-14	10	14	32	4	41	12	6.0
R3002.F-12-12	12	12	32	4	41	12	6.0
R3002.F-12-14	12	14	32	4	41	12	6.0
R3002.F-14-14	14	14	32	4	41	12	6.0
R3002.F-14-16	14	16	32	4	41	12	6.0
R3002.G-10-10	10	10	40	5	56	17	8.5
R3002.G-12-12	12	12	40	5	56	17	8.5
R3002.G-14-14	14	14	40	5	56	17	8.5
R3002.G-14-16	14	16	40	5	56	17	8.5
R3002.G-14-18	14	18	40	5	56	17	8.5
R3002.G-15-15	15	15	40	5	56	17	8.5
R3002.G-16-16	16	16	40	5	56	17	8.5
R3002.G-16-18	16	18	40	5	56	17	8.5
R3002.G-18-18	18	18	40	5	56	17	8.5

Spiral Beam Coupling - Aluminium

set screw - long type





R3003.1

Material
Anodized aluminium AL7075

Technical Notes
Zero backlash.
The flexure allowed by the beam portion of the coupling is capable of accommodating parallel, angular and axial misalignment. High wrench torque rigidity and sensitivity. Rotation character of clockwise or anti-clockwise are exactly the same. Free maintenance, oil-resist and anti-corrosiveness.
Offset of angular, parallel or axial deviation are individual allowed value, so couple reasons of axial offset appearing at the same time would reduce unit allowable value.

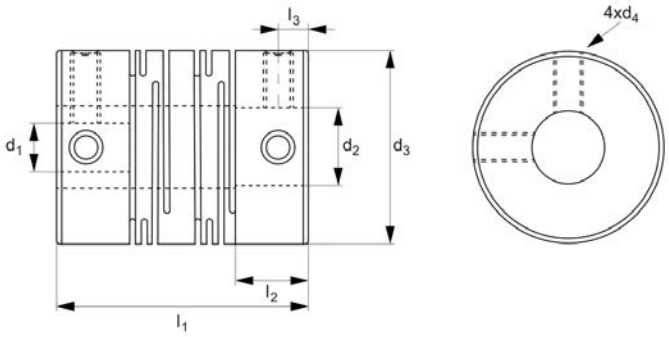
Order No.	d_1 tol. h8	d_2 tol. h8	d_3	d_4	l_1	l_2	l_3
R3003.A-2-2	2	2	8	M2	14	3.5	1.7
R3003.A-2-3	2	3	8	M2	14	3.5	1.7
R3003.A-3-3	3	3	8	M2	14	3.5	1.7
R3003.B-3-3	3	3	12	M2,5	18.5	5	2.5
R3003.B-3-4	3	4	12	M2,5	18.5	5	2.5
R3003.B-4-4	4	4	12	M2,5	18.5	5	2.5
R3003.B-4-5	4	5	12	M2,5	18.5	5	2.5
R3003.B-5-5	5	5	12	M2,5	18.5	5	2.5
R3003.B-5-6	5	6	12	M2,5	18.5	5	2.5
R3003.C-4-4	4	4	16	M3	23	6.5	3
R3003.C-4-5	4	5	16	M3	23	6.5	3
R3003.C-4-6	4	6	16	M3	23	6.5	3
R3003.C-5-5	5	5	16	M3	23	6.5	3
R3003.C-5-6	5	6	16	M3	23	6.5	3
R3003.C-5-7	5	7	16	M3	23	6.5	3
R3003.C-5-8	5	8	16	M3	23	6.5	3
R3003.C-6-6	6	6	16	M3	23	6.5	3
R3003.C-6-7	6	7	16	M3	23	6.5	3
R3003.C-6-8	6	8	16	M3	23	6.5	3
R3003.D-5-5	5	5	20	M3	26	7.5	3
R3003.D-5-6	5	6	20	M3	26	7.5	3
R3003.D-5-7	5	7	20	M3	26	7.5	3
R3003.D-5-8	5	8	20	M3	26	7.5	3
R3003.D-6-6	6	6	20	M3	26	7.5	3
R3003.D-6-7	6	7	20	M3	26	7.5	3
R3003.D-6-8	6	8	20	M3	26	7.5	3
R3003.D-6-10	5	5	20	M3	26	7.5	3
R3003.D-8-8	8	8	20	M3	26	7.5	3
R3003.D-8-10	8	10	20	M3	26	7.5	3
R3003.D-10-10	10	10	20	M3	26	7.5	3

Spiral Beam Coupling - Aluminium

set screw - long type



R3003.2



Material

Anodized aluminium AL7075

Technical Notes

Zero backlash.
The flexure allowed by the beam portion of the coupling is capable of accommodating parallel,
angular and axial misalignment. High wrench torque rigidity and sensitivity.
Rotation character of clockwise or anti-clockwise are exactly the same.
Free maintenance, oil-resist and anti-corrosiveness.
Offset of angular, parallel or axial deviation are individual allowed value,
so couple reasons of axial offset appearing at the same time would reduce unit allowable value.

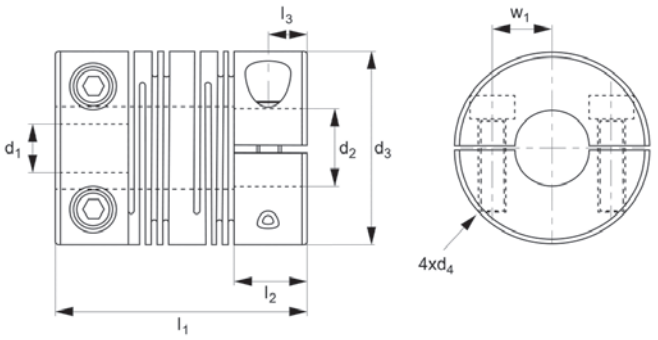
Order No.	d_1 tol. h8	d_2 tol. h8	d_3	d_4	l_1	l_2	l_3
R3003.E-5-6	5	6	25	M4	31	8.5	4
R3003.E-6-6	6	6	25	M4	31	8.5	4
R3003.E-6-8	6	8	25	M4	31	8.5	4
R3003.E-6-10	6	10	25	M4	31	8.5	4
R3003.E-8-8	8	8	25	M4	31	8.5	4
R3003.E-8-10	8	10	25	M4	31	8.5	4
R3003.E-8-12	58	12	25	M4	31	8.5	4
R3003.E-10-10	10	10	25	M4	31	8.5	4
R3003.E-10-11	10	11	25	M4	31	8.5	4
R3003.E-10-12	10	12	25	M4	31	8.5	4
R3003.E-12-12	12	12	25	M4	31	8.5	4
R3003.F-6-8	6	8	32	M4	41	12	6
R3003.F-8-8	8	8	32	M4	41	12	6
R3003.F-8-10	8	10	32	M4	41	12	6
R3003.F-8-12	8	12	32	M4	41	12	6
R3003.F-10-10	10	10	32	M4	41	12	6
R3003.F-10-11	10	11	32	M4	41	12	6
R3003.F-10-12	10	12	32	M4	41	12	6
R3003.F-10-14	10	14	32	M4	41	12	6
R3003.F-12-12	12	12	32	M4	41	12	6
R3003.F-12-14	12	14	32	M4	41	12	6
R3003.F-14-14	14	14	32	M4	41	12	6
R3003.F-14-16	14	16	32	M4	41	12	6
R3003.G-10-10	10	10	40	M5	56	17	8.5
R3003.G-12-12	12	12	40	M5	56	17	8.5
R3003.G-14-14	14	14	40	M5	56	17	8.5
R3003.G-14-16	14	16	40	M5	56	17	8.5
R3003.G-14-18	14	18	40	M5	56	17	8.5
R3003.G-15-15	15	15	40	M5	56	17	8.5
R3003.G-16-16	16	16	40	M5	56	17	8.5
R3003.G-16-18	16	18	40	M5	56	17	8.5

Order No.	d_1 tol. h8	d_2 tol. h8	d_3	d_4	l_1	l_2	l_3
R3003.G-18-18	18	18	40	M5	56	17	8.5

Spiral Beam Coupling - stainless steel
clamping type - long type



R3004.1



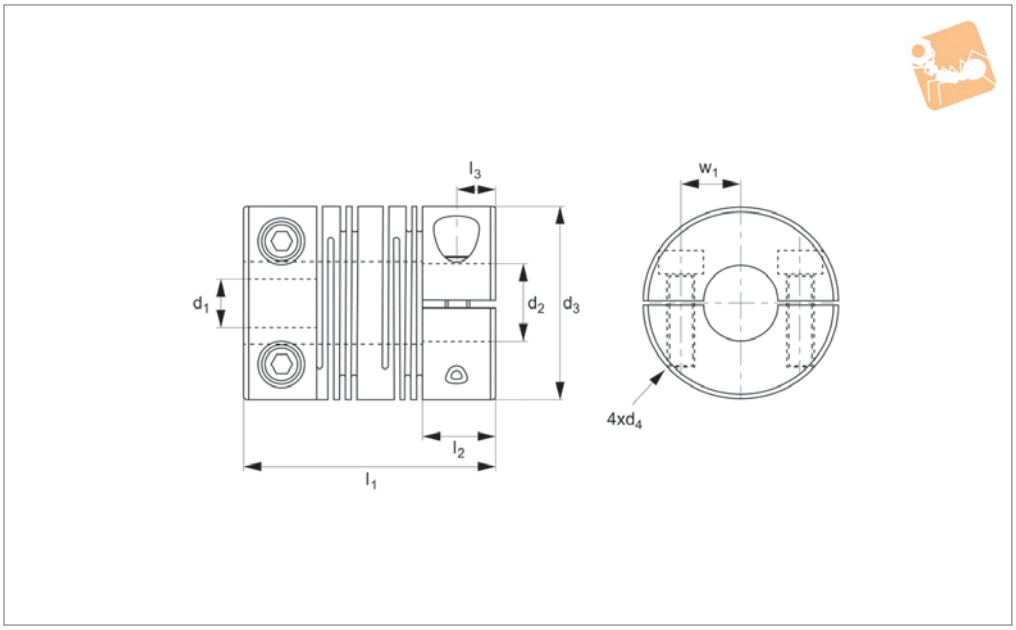
Material
Stainless steel SUS303

Technical Notes
The flexure allowed by the beam portion of the coupling is capable of accommodating angular, parallel and axial misalignment.Free maintenance, oil-resist and anti-corrosiveness. Rotation character of clockwise or anti-clockwise are exactly the same.

Offset of angular, parallel or axial deviation are individual allowed value, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

Order No.	d_1 tol. h8	d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w
R3004.A-4-4	4	4	12	M2	18.5	5	2.5	4
R3004.A-4-5	4	5	12	M2	18.5	5	2.5	4
R3004.A-5-5	5	5	12	M2	18.5	5	2.5	4
R3004.B-5-5	5	5	16	M2,5	26	6.5	3.25	5
R3004.B-5-6	5	6	16	M2,5	26	6.5	3.25	5
R3004.B-6-6	6	6	16	M2,5	26	6.5	3.25	5
R3004.C-5-6	5	6	20	M2,5	26	7.5	3.75	6.5
R3004.C-5-7	5	7	20	M2,5	26	7.5	3.75	6.5
R3004.C-5-8	5	8	20	M2,5	26	7.5	3.75	6.5
R3004.C-6-6	6	6	20	M2,5	26	7.5	3.75	6.5
R3004.C-6-7	6	7	20	M2,5	26	7.5	3.75	6.5
R3004.C-6-8	6	8	20	M2,5	26	7.5	3.75	6.5
R3004.C-8-8	8	8	20	M2,5	26	7.5	3.75	6.5
R3004.D-5-6	5	6	25	M3	31	8.5	4.25	9
R3004.D-6-6	6	6	25	M3	31	8.5	4.25	9
R3004.D-6-8	6	8	25	M3	31	8.5	4.25	9
R3004.D-6-10	6	10	25	M3	31	8.5	4.25	9
R3004.D-8-8	8	8	25	M3	31	8.5	4.25	9
R3004.D-8-10	8	10	25	M3	31	8.5	4.25	9
R3004.D-10-10	10	10	25	M3	31	8.5	4.25	9

Spiral Beam Coupling - stainless steel
clamping type - long type





R3004.2

Material
Stainless steel SUS303

Technical Notes
The flexure allowed by the beam portion of the coupling is capable of accommodating angular, parallel and axial misalignment.Free maintenance, oil-resist and anti-corrosiveness. Rotation character of clockwise or anti-clockwise are exactly the same.

Offset of angular, parallel or axial deviation are individual allowed value, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

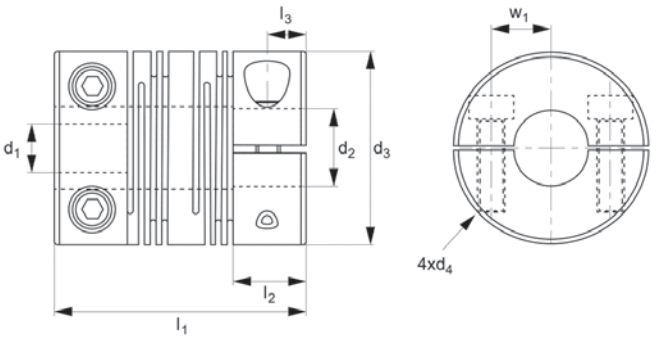
Order No.	d_1 tol. h8	d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w
R3004.E-8-8	8	8	32	M4	41	12	6	11
R3004.E-8-10	8	10	32	M4	41	12	6	11
R3004.E-8-12	8	12	32	M4	41	12	6	11
R3004.E-10-10	10	10	32	M4	41	12	6	11
R3004.E-10-11	10	11	32	M4	41	12	6	11
R3004.E-10-12	10	12	32	M4	41	12	6	11
R3004.E-10-14	10	14	32	M4	41	12	6	11
R3004.E-12-12	12	12	32	M4	41	12	6	11
R3004.E-12-14	12	14	32	M4	41	12	6	11
R3004.F-8-8	8	8	40	M5	56	17	8.5	14
R3004.F-8-10	8	10	40	M5	56	17	8.5	14
R3004.F-10-10	10	10	40	M5	56	17	8.5	14
R3004.F-12-12	12	12	40	M5	56	17	8.5	14
R3004.F-12-14	12	14	40	M5	56	17	8.5	14
R3004.F-14-14	14	14	40	M5	56	17	8.5	14
R3004.F-14-16	14	16	40	M5	56	17	8.5	14
R3004.F-15-15	15	15	40	M5	56	17	8.5	14
R3004.F-16-16	16	16	40	M5	56	17	8.5	14

Spiral Beam Coupling - Aluminium

clamping type - long type



R3005.1



Material

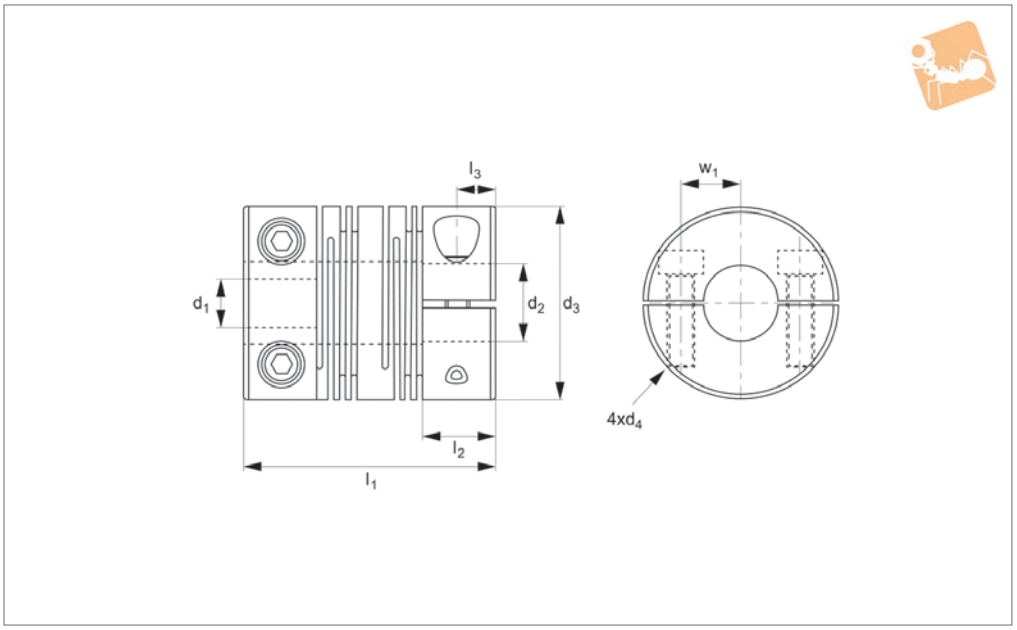
Anodized aluminium AL7075

Technical Notes

The flexure allowed by the beam portion of the coupling is capable of accommodating angular, parallel and axial misalignment.Free maintenance, oil-resist and anti-corrosiveness. Rotation character of clockwise or anti-clockwise are exactly the same.

Offset of angular, parallel or axial deviation are individual allowed value, so couple reasons of axial offset appearing at same time would reduce the unit allowable value..

Order No.	d_1 tol. h8	d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w_1
R3005.A-4-4	4	4	12	M2	18.5	5	2.5	4
R3005.A-4-5	4	5	12	M2	18.5	5	2.5	4
R3005.A-5-5	5	5	12	M2	18.5	5	2.5	4
R3005.B-5-5	5	5	16	M2,5	23	6.5	3.25	5
R3005.B-5-6	5	6	16	M2,5	23	6.5	32.5	5
R3005.B-6-6	6	6	16	M2,5	23	6.5	32.5	5
R3005.C-5-6	5	6	20	M2,5	26	7.5	3.75	6.5
R3005.C-5-7	5	7	20	M2,5	26	7.5	3.75	6.5
R3005.C-5-8	5	8	20	M2,5	26	7.5	3.75	6.5
R3005.C-6-6	6	6	20	M2,5	26	7.5	3.75	6.5
R3005.C-6-7	6	7	20	M2,5	26	7.5	3.75	6.5
R3005.C-6-8	6	8	20	M2,5	26	7.5	3.75	6.5
R3005.C-8-8	8	8	20	M2,5	26	7.5	3.75	6.5
R3005.D-5-6	5	6	25	M3	31	8.5	4.25	9
R3005.D-6-6	6	6	25	M3	31	8.5	4.25	9
R3005.D-6-8	6	8	25	M3	31	8.5	4.25	9
R3005.D-6-10	6	10	25	M3	31	8.5	4.25	9
R3005.D-8-8	8	8	25	M3	31	8.5	4.25	9
R3005.D-8-10	8	10	25	M3	31	8.5	4.25	9
R3005.D-10-10	10	10	25	M3	31	8.5	4.25	9





R3005.2

Material
Anodized aluminium AL7075

Technical Notes
The flexure allowed by the beam portion of the coupling is capable of accommodating angular, parallel and axial misalignment.Free maintenance, oil-resist and anti-corrosiveness. Rotation character of clockwise or anti-clockwise are exactly the same.

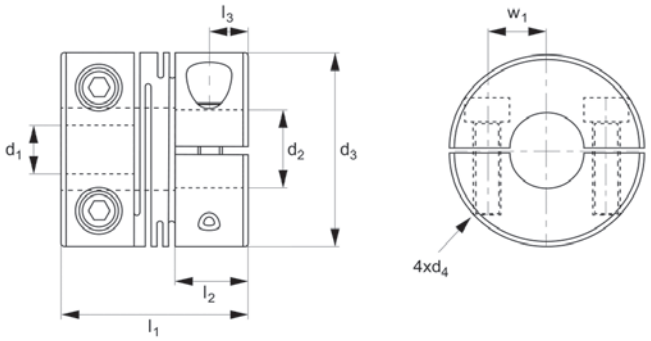
Offset of angular, parallel or axial deviation are individual allowed value, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

Order No.	d_1 tol. h8	d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w_1
R3005.E-8-8	8	8	32	M4	41	12	6	11
R3005.E-8-10	8	10	32	M4	41	12	6	11
R3005.E-8-12	8	12	32	M4	41	12	6	11
R3005.E-10-10	10	10	32	M4	41	12	6	11
R3005.E-10-11	10	11	32	M4	41	12	6	11
R3005.E-10-12	10	12	32	M4	41	12	6	11
R3005.E-10-14	10	14	32	M4	41	12	6	11
R3005.E-12-12	12	12	32	M4	41	12	6	11
R3005.E-12-14	12	14	32	M4	41	12	6	11
R3005.F-8-8	8	8	40	M5	56	17	8.5	14
R3005.F-8-10	8	10	40	M5	56	17	8.5	14
R3005.F-10-10	10	10	40	M5	56	17	8.5	14
R3005.F-12-12	12	12	40	M5	56	17	8.5	14
R3005.F-12-14	12	14	40	M5	56	17	8.5	14
R3005.F-14-14	14	14	40	M5	56	17	8.5	14
R3005.F-14-16	14	16	40	M5	56	17	8.5	14
R3005.F-15-15	15	15	40	M5	56	17	8.5	14
R3005.F-16-16	16	16	40	M5	56	17	8.5	14

Spiral Beam Coupling - stainless steel
clamping type - short type



R3006.2



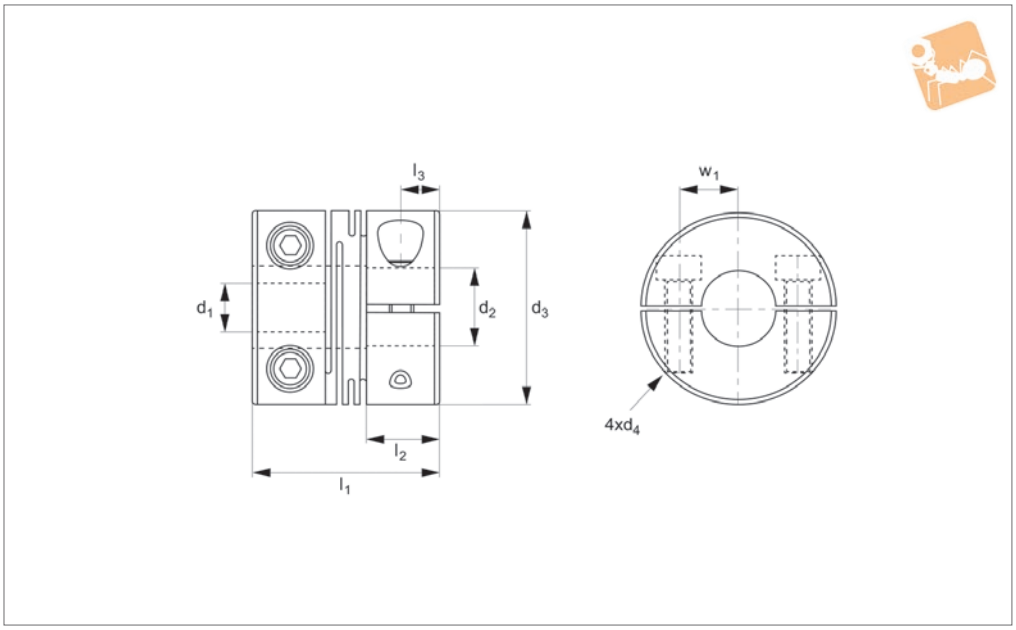
Material
Stainless steel SUS303

Technical Notes
Zero backlash.
The flexure allowed by the beam portion of the coupling is capable of accommodating angularand axial misalignment. High wrench torque rigidity and sensitivity.
Rotation character of clockwise or anti-clockwise are exactly the same.
Free maintenance, oil-resist and anti-corrossiveness.
R3006 can't allow axial deviation caused by offset.
Offset of angular, parallel or axial deviation are individual allowed valure, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

Order No.	d_1 tol. h8	d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w_1
R3006.A-4-4	4	4	12	M2	14	5.2	2.6	4
R3006.A-4-5	4	5	12	M2	14	5.2	2.6	4
R3006.A-5-5	5	5	12	M2	14	5.2	2.6	4
R3006.B-5-5	5	5	16	M2,5	18	6.8	3.4	5
R3006.B-5-6	5	6	16	M2,5	18	6.8	3.4	5
R3006.B-6-6	6	6	16	M2,5	18	6.8	3.4	5
R3006.C-5-6	5	6	20	M2,5	20	7.65	3.8	6.5
R3006.C-5-7	5	7	20	M2,5	20	7.65	3.8	6.5
R3006.C-5-8	5	8	20	M2,5	20	7.65	3.8	6.5
R3006.C-6-6	6	6	20	M2,5	20	7.65	3.8	6.5
R3006.C-6-7	6	7	20	M2,5	20	7.65	3.8	6.5
R3006.C-6-8	6	8	20	M2,5	20	7.65	3.8	6.5
R3006.C-8-8	8	8	20	M2,5	20	7.65	3.8	6.5
R3006.D-5-6	5	6	25	M3	25	9.6	4.8	9
R3006.D-6-6	6	6	25	M3	25	9.6	4.8	9
R3006.D-6-8	6	8	25	M3	25	9.6	4.8	9
R3006.D-6-10	6	10	25	M3	25	9.6	4.8	9
R3006.D-8-8	8	8	25	M3	25	9.6	4.8	9
R3006.D-8-10	8	10	25	M3	25	9.6	4.8	9
R3006.D-10-10	10	10	25	M3	25	9.6	4.8	9
R3006.E-8-8	8	8	32	M4	32	12.6	6.3	11
R3006.E-8-10	8	10	32	M4	32	12.6	6.3	11
R3006.E-10-10	10	10	32	M4	32	12.6	6.3	11
R3006.E-10-12	10	12	32	M4	32	12.6	6.3	11
R3006.E-10-14	10	14	32	M4	32	12.6	6.3	11
R3006.E-12-12	12	12	32	M4	32	12.6	6.3	11
R3006.E-12-14	12	14	32	M4	32	12.6	6.3	11

Spiral Beam Coupling - Aluminium

clamping type - short type





R3007.1

Material
Anodized aluminium AL7075

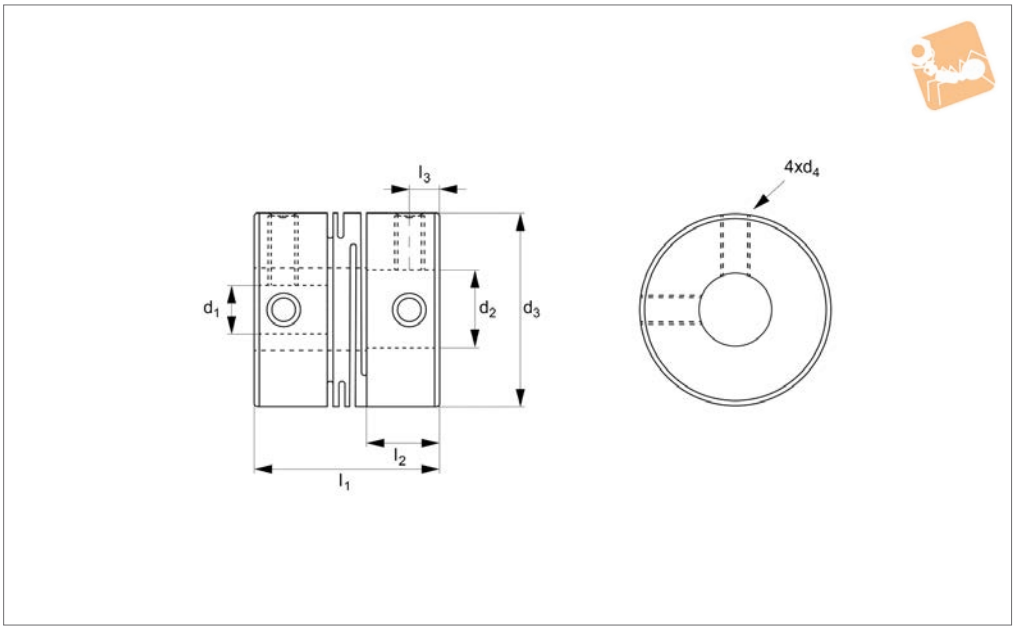
Technical Notes
Zero backlash.
The flexure allowed by the beam portion of the coupling is capable of accommodating angularand axial misalignment. High wrench torque rigidity and sensitivity.
Rotation character of clockwise or anti-clockwise are exactly the same.
Free maintenance, oil-resist and anti-corrossiveness.
R3007 can't allow axial deviation caused by offset.
Offset of angular, parallel or axial deviation are individual allowed valure, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

Order No.	d_1 tol. h8	d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w_1
R3007.A-4-4	4	4	12	2	14	5.2	2.6	4
R3007.A-4-5	4	5	12	2	14	5.2	2.6	4
R3007.A-5-5	5	5	12	2	14	5.2	2.6	4
R3007.B-5-5	5	5	16	2.5	18	6.8	3.4	5
R3007.B-5-6	5	6	16	2.5	18	6.8	3.4	5
R3007.B-6-6	6	6	16	2.5	18	6.8	3.4	5
R3007.C-5-6	5	6	20	2.5	20	7.65	3.8	6.5
R3007.C-5-7	5	7	20	2.5	20	7.65	3.8	6.5
R3007.C-5-8	5	8	20	2.5	20	7.65	3.8	6.5
R3007.C-6-6	6	6	20	2.5	20	7.65	3.8	6.5
R3007.C-6-7	6	7	20	2.5	20	7.65	3.8	6.5
R3007.C-6-8	6	8	20	2.5	20	7.65	3.8	6.5
R3007.C-8-8	8	8	20	2.5	20	7.65	3.8	6.5
R3007.D-5-6	5	6	25	3	25	9.6	4.8	9
R3007.D-6-6	6	6	25	3	25	9.6	4.8	9
R3007.D-6-8	6	8	25	3	25	9.6	4.8	9
R3007.D-6-10	6	10	25	3	25	9.6	4.8	9
R3007.D-8-8	8	8	25	3	25	9.6	4.8	9
R3007.D-8-10	8	10	25	3	25	9.6	4.8	9
R3007.D-10-10	10	10	25	3	25	9.6	4.8	9
R3007.E-8-8	8	8	32	4	32	12.6	6.3	11
R3007.E-8-10	8	10	32	4	32	12.6	6.3	11
R3007.E-10-10	10	10	32	4	32	12.6	6.3	11
R3007.E-10-12	10	12	32	4	32	12.6	6.3	11
R3007.E-10-14	10	14	32	4	32	12.6	6.3	11
R3007.E-12-12	12	12	32	4	32	12.6	6.3	11
R3007.E-12-14	12	14	32	4	32	12.6	6.3	11

Spiral Beam Coupling - Stainless steel
set screw - short type



R3008



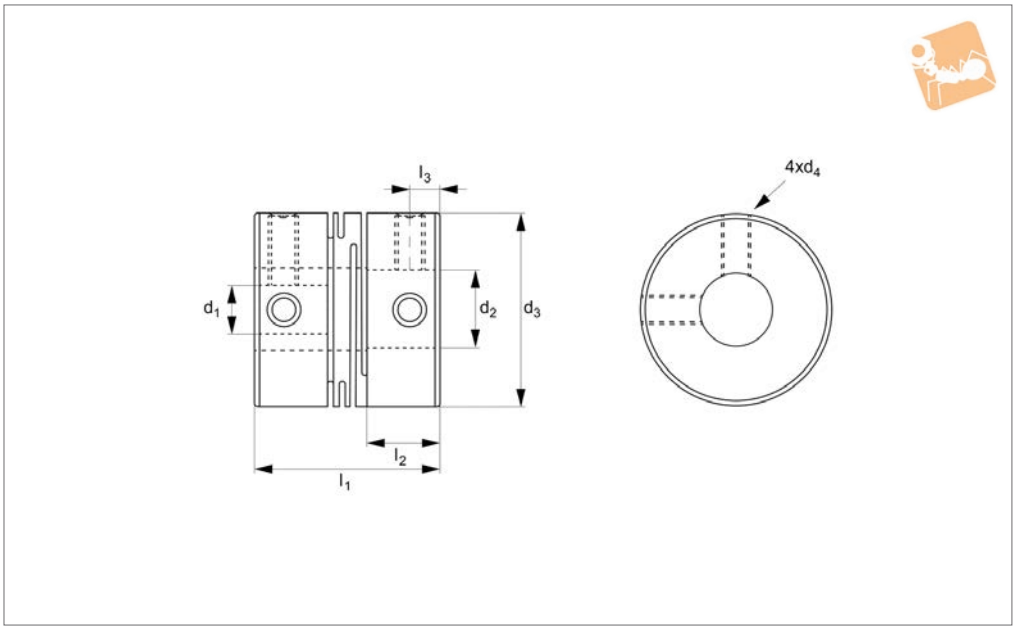
Material
Stainless steel, SUS303

Technical Notes
Zero backlash.
The flexure allowed by the beam portion of the coupling is capable of accommodating parallel,
angular and axial misalignment. High wrench torque rigidity and sensitivity.
Rotation character of clockwise or anti-clockwise are exactly the same.
Free maintenance, oil-resist and anti-corrosiveness.
Offset of angular, parallel or axial deviation are individual allowed value,
so couple reasons of axial offset appearing at the same time would reduce unit allowable value.

Order No.	d_1 tol. h8	d_2 tol. h8	d_3	d_4	l_1	l_2	l_3
R3008.A-2-2	2	2	8	M2	10	3.4	1.7
R3008.A-3-3	3	3	8	M2	10	3.4	1.7
R3008.B-4-4	4	4	12	M2,5	14	5.2	2.5
R3008.B-4-5	4	5	12	M2,5	14	5.2	2.5
R3008.B-5-5	5	5	12	M2,5	14	5.2	2.5
R3008.C-5-5	5	5	16	M3	18	6.8	3
R3008.C-5-6	5	6	16	M3	18	6.8	3
R3008.C-6-6	6	6	16	M3	18	6.8	3
R3008.D-5-6	5	6	20	M3	20	7.65	3
R3008.D-5-7	5	7	20	M3	20	7.65	3
R3008.D-5-8	5	8	20	M3	20	7.65	3
R3008.D-6-6	6	6	20	M3	20	7.65	3
R3008.D-6-7	6	7	20	M3	20	7.65	3
R3008.D-6-8	6	8	20	M3	20	7.65	3
R3008.D-8-8	8	8	20	M3	20	7.65	3
R3008.E-5-6	5	6	25	M4	25	9.6	4
R3008.E-6-6	6	6	25	M4	25	9.6	4
R3008.E-6-8	6	8	25	M4	25	9.6	4
R3008.E-6-10	6	10	25	M4	25	9.6	4
R3008.E-8-8	8	8	25	M4	25	9.6	4
R3008.E-8-10	8	10	25	M4	25	9.6	4
R3008.E-10-10	10	10	25	M4	25	9.6	4
R3008.F-8-8	8	8	32	M4	32	12.6	6
R3008.F-8-10	8	10	32	M4	32	12.6	6
R3008.F-10-10	10	10	32	M4	32	12.6	6
R3008.F-10-12	10	12	32	M4	32	12.6	6
R3008.F-12-12	12	12	32	M4	32	12.6	6
R3008.F-12-14	12	14	32	M4	32	12.6	6

Spiral Beam Coupling - Aluminium

set screw - short type





R3009.1

Material
Anodized aluminium AL7075

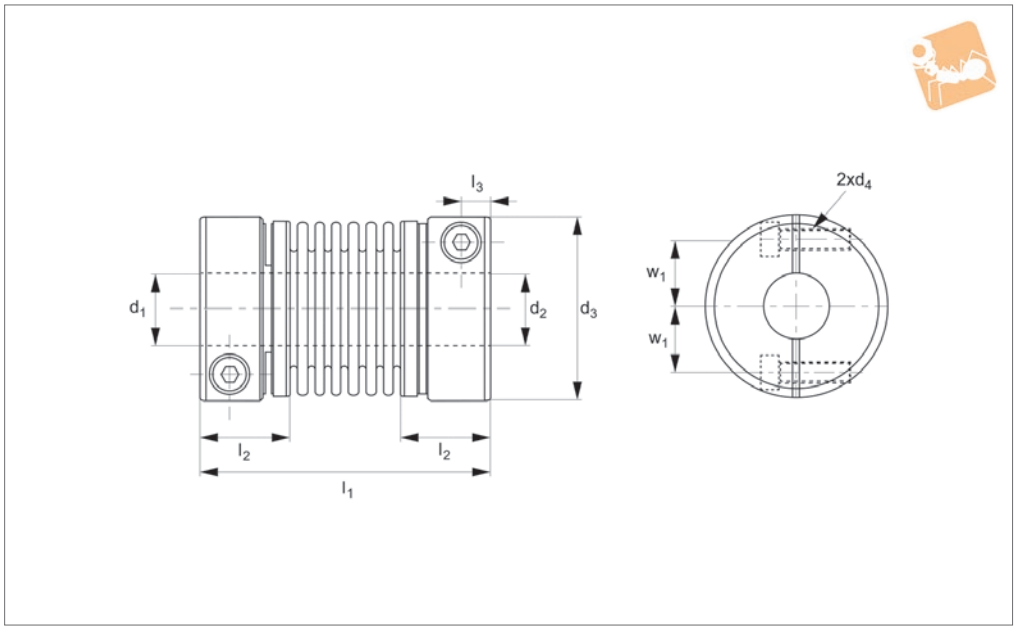
Technical Notes
Zero backlash.
The flexure allowed by the beam portion of the coupling is capable of accommodating parallel, angular and axial misalignment. High wrench torque rigidity and sensitivity. Rotation character of clockwise or anti-clockwise are exactly the same. Free maintenance, oil-resist and anti-corrosiveness.
Offset of angular, parallel or axial deviation are individual allowed value, so couple reasons of axial offset appearing at the same time would reduce unit allowable value.

Order No.	d_1 tol. h8	d_2 tol. h8	d_3	d_4	l_1	l_2	l_3
R3009.A-2-2	2	2	8	M2	10	3.4	1.7
R3009.A-3-3	3	3	8	M2	10	3.4	1.7
R3009.B-4-4	4	4	12	M2,5	14	5.2	2.5
R3009.B-4-5	4	5	12	M2,5	14	5.2	2.5
R3009.B-5-5	5	5	12	M2,5	14	5.2	2.5
R3009.C-5-5	5	5	16	M3	18	6.8	3
R3009.C-5-6	5	6	16	M3	18	6.8	3
R3009.C-6-6	6	6	16	M3	18	6.8	3
R3009.D-5-6	5	6	20	M3	20	7.65	3
R3009.D-5-7	5	7	20	M3	20	7.65	3
R3009.D-5-8	5	8	20	M3	20	7.65	3
R3009.D-6-6	56	6	20	M3	20	7.65	3
R3009.D-6-7	6	7	20	M3	20	7.65	3
R3009.D-6-8	6	8	20	M3	20	7.65	3
R3009.D-8-8	8	8	20	M3	20	7.65	3
R3009.E-5-6	5	6	25	M4	25	9.6	4
R3009.E-6-6	6	6	25	M4	25	9.6	4
R3009.E-6-8	6	8	25	M4	25	9.6	4
R3009.E-6-10	6	10	25	M4	25	9.6	4
R3009.E-8-8	8	8	25	M4	25	9.6	4
R3009.E-8-10	8	10	25	M4	25	9.6	4
R3009.E-10-10	10	10	25	M4	25	9.6	4
R3009.F-8-8	8	8	32	M4	32	12.6	6
R3009.F-8-10	8	10	32	M4	32	12.6	6
R3009.F-10-10	10	10	32	M4	32	12.6	6
R3009.F-10-12	10	12	32	M4	32	12.6	6
R3009.F-12-12	12	12	32	M4	32	12.6	6
R3009.F-12-14	12	14	32	M4	32	12.6	6

Bellows Coupling - Stainless steel
clamp fixing



R3010.1



Material
Mainframe: Stainless steel SUS303
Bellows: Stainless steel SUS316

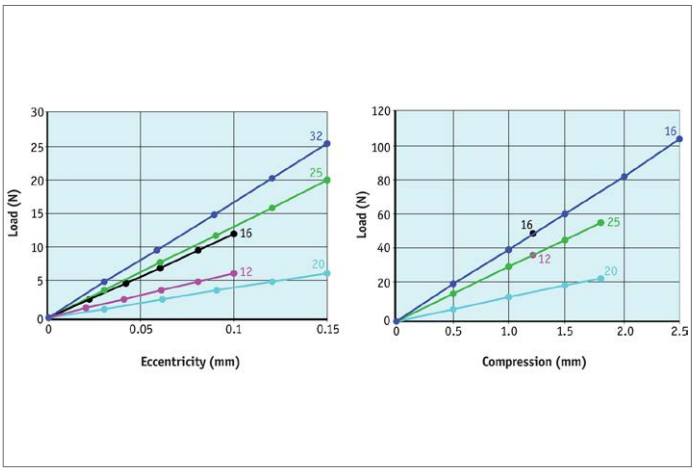
Technical Notes
Individual misalignment values permitted in an angular, parallel or axial directions are shown in the table below. Misalignment occurring in two or more directions simultaneously will reduce these values by half.

Tips
Other combinations of d_1 and d_2 available on request.

Order No.	d_1 & d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w	Allowable misalignment (angular) °	Allowable misalignment (axial) mm	Weight g
R3010.012-04-04	4	12	M 2	23.5	7.5	2.3	4	1.5	+0,4 -1,2	9
R3010.012-05-05	5	12	M 2	23.5	7.5	2.3	4	1.5	+0,4 -1,2	9
R3010.016-04-04	4	16	M2,5	26.5	9	3	5	1.5	+0,4 -1,2	22
R3010.016-05-05	5	16	M2,5	26.5	9	3	5	1.5	+0,4 -1,2	22
R3010.016-06-06	6	16	M2,5	26.5	9	3	5	1.5	+0,4 -1,2	22
R3010.020-05-05	5	20	M2,5	32.0	10	3.5	6.5	2.0	+0,6 -1,8	38
R3010.020-06-06	6	20	M2,5	32.0	10	3.5	6.5	2.0	+0,6 -1,8	38
R3010.020-08-08	8	20	M2,5	32.0	10	3.5	6.5	2.0	+0,6 -1,8	38
R3010.025-06-06	6	25	M 3	36.5	12	4.5	9	2.0	+0,6 -1,8	74
R3010.025-08-08	8	25	M 3	36.5	12	4.5	9	2.0	+0,6 -1,8	74
R3010.025-10-10	10	25	M 3	36.5	12	4.5	9	2.0	+0,6 -1,8	74
R3010.032-08-08	8	32	M 4	42.0	13.5	5	11	2.0	+0,8 -2,5	130
R3010.032-10-10	10	32	M 4	42.0	13.5	5	11	2.0	+0,8 -2,5	130
R3010.032-12-12	12	32	M 4	42.0	13.5	5	11	2.0	+0,8 -2,5	130
R3010.032-14-14	14	32	M 4	42.0	13.5	5	11	2.0	+0,8 -2,5	130

Order No.	Allowable misalignment (parallel) mm	Allowable wrench torque Nm	Clamping screw lock torque Nm	Moment of inertia kg·m²	rpm max.	Static torsional stiffness Nm/rad
R3010.012-04-04	0.10	0.5	0.5	$2,1x10^{-7}$	13000	100
R3010.012-05-05	0.10	0.5	0.5	$2,1x10^{-7}$	13000	100
R3010.016-04-04	0.10	1.0	1.0	$8,1x10^{-7}$	9500	150
R3010.016-05-05	0.10	1.0	1.0	$8,1x10^{-7}$	9500	150
R3010.016-06-06	0.10	1.0	1.0	$8,1x10^{-7}$	9500	150
R3010.020-05-05	0.15	1.5	1.0	$2,3x10^{-6}$	7700	220

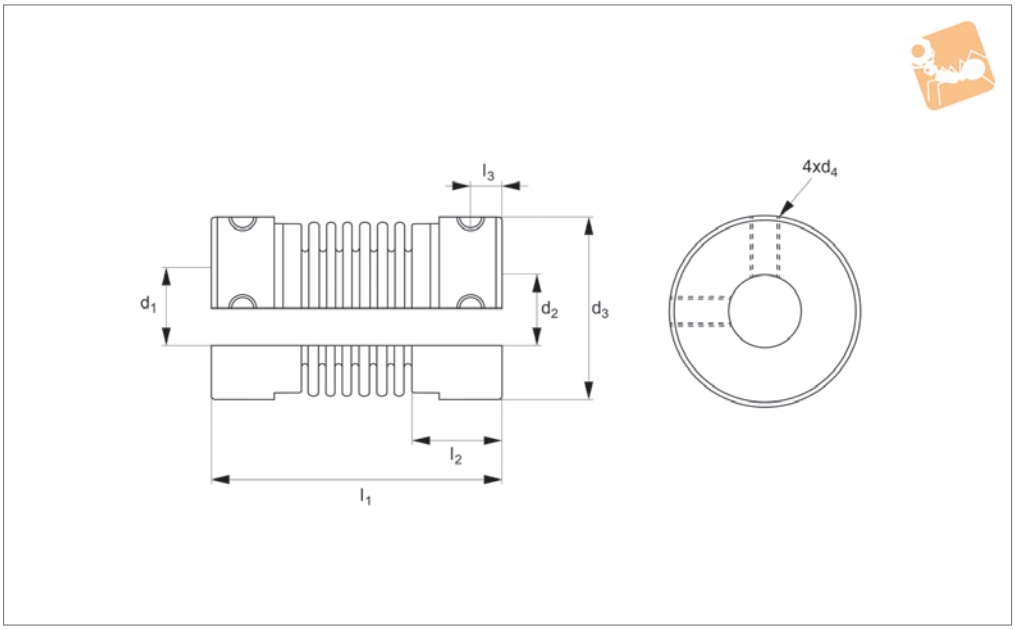
Order No.	Allowable misalignment (parallel) mm	Allowable wrench torque Nm	Clamping screw lock torque Nm	Moment of inertia kg·m²	rpm max.	Static torsional stiffness Nm/rad
R3010.020-06-06	0.15	1.5	1.0	$2,3x10^{-6}$	7700	220
R3010.020-08-08	0.15	1.5	1.0	$2,3x10^{-6}$	7700	220
R3010.025-06-06	0.15	2.0	1.5	$6,9x10^{-6}$	6100	330
R3010.025-08-08	0.15	2.0	1.5	$6,9x10^{-6}$	6100	330
R3010.025-10-10	0.15	2.0	1.5	$6,9x10^{-6}$	6100	330
R3010.032-08-08	0.20	3.0	2.5	$2,1x10^{-5}$	4800	490
R3010.032-10-10	0.20	3.0	2.5	$2,1x10^{-5}$	4800	490
R3010.032-12-12	0.20	3.0	2.5	$2,1x10^{-5}$	4800	490
R3010.032-14-14	0.20	3.0	2.5	$2,1x10^{-5}$	4800	490



Full Bellows Coupling - Stainless Steel
set screw



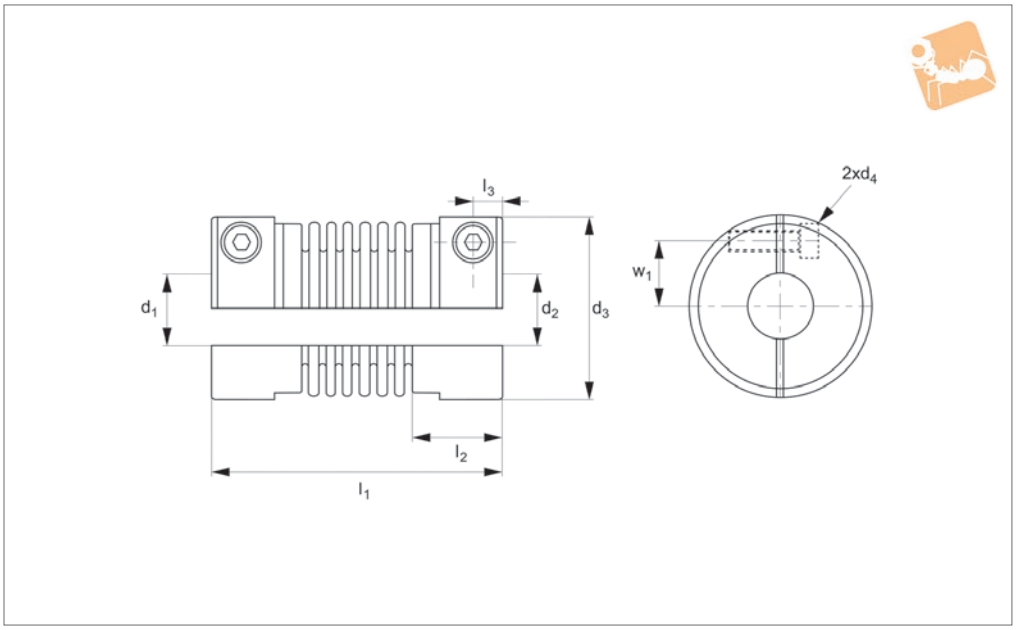
R3011



Material
Mainframe: Stainless steel SUS303
Bellows: Stainless steel SUS316

Technical Notes
Offset of angular, parallel or axial deviation are individual allowed valure, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

Order No.	d_1 & d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	Clamping screw lock torque Nm
R3011.A-3	3	12	M2,5	23.5	7.5	2.5	0.5
R3011.A-4	4	12	M2,5	23.5	7.5	2.5	0.5
R3011.A-5	5	12	M2,5	23.5	7.5	2.5	0.5
R3011.A-6	6	12	M2,5	23.5	7.5	2.5	0.5
R3011.B-4	4	16	M3	26.5	9	3	0.7
R3011.B-5	5	16	M3	26.5	9	3	0.7
R3011.B-6	6	16	M3	26.5	9	3	0.7
R3011.B-8	8	16	M3	26.5	9	3	0.7
R3011.C-5	5	20	M3	32	10	3.5	0.7
R3011.C-6	6	20	M3	32	10	3.5	0.7
R3011.C-8	8	20	M3	32	10	3.5	0.7
R3011.C-10	10	20	M3	32	10	3.5	0.7
R3011.D-6	6	25	M4	36.5	12	4.5	1.7
R3011.D-8	8	25	M4	36.5	12	4.5	1.7
R3011.D-10	10	25	M4	36.5	12	4.5	1.7
R3011.D-12	12	25	M4	36.5	12	4.5	1.7
R3011.E-6	6	32	M4	42	13.5	5.5	1.7
R3011.E-8	8	32	M4	42	13.5	5.5	1.7
R3011.E-10	10	32	M4	42	13.5	5.5	1.7
R3011.E-12	12	32	M4	42	13.5	5.5	1.7
R3011.E-14	14	32	M4	42	13.5	5.5	1.7





R3012

Material
Mainframe: Anodized aluminium AL 7075
Bellows: Phosphor bronze C5191

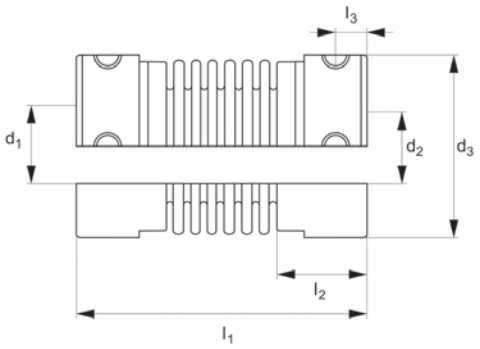
Technical Notes
Offset of angular, parallel or axial deviation are individual allowed valure, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

Order No.	d_1 & d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w	Clamping screw lock torque Nm
R3012.A-4	4	12	M2	23.5	7.5	2.3	4	0.5
R3012.A-5	5	12	M2	23.5	7.5	2.3	4	0.5
R3012.B-4	4	16	M2,5	26.5	9	3	5	1
R3012.B-5	5	16	M2,5	26.5	9	3	5	1
R3012.B-6	6	16	M2,5	26.5	9	3	5	1
R3012.C-5	5	20	M2,5	32	10	3.5	6.5	1
R3012.C-6	6	20	M2,5	32	10	3.5	6.5	1
R3012.C-8	8	20	M2,5	32	10	3.5	6.5	1
R3012.D-6	6	25	M3	36.5	12	4.5	9	1.5
R3012.D-8	8	25	M3	36.5	12	4.5	9	1.5
R3012.D-10	10	25	M3	36.5	12	4.5	9	1.5
R3012.E-8	8	32	M4	42	13.5	5	11	2.5
R3012.E-10	10	32	M4	42	13.5	5	11	2.5
R3012.E-12	12	32	M4	42	13.5	5	11	2.5
R3012.E-14	14	32	M4	42	13.5	5	11	2.5

Bellows Coupling
Aluminium with Phosphor Bronze



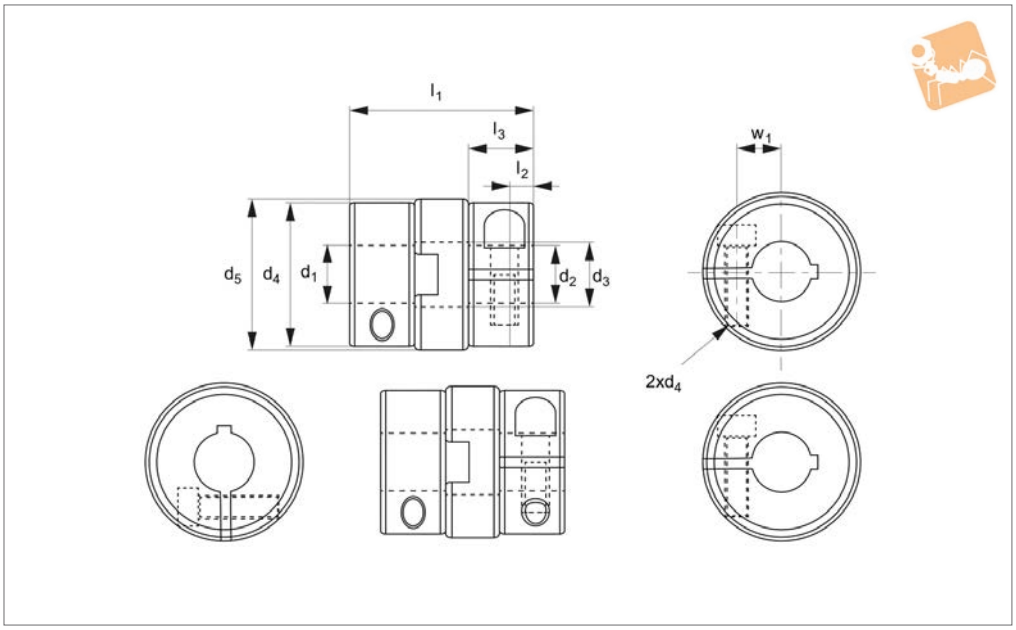
R3013



Material
Mainframe: Anodized aluminium AL 7075
Bellows: Phosphor bronze C5191

Technical Notes
Offset of angular, parallel or axial deviation are individual allowed valure, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

Order No.	d_1 & d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	Clamping screw lock torque Nm
R3013.A-3	3	12	M2,5	23.5	7.5	2.5	0.5
R3013.A-4	4	12	M2,5	23.5	7.5	2.5	0.5
R3013.A-5	5	12	M2,5	23.5	7.5	2.5	0.5
R3013.A-6	6	12	M2,5	23.5	7.5	2.5	0.5
R3013.B-4	4	16	M3	26.5	9	3	0.7
R3013.B-5	5	16	M3	26.5	9	3	0.7
R3013.B-6	6	16	M3	26.5	9	3	0.7
R3013.B-8	8	16	M3	26.5	9	3	0.7
R3013.C-5	5	20	M3	32	10	3.5	0.7
R3013.C-6	6	20	M3	32	10	3.5	0.7
R3013.C-8	8	20	M3	32	10	3.5	0.7
R3013.C-10	10	20	M3	32	10	3.5	0.7
R3013.D-6	6	25	M4	36.5	12	4.5	1.7
R3013.D-8	8	25	M4	36.5	12	4.5	1.7
R3013.D-10	10	25	M4	36.5	12	4.5	1.7
R3013.D-12	12	25	M4	36.5	12	4.5	1.7
R3013.E-6	6	32	M4	42	13.5	5.5	1.7
R3013.E-8	8	32	M4	42	13.5	5.5	1.7
R3013.E-10	10	32	M4	42	13.5	5.5	1.7
R3013.E-12	12	32	M4	42	13.5	5.5	1.7
R3013.E-14	14	32	M4	42	13.5	5.5	1.7





R3052

Material
Mainframe: Stainless steel alloy SUS304
Insert: Aluminium bronze (filled with solid lubricant)

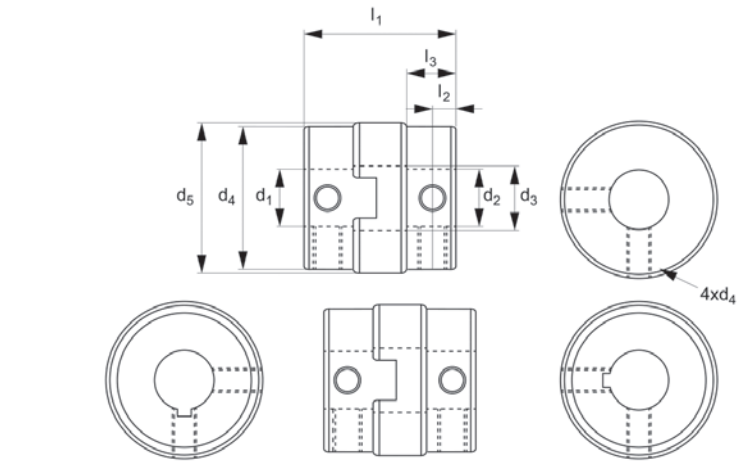
Technical Notes
Offset of angular or axial deviation are individual allowed value,
so couple reasons of axial offset appearing at same time would reduce the unit allowable value.
Suit for high wrench torque, high rotation.
In case of parallel deviation over 0,1, abrasion of the insert is direct ratio to load torque,
offset and rotation numbers.
Available options for key way inner diameter is bigger than 6mm.

Order No.	Ø d	d_1 & d_2	d_3	d_4	d_5	l_1	l_2	l_3	w	Clamping screw lock torque Nm	Clamping screw d_6
R3052.A-4	15	4	7.2	14.5	15	18.4	3.2	6.6	4.5	1.0	M2,5
R3052.A-5	15	5	7.2	14.5	15	18.4	3.2	6.6	4.5	1.0	M2,5
R3052.A-6	15	6	7.2	14.5	15	18.4	3.2	6.6	4.5	1.0	M2,5
R3052.B-5	17	5	8.2	16.8	17.5	24.4	4	9	5	1.8	M 3
R3052.B-6	17	6	8.2	16.8	17.5	24.4	4	9	5	1.8	M 3
R3052.C-6	20	6	9	20	21	27.2	4.5	10	7	1.8	M 3
R3052.C-7	20	7	9	20	21	27.2	4.5	10	7	1.8	M 3
R3052.C-8	20	8	9	20	21	27.2	4.5	10	7	1.8	M 3
R3052.C-10	20	10	9	20	21	27.2	4.5	10	7	1.8	M 3
R3052.D-6	26	6	12	26	27	30.4	5	11.5	8.4	3.0	M 4
R3052.D-7	26	7	12	26	27	30.4	5	11.5	8.4	3.0	M 4
R3052.D-8	26	8	12	26	27	30.4	5	11.5	8.4	3.0	M 4
R3052.D-10	26	10	12	26	27	30.4	5	11.5	8.4	3.0	M 4
R3052.D-11	26	11	12	26	27	30.4	5	11.5	8.4	3.0	M 4
R3052.E-8	30	8	14	30	31	33	6	12	9	4.5	M 4
R3052.E-10	30	10	14	30	31	33	6	12	9	4.5	M 4
R3052.E-12	30	12	14	30	31	33	6	12	9	4.5	M 4
R3052.E-14	30	14	14	30	31	33	6	12	9	4.5	M 4
R3052.F-10	34	10	17	34	35	34	6	13	11	8.0	M 5
R3052.F-11	34	11	17	34	35	34	6	13	11	8.0	M 5
R3052.F-12	34	12	17	34	35	34	6	13	11	8.0	M 5
R3052.F-14	34	14	17	34	35	34	6	13	11	8.0	M 5
R3052.F-15	34	15	17	34	35	34	6	13	11	8.0	M 5
R3052.F-16	34	16	17	34	35	34	6	13	11	8.0	M 5
R3052.G-10	38	10	17	38	41	39.5	7	15	13.7	8.0	M 5
R3052.G-12	38	12	17	38	41	39.5	7	15	13.7	8.0	M 5
R3052.G-14	38	14	17	38	41	39.5	7	15	13.7	8.0	M 5
R3052.G-15	38	15	17	38	41	39.5	7	15	13.7	8.0	M 5
R3052.G-16	38	16	17	38	41	39.5	7	15	13.7	8.0	M 5
R3052.G-18	38	18	17	38	41	39.5	7	15	13.7	8.0	M 5
R3052.G-20	38	20	17	38	41	39.5	7	15	13.7	8.0	M 5

Oldham Coupling
with Aluminium Bronze Insert



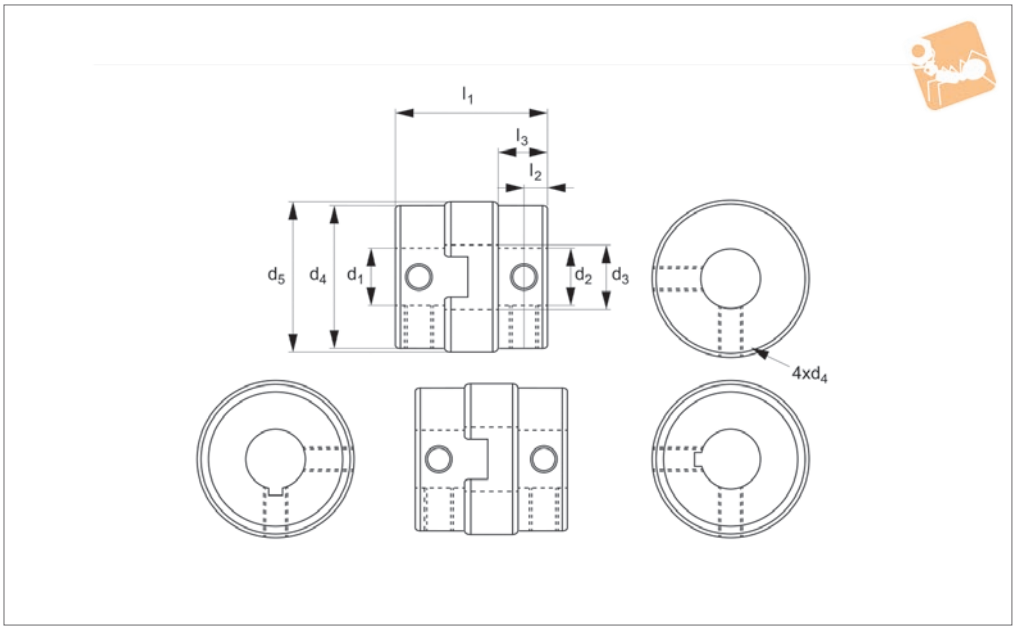
R3053.1



Material
Mainframe: Stainless steel alloy SUS304
Insert: Aluminium bronze (filled with solid lubricant)

Technical Notes
Offset of angular or axial deviation are individual allowed value,
so couple reasons of axial offset appearing at same time would reduce the unit allowable value.
Suit for high wrench torque, high rotation.
In case of parallel deviation over 0,1, abrasion of the insert is direct ratio to load torque,
offset and rotation numbers.
Available options for key way inner diameter is bigger than 6mm.

Order No.	Dia. Ø nom.	d_1 & d_2	d_3	d_4	d_5	l_1	l_2	l_3	Clamping screw lock torque Nm	Clamping screw d_6
R3053.A-4	15	4	7.2	14.5	15	16	2.6	5.4	0.7	M 3
R3053.A-5	15	5	7.2	14.5	15	16	2.6	5.4	0.7	M 3
R3053.A-6	15	6	7.2	14.5	15	16	2.6	5.4	0.7	M 3
R3053.A-7	15	7	7.2	14.5	15	16	2.6	5.4	0.7	M 3
R3053.A-8	15	8	7.2	14.5	15	16	2.6	5.4	0.7	M 3
R3053.B-5	17	5	8.2	16.8	17.5	19.8	3.2	6.7	117	M 4
R3053.B-6	17	6	8.2	16.8	17.5	19.8	3.2	6.7	117	M 4
R3053.B-7	17	7	8.2	16.8	17.5	19.8	3.2	6.7	117	M 4
R3053.B-8	17	8	8.2	16.8	17.5	19.8	3.2	6.7	117	M 4
R3053.C-6	20	6	9	20	21	21.6	3.4	7	1.7	M 4
R3053.C-7	20	7	9	20	21	21.6	3.4	7	1.7	M 4
R3053.C-8	20	8	9	20	21	21.6	3.4	7	1.7	M 4
R3053.C-10	20	10	9	20	21	21.6	3.4	7	1.7	M 4
R3053.C-11	20	11	9	20	21	21.6	3.4	7	1.7	M 4
R3053.C-12	20	12	9	20	21	21.6	3.4	7	1.7	M 4
R3053.D-6	26	6	12	26	27	25.6	4	9	1.7	M 4
R3053.D-7	26	7	12	26	27	25.6	4	9	1.7	M 4
R3053.D-8	26	8	12	26	27	25.6	4	9	1.7	M 4
R3053.D-10	26	10	12	26	27	25.6	4	9	1.7	M 4
R3053.D-11	26	11	12	26	27	25.6	4	9	1.7	M 4
R3053.D-12	26	12	12	26	27	25.6	4	9	1.7	M 4
R3053.D-14	26	14	12	26	27	25.6	4	9	1.7	M 4





R3053.2

Material
Mainframe: Stainless steel alloy SUS304
Insert: Aluminium bronze (filled with solid lubricant)

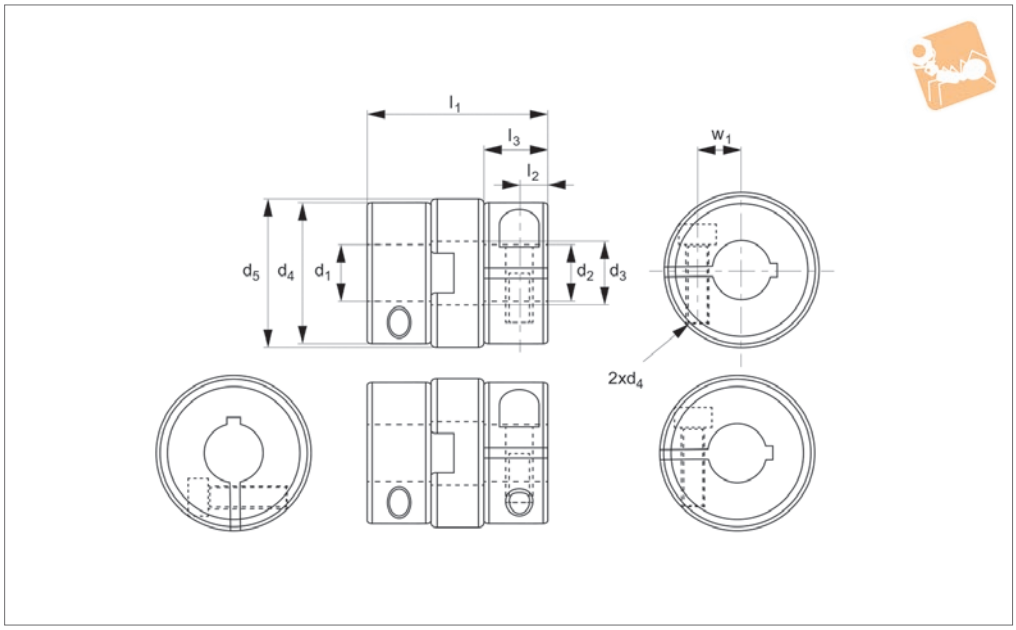
Technical Notes
Offset of angular or axial deviation are individual allowed value,
so couple reasons of axial offset appearing at same time would reduce the unit allowable value.
Suit for high wrench torque, high rotation.
In case of parallel deviation over 0,1, abrasion of the insert is direct ratio to load torque,
offset and rotation numbers.
Available options for key way inner diameter is bigger than 6mm.

Order No.	Ø d	d_1 & d_2	d_3	d_4	d_5	l_1	l_2	l_3	Clamping screw lock torque Nm	Clamping screw d_6
R3053.E-8	30	8	14	30	31	33	6	12	1.7	M 4
R3053.E-10	30	10	14	30	31	33	6	12	1.7	M 4
R3053.E-12	30	12	14	30	31	33	6	12	1.7	M 4
R3053.E-14	30	14	14	30	31	33	6	12	1.7	M 4
R3053.F-10	34	10	14	34	35	34	5.5	13	4.0	M 5
R3053.F-11	34	11	14	34	35	34	5.5	13	4.0	M 5
R3053.F-12	34	10	14	34	35	34	5.5	13	4.0	M 5
R3053.F-14	34	14	14	34	35	34	5.5	13	4.0	M 5
R3053.F-15	34	15	14	34	35	34	5.5	13	4.0	M 5
R3053.F-16	34	16	14	34	35	34	5.5	13	4.0	M 5
R3053.G-10	38	10	17	38	41	39.5	7	15	4	M 5
R3053.G-12	38	12	17	38	41	39.5	7	15	4	M 5
R3053.G-14	38	14	17	38	41	39.5	7	15	4	M 5
R3053.G-15	38	15	17	38	41	39.5	7	15	4	M 5
R3053.G-16	38	16	17	38	41	39.5	7	15	4	M 5
R3053.G-18	38	18	17	38	41	39.5	7	15	4	M 5
R3053.G-20	38	20	17	38	41	39.5	7	15	4	M 5

Oldham Coupling
with Carbon Resin Insert



R3054.1



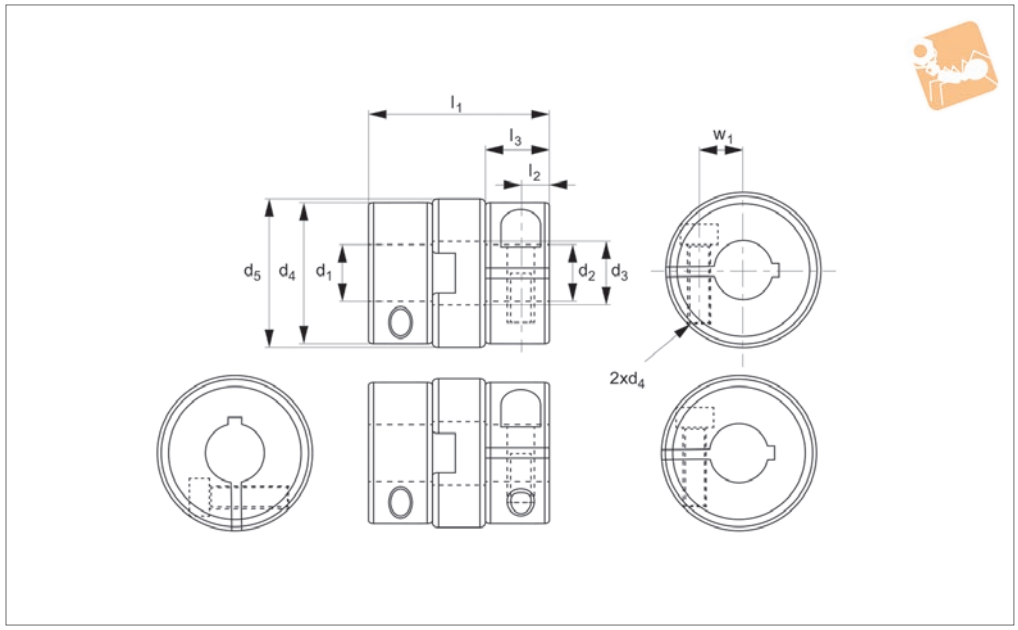
Material
Mainframe: Stainless steel alloy SUS304.
Insert: Carbon resin.

Technical Notes
Operating temperatureL -40° - 90°C.

Offset of angular, parallel or axial deviation are individual allowed value, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

R3054 lock torque of clamping screw is 5,4<Nm) based on shaft dia (Ød1, Ød2) over Ø16.
Available options for key way per inner diameter is bigger than 6mm.

Order No.	Ø d	d_1 & d_2	d_2	d_3	d_4	d_5	l_1	l_2	l_3	w	Clamping screw lock torque Nm	Clamping screw d_6
R3054.A-4	15	4	16	5.0	14.5	15	18.4	3.2	6.6	4.5	1.0	M2,5
R3054.A-5	15	5	16	5.0	14.5	15	18.4	3.2	6.6	4.5	1.0	M2,5
R3054.A-6	15	6	16	5.0	14.5	15	18.4	3.2	6.6	4.5	1.0	M2,5
R3054.B-5	17	5	19	7.2	16.8	17.5	24.4	4	9	5	1.8	M 3
R3054.B-6	17	6	19	7.2	16.8	17.5	24.4	4	9	5	1.8	M 3
R3054.C-6	20	6	23	8.2	20	21	27.2	4.5	10	7	1.8	M 3
R3054.C-7	20	7	23	8.2	20	21	27.2	4.5	10	7	1.8	M 3
R3054.C-8	20	8	23	8.2	20	21	27.2	4.5	10	7	1.8	M 3
R3054.C-10	20	10	23	8.2	20	21	27.2	4.5	10	7	1.8	M 3
R3045.D-6	26	6	29	12	26	27	30.4	5	11.5	8.4	3.0	M 4
R3045.D-7	26	7	29	12	26	27	30.4	5	11.5	8.4	3.0	M 4
R3045.D-8	26	8	29	12	26	27	30.4	5	11.5	8.4	3.0	M 4
R3045.D-10	26	10	29	12	26	27	30.4	5	11.5	8.4	3.0	M 4
R3045.D-11	26	11	29	12	26	27	30.4	5	11.5	8.4	3.0	M 4
R3045.D-12	26	12	29	12	26	27	30.4	5	11.5	8.4	3.0	M 4





R3054.2

Material
Mainframe: Stainless steel alloy SUS304.
Insert: Carbon resin.

Technical Notes
Operating temperatureL -40° - 90°C.

Offset of angular, parallel or axial deviation are individual allowed value, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

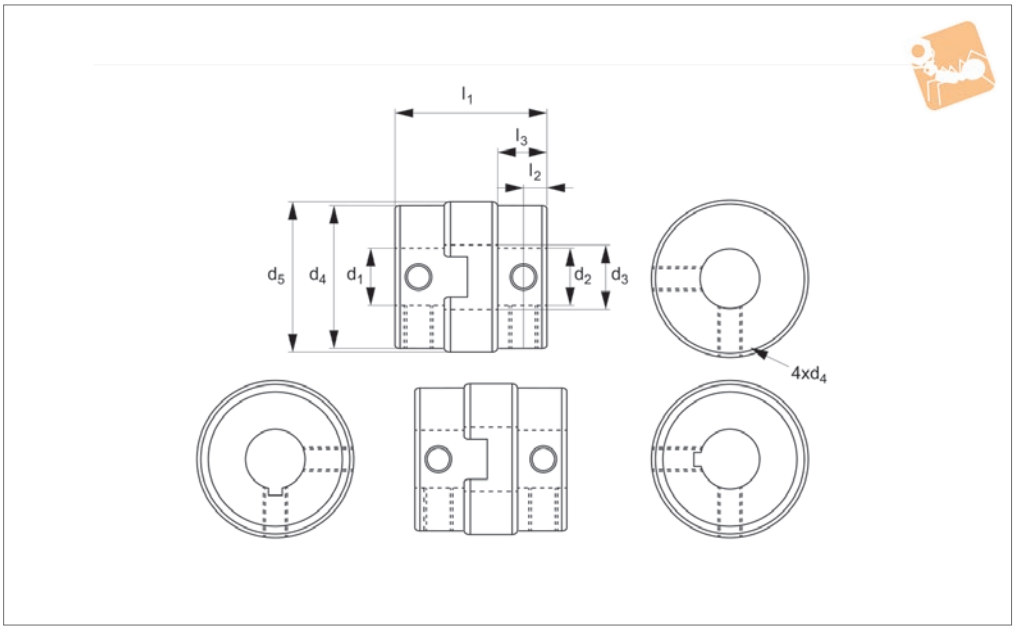
R3054 lock torque of clamping screw is 5,4<Nm) based on shaft dia (Ød1, Ød2) over Ø16.
Available options for key way per inner diameter is bigger than 6mm.

Order No.	Ø d	d_1 & d_2	d_2	d_3	d_4	d_5	l_1	l_2	l_3	w	Clamping screw lock torque Nm	Clamping screw d_6
R3054.E-8	30	8	32	13	30	31	33	6	12	9	4.5	M 5
R3054.E-10	30	10	32	13	30	31	33	6	12	9	4.5	M 5
R3054.E-12	30	12	32	13	30	31	33	6	12	9	4.5	M 5
R3054.E-14	30	14	32	13	30	31	33	6	12	9	4.5	M 5
R3054.F-10	34	10	37	13	34	35	34	6	13	11	8.0	M 5
R3054.F-11	34	11	37	13	34	35	34	6	13	11	8.0	M 5
R3054.F-12	34	12	37	13	34	35	34	6	13	11	8.0	M 5
R3054.F-14	34	14	37	13	34	35	34	6	13	11	8.0	M 5
R3054.F-15	34	15	37	13	34	35	34	6	13	11	8.0	M 5
R3054.F-16	34	16	37	13	34	35	34	6	13	11	8.0	M 5
R3054.G-10	38	10	41	17	38	41	40	7	15	13.7	8.0	M 5
R3054.G-12	38	12	41	17	38	41	40	7	15	13.7	8.0	M 5
R3054.G-14	38	14	41	17	38	41	40	7	15	13.7	8.0	M 5
R3054.G-15	38	15	41	17	38	41	40	7	15	13.7	8.0	M 5
R3054.G-16	38	16	41	17	38	41	40	7	15	13.7	8.0	M 5
R3054.G-18	38	18	41	17	38	41	40	7	15	13.7	8.0	M 5
R3054.G-20	38	20	41	17	38	41	40	7	15	13.7	8.0	M 5

Oldham Coupling
with Carbon Resin Insert



R3055.1



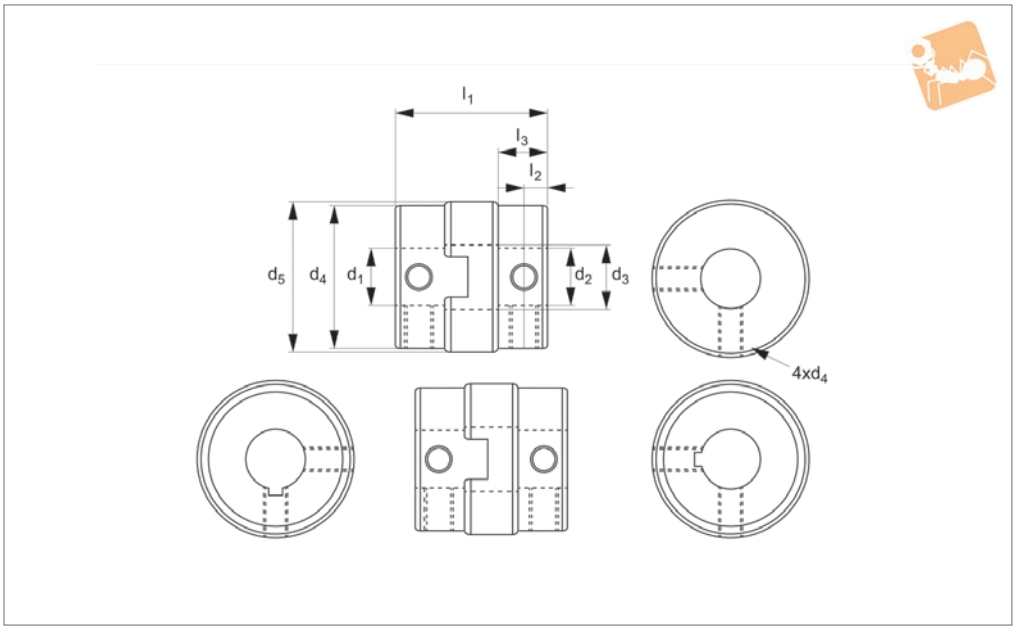
Material
Mainframe: Stainless steel alloy SUS304.
Insert: Carbon resin.

Technical Notes
Operating temperature: -40° - 90°C.

Offset of angular, parallel, or axial deviation are individual allowed value, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

Available options for key way per inner diameter is bigger than 6mm.

Order No.	Ø d	d_1 & d_2	d_3	d_4	d_5	l_1	l_2	l_3	Clamping screw lock torque Nm	Clamping screw d_6
R3055.A-1	6	1	2.4	6	6.2	8.4	1.5	3	0.15	M1,6
R3055.A-1.5	6	1.5	2.4	6	6.2	8.4	1.5	3	0.15	M1,6
R3055.A-2	6	2	2.4	6	6.2	8.4	1.5	3	0.15	M1,6
R3055.B-1	8	1	2.4	8	8.2	8.4	1.5	3	0.15	M1,6
R3055.B-2	8	2	2.4	8	8.2	8.4	1.5	3	0.15	M1,6
R3055.B-3	8	3	2.4	8	8.2	8.4	1.5	3	0.15	M1,6
R3055.C-2	10	2	4.4	10	10.2	10.2	1.8	3.7	0.3	M 2
R3055.C-3	10	3	4.4	10	10.2	10.2	1.8	3.7	0.3	M 2
R3055.C-4	10	4	4.4	10	10.2	10.2	1.8	3.7	0.3	M 2
R3055.D-3	12	3	4.0	12	12.5	14.2	2.5	5.2	0.7	M 3
R3055.D-4	12	4	4.0	12	12.5	14.2	2.5	5.2	0.7	M 3
R3055.D-5	12	5	4.0	12	12.5	14.2	2.5	5.2	0.7	M 3
R3055.E-4	15	4	5.0	14.5	15	16	2.6	5.4	0.7	M 3
R3055.E-5	15	5	5.0	14.5	15	16	2.6	5.4	0.7	M 3
R3055.E-6	15	6	5.0	14.5	15	16	2.6	5.4	0.7	M 3
R3055.E-7	15	7	5.0	14.5	15	16	2.6	5.4	0.7	M 3
R3055.E-8	15	8	5.0	14.5	15	16	2.6	5.4	0.7	M 3
R3055.F-5	17	5	7.2	16.8	17.5	19.8	3.2	6.7	1.7	M 4
R3055.F-6	17	6	7.2	16.8	17.5	19.8	3.2	6.7	1.7	M 4
R3055.F-7	17	7	7.2	16.8	17.5	19.8	3.2	6.7	1.7	M 4
R3055.F-8	17	8	7.2	16.8	17.5	19.8	3.2	6.7	1.7	M 4
R3055.G-6	20	6	8.2	20	21	21.4	3.4	7	1.7	M 4
R3055.G-7	20	7	8.2	20	21	21.4	3.4	7	1.7	M 4
R3055.G-8	20	8	8.2	20	21	21.4	3.4	7	1.7	M 4
R3055.G-10	20	10	8.2	20	21	21.4	3.4	7	1.7	M 4
R3055.G-11	20	11	8.2	20	21	21.4	3.4	7	1.7	M 4
R3055.G-12	20	12	8.2	20	21	21.4	3.4	7	1.7	M 4





R3055.2

Material
Mainframe: Stainless steel alloy SUS304.
Insert: Carbon resin.

Technical Notes
Operating temperature: -40° - 90°C.

Offset of angular, parallel, or axial deviation are individual allowed value, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

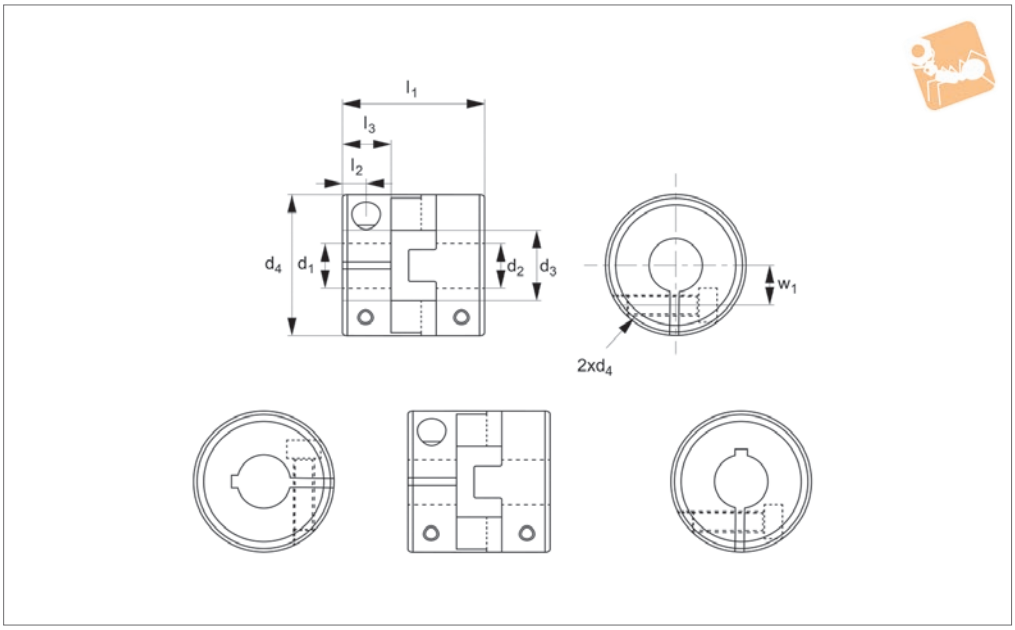
Available options for key way per inner diameter is bigger than 6mm.

Order No.	Ø d	d_1 & d_2	d_3	d_4	d_5	l_1	l_2	l_3	Clamping screw lock torque Nm	Clamping screw d_6
R3055.H-6	26	6	12.0	26	27	25.6	4	9	1.7	M 4
R3055.H-7	26	7	12.0	26	27	25.6	4	9	1.7	M 4
R3055.H-8	26	8	12.0	26	27	25.6	4	9	1.7	M 4
R3055.H-10	26	10	12.0	26	27	25.6	4	9	1.7	M 4
R3055.H-11	26	11	12.0	26	27	25.6	4	9	1.7	M 4
R3055.H-12	26	12	12.0	26	27	25.6	4	9	1.7	M 4
R3055.H-14	26	14	12.0	26	27	25.6	4	9	1.7	M 4
R3055.I-8	30	8	13.0	30	31	33	6	12	1.7	M 4
R3055.I-10	30	10	13.0	30	31	33	6	12	1.7	M 4
R3055.I-12	30	12	13.0	30	31	33	6	12	1.7	M 4
R3055.I-14	30	14	13.0	30	31	33	6	12	1.7	M 4
R3055.J-10	34	10	13.0	34	35	34.2	5.5	13	4.0	M 5
R3055.J-11	34	11	13.0	34	35	34.2	5.5	13	4.0	M 5
R3055.J-12	34	12	13.0	34	35	34.2	5.5	13	4.0	M 5
R3055.J-14	34	14	13.0	34	35	34.2	5.5	13	4.0	M 5
R3055.J-15	34	15	13.0	34	35	34.2	5.5	13	4.0	M 5
R3055.J-16	34	16	13.0	34	35	34.2	5.5	13	4.0	M 5
R3055.K-10	38	10	17.0	38	41	40	7	15	4.0	M 5
R3055.K-12	38	12	17.0	38	41	40	7	15	4.0	M 5
R3055.K-14	38	14	17.0	38	41	40	7	15	4.0	M 5
R3055.K-15	38	15	17.0	38	41	40	7	15	4.0	M 5
R3055.K-16	38	16	17.0	38	41	40	7	15	4.0	M 5
R3055.K-18	38	18	17.0	38	41	40	7	15	4.0	M 5
R3055.K-20	38	20	17.0	38	41	40	7	15	4.0	M 5

Oldham Coupling
with Black Polyacetel (POM) Insert



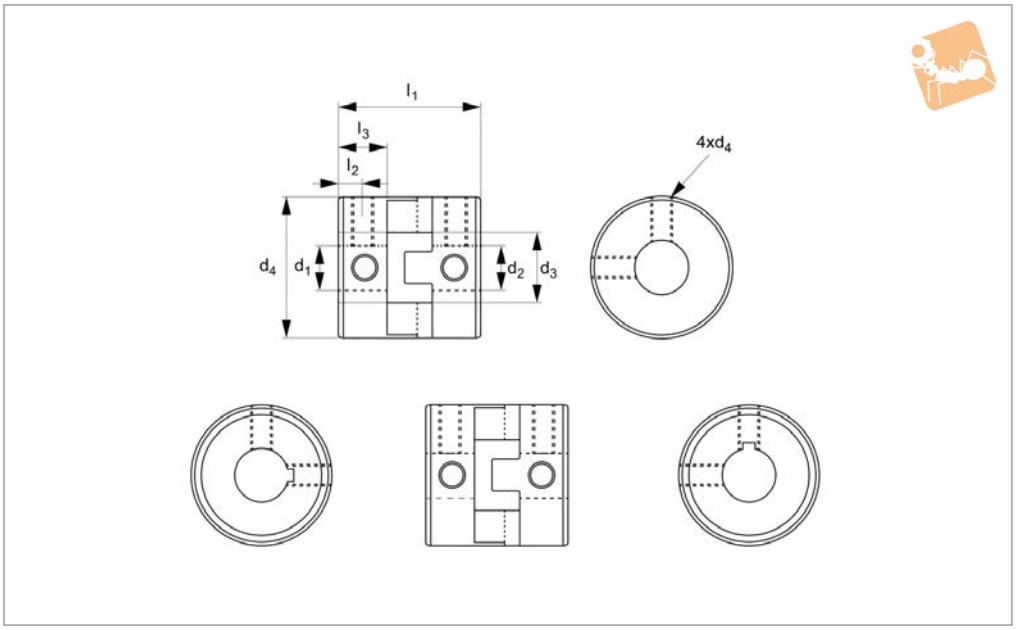
R3056



Material
Mainframe: Anodized aluminium AL7075.
Insert: Black polyacetel (POM)

Technical Notes
Operating temperature: -20° - 80°C.
Offset of angular, parallel or axial deviation are individual allowed value, so couple reasons of axial oddset appearing at same time would reduce unit allowable value.
Select bigger lock torque of clamping screw than listen values on catalogues when shaft diameter is too small.
List torque tightness values are only for general standard.
Available options for key way per inner diameter is bigger than 6mm.

Order No.	d_1 & d_2	d_3	d_4	l_1	l_2	l_3	w	Clamping screw lock torque Nm	Clamping screw d_5
R3056.A-14	14	22.5	44	46	7.5	15	14.5	8.4	M 5
R3056.A-15	15	22.5	44	46	7.5	15	14.5	8.4	M 5
R3056.A-16	16	22.5	44	46	7.5	15	14.5	8.4	M 5
R3056.A-18	18	22.5	44	46	7.5	15	14.5	8.4	M 5
R3056.A-20	20	22.5	44	46	7.5	15	14.5	8.4	M 5
R3056.B-18	18	28	55	57	9.5	19	17	14.4	M 6
R3056.B-20	20	28	55	57	9.5	19	17	14.4	M 6
R3056.B-22	22	28	55	57	9.5	19	17	14.4	M 6
R3056.B-25	25	28	55	57	9.5	19	17	14.4	M 6
R3056.C-22	22	39	70	77	12.5	25	24	30.0	M 8
R3056.C-25	25	39	70	77	12.5	25	24	30.0	M 8
R3056.C-28	28	39	70	77	12.5	25	24	30.0	M 8
R3056.C-30	30	39	70	77	12.5	25	24	30.0	M 8
R3056.C-35	35	39	70	77	12.5	25	24	30.0	M 8





R3057

Material
Mainframe: Anodized aluminium AL7075.
Insert: Black polyacetel (POM)

Technical Notes
Operating temperature: -20° - 80°C.
Offset of angular, parallel or axial deviation are individual allowed value, so couple reasons of axial oddset appearing at same time would reduce unit allowable value.
Select bigger lock torque of clamping screw than listen values on catalogues when shaft diameter is too small.
List torque tightness values are only for general standard.
Available options for key way per inner diameter is bigger than 6mm.

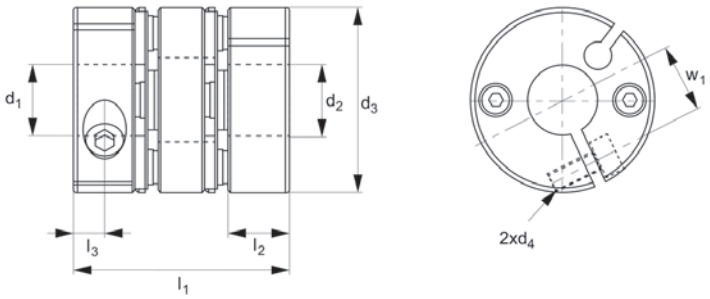
Order No.	d_1 & d_2	d_3	d_4	l_1	l_2	l_3	Clamping screw lock torque Nm	Clamping screw d_5
R3057.A-14	14	22.5	44	46	7.5	15	7.0	M 6
R3057.A-15	15	22.5	44	46	7.5	15	7.0	M 6
R3057.A-16	16	22.5	44	46	7.5	15	7.0	M 6
R3057.A-18	18	22.5	44	46	7.5	15	7.0	M 6
R3057.A-20	20	22.5	44	46	7.5	15	7.0	M 6
R3057.A-22	22	22.5	44	46	7.5	15	7.0	M 6
R3057.B-18	18	28	55	57	9.5	19	15.0	M 8
R3057.B-20	20	28	55	57	9.5	19	15.0	M 8
R3057.B-22	22	28	55	57	9.5	19	15.0	M 8
R3057.B-25	25	28	55	57	9.5	19	15.0	M 8
R3057.B-26	26	28	55	57	9.5	19	15.0	M 8
R3057.C-22	22	39	70	77	12.5	25	30.0	M10
R3057.C-25	25	39	70	77	12.5	25	30.0	M10
R3057.C-28	28	39	70	77	12.5	25	30.0	M10
R3057.C-30	30	39	70	77	12.5	25	30.0	M10
R3057.C-35	35	39	70	77	12.5	25	30.0	M10
R3057.C-38	38	39	70	77	12.5	25	30.0	M10

Double Disc Coupling - Aluminium

high rigidity clamp fixing - long type



R3064



Material

Mainframe: Anodized aluminium - AL 7075
Disk: Stainless steel - SUS303

Technical Notes

High wrench torque load, high wrench torque rigidity capacity and excellent sensibility.

The flexure allowed by stainless steel disc portion of the coupling is capable of accommodating
angular, parallel and axial misalignment.
Teethless screw to lock disks, zero backlash
Clockwise character is exactly the same as anti-clockwise one.

Free maintenance, oil-resist and anti corrosiveness.
Offset of angular,parallel or axial deviation are individual allowed value,
so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

Order No.	d_1 & d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w	Clamping screw lock torque Nm
R3064.A-4	4	21	M2,5	24.5	7	3.5	7	1.2
R3064.A-5	5	21	M2,5	24.5	7	3.5	7	1.2
R3064.A-6	6	21	M2,5	24.5	7	3.5	7	1.2
R3064.A-8	8	21	M2,5	24.5	7	3.5	7	1.2
R3064.A-9	9	21	M2,5	24.5	7	3.5	7	1.2
R3064.B-5	5	28	M3	32	9	4	9.5	1.5
R3064.B-6	6	28	M3	32	9	4	9.5	1.5
R3064.B-8	8	28	M3	32	9	4	9.5	1.5
R3064.B-9	9	28	M3	32	9	4	9.5	1.5
R3064.B-10	10	28	M3	32	9	4	9.5	1.5
R3064.C-6	6	34	M3	35	9.8	5	12	1.5
R3064.C-8	8	34	M3	35	9.8	5	12	1.5
R3064.C-9	9	34	M3	35	9.8	5	12	1.5
R3064.C-10	10	34	M3	35	9.8	5	12	1.5
R3064.C-11	11	34	M3	35	9.8	5	12	1.5
R3064.C-12	12	34	M3	35	9.8	5	12	1.5
R3064.C-14	14	34	M3	35	9.8	5	12	1.5
R3064.D-8	8	46	M4	44	12.6	6	16.5	3.5
R3064.D-9	9	46	M4	44	12.6	6	16.5	3.5
R3064.D-10	10	46	M4	44	12.6	6	16.5	3.5
R3064.D-11	11	46	M4	44	12.6	6	16.5	3.5
R3064.D-12	12	46	M4	44	12.6	6	16.5	3.5
R3064.D-14	14	46	M4	44	12.6	6	16.5	3.5
R3064.D-15	15	46	M4	44	12.6	6	16.5	3.5
R3064.D-17	17	46	M4	44	12.6	6	16.5	3.5
R3064.D-19	19	46	M4	44	12.6	6	16.5	3.5
R3064.E-12	12	55	M5	55	16	7	20.5	6
R3064.E-14	14	55	M5	55	16	7	20.5	6
R3064.E-15	15	55	M5	55	16	7	20.5	6
R3064.E-17	17	55	M5	55	16	7	20.5	6

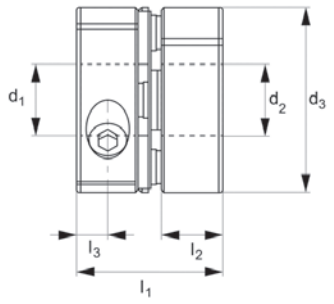
Order No.	d_1 & d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w	Clamping screw lock torque Nm
R3064.E-19	19	55	M5	55	16	7	20.5	6
R3064.E-20	20	55	M5	55	16	7	20.5	6
R3064.E-22	22	55	M5	55	16	7	20.5	6
R3064.E-24	24	55	M5	55	16	7	20.5	6
R3064.E-25	25	55	M5	55	16	7	20.5	6

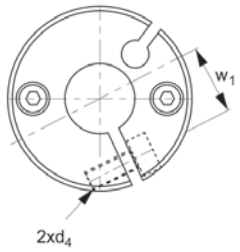
Double Disk Coupling - Aluminium

high rigidity clamp fixing - short type



R3065





Material

Mainframe: Anodized aluminium - AL 7075
Disk: Stainless steel - SUS303

Technical Notes

High wrench torque load, high wrench torque rigidity capacity and excellent sensibility.
The flexure allowed by stainless steel disk portion of the coupling is capable of accommodating angular and axial misalignment. Not accomodating of parallel misalignment.
Clockwise character is exactly the same as anti-clockwise one.
Free maintenance, oil-resist and anti corrosiveness, Teethless screw to lock disks, zero backlash
Offset of angular,parallel or axial deviation are individual allowed value,
so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

Order No.	d_1 & d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w	Clamping screw lock torque Nm
R3065.A-4	4	21	M2,5	24.5	7	3.5	7	1.2
R3065.A-5	5	21	M2,5	24.5	7	3.5	7	1.2
R3065.A-6	6	21	M2,5	24.5	7	3.5	7	1.2
R3065.A-8	8	21	M2,5	24.5	7	3.5	7	1.2
R3065.A-9	9	21	M2,5	24.5	7	3.5	7	1.2
R3065.B-5	5	28	M3	32	9	4	9.5	1.5
R3065.B-6	6	28	M3	32	9	4	9.5	1.5
R3065.B-8	8	28	M3	32	9	4	9.5	1.5
R3065.B-9	9	28	M3	32	9	4	9.5	1.5
R3065.B-10	10	28	M3	32	9	4	9.5	1.5
R3065.C-6	6	34	M3	35	9.8	5	12	1.5
R3065.C-8	8	34	M3	35	9.8	5	12	1.5
R3065.C-9	9	34	M3	35	9.8	5	12	1.5
R3065.C-10	10	34	M3	35	9.8	5	12	1.5
R3065.C-11	11	34	M3	35	9.8	5	12	1.5
R3065.C-12	12	34	M3	35	9.8	5	12	1.5
R3065.C-14	14	34	M3	35	9.8	5	12	1.5
R3065.D-8	8	46	M4	44	12.6	6	16.5	3.5
R3065.D-9	9	46	M4	44	12.6	6	16.5	3.5
R3065.D-10	10	46	M4	44	12.6	6	16.5	3.5
R3065.D-11	11	46	M4	44	12.6	6	16.5	3.5
R3065.D-12	12	46	M4	44	12.6	6	16.5	3.5
R3065.D-14	14	46	M4	44	12.6	6	16.5	3.5
R3065.D-15	15	46	M4	44	12.6	6	16.5	3.5
R3065.D-17	17	46	M4	44	12.6	6	16.5	3.5
R3065.D-19	19	46	M4	44	12.6	6	16.5	3.5
R3065.E-12	12	55	M5	55	16	7	20.5	6
R3065.E-14	14	55	M5	55	16	7	20.5	6
R3065.E-15	15	55	M5	55	16	7	20.5	6

Double Disk Coupling - Aluminium

high rigidity clamp fixing - short type

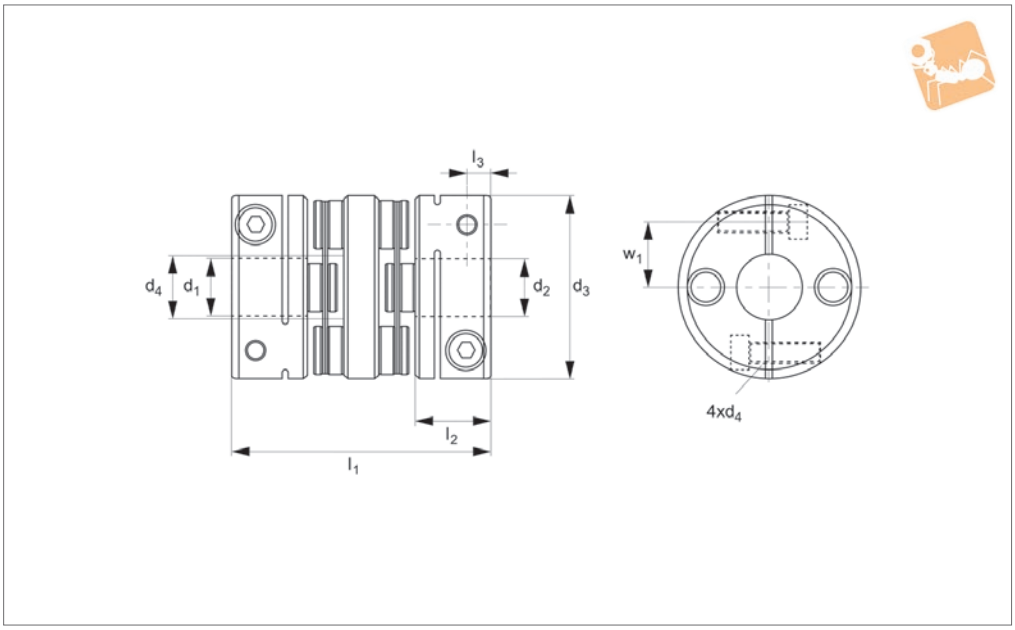
Order No.	d_1 & d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w	Clamping screw lock torque Nm
R3065.E-17	17	55	M5	55	16	7	20.5	6
R3065.E-19	19	55	M5	55	16	7	20.5	6
R3065.E-20	20	55	M5	55	16	7	20.5	6
R3065.E-22	22	55	M5	55	16	7	20.5	6
R3065.E-24	24	55	M5	55	16	7	20.5	6
R3065.E-25	25	55	M5	55	16	7	20.5	6

Double Disk Coupling - Aluminium

clamping type, long type.



R3066.1



Material

Main frame: Anodized aluminium AL7075
Disk: Stainless steel SUS301
Pin: Stainless steel SUS303

Technical Notes

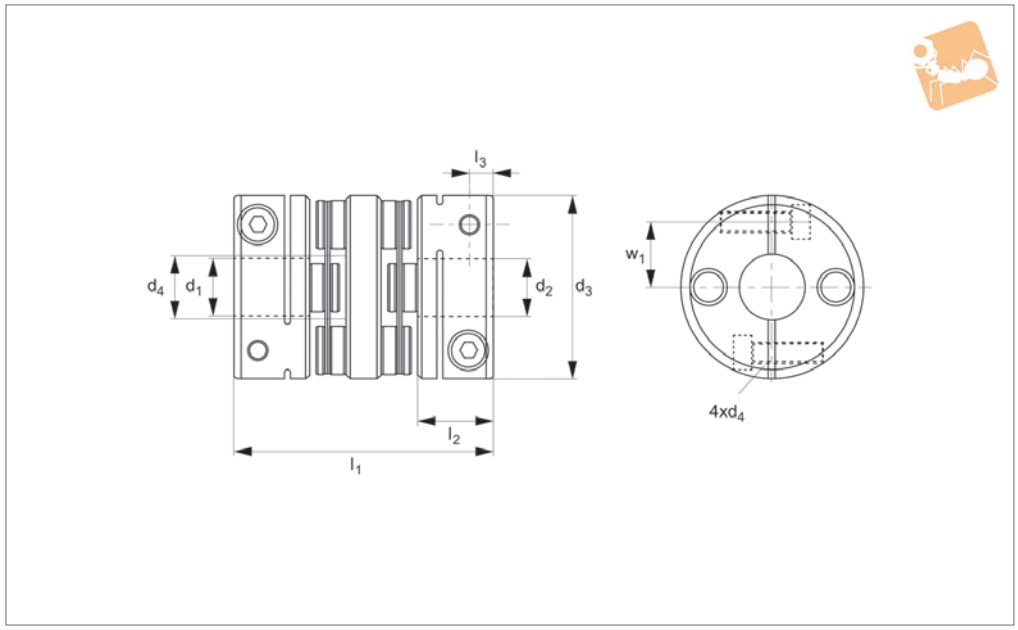
High wrench torque load, high wrench torque rigidity capacity and excellent sensibility.

The flexure allowed by stainless steel disc portion of the coupling is capable of accommodating
angular, parallel and axial misalignment.
Teethless screw to lock disks, zero backlash
Clockwise character is exactly the same as anti-clockwise one.
Free maintenance, oil-resist and anti corrosiveness.
Offset of angular,parallel or axial deviation are individual allowed value,
so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

Order No.	d_1 & d_2 tol. h8	d_3	d_4	d_5	l_1	l_2	l_3	w_1	Clamping screw lock torque Nm
R3066.A-4	4	19	8.5	M2	28	8	2.5	6.5	0.5
R3066.A-4.5	4.5	19	8.5	M2	28	8	2.5	6.5	0.5
R3066.A-5	45	19	8.5	M2	28	8	2.5	6.5	0.5
R3066.A-6	6	19	8.5	M2	28	8	2.5	6.5	0.5
R3066.A-7	7	19	8.5	M2	28	8	2.5	6.5	0.5
R3066.A-8	8	19	8.5	M2	28	8	2.5	6.5	0.5
R3066.B-6	6	25	12.5	M2,5	31	10	3.5	9	1
R3066.B-7	7	25	12.5	M2,5	31	10	3.5	9	1
R3066.B-8	8	25	12.5	M2,5	31	10	3.5	9	1
R3066.B-10	10	25	12.5	M2,5	31	10	3.5	9	1
R3066.B-11	11	25	12.5	M2,5	31	10	3.5	9	1
R3066.B-12	12	25	12.5	M2,5	31	10	3.5	9	1
R3066.C-8	8	32	16	M3	40	12	4	11	1.5
R3066.C-10	10	32	16	M3	40	12	4	11	1.5
R3066.C-11	11	32	16	M3	40	12	4	11	1.5
R3066.C-12	12	32	16	M3	40	12	4	11	1.5
R3066.C-14	14	32	16	M3	40	12	4	11	1.5
R3066.C-15	15	32	16	M3	40	12	4	11	1.5

Double Disk Coupling - Aluminium

clamping type, long type.





R3066.2

Material

Main frame: Anodized aluminium AL7075
Disk: Stainless steel SUS301
Pin: Stainless steel SUS303

Technical Notes

High wrench torque load, high wrench torque rigidity capacity and excellent sensibility.

The flexure allowed by stainless steel disc portion of the coupling is capable of accommodating
angular, parallel and axial misalignment.
Teethless screw to lock disks, zero backlash
Clockwise character is exactly the same as anti-clockwise one.
Free maintenance, oil-resist and anti corrosiveness.
Offset of angular,parallel or axial deviation are individual allowed value,
so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

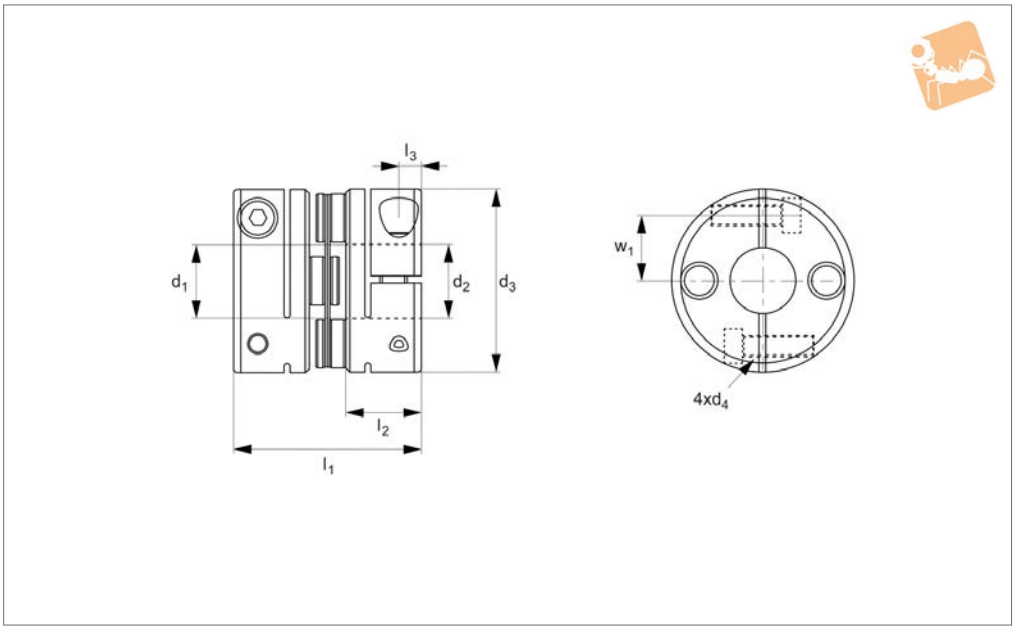
Order No.	d_1 & d_2 tol. h8	d_3	d_4	d_5	l_1	l_2	l_3	w_1	Clamping screw lock torque Nm
R3066.D-8	8	40	21	4	44	14	5	15	2.5
R3066.D-10	10	40	21	M4	44	14	5	15	2.5
R3066.D-11	11	40	21	M4	44	14	5	15	2.5
R3066.D-12	12	40	21	M4	44	14	5	15	2.5
R3066.D-14	14	40	21	M4	44	14	5	15	2.5
R3066.D-15	15	40	21	M4	44	14	5	15	2.5
R3066.D-16	16	40	21	M4	44	14	5	15	2.5
R3066.D-17	17	40	21	M4	44	14	5	15	2.5
R3066.D-18	18	40	21	M4	44	14	5	15	2.5
R3066.D-19	19	40	21	M4	44	14	5	15	2.5
R3066.D-20	20	40	21	M4	44	14	5	15	2.5
R3066.E-14	14	50	26	M5	57	18	6	18	7
R3066.E-15	15	50	26	M5	57	18	6	18	7
R3066.E-16	16	50	26	M5	57	18	6	18	7
R3066.E-17	17	50	26	M5	57	18	6	18	7
R3066.E-18	18	50	26	M5	57	18	6	18	7
R3066.E-19	19	50	26	M5	57	18	6	18	7
R3066.E-20	20	50	26	M5	57	18	6	18	7
R3066.E-22	22	50	26	M5	57	18	6	18	7
R3066.E-24	24	50	26	M5	57	18	6	18	7
R3066.E-25	25	50	26	M5	57	18	6	18	7

Single Disk Coupling - Aluminium

clamping type, short type.



R3067.1



Material

Main frame: Anodized aluminium AL7075
Disk: Stainless steel SUS301
Pin: Stainless steel SUS303

Technical Notes

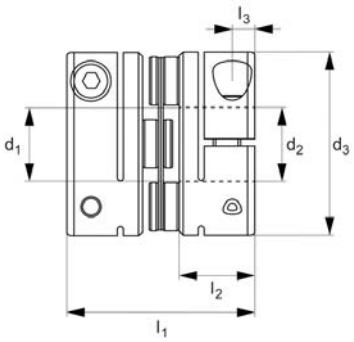
Hard torque load, high torque rigidity and excellent sensibility.

Miniature coupling has short length, no correction for radial deviation.
Dual stainless steel disk to correct angular and axial deviation.
Clockwise character is exactly the same as anti-clockwise one.
Free maintenance, oil resist and anti-corrosivenes, Zero backlash.
R3067 can't allow axial deviation caused by offset.
Offset, deflection, shaft deviation are individual allowed.

Order No.	d_1 & d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w_1	Clamping screw lock torque Nm
R3067.A-4	4	19	M2	20	8	2.5	6.5	0.5
R3067.A-4.5	4.5	19	M2	20	8	2.5	6.5	0.5
R3067.A-5	5	19	M2	20	8	2.5	6.5	0.5
R3067.A-6	6	19	M2	20	8	2.5	6.5	0.5
R3067.A-7	7	19	M2	20	8	2.5	6.5	0.5
R3067.A-8	8	19	M2	20	8	2.5	6.5	0.5
R3067.B-6	6	25	M2,5	24	10	3.5	9	1
R3067.B-7	7	25	M2,5	24	10	3.5	9	1
R3067.B-8	8	25	M2,5	24	10	3.5	9	1
R3067.B-10	10	25	M2,5	24	10	3.5	9	1
R3067.B-11	11	25	M2,5	24	10	3.5	9	1
R3067.B-12	12	25	M2,5	24	10	3.5	9	1
R3067.C-8	8	32	M3	29	12	4	11	31.5
R3067.C-10	10	32	M3	29	12	4	11	31.5
R3067.C-11	11	32	M3	29	12	4	11	31.5
R3067.C-12	12	32	M3	29	12	4	11	31.5
R3067.C-14	14	32	M3	29	12	4	11	31.5
R3067.C-15	15	32	M3	29	12	4	11	31.5

Single Disk Coupling - Aluminium

clamping type, short type.





R3067.2

Material

Main frame: Anodized aluminium AL7075
Disk: Stainless steel SUS301
Pin: Stainless steel SUS303

Technical Notes

Hard torque load, high torque rigidity and excellent sensibility.

Miniature coupling has short length, no correction for radial deviation.
Dual stainless steel disk to correct angular and axial deviation.
Clockwise character is exactly the same as anti-clockwise one.
Free maintenance, oil resist and anti-corrosivenes, Zero backlash.
R3067 can't allow axial deviation caused by offset.
Offset, deflection, shaft deviation are individual allowed.

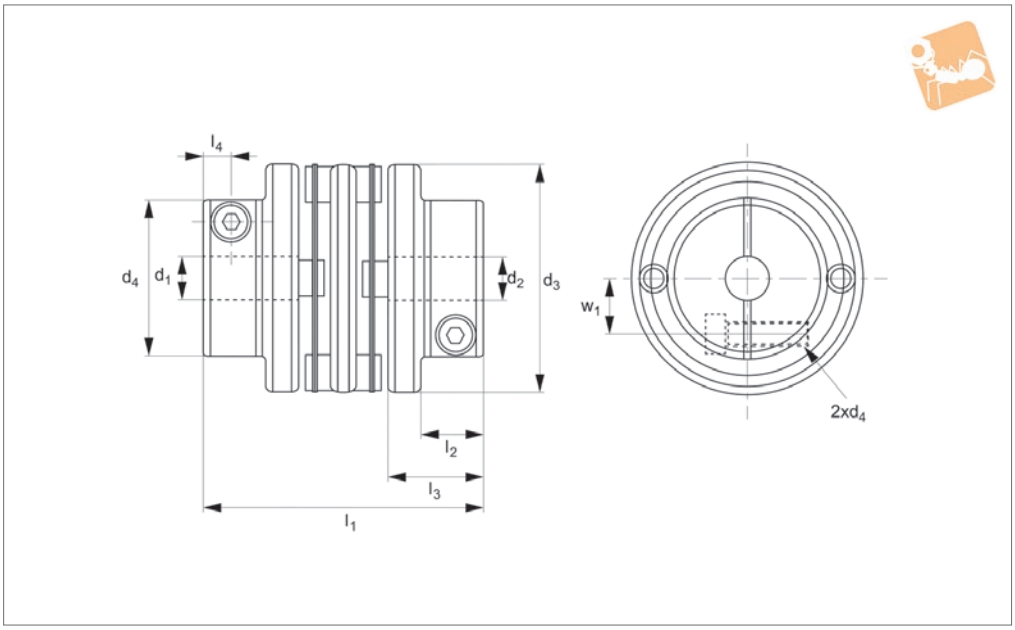
Order No.	d_1 & d_2 tol. h8	d_3	d_4	l_1	l_2	l_3	w_1	Clamping screw lock torque Nm
R3067.D-8	8	40	M4	33	14	5	15	2.5
R3067.D-17	17	40	M4	33	14	5	15	2.5
R3067.D-18	18	40	M4	33	14	5	15	2.5
R3067.D-19	19	40	M4	33	14	5	15	2.5
R3067.D-20	20	40	M4	33	14	5	15	2.5
R3067.D-10	10	40	M4	33	14	5	15	2.5
R3067.D-11	11	40	M4	33	14	5	15	2.5
R3067.D-12	12	40	M4	33	14	5	15	2.5
R3067.D-14	14	40	M4	33	14	5	15	2.5
R3067.D-15	15	40	M4	33	14	5	15	2.5
R3067.D-16	16	40	M4	33	14	5	15	2.5
R3067.E-14	14	50	M5	42	18	6	18	7
R3067.E-15	15	50	M5	42	18	6	18	7
R3067.E-16	16	50	M5	42	18	6	18	7
R3067.E-17	17	50	M5	42	18	6	18	7
R3067.E-18	18	50	M5	42	18	6	18	7
R3067.E-19	19	50	M5	42	18	6	18	7
R3067.E-20	20	50	M5	42	18	6	18	7
R3067.E-22	22	50	M5	42	18	6	18	7
R3067.E-24	24	50	M5	42	18	6	18	7
R3067.E-25	25	50	M5	42	18	6	18	7

Double Disk Coupling - Aluminium

clamp fixing, long type.



R3068



Material

Main frame: Anodized aluminium AL 7075
Disk: Stainless steel SUS301.
Pin: Stainless steel SUS303.

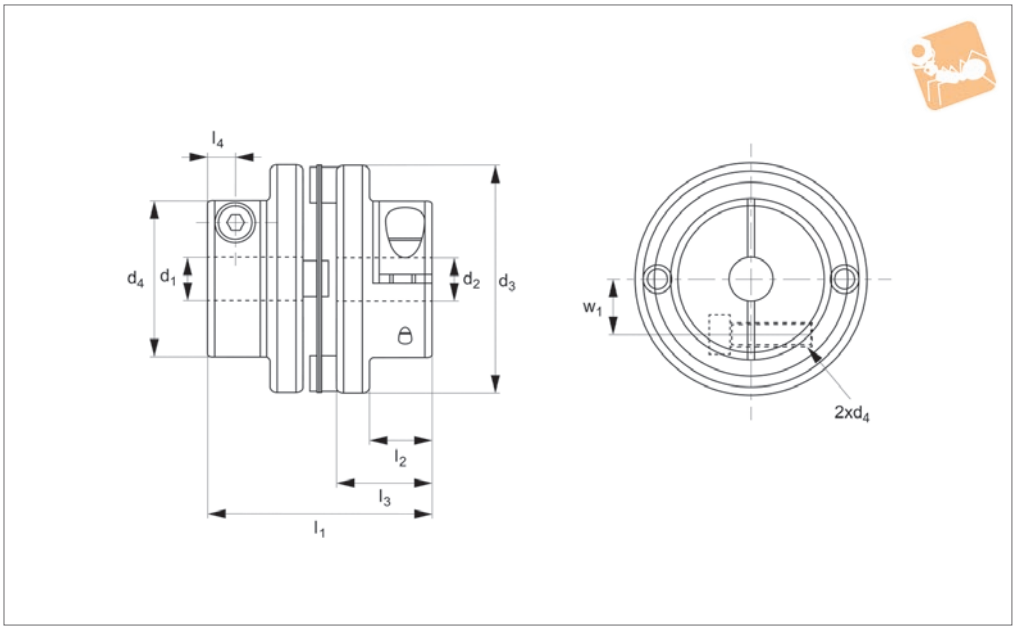
Technical Notes

High wrench torque load, high wrench torque rigidity capacity and excellent sensibility.
Dual stainless steel rings to correct radial, angular and axial deviation.
Clockwise character is exactly the same as anti-clockwise one.
Free maintenance, oil resist and anti-corrosiveness, zero backlash.
Offset of angular, parallel, or axial deviation are individual allowed, so couple reasons of axial offset appearing at same time would reduce the unit allowable value.

Order No.	d_1 & d_2 tol. h8	d_3	d_4	d_5	l_1	l_2	l_3	l_4	w	Clamping screw lock torque Nm
R3068.A-22-6	6	32	22	M3	40	13.7	9	4	8	1.5
R3068.A-22-7	7	32	22	M3	40	13.7	9	4	8	1.5
R3068.A-22-8	8	32	22	M3	40	13.7	9	4	8	1.5
R3068.A-22-10	10	32	22	M3	40	13.7	9	4	8	1.5
R3068.B-28-7	7	40	28	M4	46	16.5	12	6	10.5	2.5
R3068.B-28-8	8	40	28	M4	46	16.5	12	6	10.5	2.5
R3068.B-28-10	10	40	28	M4	46	16.5	12	6	10.5	2.5
R3068.B-28-11	11	40	28	M4	46	16.5	12	6	10.5	2.5
R3068.B-28-12	12	40	28	M4	46	16.5	12	6	10.5	2.5
R3068.B-28-14	14	40	28	M4	46	16.5	12	6	10.5	2.5
R3068.C-39-12	12	50	39	M5	52	19.4	15	7	14.8	7
R3068.C-39-14	14	50	39	M5	52	19.4	15	7	14.8	7
R3068.C-39-15	15	50	39	M5	52	19.4	15	7	14.8	7
R3068.C-39-16	16	50	39	M5	52	19.4	15	7	14.8	7
R3068.C-39-18	18	50	39	M5	52	19.4	15	7	14.8	7
R3068.C-39-19	19	50	39	M5	52	19.4	15	7	14.8	7
R3068.C-39-20	20	50	39	M5	52	19.4	15	7	14.8	7
R3068.D-45-15	15	63	45	M6	58	22.3	18	8	17	12
R3068.D-45-16	16	63	45	M6	58	22.3	18	8	17	12
R3068.D-45-18	18	63	45	M6	58	22.3	18	8	17	12
R3068.D-45-19	19	63	45	M6	58	22.3	18	8	17	12
R3068.D-45-20	20	63	45	M6	58	22.3	18	8	17	12
R3068.D-45-25	25	63	45	M6	58	22.3	18	8	17	12

Double Disk Coupling - Aluminium

clamp fixing, short type





R3069

Material

Mainframe: Anodized aluminium AL 7075
Disk: Stainless steel SUS301
Pim: Stainless steel SUS303

Technical Notes

Hard torque load, high torque rigidity and excellent sensibility.

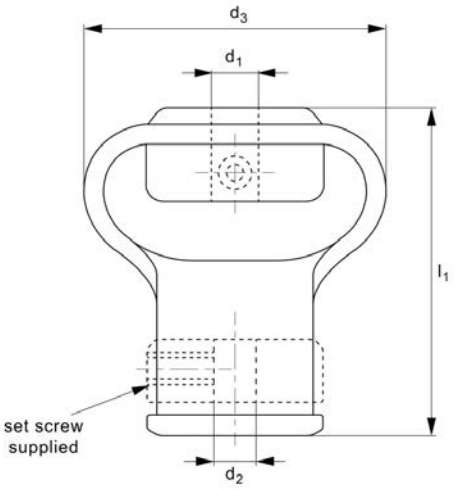
Miniature coupling has short length, zero backlash.
Dual stainless steel disk to correct angular and axial deviation.
Clockwise character is exactly the same as anti-clockwise one.
Free maintenance, oil-resist and anti-corrosiveness.
R3069 can't allow axial deviation caused by offset.
Offset, deflection, shaft deviation are individual allowed value.

Order No.	d_1 & d_2 tol. h8	d_3	d_4	d_5	l_1	l_2	l_3	l_4	w	Clamping screw lock torque Nm
R3069.A-22-6	6	32	22	M3	32	13.7	9	4	8	1.5
R3069.A-22-7	7	32	22	M3	32	13.7	9	4	8	1.5
R3069.A-22-8	8	32	22	M3	32	13.7	9	4	8	1.5
R3069.A-22-10	10	32	22	M3	32	13.7	9	4	8	1.5
R3069.B-28-7	7	40	28	M4	38	16.5	12	6	10.5	2.5
R3069.B-28-8	8	40	28	M4	38	16.5	12	6	10.5	2.5
R3069.B-28-10	10	40	28	M4	38	16.5	12	6	10.5	2.5
R3069.B-28-11	11	40	28	M4	38	16.5	12	6	10.5	2.5
R3069.B-28-12	12	40	28	M4	38	16.5	12	6	10.5	2.5
R3069.B-28-14	14	40	28	M4	38	16.5	12	6	10.5	2.5
R3069.C-39-12	12	50	39	M5	44	19.4	15	7	14.8	7
R3069.C-39-14	14	50	39	M5	44	19.4	15	7	14.8	7
R3069.C-39-15	15	50	39	M5	44	19.4	15	7	14.8	7
R3069.C-39-16	16	50	39	M5	44	19.4	15	7	14.8	7
R3069.C-39-18	18	50	39	M5	44	19.4	15	7	14.8	7
R3069.C-39-19	19	50	39	M5	44	19.4	15	7	14.8	7
R3069.C-39-20	20	50	39	M5	44	19.4	15	7	14.8	7
R3069.D-45-15	15	63	45	M6	50	22.3	18	8	17	12
R3069.D-45-16	16	63	45	M6	50	22.3	18	8	17	12
R3069.D-45-18	18	63	45	M6	50	22.3	18	8	17	12
R3069.D-45-19	19	63	45	M6	50	22.3	18	8	17	12
R3069.D-45-20	20	63	45	M6	50	22.3	18	8	17	12
R3069.D-45-25	25	63	45	M6	50	22.3	18	8	17	12

Absorbathane flexible coupling



R3040

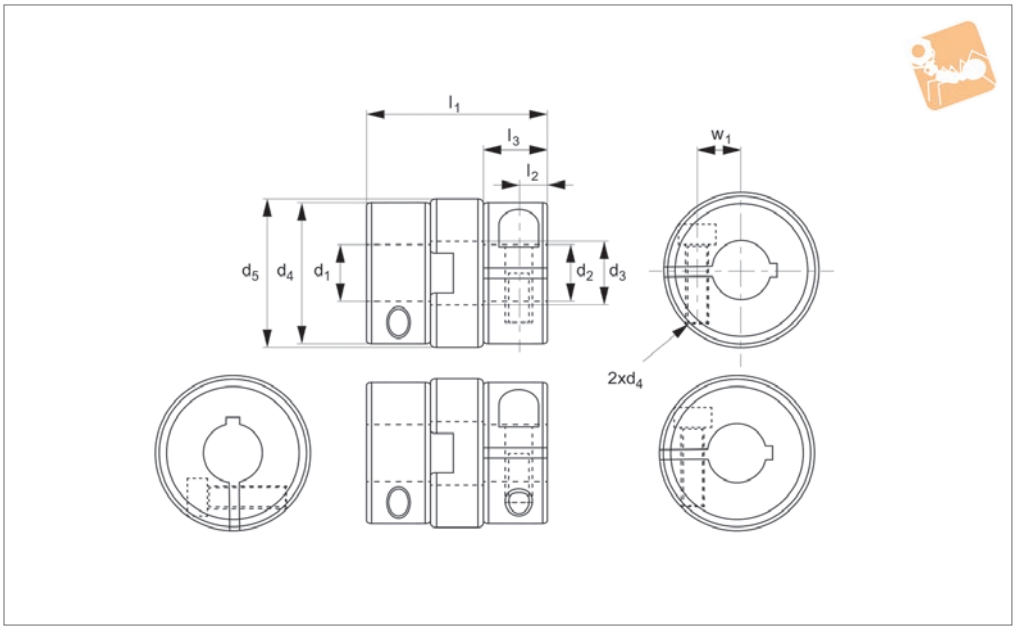


Material
Black polyurethane with plated mild steel hub.

Technical Notes
Absorbs end play.
3,600 rpm max.

Quiet running.
Maintenance free (no moving parts).

Order No.	Hub	d_1 & d_2	d_3	l	w	Torque Ncm max.	Lat. misalign. max.	Angle misalign. max.
R3040.005-E	External	5	28.5	28.5	17.5	30	2.4	10°
R3040.006-E	External	6	28.5	28.5	17.5	30	2.4	10°
R3040.008-E	External	8	28.5	28.5	17.5	30	2.4	10°
R3040.010-E	External	10	28.5	28.5	17.5	30	2.4	10°
R3040.006-I	Internal	6	47.5	44.5	25.5	135	3.2	15°
R3040.008-I	Internal	8	47.5	44.5	25.5	135	3.2	15°
R3040.010-I	Internal	10	47.5	44.5	25.5	135	3.2	15°
R3040.011-I	Internal	11	47.5	44.5	25.5	135	3.2	15°
R3040.013-I	Internal	13	47.5	44.5	25.5	135	3.2	15°
R3040.110-I	Internal	10	54.0	54.0	32.0	315	4.7	15°
R3040.111-I	Internal	11	54.0	54.0	32.0	315	4.7	15°
R3040.113-I	Internal	13	54.0	54.0	32.0	315	4.7	15°
R3040.014-I	Internal	14	54.0	54.0	32.0	315	4.7	15°
R3040.016-I	Internal	16	54.0	54.0	32.0	315	4.7	15°
R3040.213-I	Internal	13	54.0	60.5	32.0	450	3.2	15°
R3040.114-I	Internal	14	54.0	60.5	32.0	450	3.2	15°
R3040.116-I	Internal	16	54.0	60.5	32.0	450	3.2	15°





R3054

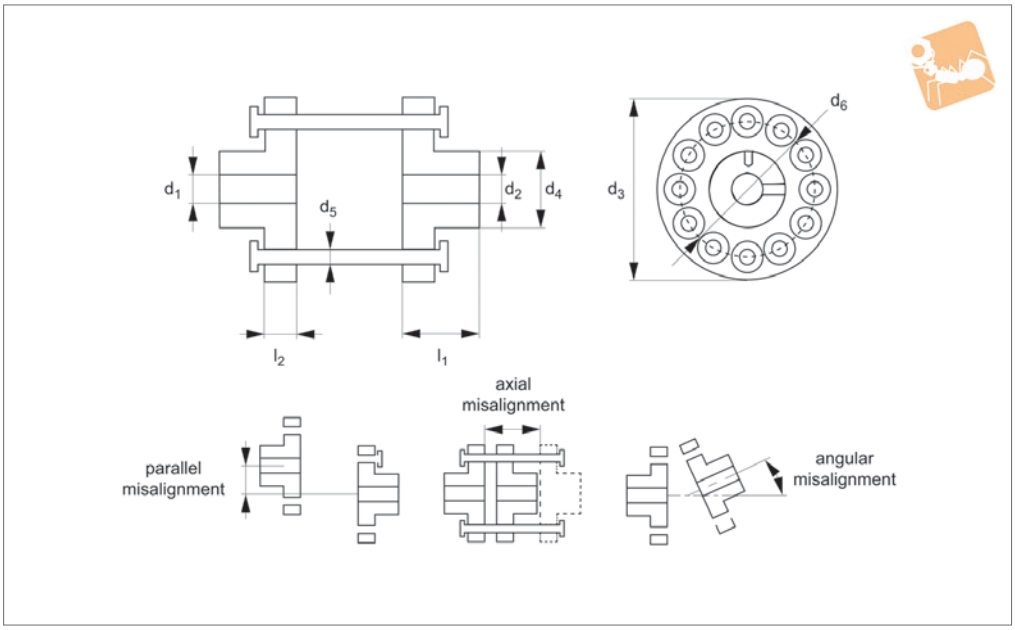
Material
Hub - stainless steel 1,4305.
Insert - polyurethane, bronze or nylon.

Technical Notes
Max. shaft to shaft misalignment 0,3mm.
Max. angular misalignment 1°.
Max. backlash 10 minutes.
For clamps see part no. R3250.

Order No.	Type	l	Ø B	Ø d	Ø H	Torque Ncm max.	Ø C	Centre material
CO3-4M-U	Pin	16.7	3.995	15.9	7.9	50	-	Polyur.
CO3-4M-B	Pin	16.7	3.995	15.9	7.9	250	-	Bronze
CO3-4M-N	Pin	16.7	3.995	15.9	7.9	75	-	Nylon
CO3-5M-U	Pin	18.3	4.995	15.9	9.5	50	-	Polyur.
CO3-5M-B	Pin	18.3	4.995	15.9	9.5	250	-	Bronze
CO3-5M-N	Pin	18.3	4.995	15.9	9.5	75	-	Nylon
CO3-6M-U	Pin	19.8	5.995	15.9	12.7	50	-	Polyur.
CO3-6M-B	Pin	19.8	5.995	15.9	12.7	250	-	Bronze
CO3-6M-N	Pin	19.8	5.995	15.9	12.7	75	-	Nylon
CO3-8M-U	Pin	19.8	7.995	15.9	12.7	50	-	Polyur.
CO3-8M-B	Pin	19.8	7.995	15.9	12.7	250	-	Bronze
CO3-8M-N	Pin	19.8	7.995	15.9	12.7	75	-	Nylon
CO3-10M-U	Pin	39.7	9.995	34.9	19.1	250	-	Polyur.
CO3-10M-N	Pin	39.7	9.995	34.9	19.1	360	-	Nylon
CO3-13M-U	Pin	46.0	12.995	38.1	25.4	300	-	Polyur.
CO3-13M-B	Pin	46.0	12.995	38.1	25.4	1225	-	Bronze
CO3-13M-N	Pin	46.0	12.995	38.1	25.4	430	-	Nylon
CO6-4M-U	Clamp	21.4	3.995	15.9	-	50	5.6	Polyur.
CO6-4M-B	Clamp	21.4	3.995	15.9	-	250	5.6	Bronze
CO6-4M-N	Clamp	21.4	3.995	15.9	-	75	5.6	Nylon
CO6-5M-U	Clamp	21.4	4.995	15.9	--	50	6.6	Polyur.
CO6-5M-B	Clamp	21.4	4.995	15.9	-	250	6.6	Bronze
CO6-5M-N	Clamp	21.4	4.995	15.9	-	75	6.6	Nylon
CO6-6M-U	Clamp	21.4	5.995	15.9	-	50	7.6	Polyur.
CO6-6M-B	Clamp	21.4	5.995	15.9	-	250	7.6	Bronze
CO6-6M-N	Clamp	21.4	5.995	15.9	-	75	7.6	Nylon



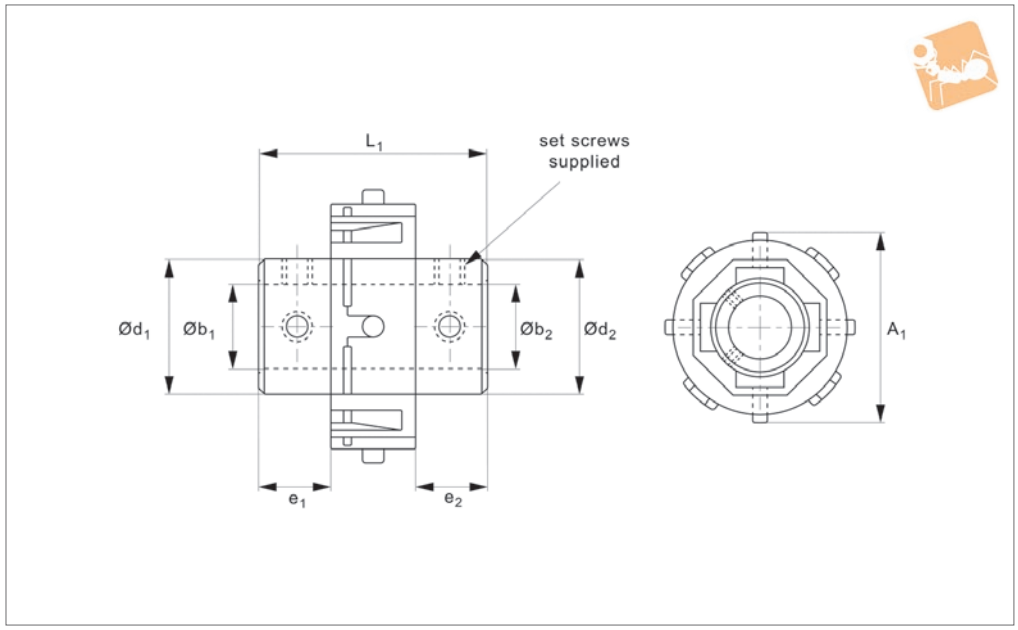
R3060



Material
Aluminium (DIN 3,1355) body with polyurethane connection shafts.

Technical Notes
Allows for very high levels of axial and angular misalignment.
Type A - allows 10° of angular misalignment.
Type B - allows 30° of angular misalignment.

Order No.	d_1 & d_2 +0.5	d_3	d_4	d_5	d_6	l_1	l_2	Torque Ncm max.	Angle misalign. max.	No. of pins	Parallel misalign. mm max.	Axial misalign. mm max.
R3060.003-A	3	17.5	8.0	1.6	14.3	8.0	3.2	280	10°	8	1.6	3.6
R3060.005-A	5	25.5	9.5	3.2	19.1	8.7	3.2	390	10°	8	3.2	4.8
R3060.007-A	7	32.0	12.7	3.2	25.4	11.0	4.8	560	10°	10	6.4	6.4
R3060.008-A	8	38.0	12.7	4.8	28.6	11.0	4.8	680	10°	10	5.6	7.9
R3060.010-A	10	50.0	19.0	6.4	38.1	19.0	9.5	1130	10°	12	4.0	9.5
R3060.013-A	13	63.5	25.5	7.9	47.6	22.0	9.5	2260	10°	12	3.2	12.7
R3060.003-B	3	17.5	8.0	1.6	14.3	8.0	3.2	280	30°	8	12.7	11.0
R3060.005-B	5	25.5	9.5	3.2	19.1	8.7	3.2	390	30°	8	16.0	16.0
R3060.007-B	7	32.0	12.7	3.2	25.4	11.0	4.8	560	30°	10	19.0	22.0
R3060.008-B	8	38.0	12.7	4.8	28.6	11.0	4.8	680	30°	10	22.0	28.5
R3060.010-B	10	50.0	19.0	6.4	38.1	19.0	9.5	1130	30°	12	22.5	35.0
R3060.013-B	13	63.5	25.5	7.9	47.6	22.0	9.5	2260	30°	12	32.0	51.0





R3062

Material
Delrin outer ring, brass or aluminium hub.

Technical Notes
Zero backlash, low inertia.

Offers simultaneous lateral and angular misalignment.
Corrosion resistant, no lubrication required,resonance damping.

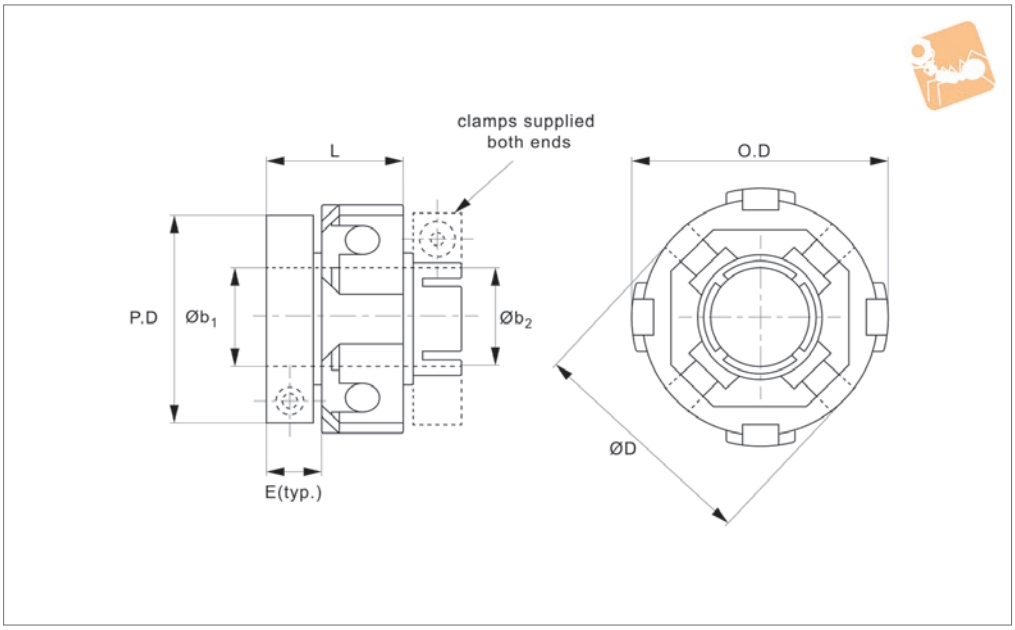
Shaft can pass through for easy installation.
Max. lateral misalignment 0,05.
Max. operating temperature +60°C.

Order No.	Hub	d_1 +0.03	d_2 +0.03	d_3	d_4	d_5	l_1	l_2	l_3	Torque Ncm max.	Angle misalign. max.	Parallel misalign. max.
R3062.003-003-BR	Brass	3	3	8.9	8.9	18	14.2	4.0	4.0	27	10°	1.3
R3062.004-004-BR	Brass	4	4	8.9	8.9	18	14.2	4.0	4.0	27	10°	1.3
R3062.005-005-BR	Brass	5	5	8.9	8.9	18	14.2	4.0	4.0	27	10°	1.3
R3062.004-006-BR	Brass	4	6	8.9	11.1	18	16.7	4.0	6.5	27	10°	1.3
R3062.006-006-BR	Brass	6	6	11.1	11.1	18	19.1	6.5	6.5	27	10°	1.3
R3062.003-006-BR	Brass	3	6	12.7	12.7	27.2	19.1	4.8	4.8	169	10°	1.3
R3062.103-004-BR	Brass	4	4	12.7	12.7	27.2	19.1	4.8	4.8	169	10°	1.3
R3062.104-006-BR	Brass	4	6	12.7	12.7	27.2	19.1	4.8	4.8	169	10°	1.3
R3062.106-006-BR	Brass	6	6	12.7	12.7	27.2	19.1	4.8	4.8	169	10°	1.3
R3062.006-010-BR	Brass	6	10	12.7	15.1	27.2	22.3	4.8	7.9	169	10°	1.3
R3062.008-008-BR	Brass	8	8	15.1	15.1	27.2	25.4	7.9	7.9	86	10°	1.3
R3062.010-010-BR	Brass	10	10	15.1	15.1	27.2	25.4	7.9	7.9	86	10°	1.3
R3062.006-006-AL	Alum.	6	6	17.6	17.6	33.7	25.2	7.6	7.6	248	10°	1.3
R3062.006-010-AL	Alum.	6	10	17.6	17.6	33.7	25.2	7.6	7.6	248	10°	1.3
R3062.008-008-AL	Alum.	8	8	17.6	17.6	33.7	25.2	7.6	7.6	248	10°	1.3
R3062.010-012-AL	Alum.	10	12	17.6	20.1	33.7	28.0	7.6	10.2	248	10°	1.3
R3062.012-012-AL	Alum.	12	12	20.1	20.1	33.7	30.7	10.2	10.2	248	10°	1.3
R3062.106-006-AL	Alum.	6	6	22.1	22.1	41.4	28.4	7.6	7.6	429	10°	1.3
R3062.007-007-AL	Alum.	7	7	22.1	22.1	41.4	28.4	7.6	7.6	429	10°	1.3
R3062.108-008-AL	Alum.	8	8	22.1	22.1	41.4	28.4	7.6	7.6	429	10°	1.3
R3062.010-010-AL	Alum.	10	10	22.1	22.1	41.4	28.4	7.6	7.6	429	10°	1.3
R3062.016-016-AL	Alum.	16	16	24.2	24.2	41.4	38.1	12.5	12.5	429	10°	1.3

Universal Lateral coupling
clamp version



R3063

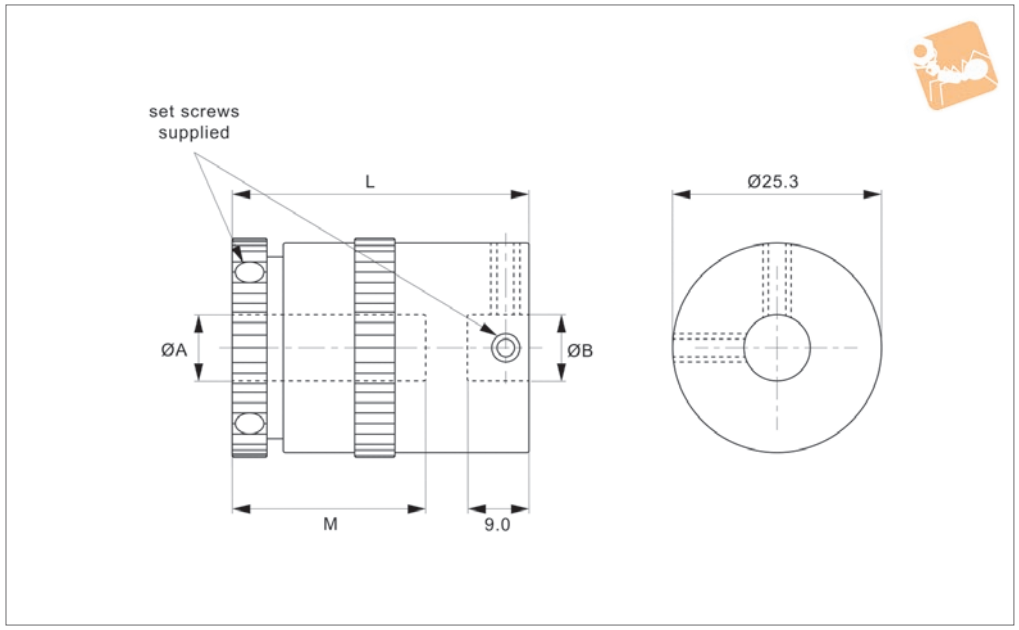


Material
Delrin outer ring, brass or aluminium hub.

Technical Notes
Zero backlash, low inertia.
Offers simultaneous lateral and angular misalignment.
Corrosion resistant, no lubrication required.
Resonance damping, shaft can pass through for easy installation.
Max. lateral misalignment 1,0
Max. operating temperature +60°C.

Tips
Clamp hub is integral to hub on CO29 series.
Additional bore sizes on request.

Order No.	Hub	d_1 +0.03|-0.00	d_2 +0.03|-0.00	d_3	d_4	l_1	l_2	Torque Ncm max.	Angle misalign. max.
R3063.003-006-BR	Brass	3.18	6.35	19.1	19.1	19.1	6.5	27	10°
R3063.006-006-BR	Brass	6.00	6.00	19.1	19.1	19.1	6.5	27	10°
R3063.106-006-BR	Brass	6.35	6.35	19.1	19.1	19.1	6.5	27	10°
R3063.005-005-BR	Brass	5.00	5.00	27.2	27.9	25.4	7.9	169	10°
R3063.206-006-BR	Brass	6.00	6.00	27.2	27.9	25.4	7.9	169	10°
R3063.006-008-BR	Brass	6.00	8.00	27.2	27.9	25.4	7.9	169	10°
R3063.007-007-BR	Brass	7.00	7.00	27.2	27.9	25.4	7.9	169	10°
R3063.006-006-AL	Alum.	6.00	6.00	20.1	33.7	30.7	10.2	248	10°
R3063.006-008-AL	Alum.	6.00	8.00	20.1	33.7	30.7	10.2	248	10°
R3063.008-010-AL	Alum.	8.00	10.00	20.1	33.7	30.7	10.2	248	10°
R3063.010-010-AL	Alum.	10.00	10.00	20.1	33.7	30.7	10.2	248	10°
R3063.106-006-AL	Alum.	6.00	6.00	24.2	41.4	38.1	12.5	429	10°
R3063.006-012-AL	Alum.	6.00	12.00	24.2	41.4	38.1	12.5	429	10°
R3063.008-008-AL	Alum.	8.00	8.00	24.2	41.4	38.1	12.5	429	10°
R3063.010-012-AL	Alum.	10.00	12.00	24.2	41.4	38.1	12.5	429	10°
R3063.011-011-AL	Alum.	11.00	11.00	24.2	41.4	38.1	12.5	429	10°
R3063.012-012-AL	Alum.	12.00	12.00	24.2	41.4	38.1	12.5	429	10°





R3080

Material
Aluminium with alocrom finish.
Hubs and plates - heat treated steel.

Sintered bronze bearing.

Technical Notes
Bi-directional.

Max. backlash 2°.
Max. operating temperature +80°C.

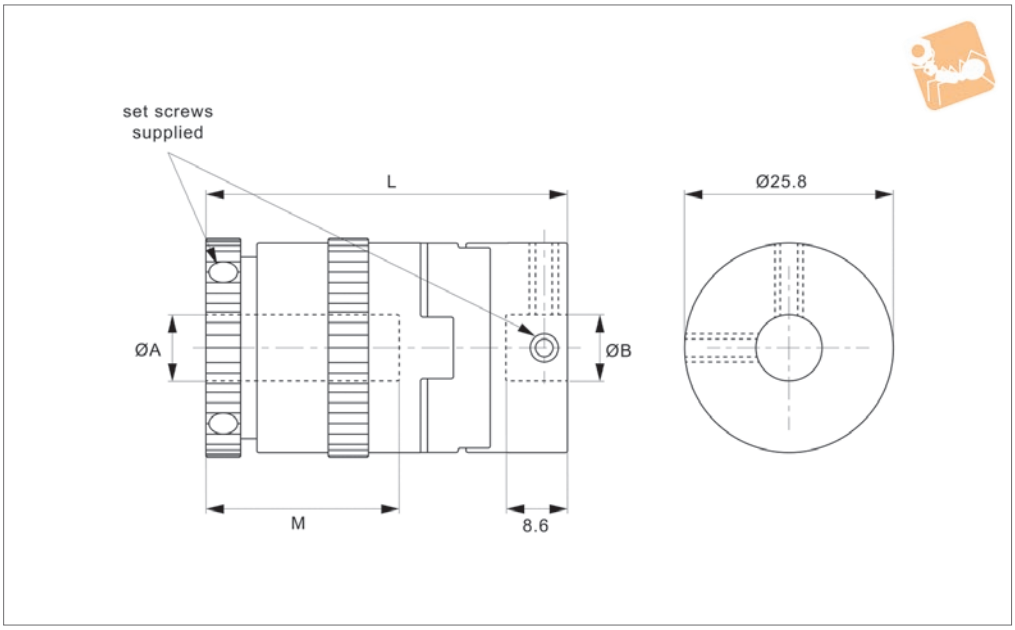
Order No.	Type	Ø A +0.03	Ø B +0.03	Adj. torque range Ncm min.	Adj. torque range Ncm max.	l_1	l_2
R3080.006-25	Slip	6	6	2.4	53.0	36.0	25
R3080.008-25	Slip	8	8	2.4	53.0	36.0	25
R3080.006-31	Slip	6	6	7.8	132.4	42.5	31
R3080.008-31	Slip	8	8	7.8	132.4	42.5	31

Oldham Slip Couplings

Adjustable 2,4 to 130Ncm



R3081

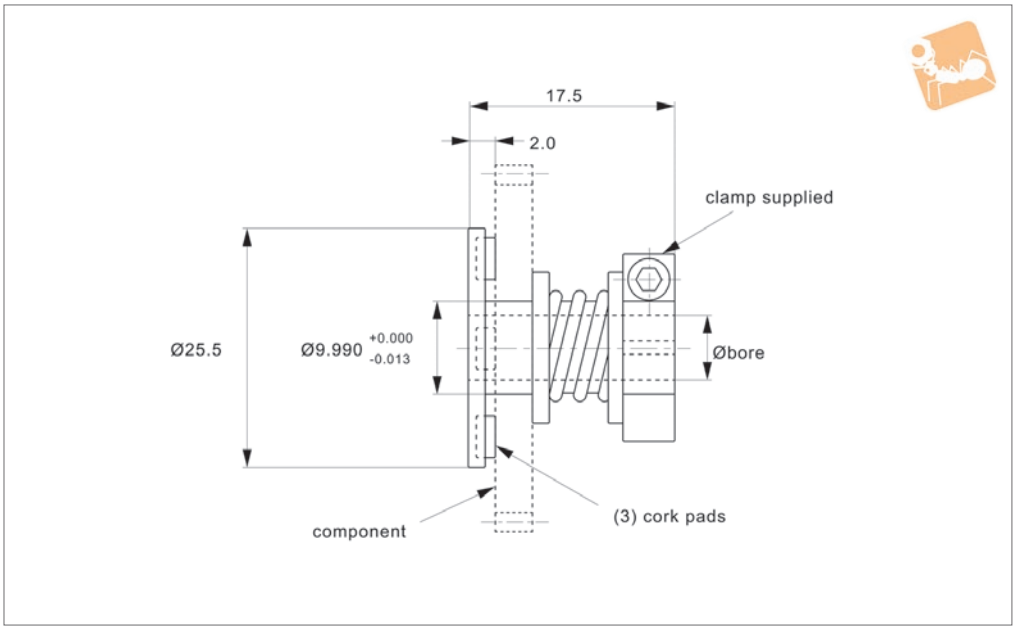


Material
Aluminium with alocrom finish.
Hubs and plates - heat treated steel.
Sintered bronze bearing.

Technical Notes
Bi-directional.

Max. backlash 2°.
Max. operating temperature +80°C.

Order No.	Type	Ø A +0.03	Ø B +0.03	Adj. torque range Ncm min.	Adj. torque range Ncm max.	l	m
R3081.006-25	Oldham Slip	6	6	2.4	53.0	36.0	25
R3081.008-25	Oldham Slip	8	8	2.4	53.0	36.0	25
R3081.006-31	Oldham Slip	6	6	7.8	132.4	42.5	31
R3081.008-31	Oldham Slip	8	8	7.8	132.4	42.5	31





R3092

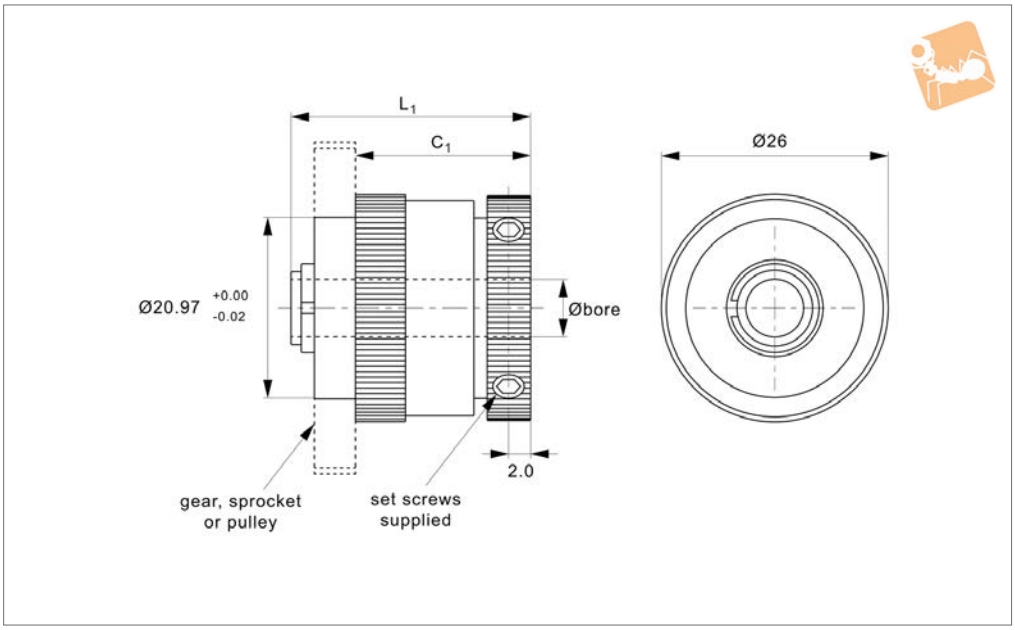
Material
Stainless steel DIN 1,4305.

Technical Notes
Adjustable by varying spring force.

Order No.	Bore dia. +0.013	Component thickness	Adjustable slip torque Ncm
R3092.004	3.995	1,5 to 3,0	1,5 (0 to 10); 3,0 (3 to 20)
R3092.005	4.995	1,5 to 3,0	1,5 (0 to 10); 3,0 (3 to 20)
R3092.006	5.995	1,5 to 3,0	1,5 (0 to 10); 3,0 (3 to 20)



R3093



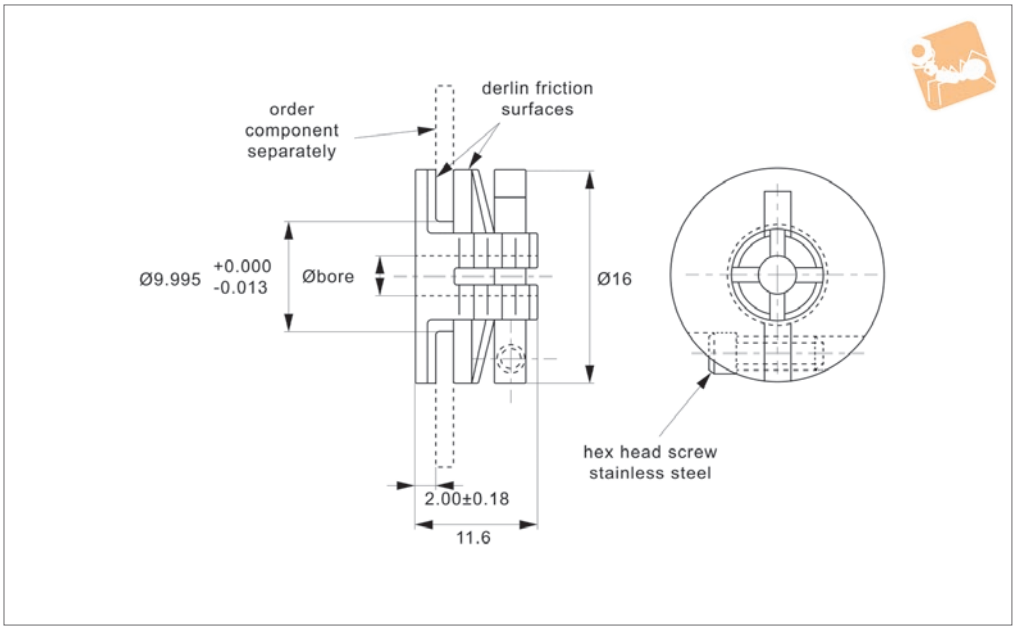
Material
Aluminium housing, adjuster ring and adapters.
Hub and plates - steel.

Sintered bronze bearing.

Technical Notes
Maximum backlash 2°, bi-directional.

Fine knurled torque adjustment rings.
Max. operating temperature 80°C.

Order No.	d_1 +0.03	l_1	l_2	Torque range Ncm min.	Torque range Ncm max.
R3093.006-020	6.00	26.4	20.0	2.5	53.5
R3093.008-020	8.00	26.4	20.0	2.5	53.5
R3093.006-026	6.00	32.4	25.6	7.8	132.0
R3093.008-026	8.00	32.4	25.6	7.8	132.0





R3095.1

Material
Anodized aluminium.

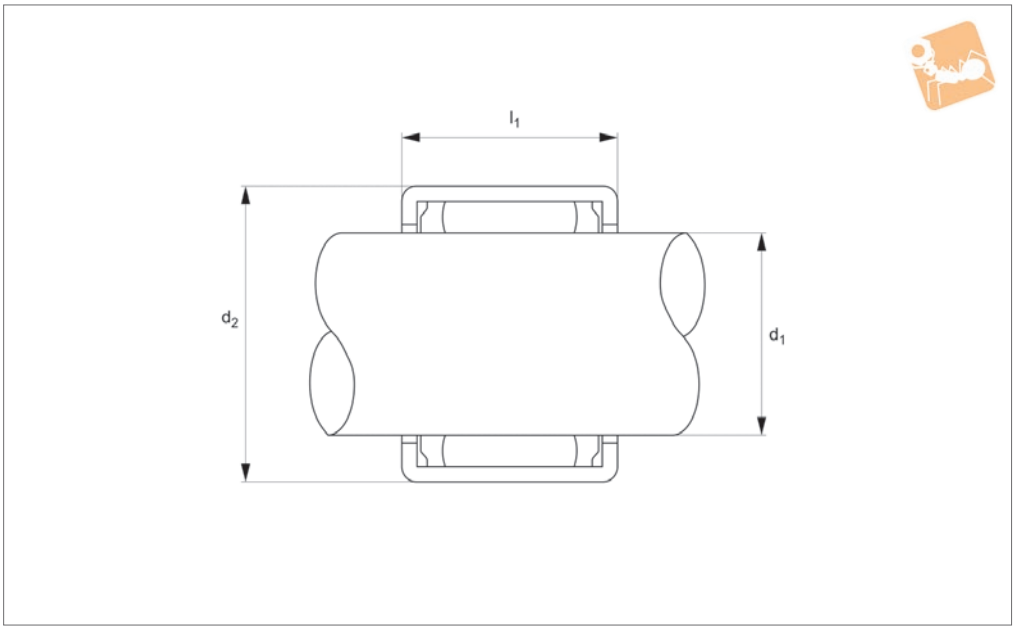
Technical Notes
Adjustable by varying spring force.

Tips
Special bore sizes available on request.

Order No.	Component thickness	d_1 +0.005
R3095.004	1,5 to 3,0	3.995
R3095.005	1,5 to 3,0	4.995



R3098.1

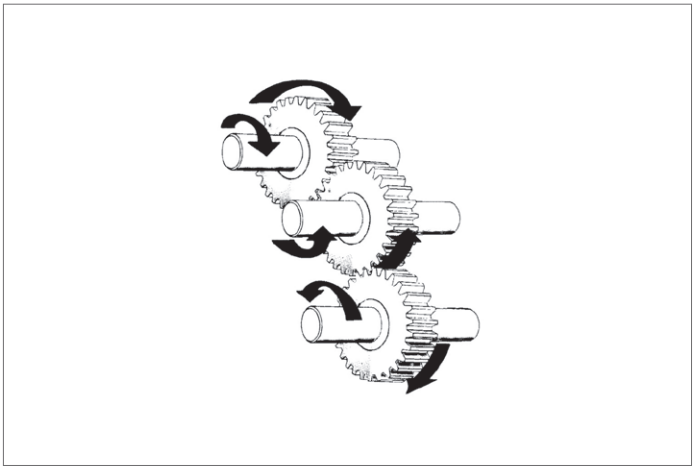


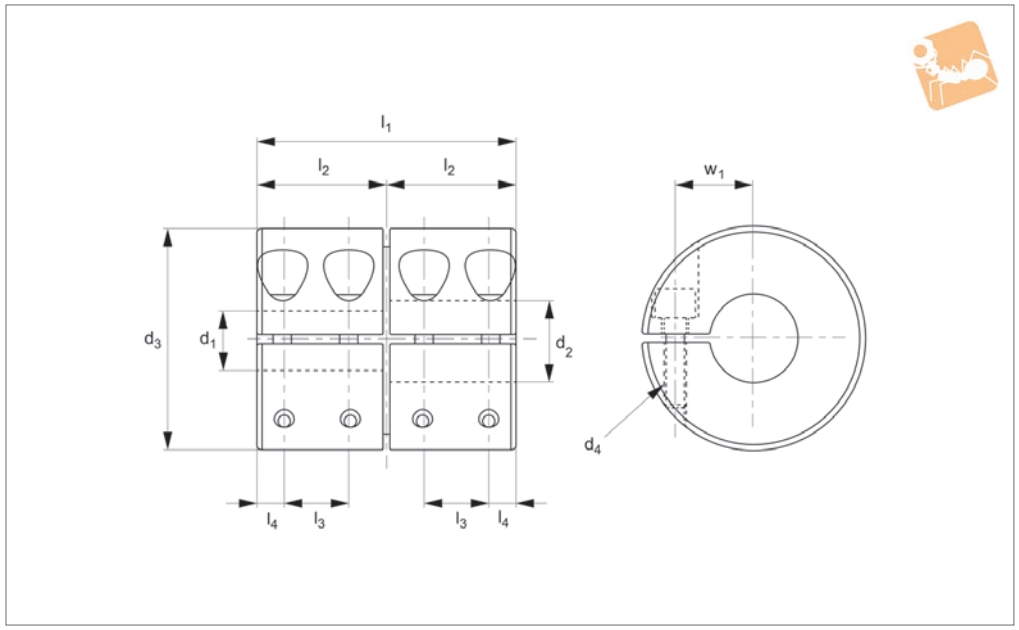
Material
Case hardened steel roller cup. Needle bearings hardened chrome steel. Springs - stainless. Cage - nylon 66. Drawn cup design.

Technical Notes
Free rolling one way, drives in opposite direction, minimum backlash. Max. operating temperature 70°C (plastic spring). Temperature range -45°C to +70°C (grease).

Tips
For shaft tolerance h6.

Order No.	d_1	d_2	l_2 +0.000 -0.008	Housing diameter N7 steel R7 al.	Overrun speed rpm max.	Torque Ncm max.
R3098.004	4	8.00	6.00	8.00	17000	0.34
R3098.006	6	10.00	12.00	10.00	23060	1.76
R3098.008	8	12.00	12.00	12.00	17000	3.15
R3098.010	10	14.00	12.00	14.00	14000	5.30
R3098.012	12	18.00	16.00	18.00	11000	12.20
R3098.020	20	26.00	16.00	26.00	7000	28.50







R3202

Material
Aluminium alloy, anodized.

Technical Notes
To fit h_7 or h_8 tolerance shafts.

Very light with low moment of inertia.
Maintenance free, excellent anti-oil and corrosion resistance.
Reciprocating torque is quarter static torque.
Rotational torque is half static torque.

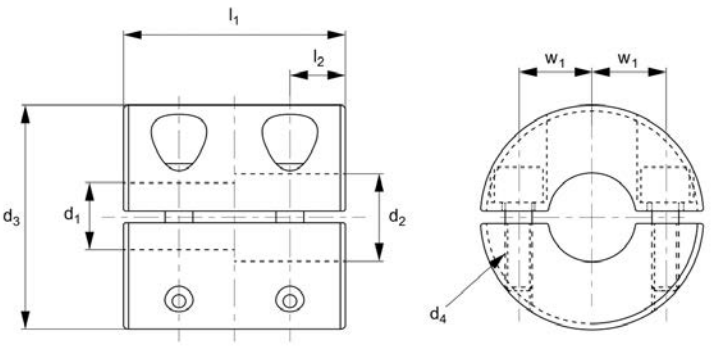
Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	d_4	l_1	l_2	l_3	w	Static torque Nm	rpm max.	Moment of inertia kg·m²	Torque screw to Nm	Weight g
R3202.16-05-05	5	5	16	M 2	22	2,5	5,5	5	0,6	9000	$3,4x10^{-7}$	0,5	10
R3202.16-05-06	5	6	16	M 2	22	2,5	5,5	5	0,6	9000	$3,4x10^{-7}$	0,5	10
R3202.16-06-06	6	6	16	M 2	22	2,5	5,5	5	0,6	9000	$3,4x10^{-7}$	0,5	10
R3202.20-06-06	6	6	20	M 2	24	2,5	6,0	7	1	7000	$9,2x10^{-7}$	0,5	18
R3202.20-06-08	6	8	20	M 2	24	2,5	6,0	7	1	7000	$9,2x10^{-7}$	0,5	18
R3202.20-08-08	8	8	20	M 2	24	2,5	6,0	7	1	7000	$9,2x10^{-7}$	0,5	18
R3202.25-08-08	8	8	25	M2,5	36	4,5	9,0	9	2	6000	$3,4x10^{-6}$	1,0	38
R3202.25-08-10	8	10	25	M2,5	36	4,5	9,0	9	2	6000	$3,4x10^{-6}$	1,0	38
R3202.25-10-10	10	10	25	M2,5	36	4,5	9,0	9	2	6000	$3,4x10^{-6}$	1,0	38
R3202.32-10-10	10	10	32	M 3	40	4,0	10,0	11	4	4500	$1,0x10^{-5}$	1,5	70
R3202.32-10-12	10	12	32	M 3	40	4,0	10,0	11	4	4500	$1,0x10^{-5}$	1,5	70
R3202.32-10-14	10	14	32	M 3	40	4,0	10,0	11	4	4500	$1,0x10^{-5}$	1,5	70
R3202.32-12-12	12	12	32	M 3	40	4,0	10,0	11	4	4500	$1,0x10^{-5}$	1,5	70
R3202.32-12-14	12	14	32	M 3	40	4,0	10,0	11	4	4500	$1,0x10^{-5}$	1,5	70
R3202.32-14-14	14	14	32	M 3	40	4,0	10,0	11	4	4500	$1,0x10^{-5}$	1,5	70

Rigid Shaft Coupling - Two Piece

Aluminium, short



R3206



Material

Aluminium alloy, Stainless steel screw (A2).

Technical Notes

To fit h_7 or h_8 tolerance shafts.

Very light with low moment of inertia.
Maintenance free, excellent anti-oil and corrosion resistance.
Reciprocating torque is quarter static torque.

Rotational torque is half static torque.

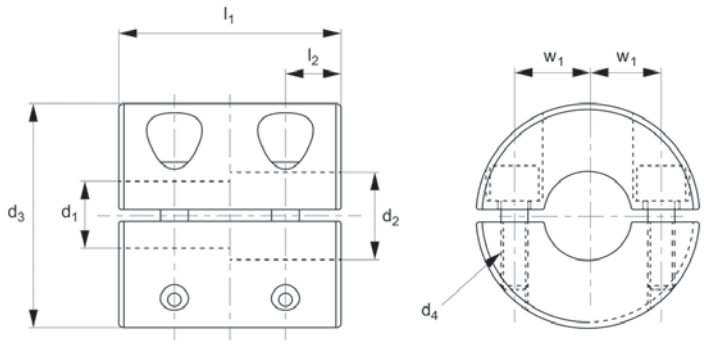
Important Notes

Different bore sizes available on request.
For keyways, please add „-KW“ suffix when ordering.

Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	d_4	l_1	l_2	Static torque Nm	rpm max.	Moment of inertia kg·m²	Torque screw to Nm	Weight g	Weight g
R3206.16-05-05	5	5	16	M2,5	16	4	0.6	9500	$3,2x10^{-7}$	1.0	9	9
R3206.16-05-06	5	6	16	M2,5	16	4	0.6	9500	$3,2x10^{-7}$	1.0	9	9
R3206.16-06-06	6	6	16	M2,5	16	4	0.6	9500	$3,2x10^{-7}$	1.0	9	9
R3206.20-06-06	6	6	20	M2,5	20	5	1	7600	$8,7x10^{-7}$	1.0	15	15
R3206.20-06-08	6	8	20	M2,5	20	5	1	7600	$8,7x10^{-7}$	1.0	15	15
R3206.20-08-08	8	8	20	M2,5	20	5	1	7600	$8,7x10^{-7}$	1.0	15	15
R3206.25-08-08	8	8	25	M 3	25	6	2	6100	$2,7x10^{-6}$	1.5	29	29
R3206.25-08-10	8	10	25	M 3	25	6	2	6100	$2,7x10^{-6}$	1.5	29	29
R3206.25-10-10	10	10	25	M 3	25	6	2	6100	$2,7x10^{-6}$	1.5	29	29
R3206.32-10-10	10	10	32	M 4	32	8	4	4800	$9,3x10^{-6}$	2.5	61	61
R3206.32-10-12	10	12	32	M 4	32	8	4	4800	$9,3x10^{-6}$	2.5	61	61
R3206.32-10-14	10	14	32	M 4	32	8	4	4800	$9,3x10^{-6}$	2.5	61	61
R3206.32-12-12	12	12	32	M 4	32	8	4	4800	$9,3x10^{-6}$	2.5	61	61
R3206.32-12-14	12	14	32	M 4	32	8	4	4800	$9,3x10^{-6}$	2.5	61	61
R3206.32-14-14	14	14	32	M 4	32	8	4	4800	$9,3x10^{-6}$	2.5	61	61

Rigid Shaft Coupling - Two Piece

Stainless, short





R3207

Material
Stainless steel (A2).

Technical Notes
Light, very low inertial, beam type with minimal allowable offset.

Maintenance free, excellent anti-oil and corrosion resistance.
Reciprocating torque is quarter static torque.
Rotational torque is half static torque.

Important Notes
Different bore sizes available on request.
For keyways, please add „-KW" suffix when ordering.

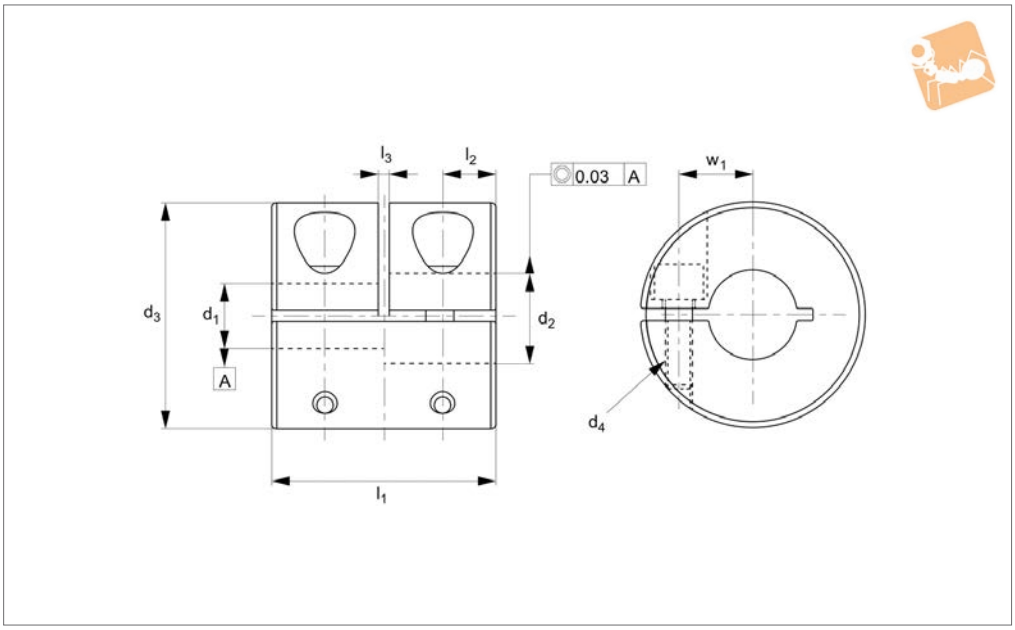
Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	d_4	l_1	l_2	Static torque Nm	rpm max.	Moment of inertia kg·m²	Torque screw to Nm	Weight g	Weight g
R3207.16-05-05	5	5	16	M2,5	16	4	0.6	9500	$8,2x10^{-7}$	1.0	22	22
R3207.16-05-06	5	6	16	M2,5	16	4	0.6	9500	$8,2x10^{-7}$	1.0	22	22
R3207.16-06-06	6	6	16	M2,5	16	4	0.6	9500	$8,2x10^{-7}$	1.0	22	22
R3207.20-06-06	6	6	20	M2,5	20	5	1	7600	$2,4x10^{-6}$	1.0	41	41
R3207.20-06-08	6	-	20	M2,5	20	5	1	7600	$2,4x10^{-6}$	1.0	41	41
R3207.20-08-08	8	8	20	M2,5	20	5	1	7600	$2,4x10^{-6}$	1.0	41	41
R3207.25-08-08	8	8	25	M 3	25	6	2	6100	$7,3x10^{-6}$	1.5	80	80
R3207.25-08-10	8	10	25	M 3	25	6	2	6100	$7,3x10^{-6}$	1.5	80	80
R3207.25-10-10	10	10	25	M 3	25	6	2	6100	$7,3x10^{-6}$	1.5	80	80
R3207.32-10-10	10	10	32	M 4	32	8	4	4800	$2,5x10^{-5}$	2.5	160	160
R3207.32-10-12	10	12	32	M 4	32	8	4	4800	$2,5x10^{-5}$	2.5	160	160
R3207.32-10-14	10	14	32	M 4	32	8	4	4800	$2,5x10^{-5}$	2.5	160	160
R3207.32-12-12	12	12	32	M 4	32	8	4	4800	$2,5x10^{-5}$	2.5	160	160
R3207.32-12-14	12	14	32	M 4	32	8	4	4800	$2,5x10^{-5}$	2.5	160	160
R3207.32-14-14	14	14	32	M 4	32	8	4	4800	$2,5x10^{-5}$	2.5	160	160

Rigid Shaft Coupling - One Piece

Aluminium, short



R3201



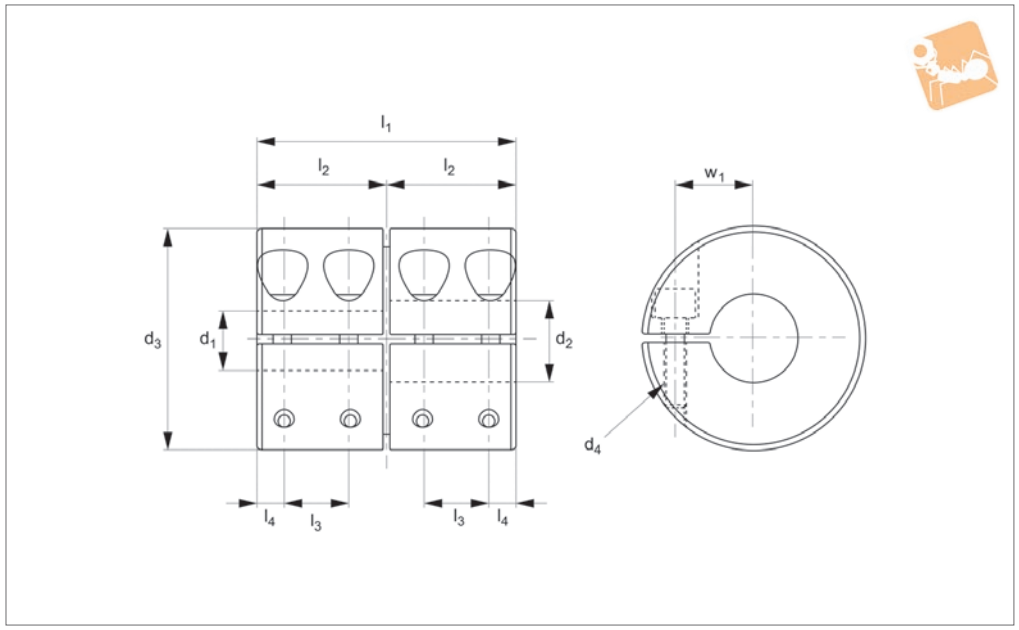
Material
Aluminium alloy, anodised

Technical Notes
Light weight, maintenance free and corrosion resistant.
Reciprocating torque is quarter static torque.
Rotational torque is half static torque.

Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	d_4	l_1	l_2	l_3	w	Static torque Nm	rpm max.	Moment of inertia kg·m²	Torque screw to Nm	Weight g
R3201.16-05-05	5	5	16	M 2,5	16	3,75	1,0	5,0	0,6	9500	$3,0x10^{-7}$	1,0	9
R3201.16-05-06	5	6	16	M 2,5	16	3,75	1,0	5,0	0,6	9500	$3,0x10^{-7}$	1,0	9
R3201.16-06-06	6	6	16	M 2,5	16	3,75	1,0	5,0	0,6	9500	$3,0x10^{-7}$	1,0	9
R3201.20-06-06	6	6	20	M 2,5	20	4,75	1,0	6,5	1	7600	$8,7x10^{-7}$	1,0	15
R3201.20-06-08	6	8	20	M 2,5	20	4,75	1,0	6,5	1	7600	$8,7x10^{-7}$	1,0	15
R3201.20-08-08	8	8	20	M 2,5	20	4,75	1,0	6,5	1	7600	$8,7x10^{-7}$	1,0	15
R3201.25-08-08	8	8	25	M 3	25	6,0	1,0	9,0	2	6100	$2,7x10^{-6}$	1,5	29
R3201.25-08-10	8	10	25	M 3	25	6,0	1,0	9,0	2	6100	$2,7x10^{-6}$	1,5	29
R3201.25-10-10	10	10	25	M 3	25	6,0	1,0	9,0	2	6100	$2,7x10^{-6}$	1,5	29
R3201.32-10-10	10	10	32	M 4	32	7.75	1,0	11,0	4	4800	$7,1x10^{-6}$	2,5	61
R3201.32-10-12	10	12	32	M 4	32	7.75	1,0	11,0	4	4800	$7,1x10^{-6}$	2,5	61
R3201.32-10-14	10	14	32	M 4	32	7.75	1,0	11,0	4	4800	$7,1x10^{-6}$	2,5	61
R3201.32-12-12	12	12	32	M 4	32	7.75	1,0	11,0	4	4800	$7,1x10^{-6}$	2,5	61
R3201.32-12-14	12	14	32	M 4	32	7.75	1,0	11,0	4	4800	$7,1x10^{-6}$	2,5	61
R3201.32-14-14	14	14	32	M 4	32	7.75	1,0	11,0	4	4800	$7,1x10^{-6}$	2,5	61
R3201.40-14-14	14	14	40	M 5	44	10.5	1,5	13,0	8	4000	$1,5x10^{-5}$	7,0	120
R3201.40-14-15	14	15	40	M 5	44	10.5	1,5	13,0	8	4000	$1,5x10^{-5}$	7,0	120
R3201.40-14-16	14	16	40	M 5	44	10.5	1,5	13,0	8	4000	$1,5x10^{-5}$	7,0	120
R3201.40-14-18	14	18	40	M 5	44	10.5	1,5	13,0	8	4000	$1,5x10^{-5}$	7,0	120
R3201.40-15-15	15	15	40	M 5	44	10.5	1,5	13,0	8	4000	$1,5x10^{-5}$	7,0	120
R3201.40-15-16	15	16	40	M 5	44	10.5	1,5	13,0	8	4000	$1,5x10^{-5}$	7,0	120
R3201.40-15-18	15	18	40	M 5	44	10.5	1,5	13,0	8	4000	$1,5x10^{-5}$	7,0	120
R3201.40-16-16	16	16	40	M 5	44	10.5	1,5	13,0	8	4000	$1,5x10^{-5}$	7,0	120
R3201.40-16-18	16	18	40	M 5	44	10.5	1,5	13,0	8	4000	$1,5x10^{-5}$	7,0	120
R3201.40-18-18	18	18	40	M 5	44	10.5	1,5	13,0	8	4000	$1,5x10^{-5}$	7,0	120

Rigid Shaft Coupling - One Piece

Stainless, clamping, long





R3203

Material
Stainless steel (A2).

Technical Notes
Beam type with minimal allowable offset.
Maintenance free, excellent anti-oil and corrosion resistance.
Reciprocating torque is quarter static torque.
Rotational torque is half static torque.

Important Notes
Different bore sizes available on request.
Keyways are standard to DIN 6885.
See keyway technical pages.

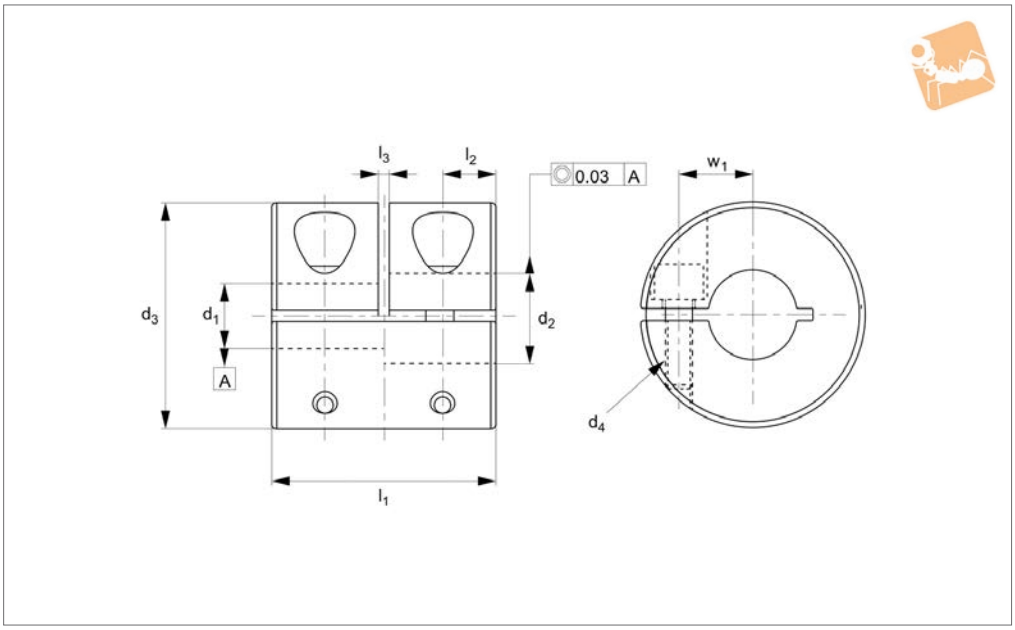
Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	d_4	l_1	l_2	l_3	w	Static torque Nm	rpm max.	Moment of inertia kg·m²	Torque screw to Nm	Weight g
R3203.16-05-05	5	5	16	M 2	22	2,5	5,5	5	0.6	9000	$8,9x10^{-7}$	0,5	25
R3203.16-05-06	5	6	16	M 2	22	2,5	5,5	5	0.6	9000	$8,9x10^{-7}$	0,5	25
R3203.16-06-06	6	6	16	M 2	22	2,5	5,5	5	0.6	9000	$8,9x10^{-7}$	0,5	25
R3203.20-06-06	6	6	20	M 2	24	2,5	6,0	7	1	7000	$2,5x10^{-6}$	0,5	45
R3203.20-06-08	6	8	20	M 2	24	2,5	6,0	7	1	7000	$2,5x10^{-6}$	0,5	45
R3203.20-08-08	8	8	20	M 2	24	2,5	6,0	7	1	7000	$2,5x10^{-6}$	0,5	45
R3203.25-08-08	8	8	25	M2,5	36	4,5	9,0	9	2	6000	$9,2x10^{-6}$	1,0	100
R3203.25-08-10	8	10	25	M2,5	36	4,5	9,0	9	2	6000	$9,2x10^{-6}$	1,0	100
R3203.25-10-10	10	10	25	M2,5	36	4,5	9,0	9	2	6000	$9,2x10^{-6}$	1,0	100
R3203.32-10-10	10	10	32	M 3	40	4,0	10,0	11	4	4500	$2,7x10^{-5}$	1,5	180
R3203.32-10-12	10	12	32	M 3	40	4,0	10,0	11	4	4500	$2,7x10^{-5}$	1,5	180
R3203.32-10-14	10	14	32	M 3	40	4,0	10,0	11	4	4500	$2,7x10^{-5}$	1,5	180
R3203.32-12-12	12	12	32	M 3	40	4,0	10,0	11	4	4500	$2,7x10^{-5}$	1,5	180
R3203.32-12-14	12	14	32	M 3	40	4,0	10,0	11	4	4500	$2,7x10^{-5}$	1,5	180
R3203.32-14-14	14	14	32	M 3	40	4,0	10,0	11	4	4500	$2,7x10^{-5}$	1,5	180

Rigid Shaft Coupling - One Piece

Stainless, short



R3204



Material
Stainless steel (A2).

Technical Notes
To fit h_7 and h_8 tolerance shafts.
Maintenance free, excellent anti-oil and corrosion resistance.
Reciprocating torque is quarter static torque.
Rotational torque is half static torque.

Important Notes
Different bore sizes available on request.
For keyways, please add „-KW" suffix when ordering.

Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	d_4	l_1	Weight g
R3204.16-05-05	5	5	16	M2,5	16	9
R3204.16-05-06	5	6	16	M2,5	16	9
R3204.16-06-06	6	6	16	M2,5	16	9
R3204.20-06-06	6	6	20	M2,5	20	15
R3204.20-06-08	6	8	20	M2,5	20	15
R3204.20-08-08	8	8	20	M2,5	20	15
R3204.25-08-08	8	8	25	M 3	25	29
R3204.25-08-10	8	10	25	M 3	25	29
R3204.25-10-10	10	10	25	M 3	25	29
R3204.32-10-10	10	10	32	M 4	32	61
R3204.32-10-12	10	12	32	M 4	32	61
R3204.32-10-14	10	14	32	M 4	32	61
R3204.32-12-12	12	12	32	M 4	32	61
R3204.32-12-14	12	14	32	M 4	32	61
R3204.32-14-14	14	14	32	M 4	32	61

Order No.	l_2	l_3	w_1	Static torque Nm	rpm max.	Moment of inertia kg·m²	Torque screw to Nm	Weight g
R3204.16-05-05	3.75	1.0	5.0	0.6	9500	$3{,}0x10^{-7}$	1.0	9
R3204.16-05-06	3.75	1.0	5.0	0.6	9500	$3{,}0x10^{-7}$	1.0	9
R3204.16-06-06	3.75	1.0	5.0	0.6	9500	$3{,}0x10^{-7}$	1.0	9
R3204.20-06-06	4.75	1.0	6.5	1	7600	$8{,}7x10^{-7}$	1.0	15
R3204.20-06-08	4.75	1.0	6.5	1	7600	$8{,}7x10^{-7}$	1.0	15
R3204.20-08-08	4.75	1.0	6.5	1	7600	$8{,}7x10^{-7}$	1.0	15
R3204.25-08-08	6.0	1.0	9.0	2	6100	$2{,}7x10^{-6}$	1.5	29
R3204.25-08-10	6.0	1.0	9.0	2	6100	$2{,}7x10^{-6}$	1.5	29
R3204.25-10-10	6.0	1.0	9.0	2	6100	$2{,}7x10^{-6}$	1.5	29
R3204.32-10-10	7.75	1.0	11	4	4800	$7{,}1x10^{-6}$	2.5	61
R3204.32-10-12	7.75	1.0	11	4	4800	$7{,}1x10^{-6}$	2.5	61
R3204.32-10-14	7.75	1.0	11	4	4800	$7{,}1x10^{-6}$	2.5	61
R3204.32-12-12	7.75	1.0	11	4	4800	$7{,}1x10^{-6}$	2.5	61
R3204.32-12-14	7.75	1.0	11	4	4800	$7{,}1x10^{-6}$	2.5	61

Rigid Shaft Coupling - One Piece

Stainless, short

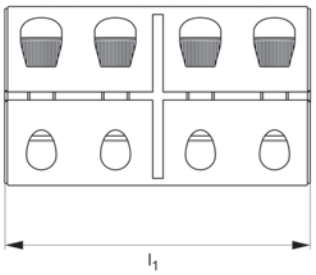
Order No.	l_2	l_3	w_1	Static torque Nm	rpm max.	Moment of inertia kg·m²	Torque screw to Nm	Weight g
R3204.32-14-14	7.75	1.0	11	4	4800	$7{,}1 \times 10^{-6}$	2.5	61

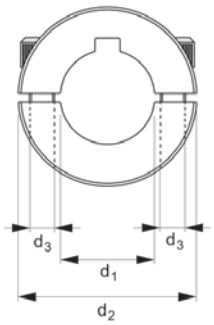
Rigid Shaft Couplings - One Piece

steel & stainless, long



R3200





Material
Steel (AISI 12L14), black oxide finish, or stainless steel (A2, AISI 303).

High axial load and torque capacity.
Part shown above with keyway.

Keyways are standard to DIN 6885.
See keyway technical pages.

Technical Notes
To fit h_7 or h_8 tolerance shafts.

Important Notes
Different bore sizes available on request.

Order No.	d_1 tol. H7/H8	d_2	d_3	l_1	Static torque Nm	Material	Type	Torque screw to Nm	Weight g	Weight g
R3200.060-BL	6	18	M 3	30	70	Steel	standard	2.0	40	40
R3200.080-BL	8	24	M 3	30	70	Steel	standard	2.0	100	100
R3200.100-BL	10	29	M 4	45	105	Steel	standard	4.5	180	180
R3200.120-BL	12	29	M 4	45	105	Steel	standard	4.5	180	180
R3200.140-BL	14	34	M 5	50	200	Steel	standard	9.5	270	270
R3200.150-BL	15	34	M 5	50	200	Steel	standard	9.5	260	260
R3200.160-BL	16	34	M 5	50	200	Steel	standard	9.5	260	260
R3200.200-BL	20	42	M 6	65	350	Steel	standard	16.5	510	510
R3200.250-BL	25	45	M 6	75	400	Steel	standard	16.5	620	620
R3200.300-BL	30	53	M 6	83	475	Steel	standard	16.5	920	920
R3200.350-BL	35	67	M 8	95	1100	Steel	standard	39.0	1880	1880
R3200.400-BL	40	77	M 8	108	1325	Steel	standard	39.0	2710	2710
R3200.500-BL	50	85	M 10	124	2250	Steel	standard	78.0	3520	3520
R3200.080-BL-K	8	24	M 3	35	70	Steel	with keyway	2.0	100	100
R3200.100-BL-K	10	29	M 4	45	70	Steel	with keyway	4.5	180	180
R3200.120-BL-K	12	29	M 4	45	105	Steel	with keyway	4.5	180	180
R3200.140-BL-K	14	34	M 5	50	200	Steel	with keyway	9.5	270	270
R3200.150-BL-K	15	34	M 5	50	200	Steel	with keyway	9.5	260	260
R3200.160-BL-K	16	34	M 5	50	200	Steel	with keyway	9.5	260	260
R3200.200-BL-K	20	42	M 6	65	350	Steel	with keyway	16.5	510	510
R3200.250-BL-K	25	45	M 6	75	400	Steel	with keyway	16.5	620	620
R3200.300-BL-K	30	53	M 6	83	475	Steel	with keyway	16.5	920	920
R3200.350-BL-K	35	67	M 8	95	1100	Steel	with keyway	39.0	1880	1880
R3200.400-BL-K	40	77	M 8	108	1325	Steel	with keyway	39.0	2710	2710
R3200.500-BL-K	50	85	M 10	124	2250	Steel	with keyway	78.0	3520	3520
R3200.060-A2	6	18	M 3	30	23	Stainless	standard	1.0	40	40
R3200.080-A2	8	24	M 3	35	23	Stainless	standard	1.0	100	100
R3200.100-A2	10	29	M 4	45	32	Stainless	standard	2.5	180	180
R3200.120-A2	12	29	M 4	45	32	Stainless	standard	2.5	180	180
R3200.140-A2	14	34	M 5	50	60	Stainless	standard	5.0	270	270
R3200.150-A2	15	34	M 5	50	60	Stainless	standard	5.0	260	260
R3200.160-A2	16	34	M 5	50	60	Stainless	standard	5.0	260	260

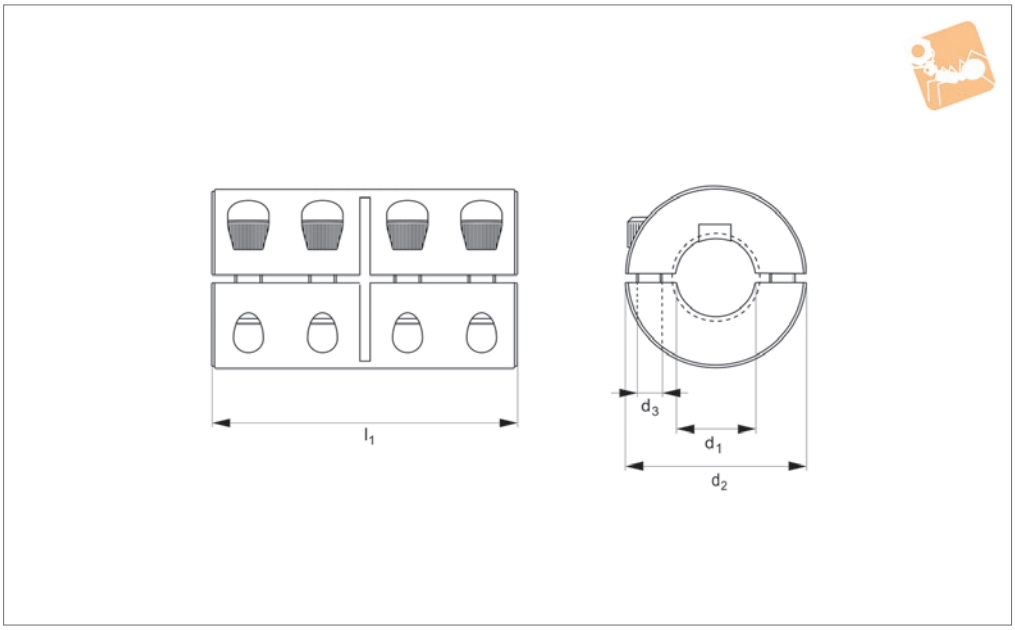
Order No.	d_1 tol. H7/H8	d_2	d_3	l_1	Static torque Nm	Material	Type	Torque screw to Nm	Weight g	Weight g
R3200.200-A2	20	42	M 6	65	110	Stainless	standard	8.5	510	510
R3200.250-A2	25	45	M 6	75	120	Stainless	standard	8.5	620	620
R3200.300-A2	30	53	M 6	83	150	Stainless	standard	8.5	920	920
R3200.350-A2	35	67	M 8	95	330	Stainless	standard	20.5	1880	1880
R3200.400-A2	40	77	M 8	108	400	Stainless	standard	20.5	2710	2710
R3200.500-A2	50	85	M 10	124	675	Stainless	standard	41.5	3520	3520
R3200.080-A2-K	8	24	M 3	35	23	Stainless	with keyway	1.0	100	100
R3200.100-A2-K	10	29	M 4	45	23	Stainless	with keyway	2.5	180	180
R3200.120-A2-K	12	29	M 4	45	32	Stainless	with keyway	2.5	180	180
R3200.140-A2-K	14	34	M 5	50	60	Stainless	with keyway	5.0	270	270
R3200.150-A2-K	15	34	M 5	50	60	Stainless	with keyway	5.0	260	260
R3200.160-A2-K	16	34	M 5	50	60	Stainless	with keyway	5.0	260	260
R3200.200-A2-K	20	42	M 6	65	110	Stainless	with keyway	8.5	510	510
R3200.250-A2-K	25	45	M 6	75	120	Stainless	with keyway	8.5	620	620
R3200.300-A2-K	30	53	M 6	83	150	Stainless	with keyway	8.5	920	920
R3200.350-A2-K	35	67	M 8	95	330	Stainless	with keyway	20.5	1880	1880
R3200.400-A2-K	40	77	M 8	108	400	Stainless	with keyway	20.5	2710	2710
R3200.500-A2-K	50	85	M 10	124	675	Stainless	with keyway	41.5	3520	3520

Rigid Shaft Couplings - Two Piece

steel & stainless, clamping, long



R3205



Material
Steel (AISI 12L14), black oxide finish, or stainless steel (A2, AISI 303).

Technical Notes
To fit h_7 or h_8 tolerance shafts.

High axial load and torque capacity.
Part shown above with keyway.

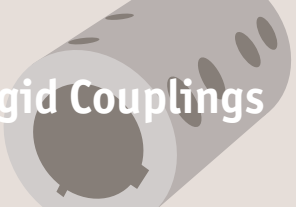
Important Notes
Different bore sizes available on request.
Keyways are standard to DIN 6885.

See keyway technical pages.

Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	l_1	Static torque Nm	Material	Type	Torque screw to Nm	Weight g	Weight g
R3205.060-BL	6	18	M 3	30	34	Steel	standard	2.0	40	40
R3205.080-BL	8	24	M 3	35	50	Steel	standard	2.0	80	80
R3205.100-BL	10	29	M 4	45	105	Steel	standard	4.5	190	190
R3205.120-BL	12	29	M 4	45	105	Steel	standard	4.5	180	180
R3205.140-BL	14	34	M 5	50	200	Steel	standard	9.5	250	250
R3205.150-BL	15	34	M 5	50	200	Steel	standard	9.5	240	240
R3205.160-BL	16	34	M 5	50	200	Steel	standard	9.5	230	230
R3205.200-BL	20	42	M 6	65	350	Steel	standard	16.5	500	500
R3205.250-BL	25	45	M 6	75	400	Steel	standard	16.5	620	620
R3205.300-BL	30	53	M 6	83	475	Steel	standard	16.5	1000	1000
R3205.350-BL	35	67	M 8	95	1100	Steel	standard	39.0	1100	1100
R3205.400-BL	40	77	M 8	108	1325	Steel	standard	39.0	2500	2500
R3205.500-BL	50	85	M10	124	2250	Steel	standard	78.0	3100	3100
R3205.080-BL-K	8	24	M 3	35	50	Steel	with keyway	2.0	80	80
R3205.100-BL-K	10	29	M 4	45	105	Steel	with keyway	4.5	190	190
R3205.120-BL-K	12	29	M 4	45	105	Steel	with keyway	4.5	180	180
R3205.140-BL-K	14	34	M 5	50	200	Steel	with keyway	9.5	240	240
R3205.150-BL-K	15	34	M 5	50	200	Steel	with keyway	9.5	240	240
R3205.160-BL-K	16	34	M 5	50	200	Steel	with keyway	9.5	230	230
R3205.200-BL-K	20	42	M 6	65	350	Steel	with keyway	16.5	500	500
R3205.250-BL-K	25	45	M 6	75	400	Steel	with keyway	16.5	620	620
R3205.300-BL-K	30	53	M 6	83	475	Steel	with keyway	16.5	1000	1000
R3205.350-BL-K	35	67	M 8	95	1100	Steel	with keyway	39.0	1100	1100
R3205.400-BL-K	40	77	M 8	108	1325	Steel	with keyway	39.0	2500	2500
R3205.500-BL-K	50	85	M10	124	2250	Steel	with keyway	78.0	3100	3100
R3205.060-A2	6	18	M 3	30	10	Stainless	standard	1.0	40	40
R3205.080-A2	8	24	M 3	35	16	Stainless	standard	1.0	80	80
R3205.100-A2	10	29	M 4	45	32	Stainless	standard	2.5	190	190
R3205.120-A2	12	29	M 4	45	32	Stainless	standard	2.5	180	180
R3205.140-A2	14	34	M 5	50	60	Stainless	standard	5.0	250	250
R3205.150-A2	15	34	M 5	50	60	Stainless	standard	5.0	240	240
R3205.160-A2	16	34	M 5	50	60	Stainless	standard	5.0	230	230

Rigid Shaft Couplings - Two Piece

steel & stainless, clamping, long



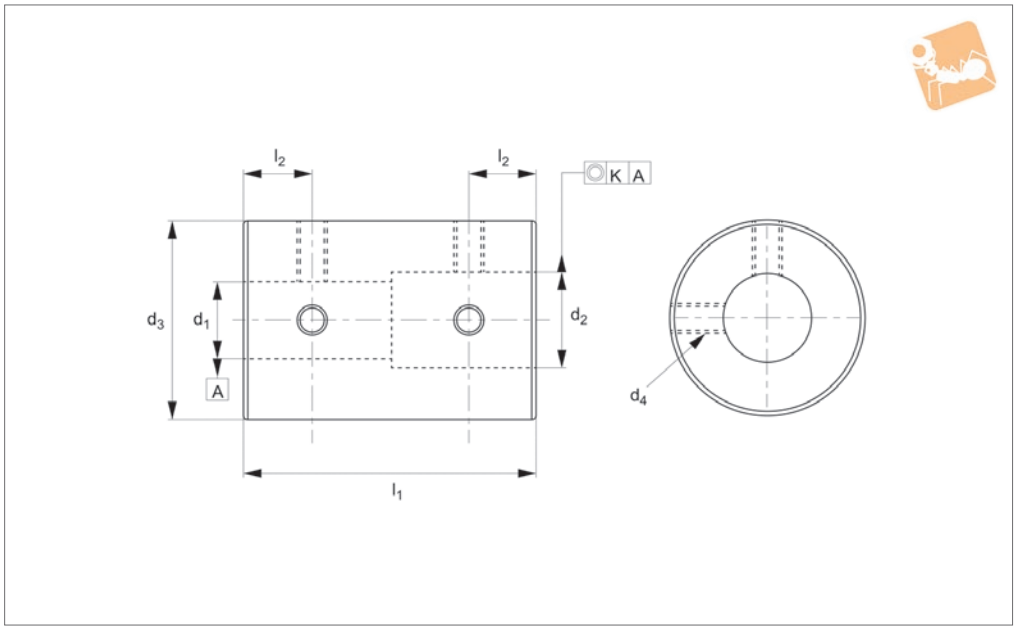
Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	l_1	Static torque Nm	Material	Type	Torque screw to Nm	Weight g	Weight g
R3205.200-A2	20	42	M 6	65	110	Stainless	standard	8.5	500	500
R3205.250-A2	25	45	M 6	75	120	Stainless	standard	8.5	620	620
R3205.300-A2	30	53	M 6	83	150	Stainless	standard	8.5	1000	1000
R3205.350-A2	35	67	M 8	95	330	Stainless	standard	20.5	1100	1100
R3205.400-A2	40	77	M 8	108	400	Stainless	standard	20.5	2500	2500
R3205.500-A2	50	85	M10	124	675	Stainless	standard	41.5	3100	3100
R3205.080-A2-K	8	24	M 3	35	16	Stainless	with keyway	1.0	80	80
R3205.100-A2-K	10	29	M 4	45	32	Stainless	with keyway	2.5	190	190
R3205.120-A2-K	12	29	M 4	45	32	Stainless	with keyway	2.5	180	180
R3205.140-A2-K	14	34	M 5	50	60	Stainless	with keyway	5.0	240	240
R3205.150-A2-K	15	34	M 5	50	60	Stainless	with keyway	5.0	240	240
R3205.160-A2-K	16	34	M 5	50	60	Stainless	with keyway	5.0	230	230
R3205.200-A2-K	20	42	M 6	65	110	Stainless	with keyway	8.5	500	500
R3205.250-A2-K	25	45	M 6	75	120	Stainless	with keyway	8.5	620	620
R3205.300-A2-K	30	53	M 6	83	150	Stainless	with keyway	8.5	1000	1000
R3205.350-A2-K	35	67	M 8	95	330	Stainless	with keyway	20.5	1100	1100
R3205.400-A2-K	40	77	M 8	108	400	Stainless	with keyway	20.5	2500	2500
R3205.500-A2-K	50	85	M10	124	675	Stainless	with keyway	41.5	3100	3100

Rigid Shaft Coupling - One Piece

Aluminium, set screw



R3208



Material
Aluminium alloy, anodised.

Technical Notes
Maintenance free, excellent anti-oil and corrosion-resistance.
Reciprocating torque is quarter static torque.
Rotational torque is half static torque.

Important Notes
Concentricity; K=0,03 when Ød_1, Ød_2 are 3 and 4, otherwise K=0,05
For sizes where d_1<4 and d_2>5, there are 3 set screws.
For sizes where d_1 and d_2 both smaller than 4, there are 2 set screws.
Different bore sizes available on request.
For keyways, please add „-KW“ suffix when ordering.

Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	d_4	l_1	l_2	Static torque Nm	rpm max.	Moment of inertia kg·m²	Torque screw to Nm	Weight g	Weight g
R3208.16-030-030	3	3	16	M 3	24	6.0	0.6	24000	$4,4x10^{-7}$	0.7	11	11
R3208.16-030-040	3	4	16	M 3	24	6.0	0.6	24000	$4,4x10^{-7}$	0.7	11	11
R3208.16-030-050	3	5	16	M 3	24	6.0	0.6	24000	$4,4x10^{-7}$	0.7	11	11
R3208.16-030-060	3	6	16	M 3	24	6.0	0.6	24000	$4,4x10^{-7}$	0.7	11	11
R3208.16-040-040	4	4	16	M 3	24	6.0	0.6	24000	$4,4x10^{-7}$	0.7	11	11
R3208.16-040-050	4	5	16	M 3	24	6.0	0.6	24000	$4,4x10^{-7}$	0.7	11	11
R3208.16-040-060	4	6	16	M 3	24	6.0	0.6	24000	$4,4x10^{-7}$	0.7	11	11
R3208.16-050-050	5	5	16	M 3	24	6.0	0.6	24000	$4,4x10^{-7}$	0.7	11	11
R3208.16-050-060	5	6	16	M 3	24	6.0	0.6	24000	$4,4x10^{-7}$	0.7	11	11
R3208.16-060-060	6	6	16	M 3	24	6.0	0.6	24000	$4,4x10^{-7}$	0.7	11	11
R3208.20-050-050	5	5	20	M 3	30	7.0	1	19000	$1,3x10^{-6}$	0.7	20	20
R3208.20-050-060	5	6	20	M 3	30	7.0	1	19000	$1,3x10^{-6}$	0.7	20	20
R3208.20-050-080	5	8	20	M 3	30	7.0	1	19000	$1,3x10^{-6}$	0.7	20	20
R3208.20-050-100	5	10	20	M 3	30	7.0	1	19000	$1,3x10^{-6}$	0.7	20	20
R3208.20-060-060	6	6	20	M 3	30	7.0	1	19000	$1,3x10^{-6}$	0.7	20	20

Rigid Shaft Coupling - One Piece

Aluminium, set screw

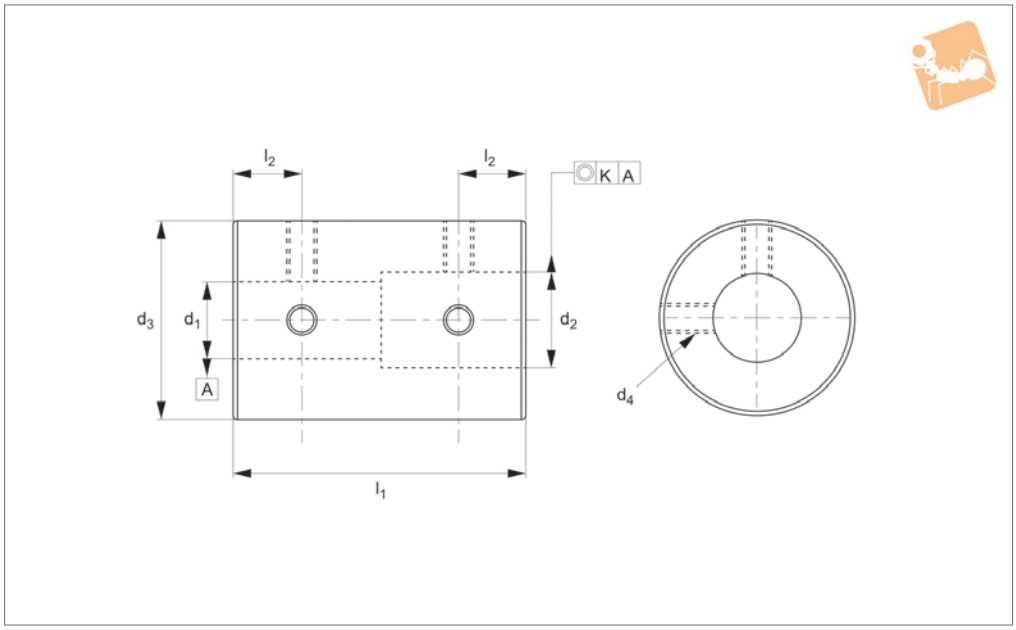
Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	d_4	l_1	l_2	Static torque Nm	rpm max.	Moment of inertia kg·m²	Torque screw to Nm	Weight g	Weight g
R3208.20-060-080	6	8	20	M 3	30	7.0	1	19000	$1,3x10^{-6}$	0.7	20	20
R3208.20-060-100	6	10	20	M 3	30	7.0	1	19000	$1,3x10^{-6}$	0.7	20	20
R3208.20-080-080	8	8	20	M 3	30	7.0	1	19000	$1,3x10^{-6}$	0.7	20	20
R3208.20-080-100	8	10	20	M 3	30	7.0	1	19000	$1,3x10^{-6}$	0.7	20	20
R3208.20-100-100	10	10	20	M 3	30	7.0	1	19000	$1,3x10^{-6}$	0.7	20	20
R3208.25-080-080	8	8	25	M 4	36	9.0	2	15000	$3,9x10^{-6}$	1.7	39	39
R3208.25-080-100	8	10	25	M 4	36	9.0	2	15000	$3,9x10^{-6}$	1.7	39	39
R3208.25-080-110	8	11	25	M 4	36	9.0	2	15000	$3,9x10^{-6}$	1.7	39	39
R3208.25-080-120	8	12	25	M 4	36	9.0	2	15000	$3,9x10^{-6}$	1.7	39	39
R3208.25-100-100	10	10	25	M 4	36	9.0	2	15000	$3,9x10^{-6}$	1.7	39	39
R3208.25-100-110	10	11	25	M 4	36	9.0	2	15000	$3,9x10^{-6}$	1.7	39	39
R3208.25-100-120	10	12	25	M 4	36	9.0	2	15000	$3,9x10^{-6}$	1.7	39	39
R3208.25-110-110	11	11	25	M 4	36	9.0	2	15000	$3,9x10^{-6}$	1.7	39	39
R3208.25-110-120	11	12	25	M 4	36	9.0	2	15000	$3,9x10^{-6}$	1.7	39	39
R3208.25-120-120	12	12	25	M 4	36	9.0	2	15000	$3,9x10^{-6}$	1.7	39	39
R3208.32-120-120	12	12	32	M 4	41	10.0	4	12000	$1,2x10^{-5}$	1.7	71	71
R3208.32-120-140	12	14	32	M 4	41	10.0	4	12000	$1,2x10^{-5}$	1.7	71	71
R3208.32-120-150	12	15	32	M 4	41	10.0	4	12000	$1,2x10^{-5}$	1.7	71	71
R3208.32-120-160	12	16	32	M 4	41	10.0	4	12000	$1,2x10^{-5}$	1.7	71	71
R3208.32-140-140	14	14	32	M 4	41	10.0	4	12000	$1,2x10^{-5}$	1.7	71	71
R3208.32-140-150	14	15	32	M 4	41	10.0	4	12000	$1,2x10^{-5}$	1.7	71	71
R3208.32-140-160	14	16	32	M 4	41	10.0	4	12000	$1,2x10^{-5}$	1.7	71	71
R3208.32-150-150	15	15	32	M 4	41	10.0	4	12000	$1,2x10^{-5}$	1.7	71	71
R3208.32-150-160	15	16	32	M 4	41	10.0	4	12000	$1,2x10^{-5}$	1.7	71	71
R3208.32-160-160	16	16	32	M 4	41	10.0	4	12000	$1,2x10^{-5}$	1.7	71	71
R3208.40-150-150	15	15	40	M 5	44	10.5	8	4000	$1,5x10^{-5}$	4.0	120	120
R3208.40-150-160	15	16	40	M 5	44	10.5	8	4000	$1,5x10^{-5}$	4.0	120	120
R3208.40-150-180	15	18	40	M 5	44	10.5	8	4000	$1,5x10^{-5}$	4.0	120	120
R3208.40-150-200	15	20	40	M 5	44	10.5	8	4000	$1,5x10^{-5}$	4.0	120	120
R3208.40-160-160	16	16	40	M 5	44	10.5	8	4000	$1,5x10^{-5}$	4.0	120	120
R3208.40-160-180	16	18	40	M 5	44	10.5	8	4000	$1,5x10^{-5}$	4.0	120	120
R3208.40-160-200	16	20	40	M 5	44	10.5	8	4000	$1,5x10^{-5}$	4.0	120	120
R3208.40-180-180	18	18	40	M 5	44	10.5	8	4000	$1,5x10^{-5}$	4.0	120	120
R3208.40-180-200	18	20	40	M 5	44	10.5	8	4000	$1,5x10^{-5}$	4.0	120	120
R3208.40-200-200	20	20	40	M 5	44	10.5	8	4000	$1,5x10^{-5}$	4.0	120	120

Rigid Shaft Coupling - One Piece

Stainless, set screw



R3209



Material
Stainless steel (A2).

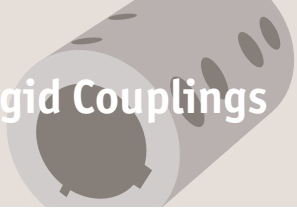
Technical Notes
Maintenance free, excellent anti-oil and corrosion-resistance.
Reciprocating torque is quarter static torque.
Rotational torque is half static torque.

Important Notes
Concentricity; K=0,03 when Ød_1, Ød_2 are 3 and 4, otherwise K=0,05
For sizes where d_1 <4 and d_2 >5, there are 3 set screws.
For sizes where d_1 and d_2 both smaller than 4, there are 2 set screws.
Different bore sizes available on request.
For keyways, please add „-KW“ suffix when ordering.

Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	d_4	l_1	l_2	Static torque Nm	rpm max.	Moment of inertia kg·m²	Torque screw to Nm	Weight g	Weight g
R3209.16-030-030	3	3	16	M 3	24	6	0.6	24000	1,2x10^{-6}	0.7	28	28
R3209.16-030-040	3	4	16	M 3	24	6	0.6	24000	1,2x10^{-6}	0.7	28	28
R3209.16-030-050	3	5	16	M 3	24	6	0.6	24000	1,2x10^{-6}	0.7	28	28
R3209.16-030-060	3	6	16	M 3	24	6	0.6	24000	1,2x10^{-6}	0.7	28	28
R3209.16-040-040	4	4	16	M 3	24	6	0.6	24000	1,2x10^{-6}	0.7	28	28
R3209.16-040-050	4	5	16	M 3	24	6	0.6	24000	1,2x10^{-6}	0.7	28	28
R3209.16-040-060	4	6	16	M 3	24	6	0.6	24000	1,2x10^{-6}	0.7	28	28
R3209.16-050-050	5	5	16	M 3	24	6	0.6	24000	1,2x10^{-6}	0.7	28	28
R3209.16-050-060	5	6	16	M 3	24	6	0.6	24000	1,2x10^{-6}	0.7	28	28
R3209.16-060-060	6	6	16	M 3	24	6	0.6	24000	1,2x10^{-6}	0.7	28	28
R3209.20-050-050	5	5	20	M 3	30	7	1	19000	3,5x10^{-6}	0.7	54	54
R3209.20-050-060	5	6	20	M 3	30	7	1	19000	3,5x10^{-6}	0.7	54	54
R3209.20-050-080	5	8	20	M 3	30	7	1	19000	3,5x10^{-6}	0.7	54	54
R3209.20-050-100	5	10	20	M 3	30	7	1	19000	3,5x10^{-6}	0.7	54	54
R3209.20-060-060	6	6	20	M 3	30	7	1	19000	3,5x10^{-6}	0.7	54	54

Rigid Shaft Coupling - One Piece

Stainless, set screw

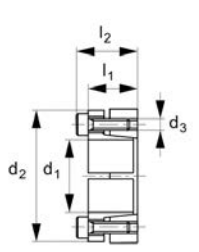


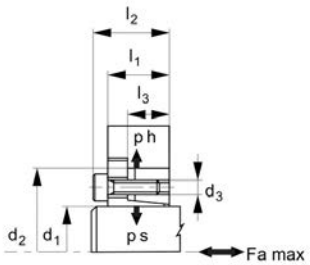
Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	d_4	l_1	l_2	Static torque Nm	rpm max.	Moment of inertia kg·m²	Torque screw to Nm	Weight g	Weight g
R3209.20-060-080	6	8	20	M 3	30	7	1	19000	$3{,}5x10^{-6}$	0.7	54	54
R3209.20-060-100	6	10	20	M 3	30	7	1	19000	$3{,}5x10^{-6}$	0.7	54	54
R3209.20-080-080	8	8	20	M 3	30	7	1	19000	$3{,}5x10^{-6}$	0.7	54	54
R3209.20-080-100	8	10	20	M 3	30	7	1	19000	$3{,}5x10^{-6}$	0.7	54	54
R3209.20-100-100	10	10	20	M 3	30	7	1	19000	$3{,}5x10^{-6}$	0.7	54	54
R3209.25-080-080	8	8	25	M 4	36	9	2	15000	$1{,}0x10^{-5}$	1.7	100	100
R3209.25-080-100	8	10	25	M 4	36	9	2	15000	$1{,}0x10^{-5}$	1.7	100	100
R3209.25-080-110	8	11	25	M 4	36	9	2	15000	$1{,}0x10^{-5}$	1.7	100	100
R3209.25-080-120	8	12	25	M 4	36	9	2	15000	$1{,}0x10^{-5}$	1.7	100	100
R3209.25-100-100	10	10	25	M 4	36	9	2	15000	$1{,}0x10^{-5}$	1.7	100	100
R3209.25-100-110	10	11	25	M 4	36	9	2	15000	$1{,}0x10^{-5}$	1.7	100	100
R3209.25-100-120	10	12	25	M 4	36	9	2	15000	$1{,}0x10^{-5}$	1.7	100	100
R3209.25-110-110	11	11	25	M 4	36	9	2	15000	$1{,}0x10^{-5}$	1.7	100	100
R3209.25-110-120	11	12	25	M 4	36	9	2	15000	$1{,}0x10^{-5}$	1.7	100	100
R3209.25-120-120	12	12	25	M 4	36	9	2	15000	$1{,}0x10^{-5}$	1.7	100	100
R3209.32-120-120	12	12	32	M 4	41	10	4	12000	$3{,}1x10^{-5}$	1.7	190	190
R3209.32-120-140	12	14	32	M 4	41	10	4	12000	$3{,}1x10^{-5}$	1.7	190	190
R3209.32-120-150	12	15	32	M 4	41	10	4	12000	$3{,}1x10^{-5}$	1.7	190	190
R3209.32-120-160	12	16	32	M 4	41	10	4	12000	$3{,}1x10^{-5}$	1.7	190	190
R3209.32-140-140	14	14	32	M 4	41	10	4	12000	$3{,}1x10^{-5}$	1.7	190	190
R3209.32-140-150	14	15	32	M 4	41	10	4	12000	$3{,}1x10^{-5}$	1.7	190	190
R3209.32-140-160	14	16	32	M 4	41	10	4	12000	$3{,}1x10^{-5}$	1.7	190	190
R3209.32-150-150	15	15	32	M 4	41	10	4	12000	$3{,}1x10^{-5}$	1.7	190	190
R3209.32-150-160	15	16	32	M 4	41	10	4	12000	$3{,}1x10^{-5}$	1.7	190	190
R3209.32-160-160	16	16	32	M 4	41	10	4	12000	$3{,}1x10^{-5}$	1.7	190	190

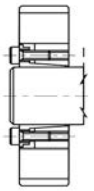
Keyless Locking Devices
self centring, high torque

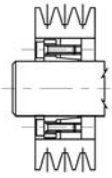


R3230






fig. 1


fig. 2

Material
Steel.

Technical Notes
Economical, quick installation, compact size.
Tolerances: Inner diameter h8, outer diameter H8.
Surface Roughness: Rt max. 16µm, Ra 3µm

Tips
Do not use any oil with molybdenum bisulphide, high pressure additives,
or grease as these reduce the coefficient of friction.
Max Torque (Mt) and Axial Thrust (Fa) values are only valid if standard oils are used.

Important Notes
Assembly:
Carefully clean the hub and shaft contact surfaces and apply a film of lightweight oil.
Slide the locking assembly into the hub bore, insert the shaft and
tighten gradually in cross sequence to indicated torque.
When tightening the mounting screws the hub has slight axial movement with respect to the shaft.
Dismantling:
Gradually loosen the cap screws. Remove and re-insert the correct number of screws into the jacking holes
and tighten gradually and regularly in crossed sequence until the back cone is released.
If the element is to be re-used then re-lubricate screws and threads.

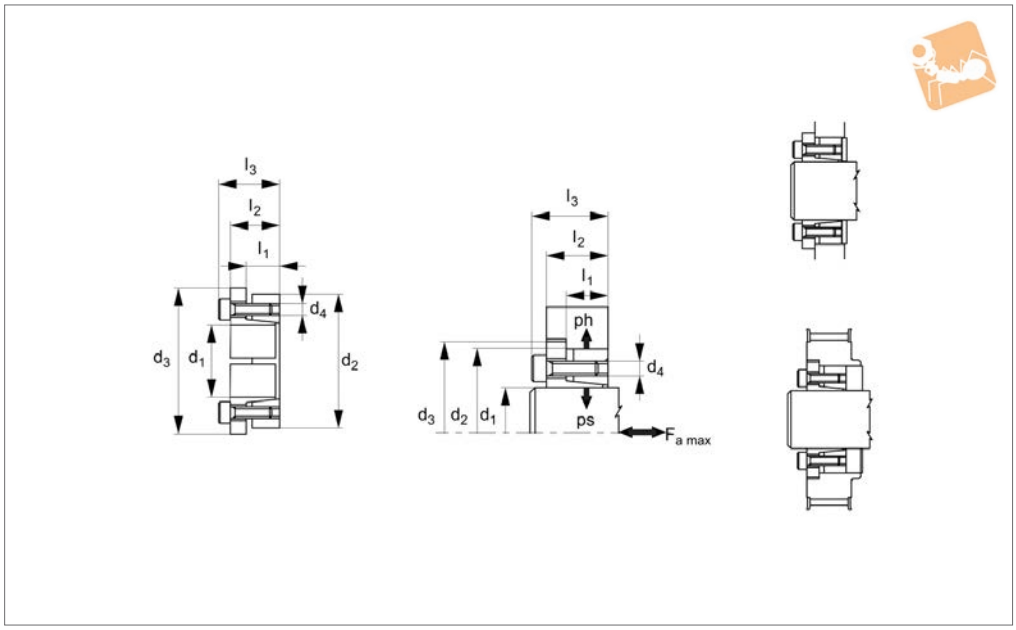
Order No.	d_1 tol. h8	l_1	d_2 tol. H8	l_2	No. of screws	d_3	Torque to Nm	M_t torque Nm max.	F_a kN max.	P_h N/mm² max.	P_S N/mm² max.	Weight kg
R3230.019	19	28	47	34	5	M 6x20	14	355	31	120	280	0.250
R3230.020	20	28	47	34	5	M 6x20	14	360	33	120	280	0.250
R3230.022	22	28	47	34	5	M 6x20	14	400	33	123	268	0.250
R3230.024	24	28	50	34	6	M 6x20	14	440	36	120	243	0.276
R3230.025	25	28	50	34	6	M 6x20	14	560	36	138	280	0.268
R3230.028	28	28	55	34	6	M 6x20	14	625	36	128	250	0.322
R3230.030	30	28	55	34	6	M 6x20	14	650	36	128	235	0.304
R3230.032	32	28	60	34	8	M 6x20	14	950	50	150	290	0.370
R3230.035	35	28	60	34	8	M 6x20	14	1050	50	150	268	0.344
R3230.038	38	28	65	34	8	M 6x20	14	1140	50	146	252	0.408
R3230.040	40	28	65	34	8	M 6x20	14	1200	50	146	232	0.378
R3230.042	42	33	75	41	7	M 8x25	35	2034	70	168	305	0.630
R3230.045	45	33	75	41	7	M 8x25	35	2180	70	168	285	0.610
R3230.048	48	33	80	41	8	M 8x25	35	1800	75	140	330	0.680
R3230.050	50	33	80	41	7	M 8x25	35	2430	85	158	258	0.690
R3230.055	55	33	85	41	8	M 8x25	35	3050	85	173	268	0.720
R3230.060	60	33	90	41	8	M 8x25	35	3350	85	163	243	0.794
R3230.065	65	33	95	41	9	M 8x25	35	4080	85	173	253	0.842
R3230.070	70	40	110	50	8	M10x30	70	6280	119	178	278	1.534
R3230.075	75	40	115	50	8	M10x30	70	6680	119	168	258	1.634
R3230.080	80	40	120	50	8	M10x30	70	7130	119	168	248	1.722
R3230.085	85	40	125	50	9	M10x30	70	8750	132	178	258	1.834
R3230.090	90	40	130	50	9	M10x30	70	9080	132	168	248	1.900

Order No.	d_1 tol. h8	l_1	d_2 tol. H8	l_2	No. of screws	d_3	Torque to Nm	M_t torque Nm max.	F_a kN max.	P_h N/mm² max.	P_S N/mm² max.	Weight kg
R3230.095	95	40	135	50	10	M10x30	70	10580	132	178	258	1.980
R3230.100	100	44	145	56	8	M12x35	125	13380	170	188	268	2.618
R3230.110	110	44	155	56	8	M12x35	125	14580	170	178	238	2.788
R3230.120	120	44	165	56	9	M12x35	125	17880	200	178	248	3.600
R3230.130	130	52	180	64	12	M14x40	190	25950	270	168	238	4.410
R3230.140	140	54	190	68	9	M14x40	190	26950	270	148	208	4.920
R3230.150	150	54	200	68	10	M14x40	190	32950	320	168	228	5.200
R3230.160	160	54	210	68	11	M14x41	190	37950	470	168	230	5.601
R3230.170	170	64	255	78	12	M14x42	190	44950	528	130	180	7.701
R3230.180	180	64	235	78	12	M14x43	190	46950	528	130	170	8.501
R3230.190	190	64	250	78	15	M14x40	190	50100	520	130	170	9.501
R3230.200	200	64	260	78	15	M14x40	190	52700	530	130	160	9.601

Keyless Locking Devices
self centring, high torque



R3231



Material
Steel.

Technical Notes
Wide tolerance, quick installation, compact size.
Tolerances: Inner diameter H8, outer diameter h8.
Surface Roughness: Rt max. 16µm, Ra 3µm

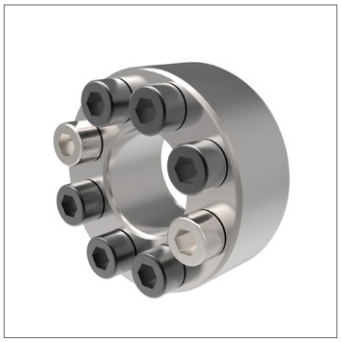
Tips
Do not use any oil with molybdenum bisulphide, high pressure additives,
or grease as these reduce the coefficient of friction.
Max Torque (Mt) and Axial Thrust (Fa) values are only valid if standard oils are used.

Important Notes
Assembly:
Carefully clean the hub and shaft contact surfaces and apply a film of lightweight oil.
Slide the locking assembly into the hub bore, insert the shaft and
tighten gradually in cross sequence to indicated torque.
When tightening the mounting screws the hub has slight axial movement with respect to the shaft.
Dismantling:
Gradually loosen the cap screws. Remove and re-insert the correct number of screws into the jacking holes
and tighten gradually and regularly in crossed sequence until the back cone is released.
If the element is to be re-used then re-lubricate screws and threads.

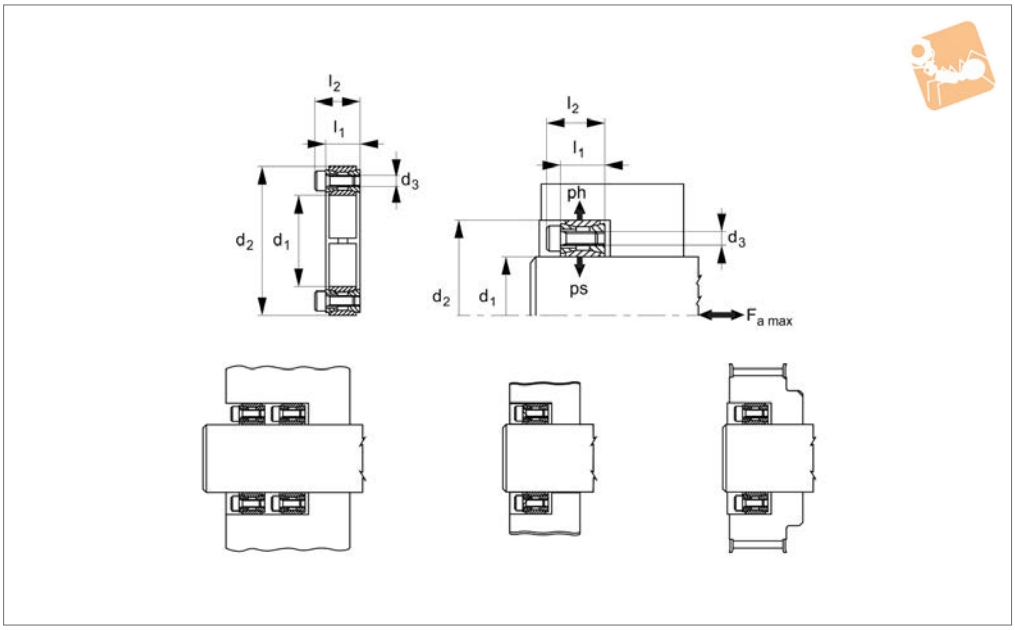
Order No.	d_1 tol. H8	l_1	d_2 tol. h8	l_2	No. of screws	d_3	d_4	Torque to Nm	l_3	M_t torque Nm max.	F_a kN max.	P_h N/mm² max.	P_S N/mm² max.	Weight kg
R3231.019	19	31	47	39	4	53	M 6x20	17	45	294	20	96	228	0.422
R3231.020	20	31	47	39	4	53	M 6x20	17	45	313	23	96	226	0.416
R3231.022	22	31	47	39	4	53	M 6x20	17	45	362	23	97	206	0.398
R3231.024	24	31	50	39	6	56	M 6x20	17	45	421	35	100	206	0.442
R3231.025	25	31	50	39	6	56	M 6x20	17	45	470	35	110	221	0.434
R3231.028	28	31	55	39	6	61	M 6x20	17	45	578	35	105	202	0.516
R3231.030	30	31	55	39	6	61	M 6x20	17	45	637	35	118	221	0.492
R3231.032	32	31	60	39	8	66	M 6x20	17	45	784	47	114	197	0.560
R3231.035	35	31	60	39	8	66	M 6x20	17	45	843	47	118	202	0.548
R3231.038	38	31	65	39	8	71	M 6x20	17	45	1010	47	121	197	0.640
R3231.040	40	31	65	39	8	71	M 6x20	17	45	1108	47	143	234	0.608
R3231.042	42	36	75	47	6	81	M 8x30	41	55	1892	47	135	216	1.090
R3231.045	45	36	75	47	6	81	M 8x30	41	55	1912	64	135	216	1.004
R3231.048	48	36	80	47	6	86	M 8x30	41	55	2137	74	142	221	1.116
R3231.050	50	36	80	47	6	86	M 8x30	41	55	2167	86	143	221	1.074
R3231.055	55	36	85	47	8	91	M 8x30	41	55	2677	86	143	221	1.204
R3231.060	60	36	90	47	8	96	M 8x30	41	55	2853	86	131	197	1.292
R3231.065	65	36	95	47	8	101	M 8x30	41	55	3500	86	142	206	1.320
R3231.070	70	46	110	57	8	116	M10x35	83	67	5717	135	142	221	2.440
R3231.075	75	46	115	62	8	121	M10x35	83	72	6207	135	148	216	2.602
R3231.080	80	46	120	62	8	126	M10x35	83	72	6707	135	139	198	2.730
R3231.085	85	46	125	62	10	131	M10x35	83	72	8002	169	157	216	2.844
R3231.090	90	46	130	62	10	136	M10x35	83	72	8502	169	143	197	2.986

Order No.	d_1 tol. H8	l_1	d_2 tol. h8	l_2	No. of screws	d_3	d_4	Torque to Nm	l_3	M_t torque Nm max.	F_a kN max.	P_h N/mm² max.	P_S N/mm² max.	Weight kg
R3231.095	95	46	135	62	10	141	M10x35	83	72	10002	169	138	187	3.144
R3231.100	100	52	145	77	8	151	M12x45	145	89	13336	198	148	197	4.136
R3231.110	110	52	155	77	8	161	M12x45	145	89	14582	198	178	197	4.552
R3231.120	120	52	165	77	10	171	M12x45	145	89	19083	248	158	216	4.844

Keyless Locking Devices
medium/high torque



R3232



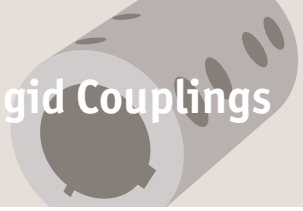
Material
Steel.

Technical Notes
Economical, quick installation, compact size.
Tolerances: Inner diameter k11, h11, outer diameter N11, H11.
Surface Roughness: Rt max. 16µm, Ra 3µm

Tips
Do not use any oil with molybdenum bisulphide, high pressure additives,
or grease as these reduce the coefficient of friction.
Max Torque (Mt) and Axial Thrust (Fa) values are only valid if standard oils are used.

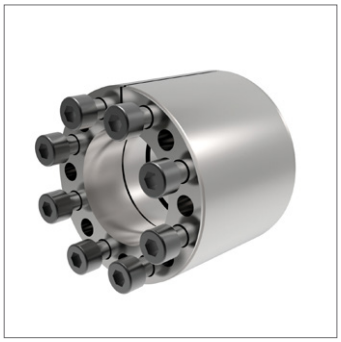
Important Notes
Assembly:
Carefully clean the hub and shaft contact surfaces and apply a film of lightweight oil.
Slide the locking assembly into the hub bore, insert the shaft.
Tighten the plated clamping screws until the inner ring grips the shaft and the outer ring grips the hub bore.
Then tighten gradually and regularly in cross sequence to indicated torque.
When tightening the mounting screws the hub has NO axial movement with respect to the shaft.
Dismantling:
Loosening the cap screws normally releases the unit.
In case of difficulties slightly hammer the released screws to push back the rear pressure cone.

Order No.	d_1 tol. K11, h11	l_1	d_2 tol. N11, H11	l_2	No. of screws	d_3	Torque to Nm	M_t torque Nm max.	F_a kN max.	P_h N/mm² max.	P_S N/mm² max.	Weight kg
R3232.019	19	20	47	26	8	M 6x18	16	260	27	93	220	0.212
R3232.020	20	20	47	26	8	M 6x18	16	268	27	93	210	0.210
R3232.022	22	20	47	26	8	M 6x18	16	283	27	96	207	0.200
R3232.024	24	20	50	26	9	M 6x18	16	361	30	103	206	0.222
R3232.025	25	20	50	26	9	M 6x18	16	376	30	103	206	0.220
R3232.028	28	20	55	26	10	M 6x18	16	420	34	103	204	0.266
R3232.030	30	20	55	26	10	M 6x18	16	450	34	103	190	0.254
R3232.032	32	20	60	26	12	M 6x18	16	643	40	114	214	0.302
R3232.035	35	20	60	26	12	M 6x18	16	703	40	114	196	0.282
R3232.038	38	20	65	26	14	M 6x18	16	891	47	122	204	0.328
R3232.040	40	20	65	26	14	M 6x18	16	938	47	122	200	0.318
R3232.042	42	24	75	32	12	M 8x22	38	1537	73	125	228	0.560
R3232.045	45	24	75	32	12	M 8x22	38	1647	73	125	208	0.528
R3232.048	48	24	80	32	12	M 8x22	38	1756	73	110	190	0.590
R3232.050	50	24	80	32	12	M 8x22	38	1830	73	115	189	0.560
R3232.055	55	24	85	32	14	M 8x22	38	2348	85	130	200	0.622
R3232.060	60	24	90	32	14	M 8x22	38	2560	85	122	180	0.660
R3232.065	65	24	95	32	16	M 8x22	38	3170	98	130	191	0.798
R3232.070	70	28	110	38	14	M10x25	75	4700	134	132	211	1.238
R3232.075	75	28	115	38	14	M10x25	75	5000	134	128	194	1.294
R3232.080	80	28	120	38	14	M10x25	75	5300	134	124	182	1.364
R3232.085	85	28	125	38	16	M10x25	75	6500	154	133	196	1.428
R3232.090	90	28	130	38	16	M10x25	75	6900	154	128	181	1.482

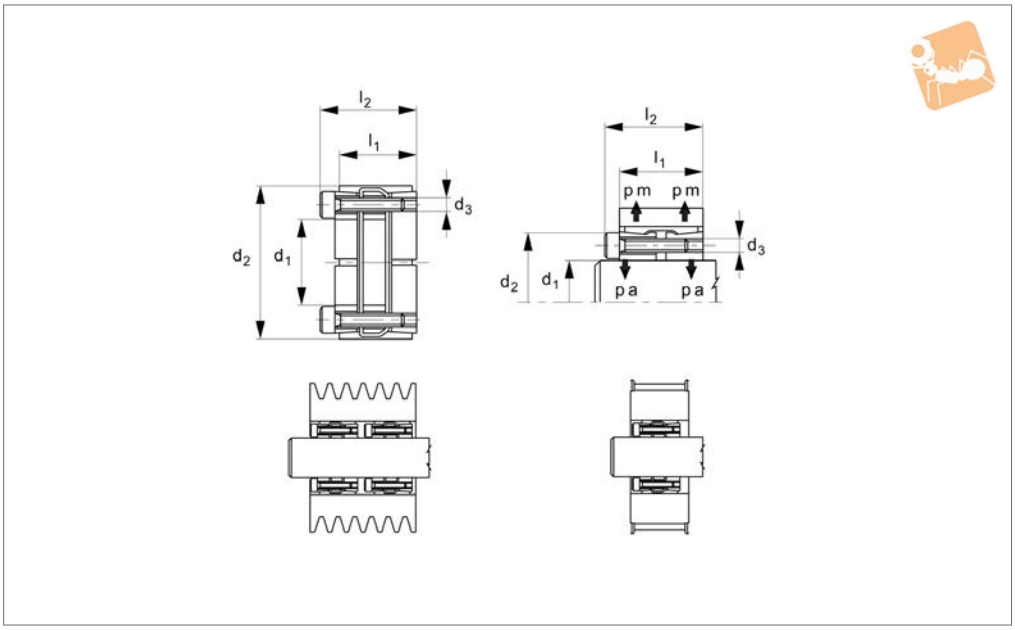


Order No.	d_1 tol. K11, h11	l_1	d_2 tol. N11, H11	l_2	No. of screws	d_3	Torque to Nm	M_t torque Nm max.	F_a kN max.	P_h N/mm² max.	P_S N/mm² max.	Weight kg
R3232.095	95	28	135	38	18	M10x25	75	8200	173	139	196	1.568
R3232.100	100	33	145	45	14	M12x30	130	9870	197	139	198	2.154
R3232.110	110	33	155	45	14	M12x30	130	10800	187	128	181	2.306
R3232.120	120	33	165	45	16	M12x30	130	13500	226	139	187	2.486
R3232.130	130	38	180	50	20	M12x35	130	18300	282	119	168	3.586
R3232.140	140	38	190	50	22	M12x35	130	21700	310	128	168	3.810
R3232.150	150	38	200	50	24	M12x35	130	25300	338	128	170	4.084
R3232.160	160	38	210	50	26	M12x35	130	29300	367	132	171	4.360
R3232.170	170	44	225	58	22	M14x40	207	33000	389	123	162	5.700
R3232.180	180	44	235	58	24	M14x40	207	38000	424	128	168	6.000
R3232.190	190	52	250	66	28	M14x45	207	47000	495	114	154	8.000
R3232.200	200	52	260	66	30	M14x45	207	53000	531	118	157	8.200
R3232.220	220	56	285	72	26	M16x50	300	91000	920	150	195	11.000
R3232.240	240	56	305	72	30	M16x50	300	115000	960	160	205	12.300
R3232.260	260	56	325	72	34	M16x50	300	140000	1050	170	210	13.000
R3232.280	280	66	355	84	32	M18x60	400	170000	1200	150	190	19.000
R3232.300	300	66	375	84	36	M18x60	400	210000	1400	160	200	20.200

Keyless Locking Devices
self centring, high torque



R3234



Material
Steel.

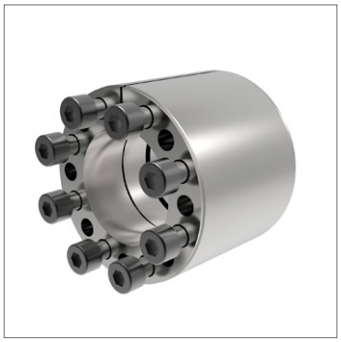
Technical Notes
Capable of withstanding bending movements. Compact size.
Shaft & hub surface roughness: Rt max. 16µ, Ra 3µ

Tips
Do not use any oil with molybdenum bisulphide, high pressure additives,
or grease as these reduce the coefficient of friction.
Max torque (Mt) and Axial thrust (Fa) values are only valid if standard oils are used.

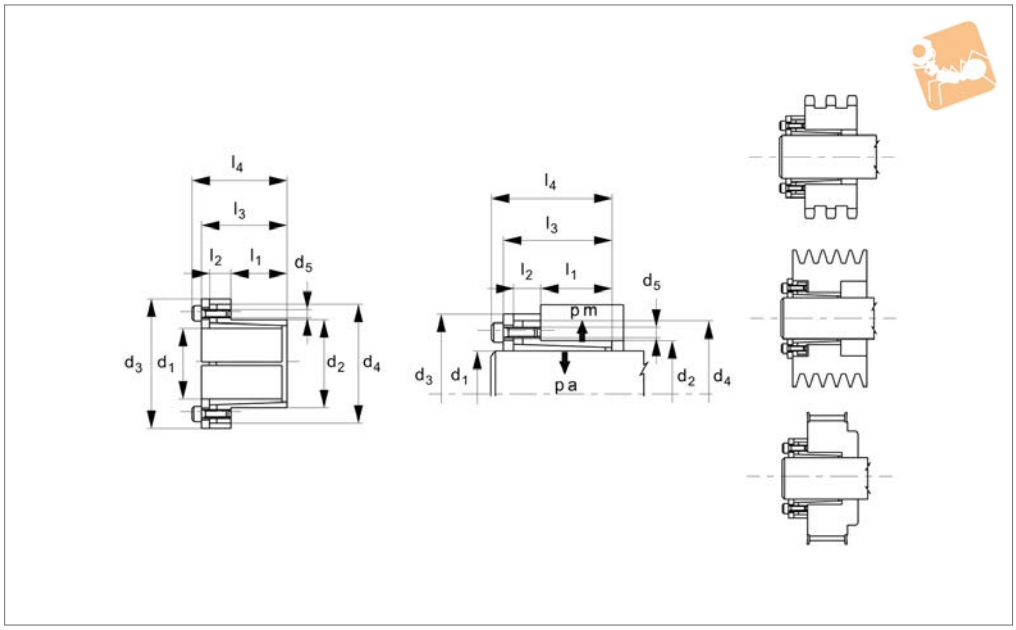
Important Notes
Assembly:
Carefully clean the hub and shaft contact surfaces and apply a film of lightweight oil.
Slide the locking assembly into the hub bore, insert the shaft
and tighten gradually in cross sequence to 50% of torque value indicated in table.
Repeat the same operation by tightening all screws to rated torque.
Re-check screws are tightened up to torque value in the table.
Disassembly:
Loosen the cap screws. Insert the screws into the dismantling threading and tighten gradually
and regularly in crossed sequence up to 50% of torque value indicated in the rating table.
When the front cone is loose, to release the rear cone keep tightening the screws and repeat the sequence above.

Order No.	d_1 tol. h8	l_1	d_2 tol. H8	l_2	No. of screws	d_3	Torque to Nm	M_t torque Nm max.	F_a kN max.	P_a N/mm² max.	P_m N/mm² max.	Weight kg
R3234.025	25	40	55	46	6	M 6x35	18	840	67	295	134	0.602
R3234.028	28	40	55	46	6	M 6x35	18	940	67	264	134	0.510
R3234.030	30	40	55	46	6	M 6x35	18	1000	67	246	134	0.420
R3234.035	35	54	60	60	7	M 6x45	18	1300	74	174	101	0.498
R3234.038	38	54	75	62	7	M 8x50	41	2600	74	296	150	1.108
R3234.040	40	54	75	62	7	M 8x50	41	2900	145	281	150	1.048
R3234.042	42	54	75	62	7	M 8x50	41	2930	145	268	150	1.050
R3234.045	45	54	75	62	7	M 8x50	41	3260	145	250	150	0.982
R3234.048	48	54	80	62	8	M 8x55	41	3800	155	207	124	1.330
R3234.050	50	64	80	72	8	M 8x55	41	4150	155	200	98	1.284
R3234.055	55	64	85	72	9	M 8x55	41	5150	186	205	104	1.376
R3234.060	60	64	90	72	10	M 8x55	41	6200	207	202	106	1.524
R3234.065	65	64	95	72	10	M 8x55	41	6750	207	187	100	1.630
R3234.070	70	78	110	88	10	M10x60	83	11500	329	223	114	2.932
R3234.075	75	78	115	88	10	M10x60	83	12060	329	223	114	3.128
R3234.080	80	78	120	88	11	M10x60	83	14500	360	215	115	3.258
R3234.085	85	78	125	88	12	M10x60	83	15100	360	215	115	3.400
R3234.090	90	78	130	88	12	M10x60	83	17600	390	208	115	3.602
R3234.095	95	78	135	88	12	M10x60	83	18300	390	208	115	4.000
R3234.100	100	100	145	112	11	M12x80	145	23300	467	200	107	5.900
R3234.110	110	100	155	112	12	M12x80	145	30400	553	198	110	6.000

Order No.	d_1 tol. h8	l_1	d_2 tol. H8	l_2	No. of screws	d_3	Torque to Nm	M_t torque Nm max.	F_a kN max.	P_a N/mm² max.	P_m N/mm² max.	Weight kg
R3234.120	120	100	165	112	14	M12x80	145	37000	617	212	120	6.600
R3234.130	130	116	180	130	12	M14x90	230	49000	759	192	112	10.200
R3234.140	140	116	190	130	14	M14x90	230	59000	843	208	124	10.500
R3234.150	150	116	200	130	15	M14x90	230	67000	897	208	127	11.000
R3234.160	160	116	210	130	16	M14x90	230	76000	950	208	128	12.000
R3234.170	170	148	225	164	16	M16x110	360	102000	1223	182	113	17.000
R3234.180	180	148	235	164	16	M16x111	360	115000	1289	184	115	18.400
R3234.190	190	148	250	164	16	M16x112	360	130000	1363	186	116	21.400
R3234.200	200	148	260	164	16	M16x113	360	143700	1438	177	112	21.800



R3236



Material
Steel.

Technical Notes
Capable of withstanding bending movements. Compact size.
Shaft & hub surface roughness: Rt max. 16µ, Ra 3µ

Tips
Do not use any oil with molybdenum bisulphide, high pressure additives,
or grease as these reduce the coefficient of friction.
Max torque (Mt) and Axial thrust (Fa) values are only valid if standard oils are used.

Important Notes
Assembly:
Carefully clean the hub and shaft contact surfaces and apply a film of lightweight oil.
Slide the locking assembly into the hub bore, insert the shaft
and tighten gradually in cross sequence to 50% of Torque value indicated in table.
Repeat the same operation by tightening all screws to rated torque.
Re-check screws are torqued up to torque value in the table.
Disassembly:
Loosen the cap screws. Insert the screws into the dismantling threading
and tighten gradually and regularly in crossed sequence up to 50% of Torque value indicated in the rating table.
When the front cone is loose, to release the rear cone keep tightening the screws and repeat the sequence above.

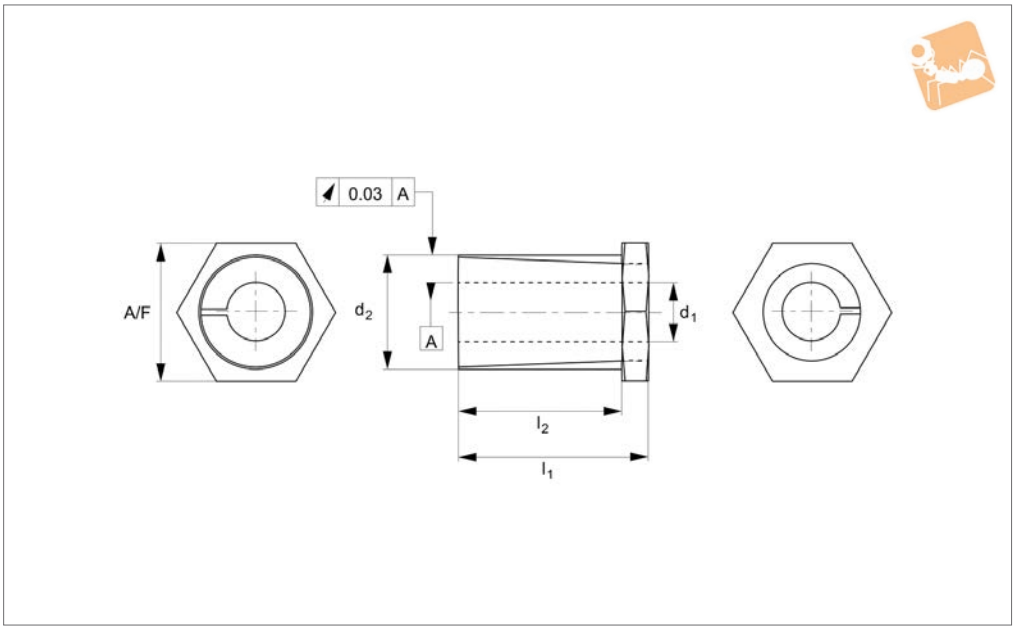
Order No.	d_1 tol. h8	l_1	d_2 tol. H8	l_2	No. of screws	d_3	d_4	Torque to Nm	d_5	l_3	l_4	M_t torque Nm max.	F_a kN max.	P_a N/mm² max.	P_m N/mm² max.	Weight kg
R3236.008	8	12	15	9	3	32	28	5	M4x12	24	28	30	7	190	105	0,050
R3236.009	9	14	16	9	3	32	28	5	M4x12	27	31	32	7	150	92	0,059
R3236.010	10	14	16	9	3	32	28	5	M4x12	27	31	40	9	140	90	0,056
R3236.011	11	14	18	9	4	34	30	5	M4x12	27	31	50	9	175	107	0,064
R3236.012	12	14	18	9	4	34	30	5	M4x12	27	31	55	9	161	107	0,070
R3236.014	14	14	23	9	4	39	35	5	M4x12	27	31	64	9	137	84	0,103
R3236.015	15	16	24	13	4	45	40	17	M6x17	36	42	99	13	162	101	0,209
R3236.016	16	16	24	13	4	45	40	17	M6x18	36	42	105	13	152	101	0,218
R3236.017	17	16	26	13	4	45	40	17	M6x15	36	42	190	23	200	140	0,216
R3236.018	18	18	26	13	4	47	42	17	M6x18	38	44	158	18	160	111	0,226
R3236.019	19	18	27	13	4	48	43	17	M6x18	38	44	167	18	151	107	0,248
R3236.020	20	18	28	13	4	49	44	17	M6x18	38	44	176	21	144	103	0,248
R3236.022	22	25	32	13	4	54	48	17	M6x18	45	51	232	21	113	78	0,325
R3236.024	24	25	34	13	4	56	50	17	M6x18	45	51	253	21	103	73	0,344
R3236.025	25	25	34	13	4	56	50	17	M6x18	45	51	263	21	99	73	0,332
R3236.028	28	25	39	13	6	61	55	17	M6x18	45	51	368	31	111	80	0,410
R3236.030	30	25	41	13	6	63	57	17	M6x18	45	51	474	31	124	91	0,414
R3236.032	32	30	43	13	6	65	59	17	M6x18	50	56	505	31	97	72	0,478
R3236.035	35	30	47	13	8	69	63	17	M6x18	50	56	737	42	119	88	0,546
R3236.038	38	30	50	13	8	72	66	17	M6x18	50	56	800	42	109	83	0,580
R3236.040	40	32	53	13	8	75	69	17	M6x18	52	58	947	53	109	82	0,626
R3236.042	42	32	55	23	8	77	71	42	M8x22	52	70	994	78	104	79	0,880
R3236.045	45	40	59	16	8	85	79	42	M8x22	64	72	1750	78	127	97	1,032

Order No.	d_1 tol. h8	l_1	d_2 tol. H8	l_2	No. of screws	d_3	d_4	Torque to Nm	d_5	l_3	l_4	M_t torque Nm max.	F_a kN max.	P_a N/mm² max.	P_m N/mm² max.	Weight kg
R3236.048	48	40	62	16	8	88	82	42	M8x22	64	72	1867	78	120	93	1,108
R3236.050	50	50	65	16	10	92	85	42	M8x22	74	82	2431	97	115	98	1,270
R3236.055	55	50	71	16	10	98	91	42	M8x22	74	82	2674	97	104	81	1,480
R3236.060	60	50	77	16	10	104	97	42	M8x22	74	82	2917	97	96	75	1,658
R3236.065	65	50	84	16	10	111	104	42	M8x22	74	82	3160	97	88	69	1,922
R3236.070	70	60	90	20	10	122	115	84	M10x25	91	101	4322	123	87	67	2,692
R3236.075	75	60	95	20	10	126	119	84	M10x25	91	101	6171	197	93	74	2,950
R3236.080	80	65	100	20	12	131	124	84	M10x25	96	106	7899	237	97	77	3,342
R3236.085	85	65	106	20	12	137	130	84	M10x25	96	106	8393	237	91	73	3,622
R3236.090	90	65	112	20	12	143	136	84	M10x25	96	106	10367	276	100	51	3,956
R3236.095	95	65	120	20	14	153	144	84	M10x25	96	106	10943	276	95	75	4,648
R3236.100	100	65	125	24	12	162	153	145	M12x30	102	114	14520	348	114	91	6,000

Stainless Taper Bushes



R3220



Material
Stainless steel (A2, AISI 303).

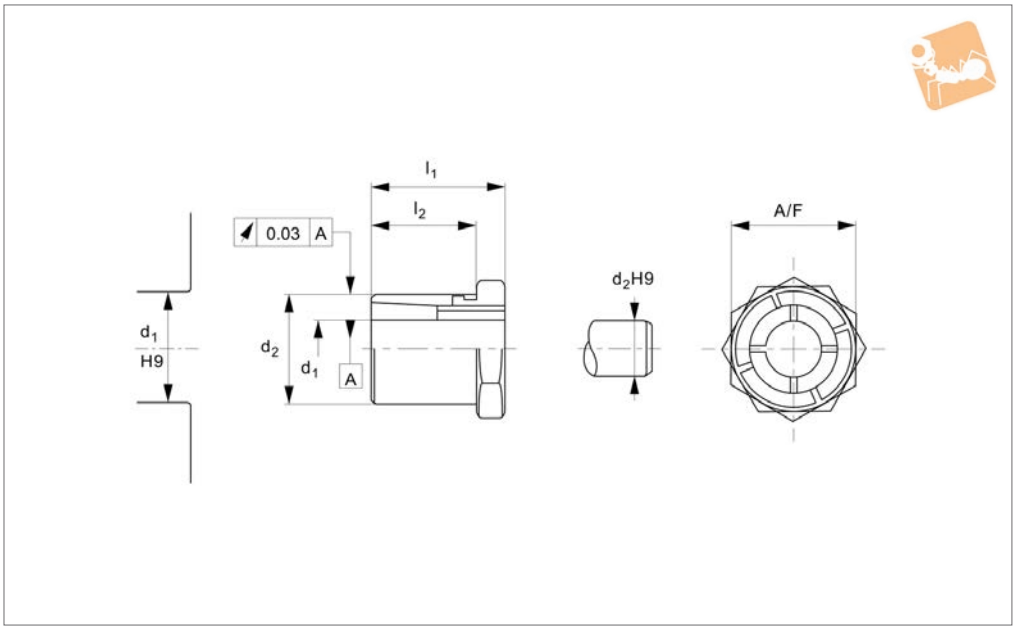
Technical Notes
Used to easily and effectively achieve shaft/hub joints. Simple axial and radial fixing.

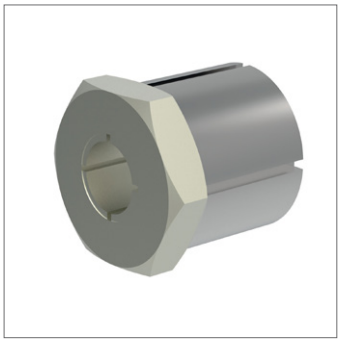
For applications such as fixing sprockets, gears, pulleys, cams, levers on to shafts.

Tips
Clean shaft and hub free from oil and dirt. Rotate the nut until inner part protrudes approximately 3mm over the outer.

Install taper bush onto shaft, slightly tighten nut when located in desired position.
Compensate the axial off-set produced with a soft-faced mallet, and tighten.

Order No.	d_1 tol. H9	d_2 tol. h9	l_1	l_2	A/F	Thread	Torque to Nm	Torque Nm max.
R3220.040	4	8	15	12.5	8	M6 x 0,5	4	3
R3220.050	5	10	15	12.5	10	M8 x 0,5	5	4
R3220.060	6	10	15	12.5	10	M8 x 0,5	8	7
R3220.0635	6.35	10	15	12.5	10	M8 x 0,5	7	7
R3220.070	7	12	15	12.0	12	M10 x 0,75	9	8
R3220.080	8	14	22	19.0	17	M12 x 1,0	15	14
R3220.090	9	14	22	19.0	17	M12 x 1,0	15	14
R3220.0952	9.52	14	22	19.0	17	M12 x 1,0	14	14
R3220.100	10	17	22	18.5	19	M15 x 1,0	19	18
R3220.110	11	17	22	18.5	19	M15 x 1,0	19	18
R3220.120	12	17	22	18.5	19	M15 x 1,0	19	18
R3220.1270	12.7	17	22	18.5	19	M15 x 1,0	18	18
R3220.140	14	20	28	23.0	22	M17 x 1,0	25	24
R3220.150	15	20	28	23.0	22	M17 x 1,0	25	24
R3220.1588	15.88	23	28	23.0	27	M20 x 1,0	26	26
R3220.160	16	23	28	23.0	27	M20 x 1,0	27	26
R3220.170	17	23	28	23.0	27	M20 x 1,0	27	26
R3220.190	19	25	28	23.0	27	M22 x 1,0	30	29
R3220.200	20	28	28	23.0	30	M22 x 1,0	32	31





R3221

Material
Body, galvanized steel. Internal part and nut from nickel plated steel.

Technical Notes
Used to easily and effectively achieve shaft/hub joints. Simple axial and radial fixing.

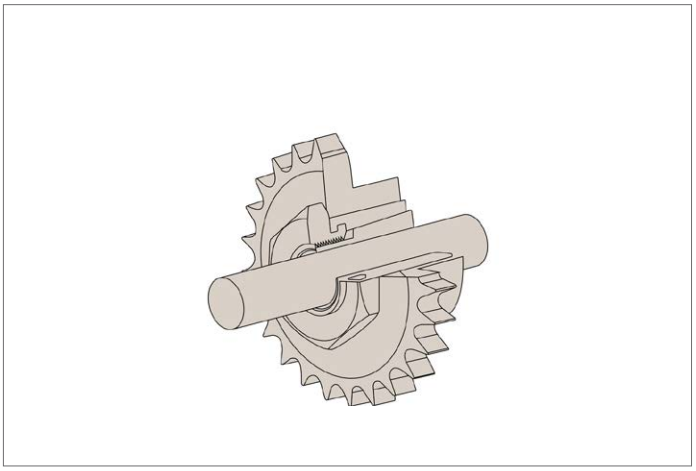
For applications such as fixing sprockets, gears, pulleys, cams, levers on to shafts.
See technical pages for installation instructions.
Parallelism is 0,03 mm.

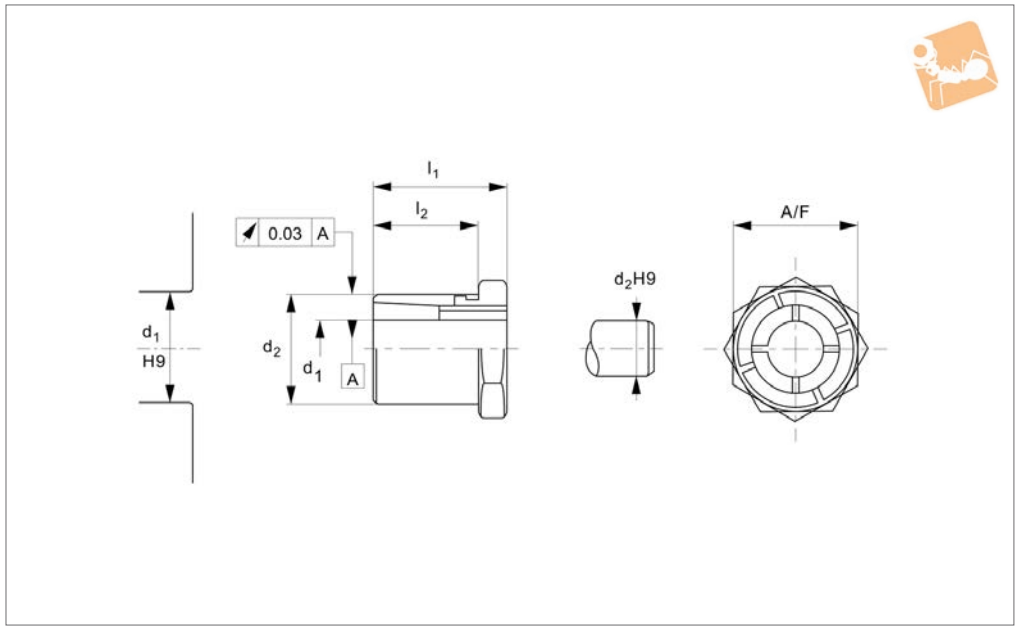
Tips
$F_a$max. kN is the transferable thrust load.
$P_s$max. N/mm² is the surface pressure on the shaft.
$P_h$max. N/mm² is the surface pressure on the bore.

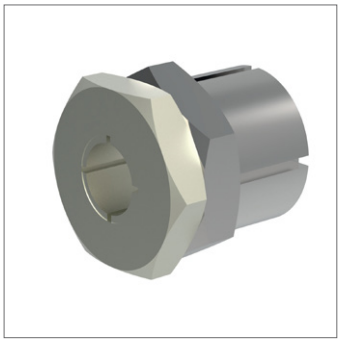
Order No.	d_1 tol. H9	d_2 tol. h9	l_1	l_2	A/F	Torque to Nm	Torque Nm max.	F_a kN	P_S N/mm² max.	P_h N/mm² max.	Weight g
R3221.050	5	14	19	15	14	9.9	10.1	4.0	264	96	20
R3221.060	6	14	19	15	14	9.9	12.1	4.0	220	96	19
R3221.080	8	16	22	17	16	16.9	23.4	5.8	179	91	26
R3221.090	9	20	24	19	22	34.9	43.7	9.7	245	115	47
R3221.100	10	20	24	19	22	34.9	48.6	9.7	221	115	46
R3221.110	11	22	24	19	22	43.8	59.9	10.9	225	117	51
R3221.120	12	22	24	19	22	43.8	65.3	10.9	206	117	49
R3221.140	14	26	28	22	27	65.0	93.0	13.3	178	99	83
R3221.150	15	26	28	22	27	65.0	99.0	13.3	166	99	78
R3221.160	16	26	28	22	27	65.0	106.0	13.3	156	99	73
R3221.180	18	35	36	27	36	161.0	223.0	24.8	224	125	201
R3221.190	19	35	36	27	36	161.0	235.0	24.8	212	125	189
R3221.200	20	35	36	27	36	161.0	248.0	24.8	201	125	186
R3221.220	22	42	41	30	46	250.0	349.0	31.8	197	110	346
R3221.240	24	42	41	30	46	250.0	381.0	31.8	180	110	326
R3221.250	25	42	41	30	46	250.0	397.0	31.8	173	110	315
R3221.280	28	47	44	33	50	355.0	565.0	40.4	174	110	403
R3221.300	30	47	44	33	50	355.0	605.0	40.4	162	110	378
R3221.320	32	55	51	38	55	490.0	764.0	47.8	166	102	632
R3221.350	35	55	51	38	55	490.0	836.0	47.8	151	102	571
R3221.380	38	62	58	43	65	720.0	1179.0	62.1	159	111	897
R3221.400	40	62	58	43	65	720.0	1241.0	62.1	151	111	842

Steel Taper Bushes

no lock nut







R3222

Material
Body, galvanized steel. Internal part and nut from nickel plated steel.

Technical Notes
Used to easily and effectively achieve shaft/hub joints, simple axial and radial fixing.
For applications such as fixing sprockets, gears, pulleys, cams, levers on to shafts.
See technical pages for installation instructions.
instructions.
The lock nut at the outer part facilitates locking of the shaft-hub joint if freely rotating shafts are involved.

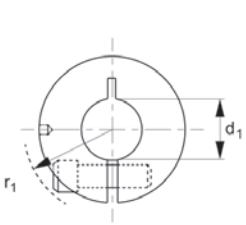
Tips
$F_a$max. kN is the transferable thrust load.
$P_s$max. N/mm² is the surface pressure on the shaft.
$P_h$max. N/mm² is the surface pressure on the bore.
Parallelism is 0,03 mm.

Order No.	d_1 tol. H9	d_2 tol. h9	l_1	l_2	l_3	A/F	Torque to Nm	Torque Nm max.	F_a kN	P_S N/mm² max.	P_h N/mm² max.	Weight g
R3222.050	5	12	19	15	9	14	9.9	10.1	4.0	264	119	18
R3222.060	6	12	19	15	9	14	9.9	12.1	4.0	220	119	17
R3222.080	8	14	22	17	11	16	16.9	23.4	5.8	179	121	23
R3222.090	9	18	24	19	12	22	34.9	43.7	9.7	245	127	47
R3222.100	10	18	24	19	12	22	34.9	48.6	9.7	221	127	46
R3222.110	11	20	24	19	12	22	43.8	59.9	10.9	225	128	47
R3222.120	12	20	24	19	12	22	43.8	65.3	10.9	206	128	45
R3222.140	14	24	28	22	15	27	65.0	93.0	13.3	178	107	78
R3222.150	15	24	28	22	15	27	65.0	99.0	13.3	166	107	75
R3222.160	16	24	28	22	15	27	65.0	106.0	13.3	156	107	70
R3222.180	18	30	36	27	17	36	161.0	223.0	24.8	224	145	179
R3222.190	19	30	36	27	17	36	161.0	235.0	24.8	212	145	169
R3222.200	20	30	36	27	17	36	161.0	248.0	24.8	201	145	213
R3222.220	22	38	41	30	20	46	250.0	349.0	31.8	197	122	341
R3222.240	24	38	41	30	20	46	250.0	381.0	31.8	180	122	320
R3222.250	25	38	41	30	20	46	250.0	397.0	31.8	173	122	310
R3222.280	28	42	44	33	23	50	355.0	565.0	40.4	174	123	370
R3222.300	30	42	44	33	23	50	355.0	605.0	40.4	162	123	348
R3222.320	32	50	51	38	28	55	490.0	764.0	47.8	166	112	555
R3222.350	35	50	51	38	28	55	490.0	836.0	47.8	151	112	501

Split Shaft Clamps



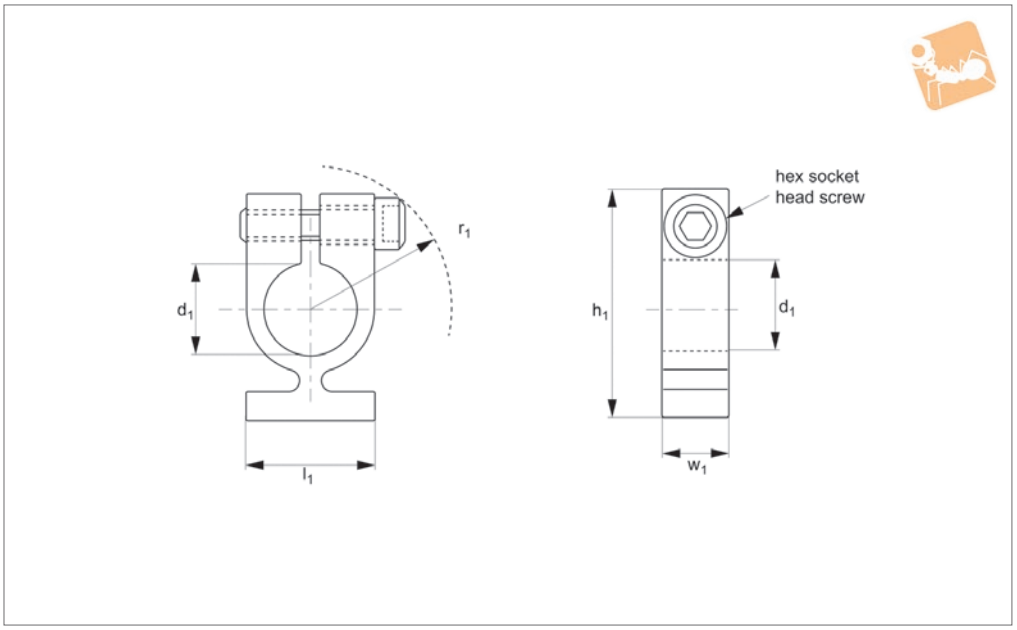
R3250



Material
Stainless steel (A2, AISI 303) or anodised aluminium (DIN 3,1355).

Technical Notes
Some sizes may be full, semi-counter-bored, or step cut.

Order No.	Material	d_1 +0.025|-0.0	d_2	r_1	w_1	For shaft
R3250.031-AL	Aluminium	4.6	14.0	8.5	4.0	3
R3250.032-AL	Aluminium	4.6	16.0	8.5	4.0	3
R3250.033-AL	Aluminium	4.6	16.0	8.5	5.0	3
R3250.034-AL	Aluminium	4.6	16.0	10.0	6.5	3
R3250.051-AL	Aluminium	6.6	16.0	8.5	4.0	5
R3250.052-AL	Aluminium	6.6	16.0	8.5	5.0	5
R3250.053-AL	Aluminium	6.6	22.0	12.5	5.0	5
R3250.054-AL	Aluminium	6.6	22.0	13.0	6.0	5
R3250.072-AL	Aluminium	8.6	22.0	13.0	6.0	7
R3250.081-AL	Aluminium	9.6	28.5	16.0	6.5	8
R3250.082-AL	Aluminium	9.6	28.5	16.0	8.0	8
R3250.101-AL	Aluminium	11.6	28.5	16.0	6.5	10
R3250.102-AL	Aluminium	11.6	32.0	16.0	8.0	10
R3250.121-AL	Aluminium	13.6	32.0	16.0	8.0	12
R3250.031-A2	Stainless	4.6	14.0	8.5	4.0	3
R3250.032-A2	Stainless	4.6	16.0	8.5	4.0	3
R3250.033-A2	Stainless	4.6	16.0	8.5	5.0	3
R3250.034-A2	Stainless	4.6	16.0	10.0	6.5	3
R3250.041-A2	Stainless	5.6	16.0	8.5	4.0	4
R3250.051-A2	Stainless	6.6	16.0	8.5	4.0	5
R3250.052-A2	Stainless	6.6	16.0	8.5	5.0	5
R3250.053-A2	Stainless	6.6	22.0	12.5	5.0	5
R3250.054-A2	Stainless	6.6	22.0	12.5	6.0	5
R3250.061-A2	Stainless	7.6	22.0	12.5	5.0	6
R3250.071-A2	Stainless	8.6	22.0	12.5	5.0	7
R3250.072-A2	Stainless	8.6	22.0	13.0	6.0	7
R3250.081-A2	Stainless	9.6	28.5	16.0	6.5	8
R3250.082-A2	Stainless	9.6	28.5	16.0	8.0	8
R3250.101-A2	Stainless	11.6	28.5	16.0	6.5	10
R3250.102-A2	Stainless	11.6	32.0	16.0	8.0	10
R3250.121-A2	Stainless	13.6	32.0	16.0	8.0	12





R3252

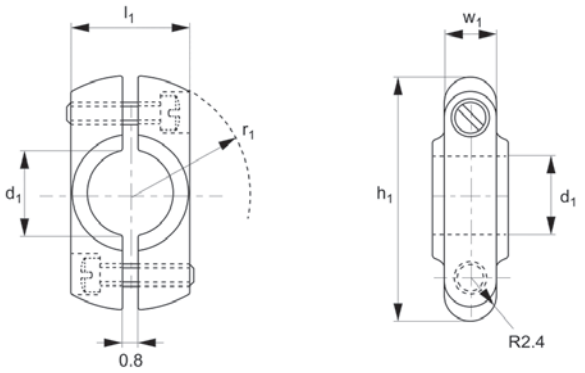
Material
Stainless steel (AISI 303 or AISI 416) or mild steel.

Order No.	Material	l_1	d_1	h_1	r_1	w_1 ±0.13	Finish	For shaft
R3252.031	416 s/s	7.9	4.6	17.5	11.1	6.35	Black Pass.	3.0
R3252.032	303 s/s	7.9	4.6	17.5	11.1	6.35	Clear Pass.	3.0
R3252.033	Steel	7.9	4.6	17.5	11.1	3.56	Cad. Plate	3.0
R3252.051	416 s/s	9.6	6.6	20.6	13.1	6.35	Black Pass.	5.0
R3252.052	303 s/s	9.6	6.6	20.6	13.1	6.35	Clear Pass.	5.0
R3252.053	Steel	9.6	6.6	20.6	13.1	3.56	Cad. Plate	5.0
R3252.071	416 s/s	11.1	8.6	20.6	14.3	6.35	Black Pass.	7.0
R3252.072	303 s/s	11.1	8.6	20.6	14.3	6.35	Clear Pass.	7.0
R3252.073	Steel	11.1	8.6	20.6	14.3	3.56	Cad. Plate	7.0
R3252.101	416 s/s	15.9	11.6	26.2	17.1	6.35	Clear Pass.	10.0
R3252.102	Steel	15.9	11.6	26.2	17.1	6.35	Cad. Plate	10.0
R3252.103	Steel	15.9	11.6	26.2	17.1	3.56	Cad. Plate	10.0
R3252.121	416 s/s	15.9	13.6	26.2	17.1	6.35	Clear Pass.	12.0
R3252.122	Steel	15.9	13.6	26.2	17.1	6.35	Cad. Plate	12.0
R3252.123	Steel	15.9	13.6	26.2	17.1	3.56	Cad. Plate	12.0

Balanced Split Shaft Clamps

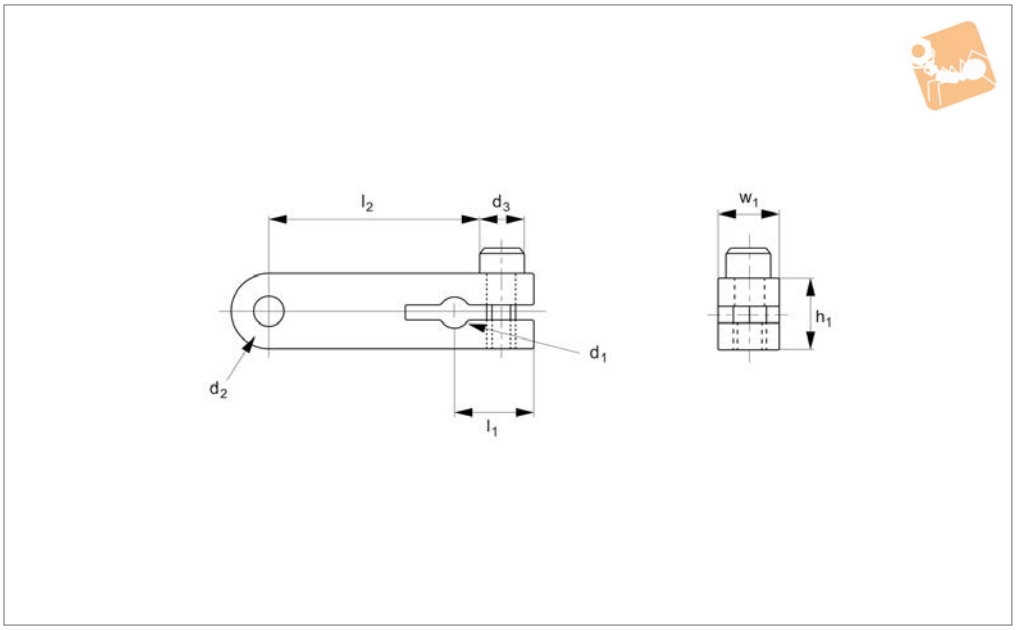


R3253



Material
Mild steel body and stainless steel screws .

Order No.	l_1	d_1	h_1	r_1	w_1 ±0.13	Balanced	For shaft
R3253.003	7.9	4.6	17.4	9.5	6.10	Dynam. bal	3.0
R3253.005	9.5	6.6	18.85	10.3	6.10	Dynam. bal	5.0
R3253.007	11.1	8.6	20.6	11.9	6.10	Dynam. bal	7.0
R3253.103	7.9	4.6	17.4	9.5	6.10	No	3.0
R3253.105	9.5	6.6	18.85	10.3	6.10	No	5.0
R3253.107	11.1	8.6	20.6	11.9	6.10	No	7.0





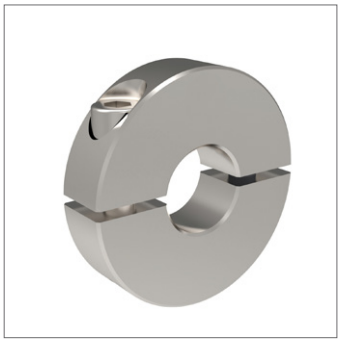
R3255

Material
Stainless steel (DIN 1,4005).

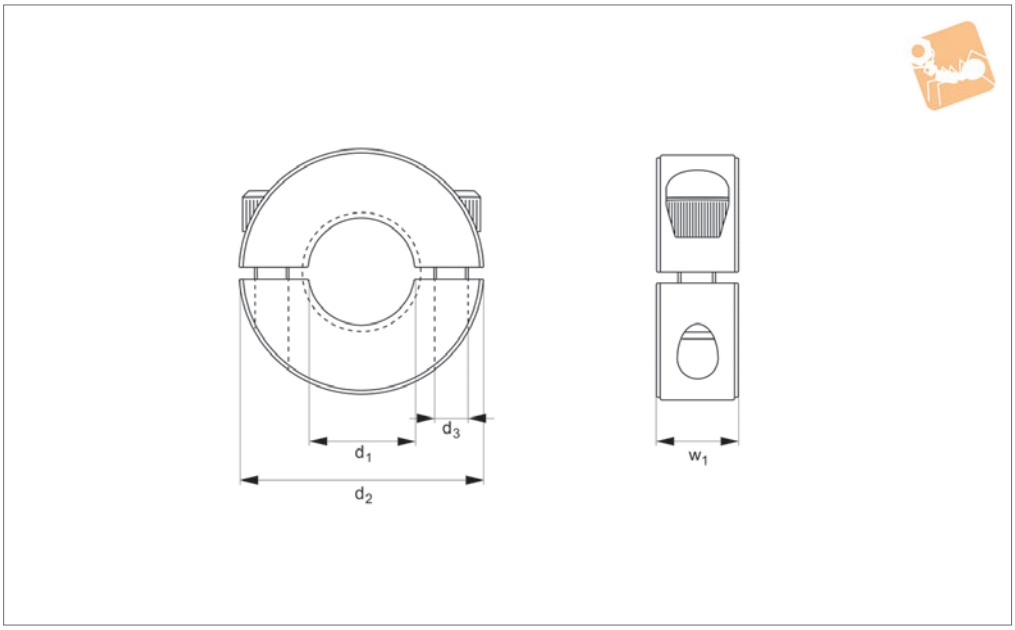
Order No.	l_1	d_1 +0.025|-0.000	d_2 for	l_2	h_1	w_1
R3255.030	6.4	3.0	M 4	15.9	6.4	4.8
R3255.040	6.4	4.0	M 4	15.9	6.4	4.8
R3255.050	6.4	5.0	M 4	15.9	7.9	4.8
R3255.060	6.7	6.0	M 4	15.9	7.9	4.8

Shaft Collars - Two Piece

Steel & stainless



R3210



Material

Steel (AISI 12L14), black oxide finish, or stainless steel (A2, AISI 303).
Other materials available on request.

Technical Notes

Design fully engages the shaft without marring or damaging.
Two piece collars are easily installed where major disassembly would otherwise be required.
Greater axial holding power than set screw collars, effective on hard and soft shafts.

Important Notes

Different bore sizes available on request.
For keyways, please add „-KW“ suffix when ordering.

Order No.	Material	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	w	Torque screw to Nm	Weight g
R3210.030-BL	Black oxide steel	3	16	M 3	9	2.0	10
R3210.040-BL	Black oxide steel	4	16	M 3	9	2.0	10
R3210.050-BL	Black oxide steel	5	16	M 3	9	2.0	10
R3210.060-BL	Black oxide steel	6	16	M 3	9	2.0	10
R3210.080-BL	Black oxide steel	8	18	M 3	9	2.0	10
R3210.090-BL	Black oxide steel	9	24	M 3	9	2.0	20
R3210.100-BL	Black oxide steel	10	24	M 3	9	2.0	20
R3210.120-BL	Black oxide steel	12	28	M 4	11	4.5	40
R3210.130-BL	Black oxide steel	13	30	M 4	11	4.5	40
R3210.140-BL	Black oxide steel	14	30	M 4	11	4.5	40
R3210.150-BL	Black oxide steel	15	34	M 5	13	9.5	70
R3210.160-BL	Black oxide steel	16	34	M 5	13	9.5	70
R3210.170-BL	Black oxide steel	17	36	M 5	13	9.5	80
R3210.180-BL	Black oxide steel	18	36	M 5	13	9.5	70
R3210.200-BL	Black oxide steel	20	40	M 6	15	16.5	110
R3210.250-BL	Black oxide steel	25	47	M 6	15	16.5	120
R3210.300-BL	Black oxide steel	30	54	M 6	15	16.5	180
R3210.350-BL	Black oxide steel	35	57	M 6	15	16.5	180
R3210.400-BL	Black oxide steel	40	60	M 6	15	16.5	180
R3210.450-BL	Black oxide steel	45	73	M 8	19	39.0	380
R3210.500-BL	Black oxide steel	50	78	M 8	19	39.0	410
R3210.550-BL	Black oxide steel	55	82	M 8	19	39.0	430
R3210.600-BL	Black oxide steel	60	88	M 8	19	39.0	480
R3210.650-BL	Black oxide steel	65	93	M 8	19	39.0	510
R3210.700-BL	Black oxide steel	70	98	M 8	19	39.0	550
R3210.750-BL	Black oxide steel	75	103	M 8	19	39.0	580
R3210.800-BL	Black oxide steel	80	108	M 8	19	39.0	610
R3210.030-A2	Stainless	3	16	M 3	9	1.0	10
R3210.040-A2	Stainless	4	16	M 3	9	1.0	10
R3210.050-A2	Stainless	5	16	M 3	9	1.0	10
R3210.060-A2	Stainless	6	16	M 3	9	1.0	10

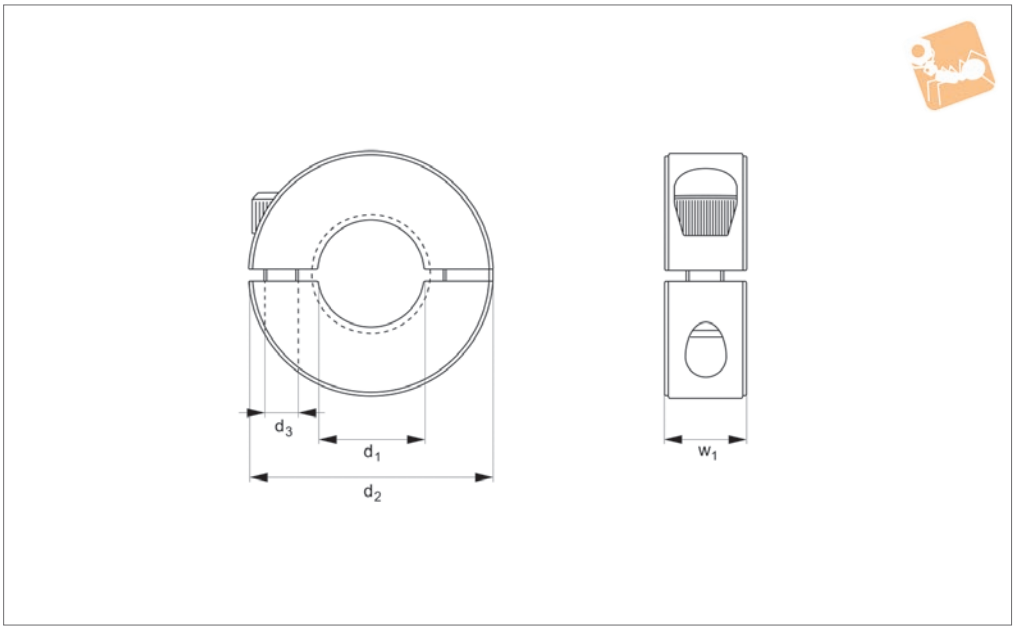
Order No.	Material	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	w	Torque screw to Nm	Weight g
R3210.080-A2	Stainless	8	18	M 3	9	1.0	30
R3210.090-A2	Stainless	9	24	M 3	9	1.0	20
R3210.100-A2	Stainless	10	24	M 3	9	1.0	20
R3210.120-A2	Stainless	12	28	M 4	11	2.5	40
R3210.130-A2	Stainless	13	30	M 4	11	2.5	40
R3210.140-A2	Stainless	14	30	M 4	11	2.5	40
R3210.150-A2	Stainless	15	34	M 5	13	5.0	70
R3210.160-A2	Stainless	16	34	M 5	13	5.0	60
R3210.170-A2	Stainless	17	36	M 5	13	5.0	80
R3210.180-A2	Stainless	18	36	M 5	13	5.0	70
R3210.200-A2	Stainless	20	40	M 6	15	8.5	100
R3210.250-A2	Stainless	25	47	M 6	15	8.5	140
R3210.300-A2	Stainless	30	54	M 6	15	8.5	170
R3210.350-A2	Stainless	35	57	M 6	15	8.5	170
R3210.400-A2	Stainless	40	60	M 6	15	8.5	160
R3210.450-A2	Stainless	45	73	M 8	19	20.5	350
R3210.500-A2	Stainless	50	78	M 8	19	20.5	380
R3210.550-A2	Stainless	55	82	M 8	19	20.5	430
R3210.600-A2	Stainless	60	88	M 8	19	20.5	440
R3210.650-A2	Stainless	65	93	M 8	19	20.5	510
R3210.700-A2	Stainless	70	98	M 8	19	20.5	550
R3210.750-A2	Stainless	75	103	M 8	19	20.5	580
R3210.800-A2	Stainless	80	108	M 8	19	20.5	610

Shaft Collars - One Piece

Steel & stainless



R3212



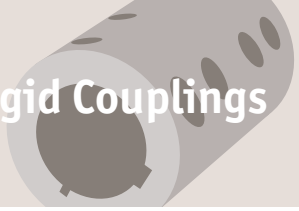
Material
Steel (AISI 12L14), black oxide finish, or stainless steel (A2, AISI 303).

Technical Notes
Design fully engages the shaft without marring or damaging. Greater axial holding power than set screw collars, effective on hard and soft shafts.

Important Notes
Different bore sizes available on request.

For keyways, please add „-KW“ suffix when ordering.

Order No.	Material	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	w	Torque screw to Nm	Weight g
R3212.030-BL	Steel	3	16	M 3	9	2.0	10
R3212.040-BL	Steel	4	16	M 3	9	2.0	10
R3212.050-BL	Steel	5	16	M 3	9	2.0	10
R3212.060-BL	Steel	6	16	M 3	9	2.0	10
R3212.080-BL	Steel	8	18	M 3	9	2.0	10
R3212.090-BL	Steel	9	24	M 3	9	2.0	20
R3212.100-BL	Steel	10	24	M 3	9	2.0	20
R3212.120-BL	Steel	12	28	M 4	11	4.5	40
R3212.130-BL	Steel	13	30	M 4	11	4.5	40
R3212.140-BL	Steel	14	30	M 4	11	4.5	40
R3212.150-BL	Steel	15	34	M 5	13	9.5	70
R3212.160-BL	Steel	16	34	M 5	13	9.5	70
R3212.170-BL	Steel	17	36	M 5	13	9.5	80
R3212.180-BL	Steel	18	36	M 5	13	9.5	70
R3212.200-BL	Steel	20	40	M 6	15	16.5	110
R3212.250-BL	Steel	25	47	M 6	15	16.5	120
R3212.300-BL	Steel	30	54	M 6	15	16.5	180
R3212.350-BL	Steel	35	57	M 6	15	16.5	180
R3212.400-BL	Steel	40	60	M 6	15	16.5	180
R3212.450-BL	Steel	45	73	M 8	19	39.0	380
R3212.500-BL	Steel	50	78	M 8	19	39.0	410
R3212.550-BL	Steel	55	82	M 8	19	39.0	430
R3212.600-BL	Steel	60	88	M 8	19	39.0	480
R3212.650-BL	Steel	65	93	M 8	19	39.0	510
R3212.700-BL	Steel	70	98	M 8	19	39.0	550
R3212.750-BL	Steel	75	103	M 8	19	39.0	580
R3212.800-BL	Steel	80	108	M 8	19	39.0	610
R3212.030-A2	Stainless	3	16	M 3	9	1.0	10
R3212.040-A2	Stainless	4	16	M 3	9	1.0	10
R3212.050-A2	Stainless	5	16	M 3	9	1.0	10
R3212.060-A2	Stainless	6	16	M 3	9	1.0	10
R3212.080-A2	Stainless	8	18	M 3	9	1.0	10



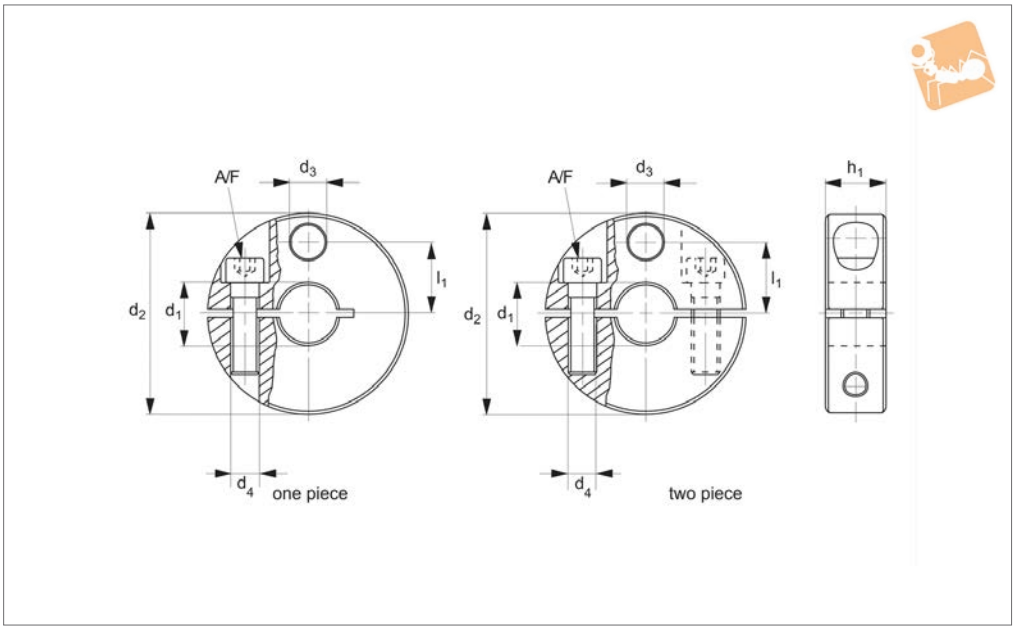
Order No.	Material	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	w	Torque screw to Nm	Weight g
R3212.090-A2	Stainless	9	24	M 3	9	1.0	20
R3212.100-A2	Stainless	10	24	M 3	9	1.0	20
R3212.120-A2	Stainless	12	28	M 4	11	2.5	40
R3212.130-A2	Stainless	13	30	M 4	11	2.5	40
R3212.140-A2	Stainless	14	30	M 4	11	2.5	40
R3212.150-A2	Stainless	15	34	M 5	13	5.0	70
R3212.160-A2	Stainless	16	34	M 5	13	5.0	70
R3212.170-A2	Stainless	17	36	M 5	13	5.0	80
R3212.180-A2	Stainless	18	36	M 5	13	5.0	70
R3212.200-A2	Stainless	20	40	M 6	15	8.5	110
R3212.250-A2	Stainless	25	47	M 6	15	8.5	120
R3212.300-A2	Stainless	30	54	M 6	15	8.5	180
R3212.350-A2	Stainless	35	57	M 6	15	8.5	180
R3212.400-A2	Stainless	40	60	M 6	15	8.5	180
R3212.450-A2	Stainless	45	73	M 8	19	20.5	380
R3212.500-A2	Stainless	50	78	M 8	19	20.5	410
R3212.550-A2	Stainless	55	52	M 8	19	20.5	430
R3212.600-A2	Stainless	60	88	M 8	19	20.5	480
R3212.650-A2	Stainless	65	93	M 8	19	20.5	510
R3212.700-A2	Stainless	70	98	M 8	19	20.5	550
R3212.750-A2	Stainless	75	103	M 8	19	20.5	580
R3212.800-A2	Stainless	80	108	M 8	19	20.5	610

Set Collars

sensor adapter - stainless steel



R3213



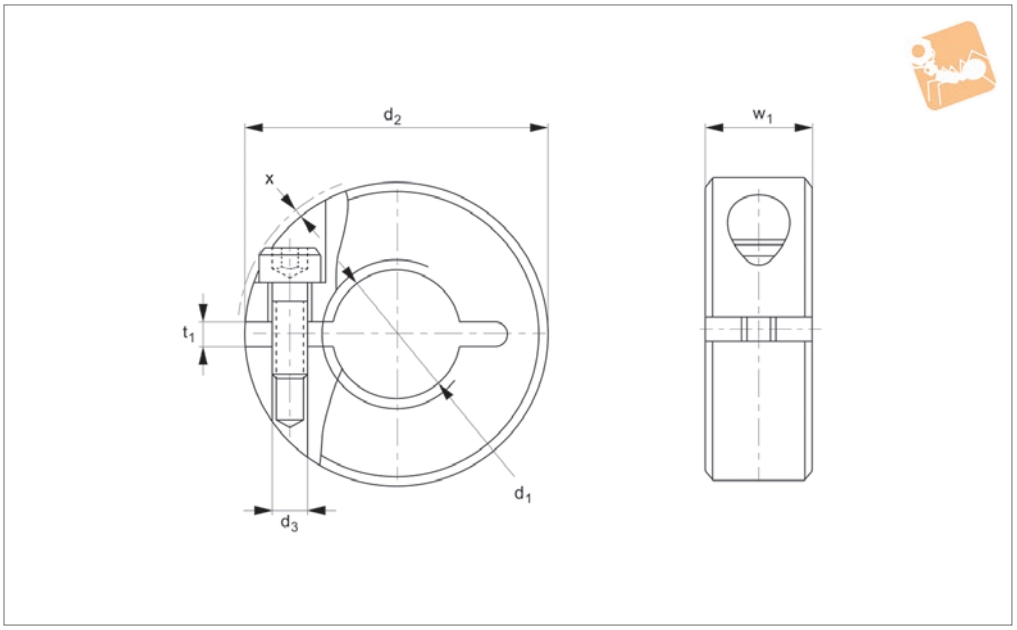
Material

Set collar and screw: stainless steel (AISI 420, 1.4021).

Technical Notes

Clamping ring made of stainless steel with strong clamping force. Available in two versions, slotted (one piece) and divided (two piece). Clamping rings with d_1 >10mm supplied with fixing hole (d_3) for the mounting of sensors, switches etc.

Order No.	Type	d_1 tol. H8	d_2 -0.5	d_3	d_4	l_1	h_1	A/F	Weight g
R3213.100-1	One piece	10	40	6.5	M 5	14.5	12	4	99
R3213.120-1	One piece	12	40	6.5	M 5	14.5	12	4	94
R3213.140-1	One piece	14	45	9.0	M 6	16.5	13	5	125
R3213.150-1	One piece	15	45	9.0	M 6	16.5	13	5	122
R3213.160-1	One piece	16	45	9.0	M 6	16.5	13	5	120
R3213.180-1	One piece	18	50	9.0	M 6	18.5	13	5	151
R3213.200-1	One piece	20	50	9.0	M 6	18.5	13	5	144
R3213.220-1	One piece	22	65	13.0	M 8	23.5	18	6	359
R3213.240-1	One piece	24	65	13.0	M 8	23.5	18	6	349
R3213.250-1	One piece	25	65	13.0	M 8	23.5	18	6	345
R3213.300-1	One piece	30	75	13.0	M 8	27.0	20	6	108
R3213.320-1	One piece	32	80	13.0	M 8	30.0	20	6	588
R3213.350-1	One piece	35	80	13.0	M 8	30.0	20	6	566
R3213.100-2	Two piece	10	40	6.5	M 5	14.5	12	4	94
R3213.120-2	Two piece	12	40	6.5	M 5	14.5	12	4	90
R3213.140-2	Two piece	14	45	9.0	M 6	16.5	13	5	114
R3213.150-2	Two piece	15	45	9.0	M 6	16.5	13	5	112
R3213.160-2	Two piece	16	45	9.0	M 6	16.5	13	5	110
R3213.180-2	Two piece	18	50	9.0	M 6	18.5	13	5	142
R3213.200-2	Two piece	20	50	9.0	M 6	18.5	13	5	139
R3213.220-2	Two piece	22	65	13.0	M 8	23.5	18	6	341
R3213.240-2	Two piece	24	65	13.0	M 8	23.5	18	6	330
R3213.250-2	Two piece	25	65	13.0	M 8	23.5	18	6	330
R3213.300-2	Two piece	30	75	13.0	M 8	27.0	20	6	488
R3213.320-2	Two piece	32	80	13.0	M 8	30.0	20	6	564
R3213.350-2	Two piece	35	80	13.0	M 8	30.0	20	6	542





R3214

Material
Steel with blackened oxide finish or Stainless steel (A4).

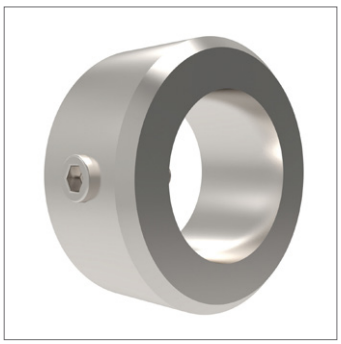
Technical Notes
Design engages a threaded shaft without marring or damaging the thread.

Important Notes
Screw is a through hole for sizes M20 and smaller.
Screw is a blind hole for sizes M24 and larger.

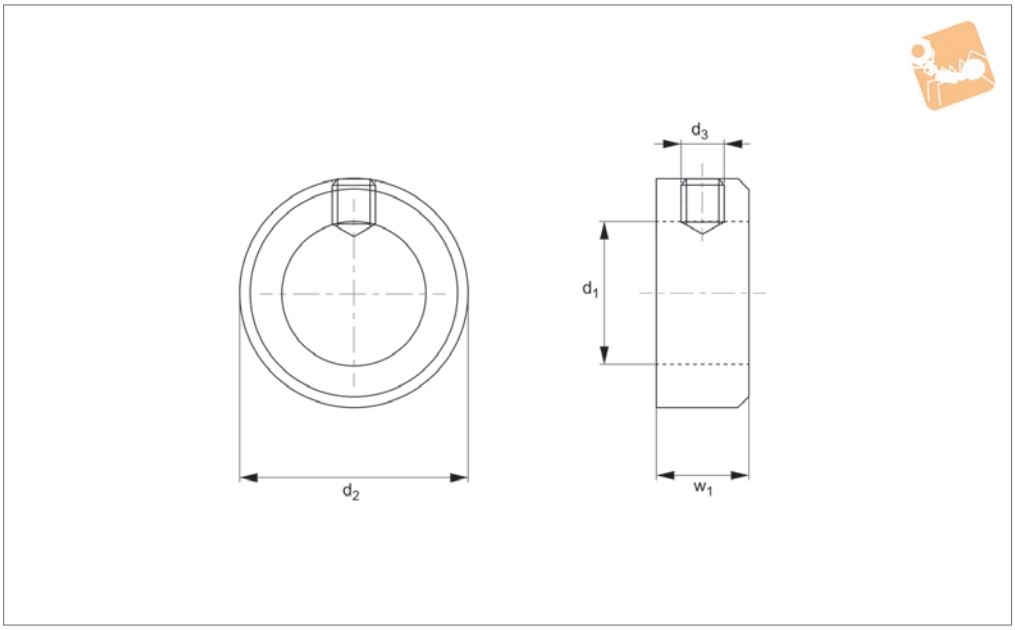
Order No.	d_1 for thread tol. 6H	d_2	d_3	t	w	x . Cap screw max. protrusion	Weight g
R3214.080-BL	M 8	20	M 3	2.1	9	1.0	15
R3214.100-BL	M10	22	M 3	2.1	9	0.8	15
R3214.120-BL	M12	26	M 4	2.1	11	1.6	15
R3214.160-BL	M16	32	M 4	2.1	11	0.7	15
R3214.200-BL	M20	42	M 5	3.0	15	0.6	15
R3214.080-100-BL	M 8 x 1,0	20	M 3	2.1	9	1.0	15
R3214.100-100-BL	M10 x 1,0	22	M 3	2.1	9	0.8	15
R3214.120-150-BL	M12 x 1,5	26	M 4	2.1	11	1.6	15
R3214.160-150-BL	M16 x 1,5	32	M 4	2.1	11	0.7	15
R3214.200-150-BL	M20 x 1,5	42	M 5	3.0	15	0.6	15
R3214.240-150-BL	M24 x 1,5	48	M 5	3.0	15	0.0	15
R3214.300-150-BL	M30 x 1,5	55	M 6	3.0	15	0.4	15
R3214.080-A4	M 8	20	M 3	2.1	9	1.0	15
R3214.100-A4	M10	22	M 3	2.1	9	0.8	15
R3214.120-A4	M12	26	M 4	2.1	11	1.6	15
R3214.160-A4	M16	32	M 4	2.1	11	0.7	15
R3214.200-A4	M20	42	M 5	3.0	15	0.6	15
R3214.080-100-A4	M 8 x 1,0	20	M 3	2.1	9	1.0	15
R3214.100-100-A4	M10 x 1,0	22	M 3	2.1	9	0.8	15
R3214.120-150-A4	M12 x 1,5	26	M 4	2.1	11	1.6	15
R3214.160-150-A4	M16 x 1,5	32	M 4	2.1	11	0.7	15
R3214.200-150-A4	M20 x 1,5	42	M 5	3.0	15	0.6	15
R3214.240-150-A4	M24 x 1,5	48	M 5	3.0	15	0.0	15
R3214.300-150-A4	M30 x 1,5	55	M 6	3.0	15	0.4	15

Set Collars - Hex Set Screw

Stainless & Steel



R3216



Material

Black oxide steel or stainless steel (A2, AISI 303).

Technical Notes

To DIN 705 B, set screw to DIN 914.

Important Notes

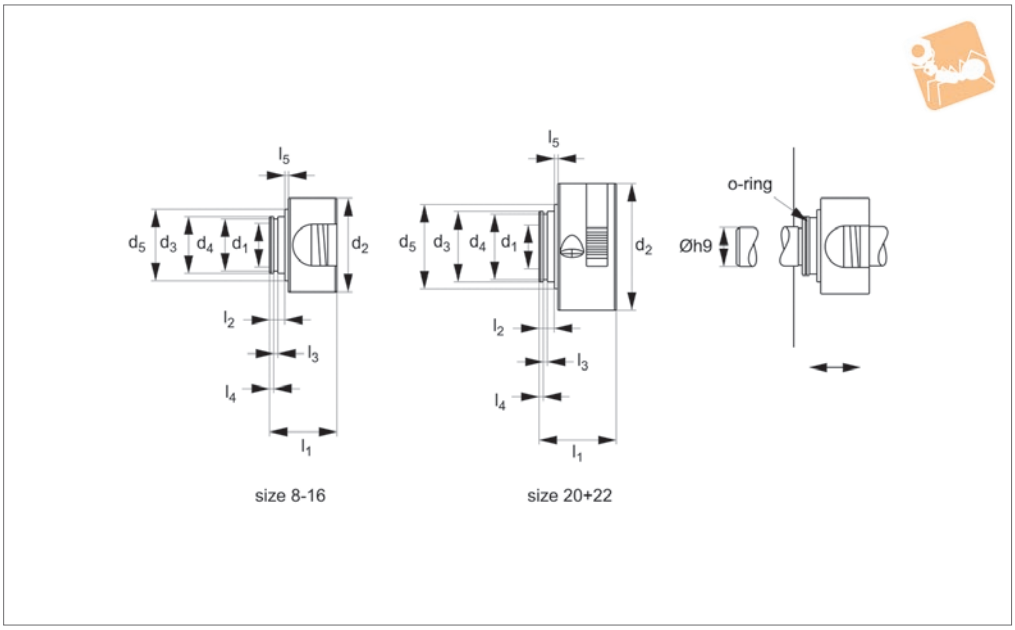
Different bore sizes available on request.
For keyways, please add „-KW“ suffix when ordering.

Order No.	Material	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	w
R3216.030-BL	Black oxide steel	3	7	M 2	5
R3216.040-BL	Black oxide steel	4	8	M2,5	5
R3216.050-BL	Black oxide steel	5	10	M 3	6
R3216.060-BL	Black oxide steel	6	12	M 4	8
R3216.080-BL	Black oxide steel	8	16	M 4	8
R3216.100-BL	Black oxide steel	10	20	M 5	10
R3216.120-BL	Black oxide steel	12	22	M 6	12
R3216.150-BL	Black oxide steel	15	25	M 6	12
R3216.200-BL	Black oxide steel	20	32	M 6	14
R3216.250-BL	Black oxide steel	25	40	M 8	16
R3216.300-BL	Black oxide steel	30	45	M 8	16
R3216.350-BL	Black oxide steel	35	56	M 8	16
R3216.400-BL	Black oxide steel	40	63	M10	18
R3216.500-BL	Black oxide steel	50	80	M10	18
R3216.050-A2	Stainless	5	10	M 3	6
R3216.080-A2	Stainless	8	16	M 4	8
R3216.060-A2	Stainless	6	12	M 4	8
R3216.100-A2	Stainless	10	20	M 5	10
R3216.120-A2	Stainless	12	22	M 6	12
R3216.140-A2	Stainless	14	25	M 6	12
R3216.150-A2	Stainless	15	25	M 6	12
R3216.160-A2	Stainless	16	28	M 6	12
R3216.180-A2	Stainless	18	32	M 6	14
R3216.200-A2	Stainless	20	32	M 6	14
R3216.220-A2	Stainless	22	36	M 6	14
R3216.240-A2	Stainless	24	40	M 8	16
R3216.250-A2	Stainless	25	40	M 8	16
R3216.280-A2	Stainless	28	45	M 8	16
R3216.300-A2	Stainless	30	45	M 8	16
R3216.320-A2	Stainless	32	50	M 8	16
R3216.350-A2	Stainless	36	56	M 8	16
R3216.400-A2	Stainless	40	63	M10	18

Order No.	Material	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	w
R3216.450-A2	Stainless	45	70	M10	18
R3216.500-A2	Stainless	50	80	M10	18
R3216.600-A2	Stainless	60	90	M10	20



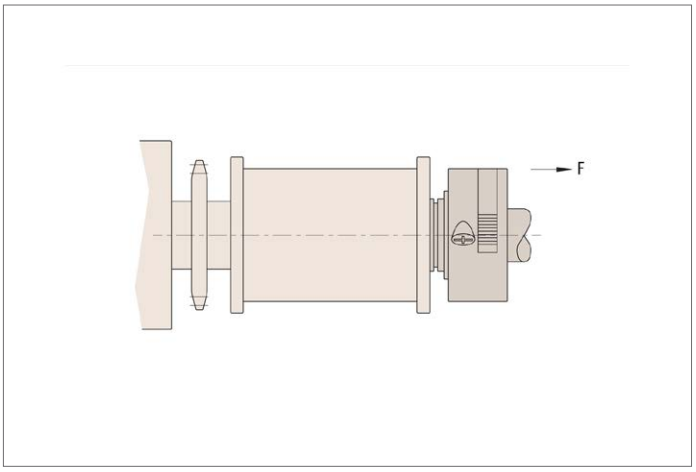
R3217

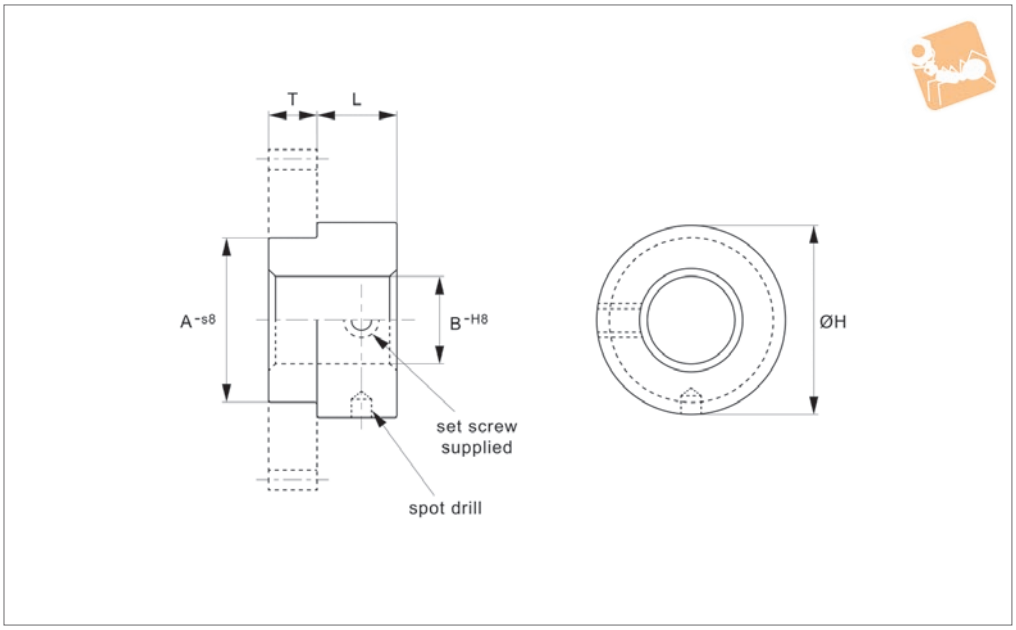


Material
Black thermoplastic body, other parts stainless steel. With NBR O ring.

Technical Notes
For positioning, clamping and quick adjustment on shafts.
Clamping and mounting can be achieved using one hand in the pull direction.
Temperature range to 80C, F - axial holding force, one-sided.

Order No.	d_1 tol. H7/H8	d_2 tol. H7/H8	d_3	d_4	d_5	l_1	l_2	l_3	l_4	l_5	O-ring size	Axial force N max.	Weight g
R3217.080	8	40	25	22.4	31	27.5	7	1.7	3.15	0.5	22x1,5	250	31
R3217.100	10	40	25	22.4	31	27.5	7	1.7	3.15	0.5	22x1,5	250	30
R3217.120	12	40	25	22.4	31	27.5	7	1.7	3.15	0.5	22x1,5	350	30
R3217.150	15	40	25	22.4	31	27.5	7	1.7	3.15	0.5	22x1,5	350	28
R3217.160	16	40	25	22.4	31	27.5	7	1.7	3.15	0.5	22x1,5	380	27
R3217.200	20	55	30	27.4	37	32.5	7	1.7	2.65	0.5	27x1,5	320	51
R3217.220	22	55	30	27.4	37	32.5	7	1.7	2.65	0.5	27x1,5	320	50







R3242

Material
Stainless steel DIN 1,4305.

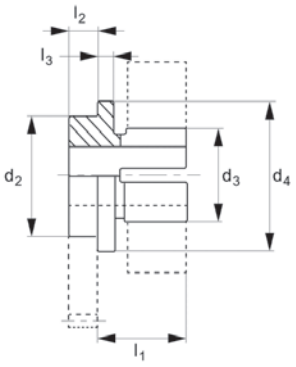
Technical Notes
Diameters A & B are concentric within 0,013mm.
Fasten component to hub with epxoy cement or stake and dutch pin.

Order No.	Bore dia. B	l	Ø A	Ø H	t
R3242.041	4	6	10	13	1.6
R3242.042	4	6	10	13	3.0
R3242.043	4	6	10	13	5.0
R3242.044	4	6	10	13	6.4
R3242.045	4	6	10	13	9.5
R3242.061	6	6	10	13	1.6
R3242.062	6	6	10	13	3.0
R3242.063	6	6	10	13	5.0
R3242.064	6	6	10	13	6.4
R3242.065	6	6	10	13	9.5
R3242.071	7	6	10	13	1.6
R3242.072	7	6	10	13	3.0
R3242.073	7	6	10	13	5.0
R3242.074	7	6	10	13	6.4
R3242.075	7	6	10	13	9.5
R3242.080	8	13	10	20	1.6
R3242.081	8	13	10	20	3.0
R3242.082	8	13	10	20	5.0
R3242.083	8	13	10	20	6.4
R3242.084	8	13	10	20	9.5
R3242.101	10	13	16	20	1.6
R3242.102	10	13	16	20	4.8
R3242.103	10	13	16	20	6.4
R3242.104	10	13	16	20	9.5
R3242.105	10	13	16	20	10.0
R3242.121	12	13	16	20	1.6
R3242.122	12	13	16	20	4.8
R3242.123	12	13	16	20	6.4
R3242.124	12	13	16	20	9.5
R3242.125	12	13	16	20	10.0

Gear and Sprocket Hubs
stainless



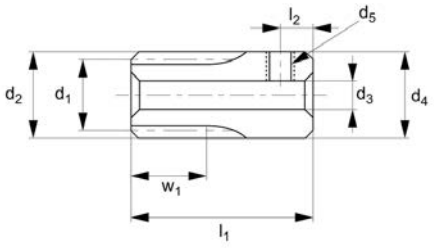
R3245

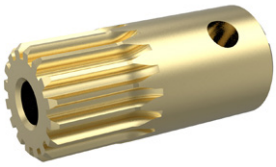


Material
Stainless steel (DIN 1,4305).

Technical Notes
Concentric to bore within 0,013mm.
For clamps see part no. R3250.

Order No.	d_1 tol. h8	d_2 tol. S8	d_3	d_4	l_1	l_2	l_3	Clamp no. (R3250)
R3245.041	4	10	5.6	12	4.8	1.6	0.8	R3250.041
R3245.042	4	10	5.6	12	4.8	3.0	0.8	R3250.042
R3245.043	4	10	5.6	12	4.8	5.0	0.8	R3250.043
R3245.044	4	10	5.6	12	4.8	6.4	0.8	R3250.044
R3245.045	4	10	5.6	12	4.8	9.5	0.8	R3250.045
R3245.061	6	10	7.6	13	6.2	1.6	1.2	R3250.061
R3245.062	6	10	7.6	13	6.2	3.0	1.2	R3250.062
R3245.063	6	10	7.6	13	6.2	5.0	1.2	R3250.063
R3245.064	6	10	7.6	13	6.2	6.4	1.2	R3250.064
R3245.065	6	10	7.6	13	6.2	9.5	1.2	R3250.065
R3245.071	7	10	8.6	14	6.6	1.6	1.6	R3250.071
R3245.072	7	10	8.6	14	6.6	3.0	1.6	R3250.072
R3245.073	7	10	8.6	14	6.6	5.0	1.6	R3250.073
R3245.074	7	10	8.6	14	6.6	6.4	1.6	R3250.074
R3245.075	7	10	8.6	14	6.6	9.5	1.6	R3250.075
R3245.081	8	10	9.6	16	7.6	1.6	1.6	R3250.081
R3245.082	8	10	9.6	16	7.6	3.0	1.6	R3250.082
R3245.083	8	10	9.6	16	7.6	5.0	1.6	R3250.083
R3245.084	8	10	9.6	16	7.6	6.4	1.6	R3250.084
R3245.085	8	10	9.6	16	7.6	9.5	1.6	R3250.085
R3245.101	10	16	11.6	24	7.6	1.6	1.6	R3250.101
R3245.102	10	16	11.6	24	7.6	4.8	1.6	R3250.102
R3245.103	10	16	11.6	24	7.6	6.4	1.6	R3250.103
R3245.104	10	16	11.6	24	7.6	9.5	1.6	R3250.104
R3245.105	10	16	11.6	24	7.6	10.0	1.6	R3250.105
R3245.121	12	16	13.6	30	9.6	1.6	1.6	R3250.121
R3245.122	12	16	13.6	30	9.6	4.8	1.6	R3250.122
R3245.123	12	16	13.6	30	9.6	6.4	1.6	R3250.123
R3245.124	12	16	13.6	30	9.6	9.5	1.6	R3250.124
R3245.125	12	16	13.6	30	9.6	10.0	1.6	R3250.125





R5100

Material
Brass (C3604B).
Accuracy to JIS B 1702-1 (ISO) class 9.

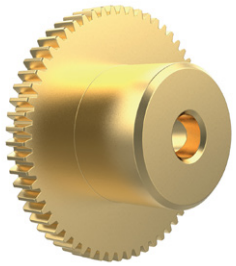
Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,006 - 0,018 mm.

Tips
For module 0.3 brass gears with 20-120 teeth see R5101. Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

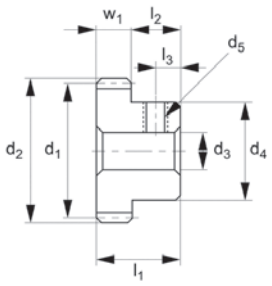
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	Thread d_5	l_2	Torque Nm max.	Weight g
R5100.030-014	*m* 0.3	14	4.2	4.8	4	2	5.0	12	M 1,6	2.5	0.031	1.5
R5100.030-015	*m* 0.3	15	4.5	5.1	4	2	5.5	12	M 1,6	2.5	0.034	1.8
R5100.030-016	*m* 0.3	16	4.8	5.4	4	2	5.5	12	M 1,6	2.5	0.038	1.9
R5100.030-018	*m* 0.3	18	5.4	6.0	4	2	6.0	12	M 2,0	2.5	0.046	2.3

Spur Gears - Module 0.3

brass - 20-120 teeth



R5101



Material

Brass (C3604B). Accuracy to JIS B 1702-1 (ISO) class 9.

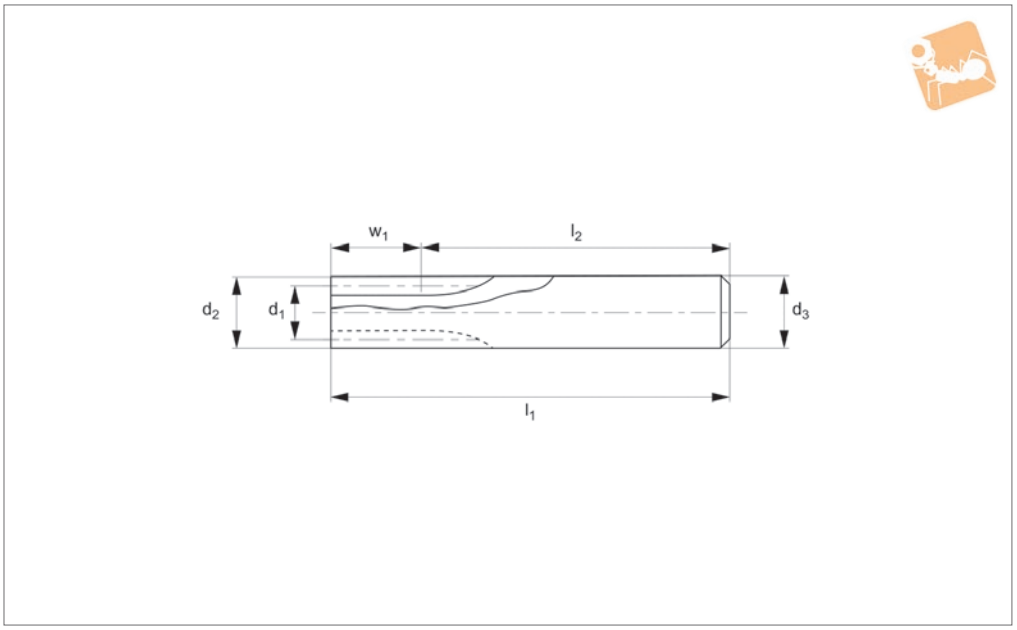
Technical Notes

20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,006 - 0,018mm.

Tips

For module 0.3 brass gears with 14-18 teeth see R5100. Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	Thread d_5	l_2	Torque Nm max.	l_3	Weight g
R5101.030-020	*m* 0.3	20	6.0	6.6	3.2	2	5	8	M 1,6	4.8	0.043	2.5	1.3
R5101.030-024	*m* 0.3	24	7.2	7.8	3.2	2	6	8	M 2	4.8	0.055	2.5	2.0
R5101.030-025	*m* 0.3	25	7.5	8.1	3.2	2	6	8	M 2	4.8	0.059	2.5	2.1
R5101.030-028	*m* 0.3	28	8.4	9.0	3.2	2	7	8	M 4	4.8	0.069	2.5	2.8
R5101.030-030	*m* 0.3	30	9.0	9.6	3.2	2	8	8	M 2	4.8	0.075	2.5	3.5
R5101.030-032	*m* 0.3	32	9.6	10.2	2.0	2	8	8	M 2	6.0	0.052	2.5	3.5
R5101.030-035	*m* 0.3	35	10.5	11.1	2.0	2	8	8	M 2	6.0	0.058	3.0	3.8
R5101.030-036	*m* 0.3	36	10.8	11.4	2.0	3	9	8	M 3	6.0	0.060	3.0	4.2
R5101.030-040	*m* 0.3	40	12.0	12.6	2.0	3	10	8	M 3	6.0	0.069	3.0	5.3
R5101.030-045	*m* 0.3	45	13.5	14.1	2.0	3	10	8	M 3	6.0	0.080	3.0	5.8
R5101.030-048	*m* 0.3	48	14.4	15.0	2.0	3	10	8	M 3	6.0	0.087	3.0	6.1
R5101.030-050	*m* 0.3	50	15.0	15.6	2.0	3	10	8	M 3	6.0	0.092	3.0	6.4
R5101.030-056	*m* 0.3	56	16.8	17.4	2.0	3	10	8	M 3	6.0	0.105	3.0	7.1
R5101.030-060	*m* 0.3	60	18.0	18.6	2.0	3	10	8	M 3	6.0	0.115	3.0	7.7
R5101.030-064	*m* 0.3	64	19.2	19.8	2.0	3	10	8	M 3	6.0	0.123	3.0	8.3
R5101.030-070	*m* 0.3	70	21.0	21.6	2.0	3	10	8	M 3	6.0	0.137	3.0	9.3
R5101.030-072	*m* 0.3	72	21.6	22.2	2.0	3	10	8	M 3	6.0	0.141	3.0	9.6
R5101.030-075	*m* 0.3	75	22.5	23.1	2.0	3	10	8	M 3	6.0	0.149	3.0	10.1
R5101.030-080	*m* 0.3	80	24.0	24.6	2.0	3	10	8	M 3	6.0	0.160	3.0	11.1
R5101.030-090	*m* 0.3	90	27.0	27.6	2.0	3	10	8	M 3	6.0	0.183	3.0	13.1
R5101.030-096	*m* 0.3	96	28.8	29.4	2.0	3	10	8	M 3	6.0	0.197	3.0	14.4
R5101.030-100	*m* 0.3	100	30.0	30.6	2.0	3	10	8	M 3	6.0	0.206	3.0	15.4
R5101.030-108	*m* 0.3	108	32.4	33.0	2.0	3	10	8	M 3	6.0	0.225	3.0	17.4
R5101.030-120	*m* 0.3	120	36.0	36.6	2.0	3	10	8	M 3	6.0	0.253	3.0	20.7





R5104

Material
Stainless steel (SUS 304, JIS G 4303). Accuracy to JIS B 1702-1 (ISO) class 9.

Technical Notes
20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,01 - 0,03mm.

Tips
For module 0,5 stainless gears with 16-120 teeth see R5105, R5106 and R5108. Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

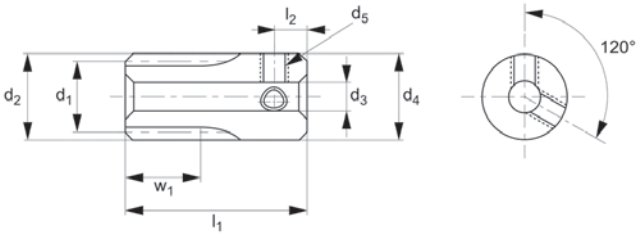
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	l_1	l_2	Torque Nm max.	Weight g
R5104.050-010	*m* 0.5	10	5.0	6.0	10	6.0	55	45	0.29	11.7
R5104.050-012	*m* 0.5	12	6.0	7.0	10	7.0	55	45	0.40	16.0
R5104.050-014	*m* 0.5	14	7.0	8.0	10	8.0	55	45	0.53	21.0
R5104.050-015	*m* 0.5	15	7.5	8.5	10	8.5	55	45	0.59	23.8

Spur Gears - Module 0.5

stainless steel - 16-30 teeth



R5105



Material

Stainless steel (SUS 304, JIS G 4303).
Accuracy to JIS B 1702-1 (ISO) class 9.

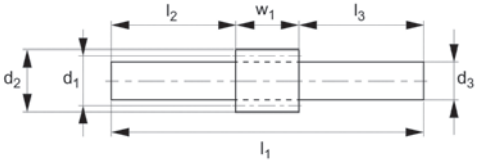
Technical Notes

20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,01 - 0,03mm.

Tips

Module 0.5 for gears with 10-15 teeth see R5104. For long spur gears with 16-20 teeth see R5106.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_3	Thread d_5	Torque Nm max.	Weight g
R5105.050-016	*m* 0.5	16	8.0	9.0	8	4	9.0	18	3	2xM 3	0.53	6.2
R5105.050-018	*m* 0.5	18	9.0	10.0	8	4	10.0	18	3	2xM 3	0.63	8.2
R5105.050-020	*m* 0.5	20	10.0	11.0	8	4	11.0	18	3	2xM 3	0.74	10.4
R5105.050-024	*m* 0.5	24	12.0	13.0	8	5	13.0	18	3	2xM 3	0.97	14.5
R5105.050-025	*m* 0.5	25	12.5	13.5	8	5	13.5	18	3	2xM 3	1.02	15.9
R5105.050-028	*m* 0.5	28	14.0	15.0	8	5	15.0	18	3	2xM 3	1.20	20.5
R5105.050-030	*m* 0.5	30	15.0	16.0	8	6	16.0	18	3	2xM 3	1.32	22.7





R5106

Material
Stainless steel (AISI 304, JIS G 4303).
Accuracy to JIS B 1702-1 (ISO) class 9.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,01 - 0,03mm.

Tips
Module 0.5 for gears with 10-15 teeth see R5104, for gears with 16-30 teeth see R5105.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

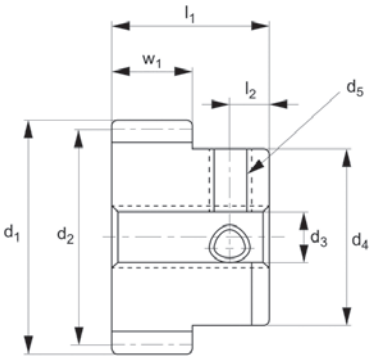
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	l_1	l_2	l_3	Torque Nm max.	Weight g
R5106.050-016	*m* 0.5	16	8.0	9.0	8	5.0	80	22	50	0.53	14.4
R5106.050-018	*m* 0.5	18	9.0	10.0	8	6.0	80	22	50	0.63	20.2
R5106.050-020	*m* 0.5	20	10.0	11.0	8	6.0	80	22	50	0.74	21.1

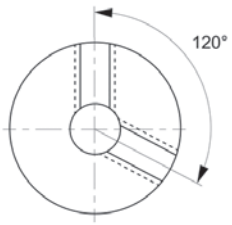
Spur Gears - Module 0.5

stainless steel - 32-120 teeth



R5108





Material

Stainless steel (SUS 304, JIS G 4303).
Accuracy to JIS B 1702-1 (ISO) class 9.

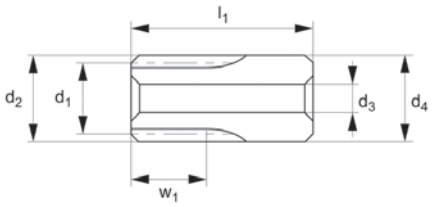
Technical Notes

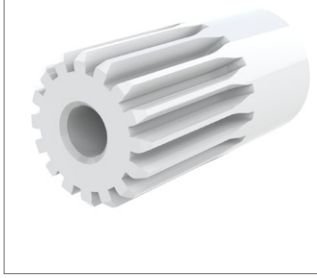
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,01 - 0,03 mm.

Tips

Module 0.5 for gears with 10-15 teeth see R5104,
for gears with 16-30 teeth see R5105,
for gears with 16-20 teeth see R5106- long spur gear.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_3	Thread d_5	Torque Nm max.	Weight g
R5108.050-032	*m* 0.5	32	16.0	17.0	5	6	12	13	4	2xM 3	0.90	12.0
R5108.050-036	*m* 0.5	36	18.0	19.0	5	6	12	13	4	2xM 3	1.05	14.1
R5108.050-040	*m* 0.5	40	20.0	21.0	5	6	15	13	4	2xM 4	1.20	20.0
R5108.050-045	*m* 0.5	45	22.5	23.5	5	6	15	13	4	2xM 4	1.39	23.3
R5108.050-048	*m* 0.5	48	24.0	25.0	5	6	15	13	4	2xM 4	1.51	25.5
R5108.050-050	*m* 0.5	50	25.0	26.0	5	6	15	13	4	2xM 4	1.59	27.0
R5108.050-054	*m* 0.5	54	27.0	28.0	5	6	15	13	4	2xM 4	1.74	30.3
R5108.050-056	*m* 0.5	56	28.0	29.0	5	6	15	13	4	2xM 4	1.82	32.0
R5108.050-060	*m* 0.5	60	30.0	31.0	5	8	18	13	4	2xM 4	1.98	38.2
R5108.050-064	*m* 0.5	64	32.0	33.0	5	8	18	13	4	2xM 4	2.14	42.0
R5108.050-070	*m* 0.5	70	35.0	36.0	5	8	18	13	4	2xM 4	2.38	48.3
R5108.050-072	*m* 0.5	72	36.0	37.0	5	8	18	13	4	2xM 4	2.46	50.5
R5108.050-075	*m* 0.5	75	37.5	38.5	5	8	18	13	4	2xM 4	2.58	53.9
R5108.050-080	*m* 0.5	80	40.0	41.0	5	10	22	13	4	2xM 5	2.78	64.3
R5108.050-090	*m* 0.5	90	45.0	46.0	5	10	22	13	4	2xM 5	3.18	77.5
R5108.050-100	*m* 0.5	100	50.0	51.0	5	10	25	13	4	2xM 5	3.58	98.9
R5108.050-120	*m* 0.5	120	60.0	61.0	5	10	25	13	4	2xM 5	4.39	133.2





R5109

Material
White polyacetal, machined.
Accuracy to JIS B 1702-1 (ISO) class 9-10.

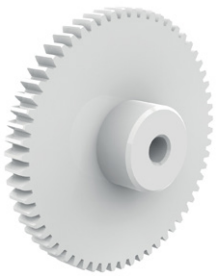
Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,01 - 0,03mm.

Tips
Module 0.5 for gears with 20-120 teeth see R5111.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

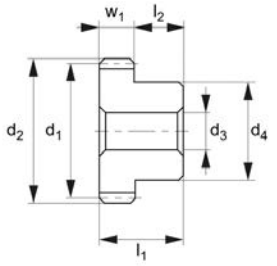
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	Torque Nm max.	Weight g
R5109.050-014	*m* 0.5	14	7.0	8.0	8	3	9	18	0.214	1.2
R5109.050-015	*m* 0.5	15	7.5	8.5	8	3	9	18	0.229	1.2
R5109.050-016	*m* 0.5	16	8.0	9.0	8	3	9	18	0.244	1.3
R5109.050-018	*m* 0.5	18	9.0	10.0	8	3	10	18	0.275	1.7

Spur Gears - Module 0.5 - Plastic

white polyacetal - 20-120 teeth



R5111



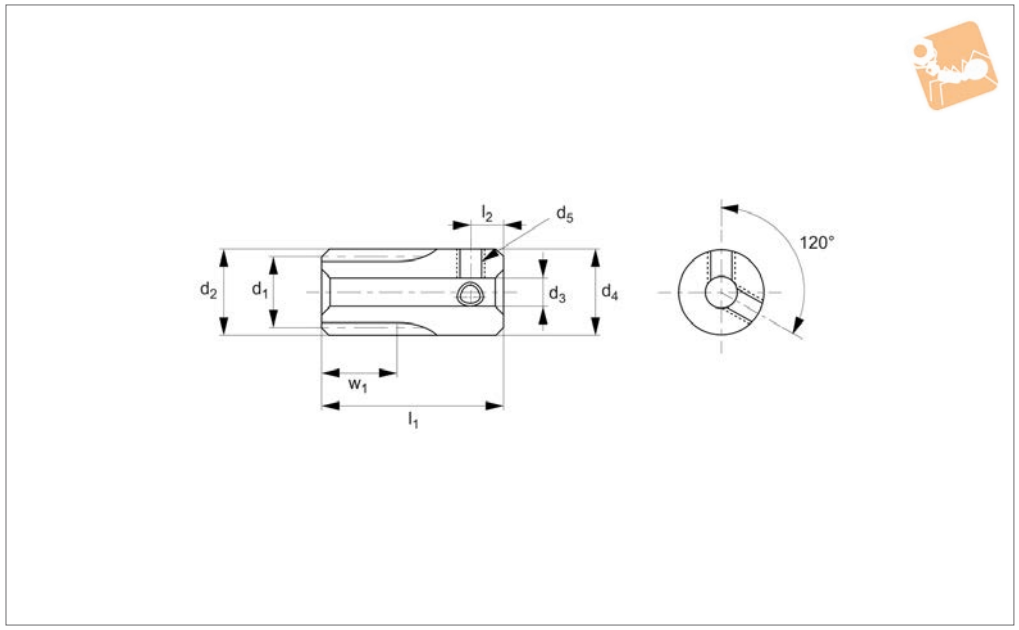
Material
White polyacetal, machined. Accuracy to JIS B 1702-1 (ISO) class 9-10.

Technical Notes
20° pressure angle, full depth tooth.

Amount of backlash when assembling gears= 0,01- 0,03 mm.

Tips
Module 0.5 for gears with 14-18 teeth see R5109. Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	l_2	Torque Nm max.	Weight g
R5111.050-020	*m* 0.5	20	10.0	11.0	3	3	8	8	5	0.11	0.6
R5111.050-024	*m* 0.5	24	12.0	13.0	3	3	8	8	5	0.17	0.8
R5111.050-025	*m* 0.5	25	12.5	13.5	3	3	8	8	5	0.17	0.8
R5111.050-028	*m* 0.5	28	14.0	15.0	3	3	8	8	5	0.19	0.9
R5111.050-030	*m* 0.5	30	15.0	16.0	3	3	8	8	5	0.21	1.0
R5111.050-032	*m* 0.5	32	16.0	17.0	3	3	8	8	5	0.22	1.1
R5111.050-036	*m* 0.5	36	18.0	19.0	3	3	8	8	5	0.25	1.4
R5111.050-040	*m* 0.5	40	20.0	21.0	3	3	10	8	5	0.28	1.8
R5111.050-045	*m* 0.5	45	22.5	23.5	3	3	10	8	5	0.31	2.2
R5111.050-050	*m* 0.5	50	25.0	26.0	3	3	10	8	5	0.35	2.6
R5111.050-056	*m* 0.5	56	28.0	29.0	3	3	10	8	5	0.39	3.1
R5111.050-060	*m* 0.5	60	30.0	31.0	3	3	10	8	5	0.42	3.4
R5111.050-064	*m* 0.5	64	32.0	33.0	3	3	10	8	5	0.44	3.9
R5111.050-070	*m* 0.5	70	35.0	36.0	3	4	12	8	5	0.49	4.7
R5111.050-072	*m* 0.5	72	36.0	37.0	3	4	12	8	5	0.50	5.0
R5111.050-080	*m* 0.5	80	40.0	41.0	3	4	12	8	5	0.55	6.0
R5111.050-090	*m* 0.5	90	45.0	46.0	3	5	14	8	5	0.62	7.6
R5111.050-100	*m* 0.5	100	50.0	51.0	3	5	14	8	5	0.69	9.2
R5111.050-120	*m* 0.5	120	60.0	61.0	3	5	14	8	5	0.83	12.9





R5112

Material
White polyacetal, machined. Accuracy to JIS B 1702-1 (ISO) class 9-10. Steel set screw.

Technical Notes
20° pressure angle, full depth tooth.

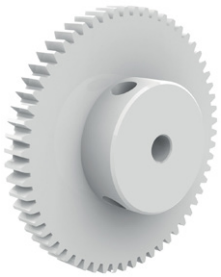
Amount of backlash when assembling gears = 0,01 - 0,03mm.

Tips
Module 0.5 for gears with 20-120 teeth see R5113. Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

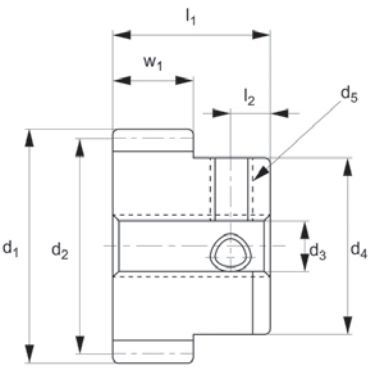
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	l_3	Thread d_5	Torque Nm max.	Weight g
R5112.050-014	*m* 0.5	14	7.0	8.0	8	3	9	18	3	2xM 3	0.214	1.15
R5112.050-015	*m* 0.5	15	7.5	8.5	8	3	9	18	3	2xM 3	0.229	1.22
R5112.050-018	*m* 0.5	18	9.0	10.0	8	3	10	18	3	2xM 3	0.275	1.65

Spur Gears - Module 0.5 - Plastic

white - set screw - 20-120 teeth



R5113

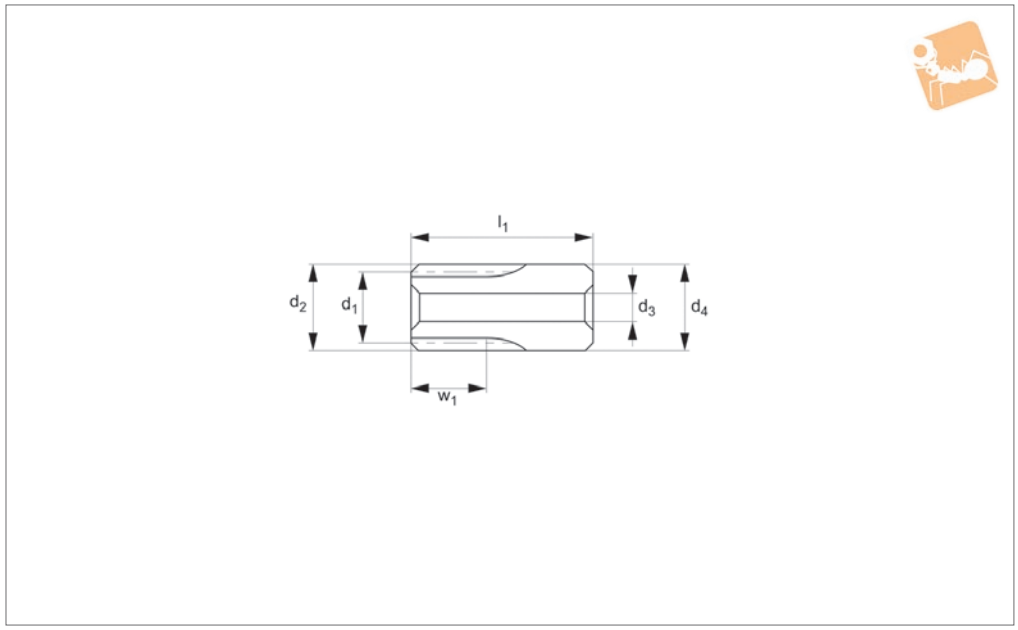


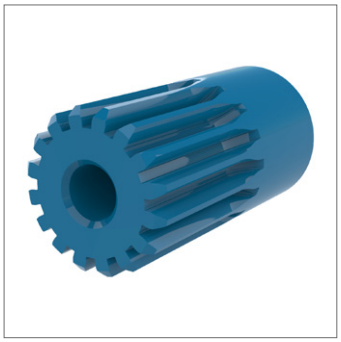
Material
White polyacetal, machined.
Accuracy to JIS B 1702-1 (ISO) class 9-10.
Steel set screw.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,01 - 0,03mm.

Tips
Module 0.5 for gears with 20-120 teeth see R5112.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5113.050-020	*m* 0.5	20	10.0	11.0	3	3	8	8	3	2xM 3	0.11	0.57
R5113.050-024	*m* 0.5	24	12.0	13.0	3	3	10	8	3	2xM 3	0.17	0.90
R5113.050-032	*m* 0.5	30	15.0	16.0	3	3	12	8	3	2xM 3	0.21	1.39
R5113.050-034	*m* 0.5	32	16.0	17.0	3	3	14	8	3	2xM 3	0.22	1.77
R5113.050-036	*m* 0.5	36	18.0	19.0	3	3	15	8	3	2xM 3	0.25	2.15
R5113.050-040	*m* 0.5	40	20.0	21.0	3	3	15	8	3	2xM 3	0.28	2.40
R5113.050-045	*m* 0.5	45	22.5	23.5	3	3	15	8	3	2xM 3	0.31	2.75
R5113.050-050	*m* 0.5	50	25.0	26.0	3	3	15	8	3	2xM 3	0.35	3.15
R5113.050-056	*m* 0.5	56	28.0	29.0	3	3	15	8	3	2xM 3	0.39	3.67
R5113.050-060	*m* 0.5	60	30.0	31.0	3	3	15	8	3	2xM 3	0.42	4.06
R5113.050-064	*m* 0.5	64	32.0	33.0	3	3	15	8	3	2xM 3	0.44	4.47
R5113.050-070	*m* 0.5	70	35.0	36.0	3	4	16	8	3	2xM 3	0.49	5.25
R5113.050-072	*m* 0.5	72	36.0	37.0	3	4	16	8	3	2xM 3	0.50	5.48
R5113.050-080	*m* 0.5	80	40.0	41.0	3	4	16	8	3	2xM 3	0.55	6.49
R5113.050-090	*m* 0.5	90	45.0	46.0	3	5	18	8	3	2xM 3	0.62	8.20
R5113.050-100	*m* 0.5	100	50.0	51.0	3	5	18	8	3	2xM 3	0.69	9.77
R5113.050-120	*m* 0.5	120	60.0	61.0	3	5	18	8	3	2xM 3	0.83	13.43





R5117

Material
Blue polyacetal, machined.
Accuracy to JIS B 1702-1 (ISO) class 9-10.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears= 0,01- 0,03 mm.
Blue polyacetal machined gears are suitable for use in food machinery applications. Approved by the FDA (USA) and by regulators in the EU and Japan, where the food has an alcohol percentage of <15%. Please clean gears thoroughly before use.

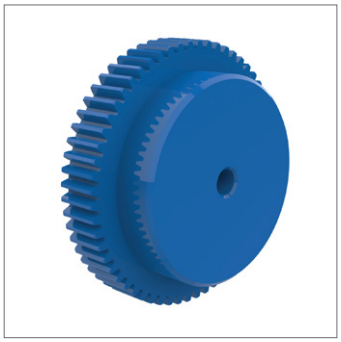
Tips
Module 0.5 for gears with 20-40 teeth see R5120.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

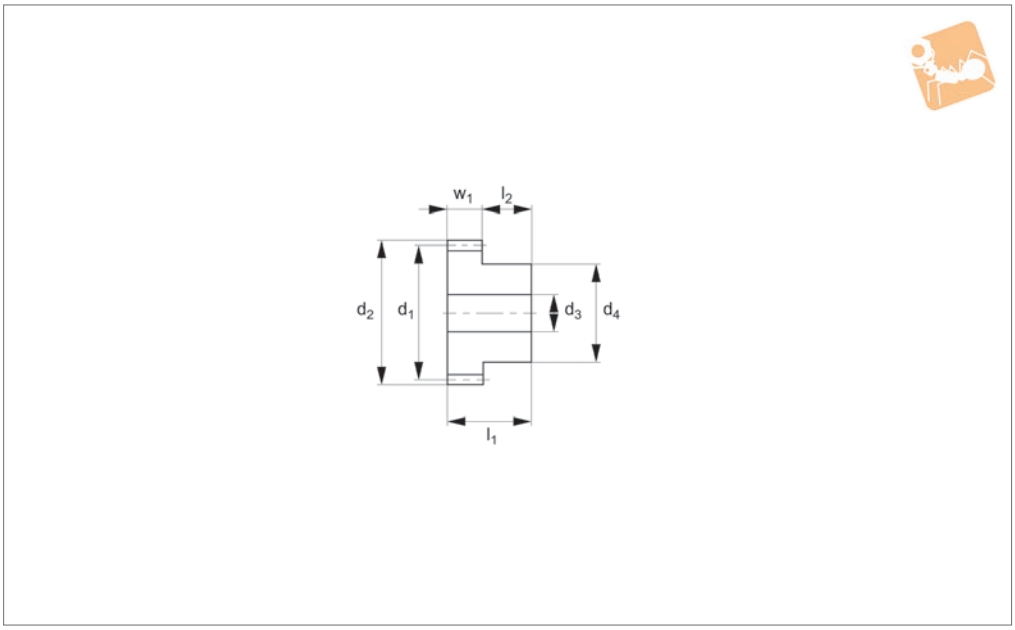
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	Torque Nm max.	Weight g
R5117.050-014	*m* 0.5	14	7.0	8.0	8	3	9	18	0.21	1.1
R5117.050-015	*m* 0.5	15	7.5	8.5	8	3	9	18	0.23	1.2
R5117.050-016	*m* 0.5	16	8.0	9.0	8	3	9	18	0.24	1.3
R5117.050-018	*m* 0.5	18	9.0	10.0	8	3	10	18	0.28	1.6

Spur Gears - Module 0.5 - Plastic

blue polyacetal - 20- 120 teeth



R5120



Material

Blue polyacetal, machined.
Accuracy to JIS B 1702-1 (ISO) class 9 - 10.

Technical Notes

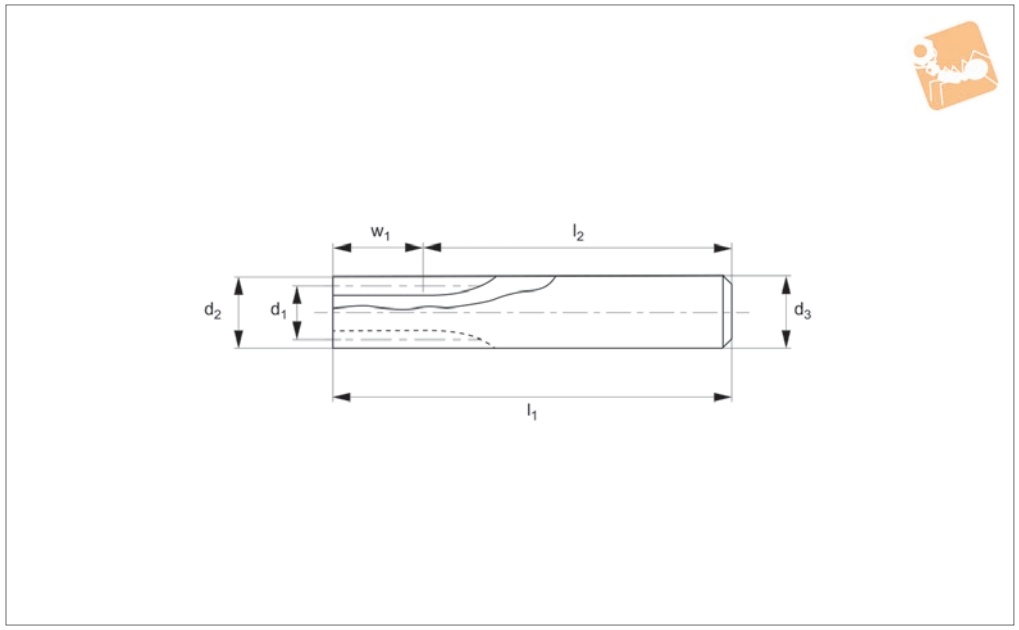
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears= 0,01 - 0,03mm.
Blue polyacetal machined gears are suitable for use in food machinery applications. Approved by the FDA (USA) and by regulators in the EU and Japan, where the food has an alcohol percentage of <15%. Please clean gears thoroughly before use.

Tips

Module 0.5 for gears with 14-18 teeth see R5117.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	l_2	Torque Nm max.	Weight g
R5120.050-020	*m* 0.5	20	10.0	11.0	5	3	8	10	5	0.17	0.8
R5120.050-024	*m* 0.5	24	12.0	13.0	5	3	10	10	5	0.21	1.2
R5120.050-025	*m* 0.5	25	12.5	13.5	5	3	10	10	5	0.22	1.3
R5120.050-028	*m* 0.5	28	14.0	15.0	5	3	12	10	5	0.26	1.8
R5120.050-030	*m* 0.5	30	15.0	16.0	5	3	12	10	5	0.29	1.9
R5120.050-032	*m* 0.5	32	16.0	17.0	5	3	14	10	5	0.31	2.4
R5120.050-036	*m* 0.5	36	18.0	19.0	5	3	15	10	5	0.36	2.9
R5120.050-040	*m* 0.5	40	20.0	21.0	5	3	15	10	5	0.42	3.3
R5120.050-045	*m* 0.5	45	22.5	23.5	5	3	18	10	5	0.48	4.5
R5120.050-050	*m* 0.5	50	25.0	26.0	5	3	20	10	5	0.54	5.6
R5120.050-056	*m* 0.5	56	28.0	29.0	5	3	22	10	5	0.61	6.9
R5120.050-060	*m* 0.5	60	30.0	31.0	5	3	24	10	5	0.67	8.1
R5120.050-064	*m* 0.5	64	32.0	33.0	5	3	26	10	5	0.72	9.3
R5120.050-070	*m* 0.5	70	35.0	36.0	5	4	26	10	5	0.79	10.3
R5120.050-072	*m* 0.5	72	36.0	37.0	5	4	28	10	5	0.82	11.3
R5120.050-080	*m* 0.5	80	40.0	41.0	5	4	32	10	5	0.92	14.3
R5120.050-090	*m* 0.5	90	45.0	46.0	5	5	36	10	5	1.04	18.1
R5120.050-100	*m* 0.5	100	50.0	51.0	5	5	40	10	5	1.18	22.4
R5120.050-120	*m* 0.5	120	60.0	61.0	5	5	50	10	5	1.43	33.5





R5121

Material
Carbon steel (ISO C45).
Accuracy to JIS B 1702-1 (ISO) class 8- 9.

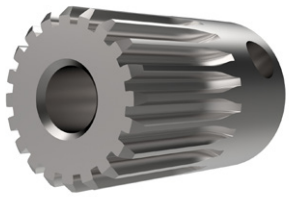
Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears= 0,01- 0,03 mm.

Tips
Module 0.5 for gears with 15-24 teeth see R5123, for gears with 25-120 teeth see R5125.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

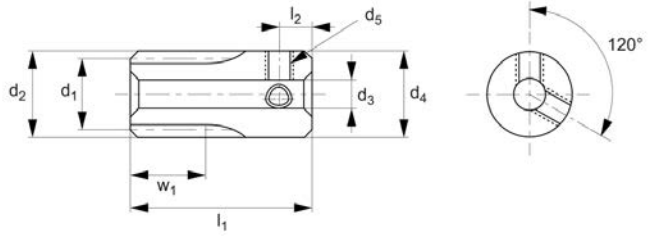
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	l_1	l_2	Torque Nm max.	Weight g
R5121.050-010	*m* 0.5	10	5	6	10	6	55	45	0.59	11.5
R5121.050-012	*m* 0.5	12	6	7	10	7	55	45	0.81	15.8

Spur Gears - Module 0.5 - Steel

carbon steel - 15-24 teeth



R5123



Material

Carbon steel (ISO C45). Accuracy to JIS B 1702-1 (ISO) class 8- 9.

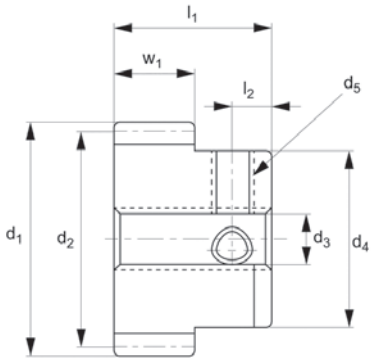
Technical Notes

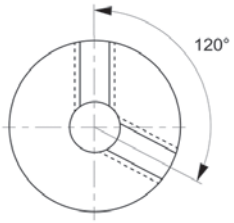
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,01 - 0,03mm.

Tips

For module 0.5 steel gears with 10-14 teeth, see R5121; for 25-120 teeth see R5125.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5123.050-015	*m* 0.5	15	7.5	8.5	8	3	8.5	18	3	2xM 3	0.95	6.0
R5123.050-016	*m* 0.5	16	8.0	9.0	8	3	9.0	18	3	2xM 3	1.05	6.9
R5123.050-018	*m* 0.5	18	9.0	10.0	8	4	10.0	18	3	2xM 3	1.26	8.1
R5123.050-020	*m* 0.5	20	10.0	11.0	8	4	11.0	18	3	2xM 3	1.48	10.3
R5123.050-022	*m* 0.5	22	11.0	12.0	8	4	12.0	18	3	2xM 3	1.71	12.7
R5123.050-024	*m* 0.5	24	12.0	13.0	8	4	13.0	18	3	2xM 3	1.93	15.4







R5125

Material
Carbon steel (ISO C45) Accuracy to JIS B 1702-1 (ISO) Class 8-9. Gear tooth surface induction hardened to HRC 47-53.

Technical Notes
20° pressure angle, full depth tooth.

Amount of backlash when assembling gears = 0,01 - 0,03mm.

Tips
For module 0.5 steel gears with fewer teeth, see R5121 & R5123.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

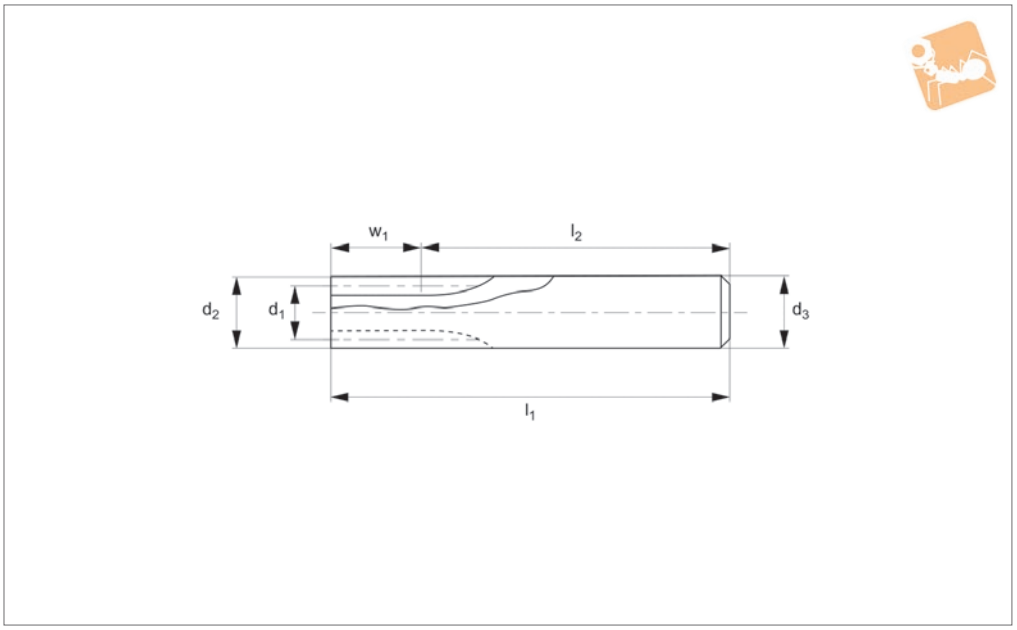
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	d_4	l_1	l_2	Thread d_4	Torque Nm max.	Weight g
R5125.050-025-04	*m* 0.5	25	12.5	13.5	8	4	10	16	4	2xM 3	2.05	10.8
R5125.050-026-04	*m* 0.5	26	13.0	14.0	8	4	10	16	4	2xM 3	2.17	11.4
R5125.050-028-04	*m* 0.5	28	14.0	15.0	8	4	10	16	4	2xM 3	2.40	12.8
R5125.050-030-05	*m* 0.5	30	15.0	16.0	8	5	12	16	4	2xM 3	2.63	15.4
R5125.050-032-05	*m* 0.5	32	16.0	17.0	5	5	12	13	4	2xM 3	1.80	12.7
R5125.050-035-05	*m* 0.5	35	17.5	18.5	5	5	12	13	4	2xM 3	2.02	14.2
R5125.050-036-05	*m* 0.5	36	18.0	19.0	5	5	12	13	4	2xM 3	2.10	14.8
R5125.050-040-04	*m* 0.5	40	20.0	21.0	5	4 tol.H8	15	13	-	-	2.40	22.1
R5125.050-040-H4	*m* 0.5	40	20.0	21.0	5	4 tol. H*	15	13	-	-	2.54	22.1
R5125.050-040-05	*m* 0.5	40	20.0	21.0	5	5	15	13	4	2xM 3	2.40	21.0
R5125.050-040-H5	*m* 0.5	42	21.0	22.0	5	5	15	13	4	2xM 3	2.56	22.3
R5125.050-044-05	*m* 0.5	44	22.0	23.0	5	5	15	13	4	2xM 3	2.71	23.6
R5125.050-045-05	*m* 0.5	45	22.5	23.5	5	5	15	13	4	2xM 3	2.79	24.3
R5125.050-048-05	*m* 0.5	48	24.0	25.0	5	5	15	13	4	2xM 3	3.02	26.4
R5125.050-050-05	*m* 0.5	50	25.0	26.0	5	5	15	13	4	2xM 3	3.18	27.9
R5125.050-052-05	*m* 0.5	52	26.0	27.0	5	5	15	13	4	2xM 3	3.33	29.5
R5125.050-054-05	*m* 0.5	54	27.0	28.0	5	5	15	13	4	2xM 3	3.49	31.1
R5125.050-055-05	*m* 0.5	55	27.5	28.5	5	5	15	13	4	2xM 3	3.57	32.0
R5125.050-056-05	*m* 0.5	56	28.0	29.0	5	5	15	13	4	2xM 3	3.65	32.8
R5125.050-060-06	*m* 0.5	60	30.0	31.0	5	6	18	13	4	2xM 4	3.96	39.9
R5125.050-064-06	*m* 0.5	64	32.0	33.0	5	6	18	13	4	2xM 4	4.28	43.7
R5125.050-070-06	*m* 0.5	70	35.0	36.0	5	6	18	13	4	2xM 4	4.76	49.9
R5125.050-072-06	*m* 0.5	72	36.0	37.0	5	6	18	13	4	2xM 4	4.92	52.1
R5125.050-075-06	*m* 0.5	75	37.5	38.5	5	6	18	13	4	2xM 4	5.16	55.5
R5125.050-080-06	*m* 0.5	80	40.0	41.0	5	6	28	13	-	-	5.52	85.0
R5125.050-080-08	*m* 0.5	80	40.0	41.0	5	8	22	13	4	2xM 4	5.56	67.0
R5125.050-090-08	*m* 0.5	90	45.0	46.0	5	8	22	13	4	2xM 4	6.36	80.1
R5125.050-096-08	*m* 0.5	96	48.0	49.0	5	8	22	13	4	2xM 4	6.84	88.7
R5125.050-100-08	*m* 0.5	100	50.0	51.0	5	8	25	13	4	2xM 4	7.16	101.4
R5125.050-110-08	*m* 0.5	110	55.0	56.0	5	8	25	13	4	2xM 4	7.97	117.6

Spur Gears - Module 0.5 - Steel

carbon steel - 25-120 teeth



Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	d_4	l_1	l_2	Thread d_4	Torque Nm max.	Weight g
R5125.050-120-08	*m* 0.5	120	60.0	61.0	5	8	25	13	4	2xM 4	8.78	135.4





R5126

Material
Stainless steel (SUS 304, JIS G 4303).
Accuracy to JIS B 1702-1 (ISO) class 9.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,015 - 0,045mm.

Tips
For module 0.75 stainless steel gears with more teeth, see R5128 & R5129.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

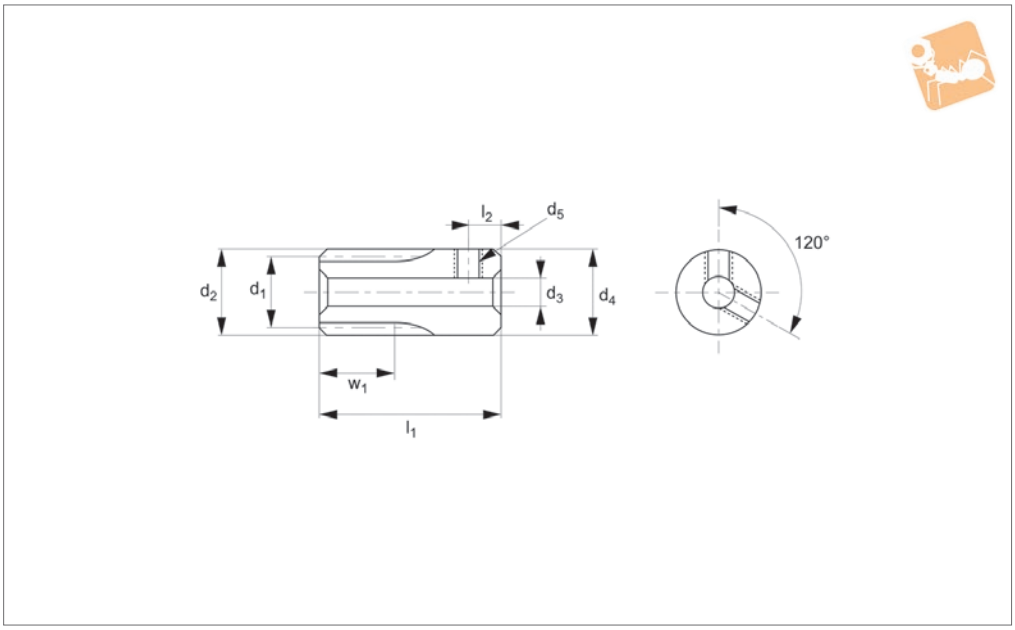
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	l_1	l_2	Torque Nm max.	Weight g
R5126.075-010	*m* 0.75	10	7.5	9	8	9	55	47	0.52	26.5

Spur Gears - Module 0.75 - Steel

carbon steel - 14-15 teeth



R5128



Material

Carbon steel (ISO C45). Accuracy to JIS B 1702-1 (ISO) class 8- 9.

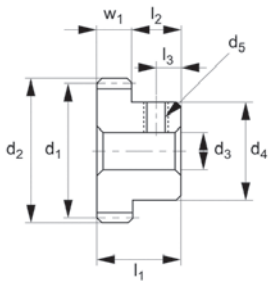
Technical Notes

20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,015 - 0,045mm.

Tips

For a module 0.75 steel gear with 10 teeth, see R5126; or for 16-120 teeth, see R5129. Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5128.075-014	*m* 0.75	14	10.5	12.0	8	5	12.0	20	3.0	M 3	0.95	12.9
R5128.075-015	*m* 0.75	15	11.3	12.8	8	5	12.8	20	3.0	M 3	1.07	15.0





R5129

Material
Stainless steel (SUS 304, JIS G 4303).
Accuracy to JIS B 1702-1 (ISO) class 9.

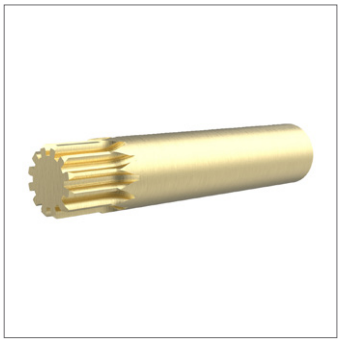
Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,015 - 0,045mm.

Tips
For module 0.75 stainless steel gears with fewer teeth, see R5126 & R5128.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

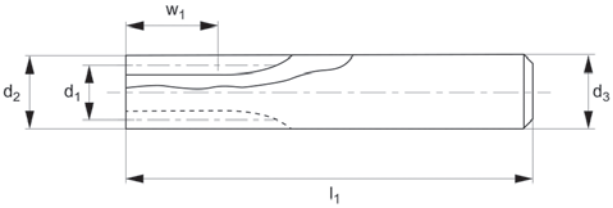
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	l_3	Thread d_5	Torque Nm max.	Weight g
R5129.075-016	*m* 0.75	16	12.0	13.5	8	5	10	15	7	3.5	M 3	1.18	9.1
R5129.075-020	*m* 0.75	20	15.0	16.5	8	6	12	15	7	3.5	M 4	1.67	13.9
R5129.075-022	*m* 0.75	22	16.5	18.0	8	6	12	15	7	3.5	M 4	1.92	16.3
R5129.075-024	*m* 0.75	24	18.0	19.5	8	6	14	15	7	3.5	M 4	2.18	21.0
R5129.075-025	*m* 0.75	25	18.8	20.3	8	6	14	15	7	3.5	M 4	2.31	22.4
R5129.075-026	*m* 0.75	26	19.5	21.0	8	6	14	15	7	3.5	M 4	2.44	23.8
R5129.075-028	*m* 0.75	28	21.0	22.5	8	6	14	15	7	3.5	M 4	2.70	26.9
R5129.075-048	*m* 0.75	48	36.0	37.5	6	6	20	15	9	4.0	M 4	4.08	67.0

Spur Gears - Module 0.75 - Brass

brass - 10-12 teeth



R5130

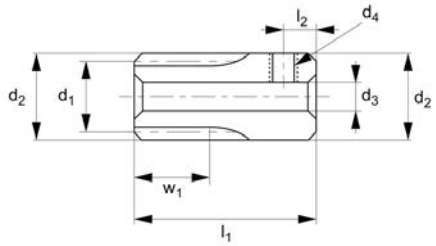


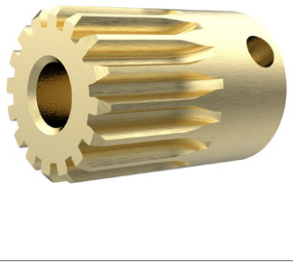
Material
Brass (C3604B). Accuracy to JIS B 1702-1 (ISO) class 9.

Technical Notes
20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,015 - 0,045mm.

Tips
For module 0.75 brass gears with 14-48 teeth, see R5132 & R5133; for 50-120 teeth, see R5135 & R5136.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	l_1	Torque Nm max.	Weight g
R5130.075-010	*m* 0.75	10	7.5	9.0	8	9	55	0.21	28.4
R5130.075-012	*m* 0.75	12	9.0	10.5	8	11	55	0.29	42.3





R5132

Material
Brass (C3604B). Accuracy to JIS B 1702-1 (ISO) class 9.

Technical Notes
20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,015 - 0,045mm.

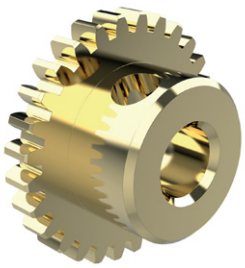
Tips
For module 0.75 brass gears with 10-12 teeth teeth, see R5130; for 16-48 teeth, see R5133; for gears with 50-120 teeth see R5135 (hubless) & R5136.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

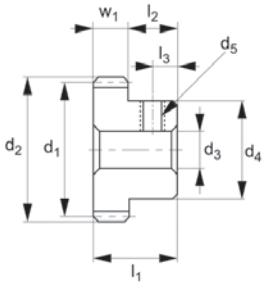
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	l_1	l_2	Thread d_4	Torque Nm max.	Weight g
R5132.075-014	*m* 0.75	14	10.5	12.0	8	5	20	3	M 3	0.38	13.9
R5132.075-015	*m* 0.75	15	11.3	12.8	8	5	20	3	M 3	0.43	16.3
R5132.075-016	*m* 0.75	16	12.0	13.5	8	5	20	3	M 3	0.47	18.8
R5132.075-020	*m* 0.75	20	15.0	16.5	8	5	20	3	M 3	0.67	30.2

Spur Gears - Module 0.75 - Brass

brass - 16-48 teeth



R5133



Material

Brass (C3604B). Accuracy to JIS B 1702-1 (ISO) class 9.

Technical Notes

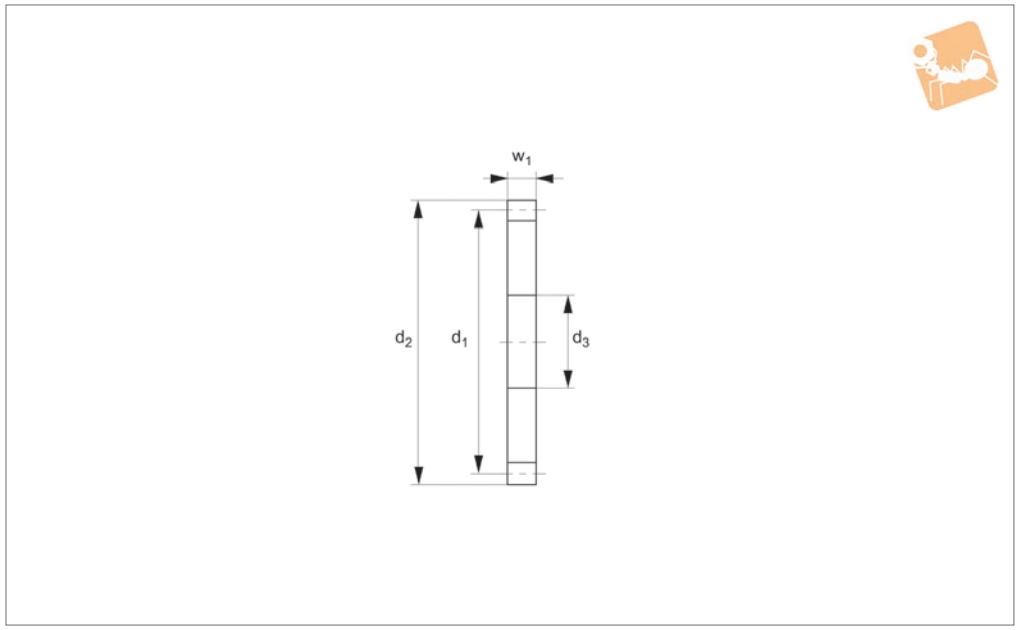
20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,015 - 0,045mm.

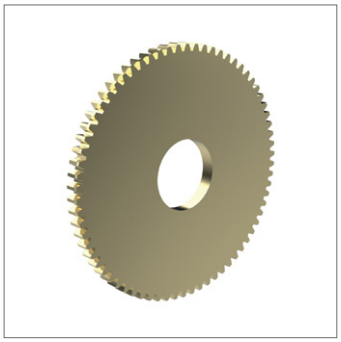
Tips

For module 0.75 brass gears with 10-12 teeth or 14-20 teeth, see R5130 & R5132; for 50-120 teeth see R5135 (hubless) & R5136.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	l_3	Thread d_5	Torque Nm max.	Weight g
R5133.075-016	*m* 0.75	16	12.0	13.5	3	5	10	10	7	3.5	M 3	0.18	5.8
R5133.075-018	*m* 0.75	18	13.5	15.0	3	5	11	10	7	3.5	M 3	0.21	7.5
R5133.075-020	*m* 0.75	20	15.0	16.5	3	6	12	10	7	3.5	M 4	0.25	8.6
R5133.075-024	*m* 0.75	24	18.0	19.5	3	6	14	10	7	3.5	M 4	0.33	11.7
R5133.075-025	*m* 0.75	25	18.8	20.3	3	6	14	10	7	3.5	M 4	0.35	12.3
R5133.075-026	*m* 0.75	26	19.5	21.0	3	6	14	10	7	3.5	M 4	0.37	12.9
R5133.075-028	*m* 0.75	28	21.0	22.5	3	6	14	10	7	3.5	M 4	0.40	14.1
R5133.075-030	*m* 0.75	30	22.5	24.0	3	6	15	10	7	3.5	M 4	0.45	16.7
R5133.075-032	*m* 0.75	32	24.0	25.5	3	6	15	10	7	3.5	M 4	0.49	18.1
R5133.075-035	*m* 0.75	35	26.3	27.8	3	6	18	10	7	3.5	M 4	0.55	24.9
R5133.075-036	*m* 0.75	36	27.0	28.5	3	6	18	10	7	3.5	M 4	0.57	25.7
R5133.075-040	*m* 0.75	40	30.0	31.5	3	6	20	10	7	3.5	M 4	0.65	33.8
R5133.075-042	*m* 0.75	42	31.5	33.0	3	6	20	10	7	3.5	M 4	0.69	35.6
R5133.075-045	*m* 0.75	45	33.8	35.3	3	6	20	10	7	3.5	M 4	0.75	38.6
R5133.075-048	*m* 0.75	48	36.0	37.5	3	6	20	10	7	3.5	M 4	0.82	41.7





R5135

Material
Brass (C3604B). Accuracy to JIS B 1702-1 (ISO) class 9.

Technical Notes
20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,015 - 0,045mm.

Tips
For module 0.75 brass gears with fewer teeth, see R5130, R5132 & R5133. For a version of this product with hub, see R5136.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

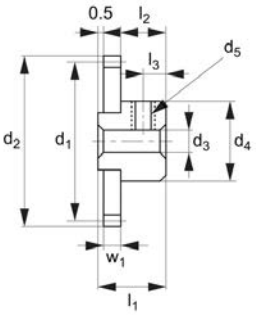
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	Torque Nm max.	Weight g
R5135.075-050	*m* 0.75	50	37.5	39.0	3	15	0.86	23.7
R5135.075-055	*m* 0.75	55	41.3	42.8	3	15	0.96	29.6
R5135.075-056	*m* 0.75	56	42.0	43.5	3	15	0.98	30.8
R5135.075-058	*m* 0.75	58	43.5	45.0	3	15	1.03	33.4
R5135.075-060	*m* 0.75	60	45.0	46.5	3	15	1.07	36.1
R5135.075-062	*m* 0.75	62	46.5	48.0	3	15	1.11	38.8
R5135.075-064	*m* 0.75	64	48.0	49.5	3	15	1.16	41.6
R5135.075-066	*m* 0.75	66	49.5	51.0	3	15	1.20	44.6
R5135.075-068	*m* 0.75	68	51.0	52.5	3	15	1.24	47.6
R5135.075-070	*m* 0.75	70	52.5	54.0	3	15	1.28	50.7
R5135.075-072	*m* 0.75	72	54.0	55.5	3	15	1.33	53.9
R5135.075-075	*m* 0.75	75	56.3	57.8	3	15	1.39	38.9
R5135.075-080	*m* 0.75	80	60.0	61.5	3	15	1.50	67.6
R5135.075-085	*m* 0.75	85	63.8	65.3	3	15	1.61	76.9
R5135.075-090	*m* 0.75	90	67.5	69.0	3	15	1.72	86.7
R5135.075-095	*m* 0.75	95	71.3	72.8	3	15	1.82	97.2
R5135.075-100	*m* 0.75	100	75.0	76.5	3	15	1.93	108.1
R5135.075-105	*m* 0.75	105	78.8	80.3	3	15	2.04	119.7
R5135.075-110	*m* 0.75	110	82.5	84.0	3	15	2.15	131.8
R5135.075-115	*m* 0.75	115	86.3	87.8	3	15	2.26	144.5
R5135.075-120	*m* 0.75	120	90.0	91.5	3	15	2.37	157.7

Spur Gears - Module 0.75 - Brass

brass - 50-120 teeth



R5136



Material

Brass (C3604B). Accuracy to JIS B 1702-1 (ISO) class 9.

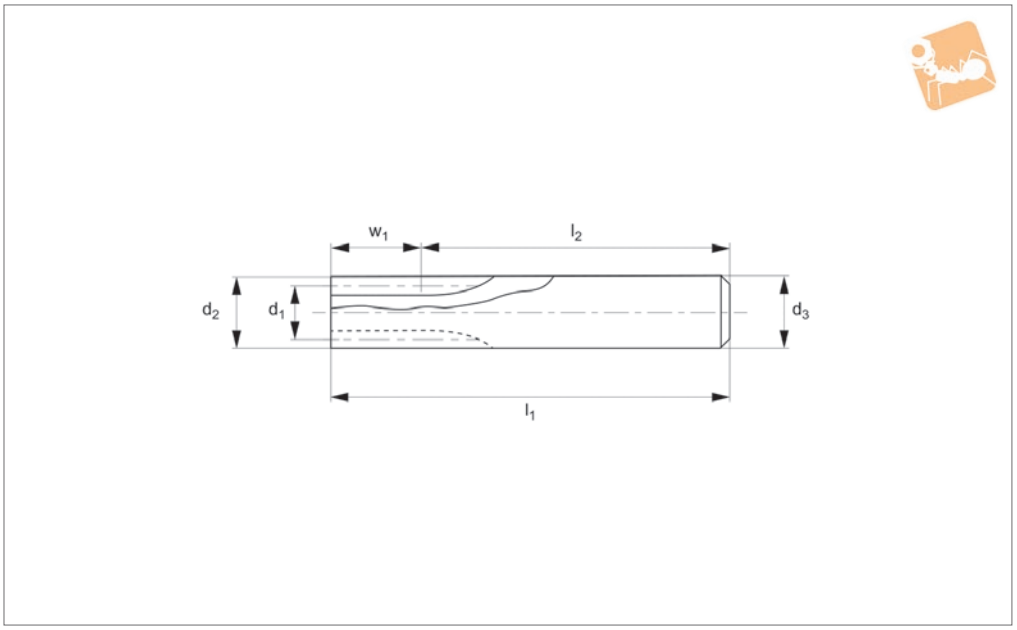
Technical Notes

20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,015- 0,045mm.

Tips

For module 0.75 brass gears with fewer teeth, see R5130, R5132 & R5133. For a hubless version of this product, see R5135. Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	l_3	Thread d_5	Torque Nm max.	Weight g
R5136.075-050	*m* 0.75	50	37.5	39.0	3	6	20	10.5	7	3.5	M 4	0.86	43.8
R5136.075-055	*m* 0.75	55	41.3	42.8	3	6	20	10.5	7	3.5	M 4	0.96	49.7
R5136.075-056	*m* 0.75	56	42.0	43.5	3	6	20	10.5	7	3.5	M 4	0.98	50.9
R5136.075-058	*m* 0.75	58	43.5	45.0	3	6	20	10.5	7	3.5	M 4	1.03	53.5
R5548.075-060	*m* 0.75	60	45.0	46.5	3	6	20	10.5	7	3.5	M 4	1.07	56.2
R5136.075-062	*m* 0.75	62	46.5	48.0	3	6	20	10.5	7	3.5	M 4	1.11	58.9
R5136.075-064	*m* 0.75	64	48.0	49.5	3	6	20	10.5	7	3.5	M 4	1.16	61.8
R5136.075-066	*m* 0.75	66	49.5	51.0	3	6	20	10.5	7	3.5	M 4	1.20	64.7
R5136.075-068	*m* 0.75	68	51.0	52.5	3	6	20	10.5	7	3.5	M 4	1.24	67.7
R5136.075-070	*m* 0.75	70	52.5	54.0	3	6	20	10.5	7	3.5	M 4	1.28	70.8
R5136.075-072	*m* 0.75	72	54.0	55.5	3	6	20	10.5	7	3.5	M 4	1.33	74.0
R5136.075-075	*m* 0.75	75	56.3	57.8	3	6	20	10.5	7	3.5	M 4	1.39	79.0
R5136.075-080	*m* 0.75	80	60.0	61.5	3	6	20	10.5	7	3.5	M 4	1.50	87.7
R5136.075-085	*m* 0.75	85	63.8	65.3	3	6	20	10.5	7	3.5	M 4	1.61	97.0
R5136.075-090	*m* 0.75	90	67.5	69.0	3	6	20	10.5	7	3.5	M 4	1.72	106.9
R5136.075-095	*m* 0.75	95	71.3	72.8	3	6	20	10.5	7	3.5	M 4	1.82	117.3
R5136.075-100	*m* 0.75	100	75.0	76.5	3	6	20	10.5	7	3.5	M 4	1.93	128.3
R5136.075-105	*m* 0.75	105	78.8	80.3	3	6	20	10.5	7	3.5	M 4	2.04	139.8
R5136.075-110	*m* 0.75	110	82.5	84.0	3	6	20	10.5	7	3.5	M 4	2.15	151.9
R5136.075-115	*m* 0.75	115	86.3	87.8	3	6	20	10.5	7	3.5	M 4	2.26	164.6
R5136.075-120	*m* 0.75	120	90.0	91.5	3	6	20	10.5	7	3.5	M 4	2.37	177.8





R5137

Material
Carbon steel (ISO C45). Accuracy to JIS B 1702-1 (ISO) class 8-9.

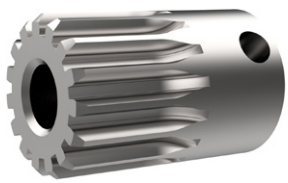
Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,015 - 0,045mm.

Tips
For module 0.75 steel gears with 14-15 teeth, see R5138; for 16-120 teeth, see R5140.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

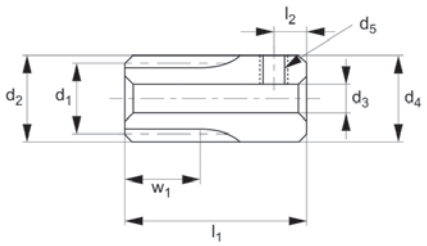
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	l_1	l_2	Torque Nm max.	Weight g
R5137.075-010	*m* 0.75	10	7.5	9.0	8	9	55	47	1.06	26.3
R5137.075-012	*m* 0.75	12	9.5	10.5	8	11	55	47	1.46	39.1

Spur Gears - Module 0.75 - Steel

carbon steel - 14-15 teeth



R5138



Material

Carbon steel (ISO C45).
Accuracy to JIS B 1702-1 (ISO) class 8- 9.

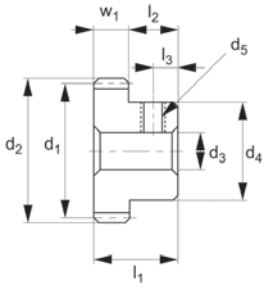
Technical Notes

20° pressure angle, full depth tooth.
Amount of backlash when assembling gears= 0,015- 0,045 mm.

Tips

For module 0.75 steel gears with 10-12 teeth, see R5137; for 16-120 teeth see R5140.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5138.075-014	*m* 0.75	14	10.5	12.0	8	5	12.0	20	3	M 3	1.90	12.9
R5138.075-015	*m* 0.75	15	11.3	12.8	8	5	12.8	20	3	M 3	2.13	15.0





R5140

Material
Carbon steel (ISO C45).
Accuracy to JIS B 1702-1 (ISO) class 8- 9.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears= 0,015- 0,045 mm.

Tips
For module 0.75 steel gears with 10-12 teeth or 14-15 teeth, see R5137 & R5138.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

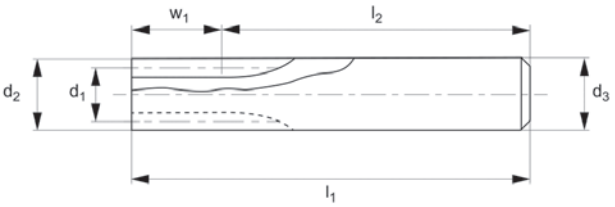
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	l_3	Thread d_5	Torque Nm max.	Weight g
R5140.075-016	*m* 0.75	16	12.0	13.5	8	5	10	15	7	3.5	M 4	2.37	8.9
R5140.075-018	*m* 0.75	18	13.5	15.0	8	5	11	15	7	3.5	M 4	2.84	11.7
R5140.075-020	*m* 0.75	20	15.0	16.5	8	6	12	15	7	3.5	M 4	3.34	13.8
R5140.075-024	*m* 0.75	24	18.0	19.5	8	6	14	15	7	3.5	M 4	4.35	20.8
R5140.075-028	*m* 0.75	28	21.0	22.5	8	6	14	15	7	3.5	M 4	5.40	26.6
R5140.075-030	*m* 0.75	30	22.5	24.0	8	6	15	15	7	3.5	M 4	5.93	31.0
R5140.075-032	*m* 0.75	32	24.0	25.5	6	6	15	15	9	4.0	M 4	4.85	30.1
R5140.075-034	*m* 0.75	35	26.3	27.8	6	6	18	15	9	4.0	M 4	5.46	39.7
R5140.075-036	*m* 0.75	36	27.0	28.5	6	6	18	15	9	4.0	M 4	5.66	41.2
R5140.075-040	*m* 0.75	40	30.0	31.5	6	6	20	15	9	4.0	M 4	6.49	51.7
R5140.075-045	*m* 0.75	45	33.8	35.3	6	6	20	15	9	4.0	M 4	7.53	60.5
R5140.075-048	*m* 0.75	48	36.0	37.5	6	6	20	15	9	4.0	M 4	8.15	66.3
R5140.075-050	*m* 0.75	50	37.5	39.0	6	6	20	15	9	4.0	M 4	8.58	70.4
R5140.075-056	*m* 0.75	56	42.0	43.5	6	6	20	15	9	4.0	M 4	9.85	83.6
R5140.075-060	*m* 0.75	60	45.0	46.5	6	6	22	15	9	4.0	M 4	10.70	97.9
R5140.075-064	*m* 0.75	64	48.0	49.5	6	6	22	15	9	4.0	M 4	11.56	108.2
R5140.075-070	*m* 0.75	70	52.5	54.0	6	6	22	15	9	4.0	M 4	12.85	124.9
R5140.075-072	*m* 0.75	72	54.0	55.5	6	6	25	15	9	4.0	M 4	13.28	138.5
R5140.075-080	*m* 0.75	80	60.0	61.5	6	8	25	15	9	4.0	M 4	15.01	161.3
R5140.075-090	*m* 0.75	90	67.5	69.0	6	8	30	15	9	4.0	M 4	17.16	211.8
R5140.075-100	*m* 0.75	100	75.0	76.5	6	8	30	15	9	4.0	M 4	19.34	251.3
R5140.075-120	*m* 0.75	120	90.0	91.5	6	8	30	15	9	4.0	M 4	23.71	342.9

Spur Gears - Module 0.8 - Stainless

stainless steel - 10-12 teeth



R5141



Material

Stainless steel (SUS 304, JIS G 4303).
Accuracy to JIS B 1702-1 (ISO) class 9.

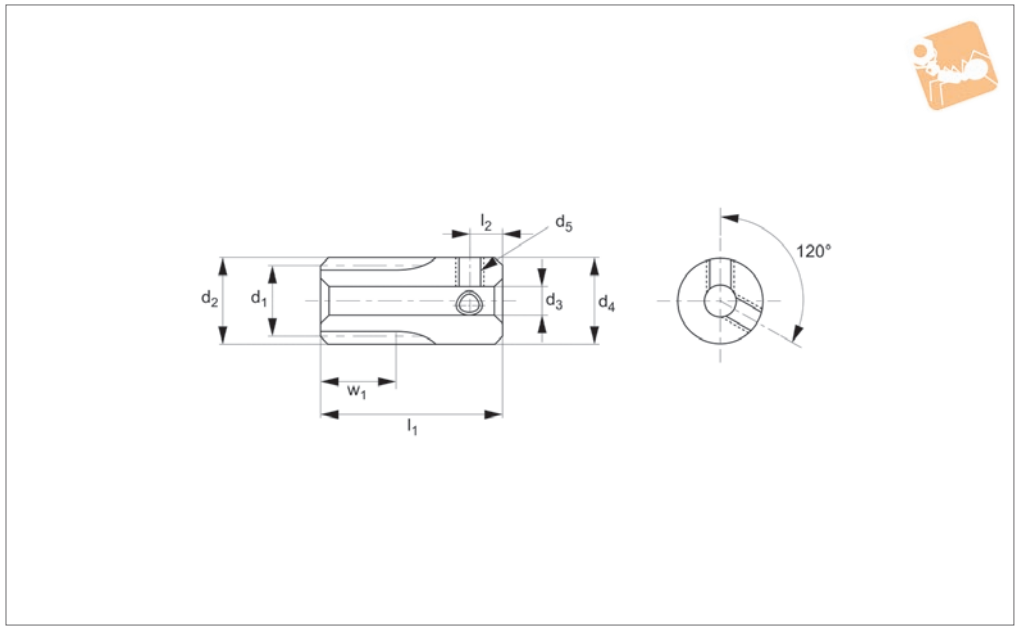
Technical Notes

20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,016 - 0,048mm.

Tips

For module 0.8 stainless steel gears with more teeth, see R5142, R5144 (boreless) & R5146.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	l_1	l_2	Torque Nm max.	Weight g
R5141.080-010	*m* 0.8	10	8.0	9.6	10	10	60	50	0.74	35.1
R5141.080-012	*m* 0.8	12	9.6	11.2	10	12	60	50	1.04	50.6





R5142

Material
Stainless steel (SUS 304, JIS G 4303).
Accuracy to JIS B 1702-1 (ISO) class 9.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,016 - 0,048mm.

Tips
For a version of this product with fewer teeth, see R5141. Or, for module 0.8 stainless steel gears with more teeth, see R5144 (boreless) & R5146.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

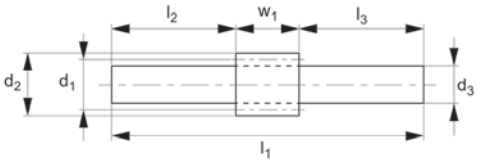
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5142.080-014	*m* 0.8	14	11.2	12.8	7	4	12.8	20	13	2xM 3	0.95	16.3
R5142.080-015	*m* 0.8	15	12.0	13.6	7	4	13.6	20	13	2xM 3	1.06	18.8

Spur Gears - Module 0.8 - Stainless

stainless steel - 14-20 teeth - boreless



R5144



Material

Stainless steel (SUS 304, JIS G 4303). Accuracy to JIS B 1702-1 (ISO) class 9.

Technical Notes

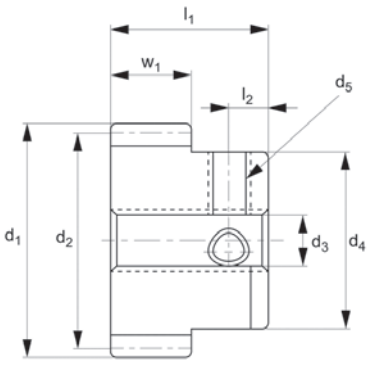
20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,016 - 0,048mm.

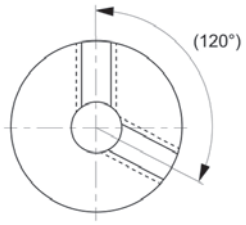
Tips

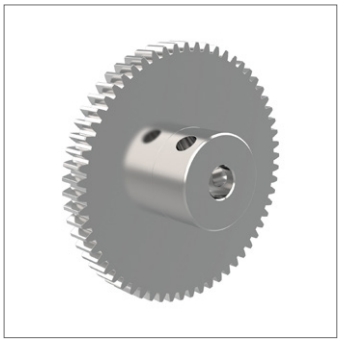
For a version of this product with a bore, see R5142. For stainless steel module 0.8 gears with 10-12 teeth, see R5141; for 16-120 teeth, see R5146.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	l_1	l_2	l_3	Torque Nm max.	Weight g
R5144.080-016	*m* 0.8	16	12.8	14.4	7	6	95	28	60	1.18	26.9
R5144.080-020	*m* 0.8	20	16.0	17.6	7	10	95	28	60	1.66	66.0







R5146

Material
Stainless steel (SUS 304, JIS G 4303).
Accuracy to JIS B 1702-1 (ISO) class 9.

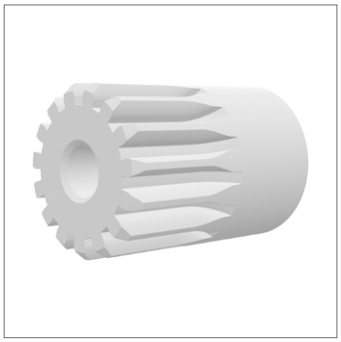
Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,016 - 0,048mm.

Tips
For module 0.8 stainless steel gears with fewer teeth, see R5142; for boreless gears with fewer teeth, see R5141 &R5144.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

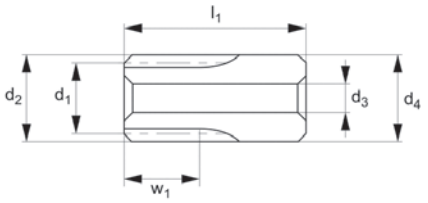
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5146.08-016-12-5-04	*m* 0.8	16	12.8	14.4	5	4	10	12	3	2xM 3	0.84	8.0
R5146.08-016-14-7-04	*m* 0.8	16	12.8	14.4	7	4	10	14	3	2xM 3	1.18	9.8
R5146.08-018-14-7-04	*m* 0.8	18	14.4	16.0	7	4	10	14	3	2xM 3	1.42	11.7
R5146.08-020-12-5-04	*m* 0.8	20	16.0	17.6	5	4	10	12	3	2xM 3	1.19	10.9
R5146.08-020-14-7-04	*m* 0.8	20	16.0	17.6	7	4	10	14	3	2xM 3	1.66	13.9
R5146.08-022-12-5-04	*m* 0.8	22	17.6	19.2	5	4	10	12	3	2xM 3	1.37	12.5
R5146.08-022-14-7-04	*m* 0.8	22	17.6	19.2	7	4	10	14	3	2xM 3	1.91	16.2
R5146.08-024-12-5-05	*m* 0.8	24	19.2	20.8	5	5	15	12	4	2xM 4	1.55	18.6
R5146.08-024-14-7-05	*m* 0.8	24	19.2	20.8	7	5	15	14	4	2xM 4	2.17	22.9
R5146.08-025-12-5-05	*m* 0.8	25	20.0	21.6	5	5	15	12	4	2xM 4	1.64	19.6
R5146.08-025-14-7-05	*m* 0.8	25	20.0	21.6	7	5	15	14	4	2xM 4	2.30	24.2
R5146.08-028-12-5-05	*m* 0.8	28	22.4	24.0	5	5	15	12	4	2xM 4	1.92	22.7
R5146.08-028-14-7-05	*m* 0.8	28	22.4	24.0	7	5	15	14	4	2xM 4	2.69	28.7
R5146.08-030-12-5-05	*m* 0.8	30	24.0	25.6	5	5	15	12	4	2xM 4	2.11	25.0
R5146.08-030-14-7-05	*m* 0.8	30	24.0	25.6	7	5	15	14	4	2xM 4	2.95	31.9
R5146.08-032-14-5-05	*m* 0.8	32	25.6	27.2	5	5	15	14	4	2xM 4	2.30	30.0
R5146.08-036-14-5-06	*m* 0.8	36	28.8	30.4	5	6	18	14	4	2xM 4	2.68	39.9
R5146.08-040-14-5-06	*m* 0.8	40	32.0	33.6	5	6	18	14	4	2xM 4	3.08	45.9
R5146.08-045-14-5-06	*m* 0.8	45	36.0	37.6	5	6	18	14	4	2xM 4	3.57	54.4
R5146.08-048-14-5-06	*m* 0.8	48	38.4	40.0	5	6	18	14	4	2xM 4	3.87	59.9
R5146.08-050-14-5-06	*m* 0.8	50	40.0	41.6	5	6	18	14	4	2xM 4	4.07	63.9
R5146.08-054-14-5-06	*m* 0.8	54	43.2	44.8	5	6	18	14	4	2xM 4	4.47	72.1
R5146.08-060-14-5-06	*m* 0.8	60	48.0	49.6	5	6	18	14	4	2xM 4	5.07	85.8
R5146.08-064-14-5-06	*m* 0.8	64	51.2	52.8	5	6	18	14	4	2xM 4	5.48	95.7
R5146.08-070-14-5-08	*m* 0.8	70	56.0	57.6	5	8	28	14	4	2xM 4	6.09	134.4
R5146.08-072-14-5-08	*m* 0.8	72	57.6	59.2	5	8	28	14	4	2xM 4	6.30	140.0
R5146.08-080-14-5-08	*m* 0.8	80	64.0	65.6	5	8	28	14	4	2xM 4	7.12	164.3
R5146.08-090-14-5-08	*m* 0.8	90	72.0	73.6	5	8	28	14	4	2xM 4	8.14	198.1
R5146.08-100-14-5-08	*m* 0.8	100	80.0	81.6	5	8	28	14	4	2xM 4	9.17	236.0
R5146.08-100-14-5-10	*m* 0.8	100	80.0	81.6	5	10	28	14	4	2xM 4	9.17	233.0

Spur Gears - Module 0.8

white polyacetal - 14-15 teeth



R5148



Material

White polyacetal (PA; also known as polyoxymethylene/POM), machined. Accuracy to JIS B 1702-1 (ISO) class 9-10.

Technical Notes

20° pressure angle, full depth tooth.

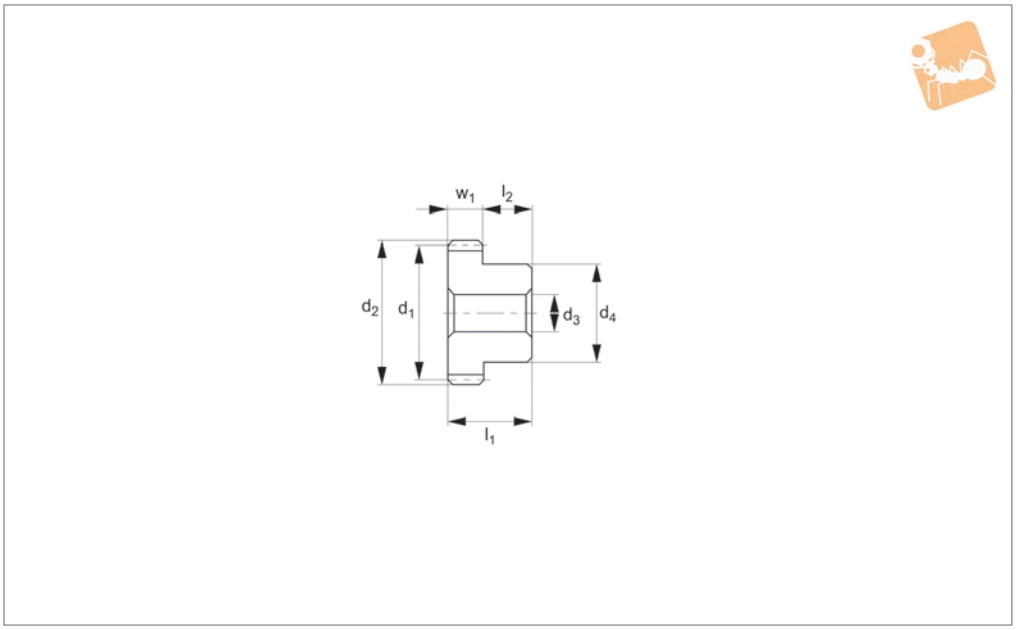
Amount of backlash when assembling gears = 0,016 - 0,048mm.

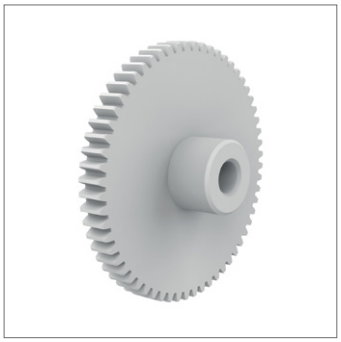
Tips

For module 0.8 white polyacetal gears with 16-120 teeth, see R5149. For versions with threaded holes for set screws, see R5150.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	Torque Nm max.	Weight g
R5148.080-014	*m* 0.8	14	11.2	12.8	7	4	12.8	20	0.48	3.0
R5148.080-015	*m* 0.8	15	12.0	13.6	7	4	13.6	20	0.51	3.4





R5149

Material
White polyacetal (PA, also known as polyoxymethylene/POM), machined. Accuracy to JIS B 1702-1 (ISO) class 9-10.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,016 - 0,048mm.

Tips
For a version of this product with 14-15 teeth, see R5148. For white polyacetal module 0.8 gears with threaded holes for set screws, see R5152.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

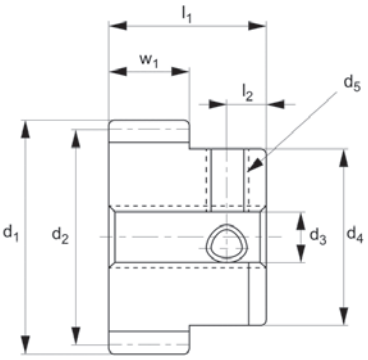
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	l_2	Torque Nm max.	Weight g
R5149.080-016	*m* 0.8	16	12.8	14.4	5	4	10.0	14	9	0.39	1.7
R5149.080-018	*m* 0.8	18	14.4	16.0	5	4	10.0	14	9	0.44	1.9
R5149.080-020	*m* 0.8	20	16.0	17.6	5	4	10.0	14	9	0.49	2.2
R5149.080-022	*m* 0.8	22	17.6	19.2	5	5	12.5	14	9	0.54	2.9
R5149.080-024	*m* 0.8	24	19.2	20.8	5	5	12.5	14	9	0.59	3.2
R5149.080-025	*m* 0.8	25	20.0	21.6	5	5	12.5	14	9	0.61	3.4
R5149.080-028	*m* 0.8	28	22.4	24.0	5	5	12.5	14	9	0.68	4.0
R5149.080-030	*m* 0.8	30	24.0	25.6	5	5	12.5	14	9	0.73	4.4
R5149.080-032	*m* 0.8	32	25.6	27.2	5	5	12.5	14	9	0.78	4.8
R5149.080-036	*m* 0.8	36	28.8	30.4	5	6	14.0	14	9	0.88	6.0
R5149.080-040	*m* 0.8	40	32.0	33.6	5	6	14.0	14	9	0.98	7.1
R5149.080-045	*m* 0.8	45	36.0	37.6	5	6	14.0	14	9	1.10	8.6
R5149.080-048	*m* 0.8	48	38.4	40.0	5	6	14.0	14	9	1.17	9.6
R5149.080-050	*m* 0.8	50	40.0	41.6	5	6	14.0	14	9	1.22	10.3
R5149.080-056	*m* 0.8	56	44.8	46.4	5	6	14.0	14	9	1.37	12.6
R5149.080-060	*m* 0.8	60	48.0	49.6	5	6	14.0	14	9	1.46	14.2
R5149.080-064	*m* 0.8	64	51.2	52.8	5	6	14.0	14	9	1.56	15.9
R5149.080-070	*m* 0.8	70	56.0	57.6	5	8	16.0	14	9	1.71	19.0
R5149.080-072	*m* 0.8	72	57.6	59.2	5	8	16.0	14	9	1.76	20.1
R5149.080-080	*m* 0.8	80	64.0	65.6	5	8	16.0	14	9	1.95	24.2
R5149.080-090	*m* 0.8	90	72.0	73.6	5	8	20.0	14	9	2.20	31.7
R5149.080-100	*m* 0.8	100	80.0	81.6	5	8	24.0	14	9	2.44	40.2
R5149.080-120	*m* 0.8	120	96.0	97.6	5	8	30.0	14	9	2.93	59.0

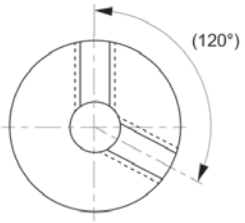
Spur Gears - Module 0.8 - Plastic

white polyacetal - set screw - 16-120 teeth



R5152





Material

White polyacetal (PA, also known as polyoxymethylene/POM), machined. Accuracy to JIS B 1702-1 (ISO) class 9-10.

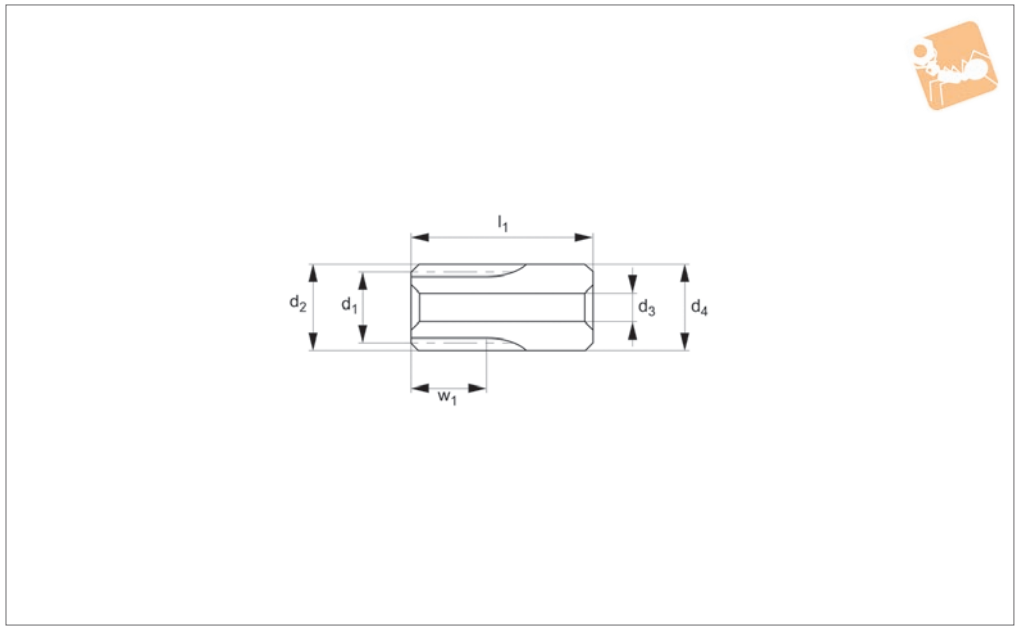
Technical Notes

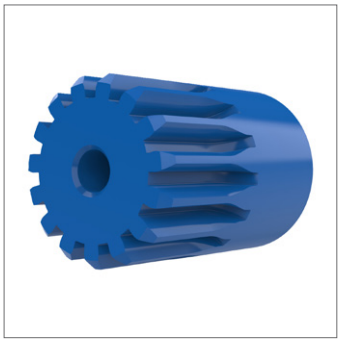
20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,016 - 0,048mm.

Tips

For module 0.8 white polyacetal gears with 14-15 teeth, see R5150. For versions of this product without threaded holes, see R5149 & R5150.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5152.080-016	*m* 0.8	16	12.8	14.4	5	3	10	12	4	2xM 3	0.39	1.5
R5152.080-020	*m* 0.8	20	16.0	17.6	5	3	12	12	4	2xM 3	0.49	2.4
R5152.080-025	*m* 0.8	25	20.0	21.6	5	3	16	12	4	2xM 3	0.61	4.0
R5152.080-028	*m* 0.8	28	22.4	24.0	5	3	20	12	4	2xM 3	0.68	5.7
R5152.080-030	*m* 0.8	30	24.0	25.6	5	3	20	12	4	2xM 3	0.73	6.1
R5152.080-032	*m* 0.8	32	25.6	27.2	5	3	20	12	4	2xM 3	0.78	6.6
R5152.080-036	*m* 0.8	36	28.8	30.4	5	4	22	12	4	2xM 4	0.88	8.1
R5152.080-040	*m* 0.8	40	32.0	33.6	5	4	22	12	4	2xM 4	0.98	9.2
R5152.080-060	*m* 0.8	60	48.0	49.6	5	4	22	12	4	2xM 4	1.46	16.3





R5156

Material
Blue polyacetal (PA, also known as polyoxymethylene/POM), machined. Accuracy to JIS B 1702-1 (ISO) class 9-10.

Technical Notes
20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,016 - 0,048mm.

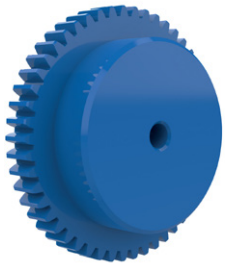
Blue polyacetal machined gears are suitable for use in food machinery applications. Approved by the FDA (USA) and by regulators in the EU and Japan, where the food has an alcohol percentage of <15%. Please clean gears thoroughly before use.

Tips
For module 0.8 blue polyacetal gears with 16-120 teeth, see R5157.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

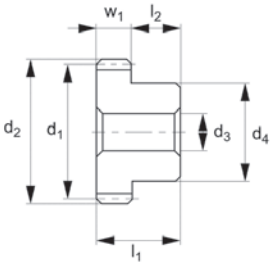
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	Torque Nm max.	Weight g
R5156.080-014	*m* 0.8	14	11.2	12.8	7	3	12.8	20	0.48	3.1
R5156.080-015	*m* 0.8	15	12.0	13.6	7	3	13.6	20	0.51	3.6

Spur Gears - Module 0.8 - Plastic

blue polyacetal - 16-120 teeth



R5157



Material

Blue polyacetal (PA, also known as poly-oxymethylene/POM), machined. Accuracy to JIS B 1702-1 (ISO) class 9-10.

Technical Notes

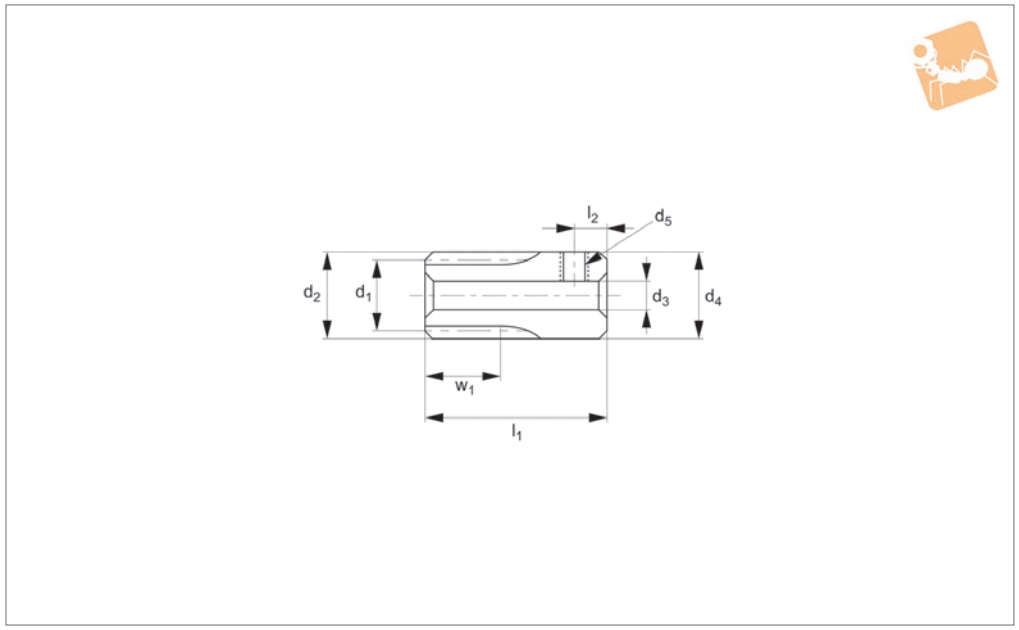
20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,016 - 0,048mm.

Blue polyacetal machined gears are suitable for use in food machinery applications. Approved by the FDA (USA) and by regulators in the EU and Japan, where the food has an alcohol percentage of <15%. Please clean gears thoroughly before use.

Tips

For module 0.8 blue polyacetal gears with 14-15 teeth, see R5156.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	l_2	Torque Nm max.	Weight g
R5157.080-016	*m* 0.8	16	12.8	14.4	5	3	10.0	12	7	0.39	1.5
R5157.080-018	*m* 0.8	18	14.4	16.0	5	3	12.0	12	7	0.44	2.1
R5157.080-020	*m* 0.8	20	16.0	17.6	5	3	12.0	12	7	0.49	2.4
R5157.080-022	*m* 0.8	22	17.6	19.2	5	3	15.0	12	7	0.54	3.3
R5157.080-024	*m* 0.8	24	19.2	20.8	5	3	16.0	12	7	0.59	3.9
R5157.080-025	*m* 0.8	25	20.0	21.6	5	3	16.0	12	7	0.61	4.1
R5157.080-028	*m* 0.8	28	22.4	24.0	5	3	20.0	12	7	0.68	5.7
R5157.080-030	*m* 0.8	30	24.0	25.6	5	3	20.0	12	7	0.73	6.1
R5157.080-032	*m* 0.8	32	25.6	27.2	5	3	20.0	12	7	0.78	6.6
R5157.080-036	*m* 0.8	36	28.8	30.4	5	4	22.0	12	7	0.88	8.1
R5157.080-040	*m* 0.8	40	32.0	33.6	5	4	22.0	12	7	0.98	9.2
R5157.080-045	*m* 0.8	45	36.0	37.6	5	4	28.0	12	7	1.10	13.0
R5157.080-048	*m* 0.8	48	38.4	40.0	5	4	30.0	12	7	1.17	14.9
R5157.080-050	*m* 0.8	50	40.0	41.6	5	4	30.0	12	7	1.22	15.6
R5157.080-056	*m* 0.8	56	44.8	46.4	5	4	35.0	12	7	1.37	20.4
R5157.080-060	*m* 0.8	60	48.0	49.6	5	4	38.0	12	7	1.46	23.7
R5157.080-064	*m* 0.8	64	51.2	52.8	5	4	38.0	12	7	1.56	25.4
R5157.080-070	*m* 0.8	70	56.0	57.6	5	5	42.0	12	7	1.71	30.6
R5157.080-072	*m* 0.8	72	57.6	59.2	5	5	45.0	12	7	1.76	33.7
R5157.080-080	*m* 0.8	80	64.0	65.6	5	5	50.0	12	7	1.95	41.7
R5157.080-090	*m* 0.8	90	72.0	73.6	5	5	54.0	12	7	2.20	50.9
R5157.080-100	*m* 0.8	100	80.0	81.6	5	5	58.0	12	7	2.44	61.1
R5157.080-120	*m* 0.8	120	96.0	97.6	5	5	68.0	12	7	2.93	86.4





R5158

Material
Brass (C3604B). Accuracy to JIS B 1702-1 (ISO) class 9.

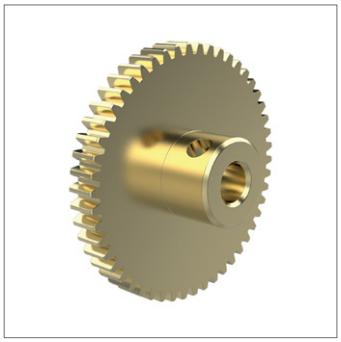
Technical Notes
20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,016 - 0,048mm.

Tips
For module 0.8 brass gears with 16-120 teeth, see R5160.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

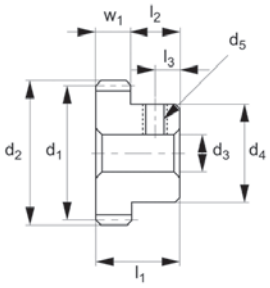
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5158.080-014	*m* 0.8	14	11.2	12.8	7	4	12.8	20	3	M 3	0.38	17.8
R5158.080-015	*m* 0.8	15	12.0	13.6	7	4	13.6	20	3	M 3	0.42	20.4

Spur Gears - Module 0.8

brass - 16-120 teeth



R5160

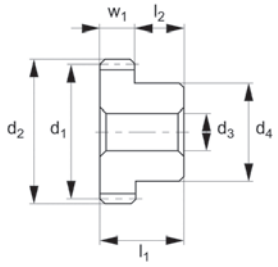


Material
Brass (C3604B).
Accuracy to JIS B 1702-1 (ISO) class 9.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,016 - 0,048mm.

Tips
For module 0.8 brass gears with 14-15 teeth see R5158.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	l_3	Thread d_5	Torque Nm max.	Weight g
R5160.080-032-05	*m* 0.8	32	25.6	27.2	5	5	12.5	14	9	4	M 3	0.92	28.8
R5160.080-056-05	*m* 0.8	56	44.8	46.4	5	6	14.0	14	9	4	M 4	1.87	75.1





R5161

Material
Carbon steel (ISO C45).
Accuracy to JIS B 1702-1 (ISO) class 8, (class 9 for hardened teeth versions). -H Gear teeth surface induction-hardened to 47-53 HRC for increased durability.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,016 - 0,048mm.

Tips
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

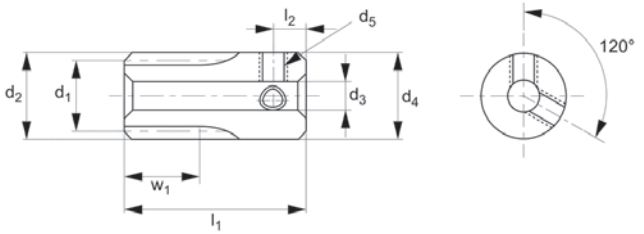
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	Torque Nm max.	Weight g
R5161.080-025	*m* 0.8	25	20	21.6	8	5	16	18	10	5.27	32.5
R5161.080-030	*m* 0.8	30	24	25.6	8	5	20	18	10	6.75	50.1
R5161.080-040	*m* 0.8	40	32	33.6	8	6	25	18	10	9.82	84.7
R5161.080-050	*m* 0.8	50	40	41.6	8	6	28	18	10	12.96	122.9
R5161.080-060	*m* 0.8	60	48	49.6	8	6	34	18	10	16.14	180.5
R5161.080-070	*m* 0.8	70	56	57.6	8	8 tol. H7	40	18	10	19.36	245.7
R5161.080-080	*m* 0.8	80	64	65.6	8	8 tol. H7	45	18	10	22.61	319.2
R5161.080-090	*m* 0.8	90	72	73.6	8	8 tol. H7	50	18	10	25.83	402.1
R5161.080-100	*m* 0.8	100	80	81.6	8	10 tol. H7	60	18	10	29.10	525.8
R5161.080-120	*m* 0.8	120	96	97.6	8	10 tol. H7	70	18	10	35.65	744.7

Spur Gears - Module 1

stainless steel - 14-16 teeth



R5163



Material

Stainless steel (SUS 304, JIS G 4303).
Accuracy to JIS B 1702-1 (ISO) class 9.

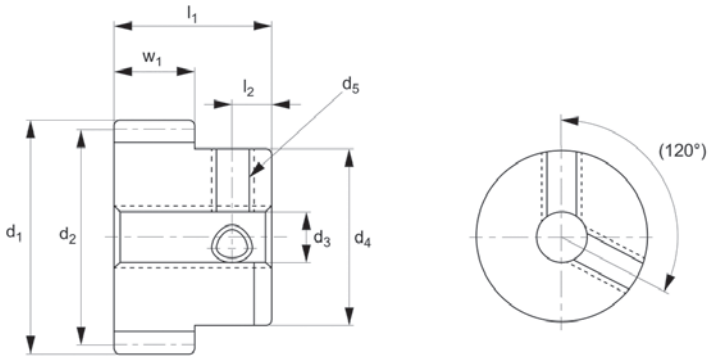
Technical Notes

20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,06 - 0,12mm.

Tips

For stainless steel module 1 gears with 17-120 teeth, see R5165.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5163.100-014	*m* 1	14	14	16	8	6	16	25	4	2xM 4	1.69	30.4
R5163.100-015	*m* 1	15	15	17	8	6	17	25	4	2xM 4	1.89	35.3
R5163.100-016	*m* 1	16	16	18	8	6	18	25	4	2xM 4	2.10	40.5





R5165

Material
Stainless steel (SUS 304, JIS G 4303).
Accuracy to JIS B 1702-1 (ISO) class 9.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,06 - 0,12mm.

Tips
For stainless steel module 1 gears with 14-16 teeth, see R5163.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

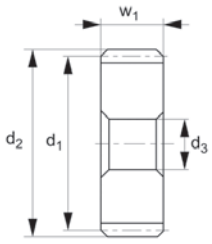
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5165.100-017-08	*m* 1	17	17	19	8	6	14	16	4	2xM 4	2.31	19.9
R5165.100-018-08	*m* 1	18	18	20	8	6	14	16	4	2xM 4	2.53	21.7
R5165.100-018-10	*m* 1	18	18	20	10	6	14	20	4	2xM 4	3.16	27.2
R5165.100-020-08	*m* 1	20	20	22	8	6	16	16	4	2xM 4	2.97	28.3
R5165.100-020-10	*m* 1	20	20	22	10	6	16	20	4	2xM 4	3.71	35.5
R5165.100-022-08	*m* 1	22	22	24	8	6	18	16	4	2xM 4	3.41	35.7
R5165.100-024-08	*m* 1	24	24	26	8	6	18	16	4	2xM 4	3.87	40.3
R5165.100-024-10	*m* 1	24	24	26	10	6	18	20	4	2xM 4	4.84	50.6
R5165.100-025-08	*m* 1	25	25	27	8	6	18	16	4	2xM 4	4.10	42.7
R5165.100-025-10	*m* 1	25	25	27	10	6	20	20	4	2xM 4	5.12	58.2
R5165.100-026-08	*m* 1	26	26	28	8	6	20	16	4	2xM 4	4.33	48.9
R5165.100-028-08	*m* 1	28	28	30	8	6	20	16	4	2xM 4	4.80	54.2
R5165.100-028-10	*m* 1	28	28	30	10	6	20	20	4	2xM 4	6.00	68.1
R5165.100-030-08	*m* 1	30	30	32	8	6	24	16	4	2xM 4	5.27	68.5
R5165.100-030-10	*m* 1	30	30	32	8	6	24	20	4	2xM 4	6.68	86.0
R5165.100-032-06	*m* 1	32	32	34	10	6	24	16	4	2xM 4	4.31	69.1
R5165.100-034-06	*m* 1	34	34	36	6	6	24	16	4	2xM 4	4.67	74.0
R5165.100-035-06	*m* 1	35	35	37	6	6	24	16	4	2xM 4	4.85	76.6
R5165.100-036-06	*m* 1	36	36	38	6	8	24	16	4	2xM 4	5.03	76.6
R5165.100-040-06	*m* 1	40	40	42	6	8	28	16	4	2xM 4	5.77	100.6
R5165.100-044-06	*m* 1	44	44	46	6	8	28	16	4	2xM 4	6.50	113.1
R5165.100-048-06	*m* 1	48	48	50	6	8	28	16	4	2xM 4	7.25	126.9
R5165.100-050-06	*m* 1	50	50	52	6	8	28	16	4	2xM 4	7.62	134.2
R5165.100-054-06	*m* 1	54	54	56	6	8	28	16	5	2xM 5	8.38	148.8
R5165.100-060-06	*m* 1	60	60	62	6	10	30	16	5	2xM 5	9.51	178.0
R5165.100-064-06	*m* 1	64	64	66	6	10	30	16	5	2xM 5	10.27	196.5
R5165.100-070-06	*m* 1	70	70	72	6	10	30	16	5	2xM 5	11.42	226.6
R5165.100-072-06	*m* 1	72	72	74	6	10	30	16	5	2xM 5	11.80	237.2
R5165.100-080-06	*m* 1	80	80	82	6	10	30	16	5	2xM 5	13.34	282.6
R5165.100-090-06	*m* 1	90	90	92	6	10	30	16	5	2xM 5	15.26	346.1

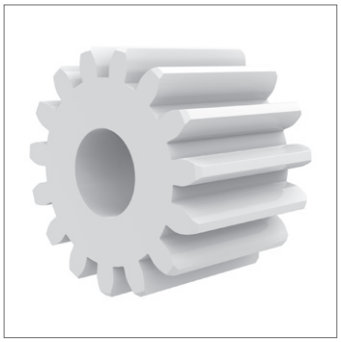
Spur Gears - Module 1

stainless steel - 17-120 teeth



Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5165.100-100-06	*m* 1	100	100	102	6	10	30	16	5	2xM 5	17.19	417.1
R5165.100-120-06	*m* 1	120	120	122	6	10	30	16	5	2xM 5	21.08	581.6





R5167

Material
White polyacetal, machined.
Accuracy to JIS B 1702-1 (ISO) class 9-10.

Technical Notes
20° pressure angle, full depth tooth.

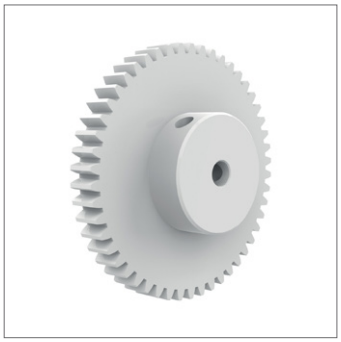
Amount of backlash when assembling gears = 0,06 - 0,12mm.

Tips
Module 1 for gears with 17-120 teeth see R5169. Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

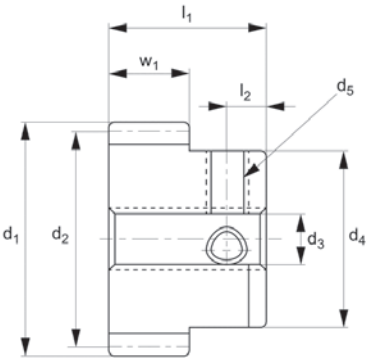
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	Torque Nm max.	Weight g
R5167.100-012	*m* 1	12	12	14	12	6	0.84	1.4
R5167.100-014	*m* 1	14	14	16	12	6	0.98	2.1
R5167.100-015	*m* 1	15	15	17	12	6	1.05	2.5
R5167.100-016	*m* 1	16	16	18	12	6	1.12	2.9

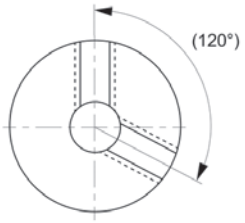
Spur Gears - Module 1 - Plastic

white polyacetal - set screw - 17-120 teeth



R5169





Material

White polyacetal, machined.
Accuracy to JIS B 1702-1 (ISO) class 9 - 10.

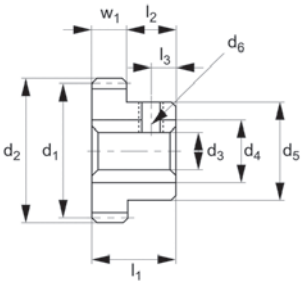
Technical Notes

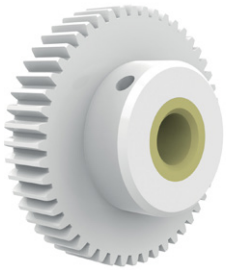
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,06-0,12mm.

Tips

Module 1 for gears with 12-16 teeth see R5167.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5169.100-017	*m* 1	17	17	19	8	4	14	16	4	2xM 4	0.80	4.0
R5169.100-018	*m* 1	18	18	20	8	4	15	16	4	2xM 4	0.84	4.5
R5169.100-020	*m* 1	20	20	22	8	5	16	16	4	2xM 4	0.94	5.3
R5169.100-024	*m* 1	24	24	26	8	5	20	16	4	2xM 4	1.12	8.2
R5169.100-025	*m* 1	25	25	27	8	5	22	16	4	2xM 4	1.17	9.3
R5169.100-026	*m* 1	26	26	28	8	5	22	16	4	2xM 4	1.22	9.8
R5169.100-030	*m* 1	30	30	32	8	5	24	16	4	2xM 4	1.40	12.6
R5169.100-032	*m* 1	32	32	34	6	5	24	14	4	2xM 4	2.00	11.5
R5169.100-036	*m* 1	36	36	38	6	5	24	14	4	2xM 4	2.25	13.3
R5169.100-040	*m* 1	40	40	42	6	5	24	14	4	2xM 4	2.50	15.3
R5169.100-048	*m* 1	48	48	50	6	5	24	14	4	2xM 4	3.00	20.0
R5169.100-050	*m* 1	50	50	52	6	5	24	14	4	2xM 4	3.13	21.3
R5169.100-052	*m* 1	52	52	54	6	5	24	14	4	2xM 4	3.25	22.6
R5169.100-060	*m* 1	60	60	62	6	5	24	14	4	2xM 4	3.75	28.6
R5169.100-064	*m* 1	64	64	66	6	5	24	14	4	2xM 4	4.00	31.9
R5169.100-072	*m* 1	72	72	74	6	5	24	14	4	2xM 4	4.50	39.1
R5169.100-080	*m* 1	80	80	82	6	5	24	14	4	2xM 4	5.00	47.2





R5170

Material
White polyacetal, with brass bushing.
Accuracy to JIS B 1702-1 (ISO) class 9-10.

Technical Notes
20° pressure angle, full depth tooth.

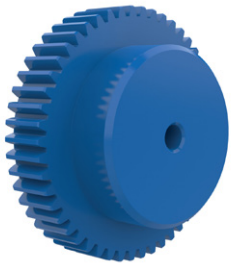
Amount of backlash when assembling gears = 0,06 - 0,12mm.

Tips
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.quency of use, type of working etc.

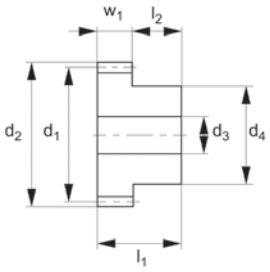
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	d_6	l_1	l_2	l_3	Thread d_5	Torque Nm max.	Weight g
R5170.100-020	*m* 1	20	20	22	10	8	16	12	20	10	4	M 4	1.54	16.8
R5170.100-024	*m* 1	24	24	26	10	8	20	12	20	10	4	M 4	1.84	17.5
R5170.100-025	*m* 1	25	25	27	10	8	20	12	20	10	4	M 4	1.92	18.0
R5170.100-028	*m* 1	28	28	30	10	10	24	16	20	10	4	M 4	2.15	35.0
R5170.100-030	*m* 1	30	30	32	10	10	24	16	20	10	4	M 4	2.30	36.4
R5170.100-032	*m* 1	32	32	34	10	10	24	16	20	10	4	M 4	2.46	37.8
R5170.100-036	*m* 1	36	36	38	10	10	30	16	20	10	4	M 4	2.76	38.0
R5170.100-040	*m* 1	40	40	42	10	10	30	16	20	10	4	M 4	3.07	41.4
R5170.100-045	*m* 1	45	45	47	10	10	30	16	20	10	4	M 4	3.45	46.1
R5170.100-048	*m* 1	48	48	50	10	10	30	16	20	10	4	M 4	3.68	49.2
R5170.100-050	*m* 1	50	50	52	10	10	30	16	20	10	4	M 4	3.84	51.4
R5170.100-060	*m* 1	60	60	62	10	10	30	16	20	10	4	M 4	4.60	63.7
R5170.100-070	*m* 1	70	70	72	10	10	30	16	20	10	4	M 4	5.37	78.2
R5170.100-080	*m* 1	80	80	82	10	10	30	16	20	10	4	M 4	6.13	94.9
R5170.100-090	*m* 1	90	90	92	10	10	30	16	20	10	4	M 4	6.89	113.9
R5170.100-100	*m* 1	100	100	102	10	10	30	16	20	10	4	M 4	7.66	135.1
R5170.100-120	*m* 1	120	120	122	10	10	30	16	20	10	4	M 4	9.18	184.1

Spur Gears - Module 1 - Plastic

blue polyacetal - 12-120 teeth



R5172



Material

Blue polyacetal, machined.
Accuracy to JIS B 1702-1 (ISO) class 9 - 10.

Technical Notes

20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,06 - 0,12mm.

Blue polyacetal machined gears are suitable for use in food machinery applications. Approved by the FDA (USA) and by regulators in the EU and Japan, where the food has an alcohol percentage of <15%. Please clean gears thoroughly before use.

Tips

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	l_2	Torque Nm max.	Weight g
R5172.100-012	m 1	12	12	14	10	4	8	20	10	0.69	1.9
R5172.100-014	m 1	14	14	16	10	4	10	20	10	0.92	2.9
R5172.100-016	m 1	16	16	18	10	4	12	20	10	1.12	4.0
R5172.100-017	m 1	17	17	19	10	4	14	20	10	1.21	5.0
R5172.100-018	m 1	18	18	20	10	4	15	20	10	1.31	5.7
R5172.100-020	m 1	20	20	22	10	5	16	20	10	1.54	6.6
R5172.100-022	m 1	22	22	24	10	5	18	20	10	1.61	8.3
R5172.100-023	m 1	23	23	25	10	5	20	20	10	1.71	9.7
R5172.100-024	m 1	24	24	26	10	5	20	20	10	1.84	10.2
R5172.100-025	m 1	25	25	27	10	5	22	20	10	1.92	11.6
R5172.100-026	m 1	26	26	28	10	5	22	20	10	1.99	12.2
R5172.100-028	m 1	28	28	30	10	5	24	20	10	2.15	14.4
R5172.100-030	m 1	30	30	32	10	5	24	20	10	2.30	15.7
R5172.100-032	m 1	32	32	34	10	5	24	20	10	2.46	17.1
R5172.100-035	m 1	35	35	37	10	5	24	20	10	2.59	19.3
R5172.100-036	m 1	36	36	38	10	5	26	20	10	2.76	21.2
R5172.100-038	m 1	38	38	40	10	5	28	20	10	2.94	24.0
R5172.100-040	m 1	40	40	42	10	5	30	20	10	3.07	27.0
R5172.100-042	m 1	42	42	44	10	5	30	20	10	3.21	28.8
R5172.100-044	m 1	44	44	46	10	5	32	20	10	3.39	32.1
R5172.100-045	m 1	45	45	47	10	5	32	20	10	3.45	33.1
R5172.100-048	m 1	48	48	50	10	5	36	20	10	3.68	39.2
R5172.100-050	m 1	50	50	52	10	5	36	20	10	3.84	41.4
R5172.100-052	m 1	52	52	54	10	5	40	20	10	4.03	47.0
R5172.100-055	m 1	55	55	57	10	5	40	20	10	4.23	50.5
R5172.100-056	m 1	56	56	58	10	5	40	20	10	4.29	51.7
R5172.100-060	m 1	60	60	62	10	5	46	20	10	4.60	62.6
R5172.100-064	m 1	64	64	66	10	5	48	20	10	4.91	70.2
R5172.100-065	m 1	65	65	67	10	5	48	20	10	4.97	71.6

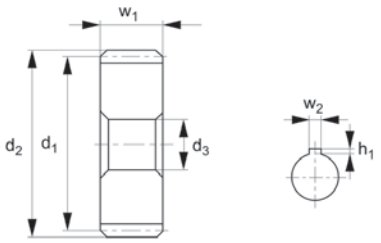
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	l_2	Torque Nm max.	Weight g
R5172.100-070	*m* 1	70	70	72	10	5	52	20	10	5.37	83.5
R5172.100-072	*m* 1	72	72	74	10	5	52	20	10	5.52	86.6
R5172.100-075	*m* 1	75	75	77	10	5	52	20	10	5.81	91.5
R5172.100-080	*m* 1	80	80	82	10	5	58	20	10	6.13	107.4
R5172.100-085	*m* 1	85	85	87	10	5	62	20	10	6.44	121.8
R5172.100-090	*m* 1	90	90	92	10	5	65	20	10	6.89	135.7
R5172.100-100	*m* 1	100	100	102	10	5	70	20	10	7.66	164.0
R5172.100-120	*m* 1	120	120	122	10	5	84	20	10	9.18	236.8

Spur Gears - Module 1

carbon steel - 14-68 teeth



R5173



Material

Carbon steel (ISO C45).
Accuracy to JIS B 1702-1 (ISO) class 8- 9.

Technical Notes

20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,04 - 0,10mm.

Tips

Module 1 for gears with 8-10 teeth see R5175 & R5176, for gears with 12-18 teeth see R5177, for gears with 14-120 teeth with set screw see R5179.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	Keyway (w_2 x h_1)	Torque Nm max.	Weight g
R5173.100-050-06-10	*m* 1	50	50	52	6	10	-	14.32	89
R5173.100-050-06-12	*m* 1	50	50	52	6	12	4×1,8	14.32	87
R5173.100-050-10-08	*m* 1	50	50	52	10	8	-	24.83	151
R5173.100-050-10-10	*m* 1	50	50	52	10	10	3×1,4	24.83	148
R5173.100-050-10-12	*m* 1	50	50	52	10	12	4×1,8	24.83	145
R5173.100-050-10-15	*m* 1	50	50	52	10	15	5×2,3	24.83	140
R5173.100-052-06-10	*m* 1	52	52	54	6	10	-	15.28	97
R5173.100-052-10-10	*m* 1	52	52	54	10	10	-	25.78	161
R5173.100-054-06-10	*m* 1	54	54	56	6	10	-	16.23	105
R5173.100-054-10-10	*m* 1	54	54	56	10	10	-	27.69	174
R5173.100-055-06-10	*m* 1	55	55	57	6	10	-	16.23	109
R5173.100-055-10-10	*m* 1	55	55	57	10	10	-	27.69	181
R5173.100-056-06-10	*m* 1	56	56	58	6	10	-	17.19	113
R5173.100-056-06-12	*m* 1	56	56	58	6	12	4×1,8	17.19	111
R5173.100-056-10-10	*m* 1	56	56	58	10	10	-	28.65	188
R5173.100-056-10-12	*m* 1	56	56	58	10	12	4×1,8	28.65	184
R5173.100-056-10-15	*m* 1	56	56	58	10	15	5×2,3	28.65	179
R5173.100-058-06-10	*m* 1	58	58	60	6	10	-	18.14	115
R5173.100-058-10-10	*m* 1	58	58	60	10	10	-	29.60	196
R5173.100-060-06-10	*m* 1	60	60	62	6	10	-	18.14	130
R5173.100-060-10-10	*m* 1	60	60	62	10	10	-	31.51	216
R5173.100-060-10-10K	*m* 1	60	60	62	10	10	3×1,4	31.51	216
R5173.100-060-10-12	*m* 1	60	60	62	10	12	4×1,8	31.51	213
R5173.100-060-10-15	*m* 1	60	60	62	10	15	5×2,3	31.51	208
R5173.100-062-06-10	*m* 1	62	62	64	6	10	-	19.10	139
R5173.100-064-06-10	*m* 1	64	64	66	6	10	-	20.05	148
R5173.100-064-10-10	*m* 1	64	64	66	10	10	-	33.42	247
R5173.100-065-06-10	*m* 1	65	65	67	6	10	-	20.05	153
R5173.100-065-10-10	*m* 1	65	65	67	10	10	-	34.38	255
R5173.100-068-06-10	*m* 1	68	68	70	6	10	-	21.96	168

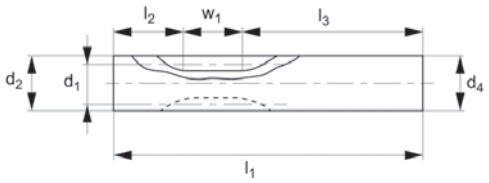
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	Keyway (w_2 x h_1)	Torque Nm max.	Weight g
R5173.100-068-10-10	*m* 1	68	68	70	10	10	-	36.29	279
R5173.100-030-08-08	*m* 1	30	30	32	8	8	-	10.54	42
R5173.100-030-10-10	*m* 1	30	30	32	10	10	3×1,4	13.19	49
R5173.100-030-12-08	*m* 1	30	30	32	12	8	-	15.81	62
R5173.100-030-12-10	*m* 1	30	30	32	12	10	3×1,4	15.81	59
R5173.100-030-12-12	*m* 1	30	30	32	12	12	4×1,8	15.81	56
R5173.100-032-06-08	*m* 1	32	32	34	6	8	-	8.62	36
R5173.100-032-10-08	*m* 1	32	32	34	10	8	-	14.37	60
R5173.100-032-10-12	*m* 1	32	32	34	10	12	4×1,8	14.37	54
R5173.100-034-06-08	*m* 1	34	34	36	6	8	-	9.34	41
R5173.100-034-10-08	*m* 1	34	34	36	10	8	-	15.57	68
R5173.100-035-06-08	*m* 1	35	35	37	6	8	-	9.70	43
R5173.100-035-10-08	*m* 1	35	35	37	10	8	-	16.17	72
R5173.100-036-06-08	*m* 1	36	36	38	6	8	-	10.07	46
R5173.100-036-10-08	*m* 1	36	36	38	10	8	-	16.78	76
R5173.100-036-10-10	*m* 1	36	36	38	10	10	3×1,4	16.78	74
R5173.100-038-10-08	*m* 1	38	38	40	10	8	-	18.00	86
R5173.100-040-06-08	*m* 1	40	40	42	6	8	-	11.53	57
R5173.100-040-06-10	*m* 1	40	40	42	6	10	3×1,4	11.53	56
R5173.100-040-06-12	*m* 1	40	40	42	6	12	4×1,8	11.53	54
R5173.100-040-10-08	*m* 1	40	40	42	10	8	-	19.18	95
R5173.100-040-10-10	*m* 1	40	40	42	10	10	3×1,4	19.18	93
R5173.100-040-10-12	*m* 1	40	40	42	10	12	4×1,8	19.18	90
R5173.100-042-10-08	*m* 1	42	42	44	10	8	-	20.45	105
R5173.100-044-06-08	*m* 1	44	44	46	6	8	-	13.01	70
R5173.100-044-10-08	*m* 1	44	44	46	10	8	-	21.68	116
R5173.100-045-06-08	*m* 1	45	45	47	6	8	-	13.38	73
R5173.100-045-06-10	*m* 1	45	45	47	6	10	3×1,4	13.38	71
R5173.100-045-10-08	*m* 1	45	45	47	10	8	-	22.30	121
R5173.100-045-10-15	*m* 1	45	45	47	10	15	5×2,3	22.30	111
R5173.100-046-10-10	*m* 1	46	46	48	10	10	-	22.92	125
R5173.100-048-06-08	*m* 1	48	48	50	6	8	-	14.32	83
R5173.100-048-06-10	*m* 1	48	48	50	6	10	3×1,4	14.32	82
R5173.100-048-06-12	*m* 1	48	48	50	6	12	4×1,8	14.32	80
R5173.100-048-10-10	*m* 1	48	48	50	10	10	-	23.87	136
R5173.100-048-10-15	*m* 1	48	48	50	10	15	5×2,3	23.87	128
R5173.100-014-08-05	*m* 1	14	14	16	8	5	-	3.38	9
R5173.100-014-08-06	*m* 1	14	14	16	8	6	-	3.38	8
R5173.100-014-12-06	*m* 1	14	14	16	12	6	-	5.07	12
R5173.100-015-08-05	*m* 1	15	15	17	8	5	-	3.79	10
R5173.100-015-08-06	*m* 1	15	15	17	8	6	-	3.79	10
R5173.100-015-12-06	*m* 1	15	15	17	12	6	-	5.68	14
R5173.100-016-08-05	*m* 1	16	16	18	8	5	-	4.21	12
R5173.100-016-08-06	*m* 1	16	16	18	8	6	-	4.21	11
R5173.100-016-12-08	*m* 1	16	16	18	12	8	-	6.31	15
R5173.100-017-08-05	*m* 1	17	17	19	8	5	-	4.63	13
R5173.100-018-08-05	*m* 1	18	18	20	8	5	-	5.06	15
R5173.100-018-08-06	*m* 1	18	18	20	8	6	-	5.06	15
R5173.100-019-08-06	*m* 1	19	19	21	8	6	-	6.38	16
R5173.100-019-12-08	*m* 1	19	19	21	12	8	-	9.57	22
R5173.100-020-08-06	*m* 1	20	20	22	8	6	-	5.94	18
R5173.100-020-08-08	*m* 1	20	20	22	8	8	-	5.94	15
R5173.100-020-12-08	*m* 1	20	20	22	12	8	-	8.90	25
R5173.100-020-12-10	*m* 1	20	20	22	12	10	3×1,4	8.90	20
R5173.100-021-08-06	*m* 1	21	21	23	8	6	-	6.38	20
R5173.100-022-08-06	*m* 1	22	22	24	8	6	-	6.83	23
R5173.100-022-12-10	*m* 1	22	22	24	12	10	-	10.24	29
R5173.100-023-08-06	*m* 1	23	23	25	8	6	-	7.28	25
R5173.100-024-08-06	*m* 1	24	24	26	8	6	-	7.74	27
R5173.100-024-08-08	*m* 1	24	24	26	8	8	-	9.67	26
R5173.100-024-12-08	*m* 1	24	24	26	12	8	-	11.61	38
R5173.100-024-12-10	*m* 1	24	24	26	12	10	3×1,4	11.61	35
R5173.100-025-08-06	*m* 1	25	25	27	8	6	-	8.20	30
R5173.100-025-08-08	*m* 1	25	25	27	8	8	-	10.29	28
R5173.100-025-08-10	*m* 1	25	25	27	8	10	3×1,4	10.29	26
R5173.100-025-12-08	*m* 1	25	25	27	12	8	-	12.30	42
R5173.100-025-12-10	*m* 1	25	25	27	12	10	3×1,4	12.30	39

Spur Gears - Module 1

carbon steel - 14-68 teeth



Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	Keyway (w_2 x h_1)	Torque Nm max.	Weight g
R5173.100-026-08-06	*m* 1	26	26	28	8	6	-	8.66	32
R5173.100-026-12-08	*m* 1	26	26	28	12	8	-	12.99	46
R5173.100-028-08-06	*m* 1	28	28	30	8	6	-	9.60	37
R5173.100-028-08-08	*m* 1	28	28	30	8	8	-	9.60	36





R5175

Material
Carbon steel (ISO C45).
Accuracy to JIS B 1702-1 (ISO) class 8-9.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,04 - 0,10mm.

Tips
Module 1 for gears with 14-120 teeth see R5173 & R5179, for gears with 8-10 see R5176, for gears with 12-18 see R5177.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

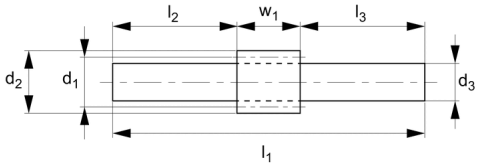
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	l_1	l_2	l_3	Torque Nm max.	Weight g
R5175.100-08	*m* 1	8	Shifted gear *	10.64	12	10.6	60	16	32	3.07	39.5
R5175.100-10	*m* 1	10	Shifted gear *	12.66	12	12.66	60	16	32	4.23	56.4

Spur Gears - Module 1

carbon steel - 8-10 teeth



R5176



Material

Carbon steel (ISO C45).
Accuracy to JIS B 1702-1 (ISO) class 8-9.

Technical Notes

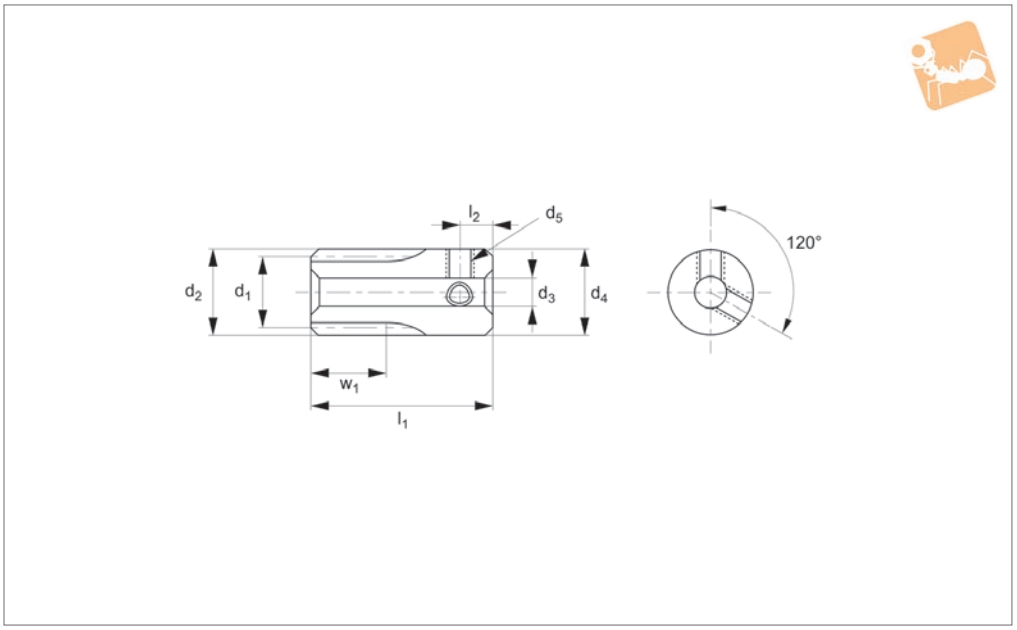
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,04 - 0,10mm.

Tips

Module 1 for gears with 14-120 teeth see R5173 & R5179, for gears with 8-10 teeth see R175, for gears with 12-18 teeth see R5177.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	l_1	l_2	l_3	Torque Nm max.	Weight g
R5176.100-008	*m* 1	8	Shifted Gear *	10.6	12	6	60	16	32	3.38	16.7
R5176.100-010	*m* 1	10	Shifted Gear *	12.7	12	6	60	16	32	5.07	27.9





R5177

Material
Carbon steel (ISO C45).
Accuracy to JIS B 1702-1 (ISO) class 8- 9.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,04 - 0,10mm.

Tips
Module 1 for gears with 14-120 teeth see R5173 & R5179, for gears with 8-10 teeth see R5175 & R5176.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

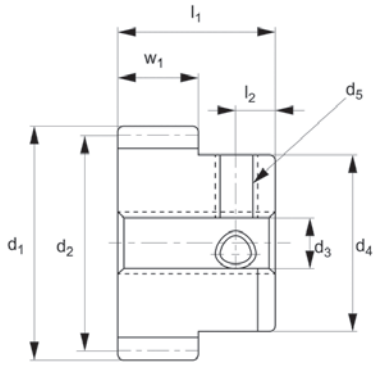
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5177.100-012-12	*m* 1	12	12	14	12	6	14	30	5	2xM 4	3.89	25.1
R5177.100-013-12	*m* 1	13	13	15	12	6	15	30	5	2xM 4	4.47	30.1
R5177.100-014-08	*m* 1	14	14	16	8	6	16	25	4	2xM 4	3.38	30.1
R5177.100-014-12	*m* 1	14	14	16	12	6	16	30	5	2xM 5	5.07	35.0
R5177.100-015-08	*m* 1	15	15	17	8	6	17	25	4	2xM 4	3.79	35.0
R5177.100-015-12	*m* 1	15	15	17	12	6	17	30	5	2xM 5	5.10	40.7
R5177.100-016-06	*m* 1	16	16	18	8	6	18	25	4	2xM 4	4.21	40.0
R5177.100-016-08	*m* 1	16	16	18	8	8	18	25	4	2xM 4	4.21	35.9
R5177.100-016-12	*m* 1	16	16	18	12	8	18	30	5	2xM 5	6.31	41.8
R5177.100-017-08	*m* 1	17	17	19	8	8	19	25	4	2xM 4	4.63	41.3
R5177.100-017-12	*m* 1	17	17	19	12	8	19	30	5	2xM 5	6.94	48.2
R5177.100-018-08	*m* 1	18	18	20	8	8	20	25	4	2xM 4	5.06	47.1
R5177.100-018-12	*m* 1	18	18	20	12	8	20	30	4	2xM 4	7.58	55.6

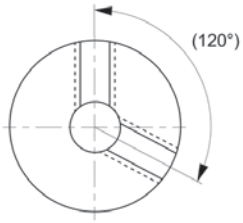
Spur Gears - Module 1

carbon steel - 14-120 teeth



R5179





Material

Carbon steel (ISO C45). Accuracy to JIS B 1702-1 (ISO) class 8, induction hardened class 9.

Technical Notes

20° pressure angle, full depth tooth. Amount of backlash when assembling gears=0,04- 0,10 mm.

Tips

Module 1 for gears with 8-10 teeth see R5175 & R5176, for gears with 12-18 teeth see R5177, for gears with 14-120 teeth without screw see R5179. Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	Hub dia. d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5179.100-014-08-05	*m* 1	14	14	16	8	5 tol. H8	11	16	-	-	3.38	13
R5179.100-015-08-05	*m* 1	15	15	17	8	5 tol. H8	12	16	-	-	3.79	16
R5179.100-015-10-05	*m* 1	15	15	17	10	5 tol. H8	12	20	-	-	4.30	20
R5179.100-016-08-05	*m* 1	16	16	18	8	5 tol. H8	13	16	-	-	4.21	19
R5179.100-016-10-05	*m* 1	16	16	18	10	5 tol. H8	13	20	-	-	4.80	22
R5179.100-017-08-05	*m* 1	17	17	19	8	5 tol. H8	14	16	-	-	4.63	22
R5179.100-018-08-06	*m* 1	18	18	20	8	6	14	16	4	2xM 4	5.06	22
R5179.100-018-10-06	*m* 1	18	18	20	10	6 tol. H8	15	20	-	-	6.32	30
R5179.100-018-10-08	*m* 1	18	18	20	10	8	15	20	5	2xM 5	6.62	26
R5179.100-019-08-06	*m* 1	19	19	21	8	6	16	16	-	-	6.38	26
R5179.100-020-08-06	*m* 1	20	20	22	8	6	16	16	-	-	5.94	29
R5179.100-020-08-06T	*m* 1	20	20	22	8	6	16	16	4	2xM 4	5.94	28
R5179.100-020-08-08	*m* 1	20	20	22	8	8	16	16	4	2xM 4	5.94	26
R5179.100-020-10-05	*m* 1	20	20	22	10	5 tol. H8	16	20	-	-	7.47	37
R5179.100-020-10-06	*m* 1	20	20	22	10	6 tol. H8	16	20	-	-	7.47	37
R5179.100-020-10-08	*m* 1	20	20	22	10	8	16	20	5	2xM 5	7.47	32
R5179.100-020-12-06	*m* 1	20	20	22	12	6 tol. H8	16	20	-	-	8.90	38
R5179.100-020-12-06T	*m* 1	20	20	22	12	6 tol. H8	16	20	4	2xM 4	8.90	37
R5179.100-020-12-08	*m* 1	20	20	22	12	8	16	20	4	2xM 4	8.90	34
R5179.100-021-08-06	*m* 1	21	21	23	8	6	18	16	-	-	6.38	34
R5179.100-021-12-08	*m* 1	21	21	23	12	8	18	20	-	-	9.57	49
R5179.100-022-08-06	*m* 1	22	22	24	8	6	18	16	-	-	6.83	37
R5179.100-022-12-08	*m* 1	22	22	24	12	8	18	20	-	-	10.24	44
R5179.100-023-08-06	*m* 1	23	23	25	8	6	20	16	-	-	7.28	43
R5179.100-023-12-08	*m* 1	23	23	25	12	8	20	20	-	-	10.93	51
R5179.100-024-08-06	*m* 1	24	24	26	8	6	16	16	-	-	7.74	38
R5179.100-024-08-06T	*m* 1	24	24	26	8	6	16	16	4	2xM 4	7.74	37
R5179.100-024-08-08	*m* 1	24	24	26	8	8	16	16	4	2xM 4	7.74	35
R5179.100-024-10-06	*m* 1	24	24	26	10	6 tol. H8	20	20	-	-	9.67	56

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	Hub dia. d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5179.100-024-10-08	m 1	24	24	26	10	8	20	20	5	2xM 5	9.67	51
R5179.100-024-12-08	m 1	24	24	26	12	8	20	20	-	-	11.61	55
R5179.100-024-12-08T	m 1	24	24	26	12	8	20	20	4	2xM 4	11.61	54
R5179.100-024-12-10	m 1	24	24	26	12	10	20	20	4	2xM 4	11.61	49
R5179.100-025-08-06	m 1	25	25	27	8	6	16	16	-	-	8.20	40
R5179.100-025-08-06T	m 1	25	25	27	8	6	16	16	4	2xM 4	8.20	40
R5179.100-025-08-08	m 1	25	25	27	8	8	16	16	4	2xM 4	8.20	37
R5179.100-025-10-05	m 1	25	25	27	10	5 tol. H8	20	20	-	-	10.90	60
R5179.100-025-10-06	m 1	25	25	27	10	6 tol. H8	20	20	-	-	10.90	59
R5179.100-025-10-08	m 1	25	25	27	10	8	20	20	5	2xM 5	10.90	54
R5179.100-025-12-08	m 1	25	25	27	12	8	20	20	-	-	12.30	59
R5179.100-025-12-08T	m 1	25	25	27	12	8	20	20	4	2xM 4	12.30	58
R5179.100-025-12-10	m 1	25	25	27	12	10	20	20	4	2xM 4	12.30	53
R5179.100-026-08-06	m 1	26	26	28	8	6	22	16	-	-	8.66	54
R5179.100-026-12-08	m 1	26	26	28	12	8	22	20	-	-	12.99	66
R5179.100-027-08-06	m 1	27	27	29	8	6	24	16	-	-	9.13	61
R5179.100-027-12-08	m 1	27	27	29	12	8	24	20	-	-	13.69	75
R5179.100-028-08-06	m 1	28	28	30	8	6	20	16	-	-	9.60	55
R5179.100-028-08-06T	m 1	28	28	30	8	6	20	16	4	2xM 4	9.60	54
R5179.100-028-08-08	m 1	28	28	30	8	8	20	16	4	2xM 4	9.60	52
R5179.100-028-08-10	m 1	28	28	30	8	10	20	16	4	2xM 4	9.60	52
R5179.100-028-10-10	m 1	28	28	30	10	10	24	20	5	2xM 5	12.90	70
R5179.100-028-12-10	m 1	28	28	30	12	10	24	20	-	-	14.40	75
R5179.100-028-12-12	m 1	28	28	30	12	12	24	20	4	2xM 4	14.40	68
R5179.100-030-08-06	m1	30	30	32	8	6	24	16	-	-	10.54	70
R5179.100-030-08-06T	m1	30	30	32	8	6	24	16	4	2xM 4	10.54	68
R5179.100-030-08-08	m1	30	30	32	8	8	24	16	4	2xM 4	10.54	66
R5179.100-030-08-10	m1	30	30	32	8	10	24	16	4	2xM 4	10.54	62
R5179.100-030-08-12	m1	30	30	32	8	12	24	16	4	2xM 4	10.54	58
R5179.100-030-10-10	m1	30	30	32	10	10	25	20	5	2xM 5	13.19	80
R5179.100-030-12-10	m1	30	30	32	12	10	24	20	-	-	15.81	83
R5179.100-030-12-10T	m1	30	30	32	12	10	24	20	4	2xM 4	15.81	81
R5179.100-030-12-12	m1	30	30	32	12	12	24	20	4	2xM 4	15.81	76
R5179.100-032-06-06	m1	32	32	34	6	6	24	16	-	-	8.62	70
R5179.100-032-06-06T	m1	32	32	34	6	6	24	16	4	2xM 4	8.62	69
R5179.100-032-06-08	m1	32	32	34	6	8	24	16	4	2xM 4	8.62	66
R5179.100-032-06-10	m1	32	32	34	6	10	24	16	5	2xM 5	8.62	62
R5179.100-032-06-12	m1	32	32	34	6	12	24	16	5	2xM 5	8.62	58
R5179.100-032-10-10	m1	32	32	34	10	10	24	20	-	-	14.37	87
R5179.100-032-10-10T	m1	32	32	34	10	10	24	20	5	2xM 5	14.37	85
R5179.100-032-10-12	m1	32	32	34	10	12	24	20	5	2xM 5	14.37	80
R5179.100-034-06-06	m1	34	34	36	6	6	28	16	-	-	9.34	88
R5179.100-034-10-10	m1	34	34	36	10	10	28	20	-	-	15.57	108
R5179.100-035-06-06	m1	35	35	37	6	6	24	16	-	-	9.70	78
R5179.100-035-06-06T	m1	35	35	37	6	6	24	16	4	2xM 4	9.70	76
R5179.100-035-06-08	m1	35	35	37	6	8	24	16	4	2xM 4	9.70	74
R5179.100-035-06-10	m1	35	35	37	6	10	24	16	5	2xM 5	9.70	70
R5179.100-035-06-12	m1	35	35	37	6	12	24	16	5	2xM 5	9.70	66
R5179.100-035-10-10	m1	35	35	37	10	10	30	20	-	-	16.17	119
R5179.100-035-10-10T	m1	35	35	37	10	10	30	20	5	2xM 5	16.17	117
R5179.100-035-10-12	m1	35	35	37	10	12	30	20	5	2xM 5	16.17	111
R5179.100-035-10-15	m1	35	35	37	10	15	30	20	5	2xM 5	16.17	102
R5179.100-036-06-08	m1	36	36	38	6	8	24	16	-	-	10.07	78
R5179.100-036-06-08T	m1	36	36	38	6	8	24	16	4	2xM 4	10.07	76
R5179.100-036-06-10	m1	36	36	38	6	10	24	16	5	2xM 5	10.07	72
R5179.100-036-06-12	m1	36	36	38	6	12	24	16	5	2xM 5	10.07	68
R5179.100-036-10-10	m1	36	36	38	10	10	30	20	-	-	16.78	124
R5179.100-036-10-10T	m1	36	36	38	10	10	30	20	5	2xM 5	16.78	121
R5179.100-036-10-12	m1	36	36	38	10	12	30	20	5	2xM 5	16.78	116
R5179.100-036-10-15	m1	36	36	38	10	15	30	20	5	2xM 5	16.78	106
R5179.100-038-06-08	m1	38	38	40	6	8	25	16	-	-	10.80	86
R5179.100-038-10-10	m1	38	38	40	10	10	30	20	-	-	18.00	133
R5179.100-040-06-08	m1	40	40	42	6	8	24	16	-	-	11.53	89
R5179.100-040-06-08T	m1	40	40	42	6	8	24	16	4	2xM 4	11.53	88
R5179.100-040-06-10	m1	40	40	42	6	10	24	16	5	2xM 5	11.53	84
R5179.100-040-06-12	m1	40	40	42	6	12	24	16	5	2xM 5	11.53	79
R5179.100-040-10-06	m1	40	40	42	10	6 tol. H8	30	20	-	-	19.18	150

Spur Gears - Module 1

carbon steel - 14-120 teeth



Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	Hub dia. d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5179.100-040-10-10	m1	40	40	42	10	10	30	20	-	-	19.18	142
R5179.100-040-10-10T	m1	40	40	42	10	10	30	20	5	2xM 5	19.18	140
R5179.100-040-10-12	m1	40	40	42	10	12	30	20	5	2xM 5	19.18	135
R5179.100-040-10-15	m1	40	40	42	10	15	30	20	5	2xM 5	19.18	125
R5179.100-042-06-08	m1	42	42	44	6	8	28	16	-	-	12.27	108
R5179.100-042-10-10	m1	42	42	44	10	10	30	20	-	-	20.45	152
R5179.100-044-06-08	m1	44	44	46	6	8	28	16	-	-	13.01	114
R5179.100-044-10-10	m1	44	44	46	10	10	30	20	-	-	21.68	163
R5179.100-045-06-08	m1	45	45	47	6	8	24	16	-	-	13.38	105
R5179.100-045-06-08T	m1	45	45	47	6	8	24	16	4	2xM 4	13.38	103
R5179.100-045-06-10	m1	45	45	47	6	10	24	16	5	2xM 5	13.38	99
R5179.100-045-06-12	m1	45	45	47	6	12	24	16	5	2xM 5	13.38	95
R5179.100-045-10-10	m1	45	45	47	10	10	30	20	-	-	22.30	168
R5179.100-045-10-10T	m1	45	45	47	10	10	30	20	5	2xM 5	22.30	166
R5179.100-045-10-12	m1	45	45	47	10	12	30	20	5	2xM 5	22.30	161
R5179.100-046-06-08	m1	46	46	48	6	8	30	16	-	-	13.75	128
R5179.100-046-10-10	m1	46	46	48	10	10	30	20	-	-	22.92	174
R5179.100-048-06-08	m1	48	48	50	6	8	24	16	-	-	15.18	115
R5179.100-048-06-08T	m1	48	48	50	6	8	24	16	4	2xM 4	15.18	114
R5179.100-048-06-10	m1	48	48	50	6	10	24	16	5	2xM 5	15.18	110
R5179.100-048-10-10	m1	48	48	50	10	10	30	20	-	-	23.87	186
R5179.100-048-10-12	m1	48	48	50	10	12	30	20	5	2xM 5	23.87	178
R5179.100-048-10-15	m1	48	48	50	10	15	30	20	5	2xM 5	23.87	168
R5179.100-050-06-08	m 1	50	50	52	6	8	24	16	-	-	14.32	122
R5179.100-050-06-08T	m 1	50	50	52	6	8	24	16	4	2xM 4	14.32	121
R5179.100-050-06-10	m 1	50	50	52	6	10	24	16	5	2xM 5	14.32	117
R5179.100-050-06-12	m 1	50	50	52	6	12	24	16	5	2xM 5	14.32	113
R5179.100-050-10-10	m 1	50	50	52	10	10	30	20	-	-	24.83	198
R5179.100-050-10-10T	m 1	50	50	52	10	10	30	20	5	2xM 5	24.83	195
R5179.100-050-10-12	m 1	50	50	52	10	12	30	20	5	2xM 5	24.83	190
R5179.100-050-10-15	m 1	50	50	52	10	15	30	20	5	2xM 5	24.83	180
R5179.100-052-06-10	m 1	52	52	54	6	10	40	16	-	-	15.28	189
R5179.100-052-10-10	m 1	52	52	54	10	10	46	20	-	-	25.78	285
R5179.100-054-06-10	m 1	54	54	56	6	10	40	16	-	-	16.23	197
R5179.100-054-10-10	m 1	54	54	56	10	10	46	20	-	-	27.69	298
R5179.100-055-10-10	m 1	55	55	57	10	10	46	20	-	-	27.69	305
R5179.100-056-06-10	m 1	56	56	58	6	10	24	16	-	-	17.19	142
R5179.100-056-06-10T	m 1	56	56	58	6	10	24	16	5	2xM 5	17.19	140
R5179.100-056-06-12	m 1	56	56	58	6	12	24	16	5	2xM 5	17.19	136
R5179.100-056-10-10	m 1	56	56	58	10	10	30	20	-	-	28.65	237
R5179.100-056-10-10T	m 1	56	56	58	10	10	30	20	5	2xM 5	28.65	234
R5179.100-056-10-15	m 1	56	56	58	10	15	30	20	5	2xM 5	28.65	220
R5179.100-058-06-10	m 1	58	58	60	6	10	40	16	-	-	18.14	214
R5179.100-058-10-10	m 1	58	58	60	10	10	50	20	-	-	29.60	362
R5179.100-060-06-10	m 1	60	60	62	6	10	30	16	-	-	18.14	179
R5179.100-060-06-10T	m 1	60	60	62	6	10	30	16	5	2xM 5	18.14	177
R5179.100-060-06-12	m 1	60	60	62	6	12	30	16	5	2xM 5	18.14	173
R5179.100-060-06-15	m 1	60	60	62	6	15	30	16	5	2xM 5	18.14	165
R5179.100-060-10-08	m 1	60	60	62	10	8	42	20	-	-	31.51	322
R5179.100-060-10-10	m 1	60	60	62	10	10	30	20	-	-	31.51	266
R5179.100-060-10-10T	m 1	60	60	62	10	10	30	20	5	2xM 5	31.51	263
R5179.100-060-10-12	m 1	60	60	62	10	12	30	20	5	2xM 5	31.51	258
R5179.100-060-10-15	m 1	60	60	62	10	15	30	20	5	2xM 5	31.51	248
R5179.100-062-06-10	m 1	62	62	64	6	10	40	16	-	-	19.10	231
R5179.100-062-10-10	m 1	62	62	64	10	10	50	20	-	-	32.47	379
R5179.100-064-06-10	m 1	64	64	66	6	10	30	16	-	-	20.05	178
R5179.100-064-06-10T	m 1	64	64	66	6	10	30	16	5	2xM 5	20.05	176
R5179.100-064-06-12	m 1	64	64	66	6	12	30	16	5	2xM 5	20.05	172
R5179.100-064-10-10	m 1	64	64	66	10	10	30	20	-	-	33.42	296
R5179.100-064-10-10T	m 1	64	64	66	10	10	30	20	5	2xM 5	33.42	294
R5179.100-064-10-15	m 1	64	64	66	10	15	30	20	5	2xM 5	33.42	279
R5179.100-065-06-10	m 1	65	65	67	6	10	40	16	-	-	20.05	246
R5179.100-065-10-10	m 1	65	65	67	10	10	50	20	-	-	34.38	403
R5179.100-068-06-10	m 1	68	68	70	6	10	40	16	-	-	21.96	260
R5179.100-068-10-10	m 1	68	68	70	10	10	50	20	-	-	36.29	427
R5179.100-070-06-10	m 1	70	70	72	6	10	40	16	-	-	21.96	270
R5179.100-070-10-10D	m 1	70	70	72	10	10	55	20	-	-	38.20	443

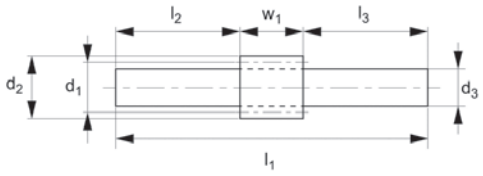
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	Hub dia. d_4	l_1	l_2	Thread d_5	Torque Nm max.	Weight g
R5179.100-072-06-10	*m* 1	72	72	74	6	10	30	16	-	-	22.92	218
R5179.100-072-06-10T	*m* 1	72	72	74	6	10	30	16	5	2xM 5	22.92	216
R5179.100-072-10-10	*m* 1	72	72	74	10	10	30	20	-	-	39.15	363
R5179.100-072-10-10T	*m* 1	72	72	74	10	10	30	20	5	2xM 5	39.15	361
R5179.100-072-10-15T	*m* 1	72	72	74	10	15	30	20	5	2xM 5	39.15	346
R5179.100-075-06-10	*m* 1	75	75	77	6	10	40	16	-	-	23.87	297
R5179.100-075-10-10	*m* 1	75	75	77	10	10	50	20	-	-	41.06	489
R5179.100-080-06-10	*m* 1	80	80	82	6	10	30	16	-	-	25.78	283
R5179.100-080-06-10T	*m* 1	80	80	82	6	10	30	16	5	2xM 5	25.78	280
R5179.100-080-06-12T	*m* 1	80	80	82	6	12	30	16	5	2xM 5	25.78	276
R5179.100-080-06-15T	*m* 1	80	80	82	6	15	30	16	5	2xM 5	25.78	269
R5179.100-080-10-10D	*m* 1	80	80	82	10	10	60	20	-	-	43.93	604
R5179.100-080-10-10	*m* 1	80	80	82	10	10	32	20	-	-	17.19	446
R5179.100-080-10-10T	*m* 1	80	80	82	10	10	32	20	5	2xM 5	17.19	443
R5179.100-080-10-12T	*m* 1	80	80	82	10	12	32	20	5	2xM 5	17.19	438
R5179.100-080-10-15T	*m* 1	80	80	82	10	15	32	20	5	2xM 5	17.19	428
R5179.100-080-10-16T	*m* 1	80	80	82	10	16	32	20	5	2xM 5	17.19	425
R5179.100-084-06-10	*m* 1	84	84	86	6	10	50	16	-	-	27.69	406
R5179.100-084-10-10	*m* 1	84	84	86	10	10	50	20	-	-	46.79	577
R5179.100-085-10-10	*m* 1	85	85	87	10	10	50	20	-	-	46.79	588
R5179.100-090-06-10	*m* 1	90	90	92	6	10	50	16	-	-	29.60	444
R5179.100-090-10-10	*m* 1	90	90	92	10	10	50	20	-	-	50.61	642
R5179.100-090-10-10D	*m* 1	90	90	92	10	10	65	20	-	-	50.61	747
R5179.100-096-06-10	*m* 1	96	96	98	6	10	50	16	-	-	32.47	486
R5179.100-096-10-10	*m* 1	96	96	98	10	10	50	20	-	-	54.43	710
R5179.100-100-06-10	*m* 1	100	100	102	6	10	30	16	-	-	34.38	416
R5179.100-100-06-10T	*m* 1	100	100	102	6	10	30	16	5	2xM 5	34.38	414
R5179.100-100-06-12T	*m* 1	100	100	102	6	12	30	16	5	2xM 5	34.38	410
R5179.100-100-06-15T	*m* 1	100	100	102	6	15	30	16	5	2xM 5	34.38	402
R5179.100-100-10-12	*m* 1	100	100	102	10	12	36	20	-	-	57.30	680
R5179.100-100-10-15T	*m* 1	100	100	102	10	15	36	20	5	2xM 5	57.30	667
R5179.100-110-06-10	*m* 1	110	110	112	6	10	50	16	-	-	38.20	592
R5179.100-120-06-10	*m* 1	120	120	122	6	10	30	16	-	-	42.02	579
R5179.100-120-06-10T	*m* 1	120	120	122	6	10	30	16	5	2xM 5	42.02	577
R5179.100-120-06-12T	*m* 1	120	120	122	6	12	30	16	5	2xM 5	42.02	572
R5179.100-120-10-12	*m* 1	120	120	122	10	12	36	20	-	-	69.71	951
R5179.100-120-10-12T	*m* 1	120	120	122	10	12	36	20	5	2xM 5	69.71	948
R5179.100-120-10-15T	*m* 1	120	120	122	10	15	36	20	5	2xM 5	69.71	938
R5179.100-120-10-16T	*m* 1	120	120	122	10	16	36	20	5	2xM 5	69.71	935

Spur Gears - Module 1.25

carbon steel - 8-10 teeth



R5182



Material

Carbon steel (ISO C45).
Accuracy to JIS B 1702-1 (ISO) class 8-9.

Technical Notes

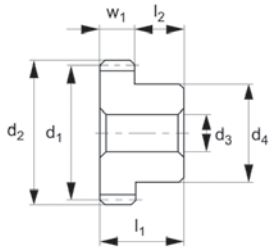
20° pressure angle, full depth tooth. Amount of backlash when assembling gears = 0,05 - 0,125mm. Rack shift coefficient x = 0.5.

Tips

Module 1.25 for gears with 14-120 teeth see R5180, for gears with 8-11 teeth see R5181, for gears with 12-17 teeth see R5183, for gears with 18-120 teeth see R185.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	l_1	l_2	l_3	Torque Nm max.	Weight g
R5182.125-10	*m* 1.25	10	Shifted gear *	15.8	15	10	75	20	40	7.11	54.5





R5190

Material
Stainless steel (AISI 304, JIS G 4303).
Accuracy to JIS B 1702-1 (ISO) class 9.

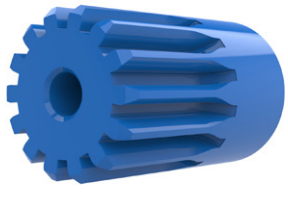
Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,09 - 0,18mm.

Tips
For module 1.5 stainless gears with 14 teeth see R5188.
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

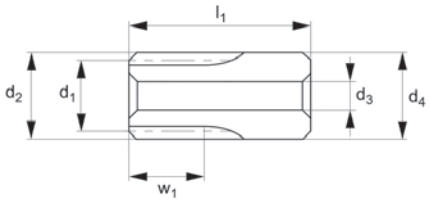
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H8	d_4	l_1	l_2	Torque Nm max.	Weight g
R5190.150-015-12	*m* 1.5	15	22.5	25.5	12	8	18	22	10	6.40	49.3
R5190.150-015-16	*m* 1.5	15	22.5	25.5	16	8	18	26	10	8.53	60.3
R5190.150-016-12	*m* 1.5	16	24.0	27.0	12	8	20	22	10	7.10	59.2
R5190.150-016-16	*m* 1.5	16	24.0	27.0	16	8	20	26	10	9.46	72.0
R5190.150-018-12	*m* 1.5	18	27.0	30.0	12	10	22	22	10	8.53	70.9
R5190.150-018-16	*m* 1.5	18	27.0	30.0	16	10	22	26	10	11.38	86.6
R5190.150-020-12	*m* 1.5	20	30.0	33.0	12	10	25	22	10	10.02	92.5
R5190.150-020-16	*m* 1.5	20	30.0	33.0	16	10	25	26	10	13.36	112.4
R5190.150-024-12	*m* 1.5	24	36.0	39.0	12	10	30	22	10	13.06	139.2
R5190.150-025-16	*m* 1.5	25	37.5	40.5	16	10	30	26	10	18.45	180.0
R5190.150-028-12	*m* 1.5	28	42.0	45.0	12	10	30	22	10	16.20	174.2
R5190.150-030-12	*m* 1.5	30	45.0	48.0	12	10	30	22	10	17.79	193.7
R5190.150-030-16	*m* 1.5	30	45.0	48.0	16	10	30	26	10	23.71	241.7
R5190.150-032-10	*m* 1.5	32	48.0	51.0	10	10	30	20	10	16.16	187.1
R5190.150-036-10	*m* 1.5	36	54.0	57.0	10	10	30	20	10	18.88	225.2
R5190.150-040-10	*m* 1.5	40	60.0	63.0	10	12	36	20	10	21.63	287.0
R5190.150-048-10	*m* 1.5	48	72.0	75.0	10	12	36	20	10	27.18	385.7
R5190.150-050-10	*m* 1.5	50	75.0	78.0	10	12	42	20	10	28.59	442.3
R5190.150-060-10	*m* 1.5	60	90.0	93.0	10	14	50	20	10	35.67	635.8
R5190.150-080-10	*m* 1.5	80	120.0	123.0	10	16	60	20	10	50.03	1089.0
R5190.150-100-10	*m* 1.5	100	150.0	153.0	10	16	60	20	10	64.47	1594.0

Spur Gears - Module 1.5 - Plastic

blue polyacetal - 14 teeth



R5191



Material

Polyacetal, blue, machined.
Accuracy to JIS B 1702-1 (ISO) class 9-10.

Technical Notes

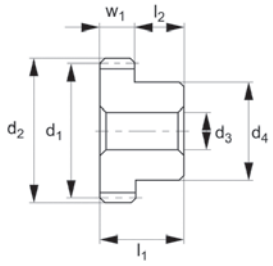
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,09-0,18mm.
Blue polyacetal machined gears are suitable for use in food machinery applications. Approved by the FDA (USA) and by regulators in the EU and Japan, where the food has an alcohol percentage of <15%. Please clean gears thoroughly before use.

Tips

For module 1.5 blue plastic gears with 15-60 teeth see R5193.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	Torque Nm max.	Weight g
R5191.150-014	*m* 1.5	14	21	24	18	6	24	40	1.36	21





R5193

Material
Polyacetal, blue, machined.
Accuracy to JIS B 1702-1 (ISO) class 9-10.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,09 - 0,18 mm.
Blue polyacetal machined gears are suitable for use in food machinery applications. Approved by the FDA (USA) and by regulators in the EU and Japan, where the food has an alcohol percentage of <15%. Please clean gears thoroughly before use.

Tips
For module 1.5 blue plastic gears with 14 teeth see R5191.

Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

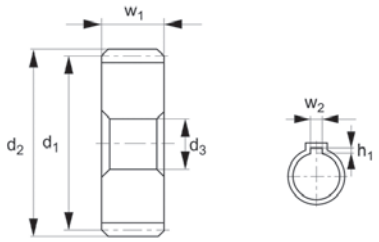
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	d_4	l_1	l_2	Torque Nm max.	Weight g
R5193.150-015	*m* 1.5	15	22.5	25.5	15	6	18	30	15	1.51	12.4
R5193.150-016	*m* 1.5	16	24.0	27.0	15	6	18	30	15	1.65	13.6
R5193.150-018	*m* 1.5	18	27.0	30.0	15	8	20	30	15	1.94	16.4
R5193.150-020	*m* 1.5	20	30.0	33.0	15	8	22	30	15	2.23	20.6
R5193.150-022	*m* 1.5	22	33.0	36.0	15	8	24	30	15	2.53	25.3
R5193.150-024	*m* 1.5	24	36.0	39.0	15	8	24	30	15	2.82	28.7
R5193.150-025	*m* 1.5	25	37.5	40.5	15	8	28	30	15	2.97	32.8
R5193.150-026	*m* 1.5	26	39.0	42.0	15	8	28	30	15	3.12	35.9
R5193.150-028	*m* 1.5	28	42.0	45.0	15	8	30	30	15	3.41	41.8
R5193.150-030	*m* 1.5	30	45.0	48.0	15	8	32	30	15	3.83	48.2
R5193.150-032	*m* 1.5	32	48.0	51.0	15	8	35	30	15	4.14	56.2
R5193.150-035	*m* 1.5	35	52.5	55.5	15	8	40	30	15	4.60	69.9
R5193.150-036	*m* 1.5	36	54.0	57.0	15	8	40	30	15	4.75	72.5
R5193.150-040	*m* 1.5	40	60.0	63.0	15	10	45	30	15	5.53	89.7
R5193.150-045	*m* 1.5	45	67.5	70.5	15	10	50	30	15	6.33	113.5
R5193.150-048	*m* 1.5	48	72.0	75.0	15	10	55	30	15	6.81	132.6
R5193.150-050	*m* 1.5	50	75.0	78.0	15	10	55	30	15	7.13	139.9
R5193.150-055	*m* 1.5	55	82.5	85.5	15	10	60	30	15	7.93	136.8
R5193.150-056	*m* 1.5	56	84.0	87.0	15	10	60	30	15	8.09	173.2
R5193.150-060	*m* 1.5	60	90.0	93.0	15	10	65	30	15	8.90	200.9

Spur Gears - Module 1.5

carbon steel - 15-100 teeth



R5194



Material
Carbon steel (ISO C45).
Accuracy to JIS B 1702-1 (ISO) class 8-9.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,06 - 0,15mm

Tips
For module 1.5 steel gears with 60-100 teeth see R5195 (hubless) & R5204 (with hub),
for gears with 8-10 see teeth R5198 & R5199, for gears with 12-14 teeth see R5200, for gears with 15-100 teeth alternative see R5201 and R5204 (reduced weight version).
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	Keyway (w_2 x h_1)	Torque Nm max.	Weight g
R5194.150-015-12-08	*m* 1.5	15	22.5	25.5	12	8	-	13.08	32.7
R5194.150-015-18-08	*m* 1.5	15	22.5	25.5	18	8	-	19.10	49.1
R5194.150-016-12-08	*m* 1.5	16	24.0	27.0	12	8	-	14.13	37.9
R5194.150-016-16-08	*m* 1.5	16	24.0	27.0	16	8	-	18.91	50.5
R5194.150-018-12-10	*m* 1.5	18	27.0	30.0	12	10	-	17.00	46.5
R5194.150-018-16-10	*m* 1.5	18	27.0	30.0	16	10	-	22.73	62.1
R5194.150-018-18-10	*m* 1.5	18	27.0	30.0	18	10	-	25.59	69.8
R5194.150-019-12-10	*m* 1.5	19	28.5	31.5	12	10	-	18.53	52.7
R5194.150-020-10-10	*m* 1.5	20	30.0	33.0	10	10	-	16.62	49.3
R5194.150-020-12-10	*m* 1.5	20	30.0	33.0	12	10	-	19.96	59.2
R5194.150-020-12-12	*m* 1.5	20	30.0	33.0	12	12	4×1,8	19.96	55.3
R5194.150-020-12-15	*m* 1.5	20	30.0	33.0	12	15	5×2,3	19.96	48.9
R5194.150-020-16-10	*m* 1.5	20	30.0	33.0	16	10	-	26.64	78.9
R5194.150-020-18-10	*m* 1.5	20	30.0	33.0	18	10	-	29.99	88.8
R5194.150-020-18-12	*m* 1.5	20	30.0	33.0	18	12	4×1,8	29.99	82.9
R5194.150-024-10-10	*m* 1.5	24	36.0	39.0	10	10	-	21.68	73.7
R5194.150-024-12-10	*m* 1.5	24	36.0	39.0	12	10	-	26.07	88.5
R5194.150-024-12-12	*m* 1.5	24	36.0	39.0	12	12	4×1,8	26.07	84.6
R5194.150-024-18-12	*m* 1.5	24	36.0	39.0	18	12	-	39.15	127.8
R5194.150-024-18-16	*m* 1.5	24	36.0	39.0	18	16	5×2,3	39.15	113.8
R5194.150-025-10-10	*m* 1.5	25	37.5	40.5	10	10	-	23.01	80.5
R5194.150-025-12-10	*m* 1.5	25	37.5	40.5	12	10	-	27.60	96.6
R5194.150-025-12-12	*m* 1.5	25	37.5	40.5	12	12	4×1,8	27.60	92.7
R5194.150-025-18-16	*m* 1.5	25	37.5	40.5	18	16	5×2,3	36.86	126.0
R5194.150-026-12-10	*m* 1.5	26	39.0	42.0	12	10	-	29.22	105.1
R5194.150-026-18-12	*m* 1.5	26	39.0	42.0	18	12	-	43.83	152.8

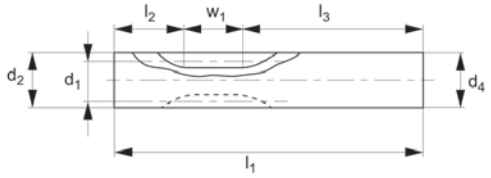
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	Keyway (w_2 x h_1)	Torque Nm max.	Weight g
R5194.150-027-12-10	*m* 1.5	27	40.5	43.5	12	10	-	30.75	114.0
R5194.150-028-10-12	*m* 1.5	28	42.0	45.0	10	12	-	26.93	99.9
R5194.150-028-12-10	*m* 1.5	28	42.0	45.0	12	10	-	32.37	123.1
R5194.150-028-16-12	*m* 1.5	28	42.0	45.0	16	12	-	43.16	159.8
R5194.150-028-18-12	*m* 1.5	28	42.0	45.0	18	12	-	48.51	179.8
R5194.150-030-10-12	*m* 1.5	30	45.0	48.0	10	12	-	29.60	116.0
R5194.150-030-12-10	*m* 1.5	30	45.0	48.0	12	10	-	35.52	142.4
R5194.150-030-12-15	*m* 1.5	30	45.0	48.0	12	15	5×2,3	35.52	132.1
R5194.150-030-16-14	*m* 1.5	30	45.0	48.0	16	14	-	47.37	180.4
R5194.150-030-18-14	*m* 1.5	30	45.0	48.0	18	14	-	53.29	203.0
R5194.150-030-18-18	*m* 1.5	30	45.0	48.0	18	18	6×2,8	53.29	186.4
R5194.150-032-10-10	*m* 1.5	32	48.0	51.0	10	10	-	32.28	135.9
R5194.150-032-16-14	*m* 1.5	32	48.0	51.0	16	14	-	51.66	207.9
R5194.150-034-10-12	*m* 1.5	34	51.0	54.0	10	12	-	34.95	151.5
R5194.150-035-16-14	*m* 1.5	35	52.5	55.5	16	14	-	58.16	252.6
R5194.150-036-10-12	*m* 1.5	36	54.0	57.0	10	12	-	37.72	170.9
R5194.150-036-16-14	*m* 1.5	36	54.0	57.0	16	14	-	60.35	268.3
R5194.150-040-10-12	*m* 1.5	40	60.0	63.0	10	12	-	43.16	213.1
R5194.150-040-10-16	*m* 1.5	40	60.0	63.0	10	16	5×2,3	43.16	205.3
R5194.150-040-16-14	*m* 1.5	40	60.0	63.0	16	14	-	69.14	335.8
R5194.150-044-10-12	*m* 1.5	44	66.0	69.0	10	12	-	48.70	259.7
R5194.150-044-16-12	*m* 1.5	44	66.0	69.0	16	12	-	78.31	415.5
R5194.150-045-10-12	*m* 1.5	45	67.5	70.5	10	12	-	50.14	272.0
R5194.150-046-10-12	*m* 1.5	46	69.0	72.0	10	12	-	51.47	284.7
R5194.150-048-10-14	*m* 1.5	48	72.0	75.0	10	14	-	53.48	307.5
R5194.150-048-16-16	*m* 1.5	48	72.0	75.0	16	16	-	86.90	486.1
R5194.150-050-10-14	*m* 1.5	50	75.0	78.0	10	14	-	56.34	334.7
R5194.150-050-16-16	*m* 1.5	50	75.0	78.0	16	16	-	84.99	529.6
R5194.150-052-10-14	*m* 1.5	52	78.0	81.0	10	14	-	59.21	363.0
R5194.150-052-16-16	*m* 1.5	52	78.0	81.0	16	16	-	96.45	574.9
R5194.150-055-16-16	*m* 1.5	55	82.5	85.5	16	16	-	103.14	646.2
R5194.150-056-16-16	*m* 1.5	56	84.0	87.0	16	16	-	105.05	670.8
R5194.150-060-10-14	*m* 1.5	60	90.0	93.0	10	14	-	70.67	487.3
R5194.150-060-16-16	*m* 1.5	60	90.0	93.0	16	16	-	114.60	773.8
R5194.150-064-10-14	*m* 1.5	64	96.0	99.0	10	14	-	76.40	560.0
R5194.150-072-10-16	*m* 1.5	72	108.0	111.0	10	16	-	88.81	700.0
R5194.150-072-16-18	*m* 1.5	72	108.0	111.0	16	18	-	141.34	1120.0
R5194.150-080-16-18	*m* 1.5	80	120.0	123.0	16	18	-	148.98	1390.0
R5194.150-090-16-22	*m* 1.5	90	135.0	138.0	16	22	-	183.35	1750.0
R5194.150-100-10-16	*m* 1.5	100	150.0	153.0	10	16	-	128.92	1370.0
R5194.150-100-16-18	*m* 1.5	100	150.0	153.0	16	18	-	206.27	2190.0

Spur Gears - Module 1.5

carbon steel - 8-10 teeth



R5198



Material

Carbon steel (ISO C45).
Accuracy to JIS B 1702-1 (ISO) class 8-9.

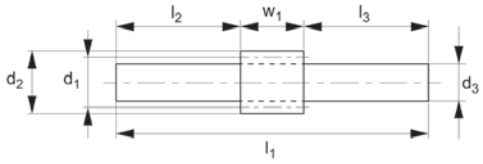
Technical Notes

20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,06 - 0,15mm. Rack shift coefficient x = 0.5.

Tips

For module 1.5 hubless steel gears with 60-100 teeth see R5194. For gears with 8-10 teeth see R5198 & R5199, for gears with 12-14 teeth see R5200,
for gears with 15-100 teeth See R5201 & R5204 (reduced weight version).
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H9	l_1	l_2	l_3	Torque Nm max.	Weight g
R5198.150-10	*m* 1.5	10	Shifted Gear *	19	18	19	90	24	48	14.23	190.5





R5199

Material
Carbon steel (ISO C45).
Accuracy to JIS B 1702-1 (ISO) class 8-9.

Technical Notes
20° pressure angle, full depth tooth.
Amount of backlash when assembling gears = 0,06 - 0,15mm. Rack shift coefficient x = 0.5.

Tips
For module 1.5 hubless steel gears with 60-100 teeth see R5194.
For gears with 8-10 teeth alternative see R5198,
for gears with 12-14 teeth see R5200,
for gears with 15-100 teeth See R5201 & R5204 (reduced weight version).

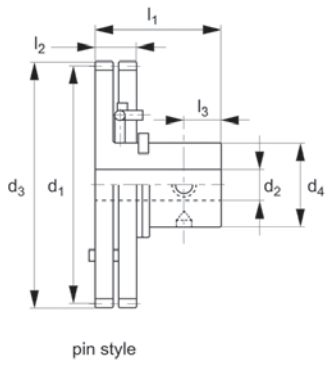
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

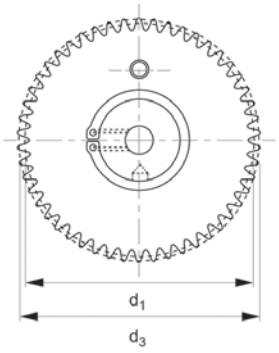
Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. h9	l_1	l_2	l_3	Torque Nm max.	Weight g
R5199.150-008	*m* 1.5	8	Shifted gear *	16	18	9	90	24	48	10.31	56.2
R5199.150-010	*m* 1.5	10	Shifted gear *	19	18	12	90	24	48	14.23	94.1

1,0 to 0,5 Module Anti-backlash
stainless steel or aluminium pin hub



R2080





Material
Stainless steel (DIN 1,4305) or aluminium (DIN 3,1355 anodized before cutting).

Technical Notes
20° pressure angle, zero backlash.
Quality class DIN 7, AGMA 10.
The split gear design incorporates springs which force the floating gear in a direction opposite to the rotation of the fixed gear, effectively enlarging the teeth width and overcoming the space, or backlash, between the teeth of the gear. Two types of design, one utilising scissor springs (figure 1), and the second, for larger diameter gears, utilising extension springs (figure 2).

Tips
Special versions available on request (e.g. different number of teeth, 14,5° pressure angle etc).

Order No.	No. of teeth	d_1 p.d.	d_2 tol. H8	d_3	l_1	l_2	Module
R2080.1.0-18-S	18	18.0	8	20.0	14	6	1.0
R2080.1.0-21-S	21	21.0	8	23.0	14	6	1.0
R2080.1.0-24-S	24	24.0	8	26.0	14	6	1.0
R2080.0.8-24-S	24	19.2	8	20.8	14	6	0.8
R2080.0.8-28-S	28	22.4	8	24.0	14	6	0.8
R2080.0.8-32-S	32	25.6	8	27.2	14	6	0.8
R2080.0.6-28-S	28	16.8	8	18.0	14	6	0.6
R2080.0.6-32-S	32	19.2	8	20.4	14	6	0.6
R2080.0.6-36-S	36	21.6	8	22.8	14	6	0.6
R2080.0.5-36-S	36	18.0	8	19.0	14	6	0.5
R2080.0.5-42-S	42	21.0	8	22.0	14	6	0.5
R2080.0.5-48-S	48	24.0	8	25.0	14	6	0.5
R2080.1.0-18-A	18	18.0	8	20.0	14	6	1.0
R2080.1.0-21-A	21	21.0	8	23.0	14	6	1.0
R2080.1.0-24-A	24	24.0	8	26.0	14	6	1.0
R2080.0.8-24-A	24	19.2	8	20.8	14	6	0.8
R2080.0.8-28-A	28	22.4	8	24.0	14	6	0.8
R2080.0.8-32-A	32	25.6	8	27.2	14	6	0.8
R2080.0.6-28-A	28	16.8	8	18.0	14	6	0.6
R2080.0.6-32-A	32	19.2	8	20.4	14	6	0.6
R2080.0.6-36-A	36	21.6	8	22.8	14	6	0.6
R2080.0.5-36-A	36	18.0	8	19.0	14	6	0.5
R2080.0.5-42-A	42	21.0	8	22.0	14	6	0.5
R2080.0.5-48-A	48	24.0	8	25.0	14	6	0.5



R2082

Material
Carbon Steel

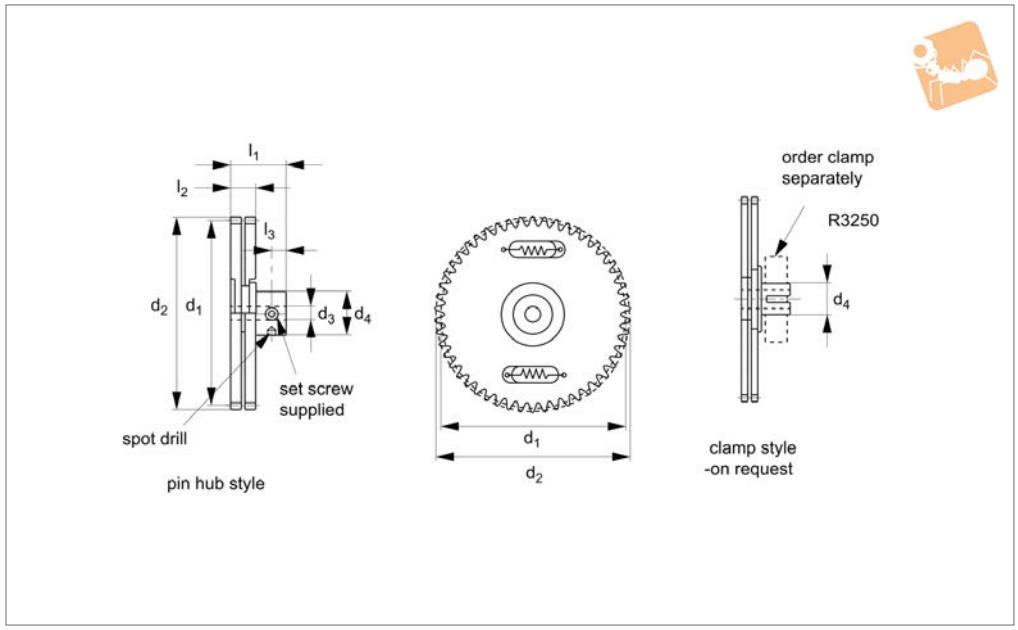
Technical Notes
20° pressure angle.
Quality class DIN 7, AGMA 10.

Tips
Special versions available on request (e.g. different number of teeth, 14.5° pressure angle, quality class DIN 5 & 3 etc).

Order No.	No. of teeth	d_1	d_2	d_3	d_4	w_1	w_2	w_3	h
R2082.015-008	15	8	18	22.5	25.5	12	10	-	-
R2082.016-008	16	8	20	24	27	12	10	-	-
R2082.018-010	18	10	22	27	30	12	10	-	-
R2082.020-010	20	10	25	30	33	12	10	-	-
R2082.024-010	24	10	30	36	39	12	10	-	-
R2082.025-010	25	10	32	37.5	40.5	12	10	-	-
R2082.028-010	28	10	36	42	45	12	10	-	-
R2082.030-010	30	10	40	45	48	12	10	-	-
R2082.032-010	32	10	40	48	51	10	10	-	-
R2082.036-010	36	10	50	54	57	10	10	-	-
R2082.040-012	40	12	50	60	63	10	10	-	-
R2082.048-012	48	12	50	72	75	10	10	-	-
R2082.050-012	50	12	50	75	78	10	10	-	-
R2082.056-014	56	14	50	84	87	10	10	-	-
R2082.060-014	60	14	50	90	93	10	10	-	-
R2082.064-014	64	14	50	96	99	10	10	-	-
R2082.070-014	70	14	50	105	108	10	10	-	-
R2082.072-015	72	15	50	108	111	10	10	-	-
R2082.080-015	80	15	60	120	123	10	10	-	-
R2082.100-015	100	15	60	150	153	10	10	-	-
R2082.020-015-K	20	15	25	30	33	12	10	5	2.3
R2082.025-015-K	25	15	30	37.5	40.5	12	10	5	2.3
R2082.028-015-K	28	15	30	42	45	12	10	5	2.3
R2082.030-015-K	30	15	30	45	48	12	10	5	2.3
R2082.036-015-K	36	15	30	54	57	10	10	5	2.3
R2082.040-018-K	40	18	36	60	63	10	10	6	2.8
R2082.048-018-K	48	18	36	72	75	10	10	6	2.8
R2082.050-018-K	50	18	36	75	78	10	10	6	2.8
R2082.056-015-K	56	15	30	84	87	10	10	5	2.3
R2082.060-018-K	60	18	36	90	93	10	10	6	2.8
R2082.064-015-K	64	15	30	96	99	10	10	5	2.3
R2082.070-015-K	70	15	30	105	108	10	10	5	2.3
R2082.072-018-K	72	18	36	108	111	10	10	6	2.8
R2082.080-018-K	80	18	36	120	123	10	10	6	2.8

Spur Gears
Steel

Order No.	No. of teeth	d_1	d_2	d_3	d_4	w_1	w_2	w_3	h
R2082.100-020-K	100	20	40	150	153	10	10	6	2.8





R2084

Material
A2 Stainless

Technical Notes
20° pressure angle.
Quality class DIN 7, AGMA 10.

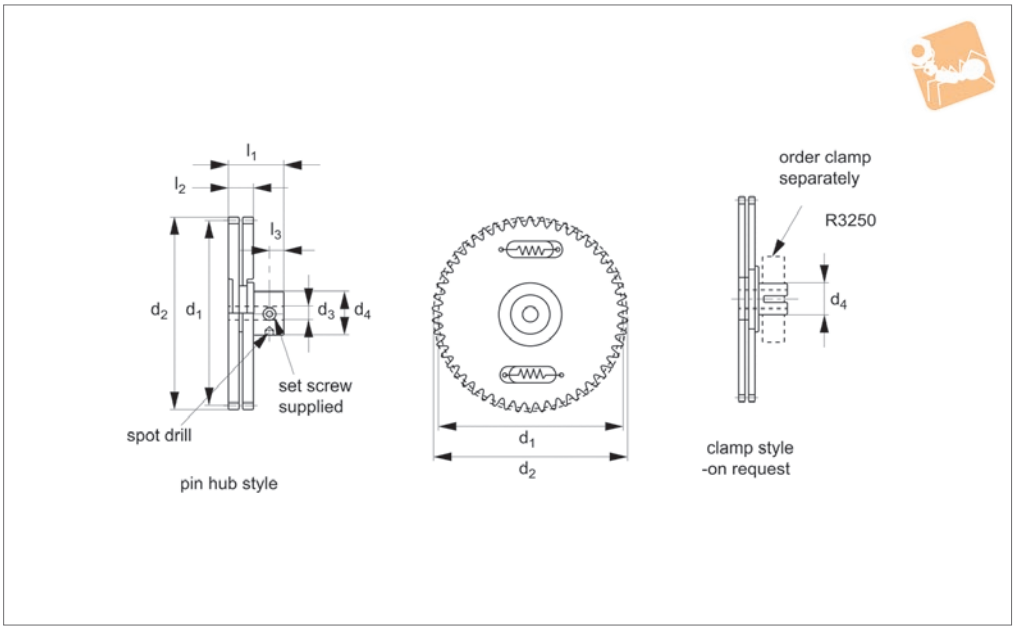
Tips
Special versions available on request (e.g. different number of teeth, 14.5° pressure angle, quality class DIN 5 & 3 etc).

Order No.	No. of teeth	d_1 p.d.	d_2	d_3	d_4	w_1	w_2
R2084.018-12-SS	18	12	20	27.0	30.0	25	12
R2084.020-12-SS	20	12	20	30.0	33.0	25	12
R2084.024-12-SS	24	12	20	36.0	39.0	25	12
R2084.028-12-SS	28	12	20	42.0	45.0	25	12
R2084.030-12-SS	30	12	20	45.0	48.0	25	12
R2084.032-12-SS	32	12	20	48.0	51.0	25	12
R2084.036-12-SS	36	12	20	54.0	57.0	25	12
R2084.040-12-SS	40	12	20	60.0	63.0	25	12
R2084.042-12-SS	42	12	20	63.0	66.0	25	12
R2084.045-12-SS	45	12	20	67.5	70.5	25	12
R2084.048-12-SS	48	12	20	72.0	75.0	25	12
R2084.050-12-SS	50	12	20	75.0	78.0	25	12
R2084.056-12-SS	56	12	20	84.0	87.0	25	12
R2084.060-12-SS	60	12	20	90.0	93.0	25	12
R2084.064-12-SS	64	12	20	96.0	99.0	25	12

Hubless Spur Gears
Stainless Steel



R2086



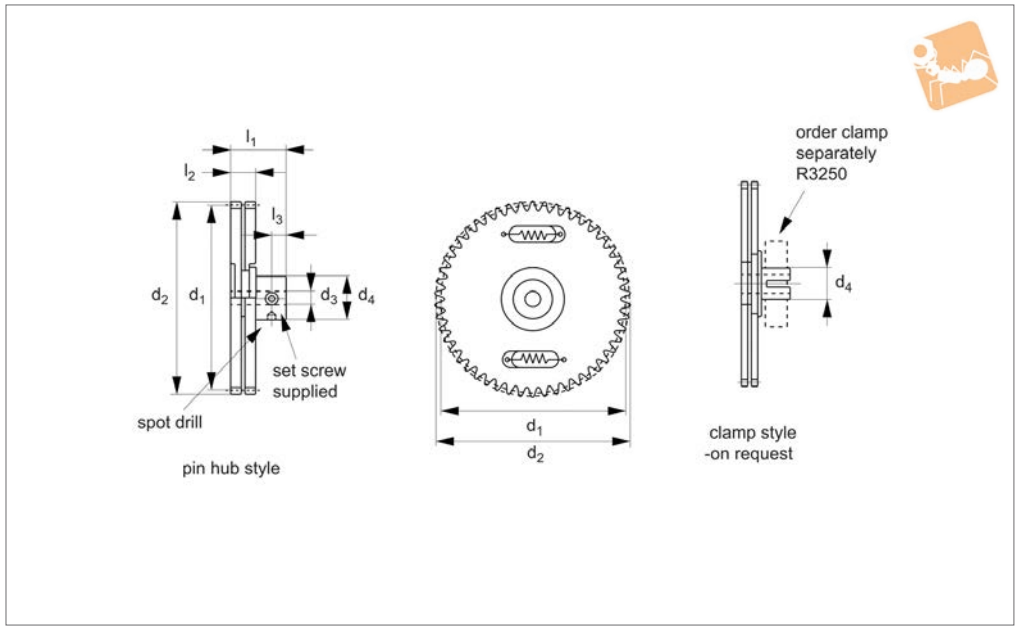
Material
A2 Stainless

Technical Notes
20° pressure angle.

Quality class DIN 7, AGMA 10.

Tips
Special versions available on request (e.g. different number of teeth, 14.5° pressure angle, quality class DIN 5 & 3 etc).

Order No.	No. of teeth	d_1 p.d.	d_2	d_3	w
R2086.018-16-SS	18	16	27.0	30.0	10
R2086.020-16-SS	20	16	30.0	33.0	10
R2086.024-16-SS	24	16	36.0	39.0	10
R2086.028-16-SS	28	16	42.0	45.0	10
R2086.030-16-SS	30	16	45.0	48.0	10
R2086.032-16-SS	32	16	48.0	51.0	10
R2086.036-16-SS	36	16	54.0	57.0	10
R2086.040-16-SS	40	16	60.0	63.0	10
R2086.042-16-SS	42	16	63.0	66.0	10
R2086.045-16-SS	45	16	67.5	70.5	10
R2086.048-16-SS	48	16	72.0	75.0	10
R2086.050-16-SS	50	16	75.0	78.0	10
R2086.056-16-SS	56	16	84.0	87.0	10
R2086.060-16-SS	60	16	90.0	93.0	10
R2086.064-16-SS	64	16	96.0	99.0	10





R2088

Material
Carbon Steel

Technical Notes
20° pressure angle.
Quality class DIN 7, AGMA 10.

ØH= 10 when bore=5mm
ØH= 13 when bore=8mm.

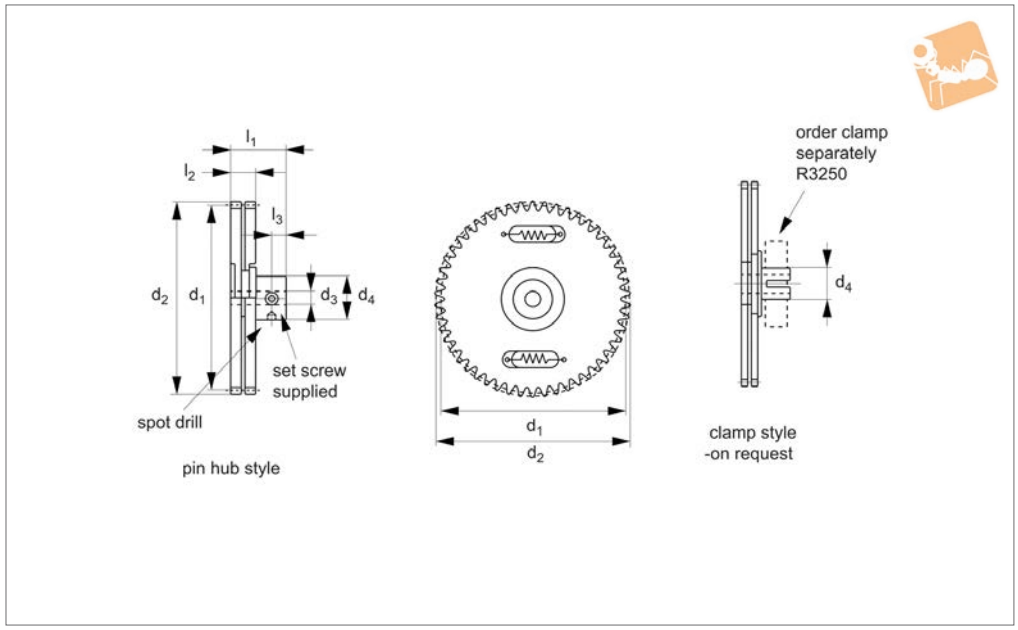
Tips
Special versions available on request (e.g. different number of teeth, 14.5° pressure angle, quality class DIN 5 & 3 etc).

Order No.	No. of teeth	Type	d_1	d_2	d_3	d_4	d_5	w_1	w_2	w_3	h
R2088.016-08-ST	16	W/o Keyway	8	-	-	24.0	27.0	18	-	-	-
R2088.018-10-ST	18	W/o Keyway	10	-	-	27.0	30.0	18	-	-	-
R2088.020-10-ST	20	W/o Keyway	10	-	-	30.0	33.0	18	-	-	-
R2088.024-12-ST	24	W/o Keyway	12	-	-	36.0	39.0	18	-	-	-
R2088.025-12-ST	25	W/o Keyway	12	-	-	37.5	40.5	18	-	-	-
R2088.028-12-ST	28	W/o Keyway	12	-	-	42.0	45.0	18	-	-	-
R2088.030-14-ST	30	W/o Keyway	14	-	-	45.0	48.0	18	-	-	-
R2088.032-14-ST	32	W/o Keyway	14	-	-	48.0	51.0	16	-	-	-
R2088.036-14-ST	36	W/o Keyway	14	-	-	54.0	57.0	16	-	-	-
R2088.040-14-ST	40	W/o Keyway	14	-	-	60.0	63.0	16	-	-	-
R2088.048-16-ST	48	W/o Keyway	16	-	-	72.0	75.0	16	-	-	-
R2088.050-16-ST	50	W/o Keyway	16	-	-	75.0	78.0	16	-	-	-
R2088.056-16-ST	56	W/o Keyway	16	-	-	84.0	87.0	16	-	-	-
R2088.060-16-ST	60	W/o Keyway	16	-	-	90.0	93.0	16	-	-	-
R2088.064-16-ST	64	W/o Keyway	16	-	-	96.0	99.0	16	-	-	-
R2088.070-16-ST	70	W/o Keyway	16	-	-	105.0	108.0	16	-	-	-
R2088.072-18-ST	72	W/o Keyway	18	-	-	108.0	111.0	18	-	-	-
R2088.080-18-ST	80	W/o Keyway	18	-	-	120.0	123.0	18	-	-	-
R2088.100-18-ST	100	W/o Keyway	18	-	-	150.0	153.0	18	-	-	-
R2088.020-14-ST	20	With Keyway	14	-	-	30.0	33.0	18	8	4	1.8
R2088.024-16-ST	24	With Keyway	16	-	-	36.0	39.0	18	8	5	2.3
R2088.025-16-ST	25	With Keyway	16	-	-	37.5	40.5	18	8	5	2.3
R2088.028-16-ST	28	With Keyway	16	-	-	42.0	45.0	18	8	5	2.3
R2088.030-18-ST	30	With Keyway	18	-	-	45.0	48.0	18	8	6	2.8
R2088.032-18-ST	32	With Keyway	18	-	-	48.0	51.0	16	8	6	2.8
R2088.036-18-ST	36	With Keyway	18	-	-	54.0	57.0	16	8	6	2.8
R2088.040-18-ST	40	With Keyway	18	-	-	60.0	63.0	16	8	6	2.8
R2088.048-20-ST	48	With Keyway	20	-	-	72.0	75.0	16	8	6	2.8
R2088.050-20-ST	50	With Keyway	20	-	-	75.0	78.0	16	8	6	2.8
R2088.056-20-ST	56	With Keyway	20	-	-	84.0	87.0	16	8	6	2.8
R2088.060-20-ST	60	With Keyway	20	40	76	90.0	93.0	16	8	6	2.8
R2088.064-20-ST	64	With Keyway	20	40	82	96.0	99.0	16	8	6	2.8
R2088.070-20-ST	70	With Keyway	20	40	91	105.0	108.0	16	8	6	2.8

Hubless Spur Gears

Steel

Order No.	No. of teeth	Type	d_1	d_2	d_3	d_4	d_5	w_1	w_2	w_3	h
R2088.072-25-ST	72	With Keyway	25	50	94	108.0	111.0	16	8	8	3.3
R2088.080-25-ST	80	With Keyway	25	50	106	120.0	123.0	16	8	8	3.3
R2088.100-25-ST	100	With Keyway	25	50	136	150.0	153.0	16	8	8	3.3





R2088.1

Material
Aluminium (DIN 3,1355 anodized before cutting).
Hub - stainless steel (DIN 1,4305).

Technical Notes
20° pressure angle.
Quality class DIN 7, AGMA 10.
ØH= 10 when bore=5mm
ØH= 13 when bore=8mm.

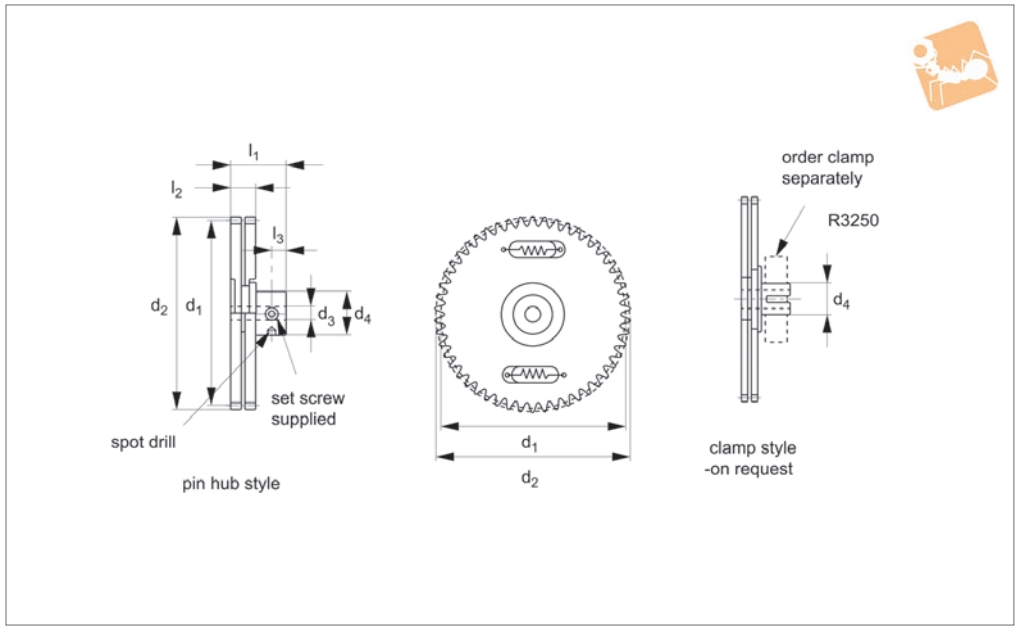
Tips
Special versions available on request (e.g. different number of teeth, 14.5° pressure angle, quality class DIN 5 & 3 etc).

Order No.	No. of teeth	d_1 p.d.	d_2 tol. H8	d_3	l_1	l_2	Module
R2088.A065-08	65	39.0	8	40.2	10	3	0.6
R2088.A070-08	70	42.0	8	43.2	10	3	0.6
R2088.A072-08	72	43.2	8	44.4	10	3	0.6
R2088.A075-08	75	45.0	8	46.2	10	3	0.6
R2088.A080-08	80	48	8	49.2	10	3	0.6
R2088.A084-08	84	50.4	8	51.6	10	3	0.6
R2088.A085-08	85	51.0	8	52.2	10	3	0.6
R2088.A090-08	90	54.0	8	55.2	10	3	0.6
R2088.A095-08	95	57.0	8	58.2	10	3	0.6
R2088.A096-08	96	57.6	8	58.8	10	3	0.6
R2088.A100-08	100	60.0	8	61.2	10	3	0.6
R2088.A105-08	105	63.0	8	64.2	10	3	0.6
R2088.A110-08	110	66.0	8	67.2	10	3	0.6
R2088.A115-08	115	69.0	8	70.2	10	3	0.6
R2088.A120-08	120	72.0	8	73.2	10	3	0.6
R2088.A125-08	125	75.0	8	76.2	10	3	0.6
R2088.A130-08	130	78.0	8	79.2	10	3	0.6
R2088.A132-08	132	79.2	8	80.4	10	3	0.6
R2088.A140-08	140	84.0	8	85.2	10	3	0.6
R2088.A144-08	144	86.4	8	87.6	10	3	0.6
R2088.A150-08	150	90.0	8	91.2	10	3	0.6
R2088.A065-05	65	39.0	8	40.2	10	3	0.6
R2088.A070-05	70	42.0	8	43.2	10	3	0.6
R2088.A072-05	72	43.2	8	44.4	10	3	0.6
R2088.A075-05	75	45.0	8	46.2	10	3	0.6
R2088.A080-05	80	48.0	8	49.2	10	3	0.6
R2088.A084-05	84	50.4	8	51.6	10	3	0.6
R2088.A085-05	85	51.0	8	52.2	10	3	0.6
R2088.A090-05	90	54.0	8	55.2	10	3	0.6
R2088.A095-05	95	57.0	8	58.2	10	3	0.6
R2088.A096-05	96	57.6	8	58.8	10	3	0.6

0,6 Module Anti-backlash Gears
aluminium



Order No.	No. of teeth	d_1 p.d.	d_2 tol. H8	d_3	l_1	l_2	Module
R2088.A100-05	100	60.0	8	61.2	10	3	0.6
R2088.A105-05	105	63.0	8	64.2	10	3	0.6
R2088.A110-05	110	66.0	8	67.2	10	3	0.6
R2088.A115-05	115	69.0	8	70.2	10	3	0.6
R2088.A120-05	120	72.0	8	73.2	10	3	0.6
R2088.A125-05	125	75.0	8	76.2	10	3	0.6
R2088.A130-05	130	78.0	8	79.2	10	3	0.6
R2088.A132-05	132	79.2	8	80.4	10	3	0.6
R2088.A140-05	140	84.0	8	85.2	10	3	0.6
R2088.A144-05	144	86.4	8	87.6	10	3	0.6
R2088.A150-05	150	90.0	8	91.2	10	3	0.6





R2090

Material
Core - A2 Stainless Steel
Gear - Machined from cast Nylon blocks

Technical Notes
20° pressure angle.

Quality class DIN 7, AGMA 10.
ØH= 10 when bore=5mm
ØH= 13 when bore=8mm.

Tips
Special versions available on request

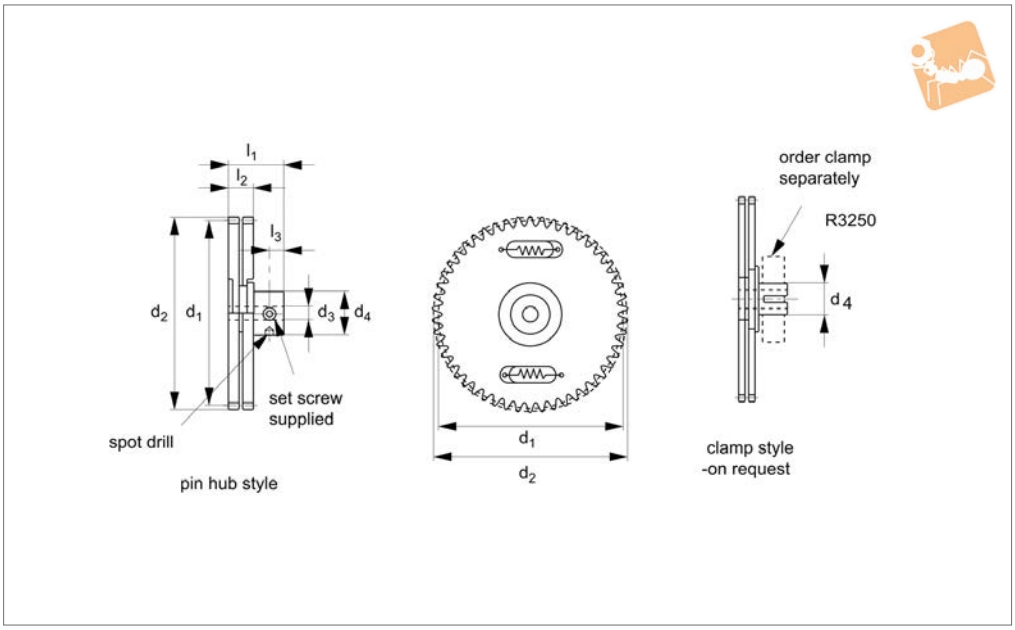
(e.g. different number of teeth, 14.5° pressure angle, quality class DIN 5 & 3 etc).

Order No.	No. of teeth	d_1	d_2	d_3	d_4	d_5	w_1	w_2	w_3
R2090.030-10	30	10	30	30	45.0	48.0	27	15	12
R2090.035-10	35	10	33	36	52.5	55.5	27	15	12
R2090.040-10	40	10	40	45	60.0	63.0	27	15	12
R2090.050-12	50	12	40	45	75.0	78.0	27	15	12
R2090.060-12	60	12	50	55	90.0	93.0	27	15	12
R2090.018-12	18	12	60	85	120.0	123.0	27	15	12

0,25 Module Anti-backlash Gears
stainless or aluminium



R2096

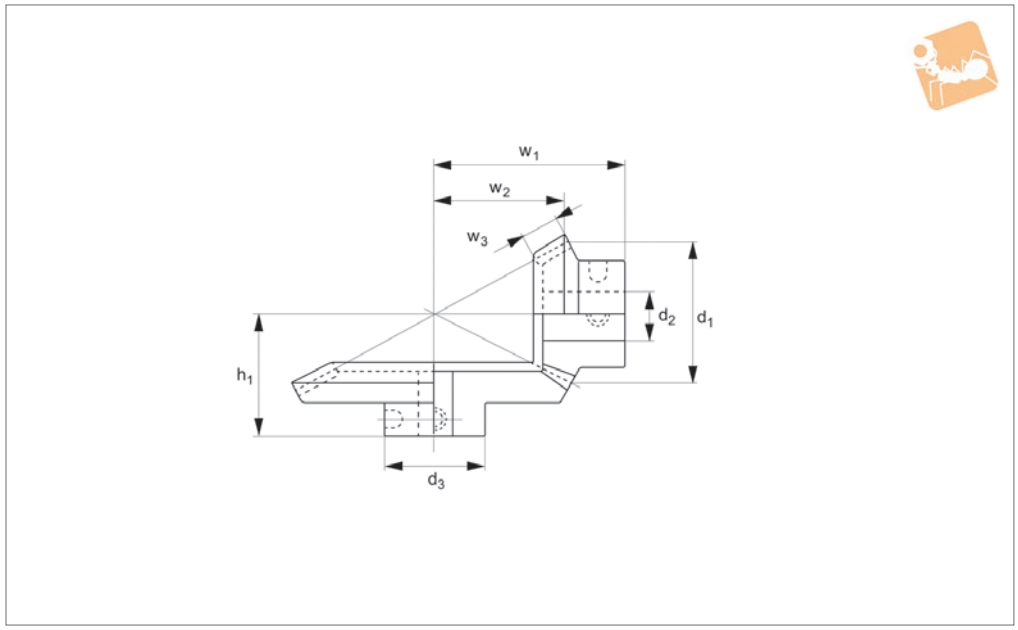


Material
Stainless steel (DIN 1,4305) or aluminium (DIN 3,1355 anodized before cutting).
Hub - stainless steel (DIN 1,4305).

Technical Notes
20° pressure angle.
Quality class DIN 7, AGMA 10.
ØH= 10 when bore=5mm
ØH= 13 when bore=8mm.

Tips
Special versions available on request (e.g. different number of teeth, 14.5° pressure angle, quality class DIN 5 & 3 etc).

Order No.	No. of teeth	d_1	d_2	d_3	d_4	w_1	w_2	w_3
R2096.015-12-SS	15	12	24	30	34	36	20	16
R2096.016-12-SS	16	12	26	32	36	36	20	16
R2096.018-12-SS	18	12	30	36	40	36	20	16
R2096.020-12-SS	20	12	32	40	44	36	20	16
R2096.022-12-SS	22	12	36	44	48	36	20	16
R2096.024-12-SS	24	12	38	48	52	36	20	16
R2096.025-12-SS	25	12	40	50	54	36	20	16
R2096.028-12-SS	28	12	45	56	60	36	20	16
R2096.030-12-SS	30	12	50	60	64	36	20	16





R2100

Material
Stainless steel (DIN 1,4305) or aluminium (DIN 3,1355).

Technical Notes
20° pressure angle.

Quality class DIN 7, AGMA 10.

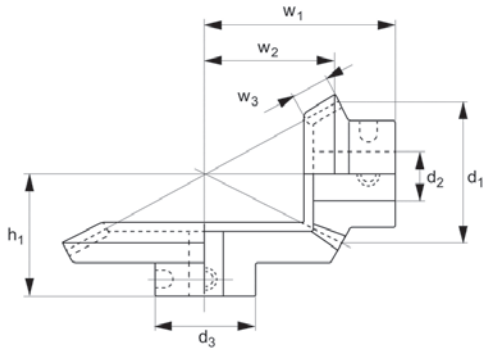
Tips
Gears will only mesh at right angles when used as sets described in chart.

Order No.	d_1 (gear)	d_1 (pinion)	d_2 tol. H7	d_3	Ratio	No. of teeth (pinion)	No. of teeth (gear)	w_1	w_2 (gear)	w_2 (pinion)	w_3	h_1	Material (pinion)	Material (gear)
R2100.001	30	30	Ø12	26	1 to 1	20	20	32,0	13,94	13,94	8	32	Stainless	Aluminium
R2100.001S	30	30	Ø12	26	1 to 1	20	20	32,0	13,94	13,94	8	32	Stainless	Stainless
R2100.001A	30	30	Ø12	26	1 to 1	20	20	32,0	13,94	13,94	8	32	Aluminium	Aluminium
R2100.002	60	30	Ø12	26	1 to 2	20	40	47,5	14,12	29,10	8	32	Stainless	Aluminium
R2100.003	90	30	Ø12	26	1 to 3	20	60	63,5	14,16	44,33	8	32	Stainless	Aluminium
R2100.001P		30	Ø12	26	1 to 1	20		32,0		13,94	8	32	Stainless	
R2100.001G	30		Ø12	26	1 to 1		20	32,0	13,94		8	32		Aluminium

1,0 Module Mitre & Bevel gears
stainless/aluminium



R2102



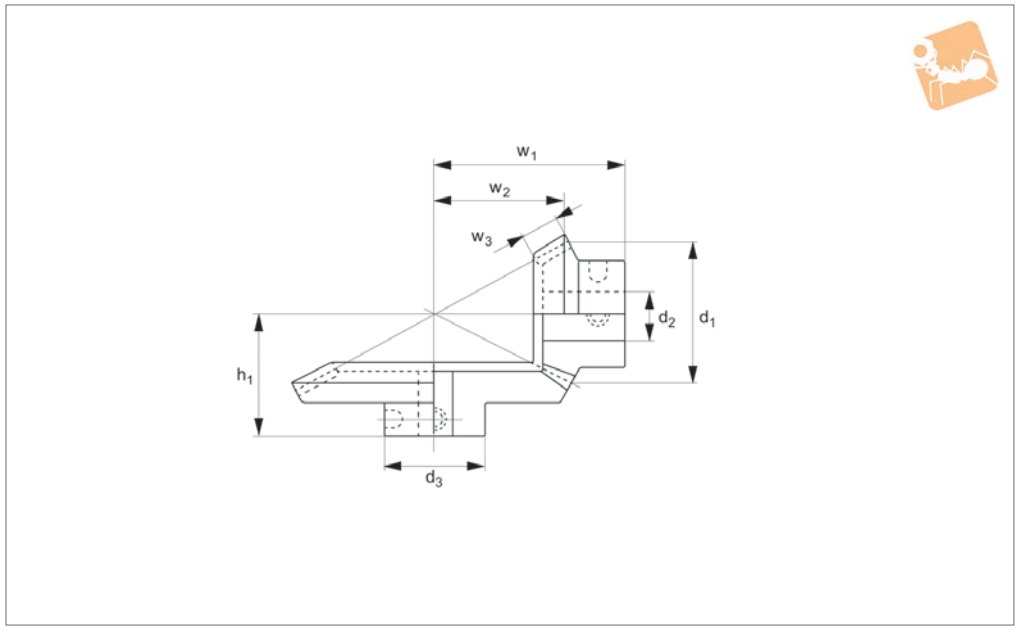
Material
Stainless steel (DIN 1,4305) or aluminium (DIN 3,1355).

Technical Notes
20° pressure angle.

Quality class DIN 7, AGMA 10.

Tips
Gears will only mesh at right angles when used as sets described in chart.

Order No.	d_1 (gear)	d_1 (pinion)	d_2 tol. H7	d_3	Ratio	No. of teeth (pinion)	No. of teeth (gear)	w_1	w_2 (gear)	w_2 (pinion)	w_3	h_1	Material (pinion)	Material (gear)
R2102.001	24	24	Ø10	19	1 to 1	24	24	25,5	11,29	11,29	7	25,5	Stainless	Aluminium
R2102.001S		24	Ø10	19	1 to 1	24	24	25,5	11,29	11,29	7	25,5	Stainless	Stainless
R2102.001A	24	24	Ø10	19	1 to 1	24	24	25,5	11,29	11,29	7	25,5	Aluminium	Aluminium
R2102.002	58	24	Ø10	19	1 to 2	24	48	38,0	11,42	23,40	7	25,5	Stainless	Aluminium
R2102.003	72	24	Ø10	19	1 to 3	24	72	51,0	11,44	35,56	7	25,5	Stainless	Aluminium
R2102.004	96	24	Ø10	19	1 to 4	24	96	63,5	11,45	47,65	7	25,5	Stainless	Aluminium
R2102.001P		24	Ø10	19	1 to 1	24		25,5		11,29	7	25,5	Stainless	
R2102.001G	24		Ø10	19	1 to 1		24	25,5	11,29		7	25,5		Aluminium





R2104

Material
Stainless steel (DIN 1,4305) or aluminium (DIN 3,1355).

Technical Notes
20° pressure angle.

Quality class DIN 7, AGMA 10.

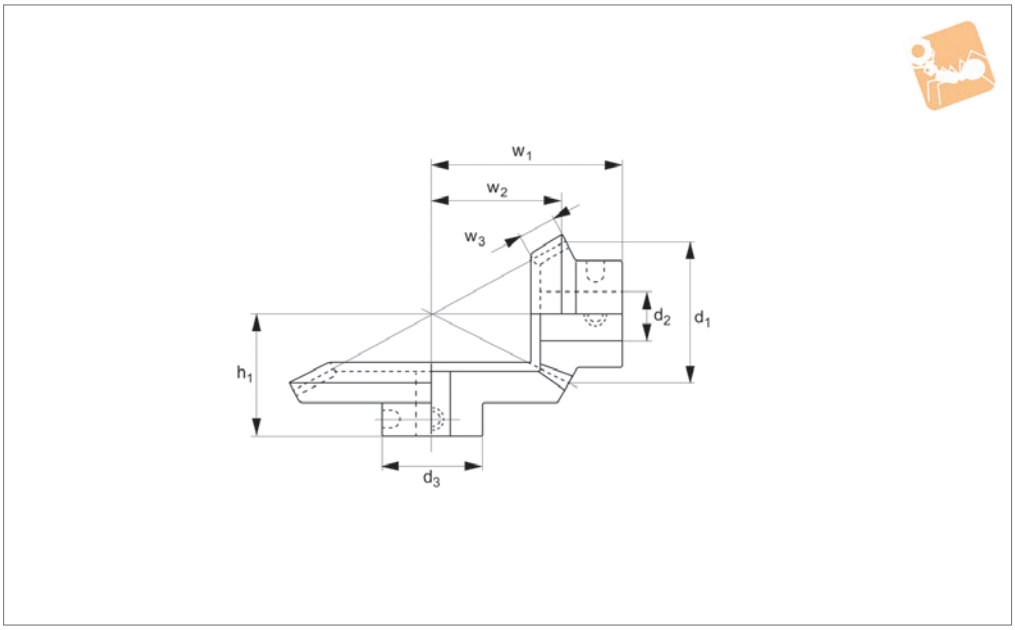
Tips
Gears will only mesh at right angles when used as sets described in chart.

Order No.	d_1 (gear)	d_1 (pinion)	d_2 tol. H7	d_3	Ratio	No. of teeth (pinion)	No. of teeth (gear)	w_1	w_2 (gear)	w_2 (pinion)	w_3	h_1	Material (pinion)	Material (gear)
R2104.001	19,20	19,20	Ø8	16	1 to 1	24	24	19,0	9,03	9,03	7	19	Stainless	Aluminium
R2104.001S		19,20	Ø8	16	1 to 1	24	24	19,0	9,03	9,03	7	19	Stainless	Stainless
R2104.001A	19,20	19,20	Ø8	16	1 to 1	24	24	19,0	9,03	9,03	7	19	Aluminium	Aluminium
R2104.002	38,40	19,20	Ø8	16	1 to 2	24	48	28,5	9,13	18,72	7	19	Stainless	Aluminium
R2104.003	57,60	19,20	Ø8	16	1 to 3	24	72	38,0	9,15	28,44	7	19	Stainless	Aluminium
R2104.004	76,80	19,20	Ø8	16	1 to 4	24	96	47,5	9,16	38,12	7	19	Stainless	Aluminium
R2104.001P		19,20	Ø8	16	1 to 1	24		19,0		9,03	7	19	Stainless	
R2104.001G	19,20		Ø8	16	1 to 1		24	19,0	9,03		7	19		Aluminium

0,6 Module Mitre & Bevel gears
stainless/aluminium



R2106



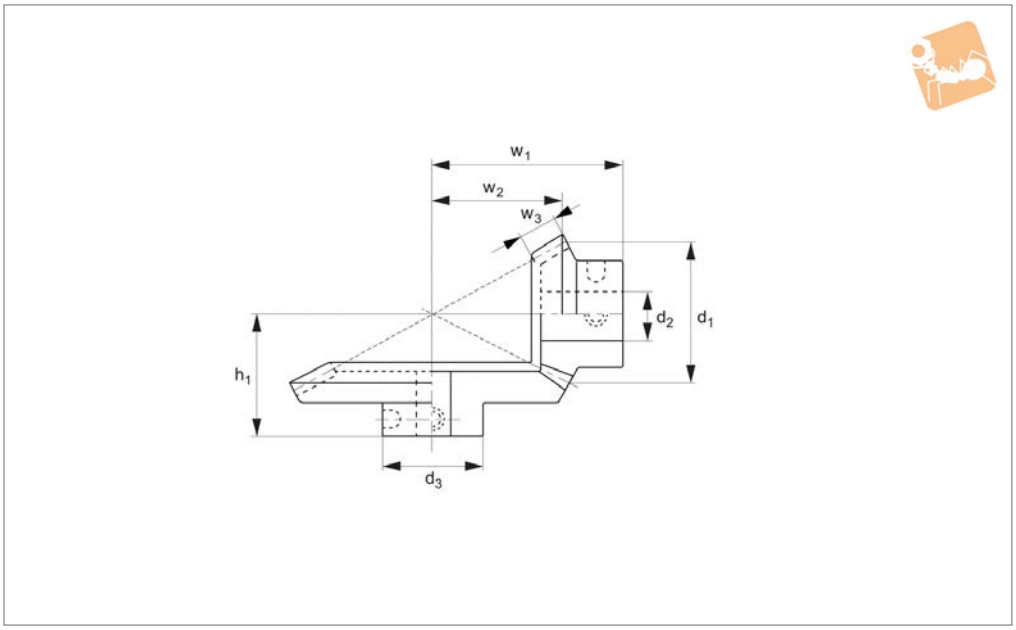
Material
Stainless steel (DIN 1,4305) or aluminium (DIN 3,1355).

Technical Notes
20° pressure angle.

Quality class DIN 7, AGMA 10.

Tips
Gears will only mesh at right angles when used as sets described in chart.

Order No.	d_1 (gear)	d_1 (pinion)	d_2 tol. H7	d_3	Ratio	No. of teeth (pinion)	No. of teeth (gear)	w_1	w_2 (gear)	w_2 (pinion)	w_3	h_1	Material (pinion)	Material (gear)
R2106.001	18	18	Ø8	13	1 to 1	30	30	18	8,58	8,58	5	18	Stainless	Aluminium
R2106.001S	18	18	Ø8	13	1 to 1	30	30	18	8,58	8,58	5	18	Stainless	Stainless
R2106.001A	18	18	Ø8	13	1 to 1	30	30	18	8,58	8,58	5	18	Aluminium	Aluminium
R2106.002	36	18	Ø8	13	1 to 2	30	60	26	8,65	17,64	5	18	Stainless	Aluminium
R2106.003	54	18	Ø8	13	1 to 3	30	90	36	8,66	26,73	5	18	Stainless	Aluminium
R2106.004	72	18	Ø8	13	1 to 4	30	120	44	8,67	35,79	5	18	Stainless	Aluminium
R2106.001P		18	Ø8	13	1 to 1	30		18		8,58	5	18	Stainless	
R2106.001G	18		Ø8	13	1 to 1		30	18	8,58		5	18		Aluminium





R2108

Material
Stainless steel (DIN 1,4305) or aluminium (DIN 3,1355).

Technical Notes
20° pressure angle.

Quality class DIN 7, AGMA 10.

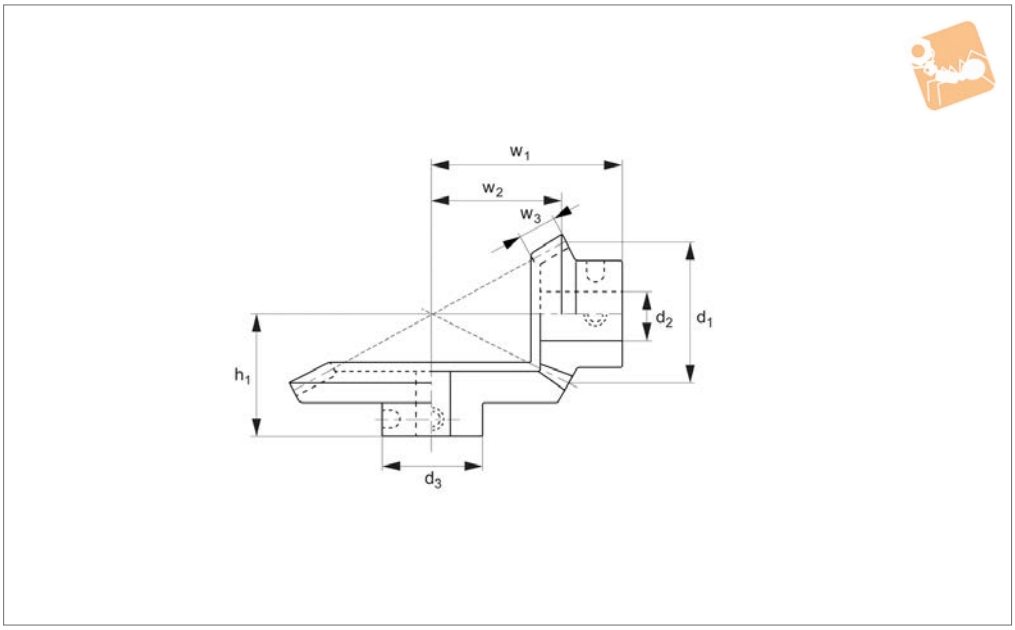
Tips
Gears will only mesh at right angles when used as sets described in chart.

Order No.	d_1 (gear)	d_1 (pinion)	d_2 tol. H7	d_3	Ratio	No. of teeth (pinion)	No. of teeth (gear)	w_1	w_2 (gear)	w_2 (pinion)	w_3	h_1	Material (pinion)	Material (gear)
R2108.01	16	16	Ø5	10	1 to 1	30	30	15	7,65	7,65	4	15	Stainless	Aluminium
R2108.01S	16	16	Ø5	10	1 to 1	30	30	15	7,65	7,65	4	15	Stainless	Stainless
R2108.01A	16	16	Ø5	10	1 to 1	30	30	15	7,65	7,65	4	15	Aluminium	Aluminium
R2108.02	32	16	Ø5	10	1 to 2	30	60	23	7,71	15,70	4	15	Stainless	Aluminium
R2108.03	48	16	Ø5	10	1 to 3	30	90	32	7,72	23,78	4	15	Stainless	Aluminium
R2108.04	64	16	Ø5	10	1 to 4	30	120	39	7,72	31,83	4	15	Stainless	Stainless
R2108.01P		16	Ø5	10	1 to 1	30		15		7,65	4	15	Stainless	
R2108.01G	16		Ø5	10	1 to 1		30	15	7,65		4	15		Aluminium

0,4 Module Mitre & Bevel gears
stainless/aluminium



R2110



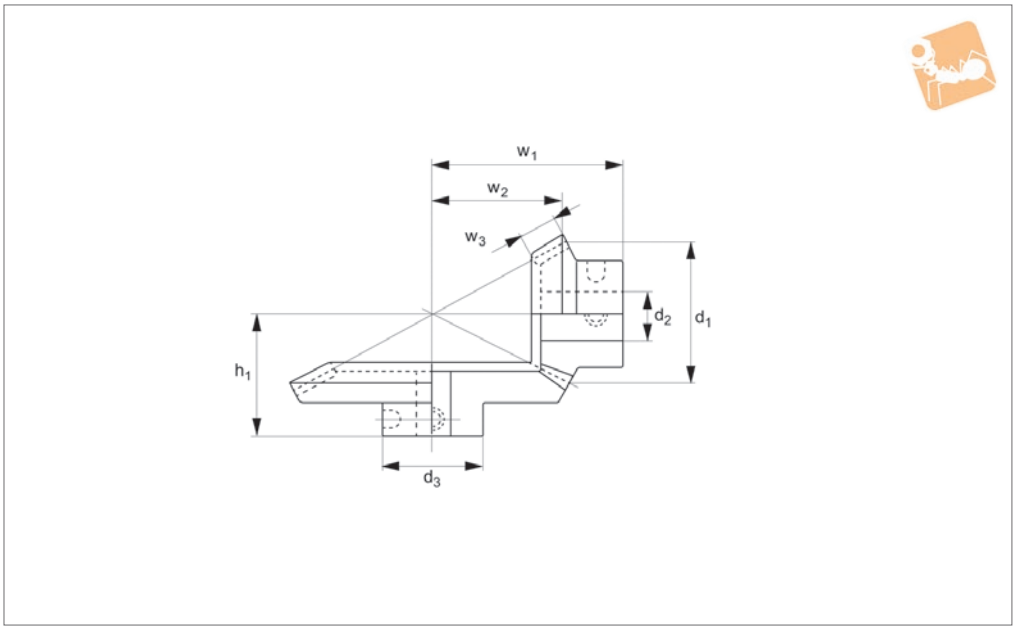
Material
Stainless steel (DIN 1,4305) or aluminium (DIN 3,1355).

Technical Notes
20° pressure angle.

Quality class DIN 7, AGMA 10.

Tips
Gears will only mesh at right angles when used as sets described in chart.

Order No.	d_1 (gear)	d_1 (pinion)	d_2 tol. H7	d_3	Ratio	No. of teeth (pinion)	No. of teeth (gear)	w_1	w_2 (gear)	w_2 (pinion)	w_3	h_1	Material (pinion)	Material (gear)
R2110.001	14,40	14,40	Ø5	10	1 to 1	36	36	15,0	6,92	6,92	4	15	Stainless	Aluminium
R2110.001S	14,40	14,40	Ø5	10	1 to 1	36	36	15,0	6,92	6,92	4	15	Stainless	Stainless
R2110.001A	14,40	14,40	Ø5	10	1 to 1	36	36	15,0	6,92	6,92	4	15	Aluminium	Aluminium
R2110.002	28,80	14,40	Ø5	10	1 to 2	36	72	22	6,97	14,16	4	15	Stainless	Aluminium
R2110.003	43,20	14,40	Ø5	10	1 to 3	36	108	29,5	6,97	21,42	4	15	Stainless	Aluminium
R2110.001P		14,40	Ø5	10	1 to 1	36		15,0		6,92	4	15	Stainless	
R2110.001G	14,40		Ø5	10	1 to 1		36	15,0	6,92		4	15		Aluminium





R2112

Material
Stainless steel (DIN 1,4305) or aluminium (DIN 3,1355).

Technical Notes
20° pressure angle.

Quality class DIN 7, AGMA 10.

Tips
Gears will only mesh at right angles when used as sets described in chart.

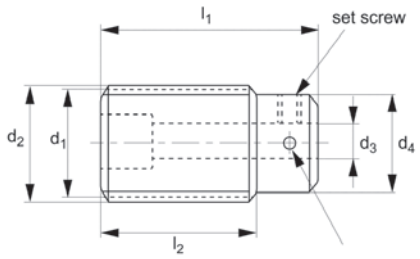
Order No.	d_1 (gear)	d_1 (pinion)	d_2 tol. H7	d_3	Ratio	No. of teeth (pinion)	No. of teeth (gear)	w_1	w_2 (gear)	w_2 (pinion)	w_3	h_1	Material (pinion)	Material (gear)
R2112.001	10,80	10,80	Ø3	8	1 to 1	36	36	13,0	5,19	5,19	3	13	Stainless	Aluminium
R2112.001S	10,80	10,80	Ø3	8	1 to 1	36	36	13,0	5,19	5,19	3	13	Stainless	Stainless
R2112.001A	10,80	10,80	Ø3	8	1 to 1	36	36	13,0	5,19	5,19	3	13	Aluminium	Aluminium
R2112.002	21,60	10,80	Ø3	8	1 to 2	36	72	18,5	5,23	10,62	3	13	Stainless	Aluminium
R2112.003	32,40	10,80	Ø3	8	1 to 3	36	108	24,0	5,23	16,07	3	13	Stainless	Aluminium
R2112.001P		10,80	Ø3	8	1 to 1	36		13,0		5,19	3	13	Stainless	
R2112.001G	10,80		Ø3	8	1 to 1		36	13,0	5,19		3	13		Aluminium

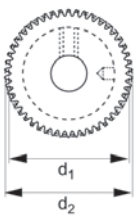


1,5 Module Precision Worms
stainless steel



R2132

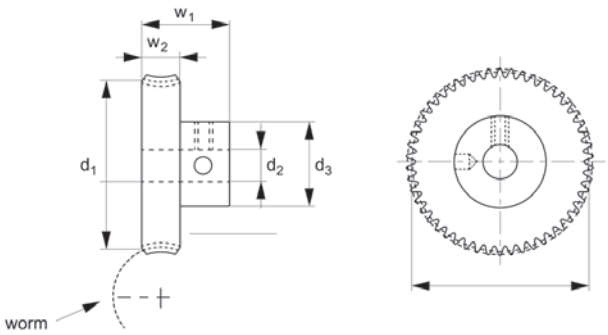




Material
Stainless steel (DIN 1,4305).

Technical Notes
Quality class DIN 7/AGMA 10.
Right hand.

Order No.	Ø B	Thread	Lead	Lead angle	Pressure angle
WAS-7S	7	Single	4.712	5° 21‘	14½°
WAS-7D	7	Double	9.425	10° 37‘	14½°
WAS-7F	7	Four	18.850	20° 33‘	20°
WAS-8S	8	Single	4.712	5° 21‘	14½°
WAS-8D	8	Double	9.425	10° 37‘	14½°
WAS-8F	8	Four	18.850	20° 33‘	20°





R2134

Material
Brass.

Technical Notes
Quality class DIN 7/AGMA 10.

Right hand.
Select worm part R2136 with corresponding number of threads.

Tips
Ratio=(No. of teeth/No. of worm threads).
For larger sizes, please see the following page.

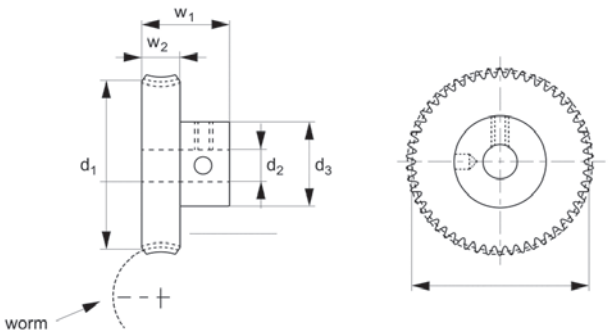
Order No.	Starts	No. of teeth	Bore dia.	Pitch dia. P.D.	Circular pitch	Helix angle	Pressure angle
R2134.020-10S	Single	20	10	20.00	3.142	4° 45‘	14½°
R2134.030-10S	Single	30	10	30.00	3.142	4° 45‘	14½°
R2134.040-10S	Single	40	10	40.00	3.142	4° 45‘	14½°
R2134.050-10S	Single	50	10	50.00	3.142	4° 45‘	14½°
R2134.060-10S	Single	60	10	60.00	3.142	4° 45‘	14½°
R2134.072-10S	Single	72	10	72.00	3.142	4° 45‘	14½°
R2134.080-10S	Single	80	10	80.00	3.142	4° 45‘	14½°
R2134.096-10S	Single	96	10	96.00	3.142	4° 45‘	14½°
R2134.100-10S	Single	100	10	100.00	3.142	4° 45‘	14½°
R2134.020-10D	Double	20	10	20.00	6.283	9° 27‘	20°
R2134.030-10D	Double	30	10	30.00	6.283	9° 27‘	20°
R2134.040-10D	Double	40	10	40.00	6.283	9° 27‘	20°
R2134.050-10D	Double	50	10	50.00	6.283	9° 27‘	20°
R2134.060-10D	Double	60	10	60.00	6.283	9° 27‘	20°
R2134.072-10D	Double	72	10	72.00	6.283	9° 27‘	20°
R2134.080-10D	Double	80	10	80.00	6.283	9° 27‘	20°
R2134.096-10D	Double	96	10	96.00	6.283	9° 27‘	20°
R2134.100-10D	Double	100	10	100.00	6.283	9° 27‘	20°
R2134.020-10F	Four	20	10	20.00	12.566	18° 26‘	25°
R2134.030-10F	Four	30	10	30.00	12.566	18° 26‘	25°
R2134.040-10F	Four	40	10	40.00	12.566	18° 26‘	25°
R2134.050-10F	Four	50	10	50.00	12.566	18° 26‘	25°
R2134.060-10F	Four	60	10	60.00	12.566	18° 26‘	25°
R2134.072-10F	Four	72	10	72.00	12.566	18° 26‘	25°
R2134.080-10F	Four	80	10	80.00	12.566	18° 26‘	25°
R2134.096-10F	Four	96	10	96.00	12.566	18° 26‘	25°
R2134.100-10F	Four	100	10	100.00	12.566	18° 26‘	25°
R2134.020-12S	Single	20	12	20.00	3.142	4° 45‘	14½°
R2134.030-12S	Single	30	12	30.00	3.142	4° 45‘	14½°
R2134.040-12S	Single	40	12	40.00	3.142	4° 45‘	14½°
R2134.050-12S	Single	50	12	50.00	3.142	4° 45‘	14½°
R2134.060-12S	Single	60	12	60.00	3.142	4° 45‘	14½°
R2134.072-12S	Single	72	12	72.00	3.142	4° 45‘	14½°
R2134.080-12S	Single	80	12	80.00	3.142	4° 45‘	14½°

1,0 Module Precision Worm Gears

Right Hand



Order No.	Starts	No. of teeth	Bore dia.	Pitch dia. P.D.	Circular pitch	Helix angle	Pressure angle
R2134.096-12S	Single	96	12	96.00	3.142	4° 45‘	14½°
R2134.100-12S	Single	100	12	100.00	3.142	4° 45‘	14½°
R2134.020-12D	Double	20	12	20.00	6.283	9° 27‘	20°
R2134.030-12D	Double	30	12	30.00	6.283	9° 27‘	20°
R2134.040-12D	Double	40	12	40.00	6.283	9° 27‘	20°
R2134.050-12D	Double	50	12	50.00	6.283	9° 27‘	20°
R2134.060-12D	Double	60	12	60.00	6.283	9° 27‘	20°
R2134.072-12D	Double	72	12	72.00	6.283	9° 27‘	20°
R2134.080-12D	Double	80	12	80.00	6.283	9° 27‘	20°
R2134.096-12D	Double	96	12	96.00	6.283	9° 27‘	20°
R2134.100-12D	Double	100	12	100.00	6.283	9° 27‘	20°





R2134.1

Material
Brass.

Technical Notes
Quality class DIN 7/AGMA 10.

Right hand.
Select worm R2136 with corresponding number of threads.

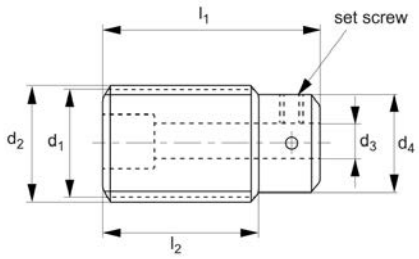
Tips
Ratio=(No. of teeth/No. of worm threads).
For smaller sizes, please see the previous page.

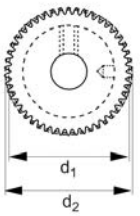
Order No.	Starts	No. of teeth	Bore dia.	Pitch dia. P.D.	Circular pitch	Helix angle	Pressure angle
R2134.020-12F	Four	20	12	20.00	12.566	18° 26‘	25°
R2134.030-12F	Four	30	12	30.00	12.566	18° 26‘	25°
R2134.040-12F	Four	40	12	40.00	12.566	18° 26‘	25°
R2134.050-12F	Four	50	12	50.00	12.566	18° 26‘	25°
R2134.060-12F	Four	60	12	60.00	12.566	18° 26‘	25°
R2134.072-12F	Four	72	12	72.00	12.566	18° 26‘	25°
R2134.080-12F	Four	80	12	80.00	12.566	18° 26‘	25°
R2134.096-12F	Four	96	12	96.00	12.566	18° 26‘	25°
R2134.100-12F	Four	100	12	100.00	12.566	18° 26‘	25°

1,0 Module Precision Worms
stainless steel



R2136



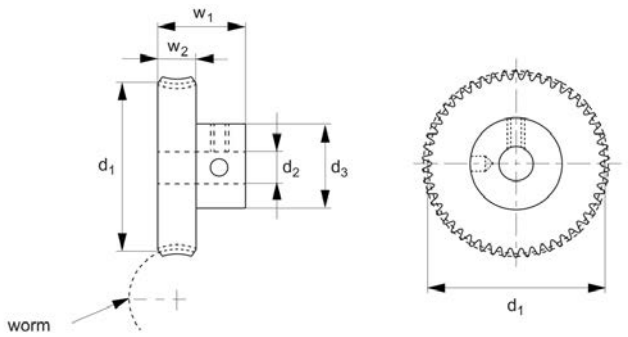


Material
Stainless steel (DIN 1,4305).

Technical Notes
Quality class DIN 7/AGMA 10.
Right hand.

Order No.	Ø B	Starts	Lead	Lead angle	Pressure angle
R2136.07S	7	Single	3.142	4° 45‘	14½°
R2136.07D	7	Double	6.283	9° 27‘	20°
R2136.07F	7	Four	12.566	18° 26‘	25°
R2136.08S	8	Single	3.142	4° 45‘	14½°
R2136.08D	8	Double	6.283	9° 27‘	20°
R2136.08F	8	Four	12.566	18° 26‘	25°

0,8 Module Precision Worm Gears
brass





R2138

Material
Brass.

Technical Notes
Quality class DIN 7/AGMA 10.

Right hand.
Select worm part R2136 with corresponding number of threads.

Tips
Ratio=(No. of teeth/No. of worm threads).

Order No.	Starts	No. of teeth	Bore dia.	Pitch dia. P.D.	Circular pitch	Helix angle	Pressure angle
R2138.020S-05	Single	20	5	16.00	2.513	4° -0‘	14½°
R2138.030S-05	Single	30	5	24.00	2.513	4° -0‘	14½°
R2138.040S-05	Single	40	5	32.00	2.513	4° -0‘	14½°
R2138.050S-05	Single	50	5	40.00	2.513	4° -0‘	14A°
R2138.060S-05	Single	60	5	48.00	2.513	4° -0‘	14A°
R2138.080S-05	Single	80	5	64.00	2.513	4° -0‘	14A°
R2138.090S-05	Single	90	5	76.80	2.513	4° -0‘	14A°
R2138.100S-05	Single	100	5	80.00	2.513	4° -0‘	14A°
R2138.020D-05	Double	20	5	16.00	5.027	7° -59‘	20°
R2138.030D-05	Double	30	5	24.00	5.027	7° -59‘	20°
R2138.040D-05	Double	40	5	32.00	5.027	7° -59‘	20°
R2138.050D-05	Double	50	5	40.00	5.027	7° -59‘	20°
R2138.060D-05	Double	60	5	48.00	5.027	7° -59‘	20°
R2138.080D-05	Double	80	5	64.00	5.027	7° -59‘	20°
R2138.090D-05	Double	90	5	76.80	5.027	7° -59‘	20°
R2138.100D-05	Double	100	5	80.00	5.027	7° -59‘	20°
R2138.020F-05	Four	20	5	16.00	10.053	15° -40‘	25°
R2138.030F-05	Four	30	5	24.00	10.053	15° -40‘	25°
R2138.040F-05	Four	40	5	32.00	10.053	15° -40‘	25°
R2138.050F-05	Four	50	5	40.00	10.053	15° -40‘	25°
R2138.060F-05	Four	60	5	48.00	10.053	15° -40‘	25°
R2138.080F-05	Four	80	5	64.00	10.053	15° -40‘	25°
R2138.090F-05	Four	90	5	76.80	10.053	15° -40‘	25°
R2138.100F-05	Four	100	5	80.00	10.053	15° -40‘	25°
R2138.020S-08	Single	20	8	16.00	2.513	4° -0‘	14½°
R2138.030S-08	Single	30	8	24.00	2.513	4° -0‘	14½°
R2138.040S-08	Single	40	8	32.00	2.513	4° -0‘	14½°
R2138.050S-08	Single	50	8	40.00	2.513	4° -0‘	14A°
R2138.060S-08	Single	60	8	48.00	2.513	4° -0‘	14A°
R2138.080S-08	Single	80	8	64.00	2.513	4° -0‘	14A°
R2138.090S-08	Single	90	8	76.80	2.513	4° -0‘	14A°
R2138.100S-08	Single	100	8	80.00	2.513	4° -0‘	14A°
R2138.020D-08	Double	20	8	16.00	5.027	7° -59‘	20°
R2138.030D-08	Double	30	8	24.00	5.027	7° -59‘	20°

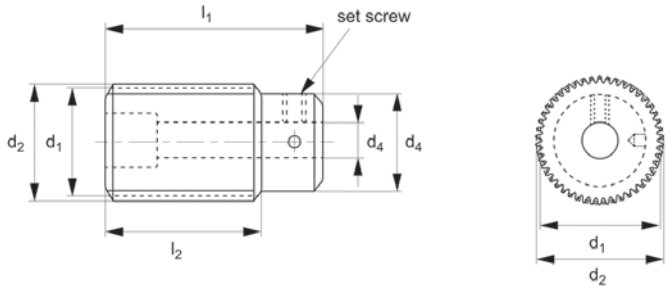


0,8 Module Precision Worm Gears

brass



Order No.	Starts	No. of teeth	Bore dia.	Pitch dia. P.D.	Circular pitch	Helix angle	Pressure angle
R2138.040D-08	Double	40	8	32.00	5.027	7° -59‘	20°
R2138.050D-08	Double	50	8	40.00	5.027	7° -59‘	20°
R2138.060D-08	Double	60	8	48.00	5.027	7° -59‘	20°
R2138.080D-08	Double	80	8	64.00	5.027	7° -59‘	20°
R2138.090D-08	Double	90	8	76.80	5.027	7° -59‘	20°
R2138.100D-08	Double	100	8	80.00	5.027	7° -59‘	20°
R2138.020F-08	Four	20	8	16.00	10.053	15° -40‘	25°
R2138.030F-08	Four	30	8	24.00	10.053	15° -40‘	25°
R2138.040F-08	Four	40	8	32.00	10.053	15° -40‘	25°
R2138.050F-08	Four	50	8	40.00	10.053	15° -40‘	25°
R2138.060F-08	Four	60	8	48.00	10.053	15° -40‘	25°
R2138.080F-08	Four	80	8	64.00	10.053	15° -40‘	25°
R2138.090F-08	Four	90	8	76.80	10.053	15° -40‘	25°
R2138.100F-08	Four	100	8	80.00	10.053	15° -40‘	25°





R2140

Material
Stainless steel (DIN 1,4305).

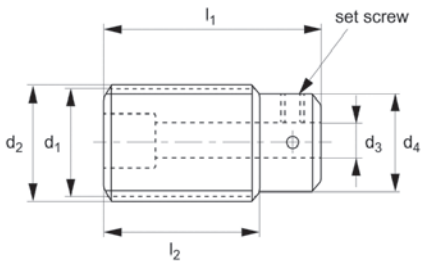
Technical Notes
Quality class DIN 7/AGMA 10.
Right hand.

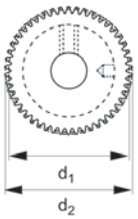
Order No.	Starts	Lead	Lead angle	Pressure angle
R2140.05S	Single	2.513	4° 0‘	14½°
R2140.05D	Double	5.027	7° 59‘	20°
R2140.04F	Four	10.053	15° 40‘	25°

0,5 Module Precision Worms
stainless steel



R2144



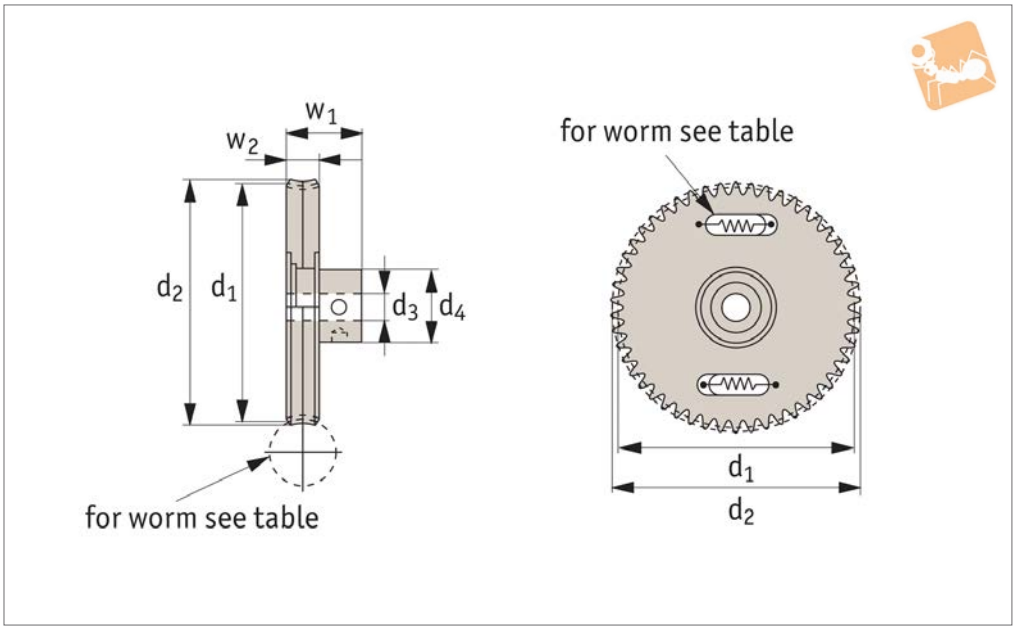


Material
Stainless steel (DIN 1,4305).

Technical Notes
Quality class DIN 7/AGMA 10.
Right hand.

Order No.	Starts	l_1	l_2	d_1	d_2	d_3 tol. H7	d_4	Lead	Lead angle	Pressure angle
R2144.3S	Single	19	14	9	10	3	8	1.571	3° 10‘	14 1/2°
R2144.3D	Double	19	14	9	10	3	8	3.142	6° 20‘	20°
R2144.3F	Four	19	14	9	10	3	8	6.283	12° 31‘	25°
R2144.5S	Single	19	14	9	10	5	8	1.571	3° 10‘	14 1/2°
R2144.5D	Double	19	14	9	10	5	8	3.142	6° 20‘	20°
R2144.5F	Four	19	14	9	10	5	8	6.283	12° 31‘	25°

0,5 Module Anti-backlash Worm Gears
brass





R2147

Material
Brass.

Technical Notes
Quality class DIN 7/AGMA 10.

Right hand.
Select worm with corresponding number of threads - see part no. R2144.
Also available with clamp style hub.

Tips
Ratio=(No. of teeth/No. of worm threads).
For larger sizes, please see following page.

Order No.	Starts	No. of teeth	Bore dia.	Pitch dia. P.D.	Circular pitch	Helix angle	Pressure angle
R2147.040S-05	Single	40	5	20.00	1.571	3° 10‘	14A°
R2147.050S-05	Single	50	5	25.00	1.571	3° 10‘	14A°
R2147.060S-05	Single	60	5	30.00	1.571	3° 10‘	14A°
R2147.070S-05	Single	70	5	35.00	1.571	3° 10‘	14A°
R2147.080S-05	Single	80	5	40.00	1.571	3° 10‘	14A°
R2147.090S-05	Single	90	5	45.00	1.571	3° 10‘	14A°
R2147.100S-05	Single	100	5	50.00	1.571	3° 10‘	14A°
R2147.120S-05	Single	120	5	60.00	1.571	3° 10‘	14A°
R2147.180S-05	Single	180	5	90.00	1.571	3° 10‘	14A°
R2147.040D-05	Double	40	5	20.00	3.142	6° 20‘	20°
R2147.050D-05	Double	50	5	25.00	3.142	6° 20‘	20°
R2147.060D-05	Double	60	5	30.00	3.142	6° 20‘	20°
R2147.120D-05	Double	120	5	60.00	3.142	6° 20‘	20°
R2147.070D-05	Double	70	5	35.00	3.142	6° 20‘	20°
R2147.080D-05	Double	80	5	40.00	3.142	6° 20‘	20°
R2147.090D-05	Double	90	5	45.00	3.142	6° 20‘	20°
R2147.100D-05	Double	100	5	50.00	3.142	6° 20‘	20°
R2147.180D-05	Double	180	5	90.00	3.142	6° 20‘	20°
R2147.040F-05	Four	40	5	20.00	6.283	12° 31‘	25°
R2147.050F-05	Four	50	5	25.00	6.283	12° 31‘	25°
R2147.060F-05	Four	60	5	30.00	6.283	12° 31‘	25°
R2147.070F-05	Four	70	5	35.00	6.283	12° 31‘	25°
R2147.080F-05	Four	80	5	40.00	6.283	12° 31‘	25°
R2147.090F-05	Four	90	5	45.00	6.283	12° 31‘	25°
R2147.100F-05	Four	100	5	50.00	6.283	12° 31‘	25°
R2147.120F-05	Four	120	5	60.00	6.283	12° 31‘	25°
R2147.180F-05	Four	180	5	90.00	6.283	12° 31‘	25°
R2147.040S-08	Single	40	8	20.00	1.571	3° 10‘	14A°
R2147.050S-08	Single	50	8	25.00	1.571	3° 10‘	14A°
R2147.060S-08	Single	60	8	30.00	1.571	3° 10‘	14A°
R2147.070S-08	Single	70	8	35.00	1.571	3° 10‘	14A°
R2147.080S-08	Single	80	8	40.00	1.571	3° 10‘	14A°
R2147.090S-08	Single	90	8	45.00	1.571	3° 10‘	14A°
R2147.100S-08	Single	100	8	50.00	1.571	3° 10‘	14A°

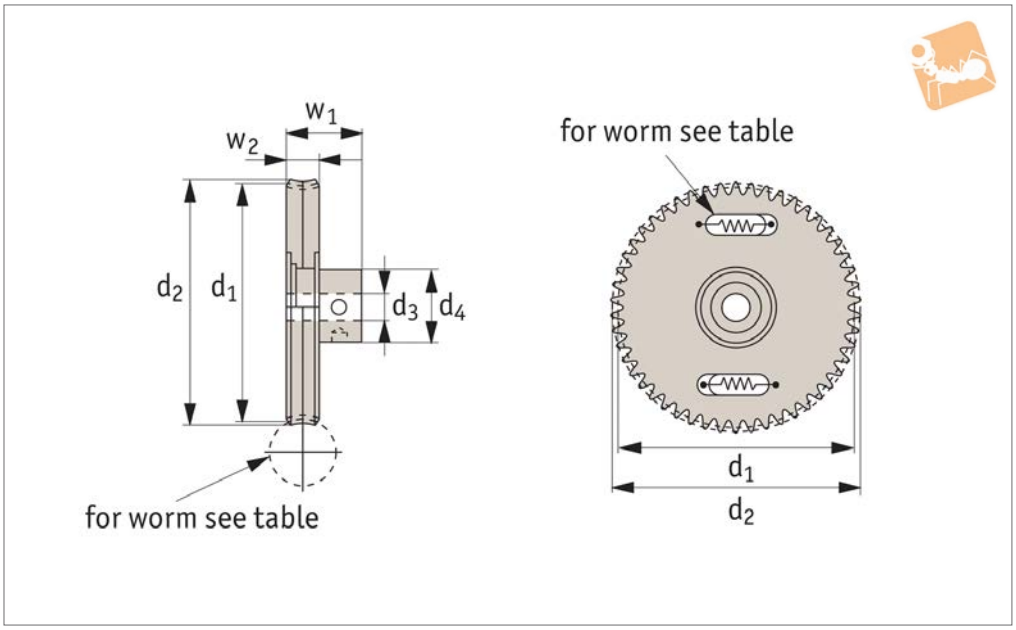
0,5 Module Anti-backlash Worm Gears

brass



Order No.	Starts	No. of teeth	Bore dia.	Pitch dia. P.D.	Circular pitch	Helix angle	Pressure angle
R2147.120S-08	Single	120	8	60.00	1.571	3° 10‘	14A°
R2147.180S-08	Single	180	8	90.00	1.571	3° 10‘	14A°

0,5 Module Anti-backlash Worm Gears
brass





R2147.1

Material
Brass.

Technical Notes
Quality class DIN 7/AGMA 10.

Right hand.
Select worm with corresponding number of threads - see part no. R2144.
Also available with clamp style hub.

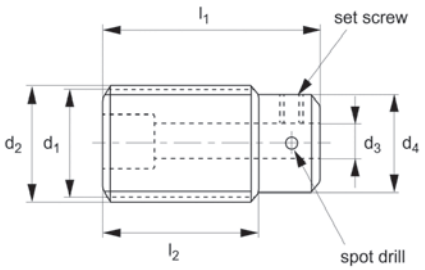
Tips
Ratio=(No. of teeth/No. of worm threads).
For smaller sizes, please see previous page.

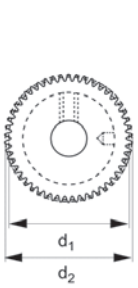
Order No.	Starts	No. of teeth	Bore dia.	Pitch dia. P.D.	Circular pitch	Helix angle	Pressure angle
R2147.D040-05	Double	40	5	20.00	3.142	6° 20‘	20°
R2147.D050-05	Double	50	5	25.00	3.142	6° 20‘	20°
R2147.D060-05	Double	60	5	30.00	3.142	6° 20‘	20°
R2147.D070-05	Double	70	5	35.00	3.142	6° 20‘	20°
R2147.D080-05	Double	80	5	40.00	3.142	6° 20‘	20°
R2147.D090-05	Double	90	5	45.00	3.142	6° 20‘	20°
R2147.D100-05	Double	100	5	50.00	3.142	6° 20‘	20°
R2147.D120-05	Double	120	5	60.00	3.142	6° 20‘	20°
R2147.D180-05	Double	180	5	90.00	3.142	6° 20‘	20°
R2147.F040-05	Four	40	5	20.00	6.283	12° 31‘	25°
R2147.F050-05	Four	50	5	25.00	6.283	12° 31‘	25°
R2147.F060-05	Four	60	5	30.00	6.283	12° 31‘	25°
R2147.F070-05	Four	70	5	35.00	6.283	12° 31‘	25°
R2147.F080-05	Four	80	5	40.00	6.283	12° 31‘	25°
R2147.F090-05	Four	90	5	45.00	6.283	12° 31‘	25°
R2147.F100-05	Four	100	5	50.00	6.283	12° 31‘	25°
R2147.F120-05	Four	120	5	60.00	6.283	12° 31‘	25°
R2147.F180-05	Four	180	5	90.00	6.283	12° 31‘	25°

Precision Worms - Module 0,4
stainless steel



R2149





Material
Stainless steel (AISI 303, 1,4305).

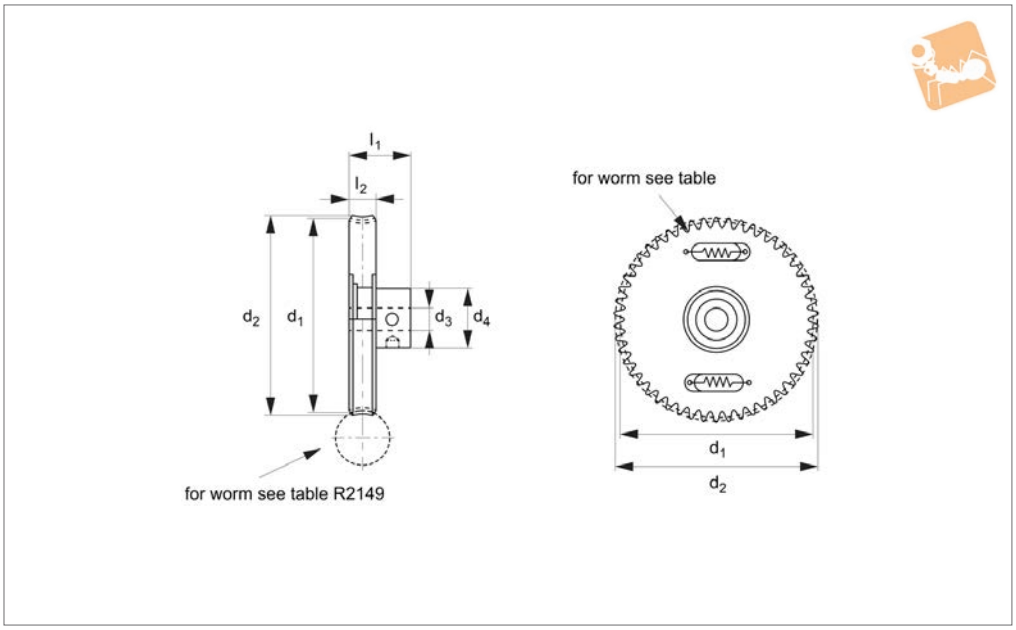
Technical Notes
Quality class DIN 7/AGMA 10.

Right hand.

Tips
Ratio = No. of teeth/No. of worm threads.

Order No.	l_1	l_2	d_1	d_2 +0.00|-0.11	d_3 tol. H7	d_4	Thread	Lead	Lead angle	Pressure angle
R2149.S03	25	19	13.2	14	3	8	single	1.257	1° 44‘	14-1/2°
R2149.D03	25	19	13.2	14	3	8	double	2.513	3° 28‘	14-1/2°
R2149.F03	25	19	13.2	14	3	8	four	5.027	6° 54‘	14-1/2°
R2149.S05	25	19	13.2	14	5	10	single	1.257	1° 44‘	14-1/2°
R2149.D05	25	19	13.2	14	5	10	double	2.513	3° 28‘	14-1/2°
R2149.F05	25	19	13.2	14	5	10	four	5.027	6° 54‘	14-1/2°
R2149.S07	25	19	13.2	14	7	11	single	1.257	1° 44‘	14-1/2°
R2149.D07	25	19	13.2	14	7	11	double	2.513	3° 28‘	14-1/2°
R2149.F07	25	19	13.2	14	7	11	four	5.027	6° 54‘	14-1/2°

0,4 Module Anti-backlash Worm Gears
brass





R2150

Material
Gears: Brass
Hubs: Stainless steel (DIN 1,4305).

Technical Notes
Quality class DIN 7/AGMA 10.

Right hand.
Select worm with corresponding number of threads - see part no. R2144.
Also available with clamp style hub.

Tips
Ratio=(No. of teeth/No. of worm threads).
For larger sizes, please see following page.

Order No.	Starts	No. of teeth	Bore dia.	Pitch dia. P.D.	Circular pitch	Helix angle	Pressure angle
R2150.S050-05	Single	50	5	20.00	1.257	1° 44‘	14 1/2°
R2150.S060-05	Single	60	5	24.00	1.257	1° 44‘	14 1/2°
R2150.S070-05	Single	70	5	28.00	1.257	1° 44‘	14 1/2°
R2150.S080-05	Single	80	5	32.00	1.257	1° 44‘	14 1/2°
R2150.S090-05	Single	90	5	36.00	1.257	1° 44‘	14 1/2°
R2150.D050-05	Double	50	5	20.00	2.513	3° 28‘	14 1/2°
R2150.F050-05	Four	50	5	20.00	5.027	6° 54‘	14 1/2°
R2150.S100-05	Single	100	5	40.00	1.257	1° 44‘	14 1/2°
R2150.S110-05	Single	110	5	44.00	1.257	1° 44‘	14 1/2°
R2150.S120-05	Single	120	5	48.00	1.257	1° 44‘	14 1/2°
R2150.S180-05	Single	180	5	72.00	1.257	1° 44‘	14 1/2°
R2150.D060-05	Double	60	5	24.00	2.513	3° 28‘	14 1/2°
R2150.D070-05	Double	70	5	28.00	2.513	3° 28‘	14 1/2°
R2150.D080-05	Double	80	5	32.00	2.513	3° 28‘	14 1/2°
R2150.D090-05	Double	90	5	36.00	2.513	3° 28‘	14 1/2°
R2150.D100-05	Double	100	5	40.00	2.513	3° 28‘	14 1/2°
R2150.D110-05	Double	110	5	44.00	2.513	3° 28‘	14 1/2°
R2150.D120-05	Double	120	5	48.00	2.513	3° 28‘	14 1/2°
R2150.D180-05	Double	180	5	72.00	2.513	3° 28‘	14 1/2°
R2150.F060-05	Four	60	5	24.00	5.027	6° 54‘	14 1/2°
R2150.F070-05	Four	70	5	28.00	5.027	6° 54‘	14 1/2°
R2150.F080-05	Four	80	5	32.00	5.027	6° 54‘	14 1/2°
R2150.F090-05	Four	90	5	36.00	5.027	6° 54‘	14 1/2°
R2150.F100-05	Four	100	5	40.00	5.027	6° 54‘	14 1/2°
R2150.F110-05	Four	110	5	44.00	5.027	6° 54‘	14 1/2°
R2150.F120-05	Four	120	5	48.00	5.027	6° 54‘	14 1/2°
R2150.F180-05	Four	180	5	72.00	5.027	6° 54‘	14 1/2°
R2150.S050-08	Single	50	8	20.00	1.257	1° 44‘	14 1/2°
R2150.S060-08	Single	60	8	24.00	1.257	1° 44‘	14 1/2°
R2150.S070-08	Single	70	8	28.00	1.257	1° 44‘	14 1/2°
R2150.S080-08	Single	80	8	32.00	1.257	1° 44‘	14 1/2°
R2150.S090-08	Single	90	8	36.00	1.257	1° 44‘	14 1/2°
R2150.S100-08	Single	100	8	40.00	1.257	1° 44‘	14 1/2°

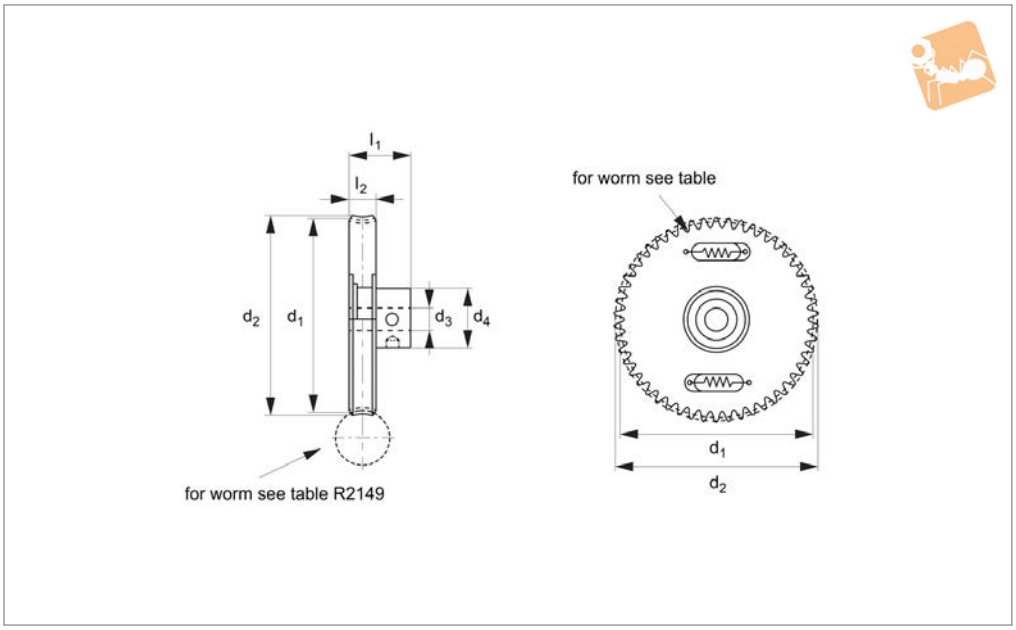


0,4 Module Anti-backlash Worm Gears
brass



Order No.	Starts	No. of teeth	Bore dia.	Pitch dia. P.D.	Circular pitch	Helix angle	Pressure angle
R2150.S110-08	Single	110	8	44.00	1.257	1° 44‘	14 1/2°
R2150.S120-08	Single	120	8	48.00	1.257	1° 44‘	14 1/2°
R2150.S180-08	Single	180	8	72.00	1.257	1° 44‘	14 1/2°

0,4 Module Anti-backlash Worm Gears
brass





R2150.1

Material
Gears: Brass
Hubs: Stainless steel (DIN 1,4305).

Technical Notes
Quality class DIN 7/AGMA 10.

Right hand.
Select worm with corresponding number of threads - see part no. R2144.
Also available with clamp style hub.

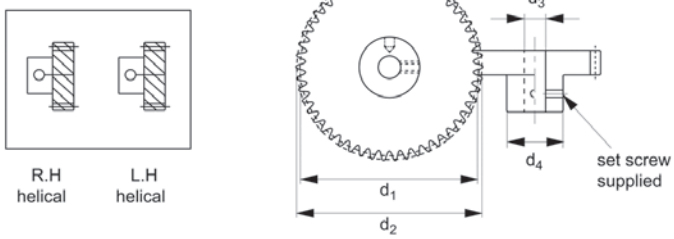
Tips
Ratio=(No. of teeth/No. of worm threads).
For smaller sizes, please see previous page.

Order No.	Starts	No. of teeth	Bore dia.	Pitch dia. P.D.	Circular pitch	Helix angle	Pressure angle
R2150.D050-08	Double	50	8	20.00	2.513	3° 28‘	14 1/2°
R2150.D060-08	Double	60	8	24.00	2.513	3° 28‘	14 1/2°
R2150.D070-08	Double	70	8	28.00	2.513	3° 28‘	14 1/2°
R2150.D080-08	Double	80	8	32.00	2.513	3° 28‘	14 1/2°
R2150.D090-08	Double	90	8	36.00	2.513	3° 28‘	14 1/2°
R2150.D100-08	Double	100	8	40.00	2.513	3° 28‘	14 1/2°
R2150.D110-08	Double	110	8	44.00	2.513	3° 28‘	14 1/2°
R2150.D120-08	Double	120	8	48.00	2.513	3° 28‘	14 1/2°
R2150.D180-08	Double	180	8	72.00	2.513	3° 28‘	14 1/2°
R2150.F050-08	Four	50	8	20.00	5.027	6° 54‘	14 1/2°
R2150.F060-08	Four	60	8	24.00	5.027	6° 54‘	14 1/2°
R2150.F070-08	Four	70	8	28.00	5.027	6° 54‘	14 1/2°
R2150.F080-08	Four	80	8	32.00	5.027	6° 54‘	14 1/2°
R2150.F090-08	Four	90	8	36.00	5.027	6° 54‘	14 1/2°
R2150.F100-08	Four	100	8	40.00	5.027	6° 54‘	14 1/2°
R2150.F110-08	Four	110	8	44.00	5.027	6° 54‘	14 1/2°
R2150.F120-08	Four	120	8	48.00	5.027	6° 54‘	14 1/2°
R2150.F180-08	Four	180	8	72.00	5.027	6° 54‘	14 1/2°

1,5 Module Helical Gears
stainless steel, pin hub



R2152

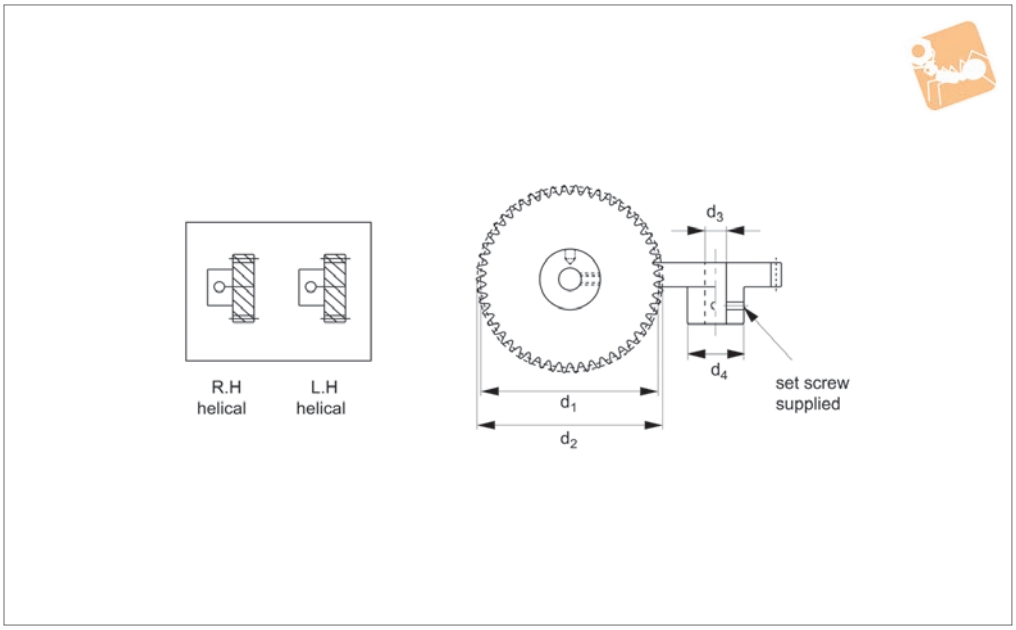


Material
Stainless steel (DIN 1,4305).

Technical Notes
45° helix angle.
20° pressure angle.
Quality class DIN 8, AGMA 9.

Tips
For right angle transmission use two gears with same helical direction.
For parallel transmission use right and left helix.

Order No.	Hand	No. of teeth	Pitch dia. P.D.	O.D. dia.
R2152.R012	Right	12	25.46	28.46
R2152.R016	Right	16	33.94	36.94
R2152.R020	Right	20	42.43	45.43
R2152.L012	Left	12	25.46	28.46
R2152.L016	Left	16	33.94	36.94
R2152.L020	Left	20	42.43	45.43
R2152.R024	Right	24	50.91	53.91
R2152.L024	Left	24	50.91	53.91
R2152.R032	Right	32	67.88	70.88
R2152.R040	Right	40	84.85	87.85
R2152.R048	Right	48	101.82	104.82
R2152.L032	Left	32	67.88	70.88
R2152.L040	Left	40	84.85	87.85
R2152.L048	Left	48	101.82	104.82





R2154

Material
Stainless steel (DIN 1,4305).

Technical Notes
45° helix angle.
20° pressure angle.
Quality class DIN 8, AGMA 9.

Tips
For right angle transmission use two gears with same helical direction.
For parallel transmission use right and left helix.

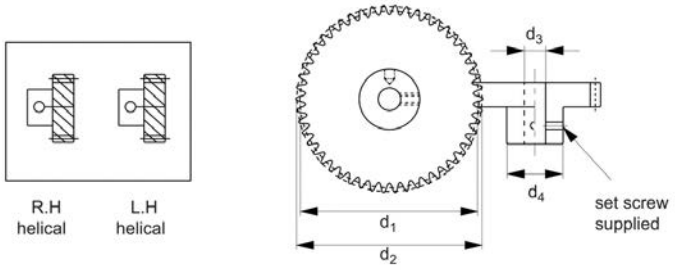
Order No.	Hand	No. of teeth	Pitch dia. P.D.	O.D. dia.
R2154.R010	Right	10	17.68	20.18
R2154.R015	Right	15	26.52	29.02
R2154.R020	Right	20	35.36	37.86
R2154.L010	Left	10	17.68	20.18
R2154.L015	Left	15	26.52	29.02
R2154.L020	Left	20	35.36	37.86
R2154.R025	Right	25	44.19	46.69
R2154.L025	Left	25	44.19	46.69
R2154.R030	Right	30	53.03	55.53
R2154.R040	Right	40	70.71	73.21
R2154.R050	Right	50	88.39	90.89
R2154.R060	Right	60	106.07	108.57
R2154.L030	Left	30	53.03	55.53
R2154.L040	Left	40	70.71	73.21
R2154.L050	Left	50	88.39	90.89
R2154.L060	Left	60	106.07	108.57

1,0 Module Helical Gears

stainless steel or aluminium, pin hub



R2156



Material
Stainless steel (DIN 1,4305), or aluminium (DIN 3,1355).

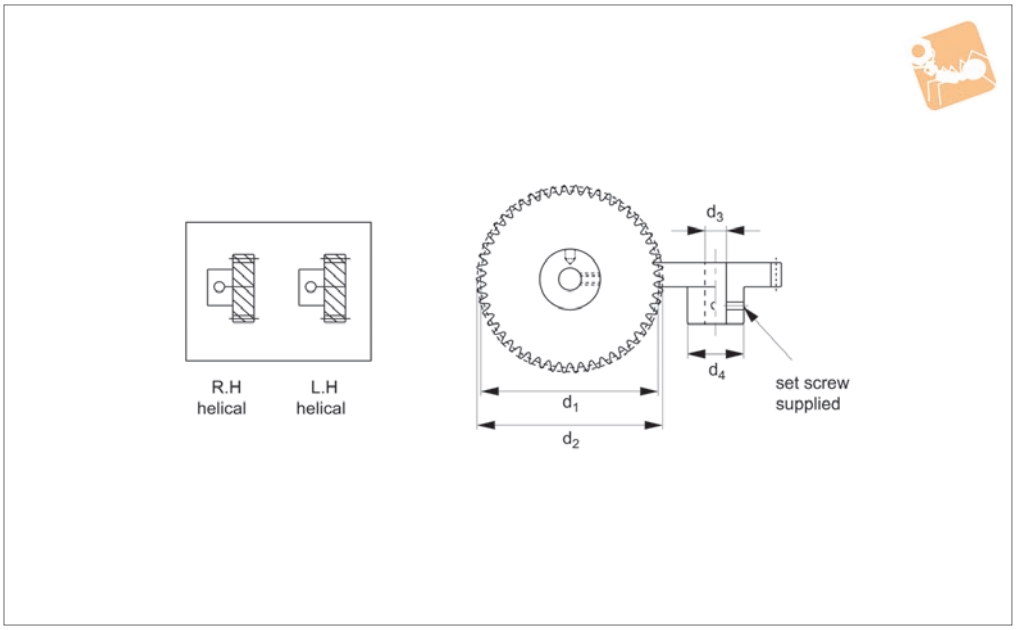
Technical Notes
45° helix angle.
20° pressure angle.
Quality class DIN 7, AGMA 10.

Tips
For right angle transmission use two gears with same helical direction. For parallel transmission use right and left helix.

Order No.	Hand	No. of teeth	Material	Pitch dia. P.D.	O.D. dia.
R2156.R012	Right	12	Stainless	16.94	18.97
R2156.R018	Right	18	Stainless	25.45	27.45
R2156.R024	Right	24	Stainless	33.94	35.94
R2156.R030	Right	30	Stainless	42.42	44.42
R2156.R036	Right	36	Stainless	50.91	52.91
R2156.R048	Right	48	Stainless	67.88	69.88
R2156.R060	Right	60	Stainless	84.85	86.85
R2156.R072	Right	72	Stainless	101.82	103.82
R2156.R512	Right	12	Aluminium	16.94	18.97
R2156.R518	Right	18	Aluminium	25.45	27.45
R2156.R524	Right	24	Aluminium	33.94	35.94
R2156.R530	Right	30	Aluminium	42.42	44.42
R2156.R536	Right	36	Aluminium	50.91	52.91
R2156.R548	Right	48	Aluminium	67.88	69.88
R2156.R560	Right	60	Aluminium	84.85	86.85
R2156.R572	Right	72	Aluminium	101.82	103.82
R2156.L012	Left	12	Stainless	16.94	18.97
R2156.L018	Left	18	Stainless	25.45	27.45
R2156.L024	Left	24	Stainless	33.94	35.94
R2156.L030	Left	30	Stainless	42.42	44.42
R2156.L036	Left	36	Stainless	50.91	52.91
R2156.L048	Left	48	Stainless	67.88	69.88
R2156.L060	Left	60	Stainless	84.85	86.85
R2156.L072	Left	72	Stainless	101.82	103.82
R2156.L512	Left	12	Aluminium	16.94	18.97
R2156.L518	Left	18	Aluminium	25.45	27.45
R2156.L524	Left	24	Aluminium	33.94	35.94
R2156.L530	Left	30	Aluminium	42.42	44.42
R2156.L536	Left	36	Aluminium	50.91	52.91
R2156.L548	Left	48	Aluminium	67.88	69.88
R2156.L560	Left	60	Aluminium	84.85	86.85
R2156.L572	Left	72	Aluminium	101.82	103.82

0,8 Module Helical Gears

stainless steel or aluminium, pin hub





R2158

Material
Stainless steel (DIN 1,4305), or aluminium (DIN 3,1355).

Technical Notes
45° helix angle.
20° pressure angle.
Quality class DIN 7, AGMA 10.

Tips
For right angle transmission use two gears with same helical direction.
For parallel transmission use right and left helix.

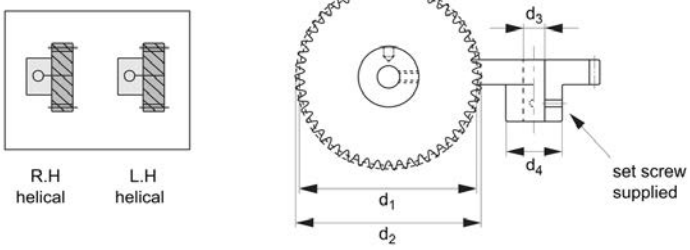
Order No.	Hand	No. of teeth	Material	Pitch dia. P.D.	O.D. dia.
R2158.R016	Right	16	Stainless	18.10	19.70
R2158.R024	Right	24	Stainless	27.15	28.75
R2158.R032	Right	32	Stainless	36.20	37.80
R2158.R040	Right	40	Stainless	45.25	46.85
R2158.R048	Right	48	Stainless	54.30	55.90
R2158.R064	Right	64	Stainless	72.40	74.00
R2158.R080	Right	80	Stainless	90.50	92.10
R2158.R096	Right	96	Stainless	108.61	110.21
R2158.R516	Right	16	Aluminium	18.10	19.70
R2158.R524	Right	24	Aluminium	27.15	28.75
R2158.R532	Right	32	Aluminium	36.20	37.80
R2158.R540	Right	40	Aluminium	45.25	46.85
R2158.R548	Right	48	Aluminium	54.30	55.90
R2158.R564	Right	64	Aluminium	72.40	74.00
R2158.R580	Right	80	Aluminium	90.50	92.10
R2158.R596	Right	96	Aluminium	108.61	110.21
R2158.L016	Left	16	Stainless	18.10	19.70
R2158.L024	Left	24	Stainless	27.15	28.75
R2158.L032	Left	32	Stainless	36.20	37.80
R2158.L040	Left	40	Stainless	45.25	46.85
R2158.L048	Left	48	Stainless	54.30	55.90
R2158.L516	Left	16	Aluminium	18.10	19.70
R2158.L064	Left	64	Stainless	72.40	74.00
R2158.L080	Left	80	Stainless	90.50	92.10
R2158.L096	Left	96	Stainless	108.61	110.21
R2158.L524	Left	24	Aluminium	27.15	28.75
R2158.L532	Left	32	Aluminium	36.20	37.80
R2158.L540	Left	40	Aluminium	45.25	46.85
R2158.L548	Left	48	Aluminium	54.30	55.90
R2158.L564	Left	64	Aluminium	72.40	74.00
R2158.L580	Left	80	Aluminium	90.50	92.10
R2158.L596	Left	96	Aluminium	108.61	110.21

0,5 Module Right Hand Helical Gears

stainless steel pin hub



R2160



Material
Stainless steel (DIN 1,4305).

Technical Notes
45° helix angle.
20° pressure angle.

Quality class DIN 7, AGMA 10.

Tips
For right angle transmission use two gears with same helical direction. For parallel transmission use right and left helix.

Important Notes
For 0,5 module left hand helical gears see R2161.

Order No.	Hand	No. of teeth	Material	Bore dia.	Pitch dia. P.D.	Outside dia.
R2160.R020-05	Right	20	Stainless	5	14.14	15.14
R2160.R024-05	Right	24	Stainless	5	16.97	17.97
R2160.R025-05	Right	25	Stainless	5	17.68	18.68
R2160.R030-05	Right	30	Stainless	5	21.21	22.21
R2160.R035-05	Right	35	Stainless	5	24.75	25.75
R2160.R036-05	Right	36	Stainless	5	25.46	26.46
R2160.R040-05	Right	40	Stainless	5	28.28	29.28
R2160.R045-05	Right	45	Stainless	5	31.82	32.82
R2160.R048-05	Right	48	Stainless	5	33.94	34.94
R2160.R050-05	Right	50	Stainless	5	35.36	36.36
R2160.R060-05	Right	60	Stainless	5	42.43	43.43
R2160.R070-05	Right	70	Stainless	5	49.50	50.50
R2160.R072-05	Right	72	Stainless	5	50.91	51.91
R2160.R080-05	Right	80	Stainless	5	56.57	57.57
R2160.R090-05	Right	90	Stainless	5	63.64	64.64
R2160.R096-05	Right	96	Stainless	5	67.88	68.88
R2160.R100-05	Right	100	Stainless	5	70.71	71.71
R2160.R120-05	Right	120	Stainless	5	84.85	85.85
R2160.R144-05	Right	144	Stainless	5	101.82	102.82
R2160.R020-08	Right	20	Stainless	8	14.14	15.14
R2160.R024-08	Right	24	Stainless	8	16.97	17.97
R2160.R025-08	Right	25	Stainless	8	17.68	18.68
R2160.R030-08	Right	30	Stainless	8	21.21	22.21
R2160.R035-08	Right	35	Stainless	8	24.75	25.27
R2160.R036-08	Right	36	Stainless	8	25.46	26.46
R2160.R040-08	Right	40	Stainless	8	28.28	29.28
R2160.R045-08	Right	45	Stainless	8	31.82	32.82
R2160.R048-08	Right	48	Stainless	8	33.94	34.94
R2160.R050-08	Right	50	Stainless	8	35.36	36.36
R2160.R060-08	Right	60	Stainless	8	42.43	43.43
R2160.R070-08	Right	70	Stainless	8	49.50	50.50
R2160.R072-08	Right	72	Stainless	8	50.91	51.91
R2160.R080-08	Right	80	Stainless	8	56.57	57.57

0,5 Module Right Hand Helical Gears

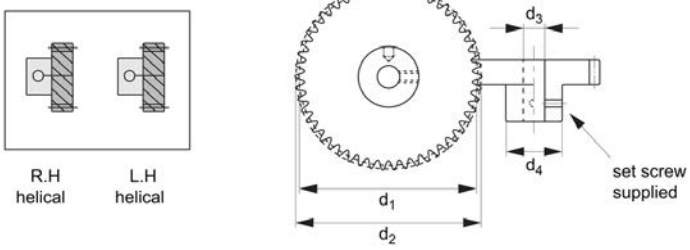
stainless steel pin hub

Order No.	Hand	No. of teeth	Material	Bore dia.	Pitch dia. P.D.	Outside dia.
R2160.R090-08	Right	90	Stainless	8	63.64	64.64
R2160.R096-08	Right	96	Stainless	8	67.88	68.88
R2160.R100-08	Right	100	Stainless	8	70.71	71.71
R2160.R120-08	Right	120	Stainless	8	84.85	85.85
R2160.R144-08	Right	144	Stainless	8	101.82	102.82

0,5 Module Right Hand Helical Gears
aluminium pin hub



R2160.1



Material
Aluminium (DIN 3,1355).

Technical Notes
45° helix angle.
20° pressure angle.

Quality class DIN 7, AGMA 10.

Tips
For right angle transmission use two gears with same helical direction. For parallel transmission use right and left helix.

Important Notes
For 0,5 module left hand helical gears see R2161.

Order No.	Hand	No. of teeth	Material	Bore dia.	Outside	Pitch
R2160.R520-05	Right	20	5	Aluminium	15.14	14.14
R2160.R524-05	Right	24	5	Aluminium	17.97	16.97
R2160.R525-05	Right	25	5	Aluminium	18.68	17.68
R2160.R530-05	Right	30	5	Aluminium	22.21	21.21
R2160.R535-05	Right	35	5	Aluminium	25.75	24.75
R2160.R536-05	Right	36	5	Aluminium	26.46	25.46
R2160.R540-05	Right	40	5	Aluminium	29.28	28.28
R2160.R545-05	Right	45	5	Aluminium	32.82	31.82
R2160.R548-05	Right	48	5	Aluminium	34.94	33.94
R2160.R550-05	Right	50	5	Aluminium	36.36	35.36
R2160.R560-05	Right	60	5	Aluminium	43.43	42.43
R2160.R570-05	Right	70	5	Aluminium	50.50	49.50
R2160.R572-05	Right	72	5	Aluminium	51.91	50.91
R2160.R580-05	Right	80	5	Aluminium	57.57	56.57
R2160.R590-05	Right	90	5	Aluminium	64.64	63.64
R2160.R596-05	Right	96	5	Aluminium	68.88	67.88
R2160.R600-05	Right	100	5	Aluminium	71.71	70.71
R2160.R620-05	Right	120	5	Aluminium	85.85	84.85
R2160.R644-05	Right	144	5	Aluminium	102.82	101.82
R2160.R520-08	Right	20	8	Aluminium	15.14	14.14
R2160.R524-08	Right	24	8	Aluminium	17.97	16.97
R2160.R525-08	Right	25	8	Aluminium	18.68	17.68
R2160.R530-08	Right	30	8	Aluminium	22.21	21.21
R2160.R535-08	Right	35	8	Aluminium	25.27	24.75
R2160.R536-08	Right	36	8	Aluminium	26.46	25.46
R2160.R540-08	Right	40	8	Aluminium	29.28	28.28
R2160.R545-08	Right	45	8	Aluminium	32.82	31.82
R2160.R548-08	Right	48	8	Aluminium	34.94	33.94
R2160.R550-08	Right	50	8	Aluminium	36.36	35.36
R2160.R560-08	Right	60	8	Aluminium	43.43	42.43
R2160.R570-08	Right	70	8	Aluminium	50.50	49.50
R2160.R572-08	Right	72	8	Aluminium	51.91	50.91
R2160.R580-08	Right	80	8	Aluminium	57.57	56.57

0,5 Module Right Hand Helical Gears

aluminium pin hub

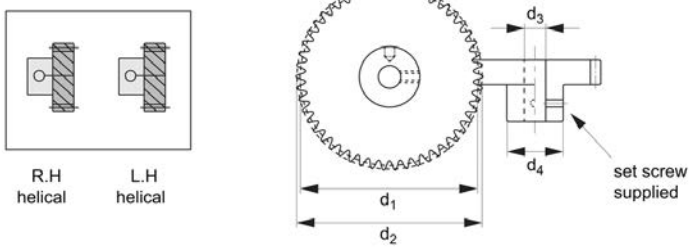
Order No.	Hand	No. of teeth	Material	Bore dia.	Outside	Pitch
R2160.R590-08	Right	90	8	Aluminium	64.64	63.64
R2160.R596-08	Right	96	8	Aluminium	68.88	67.88
R2160.R600-08	Right	100	8	Aluminium	71.71	70.71
R2160.R620-08	Right	120	8	Aluminium	85.85	84.85
R2160.R644-08	Right	144	8	Aluminium	102.82	101.82

0,5 Module Left Hand Helical Gears

stainless steel, pin hub



R2161



Material
Stainless steel (DIN 1,4305).

Technical Notes
45° helix angle.
20° pressure angle.
Quality class DIN 7, AGMA 10.

Tips
For right angle transmission use two gears with same helical direction.
For parallel transmission use right and left helix..

Important Notes
For 0,5 module right hand helical gears see R2160.

Order No.	Hand	No. of teeth	Material	Bore dia.	Pitch dia. P.D.	Outside dia.
R2161.L020-05	Left	20	Stainless	5	14.14	15.14
R2161.L024-05	Left	24	Stainless	5	16.97	16.97
R2161.L025-05	Left	25	Stainless	5	17.68	17.68
R2161.L020-08	Left	20	Stainless	8	14.14	15.14
R2161.L024-08	Left	24	Stainless	8	16.97	17.97
R2161.L025-08	Left	25	Stainless	8	17.68	18.68
R2161.L030-08	Left	30	Stainless	8	21.21	22.21
R2161.L030-05	Left	30	Stainless	5	21.21	21.21
R2161.L035-05	Left	35	Stainless	5	24.75	25.75
R2161.L036-05	Left	36	Stainless	5	25.46	26.46
R2161.L040-05	Left	40	Stainless	5	28.28	29.28
R2161.L045-05	Left	45	Stainless	5	31.82	32.82
R2161.L035-08	Left	35	Stainless	8	24.75	25.75
R2161.L036-08	Left	36	Stainless	8	25.46	26.46
R2161.L040-08	Left	40	Stainless	8	28.28	29.28
R2161.L045-08	Left	45	Stainless	8	31.82	32.82
R2161.L048-08	Left	48	Stainless	8	33.94	34.94
R2161.L048-05	Left	48	Stainless	5	33.94	34.94
R2161.L050-05	Left	50	Stainless	5	35.36	36.36
R2161.L060-05	Left	60	Stainless	5	42.43	43.43
R2161.L070-05	Left	70	Stainless	5	49.50	50.50
R2161.L072-05	Left	72	Stainless	5	50.91	51.91
R2161.L050-08	Left	50	Stainless	8	35.36	36.36
R2161.L060-08	Left	60	Stainless	8	42.43	43.43
R2161.L070-08	Left	70	Stainless	8	49.50	50.50
R2161.L072-08	Left	72	Stainless	8	50.91	51.91
R2161.L080-08	Left	80	Stainless	8	56.57	57.57
R2161.L080-05	Left	80	Stainless	5	56.57	57.57
R2161.L090-05	Left	90	Stainless	5	63.64	64.64
R2161.L096-05	Left	96	Stainless	5	67.88	68.88
R2161.L100-05	Left	100	Stainless	5	70.71	71.71
R2161.L120-05	Left	120	Stainless	5	84.85	85.85
R2161.L090-08	Left	90	Stainless	8	63.64	64.64

0,5 Module Left Hand Helical Gears

stainless steel, pin hub

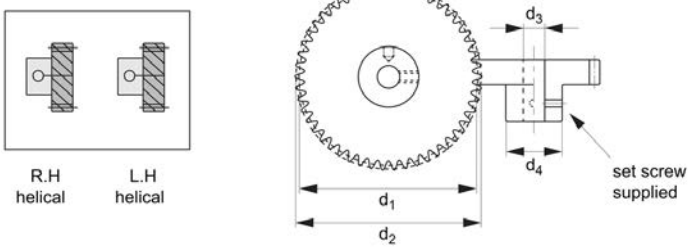
Order No.	Hand	No. of teeth	Material	Bore dia.	Pitch dia. P.D.	Outside dia.
R2161.L096-08	Left	96	Stainless	8	67.88	68.88
R2161.L100-08	Left	100	Stainless	8	70.71	71.71
R2161.L120-08	Left	120	Stainless	8	84.85	85.85
R2161.L144-08	Left	144	Stainless	8	101.82	102.82
R2161.L144-05	Left	144	Stainless	5	101.82	102.82

0,5 Module Left Hand Helical Gears

aluminium, pin hub



R2161.1



Material
Aluminium (DIN 3,1355).

Technical Notes
45° helix angle.
20° pressure angle.
Quality class DIN 7, AGMA 10.

Tips
For right angle transmission use two gears with same helical direction.
For parallel transmission use right and left helix.

Important Notes
For 0,5 module right hand helical gears see R2160.

Order No.	Hand	No. of teeth	Material	Bore dia.	Pitch dia. P.D.	Outside dia.
R2161.L520-05	Left	20	Aluminium	5	14.14	15.14
R2161.L524-05	Left	24	Aluminium	5	16.97	16.97
R2161.L525-05	Left	25	Aluminium	5	17.68	17.68
R2161.L530-05	Left	30	Aluminium	5	21.21	21.21
R2161.L535-05	Left	35	Aluminium	5	24.75	25.75
R2161.L536-05	Left	36	Aluminium	5	25.46	26.46
R2161.L540-05	Left	40	Aluminium	5	28.28	29.28
R2161.L545-05	Left	45	Aluminium	5	31.82	32.82
R2161.L548-05	Left	48	Aluminium	5	33.94	34.94
R2161.L550-05	Left	50	Aluminium	5	35.36	36.36
R2161.L560-05	Left	60	Aluminium	5	42.43	43.43
R2161.L570-05	Left	70	Aluminium	5	49.50	50.50
R2161.L572-05	Left	72	Aluminium	5	50.91	51.91
R2161.L580-05	Left	80	Aluminium	5	56.57	57.57
R2161.L590-05	Left	90	Aluminium	5	63.64	64.64
R2161.L596-05	Left	96	Aluminium	5	67.88	68.88
R2161.L600-05	Left	100	Aluminium	5	70.71	71.71
R2161.L620-05	Left	120	Aluminium	5	84.85	85.85
R2161.L644-05	Left	144	Aluminium	5	101.82	102.82
R2161.L520-08	Left	20	Aluminium	8	14.14	15.14
R2161.L524-08	Left	24	Aluminium	8	16.97	17.97
R2161.L525-08	Left	25	Aluminium	8	17.68	18.68
R2161.L530-08	Left	30	Aluminium	8	21.21	22.21
R2161.L535-08	Left	35	Aluminium	8	24.75	25.75
R2161.L536-08	Left	36	Aluminium	8	25.46	26.46
R2161.L540-08	Left	40	Aluminium	8	28.28	29.28
R2161.L545-08	Left	45	Aluminium	8	31.82	32.82
R2161.L548-08	Left	48	Aluminium	8	33.94	34.94
R2161.L550-08	Left	50	Aluminium	8	35.36	36.36
R2161.L560-08	Left	60	Aluminium	8	42.43	43.43
R2161.L570-08	Left	70	Aluminium	8	49.50	50.50
R2161.L572-08	Left	72	Aluminium	8	50.91	51.91
R2161.L580-08	Left	80	Aluminium	8	56.57	57.57

0,5 Module Left Hand Helical Gears

aluminium, pin hub

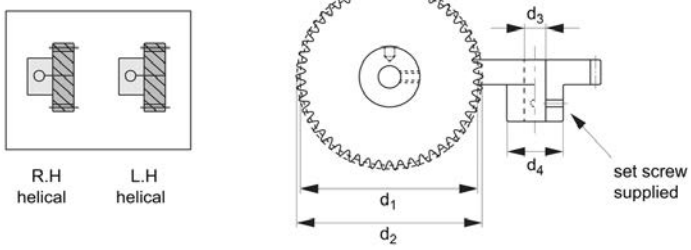
Order No.	Hand	No. of teeth	Material	Bore dia.	Pitch dia. P.D.	Outside dia.
R2161.L590-08	Left	90	Aluminium	8	63.64	64.64
R2161.L596-08	Left	96	Aluminium	8	67.88	68.88
R2161.L600-08	Left	100	Aluminium	8	70.71	71.71
R2161.L620-08	Left	120	Aluminium	8	84.85	85.85
R2161.L644-08	Left	144	Aluminium	8	101.82	102.82

0,4 Module Right Hand Helical Gears

stainless steel, pin hub



R2162



Material
Stainless steel (DIN 1,4305).

Technical Notes
45° helix angle.
20° pressure angle.
Quality class DIN 7, AGMA 10.

Tips
For right angle transmission use two gears with same helical direction.
For parallel transmission use right and left helix.

Important Notes
For 0,4 module left hand helical gears see R2163.

Order No.	Hand	No. of teeth	Material	Bore dia.	Pitch dia. P.D.	Outside dia.
R2162.R020-03	Right	20	Stainless	3	11.31	12.11
R2162.R025-03	Right	25	Stainless	3	14.14	14.94
R2162.R030-03	Right	30	Stainless	3	16.97	17.77
R2162.R032-03	Right	32	Stainless	3	18.10	18.90
R2162.R035-03	Right	35	Stainless	3	19.80	20.60
R2162.R040-03	Right	40	Stainless	3	22.63	23.43
R2162.R045-03	Right	45	Stainless	3	54.46	26.26
R2162.R048-03	Right	48	Stainless	3	27.15	27.95
R2162.R050-03	Right	50	Stainless	3	28.28	29.08
R2162.R060-03	Right	60	Stainless	3	33.94	34.74
R2162.R064-03	Right	64	Stainless	3	36.20	37.00
R2162.R070-03	Right	70	Stainless	3	39.60	40.40
R2162.R080-03	Right	80	Stainless	3	45.25	46.05
R2162.R090-03	Right	90	Stainless	3	50.91	51.71
R2162.R096-03	Right	96	Stainless	3	54.31	55.11
R2162.R100-03	Right	100	Stainless	3	56.57	57.37
R2162.R128-03	Right	128	Stainless	3	72.41	73.21
R2162.R160-03	Right	160	Stainless	3	90.51	91.31
R2162.R020-05	Right	20	Stainless	5	11.31	12.11
R2162.R025-05	Right	25	Stainless	5	14.14	14.94
R2162.R030-05	Right	30	Stainless	5	16.97	17.77
R2162.R032-05	Right	32	Stainless	5	18.10	18.90
R2162.R035-05	Right	35	Stainless	5	19.80	20.60
R2162.R040-05	Right	40	Stainless	5	22.63	23.43
R2162.R045-05	Right	45	Stainless	5	54.46	26.26
R2162.R048-05	Right	48	Stainless	5	27.15	27.95
R2162.R050-05	Right	50	Stainless	5	28.28	29.08
R2162.R060-05	Right	60	Stainless	5	33.94	34.74
R2162.R064-05	Right	64	Stainless	5	36.20	37.00
R2162.R070-05	Right	70	Stainless	5	39.60	40.40
R2162.R080-05	Right	80	Stainless	5	42.25	46.05
R2162.R090-05	Right	90	Stainless	5	50.91	51.71
R2162.R096-05	Right	96	Stainless	5	54.31	55.11

0,4 Module Right Hand Helical Gears

stainless steel, pin hub

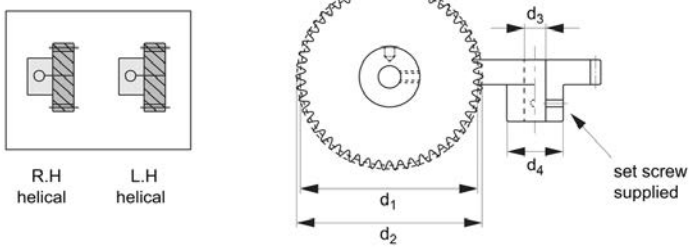
Order No.	Hand	No. of teeth	Material	Bore dia.	Pitch dia. P.D.	Outside dia.
R2162.R100-05	Right	100	Stainless	5	56.57	57.37
R2162.R128-05	Right	128	Stainless	5	72.41	73.21
R2162.R160-05	Right	160	Stainless	5	90.51	91.31

0,4 Module Right Hand Helical Gears

aluminium, pin hub



R2162.1



Material
Aluminium (DIN 3,1355).

Technical Notes
45° helix angle.
20° pressure angle.
Quality class DIN 7, AGMA 10.

Tips
For right angle transmission use two gears with same helical direction.
For parallel transmission use right and left helix.

Important Notes
For 0,4 module left hand helical gears see R2163.

Order No.	Hand	No. of teeth	Material	Bore dia.	Pitch dia. P.D.	Outside dia.
R2162.R520-03	Right	20	Aluminium	3	11.31	12.11
R2162.R525-03	Right	25	Aluminium	3	14.14	14.94
R2162.R530-03	Right	30	Aluminium	3	16.97	17.77
R2162.R532-03	Right	32	Aluminium	3	18.10	18.90
R2162.R535-03	Right	35	Aluminium	3	19.80	20.60
R2162.R540-03	Right	40	Aluminium	3	22.63	23.43
R2162.R545-03	Right	45	Aluminium	3	54.56	26.26
R2162.R548-03	Right	48	Aluminium	3	27.15	27.95
R2162.R550-03	Right	50	Aluminium	3	28.28	29.08
R2162.R560-03	Right	60	Aluminium	3	33.94	34.74
R2162.R564-03	Right	64	Aluminium	3	36.20	37.00
R2162.R570-03	Right	70	Aluminium	3	39.60	40.40
R2162.R580-03	Right	80	Aluminium	3	45.25	46.05
R2162.R590-03	Right	90	Aluminium	3	50.91	51.71
R2162.R596-03	Right	96	Aluminium	3	54.31	55.11
R2162.R600-03	Right	100	Aluminium	3	56.57	57.37
R2162.R628-03	Right	128	Aluminium	3	72.41	73.21
R2162.R660-03	Right	160	Aluminium	3	90.51	91.31
R2162.R520-05	Right	20	Aluminium	5	11.31	12.11
R2162.R525-05	Right	25	Aluminium	5	14.14	14.94
R2162.R530-05	Right	30	Aluminium	5	16.97	17.77
R2162.R532-05	Right	32	Aluminium	5	18.10	18.90
R2162.R535-05	Right	35	Aluminium	5	19.80	20.60
R2162.R540-05	Right	40	Aluminium	5	22.63	23.43
R2162.R545-05	Right	45	Aluminium	5	54.46	26.26
R2162.R548-05	Right	48	Aluminium	5	27.15	27.95
R2162.R550-05	Right	50	Aluminium	5	28.28	29.08
R2162.R560-05	Right	60	Aluminium	5	33.94	34.74
R2162.R564-05	Right	64	Aluminium	5	36.20	37.00
R2162.R570-05	Right	70	Aluminium	5	39.60	40.40
R2162.R580-05	Right	80	Aluminium	5	45.25	46.05
R2162.R590-05	Right	90	Aluminium	5	50.91	51.71
R2162.R596-05	Right	96	Aluminium	5	54.31	55.11

0,4 Module Right Hand Helical Gears

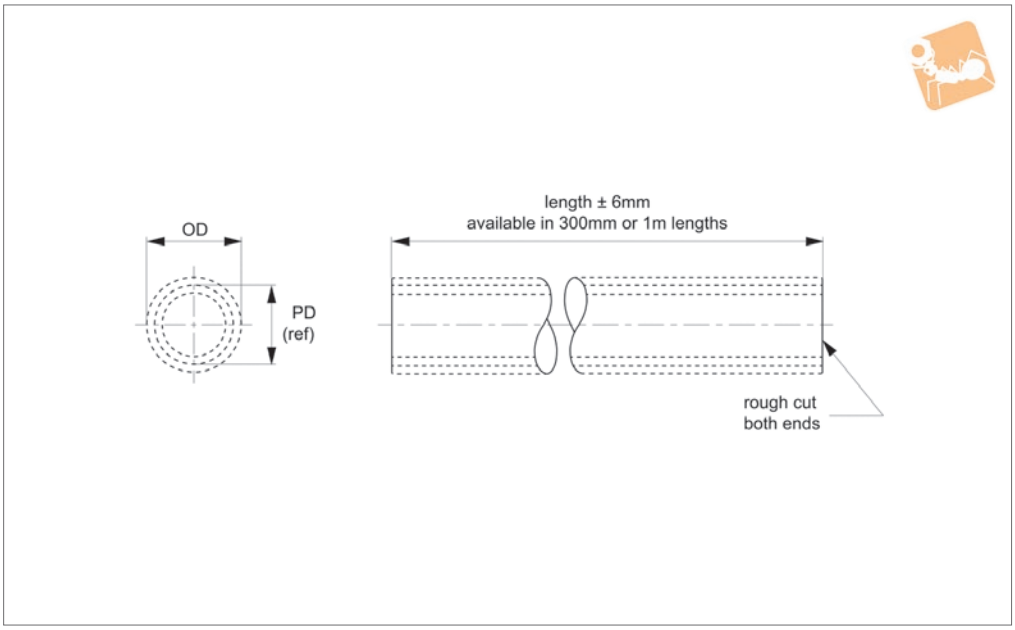
aluminium, pin hub

Order No.	Hand	No. of teeth	Material	Bore dia.	Pitch dia. P.D.	Outside dia.
R2162.R600-05	Right	100	Aluminium	5	56.57	57.37
R2162.R5128-05	Right	128	Aluminium	5	72.41	73.21
R2162.R660-05	Right	160	Aluminium	5	90.51	91.31

0,8/0,4 Module Precision Gear Racks
stainless



R2170

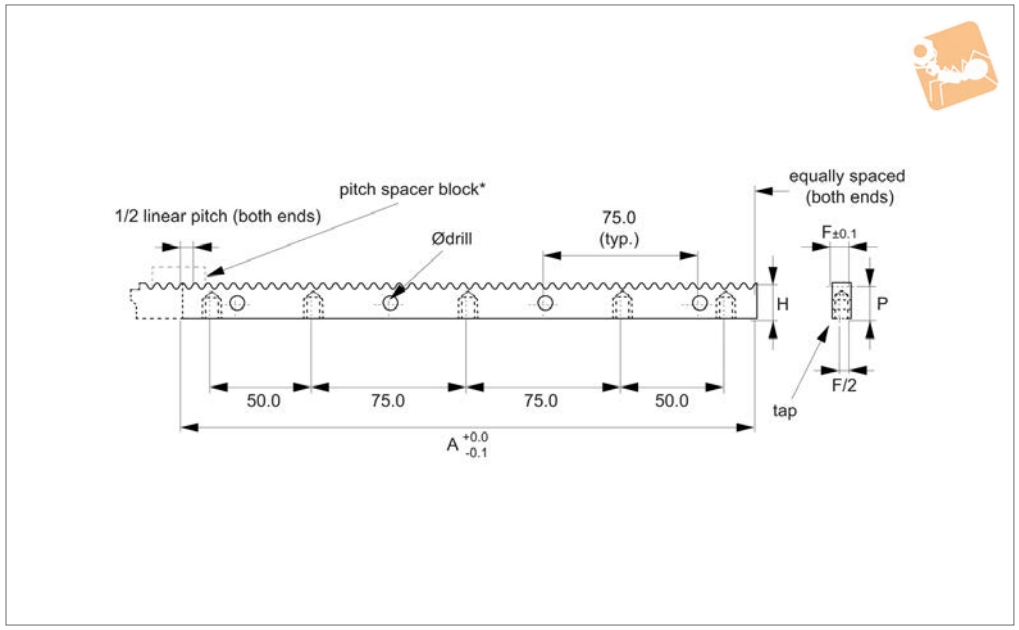


Material
Stainless steel (DIN 1,4005).

Technical Notes
20° pressure angle.

Quality class Din 7/AGMA 10.
Adjacent hole centre ±0,06, Accumulative hole centre ±0,14.

Order No.	Module	Linear pitch	c
R8M-1-G1	0.8	2.51	11.39
R8M-2-G1	0.4	1.26	11.79





R2172

Material
Stainless steel (DIN 1,4005).

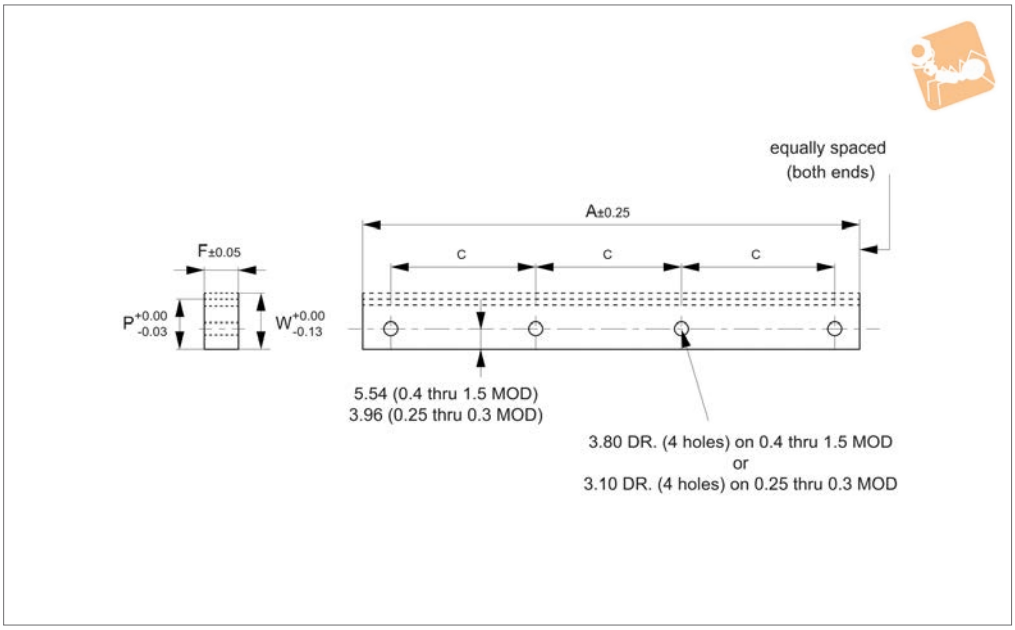
Technical Notes
20° pressure angle.
Quality class Din 7/AGMA 10.

Order No.	Module	Linear pitch	a	f	b	h +0.00|-0.13	P ref.	Ø Drill	Tap
R1M-1	1.5	4.71	282.7	9.0	7.9	18.42	16.91	7.0	M 5 X 0,8
R1M-2	1.25	3.93	282.8	9.0	7.9	18.42	17.17	7.0	M 5 X 0,8
R1M-3	1.0	3.14	279.6	5.8	5.5	12.07	11.07	3.8	M 4 X 0,7
R1M-4	0.8	2.51	281.5	5.8	5.5	12.07	11.26	3.8	M 4 X 0,7
R1M-5	0.6	1.88	280.9	5.8	5.5	12.07	11.47	3.8	M 4 X 0,7
R1M-6	0.5	1.57	279.6	5.8	5.5	12.07	11.56	3.8	M 4 X 0,7
R1M-7	0.4	1.26	280.2	5.8	5.5	12.07	11.66	3.8	M 4 X 0,7
R1M-8	0.3	0.94	280.9	4.2	4.0	8.89	8.59	3.1	M 3 X 0,5
R1M-9	0.25	0.78	279.6	4.2	4.0	8.89	8.64	3.1	M 3 X 0,5

1,5/0,25 Module Precision Racks
stainless



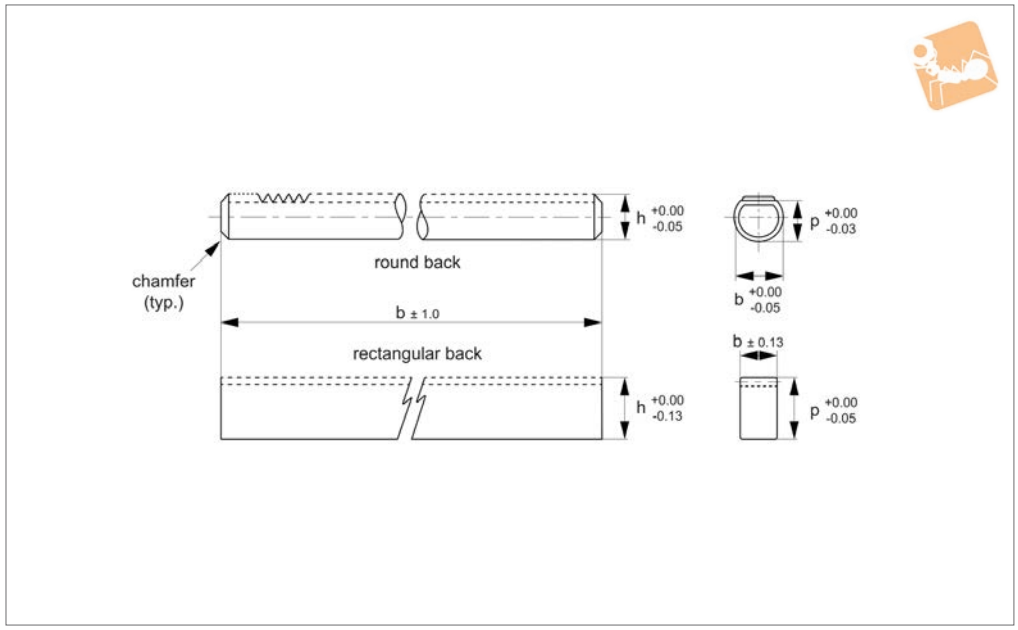
R2174



Material
Stainless Steel (DIN 1,4005).

Technical Notes
20° pressure angle.
Quality class Din 7/AGMA 10.

Order No.	Module	a	f	c	P ref.	w
R4M-5	1.5	249.8	5.8	80.0	10.7	12.2
R4M-9	1.25	247.4	5.8	80.0	10.9	12.2
R4M-11	1.0	248.2	5.8	80.0	11.2	12.2
R4M-15	0.8	248.8	5.8	80.0	11.4	12.2
R4M-17	0.6	224.3	5.8	70.0	11.6	12.2
R4M-19	0.5	224.7	5.8	70.0	11.7	12.2
R4M-21	0.4	174.7	5.8	55.0	11.8	12.2
R4M-23	0.3	124.4	4.2	35.0	8.7	9.0
R4M-25	0.25	74.6	4.2	20.0	8.8	9.0





R2176

Material
Stainless Steel (DIN 1,4005).

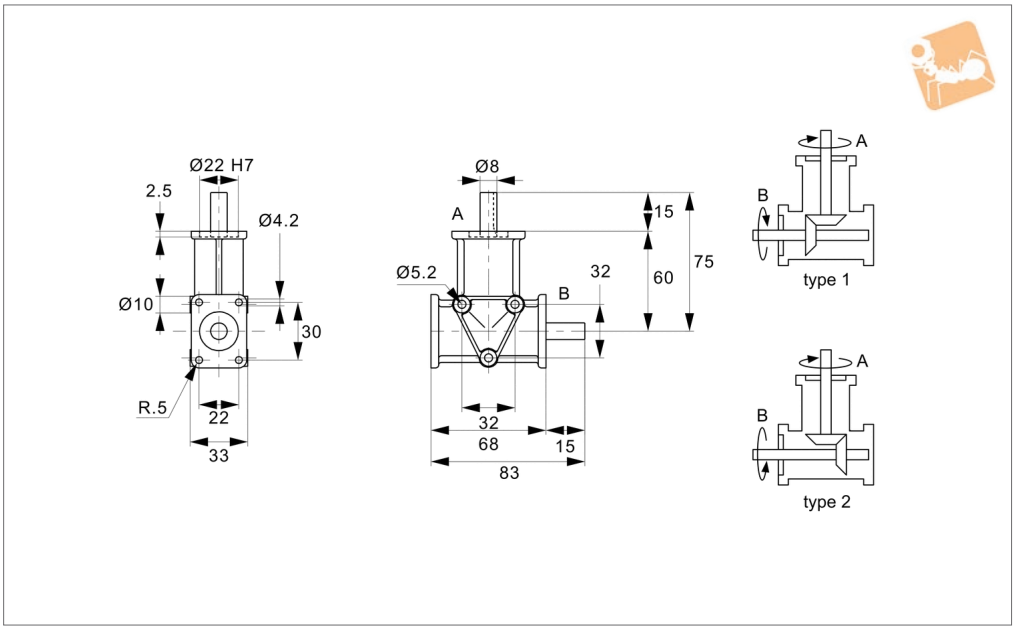
Technical Notes
20° pressure angle.
Quality class Din 7/AGMA 10.

Order No.	Module	Rack style	a	h	Ø B	P ref.
R2M-1	1.5	Round	600	17.27	19.974	15.77
R2M-2	1.25	Round	600	13.46	19.974	12.21
R2M-3	1.00	Round	450	12.19	12.974	11.79
R2M-4	0.8	Round	450	8.64	9.974	7.84
R2M-5	0.6	Round	450	5.59	5.974	4.99
R2M-6	0.5	Round	450	5.59	5.974	5.09
R2M-7	0.4	Round	275	5.59	5.974	5.19
R2M-8	0.3	Round	275	3.96	4.755	3.66
R2M-9	0.25	Round	275	3.96	4.755	3.71
R3M-1	1.5	Rectangular	600	18.54	9.02	17.04
R3M-2	1.25	Rectangular	600	18.54	9.02	17.29
R3M-3	1.00	Rectangular	450	12.19	5.84	11.19
R3M-4	0.8	Rectangular	450	12.19	5.84	11.39
R3M-5	0.6	Rectangular	450	12.19	5.84	11.59
R3M-6	0.5	Rectangular	450	12.19	5.84	11.69
R3M-7	0.4	Rectangular	275	12.19	5.84	11.79
R3M-8	0.3	Rectangular	275	9.02	4.24	8.72
R3M-9	0.25	Rectangular	275	9.02	4.24	8.77

Right Angle Drives - 2 shafts
Ø8 shafts



R2300

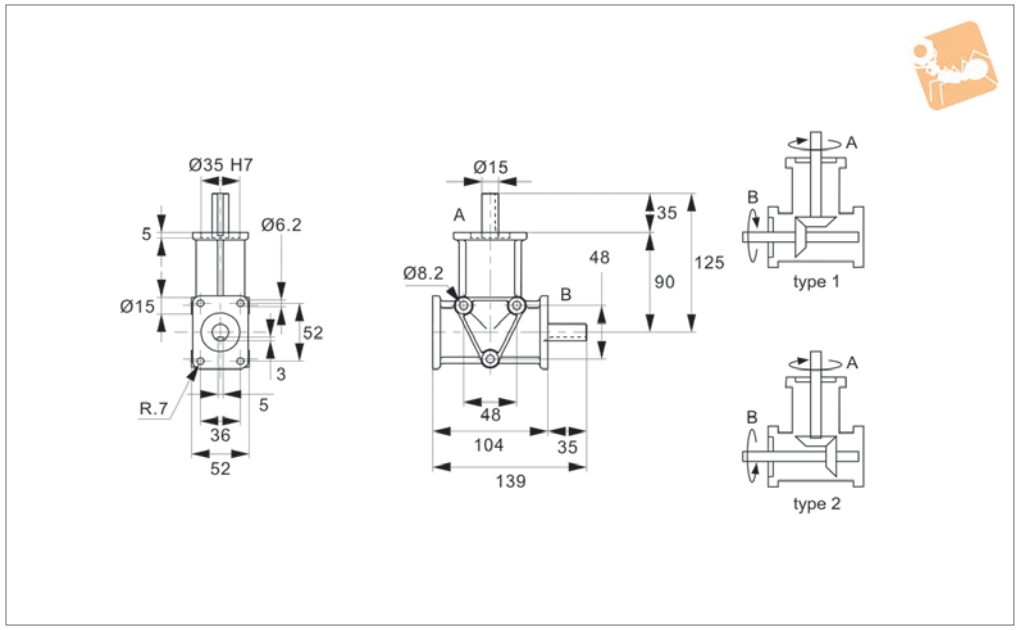


Material
Lightweight aluminium alloy housing. Case-hardened steel bevel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance is based on max. 1400 rpm input. Provides on average 10,000 hours trouble-free life. Very low operating noise levels. May also be used as speed increasers (here the max. shaft input speed for a 1:2 ratio unit is 750 rpm).
Temperature range is -20°C to +80°C.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2300.1-1	8	1	1:1	0.35	2.4	0.3
R2300.2-1	8	2	1:1	0.35	2.4	0.3
R2300.1-2	8	1	2:1	0.18	1.2	0.3
R2300.2-2	8	2	2:1	0.18	1.2	0.3





R2306

Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :41 Kg.
Max. axial loading: 20 Kg.
Angular alignment: 15' to 30' of arc.

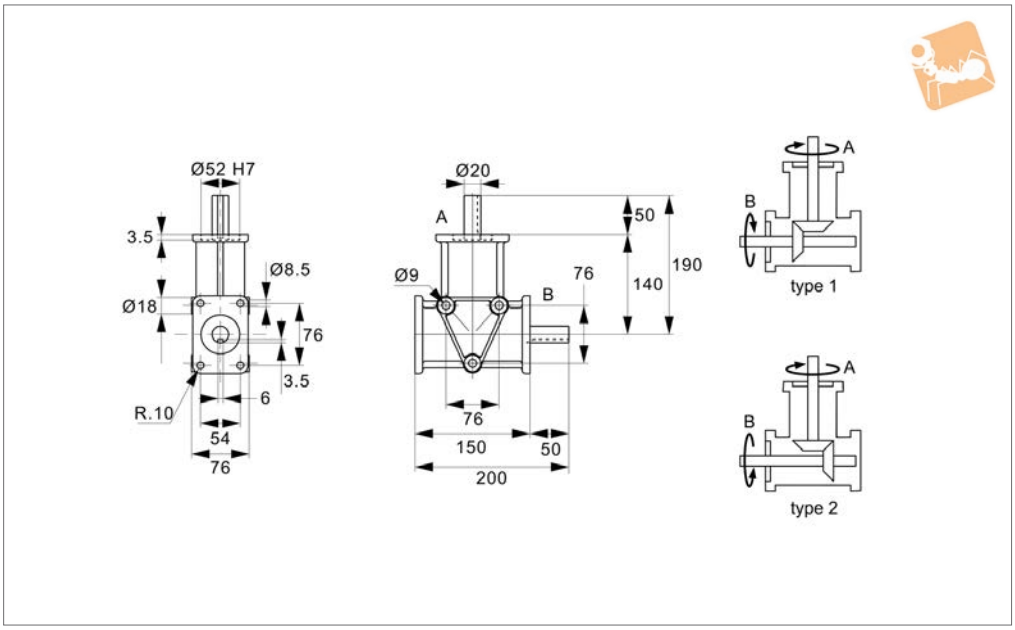
Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2306.1-1	15	1	1:1	1.29	8.8	1.2
R2306.2-1	15	2	1:1	1.29	8.8	1.2
R2306.1-2	15	1	2:1	0.66	4.5	1.2
R2306.2-2	15	2	2:1	0.66	4.5	1.2

Right Angle Drives - 2 Shafts
Ø20 shafts



R2308

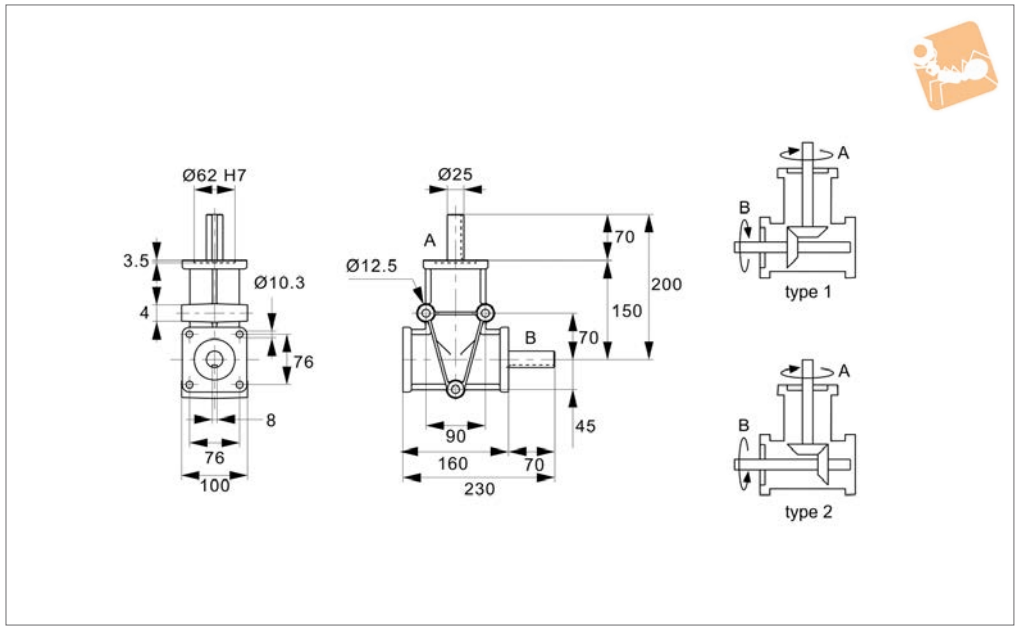


Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :76 Kg.
Max. axial loading: 43 Kg.
Angular alignment: 15' to 30' of arc.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours..

Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2308.1-1	20	1	1:1	3.99	27.2	3.5
R2308.2-1	20	2	1:1	3.99	27.2	3.5
R2308.1-2	20	1	2:1	2.35	16.0	3.5
R2308.2-2	20	2	2:1	1.50	16.0	3.5





R2312

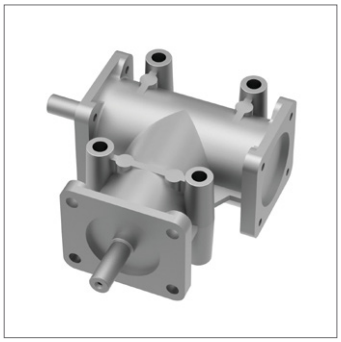
Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :88 Kg.
Max. axial loading: 49 Kg.
Angular alignment: 15‘ to 30‘ of arc.

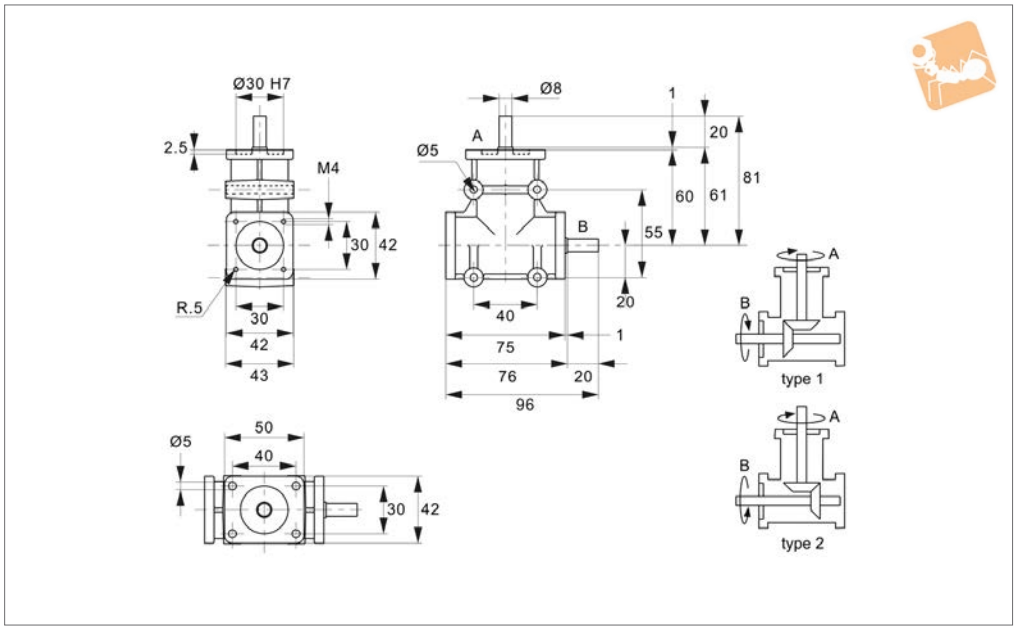
Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2312.1-1	25	1	1:1	6.50	44.0	5.8
R2312.2-1	25	2	1:1	6.50	44.0	5.8
R2312.1-2	25	1	2:1	3.67	25.0	5.8
R2312.2-2	25	2	2:1	3.67	25.0	5.8

Right Angle Drives - 2 Shafts
Ø8 shafts



R2320

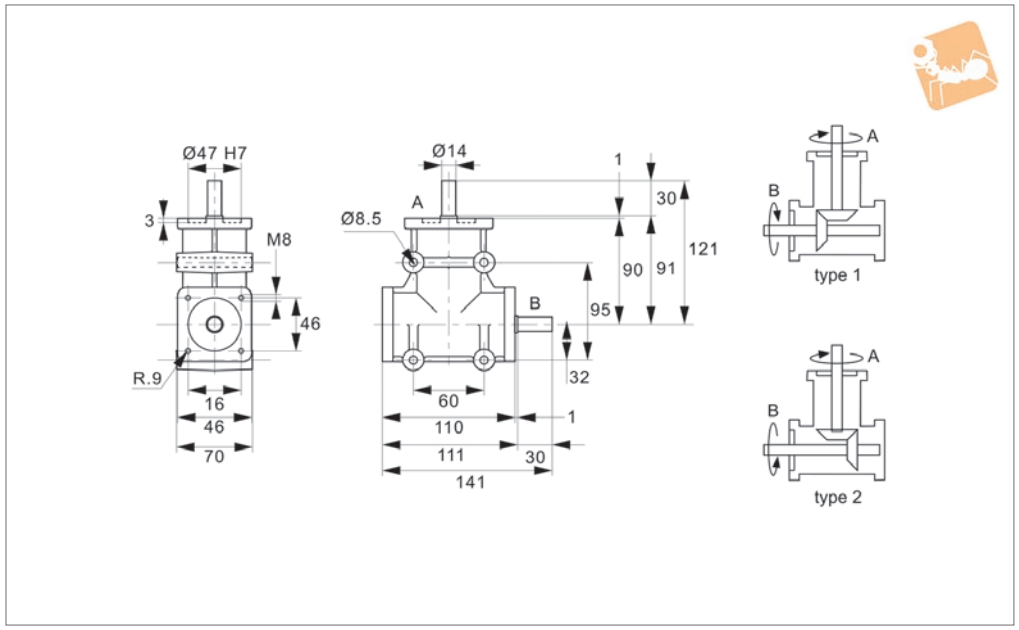


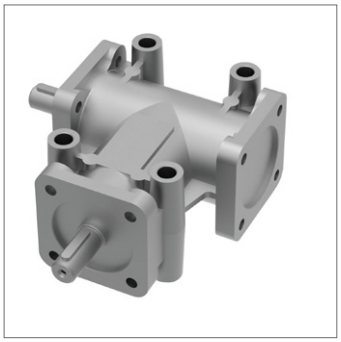
Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :10 Kg.
Max. axial loading: 2 Kg.
Angular alignment: 15' to 30' of arc.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2320.1-1	8	1	1:1	0.44	3.00	0.5
R2320.2-1	8	2	1:1	0.44	3.0	0.5
R2320.1-2	8	1	2:1	0.32	2.2	0.5
R2320.2-2	8	2	2:1	0.32	2.2	0.5





R2322

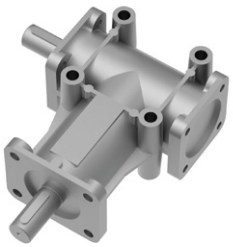
Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :25 Kg.
Max. axial loading: 5 Kg.
Angular alignment: 15‘ to 30‘ of arc.

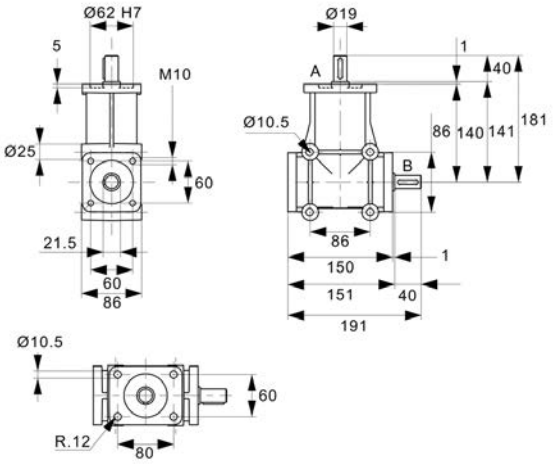
Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2322.1-1	14	1	1:1	1.91	13.0	2.0
R2322.2-1	14	2	1:1	1.91	13.0	2.0
R2322.1-2	14	1	2:1	1.47	10.0	2.0
R2322.2-2	14	2	2:1	1.47	10.0	2.0
R2322.1-3	14	1	3:1	0.99	9.5	2.0
R2322.2-3	14	2	3:1	0.99	9.5	2.0

Right Angle Drives - 2 Shafts
Ø19 shafts



R2330



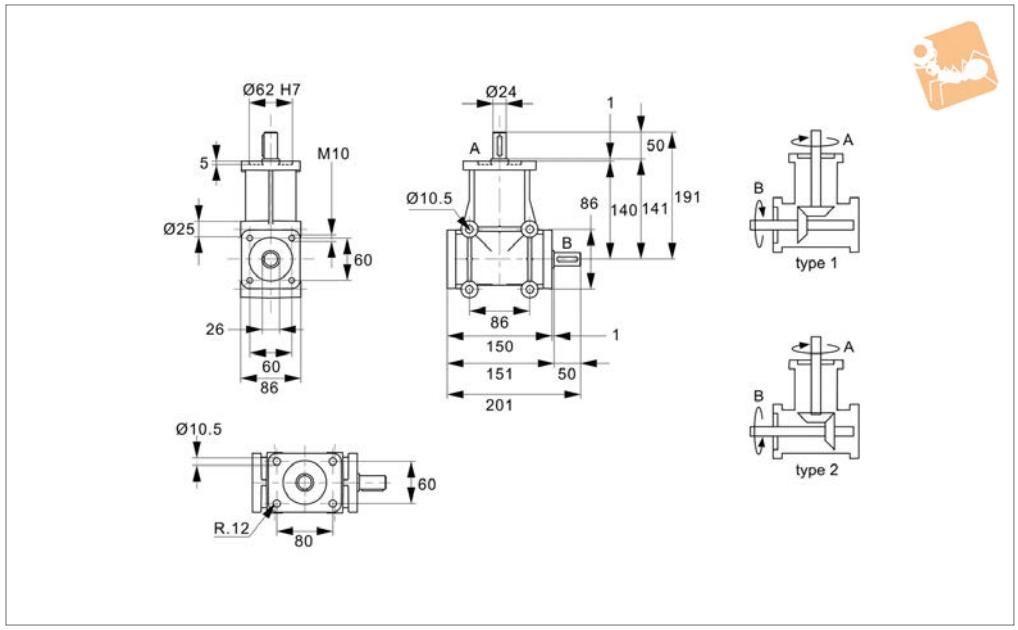
Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

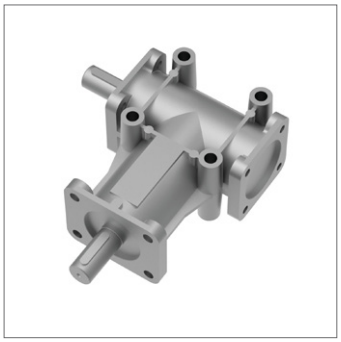
Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.

Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20°C to +80°C.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2330.1-1	19	1	1:1	5.57	38.0	4.40
R2330.2-1	19	2	1:1	5.57	38.0	4.40
R2330.1-2	19	1	2:1	3.23	22.0	4.40
R2330.2-2	19	2	2:1	3.23	22.0	4.40
R2330.1-3	19	1	3:1	1.57	16.0	4.40
R2330.2-3	19	2	3:1	1.57	16.0	4.40





R2333

Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

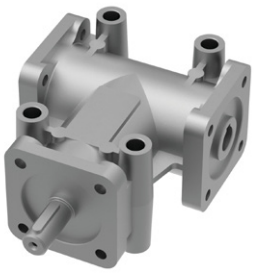
Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :80 Kg.
Max. axial loading: 16 Kg.
Angular alignment: 15‘ to 30‘ of arc.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

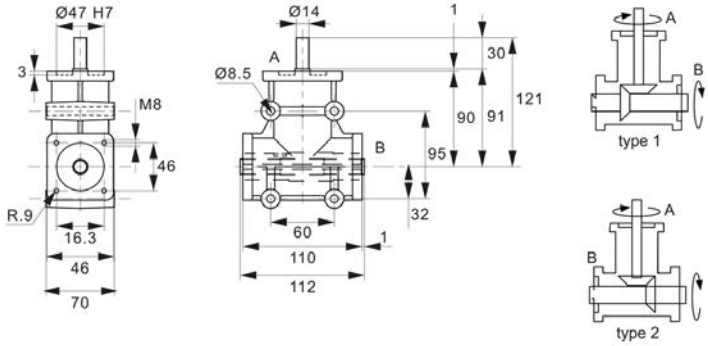
Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2333.1-1	24	1	1:1	6.7	50.0	4.40
R2333.2-1	24	2	1:1	6.7	50.0	4.40
R2333.1-2	24	1	2:1	4.1	28.0	4.40
R2333.2-2	24	2	2:1	4.1	28.0	4.40
R2333.1-3	24	1	3:1	2.2	21.0	4.40
R2333.2-3	24	2	3:1	2.2	21.0	4.40

Right Angle Drives - Hollow 2 Shafts

Ø14 shafts



R2336



Material

Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

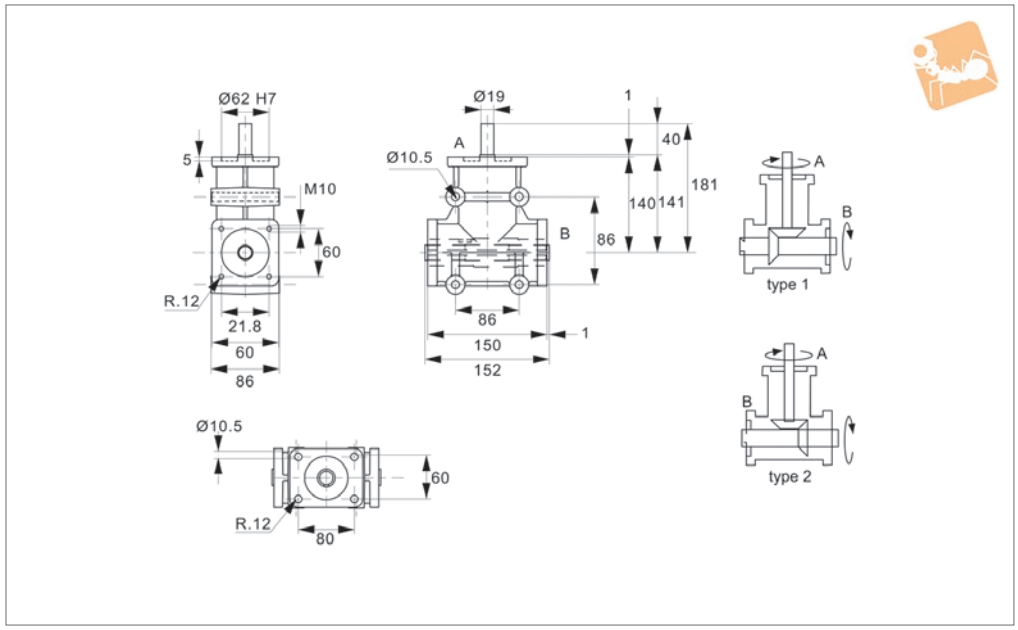
Technical Notes

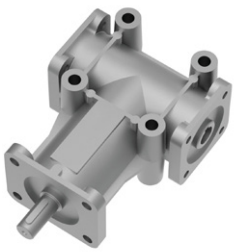
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :25 Kg.
Max. axial loading: 5 Kg.
Angular alignment: 15' to 30' of arc.

Tips

See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2336.1-1	14	1	1:1	2.49	17.0	2.0
R2336.2-1	14	2	1:1	2.49	17.0	2.0
R2336.1-2	14	1	2:1	2.05	14.0	2.0
R2336.2-2	14	2	2:1	2.05	14.0	2.0
R2336.1-3	14	1	3:1	0.63	6.0	2.0
R2336.2-3	14	2	3:1	0.63	6.0	2.0





R2338

Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :40 Kg.
Max. axial loading: 8 Kg.
Angular alignment: 15' to 30' of arc.

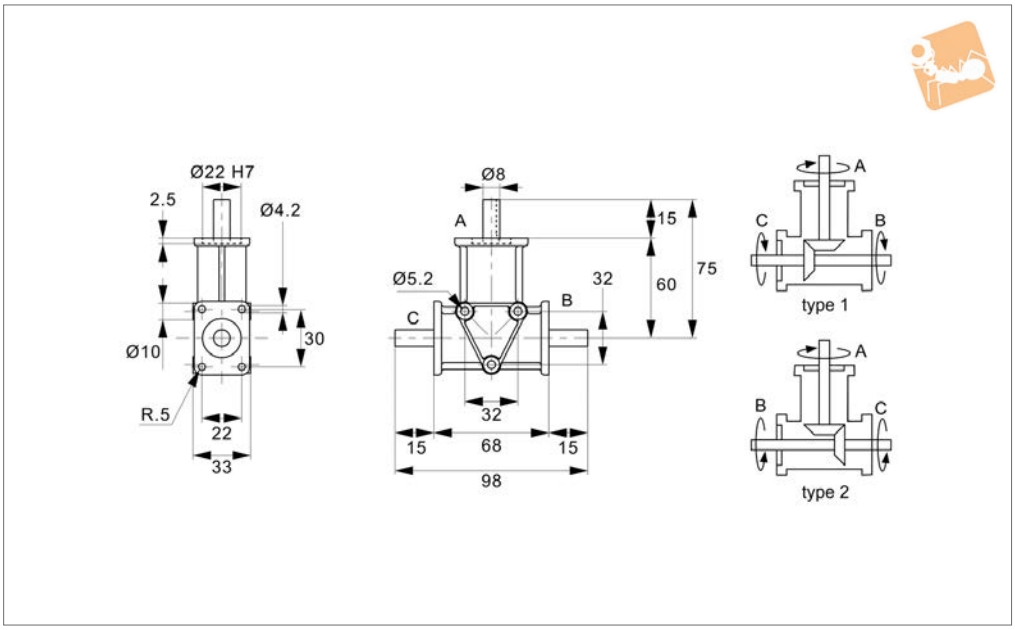
Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2338.1-1	19	1	1:1	5.57	38.0	4.8
R2338.2-1	19	2	1:1	5.57	38.0	4.8
R2338.1-2	19	1	2:1	3.23	22.0	4.8
R2338.2-2	19	2	2:1	3.23	22.0	4.8
R2338.1-3	19	1	3:1	1.68	16.0	4.8
R2338.2-3	19	2	3:1	1.68	16.0	4.8

Right Angle Drives - 3 Shafts
Ø8 shafts



R2302

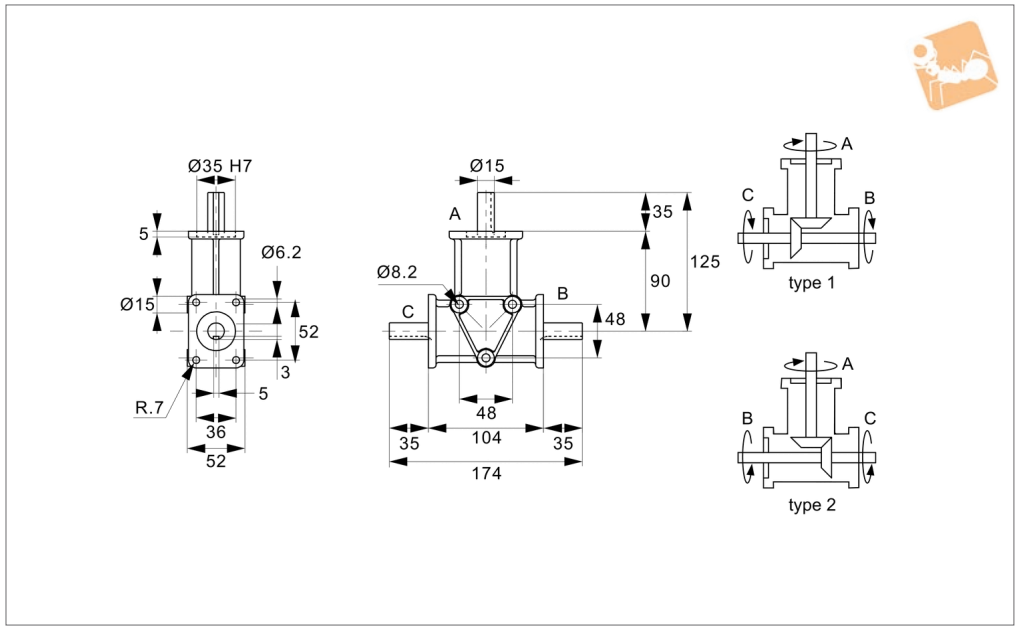


Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance is based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life. Very low operating noise levels.
May also be used as speed increasers (here the max. shaft input speed for a 1:2 ratio unit is 750 rpm).
Temperature range is -20°C to +80°C.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2302.1	8	1:1	0.35	1.2	1.2	0.3
R2302.2	8	2:1	0.18	0.6	0.6	0.3





R2307

Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :41 Kg.
Max. axial loading: 20 Kg.
Angular alignment: 15‘ to 30‘ of arc.

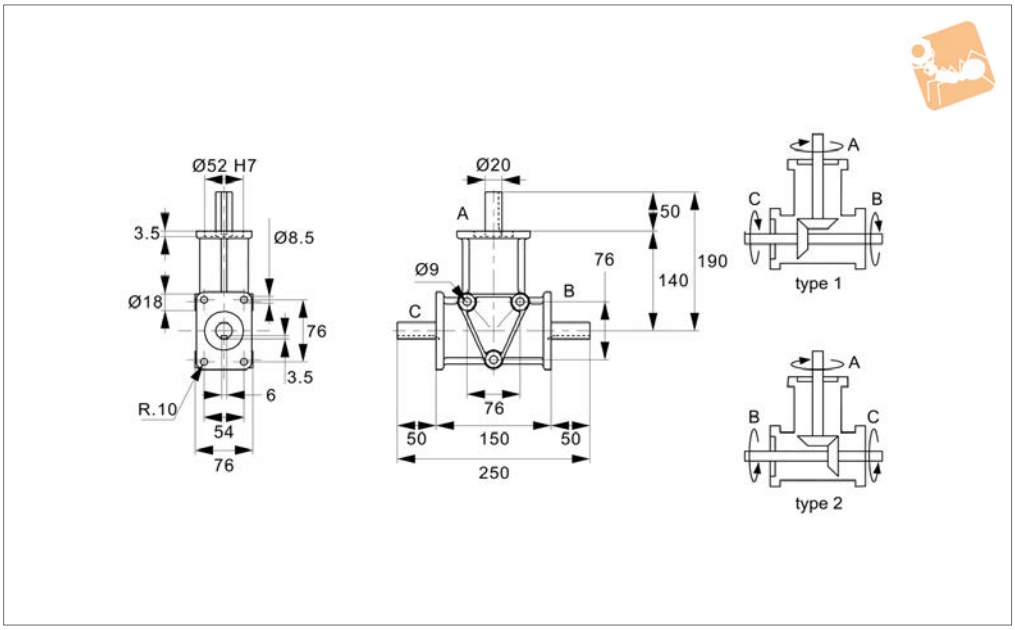
Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2307.1	15	1:1	1.29	4.4	4.4	1.2
R2307.2	15	2:1	0.66	2.25	2.25	1.2

Right Angle Drives - 3 Shafts
Ø20 shafts



R2310

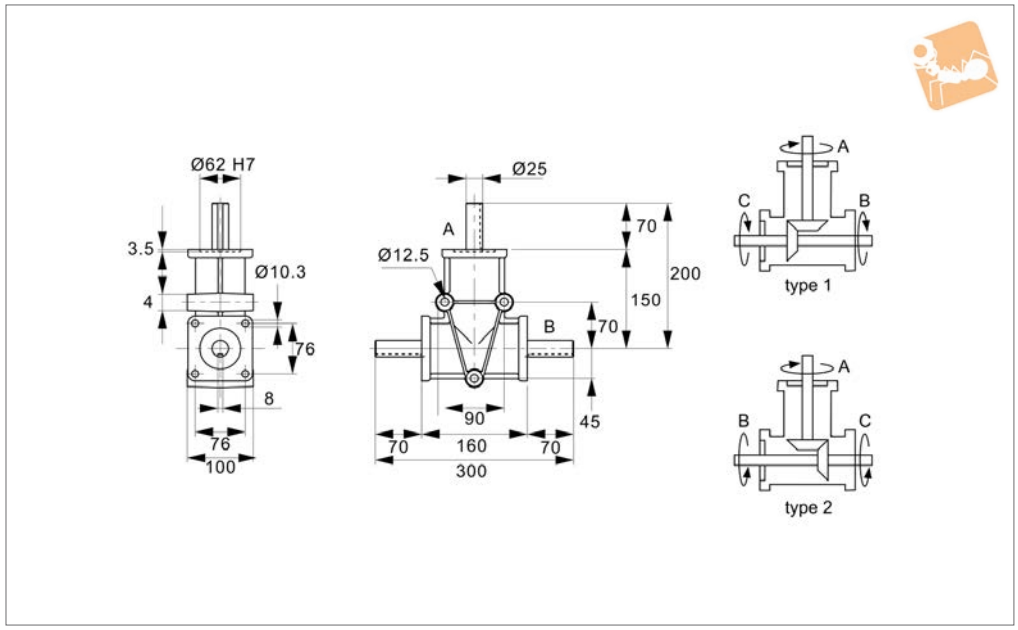


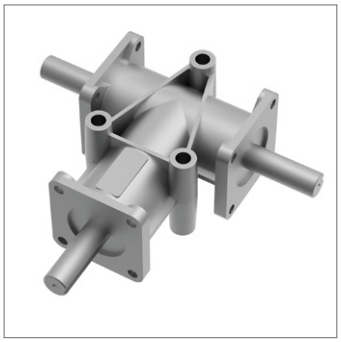
Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :76 Kg.
Max. axial loading: 43 Kg.
Angular alignment: 15' to 30' of arc.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2310.1	20	1:1	4.00	13.6	13.6	3.5
R2310.2	20	2:1	2.35	8.0	8.0	3.5





R2314

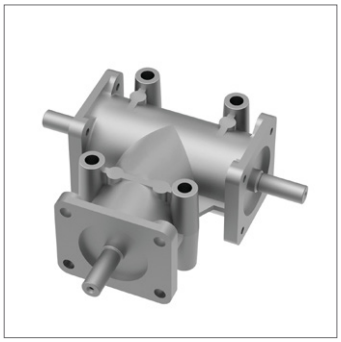
Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :88 Kg.
Max. axial loading: 49 Kg.
Angular alignment: 15‘ to 30‘ of arc.

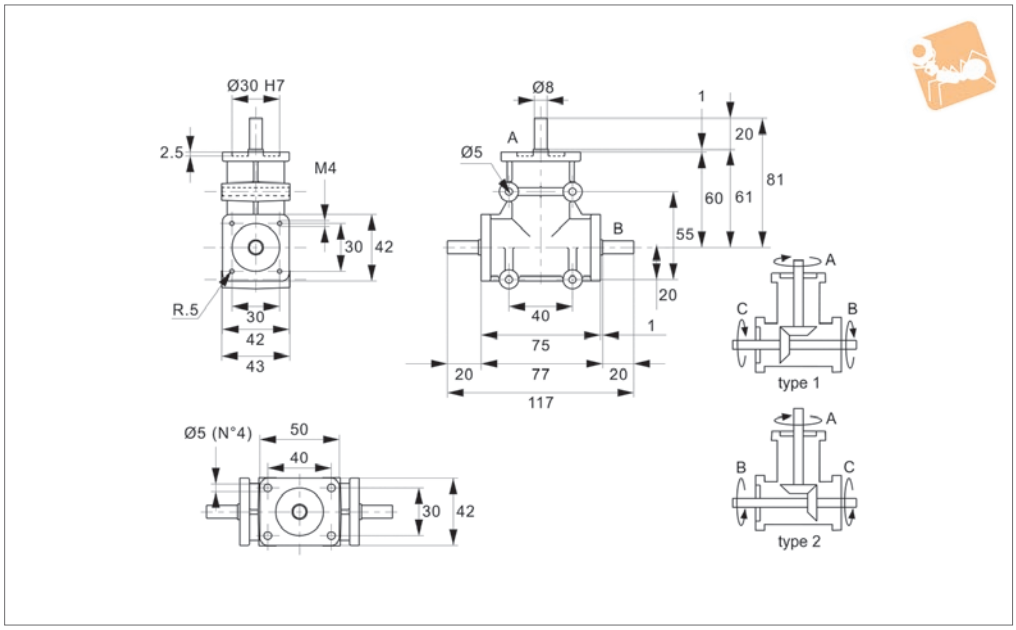
Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2314.1	25	1:1	6.50	22.0	22.0	5.8
R2314.2	25	2:1	3.67	12.5	12.5	5.8

Right Angle Drives - 3 Shafts
Ø8 shafts



R2321

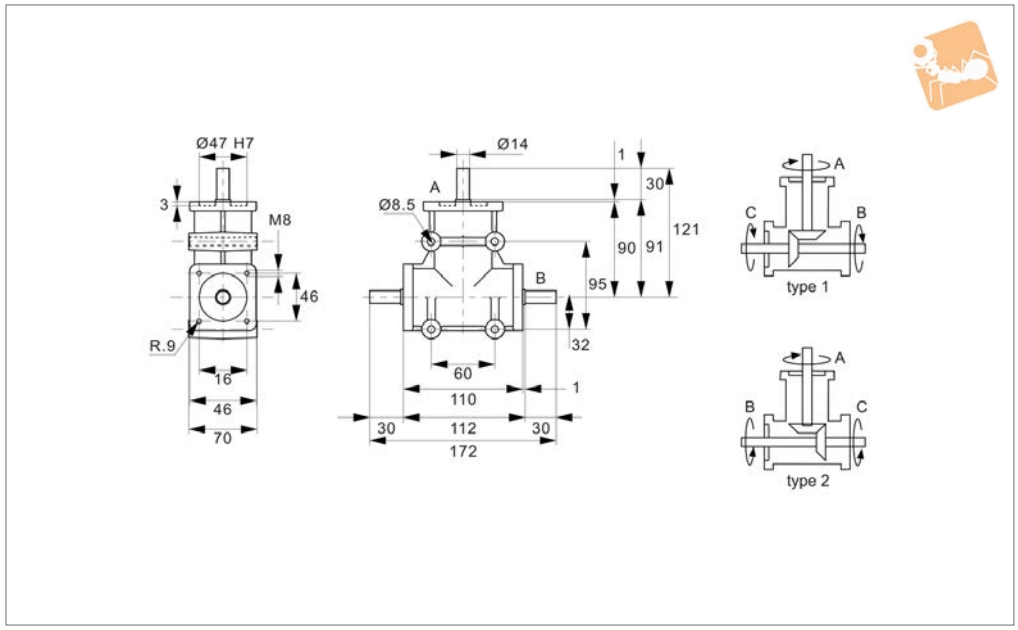


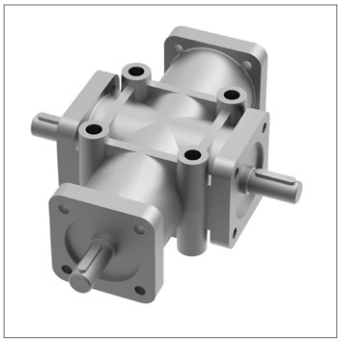
Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :10 Kg.
Max. axial loading: 2 Kg.
Angular alignment: 15' to 30' of arc.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2321.1	8	1:1	0.44	1.5	1.5	0.50
R2321.2	8	2:1	0.32	1.1	1.1	0.50





R2325

Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :25 Kg.
Max. axial loading: 5 Kg.
Angular alignment: 15‘ to 30‘ of arc.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

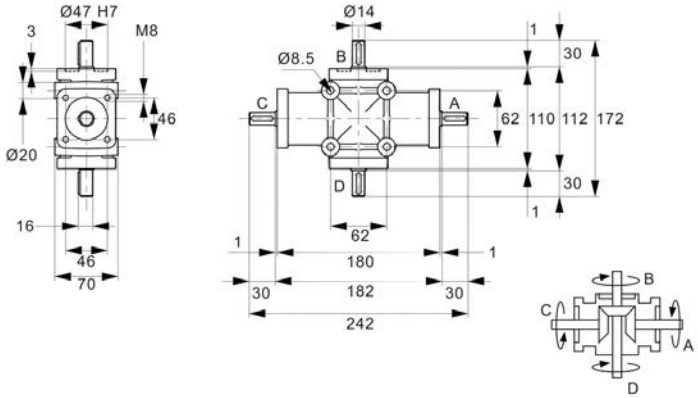
Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2325.1	14	1:1	1.91	6.50	6.50	2.0
R2325.2	14	2:1	1.47	5.00	5.00	2.0
R2325.3	14	3:1	0.99	4.75	4.75	2.0

Right Angle Drives - 4 Shafts

Ø14 shafts



R2328



Material

Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

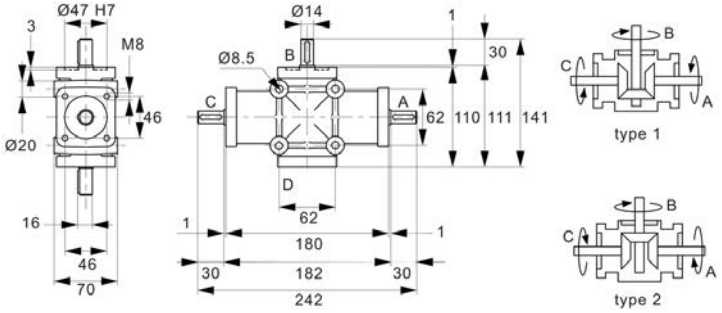
Technical Notes

Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :25 Kg.
Max. axial loading: 5 Kg.
Angular alignment: 15' to 30' of arc.

Tips

See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia.	Gear ratio	Drive type	Input power at 1400 rpm (Shaft A) kW max.	Torque output (Shaft B) Nm max.	Torque output (Shaft C) Nm max.	Torque output (Shaft D) Nm max.	Weight kg
R2328.101	14	1:1	1 and 2	1,91	4,5	4,5	4,5	3,25
R2328.102	14	2:1	1 and 2	1,47	3,3	3,3	3,3	3,25
R2328.103	14	3:1	1 and 2	0,73	2,3	2,3	2,3	3,25





R2329

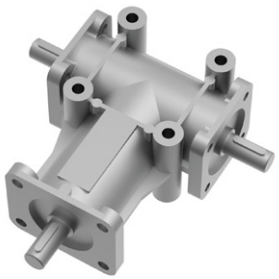
Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20°C to +80°C.

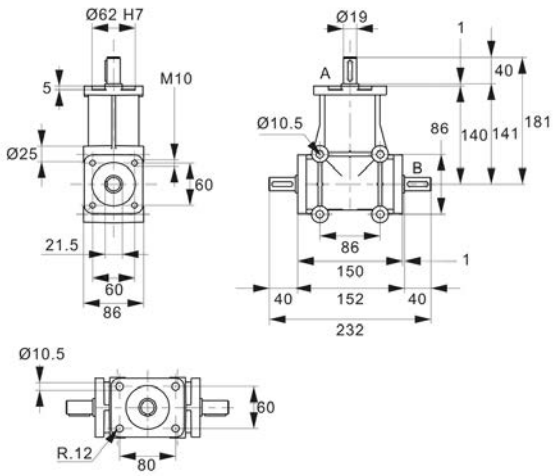
Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2329.1-1	14	1:1	1.91	6.5	6.5	3.25
R2329.2-2	14	2:1	1.47	5.0	5.0	3.25
R2329.1-3	14	3:1	0.73	3.5	3.5	3.25
R2329.2-1	14	1:1	1.91	6.5	6.5	3.25
R2329.1-2	14	2:1	1.47	5.0	5.0	3.25
R2329.2-3	14	3:1	0.73	3.5	3.5	3.25

Right Angle Drives - 3 Shafts
Ø19 shafts



R2332

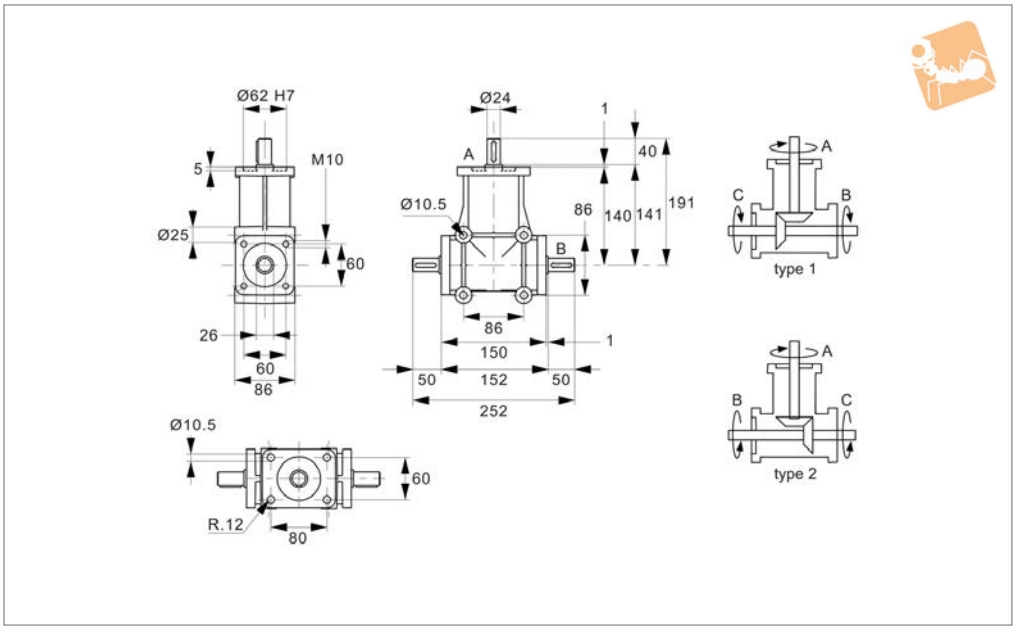


Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :40 Kg.
Max. axial loading: 8 Kg.
Angular alignment: 15' to 30' of arc.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2332.1	19	1:1	5.57	19.0	19.0	4.40
R2332.2	19	2:1	3.23	11.0	11.0	4.40
R2332.3	19	3:1	1.57	7.5	7.5	4.40





R2334

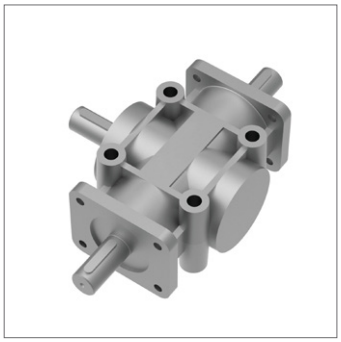
Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :80 Kg.
Max. axial loading: 16 Kg.
Angular alignment: 15‘ to 30‘ of arc.

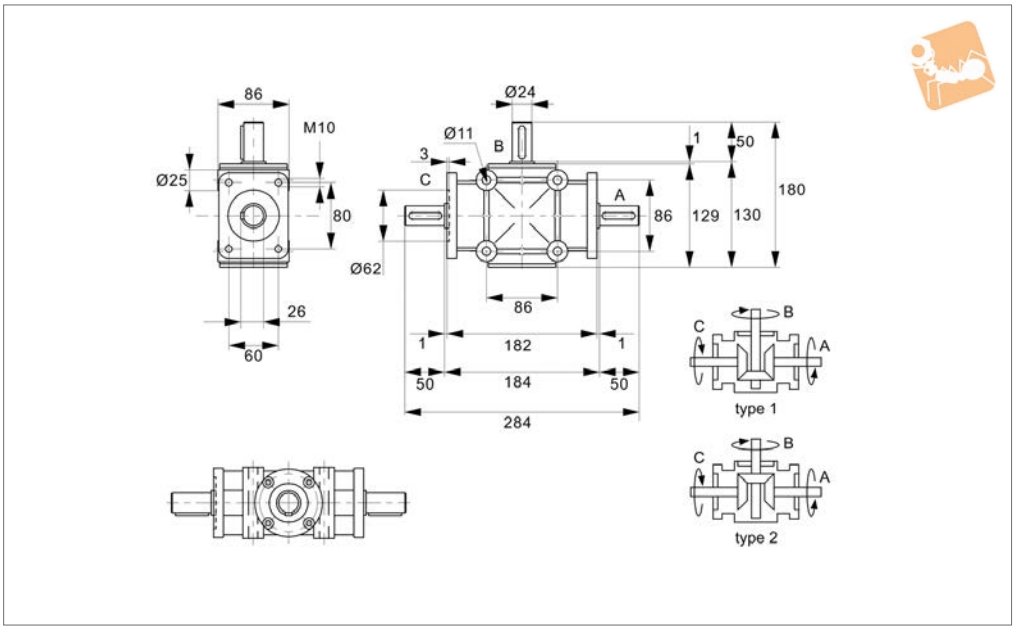
Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2334.1	24	1:1	6.7	25.0	25.0	4.40
R2334.2	24	2:1	4.1	14.0	14.0	4.40
R2334.3	24	3:1	2.2	10.5	10.5	4.40

Right Angle Drives - 3 Shafts
Ø24 shafts



R2340



Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.
Shafts are key-wayed.

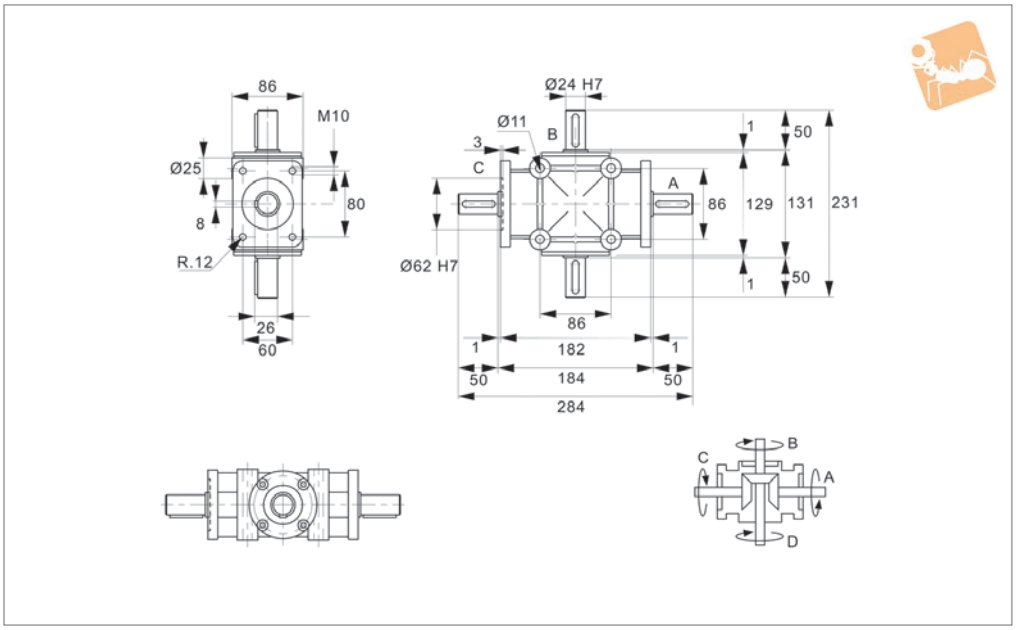
Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.

Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :50 Kg.

Max. axial loading: 10 Kg.
Angular alignment: 15' to 30' of arc.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2340.1	24	1:1	4.4	15.0	15.0	5.25
R2340.2	24	2:1	2.05	14.0	14.0	5.25
R2340.3	24	3:1	0.92	11.0	11.0	5.25





R2342

Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :50 Kg.
Max. axial loading: 10 Kg.
Angular alignment: 15‘ to 30‘ of arc.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

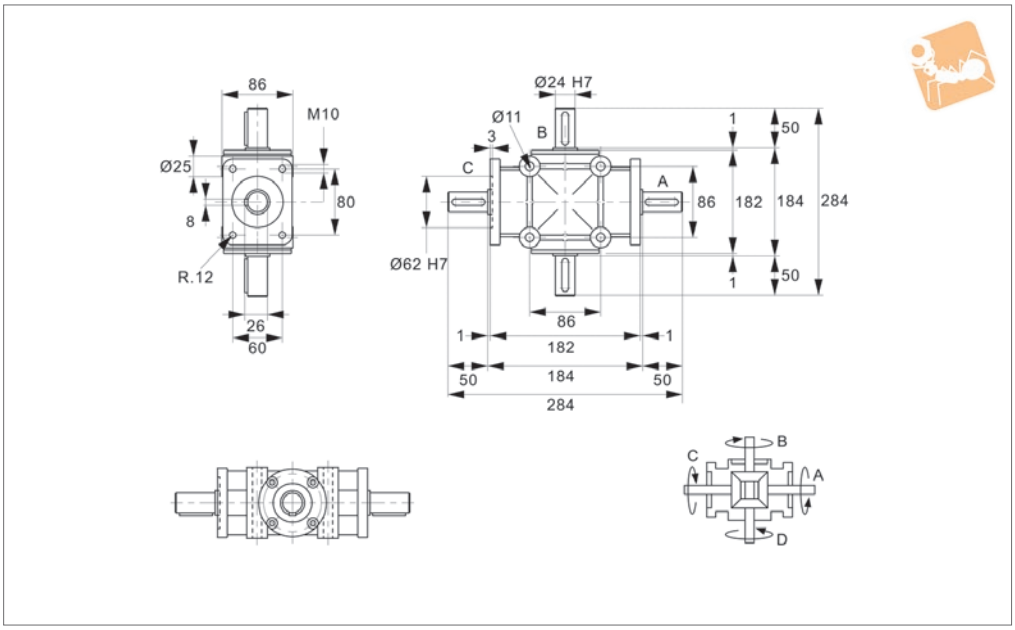
Order No.	Gear ratio	Drive type	Shaft dia.	Input power at 1400 rpm (Shaft A) kW max.	Torque output (Shaft B) Nm max.	Torque output (Shaft C) Nm max.	Torque output (Shaft D) Nm max.	Weight kg
R2342.1	1:1	1 and 2	24	4,4	10,0	10,0	10,0	5,35
R2342.2	2:1	1 and 2	24	2,05	9,3	9,3	9,3	5,35
R2342.3	3:1	1 and 2	24	0,92	7,3	7,3	7,3	5,35

Right Angle Drives - 4 Shafts

Ø24 shafts



R2345



Material

Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes

Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :50 Kg.
Max. axial loading: 10 Kg.
Angular alignment: 15' to 30' of arc.

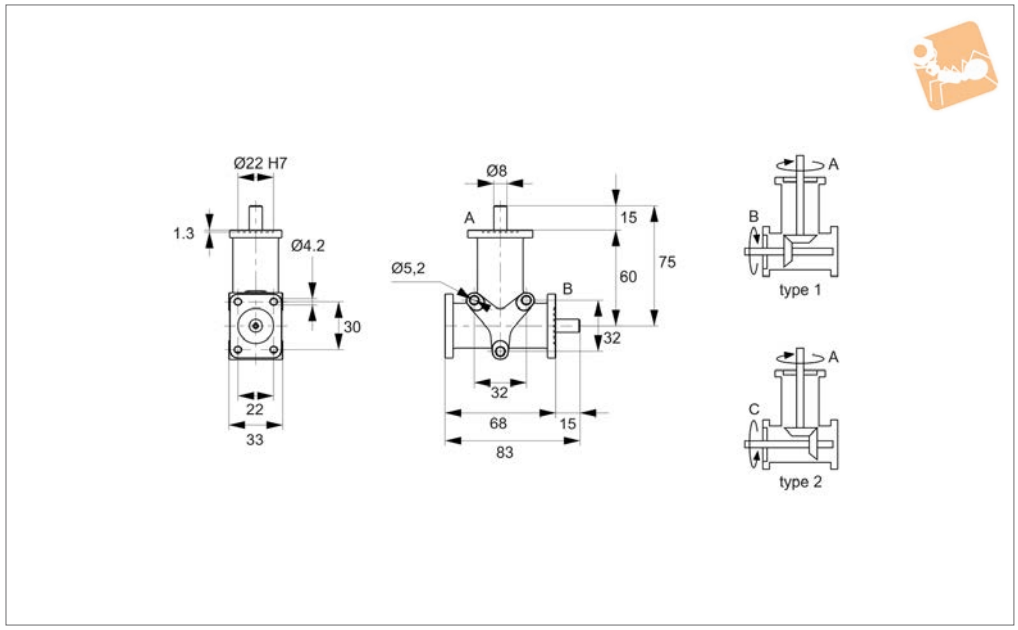
Tips

See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Gear ratio	Drive type	Shaft dia.	Input power at 1400 rpm (Shaft A) kW max.	Torque output (Shaft B) Nm max.	Torque output (Shaft C) Nm max.	Torque output (Shaft D) Nm max.	Weight kg
R2345.1	1:1	1 and 2	24	4,4	10	10	10	6,10

Stainless Right Angle Drives - 2 Shafts

Ø8 shafts





R2350

Material
Stainless steel (AISI 316) housing and shafts. Seals - NBR. Spiral bevel gears from hardened steel.

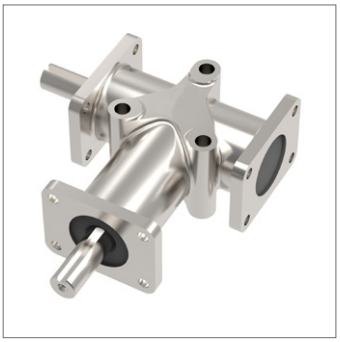
Technical Notes
Normally used as speed reducers.

Shaft A is the input shaft, maximum input (as speed reducer) is 1400 rpm.
Provides on average 10,000 hours trouble free life.
Usually used as speed reducers but can also be used as speed increasers (max input 750 rpm).
Temperature range -20C to +80C
Max. radial loading 60N. Max. axial loading 20N.
Angular alignment: 15' to 30' of arc.

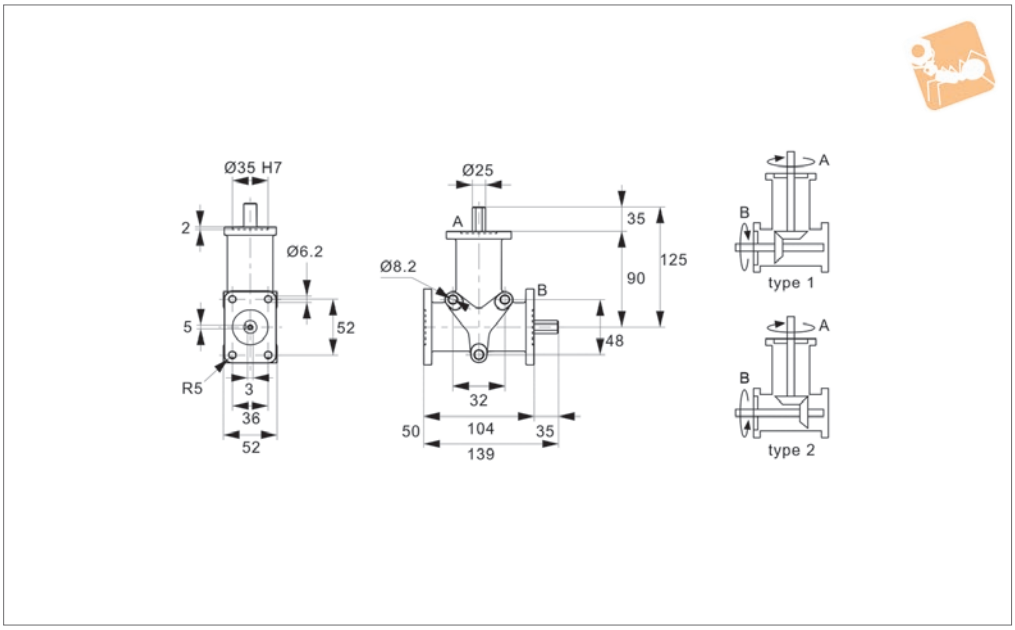
Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2350.1-1	8	1	1:1	0.24	1.60	0.48
R2350.2-1	8	2	1:1	0.24	1.60	0.483
R2350.1-2	8	1	2:1	0.16	1.10	0.483
R2350.2-2	8	2	2:1	0.16	1.10	0.483

Stainless Right Angle Drives - 2 Shafts

Ø15 shafts



R2352

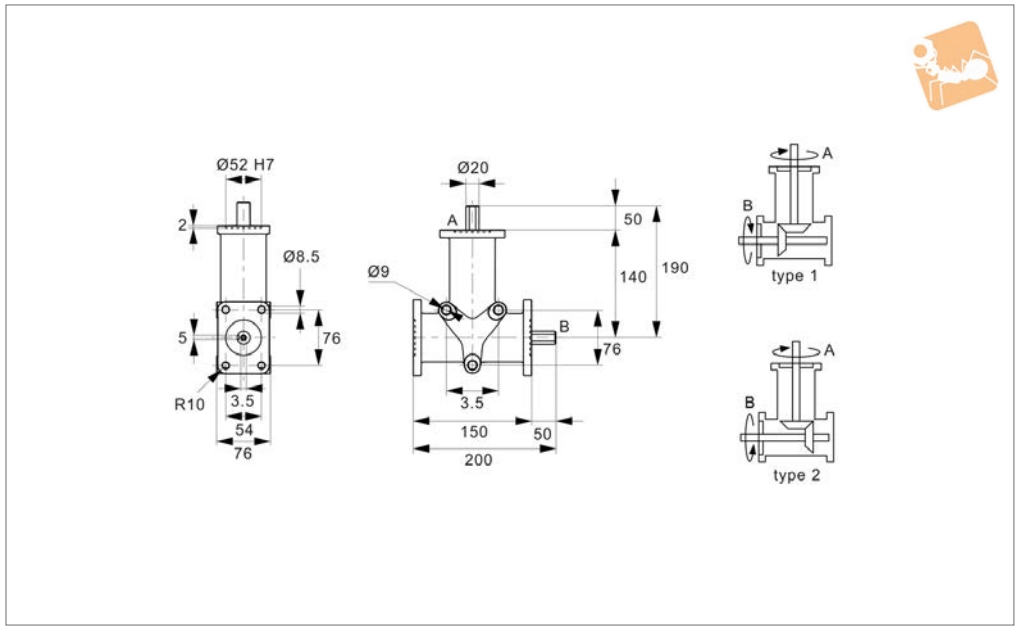


Material
Stainless steel (AISI 316) housing and shafts, seals - NBR. Spiral bevel gears from hardened steel.

Technical Notes
Normally used as speed reducers. Max. radial loading 140N. Max. axial loading 50N.

Angular alignment: 15' to 30' of arc.

Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2352.1-1	15	1	1:1	0.88	6	1.8
R2352.2-1	15	2	1:1	0.880	6	1.8
R2352.1-2	15	1	2:1	0.59	4	1.8
R2352.2-2	15	2	2:1	0.59	4	1.8





R2354

Material
Stainless steel (AISI 316) housing and shafts, seals - NBR. Spiral bevel gears from hardened steel.

Technical Notes
Normally used as speed reducers. Max. radial loading 300N. Max. axial loading 80N.

Angular alignment: 15‘ to 30‘ of arc.

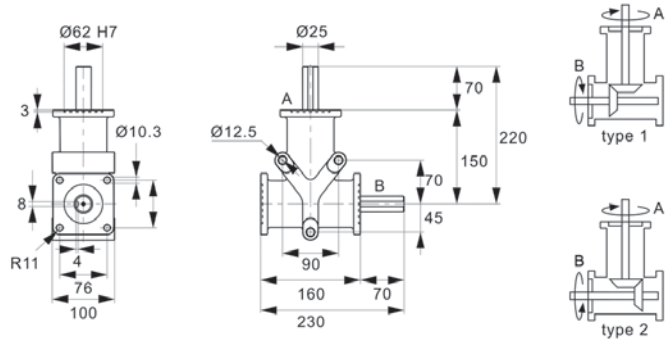
Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2354.1-1	20	1	1:1	2.79	19	5.39
R2354.2-1	20	2	1:1	2.79	19	5.39
R2354.1-2	20	1	2:1	1.76	12	5.39
R2354.2-2	20	2	2:1	1.76	12	5.39

Stainless Right Angle Drives - 2 Shafts

Ø25 shafts



R2358

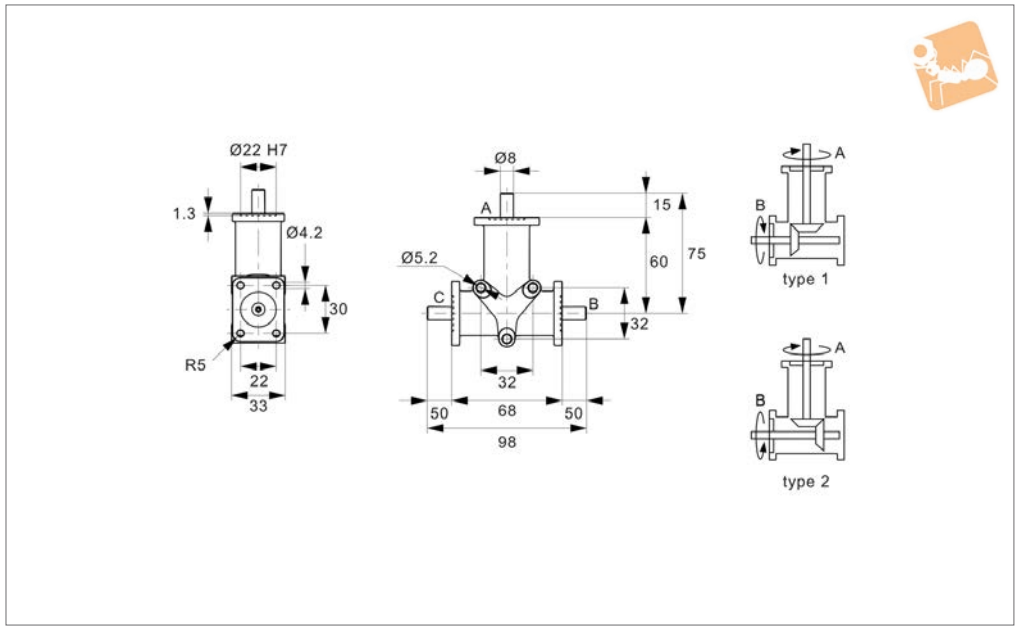


Material
Stainless steel (AISI 316) housing and shafts, seals - NBR. Spiral bevel gears from hardened steel.

Technical Notes
Normally used as speed reducers. Max. radial loading 400N. Max. axial loading 160N.

Angular alignment: 15' to 30' of arc.

Order No.	Shaft dia. tol. f7	Type	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Weight kg
R2358.1-1	25	1	1:1	4.55	31	9.14
R2358.2-1	25	2	1:1	4.55	31	9.14
R2358.1-2	25	1	2:1	3.37	23	9.14
R2358.2-2	25	2	2:1	3.37	23	9.14





R2351

Material
Lightweight aluminium alloy housing. Stainless steel (AISI 316) housing and shafts, seals - NBR. Spiral bevel gears from hardened steel.

Technical Notes
Normally used as speed reducers.

Max. radial loading 60N. Max. axial loading 20N.
Angular alignment: 15' to 30' of arc.

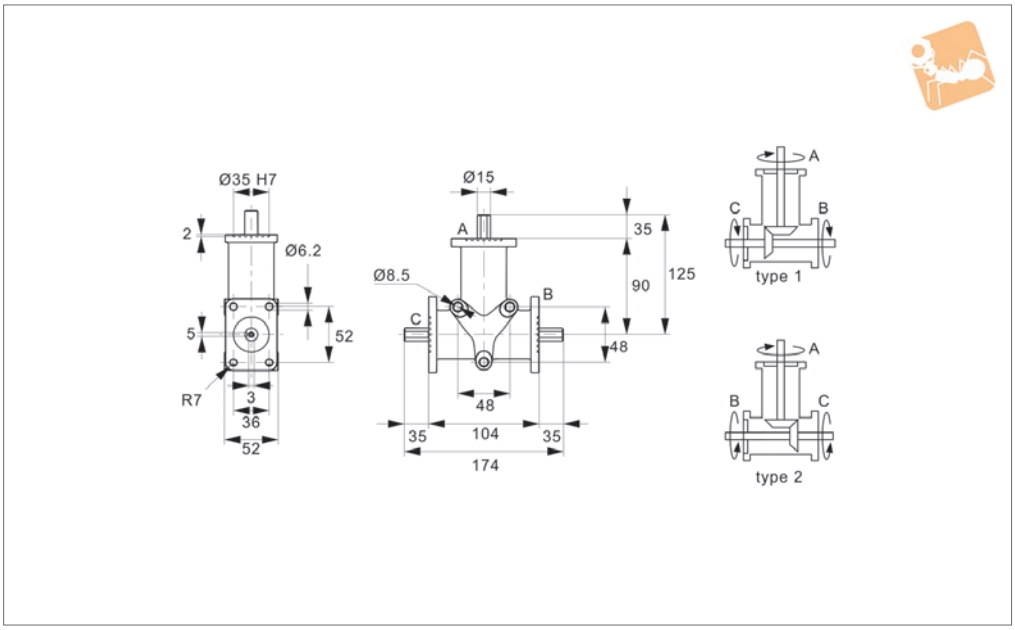
Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2351.1	8	1	0.24	0.80	0.80	0.48
R2351.2	8	2	0.16	0.55	0.55	0.48

Stainless Right Angle Drives - 3 Shafts

Ø15 shafts



R2353

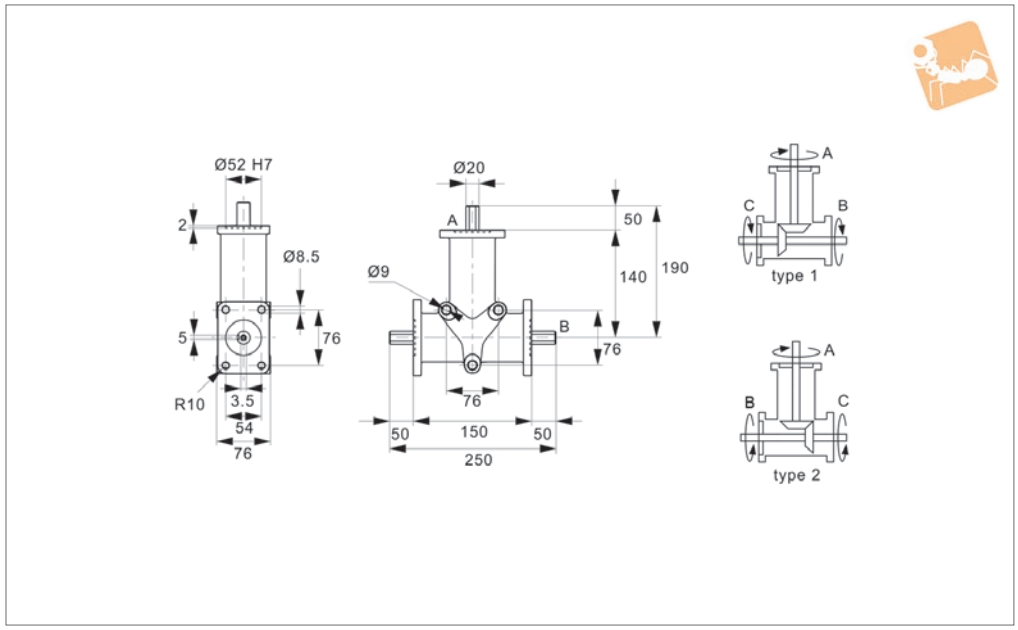


Material
Stainless steel (AISI 316) housing and shafts, seals - NBR. Spiral bevel gears from hardened steel.

Technical Notes
Normally used as speed reducers. Max. radial loading 140N. Max. axial loading 50N.

Angular alignment: 15' to 30' of arc.

Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2353.1	15	1:1	0.88	3	3	1.86
R2353.2	15	2:1	0.59	2	2	1.86





R2355

Material
Stainless steel (AISI 316) housing and shafts, seals - NBR. Spiral bevel gears from hardened steel.

Technical Notes
Normally used as speed reducers. Max. radial loading 300N. Max. axial loading 80N.

Angular alignment: 15‘ to 30‘ of arc.

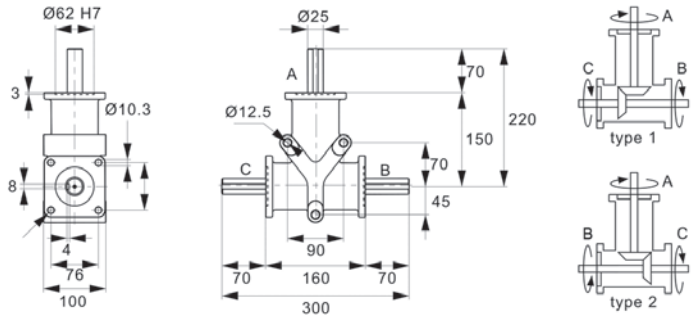
Order No.	Shaft dia. tol. f7	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2355.1	20	1:1	2.79	9.5	9.5	5.54
R2355.2	20	2:1	1.76	6.0	6.0	5.54

Stainless Right Angle Drives - 3 Shafts

Ø25 shafts



R2359

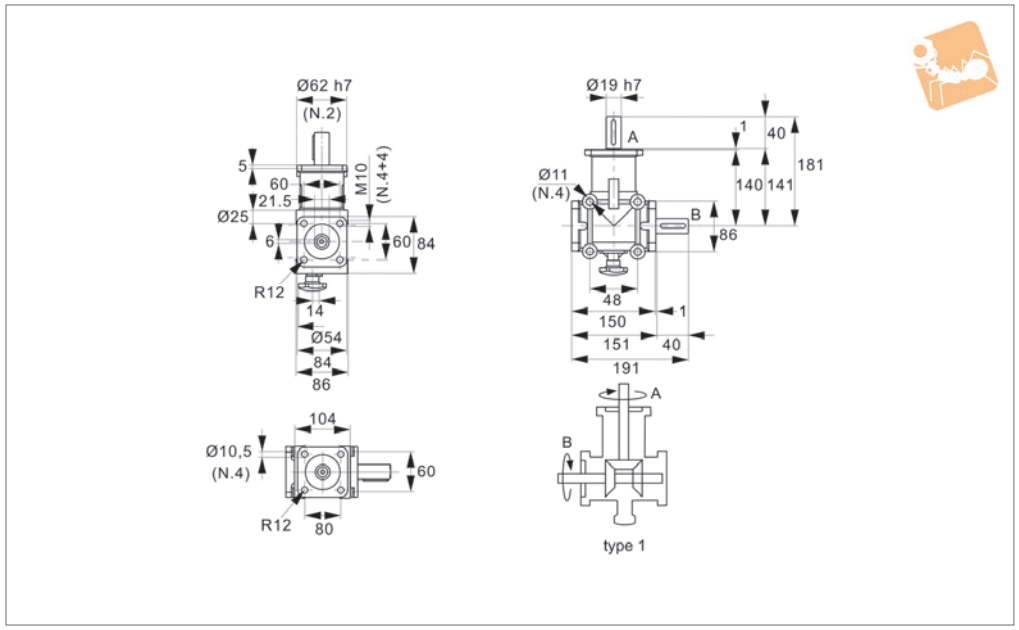


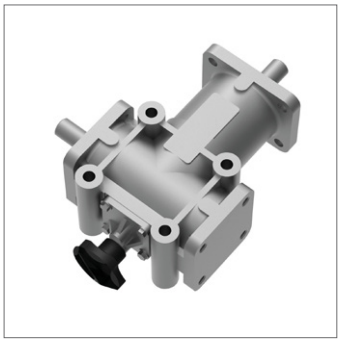
Material
Stainless steel (AISI 316) housing and shafts, seals - NBR. Spiral bevel gears from hardened steel.

Technical Notes
Normally used as speed reducers. Max. radial loading 400N. Max. axial loading 160N.

Angular alignment: 15' to 30' of arc.

Order No.	Shaft dia.	Ratio	Input shaft A kW max.	Output shaft B Nm max.	Output shaft C Nm max.	Weight kg
R2359.1	25	1	4.55	15.50	15.50	9.45
R2359.2	25	2	3.37	11.50	11.50	9.45





R2347

RIGHT ANGLE GEAR BOXES

Material
Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes
Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers, the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :50 Kg.
Max. axial loading: 10 Kg.
Angular alignment: 15‘ to 30‘ of arc.

Tips
See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

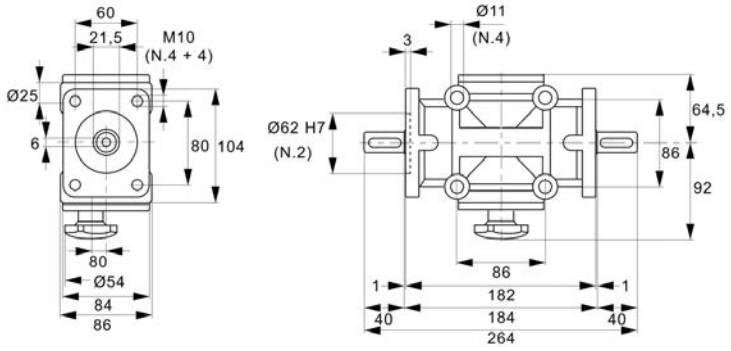
Order No.	Shaft dia. tol. h7	Gear ratio	Input power at 1400 rpm max.	Torque output (Shaft B) Nm (Shaft A) kW max.	Weight kg
R2347.1	19	1:1	5.13	35.0	5.40

2 Way Reversing Gear Box

Ø19 shafts,



R2348



Material

Lightweight aluminium alloy housing.
Case-hardened steel gears and shafts.

Technical Notes

Normally used as speed reducers.
Shaft A is the input shaft. Optimum performance based on max. 1400 rpm input.
Provides on average 10,000 hours trouble-free life.
Where ratio geared units are used as speed increasers, the optimum input speed is 750 rpm for 1:2 ratios.
Very low operating noise levels. Temperature range is -20° to +80°.
Max. radial loading :50 Kg.
Max. axial loading: 10 Kg.
Angular alignment: 15' to 30' of arc.

Tips

See technical pages for gear box selection guide,
based on motor rating, gearing ratio, load type and expected hourly usage hours.

Order No.	Shaft dia. tol. h7	Gear ratio	Input power at 1400 rpm max.	Torque output (Shaft B) Nm (Shaft A) kW max.	Weight kg
R2348.1	19	1:1	5.13	35.0	5.10

Flexure Pivoit Bearings from Automotion Components

Flexural pivot bearings are limited rotation bearings for applications that do not allow lubrication but also require precision, repeatability and infi nite life.

Angle of rotations are graded into three series:

- Series 10 - ± 15° (mainly for light loads)
- Series 20 - ± 7.5° (mainly for medium-heavy loads)
- Series 10 - ± 3.7° (mainly for heavy loads)

They have a range of torsional stiffness depending on the bearing diameter. The bearing consistes of two stainless steel sleeves held in position by three leaf springs on two planes. There is no contact between the sleeves (eliminating friction) and the springs provide the pivotal action which is inherently self centring and requires no lubrication.

Material

The sleeves in a Flexure Pivot bearing are made from 416 Stainless Steel. The spring and core are made from Stainless Steel (410 and 420) with a braze alloy (AMS4765).

Special pivot bearings can be manufactured with angle of rotation up to ± 50° and for heavy loads.

Single Ended Pivot Bearings

Here one end is fixed and the other end is free to rotate - this type is used most widely as they support overhung loads.

Single Ended Pivot Bearings are frictionless with infi nite ligt (see our technical graphs for life cycle curves).



Double Ended Pivot Bearings

In these applications both ends are fi xed and the centre of the bearing is free to rotate - this supports suspended loads.

Double Ended Pivot Bearings are frictionless with infi nite ligt (see our technical graphs for life cycle curves).

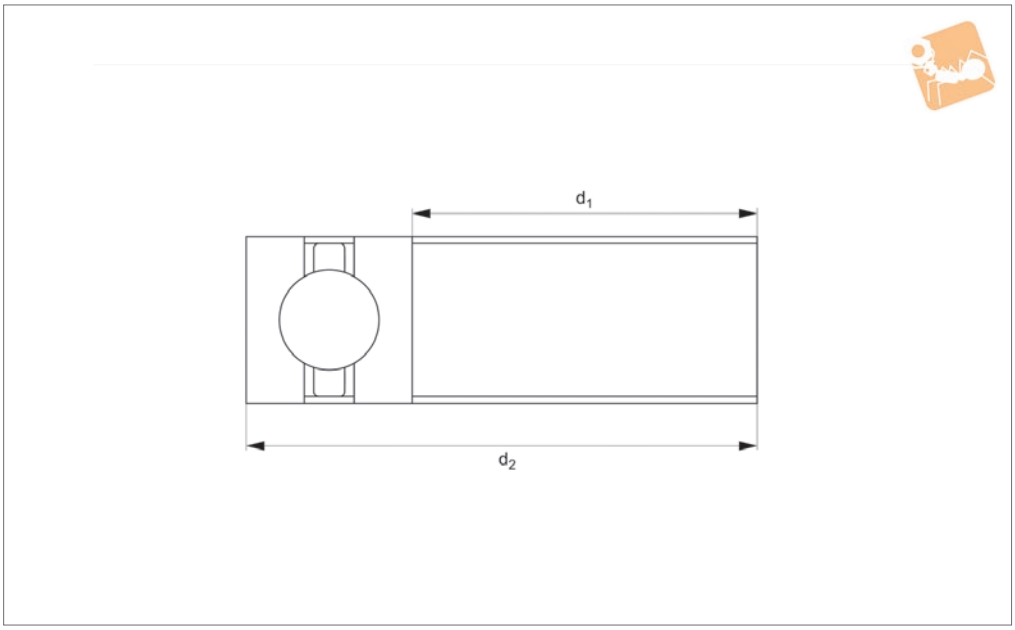


Split Bearing - Slim

slim bearing type



R4200



Material
Corrosion resistant split bearing rings.
Ball bearings retained in plastic cage.

Tips
Our split bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

Order No.	d_1 inch	d_1 mm	d_2 mm	Dyn. load $C_{ax.}$ kN max.	Dyn. load $C_{rad.}$ kN max.	Static load $C_{0\ ax.}$ kN max.	Static load $C_{0\ rad.}$ kN max.	Speed rpm max.	Weight kg
R4200.040	4	101.60	120.65	9.3	8.5	37.0	14.7	1500	0.18
R4200.042	4¼	107.95	127.00	9.6	8.7	39.5	15.8	1410	0.19
R4200.045	4½	114.30	133.35	9.7	8.8	41.0	16.5	1340	0.20
R4200.047	4¾	120.65	139.70	10.0	9.0	44.0	17.5	1270	0.21
R4200.050	5	127.00	146.05	10.10	9.1	45.5	18.2	1200	0.22
R4200.055	5½	139.70	158.75	10.60	9.6	51.0	20.3	1090	0.24
R4200.060	6	152.40	171.45	10.90	9.8	55.0	22.1	1000	0.26
R4200.065	6½	165.10	184.15	11.20	10.1	60.0	23.9	920	0.28
R4200.070	7	177.80	196.85	11.50	10.4	64.0	25.5	860	0.30
R4200.075	7½	190.50	209.55	11.70	10.6	68.0	27.5	800	0.32
R4200.080	8	203.20	222.25	12.00	10.9	73.0	29.0	750	0.34
R4200.085	8½	215.90	234.95	12.20	11.1	77.0	31.0	710	0.36
R4200.090	9	228.60	247.65	12.50	11.3	82.0	32.5	670	0.38
R4200.095	9½	241.30	260.35	12.80	11.6	87.0	35.0	630	0.39
R4200.100	10	254.00	273.05	13.00	11.8	91.0	36.5	600	0.41
R4200.105	10½	266.70	285.75	13.30	12.0	96.0	38.5	570	0.43
R4200.110	11	279.40	298.45	13.50	12.2	100.0	40.0	550	0.45
R4200.115	11½	292.10	311.15	13.70	12.4	105.0	42.0	520	0.47
R4200.120	12	304.80	323.85	13.90	12.6	109.0	43.5	500	0.49
R4200.130	13	330.20	349.25	14.30	12.9	118.0	47.0	460	0.53
R4200.140	14	355.60	374.65	14.70	13.3	127.0	51.0	430	0.56
R4200.150	15	381.00	400.05	15.10	13.6	136.0	54.0	400	0.60
R4200.160	16	406.40	425.45	15.40	13.9	145.0	58.0	380	0.64
R4200.170	17	431.80	450.85	15.70	14.2	154.0	62.0	350	0.68
R4200.180	18	457.20	476.25	16.10	14.5	163.0	65.0	330	0.72
R4200.190	19	482.60	501.65	16.40	14.8	172.0	69.0	320	0.76
R4200.200	20	508.00	527.05	16.70	15.1	181.0	72.0	300	0.79
R4200.210	21	533.40	552.45	17.00	15.4	190.0	76.0	290	0.83
R4200.220	22	558.80	577.85	17.30	15.6	199.0	79.0	270	0.87
R4200.230	23	584.20	603.25	17.60	15.9	208.0	83.0	260	0.91
R4200.240	24	609.60	628.65	17.90	16.1	217.0	87.0	250	0.95
R4200.250	25	635.00	654.05	18.10	16.4	226.0	90.0	240	0.98
R4200.260	26	660.40	679.45	18.40	16.6	235.0	94.0	230	1.02
R4200.270	27	685.80	704.85	18.70	16.9	245.0	98.0	220	1.06

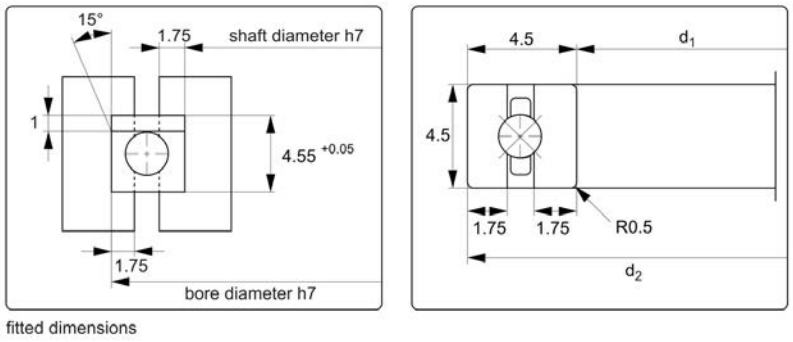
Order No.	d_1 inch	d_1 mm	d_2 mm	Dyn. load $C_{ax.}$ kN max.	Dyn. load $C_{rad.}$ kN max.	Static load $C_{0\ ax.}$ kN max.	Static load $C_{0\ rad.}$ kN max.	Speed rpm max.	Weight kg
R4200.280	28	711.20	730.25	18.90	17.1	255.0	101.0	210	1.10
R4200.290	29	736.60	755.65	19.10	17.3	260.0	105.0	210	1.14
R4200.300	30	762.00	781.05	19.30	17.5	270.0	108.0	200	1.18
R4200.310	31	787.40	806.45	19.60	17.7	280.0	112.0	190	1.22
R4200.320	32	812.80	831.85	19.80	17.9	290.0	116.0	190	1.26
R4200.330	33	838.20	857.25	20.00	18.1	300.0	119.0	180	1.30
R4200.340	34	863.60	882.65	31.0	18.5	305.0	123.0	180	1.34

Split Bearing - Supra Slim

thin ring bearing type



R4204.1



Material
Corrosion resistant split bearing rings.
Ball bearings retained in plastic cage.

Technical Notes
Please specify:
- bearing ring material required
- ball bearing material required
- ball cage material required.
See previous page for options.

Tips
Our split bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

Smaller sizes on previous page.

Order No.	d_1	d_2	Strength dyn. C N	Strength dyn. C_0 N	Weight kg
R4204.310	310	319	4.680	18.740	0.121
R4204.320	320	329	4.740	19.340	0.125
R4204.330	330	339	4.800	19.930	0.129
R4204.340	340	349	4.860	20.530	0.133
R4204.350	350	359	4.920	21.120	0.137
R4204.360	360	369	4.970	21.720	0.141
R4204.370	370	379	5.030	22.310	0.145
R4204.380	380	389	5.090	22.910	0.149
R4204.390	390	399	5.140	23.500	0.153
R4204.400	400	409	5.200	24.100	0.157
R4204.410	410	419	5.240	24.700	0.161
R4204.420	420	429	5.290	25.290	0.165
R4204.430	430	439	5.330	25.900	0.169
R4204.440	440	449	5.380	26.480	0.173
R4204.450	450	459	5.420	27.070	0.177
R4204.460	460	469	5.460	27.670	0.181
R4204.470	470	479	5.510	28.260	0.185
R4204.480	480	489	5.550	28.860	0.189
R4204.490	490	499	5.600	29.450	0.193
R4204.500	500	509	5.640	30.050	0.197
R4204.510	510	519	5.680	30.900	0.201
R4204.520	520	529	5.730	31.500	0.205
R4204.530	530	539	5.770	32.100	0.209
R4204.540	540	549	5.820	32.700	0.213
R4204.550	550	559	5.860	33.300	0.217
R4204.560	560	569	5.900	33.900	0.221
R4204.570	570	579	5.950	34.500	0.225
R4204.580	580	589	5.990	35.100	0.229
R4204.590	590	599	6.040	35.700	0.233
R4204.600	600	609	6.080	36.300	0.237
R4204.610	610	619	6.130	36.900	0.241

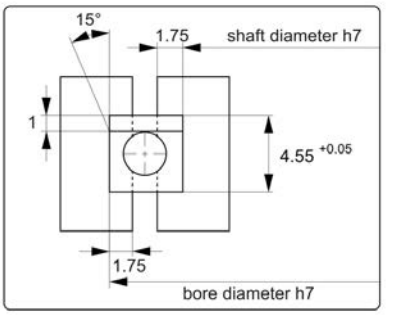
Order No.	d_1	d_2	Strength dyn. C N	Strength dyn. C_0 N	Weight kg
R4204.620	620	629	6.180	37.500	0.245
R4204.630	630	639	6.230	38.100	0.249
R4204.640	640	649	6.280	38.700	0.253

Split Bearing - Supra Slim

thin ring bearing type



R4204



Material

Corrosion resistant split bearing rings.
Ball bearings retained in plastic cage.

Technical Notes

Please specify:
- bearing ring material required
- ball bearing material required
- ball cage material required.

See previous page for options.

Tips

Our split bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

Larger sizes on next page.

Order No.	d_1	d_2	Strength dyn. C N	Strength dyn. C_0 N	Weight kg
R4204.035	35	44	2.180	2.280	0.014
R4204.040	40	49	2.270	2.570	0.016
R4204.045	45	54	2.360	2.850	0.018
R4204.050	50	59	2.450	3.140	0.020
R4204.055	55	64	2.540	3.420	0.022
R4204.060	60	69	2.630	3.710	0.024
R4204.065	65	74	2.720	3.990	0.025
R4204.070	70	79	2.810	4.310	0.027
R4204.075	75	84	2.870	4.600	0.029
R4204.080	80	89	2.930	4.890	0.031
R4204.085	85	94	2.990	5.180	0.033
R4204.090	90	99	3.050	5.500	0.035
R4204.095	95	104	3.110	5.790	0.037
R4204.100	100	109	3.170	6.080	0.039
R4204.110	110	119	3.260	6.660	0.043
R4204.120	120	129	3.360	7.240	0.047
R4204.130	130	139	3.450	7.910	0.051
R4204.140	140	149	3.550	8.500	0.055
R4204.150	150	159	3.640	9.080	0.059
R4204.160	160	169	3.720	9.670	0.062
R4204.170	170	179	3.810	10.260	0.066
R4204.180	180	189	3.890	10.920	0.070
R4204.190	190	199	3.980	11.500	0.074
R4204.200	200	209	4.060	12.100	0.078
R4204.210	210	219	4.120	12.690	0.082
R4204.220	220	229	4.170	13.280	0.086
R4204.230	230	239	4.230	13.870	0.090
R4204.240	240	249	4.290	14.580	0.094
R4204.250	250	259	4.350	15.170	0.098
R4204.260	260	269	4.400	15.770	0.102
R4204.270	270	279	4.460	16.360	0.106

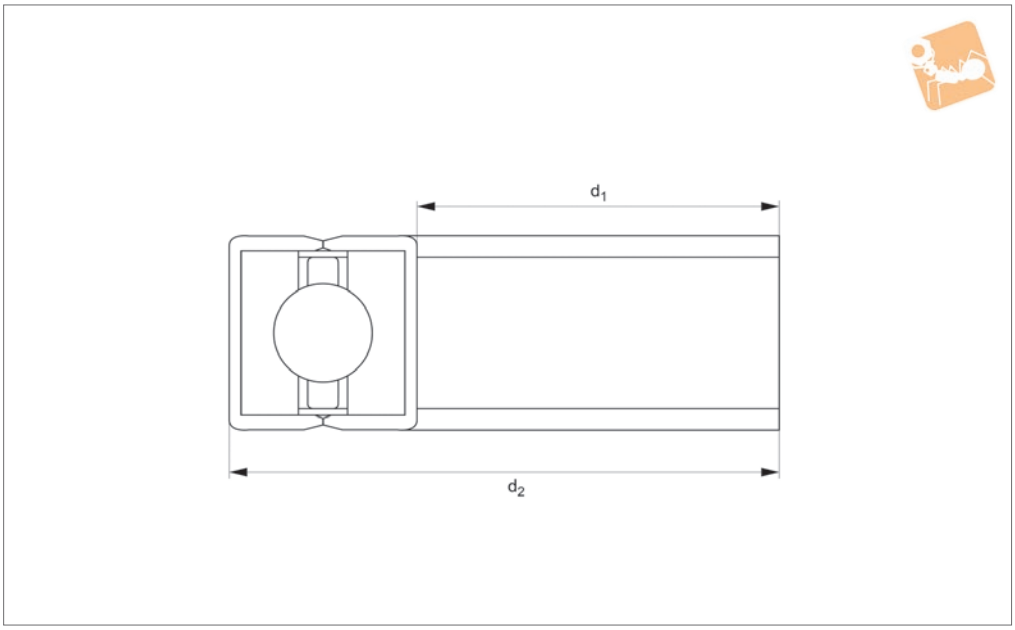
Order No.	d_1	d_2	Strength dyn. C N	Strength dyn. C_0 N	Weight kg
R4204.280	280	289	4.520	16.960	0.110
R4204.290	290	299	4.570	17.550	0.113
R4204.300	300	309	4.630	18.150	0.117

Split Bearing - Slim

slim bearing type



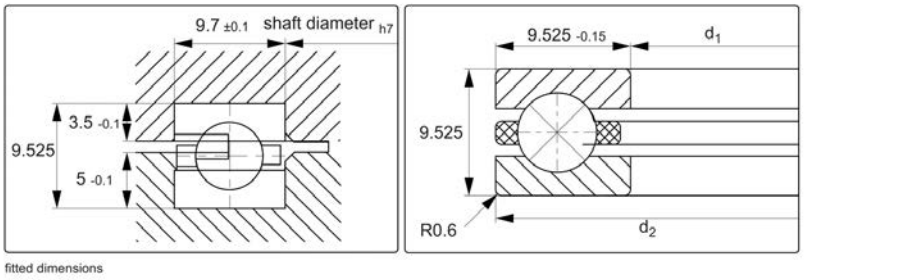
R4205



Material
Corrosion resistant split bearing rings. Ball bearings retained in plastic cage.

Tips
Our split bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

Order No.	d_1 & d_3 mm	d_2 mm	d_4 mm	Dyn. load $C_{ax.}$ kN max.	Dyn. load $C_{rad.}$ kN max.	Speed $min.^{-1}$ max.	Static load $C_{0\ ax.}$ kN max.	Static load $C_{0\ rad.}$ kN max.	Weight kg
R4205.070	175.0	199.65	199.5	10.4	9.4	870	57.6	23.0	0.32
R4205.075	187.7	212.35	212.20	10.5	9.5	810	61.2	24.8	0.34
R4205.080	200.4	225.05	224.9	10.8	9.8	760	65.7	26.1	0.36
R4205.085	213.1	237.75	237.6	11.0	10.0	720	69.3	27.9	0.38
R4205.090	225.8	250.45	250.3	11.3	10.2	680	73.8	29.3	0.41
R4205.095	238.5	263.15	263.0	11.5	10.4	640	78.3	31.5	0.43
R4205.100	251.2	275.85	275.7	11.7	10.6	610	81.9	32.9	0.45
R4205.105	263.9	288.55	288.4	12.0	10.8	580	86.4	34.7	0.47
R4205.110	276.6	301.25	301.1	12.2	11.0	550	90.0	36.0	0.50
R4205.115	289.3	313.95	313.8	12.3	11.2	530	94.5	37.8	0.52
R4205.120	302.0	326.65	326.5	12.5	11.3	510	98.1	39.2	0.54
R4205.130	327.4	352.05	351.9	12.9	11.6	470	106.2	42.3	0.59
R4205.140	352.8	377.45	377.3	13.2	12.0	430	114.3	45.9	0.63
R4205.150	378.2	402.85	402.7	13.6	12.2	400	122.4	48.6	0.68
R4205.160	403.6	428.25	428.1	13.9	12.5	380	130.5	52.2	0.72
R4205.170	429.0	453.65	453.5	14.1	12.8	360	138.6	55.8	0.77
R4205.180	454.4	479.05	478.9	14.5	13.0	340	146.7	58.5	0.81
R4205.190	479.8	504.45	504.3	14.8	13.3	320	154.8	62.1	0.86
R4205.200	505.2	529.85	529.7	15.0	13.6	300	162.9	64.8	0.90
R4205.210	530.6	555.25	555.1	15.3	13.9	290	171.0	68.4	0.95
R4205.220	556.0	580.65	580.5	15.6	14.0	270	179.1	71.1	0.99
R4205.230	581.4	606.05	605.9	15.8	14.3	260	187.2	74.7	1.04
R4205.240	606.8	631.45	631.3	16.1	14.5	250	195.3	78.3	1.08
R4205.250	632.2	656.85	656.7	16.3	14.8	240	203.4	81.0	1.13
R4205.260	657.6	682.25	682.1	16.6	14.9	230	211.5	84.6	1.17
R4205.270	683.0	707.65	707.5	16.8	15.2	220	220.5	88.2	1.22
R4205.280	708.4	733.05	732.9	17.0	15.4	220	229.50	90.9	1.26
R4205.290	733.8	758.45	758.3	17.2	15.6	210	234.0	94.5	1.31
R4205.300	759.2	783.85	783.7	17.4	15.8	200	243.0	97.2	1.35
R4205.310	784.6	809.25	809.1	17.6	15.9	190	252.0	100.8	1.40
R4205.320	810.0	834.65	834.5	17.8	16.1	190	261.0	104.4	1.44
R4205.330	835.4	860.05	859.9	18.0	16.3	180	270.0	107.1	1.49
R4205.340	863.6	885.45	885.3	18.3	18.5	180	274.5	110.7	1.53



fitted dimensions



R4208

Material
Corrosion resistant, hardened steel bearing ring and balls 1,4304.
Ball cage - polyamide 12 plastic.

Technical Notes
Preferred sizes.

Tips
Our split bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

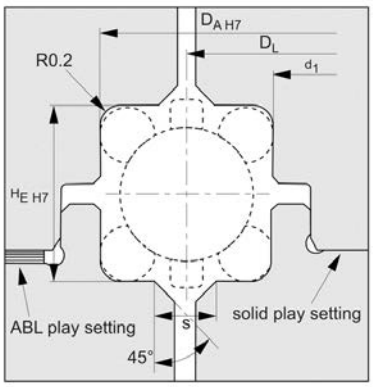
Order No.	d_1 inch	d_1 mm	d_2 mm	Dyn. load $C_{ax.}$ kN max.	Speed min.$^{-1}$ max.	Static load $C_{0\ ax.}$ kN max.	Weight kg
R4208.070	7	177.80	196.85	18.7	860	128.0	0.30
R4208.075	7½	190.50	209.55	19.0	800	136.0	0.32
R4208.080	8	203.20	222.25	19.5	750	146.0	0.34
R4208.085	8½	215.90	234.95	19.8	710	154.0	0.36
R4208.090	9	228.60	247.65	20.3	670	164.0	0.38
R4208.095	9½	241.30	260.35	20.8	630	174.0	0.39
R4208.100	10	254.00	273.05	21.1	600	182.0	0.41
R4208.105	10½	266.70	285.75	21.6	570	192.0	0.43
R4208.110	11	279.40	298.45	21.9	550	200.0	0.45
R4208.115	11½	292.10	311.15	22.3	520	210.0	0.47
R4208.120	12	304.80	323.85	22.6	500	218.0	0.49
R4208.130	13	330.20	349.25	23.2	460	236.0	0.53
R4208.140	14	355.60	374.65	23.9	430	254.0	0.56
R4208.150	15	381.00	400.05	24.5	400	272.0	0.60
R4208.160	16	406.40	425.45	25.0	380	290.0	0.64
R4208.170	17	431.80	450.85	25.5	350	308.0	0.68
R4208.180	18	457.20	476.25	26.2	330	326.0	0.72
R4208.190	19	482.60	501.65	26.7	320	344.0	0.76
R4208.200	20	508.00	527.05	27.1	300	362.0	0.79
R4208.210	21	533.40	552.45	27.6	290	380.0	0.83
R4208.220	22	558.80	577.85	28.1	270	398.0	0.87
R4208.230	23	584.20	603.25	28.6	260	416.0	0.91
R4208.240	24	609.60	628.65	29.1	250	434.0	0.95
R4208.250	25	635.00	654.05	29.4	240	452.0	0.98
R4208.260	26	660.40	679.45	29.9	230	470.0	1.02
R4208.270	27	685.80	704.85	30.4	220	490.0	1.06
R4208.280	28	711.20	730.25	30.7	210	510.0	1.10
R4208.290	29	736.60	755.65	31.0	210	520.0	1.14
R4208.300	30	762.00	781.05	31.4	200	540.0	1.18
R4208.310	31	787.40	806.45	31.9	190	560.0	1.22

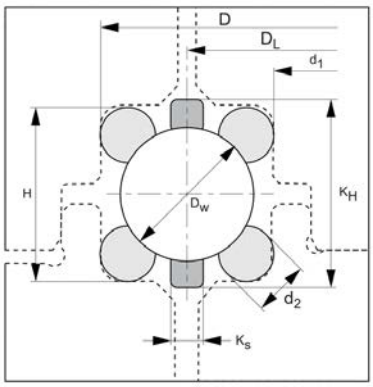
Split Bearing - Slim

ball thrust bearing type



Order No.	d_1 inch	d_1 mm	d_2 mm	Dyn. load $C_{ax.}$ kN max.	Speed $min.^{-1}$ max.	Static load $C_{0\ ax.}$ kN max.	Weight kg
R4208.320	32	812.80	831.85	32.2	190	580.0	1.26
R4208.330	33	838.20	857.25	32.5	180	600.0	1.30
R4208.340	34	863.60	882.65	33.0	180	610.0	1.34





fitted dimensions



R4222.1

Material
Hardened corrosion resistant steel wire and ball bearings (in plastic cage).

Technical Notes
Play in the bearings can be adjusted via the surface-solid settings or can be set by matching with spacers.

Tips
Our wire bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

Smaller sizes on previous page.

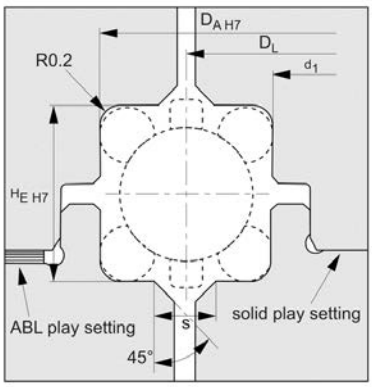
Order No.	d	D_L	h	Dyn. load C kN max.	Dyn. load C_0 kN max.	Weight g
R4222.1025	1013	1025	12	38.4	348.5	1.85
R4222.1050	1038	1050	12	38.9	357.0	1.89
R4222.1075	1063	1075	12	39.3	365.5	1.94
R4222.1100	1088	1100	12	39.8	374.0	1.98
R4222.1125	1113	1125	12	40.2	382.5	2.03
R4222.1150	1138	1150	12	40.7	391.0	2.07
R4222.1175	1163	1175	12	41.1	399.5	2.12
R4222.1200	1188	1200	12	41.6	408.0	2.16
R4222.1225	1213	1225	12	42.0	416.5	2.21
R4222.1250	1238	1250	12	42.4	425.0	2.25
R4222.1275	1263	1275	12	42.8	433.5	2.30
R4222.1300	1288	1300	12	43.3	442.0	2.34
R4222.1325	1313	1325	12	43.7	450.5	2.39
R4222.1350	1338	1350	12	44.1	459.0	2.43
R4222.1375	1363	1375	12	44.5	467.5	2.48
R4222.1400	1388	1400	12	44.9	476.0	2.52
R4222.1425	1413	1425	12	45.3	484.5	2.57
R4222.1450	1438	1450	12	45.7	493.0	2.61
R4222.1475	1463	1475	12	46.1	501.5	2.66
R4222.1500	1488	1500	12	46.5	510.0	2.70
R4222.1525	1513	1525	12	46.9	518.5	2.75
R4222.1550	1538	1550	12	47.2	527.0	2.79
R4222.1575	1563	1575	12	47.6	535.5	2.84
R4222.1600	1588	1600	12	48.0	544.0	2.90
R4222.1625	1613	1625	12	48.4	554.5	2.93
R4222.1650	1638	1650	12	48.7	561.0	2.97
R4222.1675	1663	1675	12	49.1	569.5	3.02

Ball Bearing - Wire

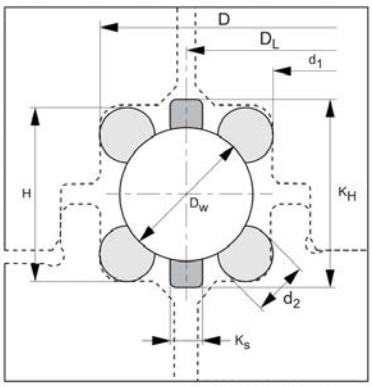
metric, groundway raceway



R4222



fitted dimensions



Material

Hardened corrosion resistant steel wire and ball bearings (in plastic cage).

Technical Notes

Play in the bearings can be adjusted via the surface-solid settings or can be set by matching with spacers.

Tips

Our wire bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

Larger sizes on next page.

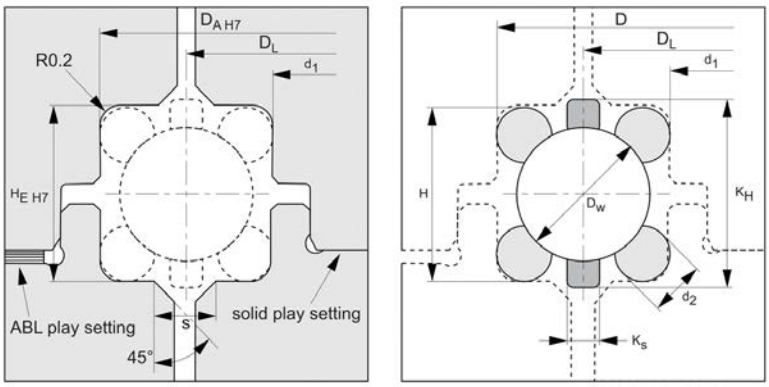
Order No.	d	D_L	h	Dyn. load C kN max.	Dyn. load C_0 kN max.	Weight g
R4222.100	88	100	12	12.0	34.0	0.18
R4222.125	113	125	12	13.4	42.5	0.23
R4222.150	138	150	12	14.7	51.0	0.27
R4222.175	163	175	12	15.9	59.5	0.32
R4222.200	188	200	12	17.0	68.0	0.36
R4222.225	213	225	12	18.0	76.5	0.41
R4222.250	238	250	12	19.0	85.0	0.45
R4222.275	263	275	12	19.9	93.5	0.50
R4222.300	288	300	12	20.8	102.0	0.54
R4222.325	313	325	12	21.6	110.5	0.59
R4222.350	338	350	12	22.4	119.0	0.63
R4222.375	363	375	12	23.2	127.5	0.68
R4222.400	388	400	12	24.0	136.0	0.72
R4222.425	413	425	12	24.7	144.5	0.77
R4222.450	438	450	12	25.5	153.0	0.81
R4222.475	463	475	12	26.2	161.5	0.86
R4222.500	488	500	12	26.8	170.0	0.90
R4222.525	513	525	12	27.5	178.5	0.95
R4222.550	538	550	12	28.1	187.0	0.99
R4222.575	563	575	12	28.8	195.5	1.04
R4222.600	588	600	12	29.4	204.0	1.08
R4222.625	613	625	12	30.0	212.5	1.13
R4222.650	638	650	12	30.6	221.0	1.17
R4222.675	663	675	12	31.2	229.5	1.22
R4222.700	688	700	12	31.7	238.0	1.26
R4222.725	713	725	12	32.3	246.5	1.31
R4222.750	738	750	12	32.9	255.0	1.35
R4222.775	763	775	12	33.4	263.5	1.40
R4222.800	788	800	12	33.9	272.0	1.44
R4222.825	813	825	12	34.5	280.5	1.49
R4222.850	838	850	12	35.0	289.0	1.53

Order No.	d	D_L	h	Dyn. load C kN max.	Dyn. load C_0 kN max.	Weight g
R4222.875	863	875	12	35.5	297.5	1.58
R4222.900	888	900	12	36.0	306.0	1.62
R4222.925	913	925	12	36.5	314.5	1.67
R4222.950	938	950	12	37.0	323.0	1.71
R4222.975	963	975	12	37.5	331.5	1.76
R4222.1000	988	1000	12	37.9	340.0	1.80

Ball Bearing - Wire
imperial, ground raceway



R4224.1



fitted dimensions

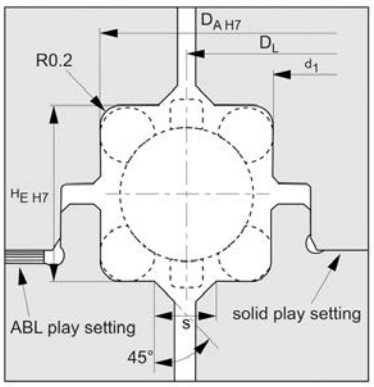
Material
Hardened corrosion resistant steel wire and ball bearings (in plastic cage).

Technical Notes
Play in the bearings can be adjusted via the surface-solid settings or can be set by matching with spacers.

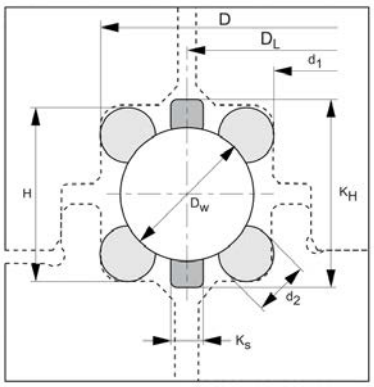
Tips
Our wire bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

Smaller sizes on previous page.

Order No.	d	H inch	H mm	Dyn. load C kN max.	Dyn. load C_0 kN max.	Weight kg
R4224.1025	1012.05	0.51	12.95	46.4	317.8	2.15
R4224.1050	1037.05	0.51	12.95	47.0	325.5	2.21
R4224.1075	1062.05	0.51	12.95	47.5	333.3	2.26
R4224.1100	1087.05	0.51	12.95	48.1	341.0	2.31
R4224.1125	1112.05	0.51	12.95	48.6	348.8	2.36
R4224.1150	1137.05	0.51	12.95	49.2	356.5	2.42
R4224.1175	1162.05	0.51	12.95	49.7	364.3	2.47
R4224.1200	1187.05	0.51	12.95	50.2	372.0	2.52
R4224.1225	1212.05	0.51	12.95	50.8	379.8	2.57
R4224.1250	1237.05	0.51	12.95	51.3	387.5	2.63
R4224.1275	1262.05	0.51	12.95	51.8	395.3	2.68
R4224.1300	1287.05	0.51	12.95	52.3	403.0	2.73
R4224.1325	1312.05	0.51	12.95	52.8	410.8	2.78
R4224.1350	1337.05	0.51	12.95	53.3	418.5	2.84
R4224.1375	1362.05	0.51	12.95	53.8	426.3	2.89
R4224.1400	1387.05	0.51	12.95	54.3	434.0	2.94
R4224.1425	1412.05	0.51	12.95	54.7	441.8	2.99
R4224.1450	1437.05	0.51	12.95	55.2	449.5	3.05
R4224.1475	1462.05	0.51	12.95	55.7	457.3	3.10
R4224.1500	1487.05	0.51	12.95	56.2	465.0	3.15
R4224.1525	1512.05	0.51	12.95	56.6	472.8	3.20
R4224.1550	1537.05	0.51	12.95	57.1	480.5	3.26
R4224.1575	1562.05	0.51	12.95	57.5	488.3	3.31
R4224.1600	1587.05	0.51	12.95	58.0	496.0	3.36
R4224.1625	1612.05	0.51	12.95	58.5	503.8	3.41
R4224.1650	1637.05	0.51	12.95	58.9	511.5	3.47
R4224.1675	1662.05	0.51	12.95	59.3	519.3	3.52



fitted dimensions





R4224

Material
Hardened corrosion resistant steel wire and ball bearings (in plastic cage).

Technical Notes
Play in the bearings can be adjusted via the surface-solid settings or can be set by matching with spacers.

Tips
Our wire bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

Larger sizes on next page.

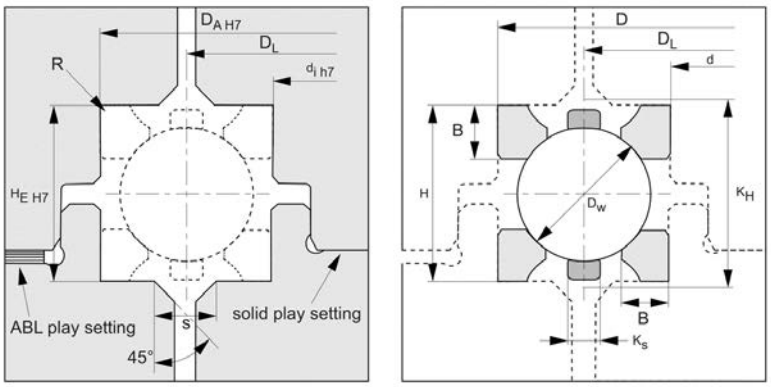
Order No.	d	H inch	H mm	Dyn. load C kN max.	Dyn. load C_0 kN max.	Weight kg
R4224.100	87.05	0.51	12.95	14.5	31.0	0.21
R4224.125	112.05	0.51	12.95	16.2	38.8	0.26
R4224.150	137.05	0.51	12.95	17.8	46.5	0.32
R4224.175	162.05	0.51	12.95	19.2	54.3	0.37
R4224.200	187.05	0.51	12.95	20.5	62.0	0.42
R4224.225	212.05	0.51	12.95	21.8	69.8	0.47
R4224.250	237.05	0.51	12.95	22.9	77.5	0.53
R4224.275	262.05	0.51	12.95	24.0	85.3	0.58
R4224.300	287.05	0.51	12.95	25.1	93.0	0.63
R4224.325	312.05	0.51	12.95	26.1	100.8	0.68
R4224.350	337.05	0.51	12.95	27.1	108.5	0.74
R4224.375	362.05	0.51	12.95	28.1	116.3	0.79
R4224.400	387.05	0.51	12.95	29.0	124.0	0.84
R4224.425	412.05	0.51	12.95	29.9	131.8	0.89
R4224.450	437.05	0.51	12.95	30.8	139.5	0.95
R4224.475	462.05	0.51	12.95	31.6	147.3	1.00
R4224.500	487.05	0.51	12.95	32.4	155.0	1.05
R4224.525	512.05	0.51	12.95	33.2	162.8	1.10
R4224.550	537.05	0.51	12.95	34.0	170.5	1.16
R4224.575	562.05	0.51	12.95	34.8	178.3	1.21
R4224.600	587.05	0.51	12.95	35.5	185.0	1.26
R4224.625	612.05	0.51	12.95	36.3	193.8	1.31
R4224.650	637.05	0.51	12.95	37.0	201.5	1.37
R4224.675	662.05	0.51	12.95	37.7	209.3	1.42
R4224.700	687.05	0.51	12.95	38.4	217.0	1.47
R4224.725	712.05	0.51	12.95	39.0	224.8	1.52
R4224.750	737.05	0.51	12.95	39.7	232.5	1.58
R4224.775	762.05	0.51	12.95	40.4	240.3	1.63
R4224.800	787.05	0.51	12.95	41.0	248.0	1.68
R4224.825	812.05	0.51	12.95	41.6	255.8	1.73
R4224.850	837.05	0.51	12.95	42.3	263.5	1.79

Ball Bearing - Wire

imperial, ground raceway



Order No.	d	H inch	H mm	Dyn. load C kN max.	Dyn. load C_0 kN max.	Weight kg
R4224.875	862.05	0.51	12.95	42.9	271.3	1.84
R4224.900	887.05	0.51	12.95	43.5	279.0	1.89
R4224.925	912.05	0.51	12.95	44.1	286.8	1.94
R4224.950	937.05	0.51	12.95	44.7	294.5	2.00
R4224.975	962.05	0.51	12.95	45.3	302.3	2.05
R4224.1000	987.05	0.51	12.95	45.9	310.0	2.10



fitted dimensions



R4230.1

Material
Hardened corrosion resistant steel wire and ball bearings (in plastic cage).

Technical Notes
Play in the bearings can be adjusted via the surface-solid settings or can be set by matching with spacers.

Tips
Our wire bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

Smaller sizes on previous page.

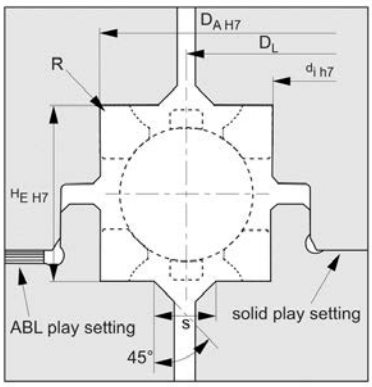
Order No.	d	D_L	h	Load C_0 kN	Dyn. load C kN max.	Weight kg
R4230.300	289	300	13	96.0	26.0	0.56
R4230.310	299	310	13	99.2	26.4	0.58
R4230.320	309	320	13	102.4	26.8	0.60
R4230.330	319	330	13	105.6	27.2	0.61
R4230.340	329	340	13	108.8	27.7	0.63
R4230.350	339	350	13	112.0	28.1	0.65
R4230.360	349	360	13	115.2	28.5	0.67
R4230.370	359	370	13	118.4	28.9	0.69
R4230.380	369	380	13	121.6	29.2	0.71
R4230.390	379	390	13	124.8	29.6	0.73
R4230.400	389	400	13	128.0	30.0	0.74
R4230.410	399	410	13	131.2	30.4	0.76
R4230.420	409	420	13	134.4	30.8	0.78
R4230.430	419	430	13	137.6	31.1	0.80
R4230.440	429	440	13	140.8	31.5	0.82
R4230.450	439	450	13	144.0	31.8	0.84
R4230.460	449	460	13	147.2	32.2	0.86
R4230.470	459	470	13	150.4	32.5	0.87
R4230.480	469	480	13	153.6	32.9	0.89
R4230.490	479	490	13	156.8	33.2	0.91
R4230.500	489	500	13	160.0	33.5	0.93
R4230.510	499	510	13	163.2	33.9	0.95
R4230.520	509	520	13	166.4	34.2	0.97
R4230.530	519	530	13	169.6	34.5	0.99

Ball Bearing - Wire, Duo Profile

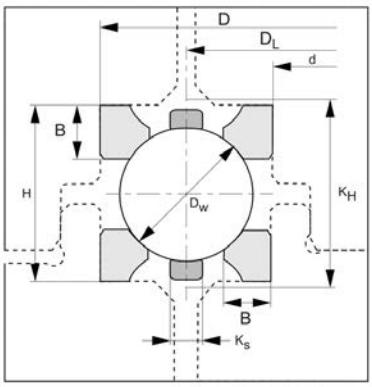
duo-profile, drawn raceway



R4230



fitted dimensions



Material

Hardened corrosion resistant steel wire and ball bearings (in plastic cage).

Technical Notes

Play in the bearings can be adjusted via the surface-solid settings or can be set by matching with spacers.

Tips

Our wire bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

Larger sizes on next page.

Order No.	d	D_L	h	Load C_0 kN	Dyn. load C kN max.	Weight kg
R4230.100	89	100	13	32.0	15.0	0.19
R4230.105	94	105	13	33.6	15.4	0.20
R4230.110	99	110	13	35.2	15.7	0.21
R4230.115	104	115	13	36.8	16.1	0.21
R4230.120	109	120	13	38.4	16.4	0.22
R4230.125	114	125	13	40.0	16.8	0.23
R4230.130	119	130	13	41.6	17.1	0.24
R4230.135	124	135	13	43.2	17.4	0.25
R4230.140	129	140	13	44.8	17.7	0.26
R4230.145	134	145	13	46.4	18.1	0.27
R4230.150	139	150	13	48.0	18.4	0.28
R4230.155	144	155	13	49.6	18.7	0.29
R4230.160	149	160	13	51.2	19.0	0.30
R4230.165	154	165	13	52.8	19.3	0.31
R4230.170	159	170	13	54.4	19.6	0.32
R4230.175	164	175	13	56.0	19.9	0.33
R4230.180	169	180	13	57.6	20.1	0.34
R4230.185	174	185	13	59.2	20.4	0.34
R4230.190	179	190	13	60.8	20.7	0.35
R4230.195	184	195	13	62.4	21.0	0.36
R4230.200	189	200	13	64.0	21.2	0.37
R4230.205	194	205	13	65.6	21.5	0.38
R4230.210	199	210	13	67.2	21.7	0.39
R4230.215	204	215	13	68.8	22.0	0.40
R4230.220	209	220	13	70.4	22.3	0.41
R4230.225	214	225	13	72.0	22.5	0.42
R4230.230	219	230	13	73.6	22.8	0.43
R4230.235	224	235	13	75.2	23.0	0.44
R4230.240	229	240	13	76.8	23.2	0.45
R4230.245	234	245	13	78.4	23.5	0.46
R4230.250	239	250	13	80.0	23.7	0.47

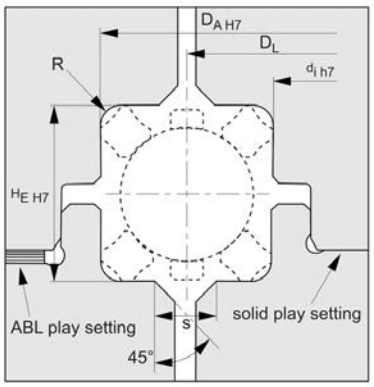
Order No.	d	D_L	h	Load C_0 kN	Dyn. load C kN max.	Weight kg
R4230.255	244	255	13	81.6	24.0	0.47
R4230.260	249	260	13	83.2	24.2	0.48
R4230.265	254	265	13	84.8	24.4	0.49
R4230.270	259	270	13	86.4	24.7	0.50
R4230.275	264	275	13	88.0	24.9	0.51
R4230.280	269	280	13	89.6	25.1	0.52
R4230.285	274	285	13	91.2	25.3	0.53
R4230.290	279	290	13	92.8	25.6	0.54
R4230.295	284	295	13	94.4	25.8	0.55

Ball Bearing - Wire, Duplex Profile

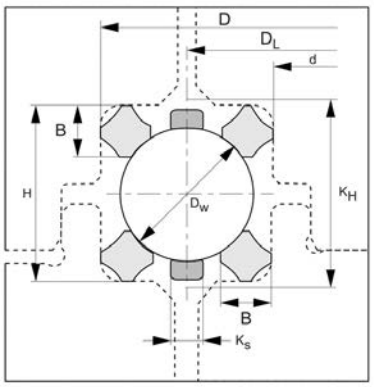
duplex profile, drawn raceway



R4240.1



fitted dimensions



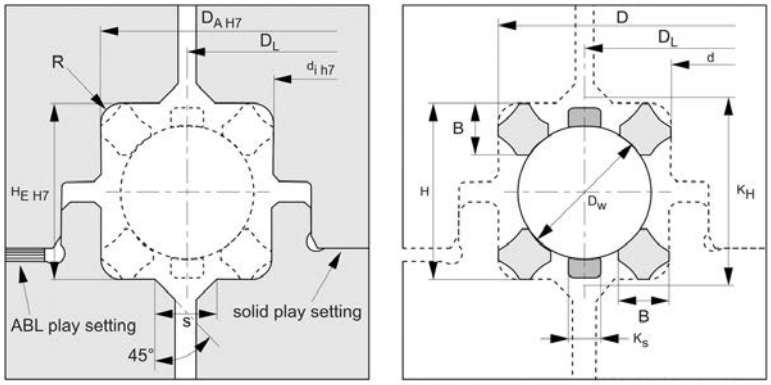
Material
Hardened corrosion resistant steel wire and ball bearings (in plastic cage).

Technical Notes
Play in the bearings can be adjusted via the surface-solid settings or can be set by matching with spacers.

Tips
Our wire bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

Smaller sizes on previous page.

Order No.	d	D_L	h	Dyn. load C kN max.	Dyn. load C_0 kN max.	Weight kg
R4240.0300	287.05	300	12.95	26.0	96.0	0.59
R4240.0310	297.05	310	12.95	26.4	99.2	0.61
R4240.0320	307.05	320	12.95	26.8	102.4	0.63
R4240.0330	317.05	330	12.95	27.2	105.6	0.65
R4240.0340	327.05	340	12.95	27.7	108.8	0.67
R4240.0350	337.05	350	12.95	28.1	112.0	0.69
R4240.0360	347.05	360	12.95	28.5	115.2	0.71
R4240.0370	357.05	370	12.95	28.9	118.4	0.73
R4240.0380	367.05	380	12.95	29.2	121.6	0.75
R4240.0390	377.05	390	12.95	29.6	124.8	0.76
R4240.0400	387.05	400	12.95	30.0	128.0	0.78
R4240.0410	397.05	410	12.95	30.4	131.2	0.80
R4240.0420	407.05	420	12.95	30.8	134.4	0.82
R4240.0430	417.05	430	12.95	31.1	137.6	0.84
R4240.0440	427.05	440	12.95	31.5	140.8	0.86
R4240.0450	437.05	450	12.95	31.8	144.0	0.88
R4240.0460	447.05	460	12.95	32.2	147.2	0.90
R4240.0470	457.05	470	12.95	32.5	150.4	0.92
R4240.0480	467.05	480	12.95	32.9	153.6	0.96
R4240.0490	477.05	490	12.95	33.2	156.8	0.96
R4240.0500	487.05	500	12.95	33.5	160.0	0.98
R4240.0510	497.05	510	12.95	33.9	163.2	1.00
R4240.0520	507.05	520	12.95	34.2	166.4	1.04
R4240.0530	517.05	530	12.95	34.5	169.6	1.04



fitted dimensions



R4240

Material
Hardened corrosion resistant steel wire and ball bearings (in plastic cage).

Technical Notes
Play in the bearings can be adjusted via the surface-solid settings or can be set by matching with spacers.

Tips
Our wire bearings are compatable with most other manufacturers and are very cost competitive. Please ask us to ‚cross reference' if required.

Larger sizes on next page.

Order No.	d	D_L	h	Dyn. load C kN max.	Dyn. load C_0 kN max.	Weight kg
R4240.0100	87.05	100	12.95	15.0	32.0	0.20
R4240.0105	92.05	105	12.95	15.4	33.6	0.21
R4240.0110	97.05	110	12.95	15.7	35.2	0.22
R4240.0115	102.05	115	12.95	16.1	36.8	0.23
R4240.0120	107.05	120	12.95	16.4	38.4	0.24
R4240.0125	112.05	125	12.95	16.8	40.0	0.25
R4240.0130	117.05	130	12.95	17.1	41.6	0.26
R4240.0135	122.05	135	12.95	17.4	43.2	0.27
R4240.0140	127.05	140	12.95	17.7	44.8	0.27
R4240.0145	132.05	145	12.95	18.1	46.4	0.28
R4240.0150	137.05	150	12.95	18.4	48.0	0.29
R4240.0155	142.05	155	12.95	18.7	49.6	0.30
R4240.0160	147.05	160	12.95	19.0	51.2	0.31
R4240.0165	152.05	165	12.95	19.3	52.8	0.32
R4240.0170	157.05	170	12.95	19.6	54.4	0.33
R4240.0175	162.05	175	12.95	19.9	56.0	0.34
R4240.0180	167.05	180	12.95	20.1	57.6	0.35
R4240.0185	172.05	185	12.95	20.4	59.2	0.36
R4240.0190	177.05	190	12.95	20.7	60.8	0.37
R4240.0195	182.05	195	12.95	21.0	62.4	0.38
R4240.0200	187.05	200	12.95	21.2	64.0	0.39
R4240.0205	192.05	205	12.95	21.5	65.6	0.40
R4240.0210	197.05	210	12.95	21.7	67.2	0.41
R4240.0215	202.05	215	12.95	22.0	68.8	0.42
R4240.0220	207.05	220	12.95	22.3	70.4	0.43
R4240.0225	212.05	225	12.95	22.5	72.0	0.44
R4240.0230	217.05	230	12.95	22.8	73.6	0.45
R4240.0235	222.05	235	12.95	23.0	75.2	0.46
R4240.0240	227.05	240	12.95	23.2	76.8	0.47
R4240.0245	232.05	245	12.95	23.5	78.4	0.48
R4240.0250	237.05	250	12.95	23.7	80.0	0.49

Ball Bearing - Wire, Duplex Profile

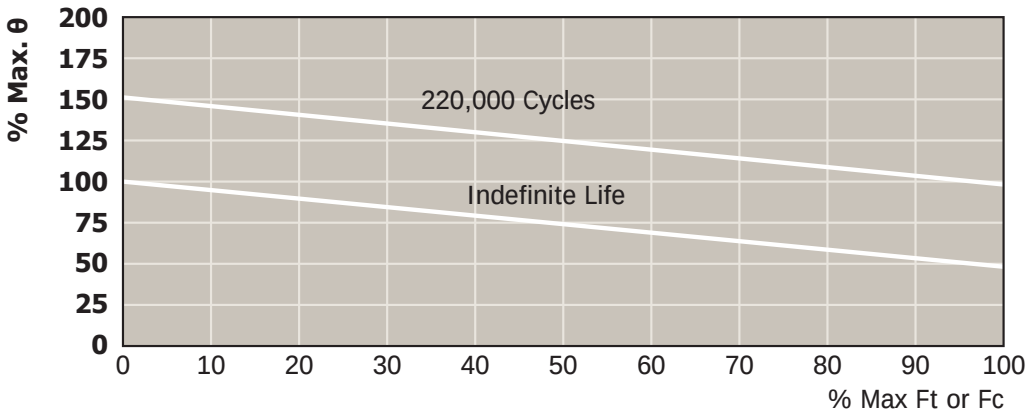
duplex profile, drawn raceway



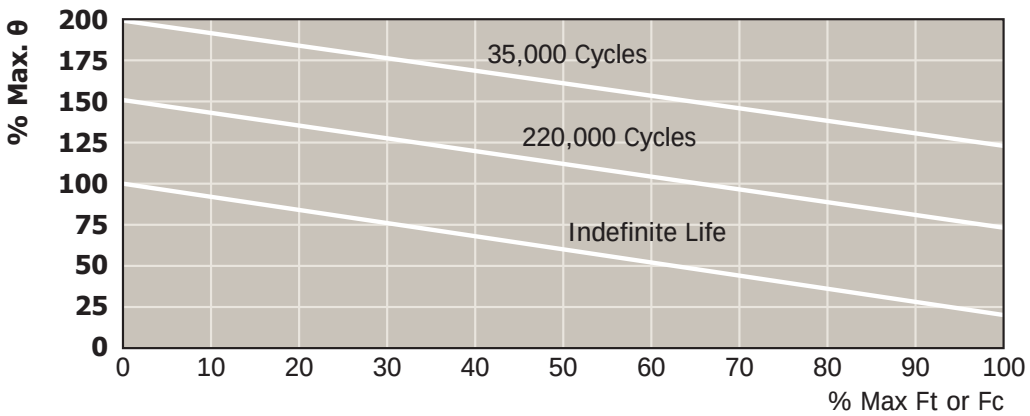
Order No.	d	D_L	h	Dyn. load C kN max.	Dyn. load C_0 kN max.	Weight kg
R4240.0255	242.05	255	12.95	24.0	81.6	0.50
R4240.0260	247.05	260	12.95	24.2	83.2	0.51
R4240.0265	252.05	265	12.95	24.4	84.8	0.52
R4240.0270	257.05	270	12.95	24.7	86.4	0.53
R4240.0275	262.05	275	12.95	24.9	88.0	0.54
R4240.0280	267.05	280	12.95	25.1	89.6	0.55
R4240.0285	272.05	285	12.95	25.3	91.2	0.56
R4240.0290	277.05	290	12.95	25.6	92.8	0.57
R4240.0295	282.05	295	12.95	25.8	94.4	0.58

The cycle life of the bearings is based on the fatigue limit of the springs. The graphs below show the life expectancy for Torsional Spring Rates for Series 10, 20 and 30. Max θ shows the angle of deflection. This is the deflection angle from the null position, which can be positive or negative.

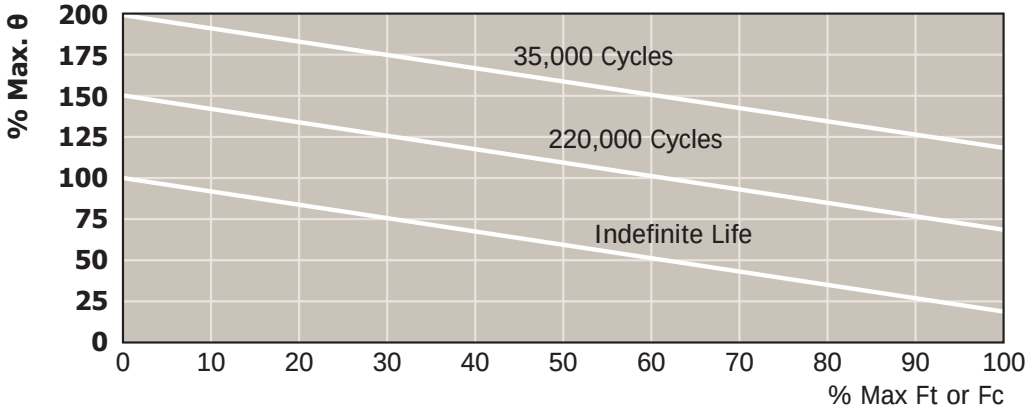
Series 10 - Max t ± 15.0°



Series 20 - Max θ ± 7.5°



Series 30 - Max θ ± 3.7°



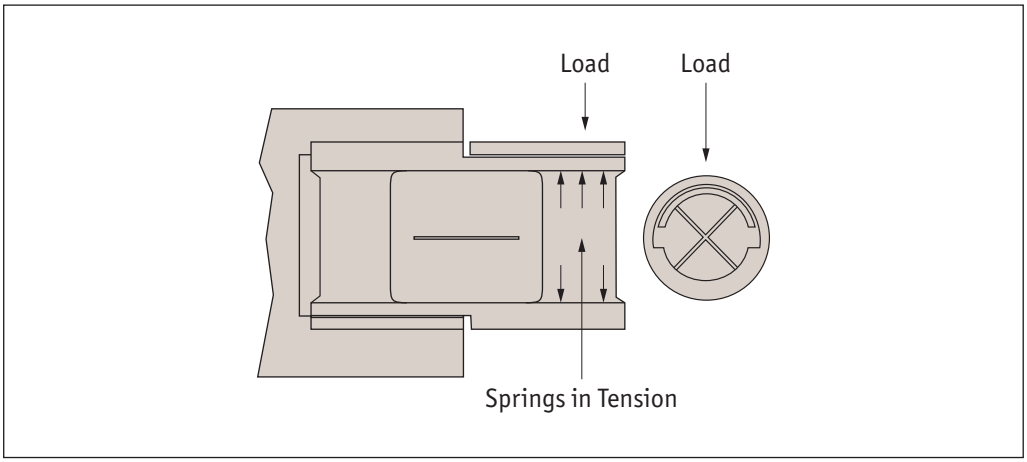
Flexure Pivot Bearings from Automotion Components

Technical Information

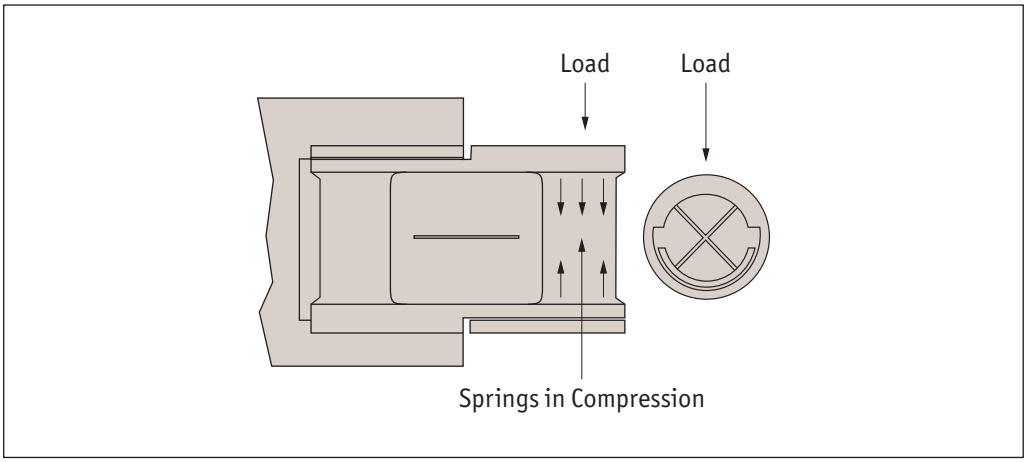
Loading diagrams with related spring stresses

Flexure Pivot Bearings from Automotion Components

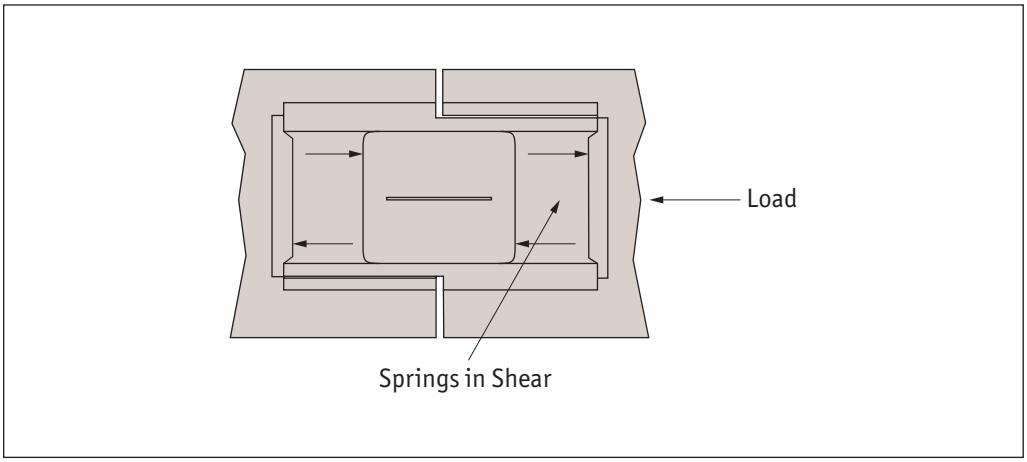
Radial loading: Spring in tension (Ft)



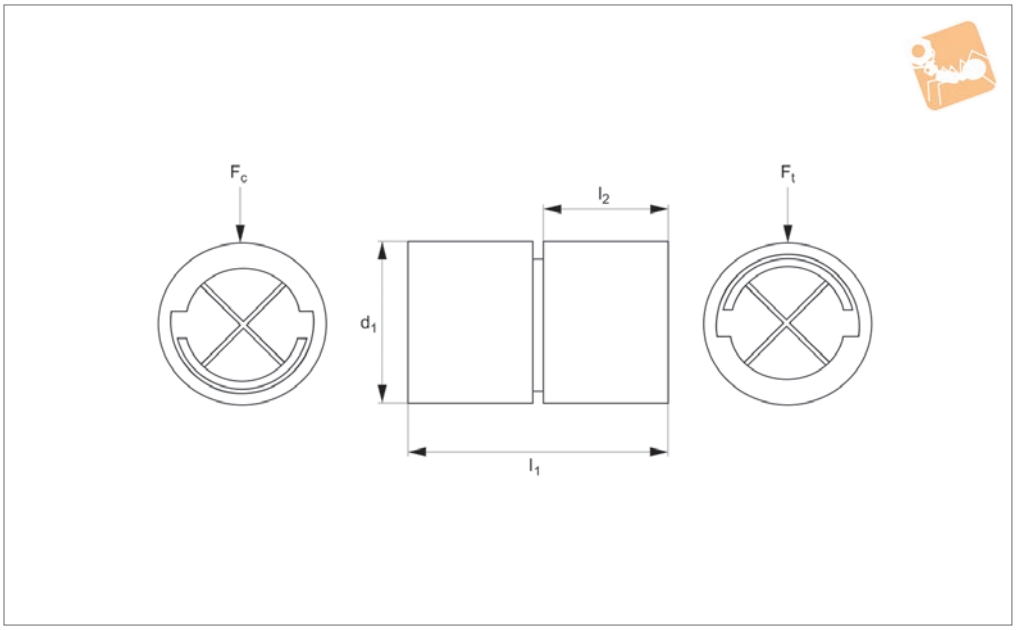
Radial loading: Spring in compression (Fc)



Axial loading: Springs in shear



ov-flexture-pivot-bearings-loading-diagrams-lnh-Updated-17-03-2023





R4000

Material
Body stainless steel (416), spring and core: 410 and 420 stainless steel (46-56 HRC), braze alloy AMS 4765.

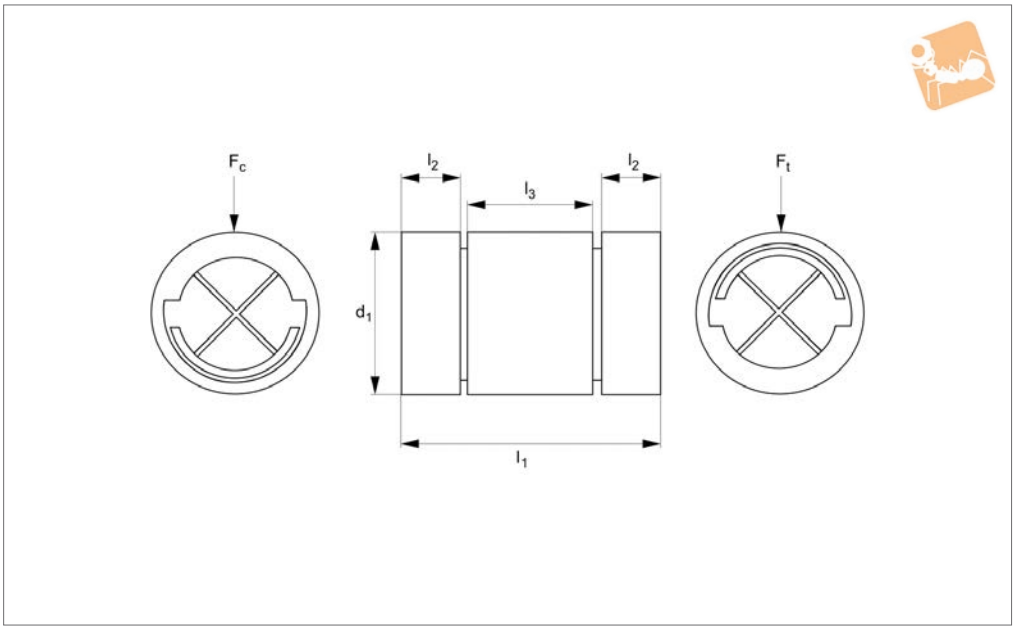
Technical Notes
Operating temperature -35°C to + 190°C.

Order No.	d_1 +0.00|-0.13	l_1 ±0.08	l_2 min.	Torsional spring rate Nmm/°	Load f_c compression kg max.	Load f_t tension kg max.	Angular movement max.
R4000.A-10	3,175 (1/8“)	5.08	2.24	0.034	0.43	1.72	±15°
R4000.A-20	3,175 (1/8“)	5.08	2.24	0.20	4.03	5.76	±7,5°
R4000.A-30	3,175 (1/8“)	5.08	2.24	1.67	11.47	11.47	±3,7°
R4000.B-10	3,969 (5/32“)	6.35	2.90	0.045	0.64	2.54	±15°
R4000.B-20	3,969 (5/32“)	6.35	2.90	0.42	6.21	8.89	±7,5°
R4000.B-30	3,969 (5/32“)	6.35	2.90	3.35	17.82	17.82	±3,7°
R4000.C-10	4,763 (3/16“)	7.62	3.45	0.08	0.90	3.53	±15°
R4000.C-20	4,763 (3/16“)	7.62	3.45	0.68	8.84	12.65	±7,5°
R4000.C-30	4,763 (3/16“)	7.62	3.45	5.45	25.31	25.31	±3,7°
R4000.D-10	6,350 (1/4“)	10.16	4.67	0.20	1.63	6.44	±15°
R4000.D-20	6,350 (1/4“)	10.16	4.67	1.67	15.87	22.68	±7,5°
R4000.D-30	6,350 (1/4“)	10.16	4.67	13.39	45.36	45.36	±3,7°
R4000.E-10	7,938 (5/16“)	12.70	5.89	0.42	2.58	10.34	±15°
R4000.E-20	7,938 (5/16“)	12.70	5.89	3.35	24.95	35.65	±7,5°
R4000.E-30	7,938 (3/10“)	12.70	5.89	26.75	71.26	71.26	±3,7°
R4000.F-10	9,525 (3/8“)	15.24	7.09	0.73	3.81	15.24	±15°
R4000.F-20	9,525 (3/8“)	15.24	7.09	5.45	35.88	51.25	±7,5°
R4000.F-30	9,525 (3/8“)	15.24	7.09	45.22	102.51	102.51	±3,7°
R4000.G-10	12,700 (1/2“)	20.32	9.50	1.67	6.53	26.03	±15°
R4000.G-20	12,700 (1/2“)	20.32	9.50	13.39	63.50	90.72	±7,5°
R4000.G-30	12,700 (1/2“)	20.32	9.50	107.19	181.44	181.44	±3,7°
R4000.H-10	15,875 (5/8“)	25.40	11.91	3.33	10.43	41.73	±15°
R4000.H-20	15,875 (5/8“)	25.40	11.91	26.75	100.29	143.25	±7,5°
R4000.H-30	15,875 (5/8“)	25.40	11.91	214.02	286.45	286.45	±3,7°
R4000.I-10	19,050 (3/4“)	30.48	14.32	5.45	14.69	58.69	±15°
R4000.I-20	19,050 (3/4“)	30.48	14.32	45.22	143.88	205.52	±7,5°
R4000.I-30	19,050 (3/4“)	30.48	14.32	368.49	411.00	411.00	±3,7°
R4000.J-10	25,400 (1“)	40.64	19.40	13.39	26.85	107.32	±15°
R4000.J-20	25,400 (1“)	40.64	19.40	107.19	256.87	366.92	±7,5°
R4000.J-30	25,400 (1“)	40.64	19.40	881.66	733.00	733.00	±3,7°

Flexure Pivot Bearings
double-ended



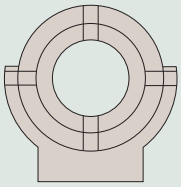
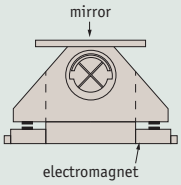
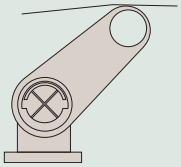
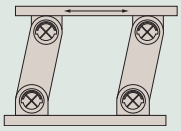
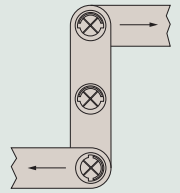
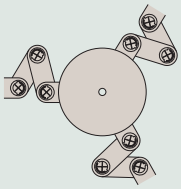
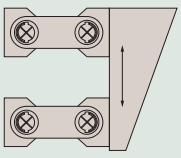
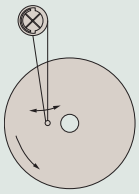
R4002



Material
Body stainless steel (416), spring and core: 410 and 420 stainless steel (46-56 HRC), braze alloy AMS 4765.

Technical Notes
Operating temperature -35°C to + 190°C.

Order No.	d_1 +0|-0.013	l_1 ±0.08	l_2 min.	l_3 min.	Torsional spring rate Nmm/°	Load f_c compression kg max.	Load f_t tension kg max.	Angular movement max.
R4002.AD-10	3,175 (1/8“)	5.08	0.97	1.78	0.034	0.43	1.72	±15°
R4002.AD-20	3,175 (1/8“)	5.08	0.97	1.78	0.20	4.03	5.76	±7,5°
R4002.AD-30	3,175 (1/8“)	5.08	0.97	1.78	1.67	11.47	11.47	±3,7°
R4002.BD-10	3,967 (5/32“)	6.35	1.27	2.54	0.045	0.64	2.54	±15°
R4002.BD-20	3,967 (5/32“)	6.35	1.27	2.54	0.42	6.21	8.89	±7,5°
R4002.BD-30	3,967 (5/32“)	6.35	1.27	2.54	3.35	17.82	17.82	±3,7°
R4002.CD-10	4,763 (3/16“)	7.62	1.52	3.05	0.08	0.90	3.53	±15°
R4002.CD-20	4,763 (3/16“)	7.62	1.52	3.05	0.67	8.84	12.65	±7,5°
R4002.CD-30	4,763 (3/16“)	7.62	1.52	3.05	5.45	25.31	25.31	±3,7°
R4002.DD-10	6,350 (1/4“)	10.16	2.11	4.19	0.20	1.63	6.44	±15°
R4002.DD-20	6,350 (1/4“)	10.16	2.11	4.19	1.67	15.87	22.68	±7,5°
R4002.DD-30	6,350 (1/4“)	10.16	2.11	4.19	13.39	45.36	45.36	±3,7°
R4002.ED-10	7,938 (5/16“)	12.70	2.67	5.23	0.42	2.58	10.34	±15°
R4002.ED-20	7,938 (5/16“)	12.70	2.67	5.23	3.345	24.95	35.65	±7,5°
R4002.ED-30	7,938 (5/16“)	12.70	2.67	5.23	26.75	71.26	71.26	±3,7°
R4002.FD-10	9,525 (3/8“)	15.24	3.25	6.48	0.73	3.81	15.24	±15°
R4002.FD-20	9,525 (3/8“)	15.24	3.25	6.48	5.446	35.88	51.25	±7,5°
R4002.FD-30	9,525 (3/8“)	15.24	3.25	6.48	45.22	102.51	102.51	±3,7°
R4002.GD-10	12,700 (1/2“)	20.32	4.39	8.76	1.67	6.53	26.03	±15°
R4002.GD-20	12,700 (1/2“)	20.32	4.39	8.76	13.39	63.50	90.72	±7,5°
R4002.GD-30	12,700 (1/2“)	20.32	4.39	8.76	107.19	181.44	181.44	±3,7°
R4002.HD-10	15,875 (5/8“)	25.40	5.33	10.92	3.345	10.43	41.73	±15°
R4002.HD-20	15,875 (5/8“)	25.40	5.33	10.92	26.75	100.29	143.25	±7,5°
R4002.HD-30	15.875	25.40	5.33	10.92	214.0	286.45	286.45	±3,7°
R4002.ID-10	19,050 (3/4“)	30.48	6.68	13.21	5.44	14.69	58.69	±15°
R4002.ID-20	19,050 (3/4“)	30.48	6.68	13.21	45.22	143.88	205.52	±7,5°
R4002.ID-30	19,050 (3/4“)	30.48	6.68	13.21	368.49	411.00	411.00	±3,7°
R4002.JD-10	25,400 (1“)	40.64	9.22	18.29	13.39	26.85	107.32	±15°
R4002.JD-20	25,400 (1“)	40.64	9.22	18.29	107.19	256.87	366.92	±7,5°
R4002.JD-30	25,400 (1“)	40.64	9.22	18.29	881.65	733.00	733.00	±3,7°

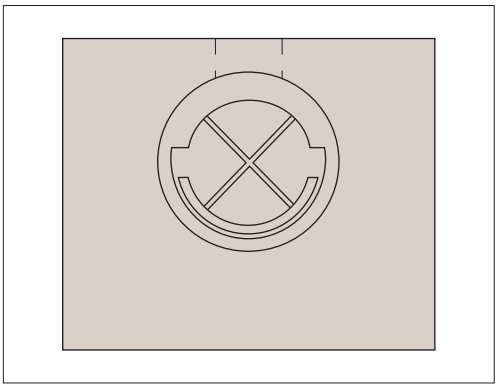
	Application	Notes
	Gimbals	Free from backlash, friction and wear. Flexure bearings give the extreme accuracy needed for positioning precision optics.
	Oscillating mirrors	Optical scanners using flexure bearings provide for the ultimate in cost-effective design. They allow for easy assembly and, with indefinite life expectancies, perform with undiminished accuracy.
	Tensioners	Belt or chain tensioning can be easily achieved through the use of flexure bearings. Tolerant of hostile environments and not subject to wear, extreme long life can be expected without maintenance.
	Linear postioners	Free of errors due to backlash, friction or wear, flexure bearings mounted in suitable geometric structures can provide accurate linear movement or adjustment.
	Lever actuators	Accurate motion requirements in areas of contamination, temperature extremes, or in a vacuum, can be easily provided through linkages utilising flexure bearings. Used in dynamic conditions, the precision of load sensitive systems can be increased to a much higher level than with ball bearings.
	Restrained or dampened oscillating motion	Eccentric or circular oscillating mechanisms can utilise Flexure bearings to provide centre and dampening actions for a lifetime of maintenance free performance.
	Gauges sensors	Miniature sizes which are free of error from backlash, friction or wear, make flexure bearings ideal for applications where position must be accurately measured or outside forces sensed.
	Vibrating/sorting mechanisms	A workhorse, capable of supporting heavy loads for years of continuous service without wear or deterioration, Flexure bearings are ideal for equipment such as vibrating hoppers operating in severe environments.
	Optical or magnetic disc read/write heads	With their constant predictable spring rate, Flexure bearings are immune to the problems of starting vs. moving torque requirements of conventional bearings. Also since they operate without backlash errors or wear, a lifetime of accurate performance can be expected.

Flexure Pivot Bearings from Automotion Components

Technical Information

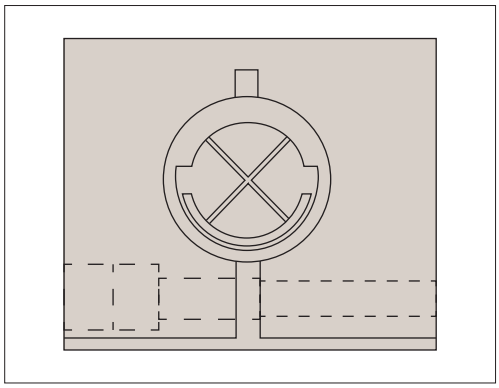
Installation information

The following examples are a few of the possible methods for installing standard flexure bearings. Other techniques may provide satisfactory results. Special options, such as flanged or drilled and tapped sleeves may be provided upon request. Please contact our Technical Department with any questions or for a review of mounting requirements.



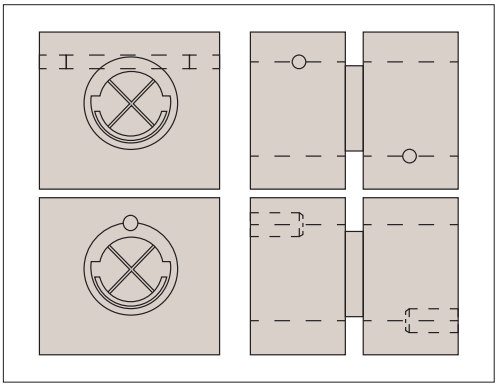
Set screw

One or more properly sized cup point set screws may be used to clamp the bearing in place. Hole size should be 0.0005" to 0.0010" larger than the bearing.



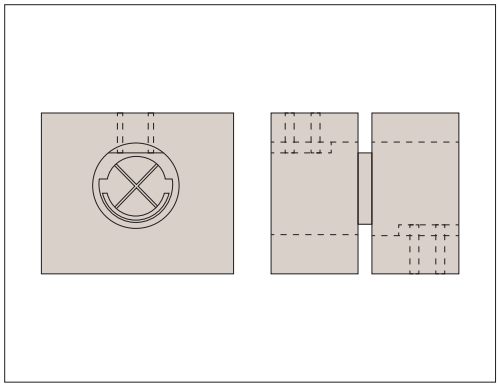
Clamp screw

A clamping screw applies suitable pressure to retain the bearing in place. Hole size should be 0.0005" to 0.0010" larger than the bearing.



Radial or axial pins

Pins may be pressed into holes drilled through the mounting bracket and the bearing sleeve. Care must be exercised to orientate the bearing properly so the springs are not damaged. Hole size should be 0.0005" to 0.0010" larger than the bearing.



Locator flats

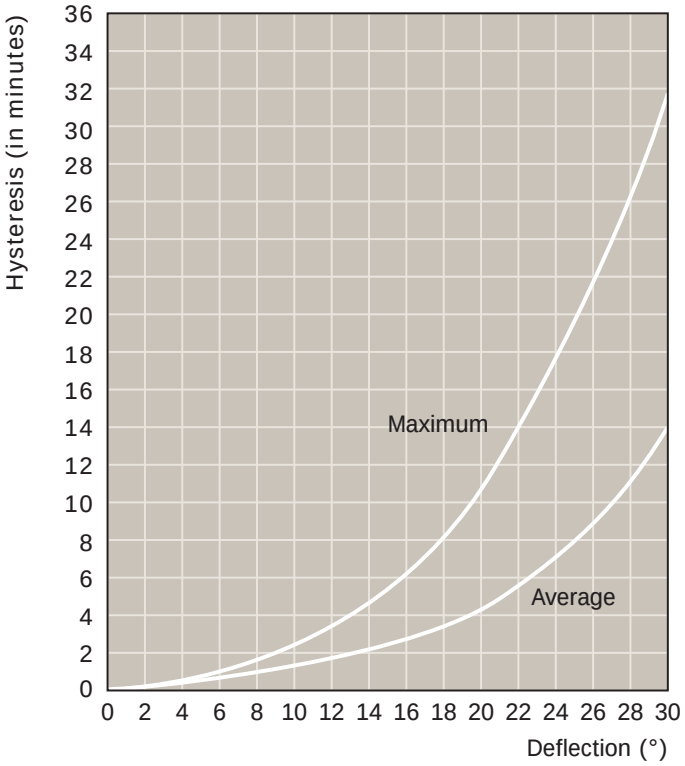
Locator flats with cup point set screws may be used to orientate and securely clamp the bearing in place. Hole size should be 0.0005" to 0.0010" larger than the bearing.

Flexure Pivot Bearings from Automotion Components

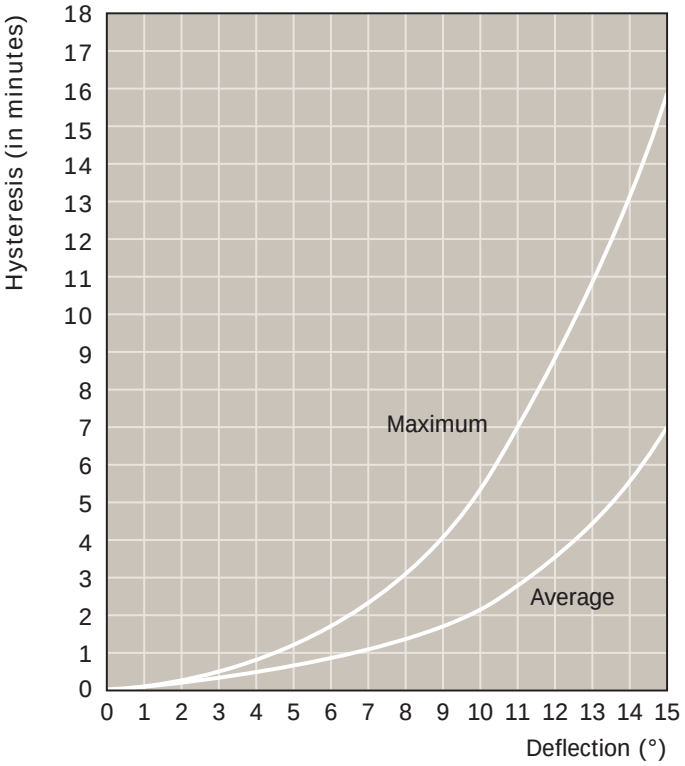
ov-flexture-pivot-bearings-installation-information-lnh-Updated-17-03-2023

The linearity of the bearings (being the rotational deflection of the pivot v the torque required to induce the deflection) is relatively constant for angles of rotation up to 15°. We define hysteresis as the difference between the zero position when the bearing is deflected to a plus angle then relieved and then deflected to a negative angle then relieved. Comparing these two positions is the angle of hysteresis (see graphs below).

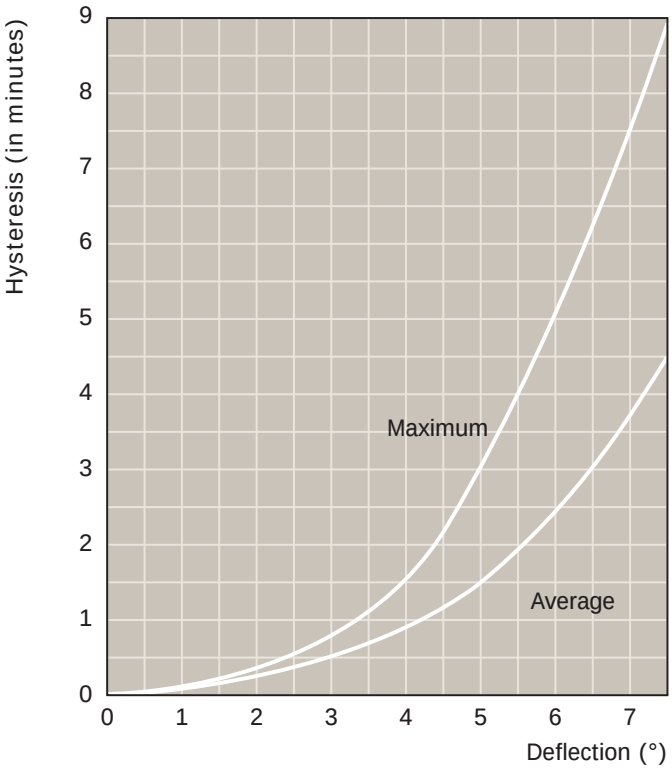
Series 10 - Max. θ ± 15.0°



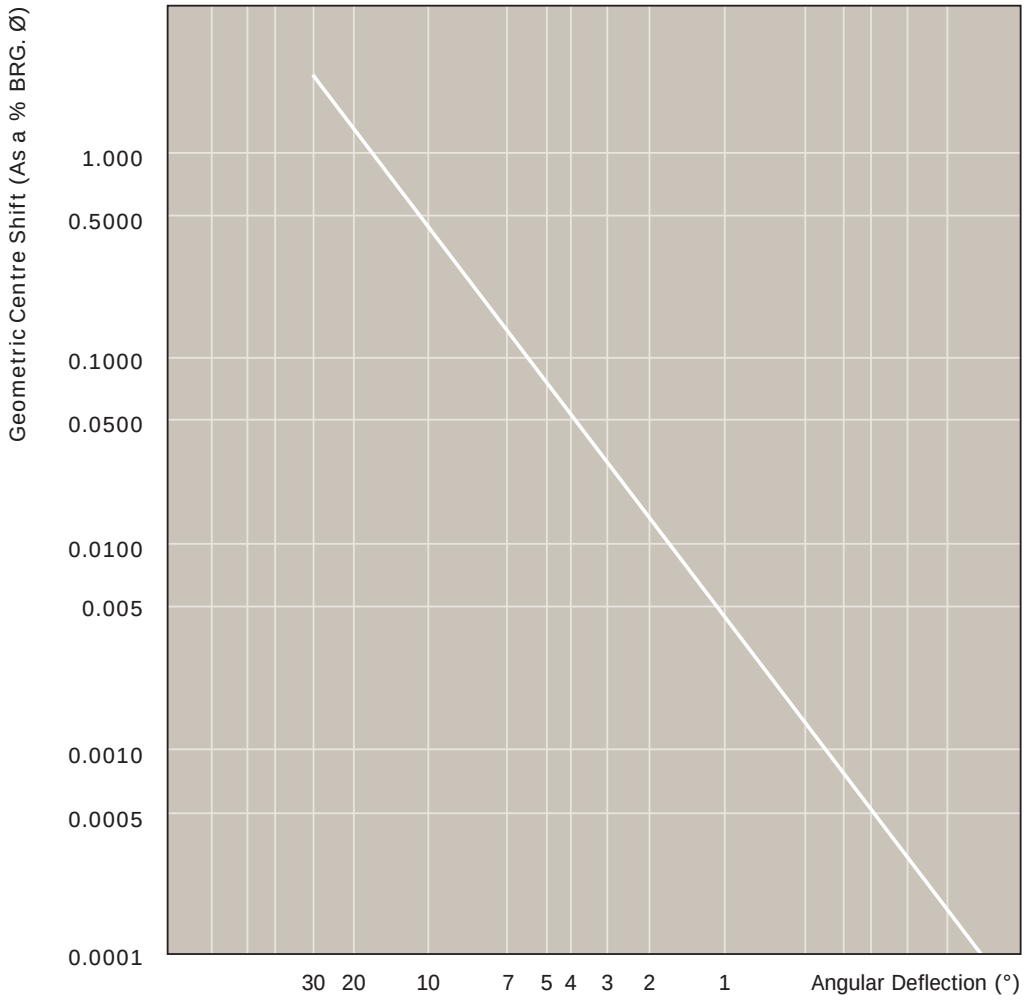
Series 20 - Max. θ ± 7.5°



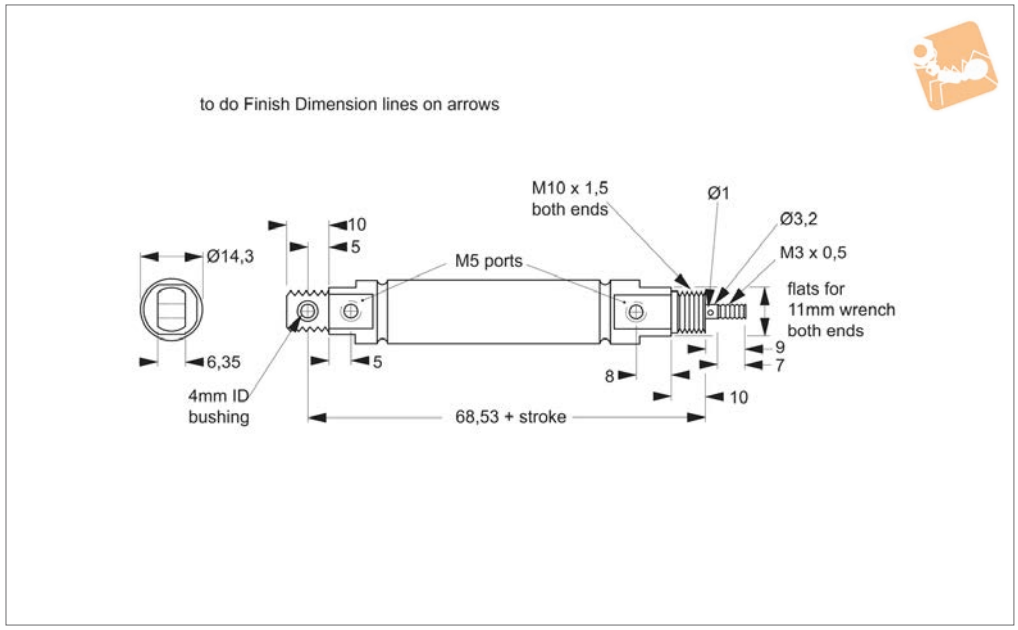
Series 30 - Max. θ ± 3.7°



The rotation of the bearing sleeve segments is achieved by bending flat spring beams. This causes a slight radial shift in the sleeve segment. For small angle of rotations (eg 2°) the shift is minimal (around 0.2% of the bearing diameter). However this can increase up to 1% of the bearing diameter at a rotation of 15° (see graph below).



Flexure Pivot Bearings from Automotion Components





L4500

Material
Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes
Ultra low friction. Corrosion resistant, no need for lubrication.
Operating temperature range: -55°C to +150°C
For applications operating below -20°C please add -ET to part number>

Suitable for vacuum actuation.
Piston area = 67.7mm²
Force output at max pressure on rear side = 47.4N
Force output at max pressure on rod side = 42N

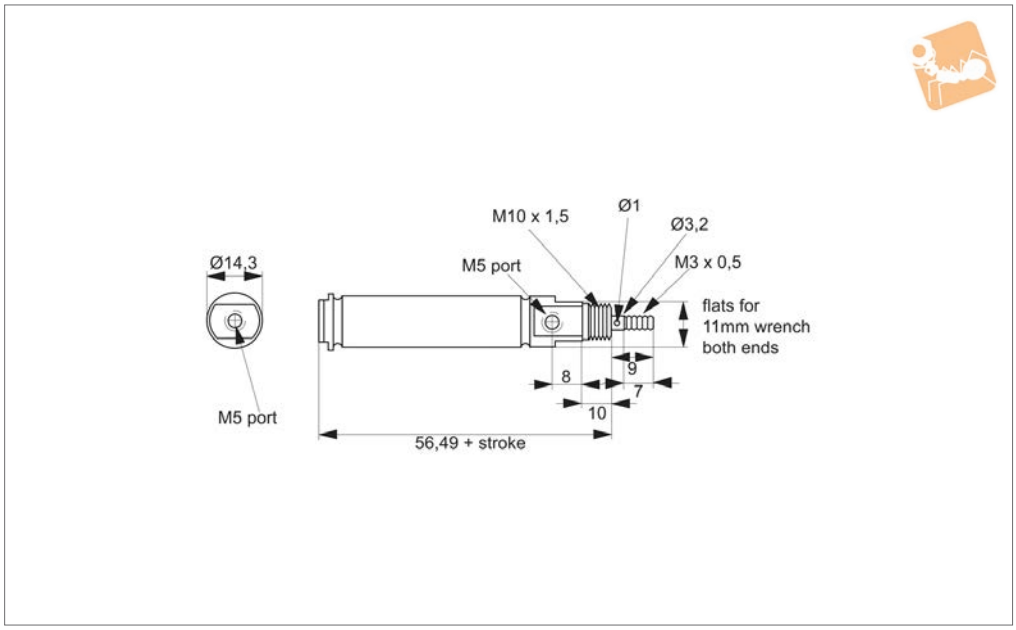
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = < 0.0015 MPa
Force factor rear side = 67.7N
Force factor rod side - 60N
(factor x pressure (MPa) = force output (N))
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/mm max.	Weight g
L4500.012	9.3	12.5	81.03	0.7	1.16	2.2	36.39
L4500.025	9.3	25.0	93.53	0.7	1.16	2.2	41.08
L4500.037	9.3	37.5	106.03	0.7	1.16	2.2	45.76
L4500.050	9.3	50.0	118.53	0.7	1.16	2.2	50.45
L4500.075	9.3	75.0	143.53	0.7	1.16	2.2	59.83
L4500.100	9.3	100.0	168.53	0.7	1.16	2.2	69.20
L4500.125	9.3	125.0	193.53	0.7	1.16	2.2	78.58
L4500.150	9.3	150.0	218.53	0.7	1.16	2.2	87.95
L4500.175	9.3	175.0	243.53	0.7	1.16	2.2	97.33
L4500.200	9.3	200.0	268.53	0.7	1.16	2.2	106.70
L4500.225	9.3	225.0	293.53	0.7	1.16	2.2	116.08
L4500.250	9.3	250.0	318.53	0.7	1.16	2.2	125.45
L4500.275	9.3	275.0	343.53	0.7	1.16	2.2	134.83
L4500.300	9.3	300.0	368.53	0.7	1.16	2.2	144.20

Anti - Stiction Air Cylinder - 9.3mm
front stud mount



L4502



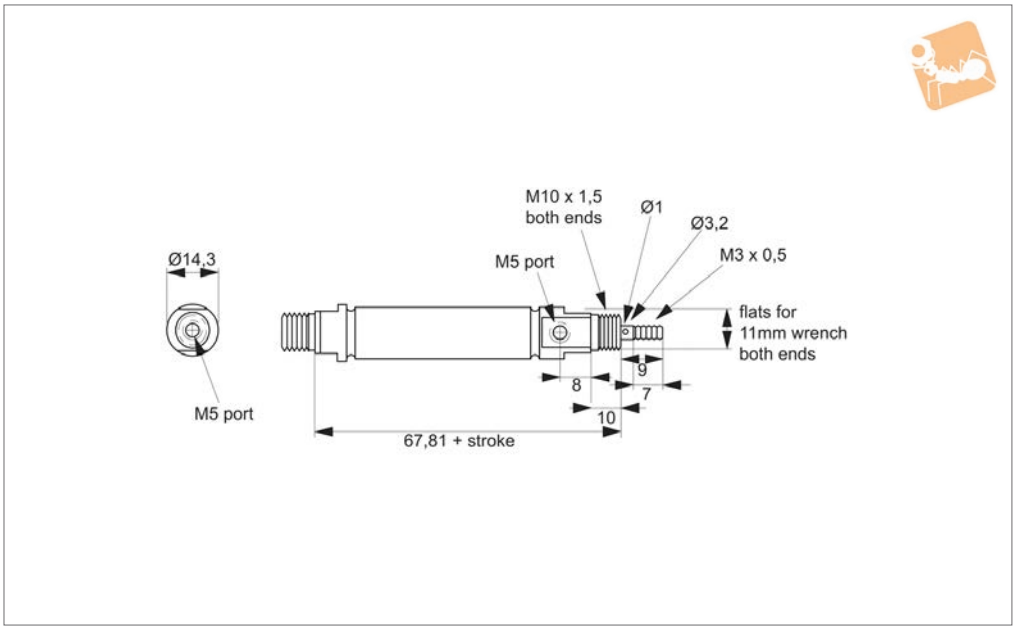
Material
Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes
Ultra low friction. Corrosion resistant, no need for lubrication.
Operating temperature range: -55°C to +150°C For applications operating below -20°C please add -ET to part number.
Suitable for vacuum actuation.
Piston area = 67.7mm²
Force output at max pressure on rear side = 47.4N
Force output at max pressure on rod side = 42N
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = < 0.0015 MPa
Force factor rear side = 67.7N
Force factor rod side - 60N
(factor x pressure (MPa) = force output (N))
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/mm max.	Weight g
L4502.012	9.3	12.5	68.99	0.7	1.16	2.2	36.39
L4502.025	9.3	25.0	81.49	0.7	1.16	2.2	41.08
L4502.037	9.3	37.5	93.99	0.7	1.16	2.2	45.76
L4502.050	9.3	50.0	106.49	0.7	1.16	2.2	50.45
L4502.075	9.3	75.0	131.49	0.7	1.16	2.2	59.83
L4502.100	9.3	100.0	156.49	0.7	1.16	2.2	69.20
L4502.125	9.3	125.0	181.49	0.7	1.16	2.2	78.58
L4502.150	9.3	150.0	206.49	0.7	1.16	2.2	87.95
L4502.175	9.3	175.0	231.49	0.7	1.16	2.2	97.33
L4502.200	9.3	200.0	256.49	0.7	1.16	2.2	106.70
L4502.225	9.3	225.0	281.49	0.7	1.16	2.2	116.08
L4502.250	9.3	250.0	306.49	0.7	1.16	2.2	125.45
L4502.275	9.3	275.0	331.49	0.7	1.16	2.2	134.83
L4502.300	9.3	300.0	356.49	0.7	1.16	2.2	144.20

Anti - Stiction Air Cylinder - 9.3mm

front & rear stud mount





L4504

Material

Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes

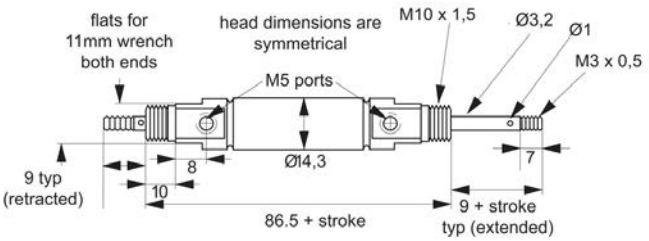
Ultra low friction. Corrosion resistant, no need for lubrication.
Operating temperature range: -55°C to +150°C
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation.
Piston area = 67.7mm^2
Force output at max pressure on rear side = 47.4N
Force output at max pressure on rod side = 42N
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = < 0.0015 MPa
Force factor rear side = 67.7N
Force factor rod side - 60N
(factor x pressure (MPa) = force output (N))
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/mm max.	Weight g
L4504.012	9.3	12.5	80.31	0.7	1.16	2.2	36.39
L4504.025	9.3	25.0	92.81	0.7	1.16	2.2	41.08
L4504.037	9.3	37.5	105.31	0.7	1.16	2.2	45.76
L4504.050	9.3	50.0	117.81	0.7	1.16	2.2	50.45
L4504.075	9.3	75.0	142.81	0.7	1.16	2.2	59.83
L4504.100	9.3	100.0	167.81	0.7	1.16	2.2	69.20
L4504.125	9.3	125.0	192.81	0.7	1.16	2.2	78.58
L4504.150	9.3	150.0	217.81	0.7	1.16	2.2	87.95
L4504.175	9.3	175.0	242.81	0.7	1.16	2.2	97.33
L4504.200	9.3	200.0	267.81	0.7	1.16	2.2	106.70
L4504.225	9.3	225.0	292.81	0.7	1.16	2.2	116.08
L4504.250	9.3	250.0	317.81	0.7	1.16	2.2	125.45
L4504.275	9.3	275.0	342.81	0.7	1.16	2.2	134.83
L4504.300	9.3	300.0	367.81	0.7	1.16	2.2	144.20

Anti - Stiction Air Cylinder - 9.3mm
double rod end



L4506



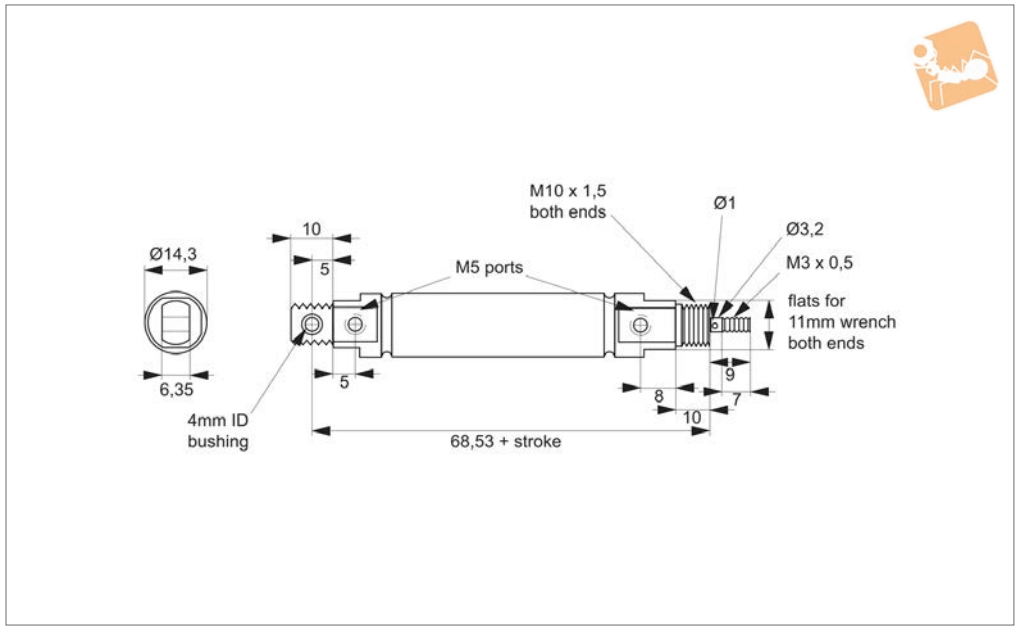
Material
Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes
Ultra low friction. Corrosion resistant, no need for lubrication.
Operating temperature range: -55°C to +150°C
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation.
Piston area = 67.7mm^2
Force output at max pressure on rear side = 47.4N
Force output at max pressure on rod side = 42N
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = < 0.0015 MPa
Force factor rear side = 67.7N
Force factor rod side - 60N
(factor x pressure (MPa) = force output (N))
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/mm max.	Weight g
L4506.012	9.3	12.5	99	0.7	1.16	2.2	36.39
L4506.025	9.3	25.0	111.5	0.7	1.16	2.2	41.08
L4506.037	9.3	37.5	124	0.7	1.16	2.2	45.76
L4506.050	9.3	50.0	136.5	0.7	1.16	2.2	50.45
L4506.075	9.3	75.0	161.5	0.7	1.16	2.2	59.83
L4506.100	9.3	100.0	186.5	0.7	1.16	2.2	69.20
L4506.125	9.3	125.0	211.5	0.7	1.16	2.2	78.58
L4506.150	9.3	150.0	236.5	0.7	1.16	2.2	87.95
L4506.175	9.3	175.0	261.5	0.7	1.16	2.2	97.33
L4506.200	9.3	200.0	286.5	0.7	1.16	2.2	106.70
L4506.225	9.3	225.0	311.5	0.7	1.16	2.2	116.08
L4506.250	9.3	250.0	336.5	0.7	1.16	2.2	125.45
L4506.275	9.3	275.0	361.5	0.7	1.16	2.2	134.83
L4506.300	9.3	300.0	386.5	0.7	1.16	2.2	144.20

Anti - Stiction Air Cylinder - 9.3mm

universal mount, air extend, spring return





L4508

Material

Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes

Ultra low friction. Corrosion resistant, no need for lubrication.
Operating temperature range: -55°C to +150°C
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation.
Piston area = 67.7mm^2
Force output at max pressure on rear side = 47.4N
Force output at max pressure on rod side = 42N
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = < 0.0015 MPa
Force factor rear side = 67.7N
Force factor rod side - 60N
(factor x pressure (MPa) = force output (N))
*max leak measured at pressure of 0.34 MPa.

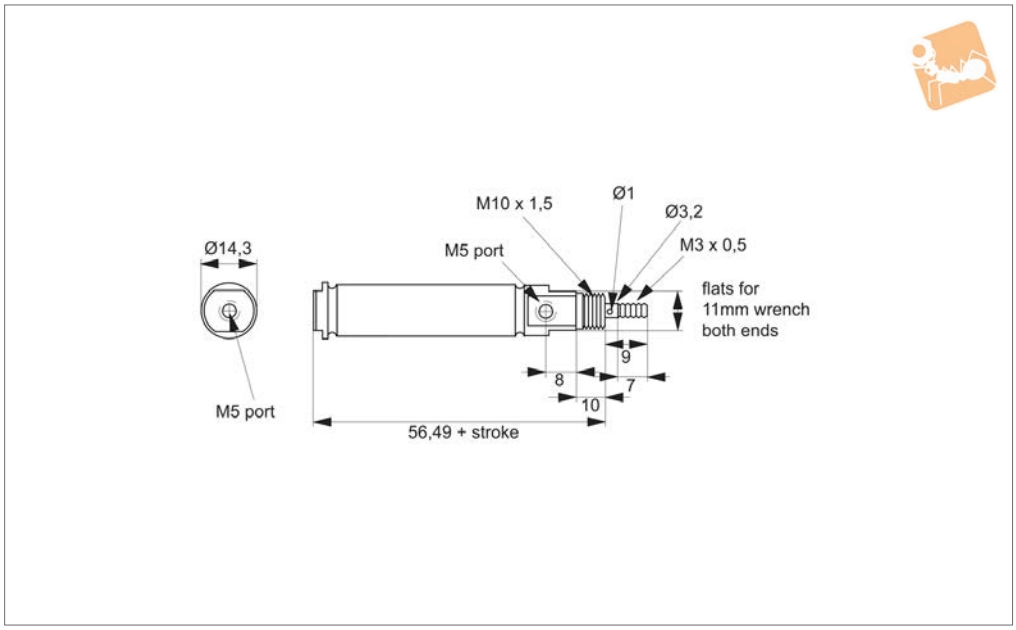
Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/mm max.	Reset spring force rod extended N	Reset spring force rod retracted N	Weight g
L4508.012	9,3	12,5	81,03	0,7	1,16	2,2	0,8	0,5	36,39
L4508.025	9,3	25,0	93,53	0,7	1,16	2,2	0,8	0,4	41,08
L4508.037	9,3	37.5	106,03	0,7	1,16	2,2	0,8	0,2	45,76

Anti - Stiction Air Cylinder - 9.3mm

front stud mount, air extend, spring return



L4510



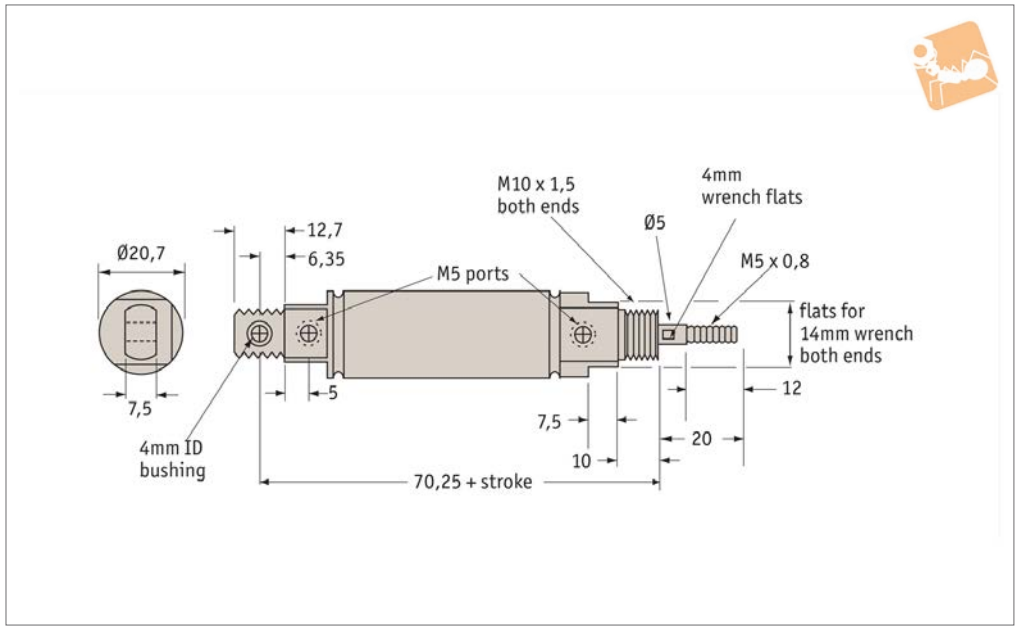
Material

Carbon/graphite piston. Stainless steel rod (AISU 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes

Ultra low friction. Corrosion resistant, no need for lubrication.
Operating temperature range: -55°C to +150°C. For applications operating below -20°c please add -ET to part number.
Suitable for vacuum actuation.
Piston area = 67.7mm^2
Force output at max pressure on rear side = 47.4N
Force output at max pressure on rod side = 42N
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = < 0.0015 MPa
Force factor rear side = 67.7N
Force factor rod side - 60N
(factor x pressure (MPa) = force output (N))
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/mm max.	Reset spring force rod extended N	Reset spring force rod retracted N	Weight g
L4510.012	9,3	12,5	68,99	0,7	1,16	2,2	0,8	0,5	36,39
L4510.025	9,3	25,0	81,49	0,7	1,16	2,2	0,8	0,4	41,08
L4510.037	9,3	37,5	93,99	0,7	1,16	2,2	0,8	0,2	45,76





L4520

Material

Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless Steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes

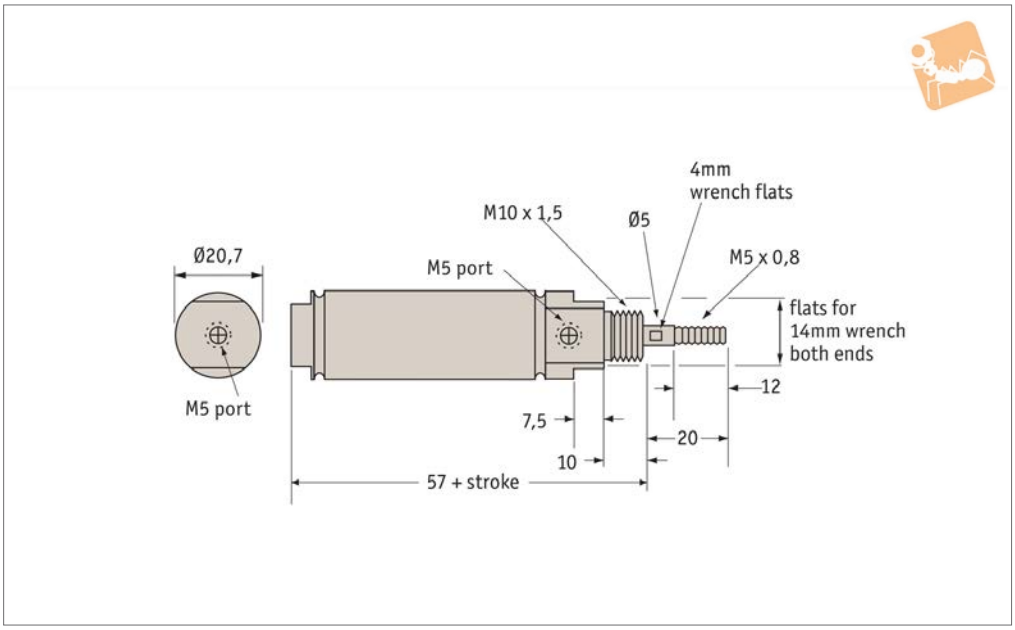
Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation.
Piston area = 198mm^2.
Force output at max pressure on rear side = 139N.
Force output at max pressure on rod side = 125N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0015 MPa.
Force factor rear side = 198N.
Force factor rod side = 178N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/min max.	Weight g
L4520.012	15.9	12.5	82.75	0.7	1.39	2.6	72.38
L4520.025	15.9	25.0	95.25	0.7	1.39	2.6	80.15
L4520.037	15.9	37.5	107.75	0.7	1.39	2.6	87.93
L4520.050	15.9	50.0	120.25	0.7	1.39	2.6	95.70
L4520.075	15.9	75.0	145.25	0.7	1.39	2.6	111.25
L4520.100	15.9	100.0	170.25	0.7	1.39	2.6	126.80
L4520.125	15.9	125.0	195.25	0.7	1.39	2.6	142.35
L4520.150	15.9	150.0	220.50	0.7	1.39	2.6	157.90
L4520.175	15.9	175.0	245.25	0.7	1.39	2.6	173.45
L4520.200	15.9	200.0	270.25	0.7	1.39	2.6	189.00
L4520.225	15.9	225.0	295.25	0.7	1.39	2.6	204.55
L4520.250	15.9	250.0	320.25	0.7	1.39	2.6	220.10
L4520.275	15.9	275.0	345.25	0.7	1.39	2.6	235.65
L4520.300	15.9	300.0	370.25	0.7	1.39	2.6	251.20

Anti-Stiction Air Cylinder - 15.9mm
front stud mount



L4522



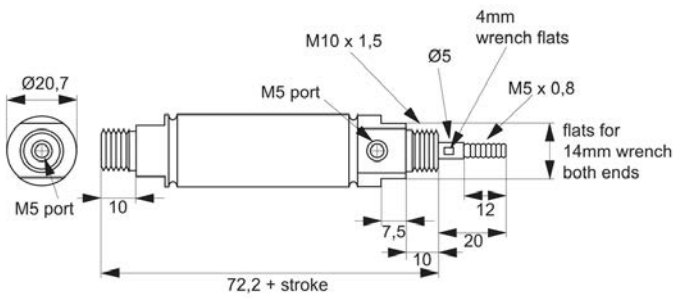
Material
Carbon/graphite piston. Stainless Steel rod (AISI 303). Stainless Steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes
Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation.
Piston area = 198mm^2.
Force output at max pressure on rear side = 139N.
Force output at max pressure on rod side = 125N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0015 MPa.
Force factor rear side = 198N.
Force factor rod side = 178N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/min max.	Weight g
L4522.012	15.9	12.5	69.5	0.7	1.39	2.6	72.38
L4522.025	15.9	25.0	82	0.7	1.39	2.6	80.15
L4522.037	15.9	37.5	94.5	0.7	1.39	2.6	87.93
L4522.050	15.9	50.0	107	0.7	1.39	2.6	95.70
L4522.075	15.9	75.0	132	0.7	1.39	2.6	111.25
L4522.100	15.9	100.0	157	0.7	1.39	2.6	126.80
L4522.125	15.9	125.0	182	0.7	1.39	2.6	142.35
L4522.150	15.9	150.0	207	0.7	1.39	2.6	157.90
L4522.175	15.9	175.0	232	0.7	1.39	2.6	173.45
L4522.200	15.9	200.0	257	0.7	1.39	2.6	189.00
L4522.225	15.9	225.0	282	0.7	1.39	2.6	204.55
L4522.250	15.9	250.0	307	0.7	1.39	2.6	220.10
L4522.275	15.9	275.0	332	0.7	1.39	2.6	235.65
L4522.300	15.9	300.0	357	0.7	1.39	2.6	251.20

Anti-Stiction Air Cylinder - 15.9mm

front & rear stud mount





L4524

Material

Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes

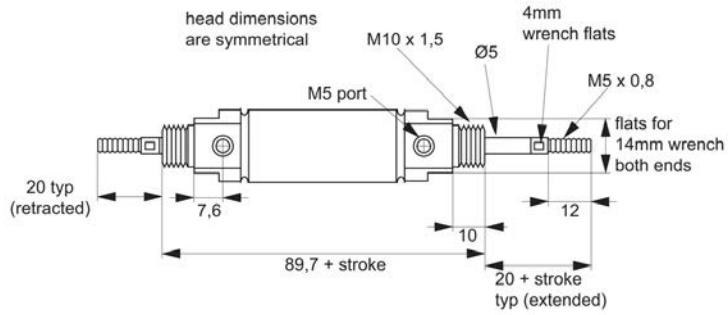
Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation. Piston area = 198mm^2.
Force output at max pressure on rear side = 139N.
Force output at max pressure on rod side = 125N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0015 MPa.
Force factor rear side = 198N.
Force factor rod side = 178N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/min max.	Weight g
L4524.012	15.9	12.5	84.7	0.7	1.39	2.6	72.38
L4524.025	15.9	25.0	97.2	0.7	1.39	2.6	80.15
L4524.037	15.9	37.5	109.7	0.7	1.39	2.6	87.93
L4524.050	15.9	50.0	122.2	0.7	1.39	2.6	95.70
L4524.075	15.9	75.0	147.2	0.7	1.39	2.6	111.25
L4524.100	15.9	100.0	172.2	0.7	1.39	2.6	126.80
L4524.125	15.9	125.0	197.2	0.7	1.39	2.6	142.35
L4524.150	15.9	150.0	222.2	0.7	1.39	2.6	157.90
L4524.175	15.9	175.0	247.2	0.7	1.39	2.6	173.45
L4524.200	15.9	200.0	272.2	0.7	1.39	2.6	189.00
L4524.225	15.9	225.0	297.2	0.7	1.39	2.6	204.55
L4524.250	15.9	250.0	322.2	0.7	1.39	2.6	220.10
L4524.275	15.9	275.0	347.2	0.7	1.39	2.6	235.65
L4524.300	15.9	300.0	372.2	0.7	1.39	2.6	251.20

Anti-Stiction Air Cylinder - 15.9mm
double rod end



L4526



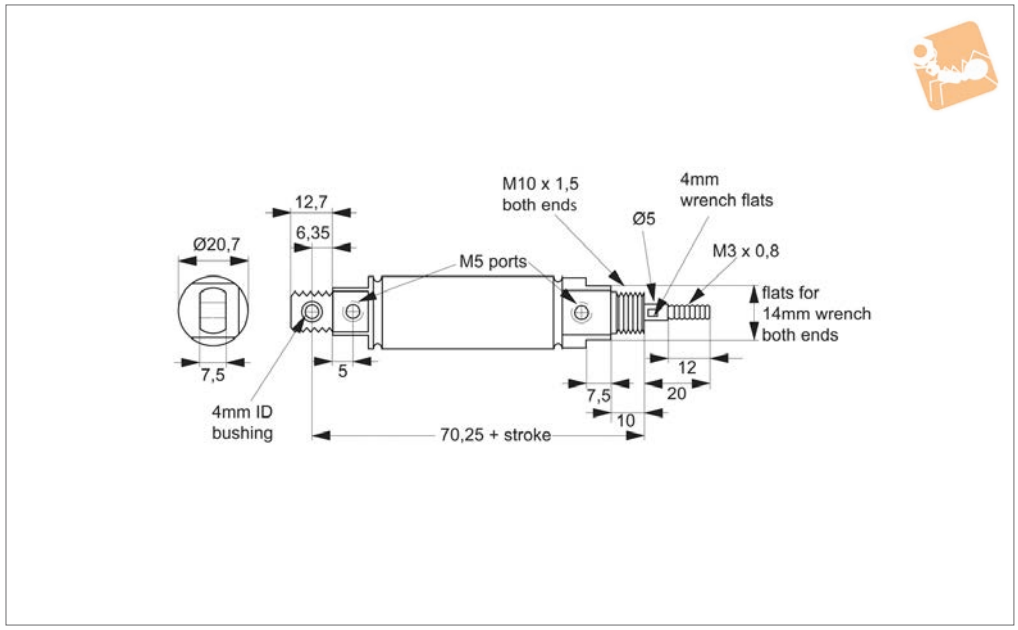
Material
Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes
Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation. Piston area = 198mm^2.
Force output at max pressure on rear side = 139N.
Force output at max pressure on rod side = 125N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0015 MPa.
Force factor rear side = 198N.
Force factor rod side = 178N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/min max.	Weight g
L4526.012	15.9	12.5	102.2	0.7	1.39	2.6	91.13
L4526.025	15.9	25.0	114.7	0.7	1.39	2.6	101.80
L4526.037	15.9	37.5	127.2	0.7	1.39	2.6	112.48
L4526.050	15.9	50.0	139.7	0.7	1.39	2.6	123.15
L4526.075	15.9	75.0	164.7	0.7	1.39	2.6	144.50
L4526.100	15.9	100.0	189.7	0.7	1.39	2.6	165.85
L4526.125	15.9	125.0	214.7	0.7	1.39	2.6	187.20
L4526.150	15.9	150.0	239.7	0.7	1.39	2.6	208.55
L4526.175	15.9	175.0	264.7	0.7	1.39	2.6	229.90
L4526.200	15.9	200.0	289.7	0.7	1.39	2.6	251.25
L4526.225	15.9	225.0	314.7	0.7	1.39	2.6	272.60
L4526.250	15.9	250.0	339.7	0.7	1.39	2.6	293.95
L4526.275	15.9	275.0	364.7	0.7	1.39	2.6	315.30
L4526.300	15.9	300.0	389.7	0.7	1.39	2.6	336.65

Anti-Stiction Air Cylinder - 15.9mm

universal mount, air extended, spring return





L4528

Material

Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes

Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
Suitable for vacuum actuation./symbol
Piston area = 198mm^2.
Force output at max pressure on rear side = 139N.
Force output at max pressure on rod side = 125N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0015 MPa.
Force factor rear side = 198N.
Force factor rod side = 178N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa.

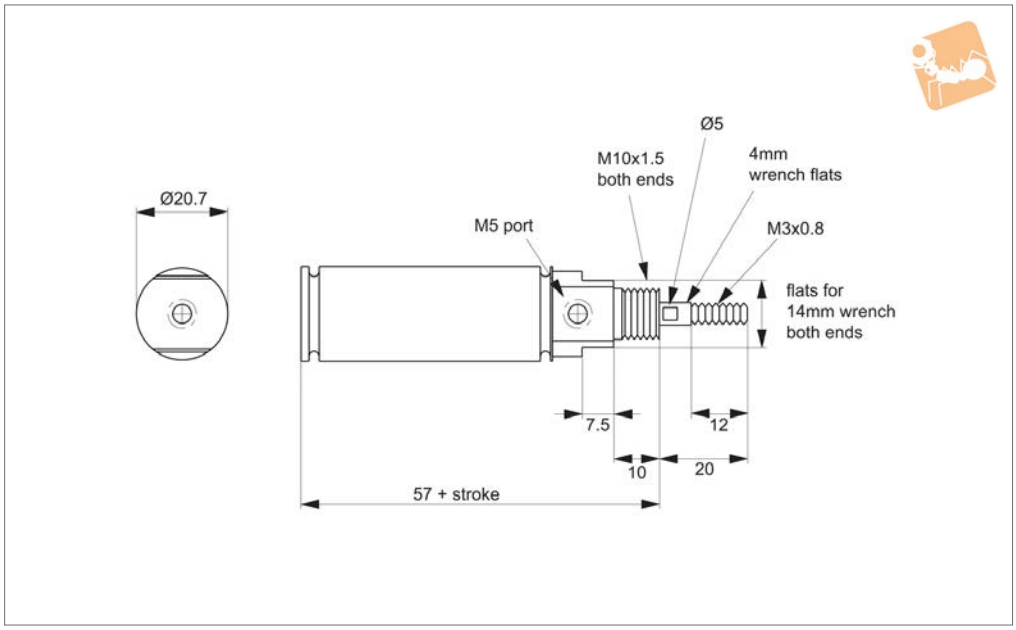
Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/mm max.	Reset spring force rod extended N	Reset spring force rod retracted N	Weight g
L4528.012	15,9	12,5	82,75	0,7	139	125	1,1	1,0	72,38
L4528.025	15,9	25,0	95,25	0,7	139	125	1,1	0,9	80,15
L4528.037	15,9	37,5	107,75	0,7	139	125	1,1	0,8	87,93
L4528.050	15,9	50,0	120,25	0,7	139	125	1,1	0,7	95,70

Anti-Stiction Air Cylinder - 15.9mm

front stud mount, air extend, spring return



L4530



Material

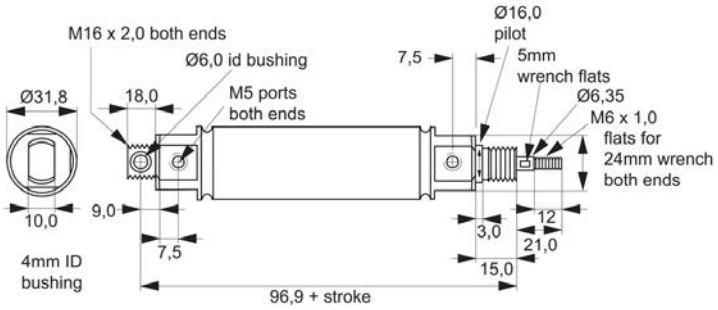
Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes

Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation.
Piston area = 198mm^2.
Force output at max pressure on rear side = 139N.
Force output at max pressure on rod side = 125N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0015 MPa.
Force factor rear side = 198N.
Force factor rod side = 178N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/mm max.	Reset spring force rod extended N	Reset spring force rod retracted N	Weight g
L4530.012	15,9	12,5	69,5	0,7	139	125	1,1	1,0	72,38
L4530.025	15,9	25	82	0,7	139	125	1,1	0,9	80,15
L4530.037	15,9	37,5	94,5	0,7	139	125	1,1	0,8	87,93
L4530.050	15,9	50	107	0,7	139	125	1,1	0,7	95,70

Anti-Stiction Air Cylinder - 24mm
universal mount





L4540

Material
Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes
Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation.
Piston area = 452.5mm^2.
Force output at max pressure on rear side = 316.6N.
Force output at max pressure on rod side = 294.5N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0015 MPa.
Force factor rear side = 452.5N.
Force factor rod side = 420.8N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa.

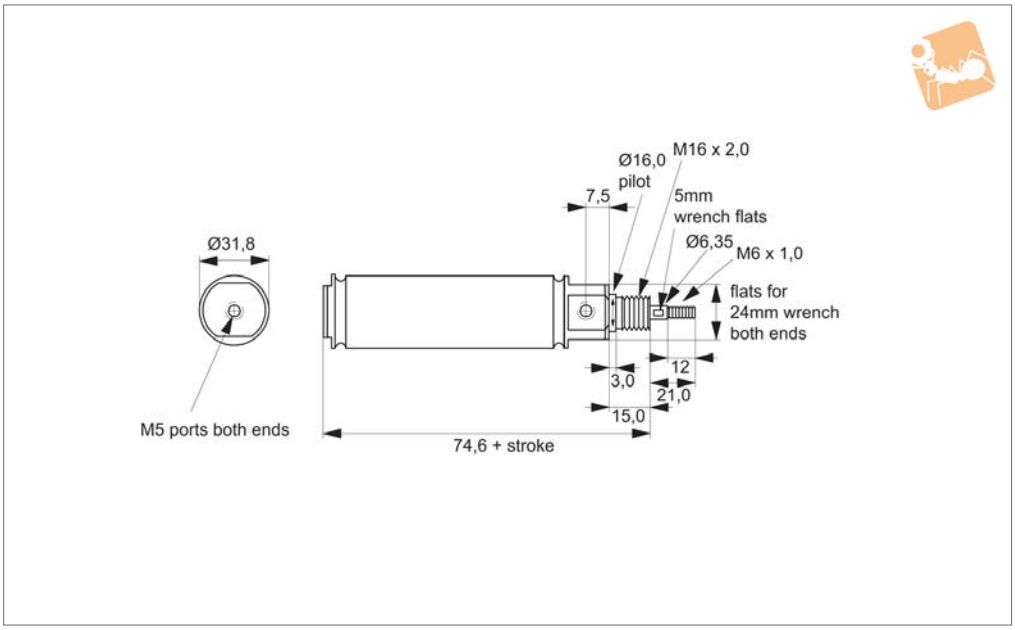
Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/min max.	Weight g
L4540.012	24.0	12.5	109.4	0.7	2.2	2.6	172.49
L4540.025	24.0	25.0	121.9	0.7	2.2	2.6	187.81
L4540.037	24.0	37.5	134.4	0.7	2.2	2.6	203.12
L4540.050	24.0	50.0	146.9	0.7	2.2	2.6	218.43
L4540.075	24.0	75.0	171.9	0.7	2.2	2.6	249.06
L4540.100	24.0	100.0	196.9	0.7	2.2	2.6	279.68
L4540.125	24.0	125.0	221.9	0.7	2.2	2.6	310.31
L4540.150	24.0	150.0	246.9	0.7	2.2	2.6	340.93
L4540.175	24.0	175.0	271.9	0.7	2.2	2.6	371.56
L4540.200	24.0	200.0	296.9	0.7	2.2	2.6	402.18
L4540.225	24.0	225.0	321.9	0.7	2.2	2.6	432.81
L4540.250	24.0	250.0	346.9	0.7	2.2	2.6	463.43
L4540.275	24.0	275.0	371.9	0.7	2.2	2.6	494.06
L4540.300	24.0	300.0	396.9	0.7	2.2	2.6	524.68

Anti-Stiction Air Cylinder - 24mm

front stud mount



L4542



Material

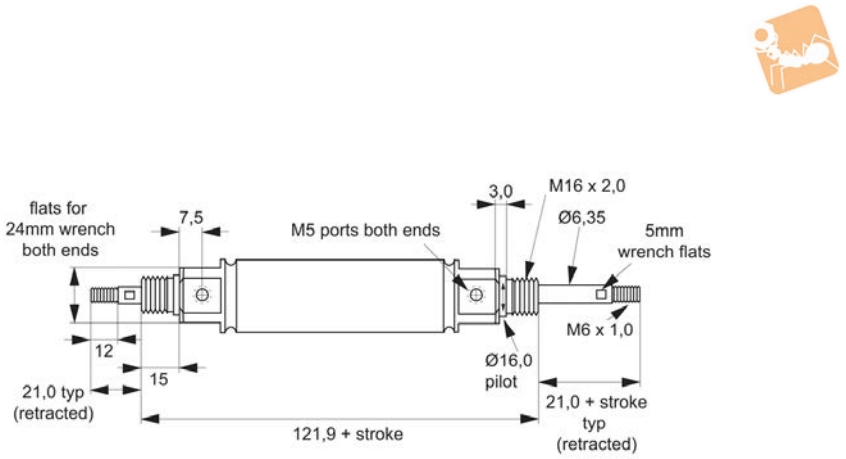
Carbon/graphite piston. Stainless Steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes

Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation.
Piston area = 452.5mm^2.
Force output at max pressure on rear side = 316.6N.
Force output at max pressure on rod side = 294.5N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0015 MPa.
Force factor rear side = 452.5N.
Force factor rod side = 420.8N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/min max.	Weight g
L4542.012	24.0	12.5	87.1	0.7	2.2	2.6	172.49
L4542.025	24.0	25.0	99.6	0.7	2.2	2.6	187.81
L4542.037	24.0	37.5	112.1	0.7	2.2	2.6	203.12
L4542.050	24.0	50.0	124.6	0.7	2.2	2.6	218.43
L4542.075	24.0	75.0	149.6	0.7	2.2	2.6	249.06
L4542.100	24.0	100.0	174.6	0.7	2.2	2.6	279.68
L4542.125	24.0	125.0	199.6	0.7	2.2	2.6	310.31
L4542.150	24.0	150.0	224.6	0.7	2.2	2.6	340.93
L4542.175	24.0	175.0	249.6	0.7	2.2	2.6	371.56
L4542.200	24.0	200.0	274.6	0.7	2.2	2.6	402.18
L4542.225	24.0	225.0	299.6	0.7	2.2	2.6	432.81
L4542.250	24.0	250.0	324.6	0.7	2.2	2.6	463.43
L4542.275	24.0	275.0	349.6	0.7	2.2	2.6	494.06
L4542.300	24.0	300.0	374.6	0.7	2.2	2.6	524.68

Anti-Stiction Air Cylinder - 24mm
double rod end





L4544

Material
Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless Steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes
Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation.
Piston area = 452.5mm^2.
Force output at max pressure on rear side = 316.6N.
Force output at max pressure on rod side = 294.5N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0015 MPa.
Force factor rear side = 452.5N.
Force factor rod side = 420.8N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa.

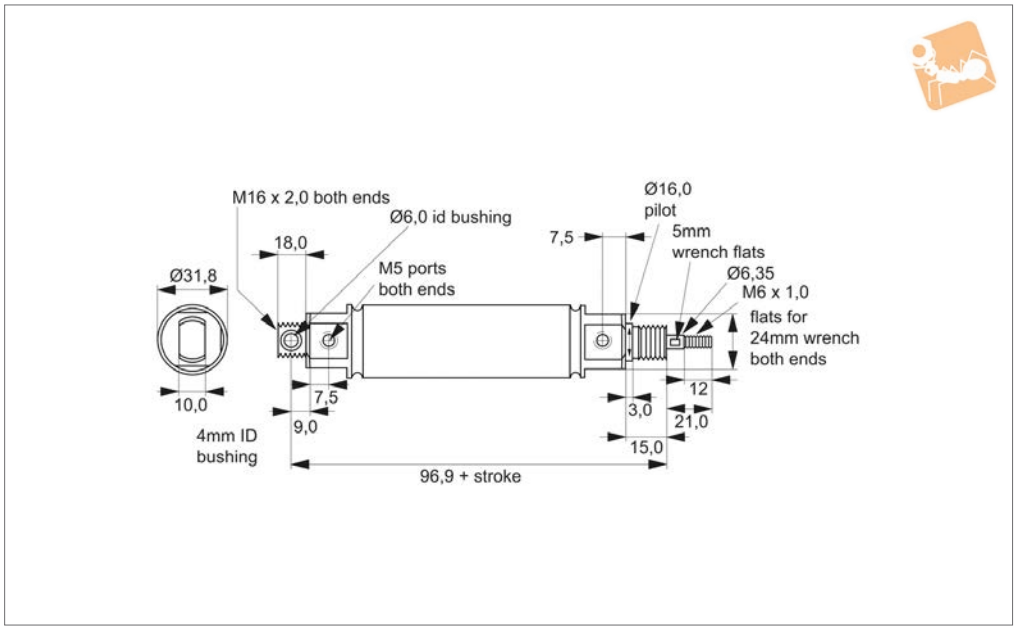
Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/min max.	Weight g
L4544.012	24.0	12.5	134.4	0.7	2.2	2.6	223.4
L4544.025	24.0	25.0	146.9	0.7	2.2	2.6	241.9
L4544.037	24.0	37.5	159.4	0.7	2.2	2.6	260.4
L4544.050	24.0	50.0	171.9	0.7	2.2	2.6	278.9
L4544.075	24.0	75.0	196.9	0.7	2.2	2.6	315.9
L4544.100	24.0	100.0	221.9	0.7	2.2	2.6	352.9
L4544.125	24.0	125.0	246.9	0.7	2.2	2.6	389.9
L4544.150	24.0	150.0	271.9	0.7	2.2	2.6	426.9
L4544.175	24.0	175.0	296.9	0.7	2.2	2.6	463.9
L4544.200	24.0	200.0	321.9	0.7	2.2	2.6	500.9
L4544.225	24.0	225.0	346.9	0.7	2.2	2.6	537.9
L4544.250	24.0	250.0	371.9	0.7	2.2	2.6	574.9
L4544.275	24.0	275.0	396.9	0.7	2.2	2.6	611.9

Anti-Stiction Air Cylinder - 24mm

universal mount - air extended, spring return



L4546



Material

Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

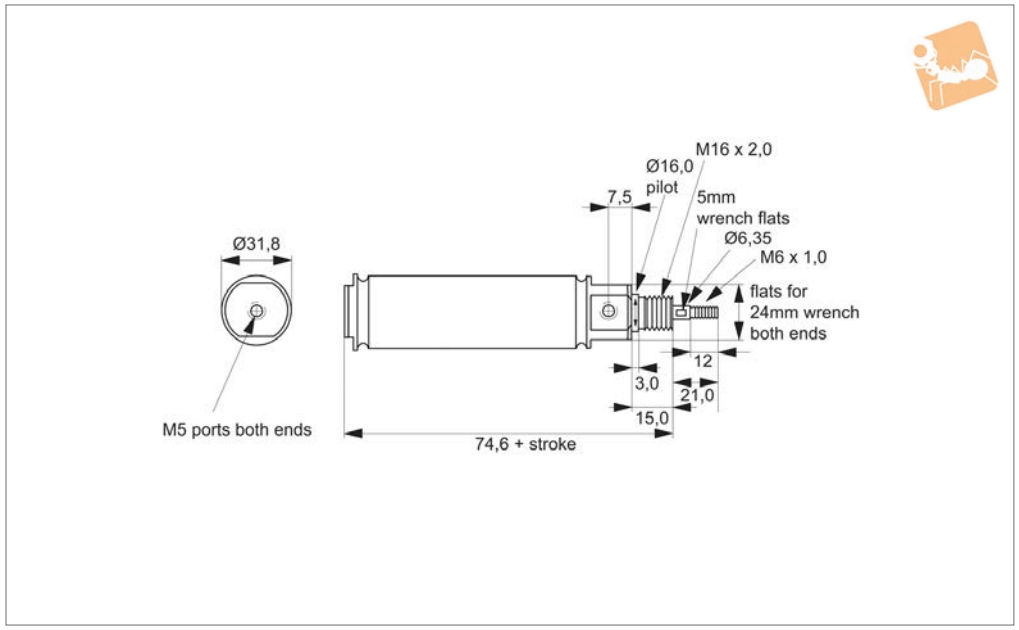
Technical Notes

Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation.
Piston area = 452.5mm^2.
Force output at max pressure on rear side = 316.6N.
Force output at max pressure on rod side = 294.5N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0015 MPa.
Force factor rear side = 452.5N.
Force factor rod side = 420.8N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/mm max.	Reset spring force rod extended N	Reset spring force rod retracted N	Weight g
L4546.012	24,0	12,5	109,4	0,7	2,2	2,6	1,44	1,34	172,49
L4546.025	24,0	25,0	121,9	0,7	2,2	2,6	1,44	1,26	187,81
L4546.037	24,0	37,5	134,4	0,7	2,2	2,6	1,44	1,17	203,12
L4546.050	24,0	50,0	146,9	0,7	2,2	2,6	1,44	1,09	218,43

Anti-Stiction Air Cylinder - 24mm

front stud mount - air extend spring return





L4548

Material

Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes

Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
For applications operating below -20°C please add -ET to part number. Suitable for vacuum actuation.
Piston area = 452.5mm^2.
Force output at max pressure on rear side = 316.6N.
Force output at max pressure on rod side = 294.5N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0015 MPa.
Force factor rear side = 452.5N.
Force factor rod side = 420.8N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa.

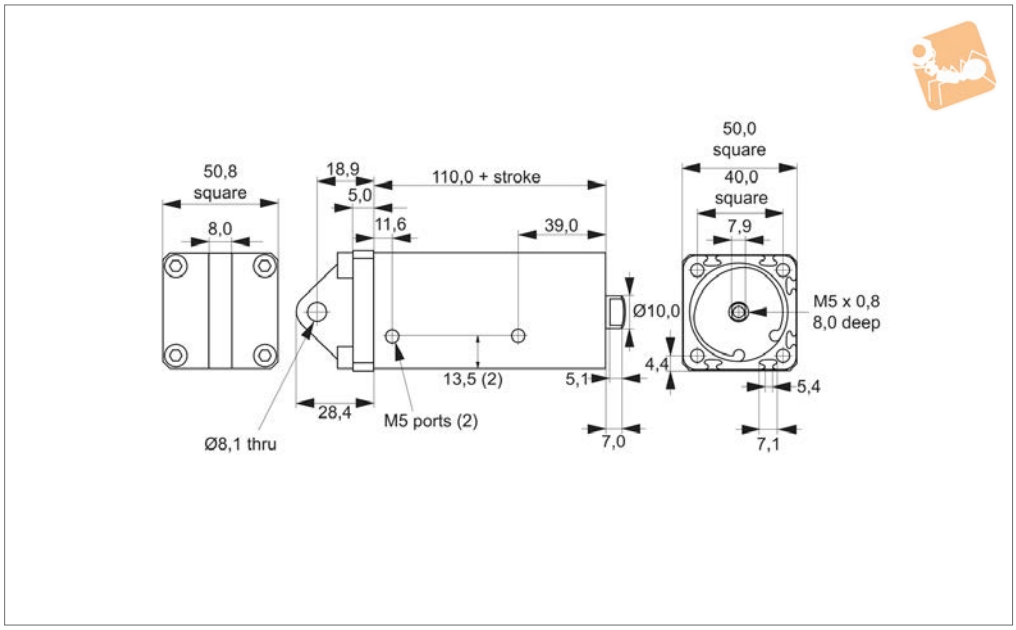
Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/mm max.	Reset spring force rod extended N	Reset spring force rod retracted N	Weight g
L4548.012	24,0	12,5	87,1	0,7	2,2	2,6	1,44	1,34	172,49
L4548.025	24,0	25,0	99,6	0,7	2,2	2,6	1,44	1,26	187,81
L4548.037	24,0	37,5	112,1	0,7	2,2	2,6	1,44	1,17	203,12
L4548.050	24,0	50,0	124,6	0,7	2,2	2,6	1,44	1,09	218,43

Anti-Stiction Air Cylinder - 32mm

rear pivot mount



L4556



Material

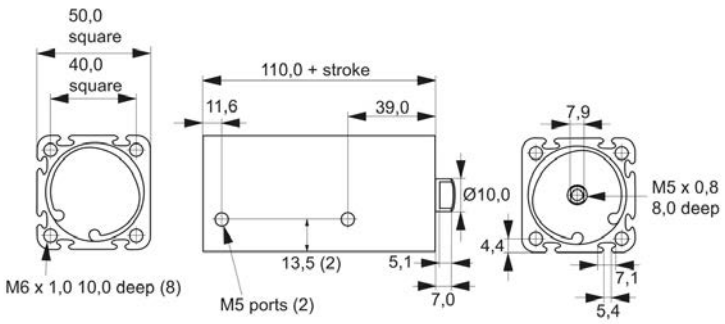
Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

Technical Notes

Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
For applications operating below -20°C please add -ET to part number. NOT suitable for vacuum actuation.
Piston area = 830mm^2.
Force output at max pressure on rear side = 581N.
Force output at max pressure on rod side = 526N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0035 MPa.
Force factor rear side = 830N.
Force factor rod side = 751N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa./symbol

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/min max.	Weight g
L4556.012	32.5	12.5	122.5	0.7	2.2	2.0	661.75
L4556.025	32.5	25.0	135	0.7	2.2	2.0	707.50
L4556.050	32.5	50.0	160	0.7	2.2	2.0	799.00
L4556.075	32.5	75.0	185	0.7	2.2	2.0	890.50
L4556.100	32.5	100.0	210	0.7	2.2	2.0	982.00

Anti-Stiction Air Cylinder - 32mm
front/rear mount





L4558

Material
Carbon/graphite piston. Stainless steel rod (AISI 303). Stainless steel outer tube (AISI 304). Nickel plated aluminium cylinder heads and piston/rod coupling. Graphite filled bronze pivot bushing.

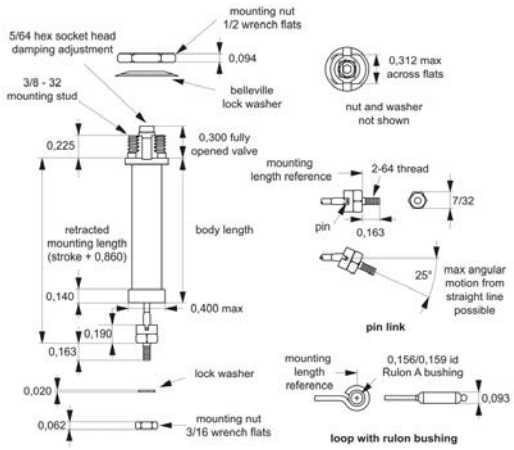
Technical Notes
Ultra low friction.
Corrosion resistant, no need for lubrication.
Operating temp range: -55°C to +150°C.
For applications operating below -20°C please add -ET to part number. NOT suitable for vacuum actuation.
Piston area = 830mm^2.
Force output at max pressure on rear side = 581N.
Force output at max pressure on rod side = 526N.
Piston friction as % of load (without side load) = 1% - 2%.
Min pressure differential required for actuation = <0.0035 MPa.
Force factor rear side = 830N.
Force factor rod side = 751N.
(factor x pressure (MPa) = force output (N)).
*max leak measured at pressure of 0.34 MPa.

Order No.	Bore dia.	Stroke	Length	Pressure MPa max.	Leak rate by piston SL/min max.	Leak rate by rod SL/min max.	Weight g
L4558.012	32.5	12.5	122.5	0.7	2.2	2.0	661.75
L4558.025	32.5	25.0	135	0.7	2.2	2.0	707.50
L4558.050	32.5	50.0	160	0.7	2.2	2.0	799.00
L4558.075	32.5	75.0	185	0.7	2.2	2.0	890.50
L4558.100	32.5	100.0	210	0.7	2.2	2.0	982.00

Push/Pull Dashpot
0.22“ bore



L4570



Material
Graphite carbon piston.
Annealed borosilicate glass cylinder.
Precision fire-polished bore.
Stainless steel piston rod (AISI 304)

Technical Notes
Damping coefficient = 0-0,16 N/(mm/s).
Friction coefficient = 0.2.
Force without side load: <1g.
Operating temperature range: -55°c to 150°c.

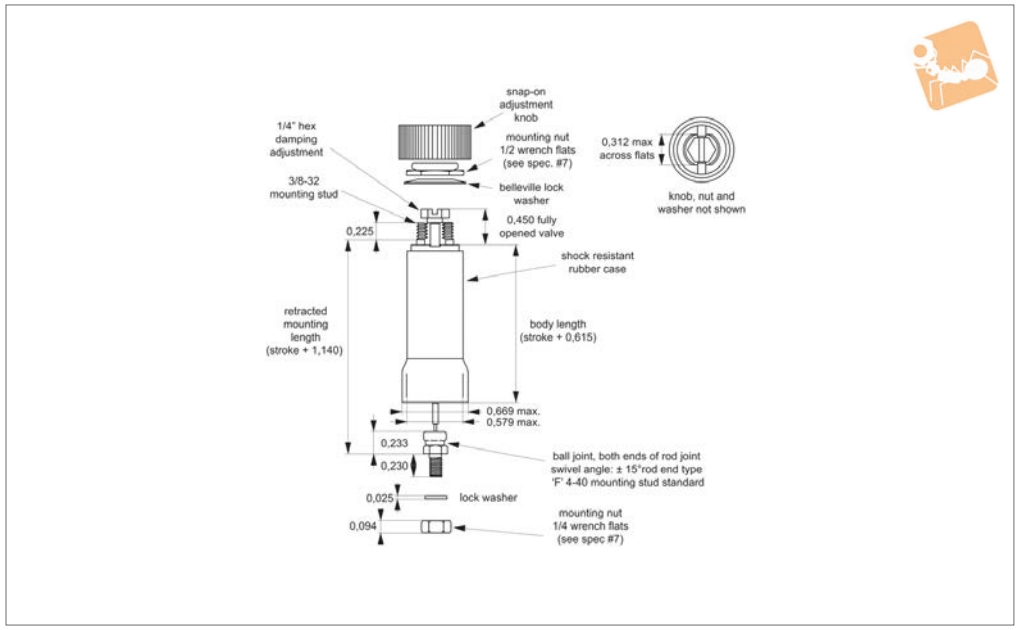
*If operating temperature is above +70°c, please advise at time of ordering.

Important Notes
Mounting data:
Mounting hole:
Rectangular = 0.312 x 0.375 (8mm x 10mm)
Round = 0.375“ (10mm)
Suggested mounting bracket thickness = 0.06 - 0.125 (1.52mm - 3.18mm)
Mounting nut torque:
Head = 4-8 in-lb (0.45 - 0.90 Nm)
Rod end = 1-3 in-lb (0.11-0.34 Nm)

Full stroke is obtained with customer held mounting tolerance of ±0.015“ (0.38mm).

Level of damping is adjustable by hand. If you know the level of damping required we can pre-set this in the factory.

Order No.	Stroke	Rod end linkage	Bore dia.	Pull damping force N max.	Push damping force N max.	Body length
L4570.A0500	0,5“	Pin	0,22“	2.22	1.55	0,937“
L4570.A1000	1,0“	Pin	0,22“	2.22	1.55	1,437“
L4570.A1500	1,5“	Pin	0,22“	2.22	1.55	1,937“
L4570.A2000	2,0“	Pin	0,22“	2.22	1.55	2,437“
L4570.B0500	0,5“	Loop	0,22“	2.22	1.55	0,937“
L4570.B1000	1,0“	Loop	0,22“	2.22	1.55	1,437“
L4570.B1500	1,5“	Loop	0,22“	2.22	1.55	1,937“
L4570.B2000	2,0“	Loop	0,22“	2.22	1.55	2,437“





L4572

Material
Graphite carbon piston.
Annealed borosilicate glass cylinder.
Precision fire-polished bore.
Stainless steel piston rod (AISI 304)
Shock resistant rubber case.

Technical Notes
Damping coefficient = 0-0,44 N/(mm/s).
Friction coefficient = 0.2.
Force without side load: <1g.
Operating temperature range: -55°c to 150°c.
*If operating temperature is above +70°c, please advise at time of ordering.

Important Notes
Mounting data:
Mounting hole:
Rectangular = 0.312 x 0.375 (8mm x 10mm)
Round = 0.375“ (10mm)
Suggested mounting bracket thickness = 0.06 - 0.125 (1.52mm - 3.18mm)

Mounting nut torque:
Head = 4-8 in-lb (0.45 - 0.90 Nm)
Rod end = 2-5 in-lb (0.23-0.56 Nm)

Full stroke is obtained with customer held mounting tolerance of ±0.015“ (0.38mm).

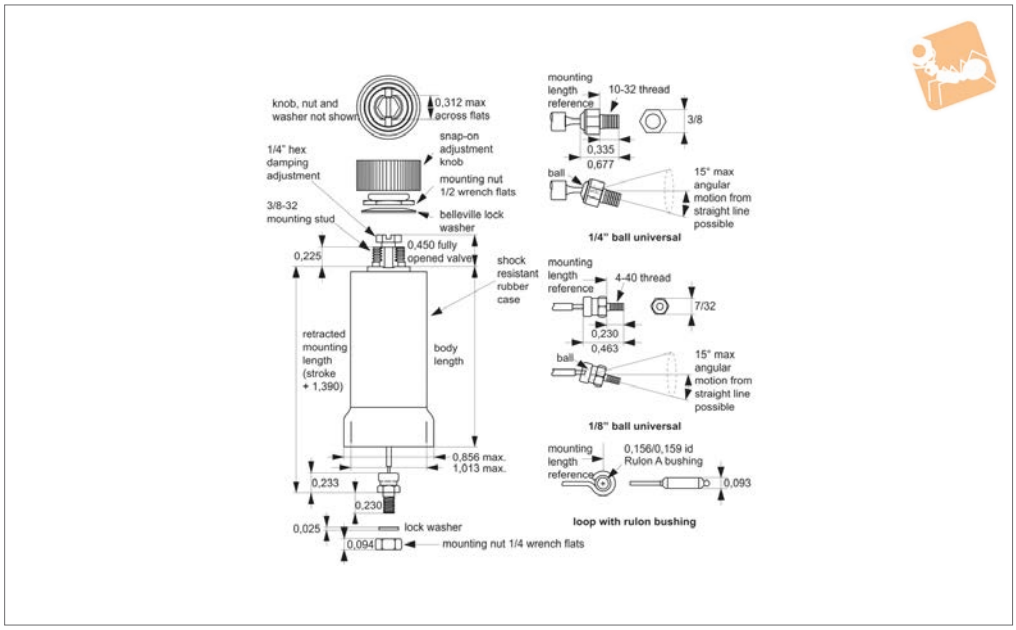
Level of damping is adjustable by hand. If you know the level of damping required we can pre-set this in the factory.

Order No.	Stroke	Damping direction	Rod end linkage	Bore dia.	Pull damping force N max.	Push damping force N max.	Body length
L4572.A0500-TW	0,5“	Two-way	1/8“ Ball	0,366“	6.23	4.45	1,115“
L4572.A1000-TW	1,0“	Two-way	1/8“ Ball	0,366“	6.23	4.45	1,615“
L4572.A1500-TW	1,5“	Two-way	1/8“ Ball	0,366“	6.23	4.45	2,115“
L4572.A2000-TW	2,0“	Two-way	1/8“ Ball	0,366“	6.23	4.45	2,615“
L4572.B0500-TW	0,5“	Two-way	Loop	0,366“	6.23	4.45	1,115“
L4572.B1000-TW	1,0“	Two-way	Loop	0,366“	6.23	4.45	1,615“
L4572.B1500-TW	1,5“	Two-way	Loop	0,366“	6.23	4.45	2,115“
L4572.B2000-TW	2,0“	Two-way	Loop	0,366“	6.23	4.45	2,615“
L4572.A0500-PL	0,5“	Pull	1/8“ Ball	0,366“	6.23	4.45	1,115“
L4572.A1000-PL	1,0“	Pull	1/8“ Ball	0,366“	6.23	4.45	1,615“
L4572.A1500-PL	1,5“	Pull	1/8“ Ball	0,366“	6.23	4.45	2,115“
L4572.A2000-PL	2,0“	Pull	1/8“ Ball	0,366“	6.23	4.45	2,615“
L4572.B0500-PL	0,5“	Pull	Loop	0,366“	6.23	4.45	1,115“
L4572.B1000-PL	1,0“	Pull	Loop	0,366“	6.23	4.45	1,615“
L4572.B1500-PL	1,5“	Pull	Loop	0,366“	6.23	4.45	2,115“
L4572.B2000-PL	2,0“	Pull	Loop	0,366“	6.23	4.45	2,615“
L4572.A0500-PS	0,5“	Push	1/8“ Ball	0,366“	6.23	4.45	1,115“
L4572.A1000-PS	1,0“	Push	1/8“ Ball	0,366“	6.23	4.45	1,615“
L4572.A1500-PS	1,5“	Push	1/8“ Ball	0,366“	6.23	4.45	2,115“
L4572.A2000-PS	2,0“	Push	1/8“ Ball	0,366“	6.23	4.45	2,615“
L4572.B0500-PS	0,5“	Push	Loop	0,366“	6.23	4.45	1,115“
L4572.B1000-PS	1,0“	Push	Loop	0,366“	6.23	4.45	1,615“
L4572.B1500-PS	1,5“	Push	Loop	0,366“	6.23	4.45	2,115“
L4572.B2000-PS	2,0“	Push	Loop	0,366“	6.23	4.45	2,615“

Push/Pull Dashpot
0.627“ bore



L4574



Material
Graphite carbon piston.
Annealed borosilicate glass cylinder.
Precision fire-polished bore.
Stainless steel piston rod (AISI 304) or Aluminium 2024-T4

Technical Notes
Damping coefficient = 0-1,75 N/(mm/s).
Friction coefficient = 0.2.
Force without side load: <1g.
Operating temperature range: -55°c to 150°c.

*If operating temperature is above +70°c, please advise at time of ordering.

Important Notes
Mounting data:
Mounting hole:
Rectangular = 0.312 x 0.375 (8mm x 10mm)
Round = 0.375“ (10mm)
Suggested mounting bracket thickness = 0.06 - 0.093 (1.52mm - 2.36mm)
Mounting nut torque:
Head = 4-8 in-lb (0.45 - 0.90 Nm)
Rod end = 2-5 in-lb (0.23-0.56 Nm)

Full stroke is obtained with customer held mounting tolerance of ±0.015“ (0.38mm).

1/4“ ball joint linkage option only available with aluminium rod.

Level of damping is adjustable by hand. If you know the level of damping required we can pre-set this in the factory.

Order No.	Stroke	Damping direction	Rod end linkage	Bore dia.	Piston rod	Pull damping force N max.	Push damping force N max.	Body length
L4574.A0500-TW	0,5“	Two-way	1/8“ Ball	0,627“	Stainless	18	13	1,255“
L4574.A1000-TW	1,0“	Two-way	1/8“ Ball	0,627“	Stainless	18	13	1,755“
L4574.A1500-TW	1,5“	Two-way	1/8“ Ball	0,627“	Stainless	18	13	2,255“
L4574.A2000-TW	2,0“	Two-way	1/8“ Ball	0,627“	Stainless	18	13	2,755“
L4574.A3000-TW	3,0“	Two-way	1/8“ Ball	0,627“	Stainless	18	13	3,755“
L4574.B0500-TW	0,5“	Two-way	Loop	0,627“	Stainless	18	13	1,255“
L4574.B1000-TW	1,0“	Two-way	Loop	0,627“	Stainless	18	13	1,755“
L4574.B1500-TW	1,5“	Two-way	Loop	0,627“	Stainless	18	13	2,255“
L4574.B2000-TW	2,0“	Two-way	Loop	0,627“	Stainless	18	13	2,755“
L4574.B3000-TW	3,0“	Two-way	Loop	0,627“	Stainless	18	13	3,755“
L4574.A0500-PL	0,5“	Pull	1/8“ Ball	0,627“	Stainless	18	13	1,255“
L4574.A1000-PL	1,0“	Pull	1/8“ Ball	0,627“	Stainless	18	13	1,755“
L4574.A1500-PL	1,5“	Pull	1/8“ Ball	0,627“	Stainless	18	13	2,255“
L4574.A2000-PL	2,0“	Pull	1/8“ Ball	0,627“	Stainless	18	13	2,755“
L4574.A3000-PL	3,0“	Pull	1/8“ Ball	0,627“	Stainless	18	13	3,755“
L4574.E0500-PL	0,5“	Pull	1/4“ Ball	0,627“	Aluminium	18	13	1,260“
L4574.E1000-PL	1,0“	Pull	1/4“ Ball	0,627“	Aluminium	18	13	1,760“
L4574.E1500-PL	1,5“	Pull	1/4“ Ball	0,627“	Aluminium	18	13	2,260“
L4574.E2000-PL	2,0“	Pull	1/4“ Ball	0,627“	Aluminium	18	13	2,760“
L4574.E3000-PL	3,0“	Pull	1/4“ Ball	0,627“	Aluminium	18	13	3,760“
L4574.B0500-PL	0,5“	Pull	Loop	0,627“	Stainless	18	13	1,255“
L4574.B1000-PL	1,0“	Pull	Loop	0,627“	Stainless	18	13	1,755“
L4574.B1500-PL	1,5“	Pull	Loop	0,627“	Stainless	18	13	2,255“

Push/Pull Dashpot
0.627“ bore

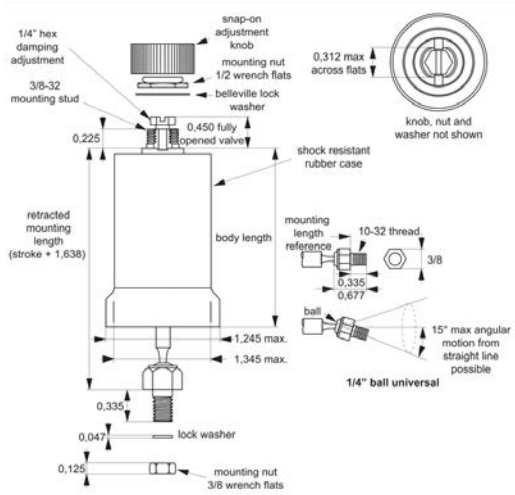
Order No.	Stroke	Damping direction	Rod end linkage	Bore dia.	Piston rod	Pull damping force N max.	Push damping force N max.	Body length
L4574.B2000-PL	2,0“	Pull	Loop	0,627“	Stainless	18	13	2,755“
L4574.B3000-PL	3,0“	Pull	Loop	0,627“	Stainless	18	13	3,755“
L4574.A0500-PS	0,5“	Push	1/8“ Ball	0,627“	Stainless	18	13	1,255“
L4574.A1000-PS	1,0“	Push	1/8“ Ball	0,627“	Stainless	18	13	1,755“
L4574.A1500-PS	1,5“	Push	1/8“ Ball	0,627“	Stainless	18	13	2,255“
L4574.A2000-PS	2,0“	Push	1/8“ Ball	0,627“	Stainless	18	13	2,755“
L4574.A3000-PS	3,0“	Push	1/8“ Ball	0,627“	Stainless	18	13	3,755“
L4574.E0500-PS	0,5“	Push	1/4“ Ball	0,627“	Aluminium	18	13	1,281“
L4574.E1000-PS	1,0“	Push	1/4“ Ball	0,627“	Aluminium	18	13	1,781“
L4574.E1500-PS	1,5“	Push	1/4“ Ball	0,627“	Aluminium	18	13	2,281“
L4574.E2000-PS	2,0“	Push	1/4“ Ball	0,627“	Aluminium	18	13	2,781“
L4574.E3000-PS	3,0“	Push	1/4“ Ball	0,627“	Aluminium	18	13	3,781“
L4574.B0500-PS	0,5“	Push	Loop	0,627“	Stainless	18	13	1,255“
L4574.B1000-PS	1,0“	Push	Loop	0,627“	Stainless	18	13	1,755“
L4574.B1500-PS	1,5“	Push	Loop	0,627“	Stainless	18	13	2,255“
L4574.B2000-PS	2,0“	Push	Loop	0,627“	Stainless	18	13	2,755“
L4574.B3000-PS	3,0“	Push	Loop	0,627“	Stainless	18	13	3,755“
L4574.E0500-TW	0,5“	Two-way	1/4“ Ball	0,627“	Aluminium	18	13	1,300“
L4574.E1000-TW	1,0“	Two-way	1/4“ Ball	0,627“	Aluminium	18	13	1,800“
L4574.E1500-TW	1,5“	Two-way	1/4“ Ball	0,627“	Aluminium	18	13	2,300“
L4574.E2000-TW	2,0“	Two-way	1/4“ Ball	0,627“	Aluminium	18	13	2,800“
L4574.E3000-TW	3,0“	Two-way	1/4“ Ball	0,627“	Aluminium	18	13	3,800“

Push/Pull Dashpot

0.945“ bore



L4576



Material

Graphite carbon piston.
Annealed borosilicate glass cylinder.
Precision fire-polished bore.
Aluminium 2024-T4 Piston rod.

Technical Notes

Damping coefficient = 0-5,25 N/(mm/s).
Friction coefficient = 0.2.
Force without side load: <1g.
Operating temperature range: -55°c to 150°c.
*If operating temperature is above +70°c, please advise at time of ordering.

Important Notes

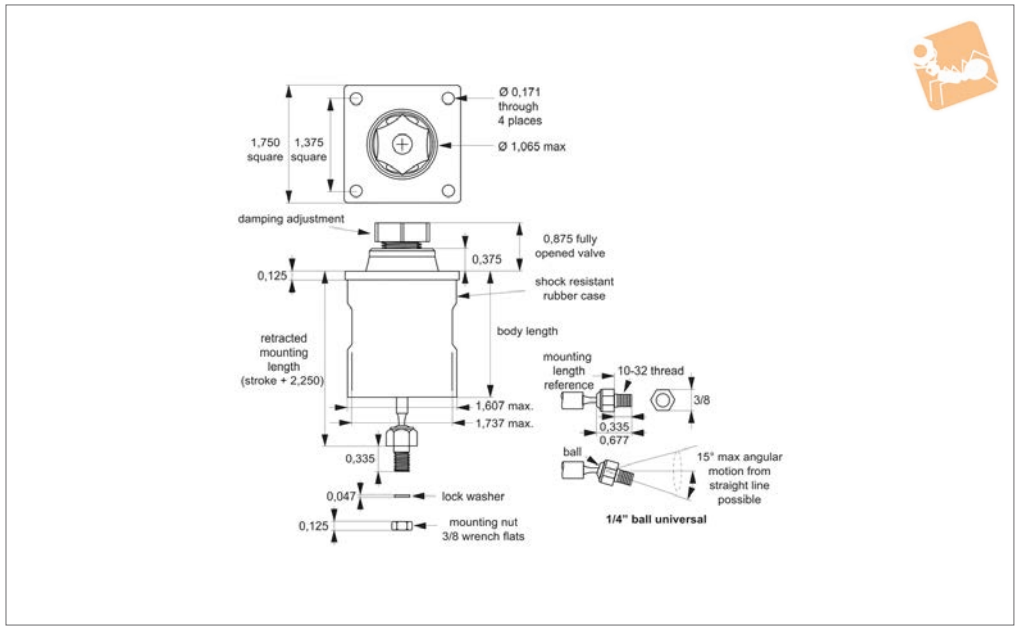
Mounting data:
Mounting hole:
Rectangular = 0.312 x 0.375 (8mm x 10mm)
Round = 0.375“ (10mm)
Suggested mounting bracket thickness = 0.06 - 0.093 (1.52mm - 2.36mm)
Mounting nut torque:
Head = 4-8 in-lb (0.45 - 0.90 Nm)
Rod end = 5-15 in-lb (0.56-1.70 Nm)

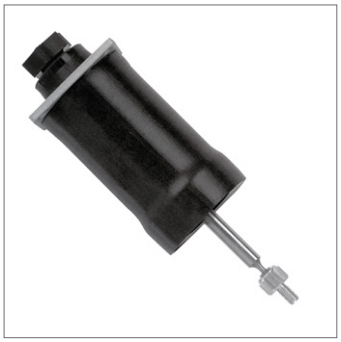
Full stroke is obtained with customer held mounting tolerance of ±0.015“ (0.38mm).

B“ ball joint linkage option only available with aluminium rod.

Level of damping is adjustable by hand. If you know the level of damping required we can pre-set this in the factory.

Order No.	Stroke	Damping direction	Rod end linkage	Bore dia.	Pull damping force N max.	Push damping force N max.	Body length
L4576.0500-TW	0,5“	Two-way	1/4“ Ball	0,945“	40	31.1	1,296“
L4576.1000-TW	1,0“	Two-way	1/4“ Ball	0,945“	40	31.1	1,796“
L4576.1500-TW	1,5“	Two-way	1/4“ Ball	0,945“	40	31.1	2,296“
L4576.2000-TW	2,0“	Two-way	1/4“ Ball	0,945“	40	31.1	2,796“
L4576.0500-PL	0,5“	Pull	1/4“ Ball	0,945“	40	31.1	1,296“
L4576.1000-PL	1,0“	Pull	1/4“ Ball	0,945“	40	31.1	1,796“
L4576.1500-PL	1,5“	Pull	1/4“ Ball	0,945“	40	31.1	2.296“
L4576.2000-PL	2,0“	Pull	1/4“ Ball	0,945“	40	31.1	2,796“
L4576.0500-PS	0,5“	Push	1/4“ Ball	0,945“	40	31.1	1,277“
L4576.1000-PS	1,0“	Push	1/4“ Ball	0,945“	40	31.1	1,777“
L4576.1500-PS	1,5“	Push	1/4“ Ball	0,945“	40	31.1	2,277“
L4576.2000-PS	2,0“	Push	1/4“ Ball	0,945“	40	31.1	2,777“





L4578

Material
Graphite carbon piston.
Annealed borosilicate glass cylinder.
Precision fire-polished bore.
Stainless steel piston rod (AISI 304).

Technical Notes
Damping coefficient = 0-7,N N/(mm/s).
Friction coefficient = 0.2.

Force without side load: <4g.
Operating temperature range: -55°c to 125°c.
*If operating temperature is above +70°c, please advise at time of ordering.

Important Notes
Mounting data:
Mounting nut torque:

Rod end = 5-15 in-lb (0.56-1.7 Nm)

Full stroke is obtained with customer held mounting tolerance of ±0.015“ (0.38mm).

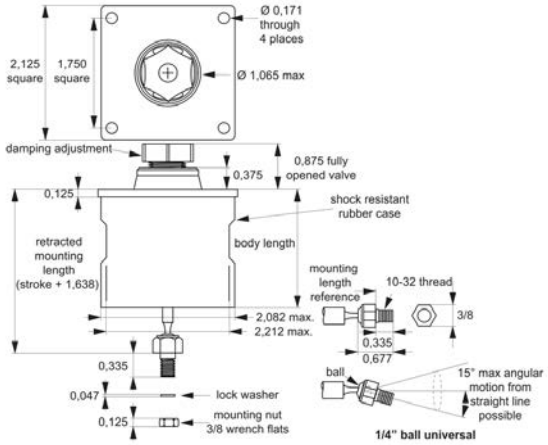
Level of damping is adjustable by hand. If you know the level of damping required we can pre-set this in the factory.

Order No.	Stroke	Damping direction	Rod end linkage	Bore dia.	Pull damping force N max.	Push damping force N max.	Body length
L4578.0500-TW	0,5“	Two-way	1/4“ Ball	1,281“	75.62	57.83	1,880“
L4578.1000-TW	1,0“	Two-way	1/4“ Ball	1,281“	75.62	57.83	2,380“
L4578.1500-TW	1,5“	Two-way	1/4“ Ball	1,281“	75.62	57.83	2,880“
L4578.2000-TW	2,0“	Two-way	1/4“ Ball	1,281“	75.62	57.83	3,380“
L4578.3000-TW	3,0“	Two-way	1/4“ Ball	1,281“	75.62	57.83	4,380“
L4578.0500-PL	0,5“	Pull	1/4“ Ball	1,281“	75.62	57.83	1,880“
L4578.1000-PL	1,0“	Pull	1/4“ Ball	1,281“	75.62	57.83	2,380“
L4578.1500-PL	1,5“	Pull	1/4“ Ball	1,281“	75.62	57.83	2,880“
L4578.2000-PL	2,0“	Pull	1/4“ Ball	1,281“	75.62	57.83	3,380“
L4578.3000-PL	3,0“	Pull	1/4“ Ball	1,281“	75.62	57.83	4,380“
L4578.0500-PS	0,5“	Push	1/4“ Ball	1,281“	75.62	57.83	1,947“
L4578.1000-PS	1,0“	Push	1/4“ Ball	1,281“	75.62	57.83	2,447“
L4578.1500-PS	1,5“	Push	1/4“ Ball	1,281“	75.62	57.83	2,947“
L4578.2000-PS	2,0“	Push	1/4“ Ball	1,281“	75.62	57.83	3,447“
L4578.3000-PS	3,0“	Push	1/4“ Ball	1,281“	75.62	57.83	4,447“

Push/Pull Dashpot
1,750“ bore



L4580



Material
Graphite carbon piston.
Annealed borosilicate glass cylinder.
Precision fire-polished bore.
Stainless steel piston rod (AISI 304).

Technical Notes
Damping coefficient = 0-7,0 N/(mm/s).
Friction coefficient = 0.2.

Force without side load: <8g.
Operating temperature range: -55°c to 125°c.
*If operating temperature is above +70°c, please advise at time of ordering.

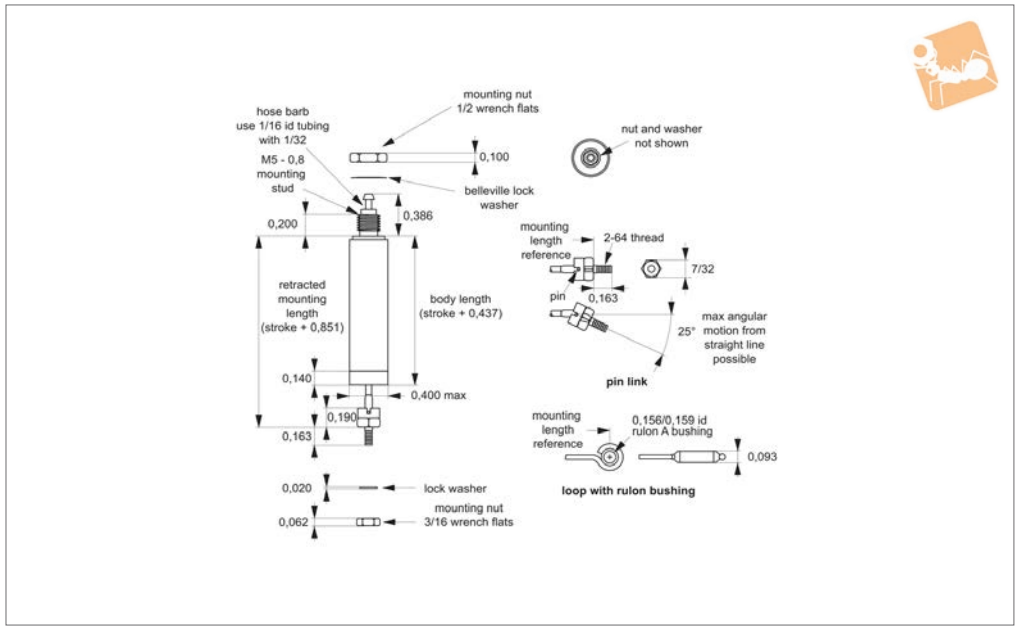
Important Notes
Mounting data:
Mounting nut torque:

Rod end = 5-15 in-lb (0.56-1.7 Nm)

Full stroke is obtained with customer held mounting tolerance of ±0.015“ (0.38mm).

Level of damping is adjustable by hand. If you know the level of damping required we can pre-set this in the factory.

Order No.	Stroke	Damping direction	Rod end linkage	Bore dia.	Pull damping force N max.	Push damping force N max.	Body length
L4580.0500-TW	0,5“	Two-way	1/4“ Ball	1,750“	133.45	106.76	1,852“
L4580.1000-TW	1,0“	Two-way	1/4“ Ball	1,750“	133.45	106.76	2,352“
L4580.2000-TW	2,0“	Two-way	1/4“ Ball	1,750“	133.45	106.76	3,352“
L4580.3000-TW	3,0“	Two-way	1/4“ Ball	1,750“	133.45	106.76	4,352“
L4580.0500-PL	0,5“	Pull	1/4“ Ball	1,750“	133.45	106.76	1,852“
L4580.1000-PL	1,0“	Pull	1/4“ Ball	1,750“	133.45	106.76	2,352“
L4580.2000-PL	2,0“	Pull	1/4“ Ball	1,750“	133.45	106.76	3,352“
L4580.3000-PL	3,0“	Pull	1/4“ Ball	1,750“	133.45	106.76	4,352“
L4580.0500-PS	0,5“	Push	1/4“ Ball	1,750“	133.45	106.76	1,987“
L4580.1000-PS	1,0“	Push	1/4“ Ball	1,750“	133.45	106.76	2,487“
L4580.2000-PS	2,0“	Push	1/4“ Ball	1,750“	133.45	106.76	3,487“
L4580.3000-PS	3,0“	Push	1/4“ Ball	1,750“	133.45	106.76	4,487“





L4590

Material
Graphite carbon piston.
Annealed borosilicate glass cylinder.
Precision fire-polished bore.
Stainless steel piston rod (AISI 304).
Shock resistant rubber case.

Technical Notes
Piston area = 0.038 in^2 (24.54mm^2)
Pressure range = full vacuum - 125 psi (0.86 MPa)
Force factor:
Piston area x pressure = output force.
Max force = 21.13N (at 0.86 MPa)
Minimum pressure differential required for actuation = 0.05 psi (345 Pa)
Friction coefficient = 0.2
Force without side load typically 0.5% - 1.5% of load.
Operating temperature range: -55°c to 150°c.
If operating at temperatures about +70°c, please advise when placing order.

Mounting data:
Suggested mounting bracket thickness = 0.050“ - 0.100“ (1.27mm - 2.54mm).
Mounting nut torque:
Head = 2-4 in-lb (0.23-0.45 Nm).
Rod end = 1-3 in-lb (0.11-0.34 Nm).

*Full stroke is obtained with customer held mounting tolerance of ±0.015“ (0.038mm).

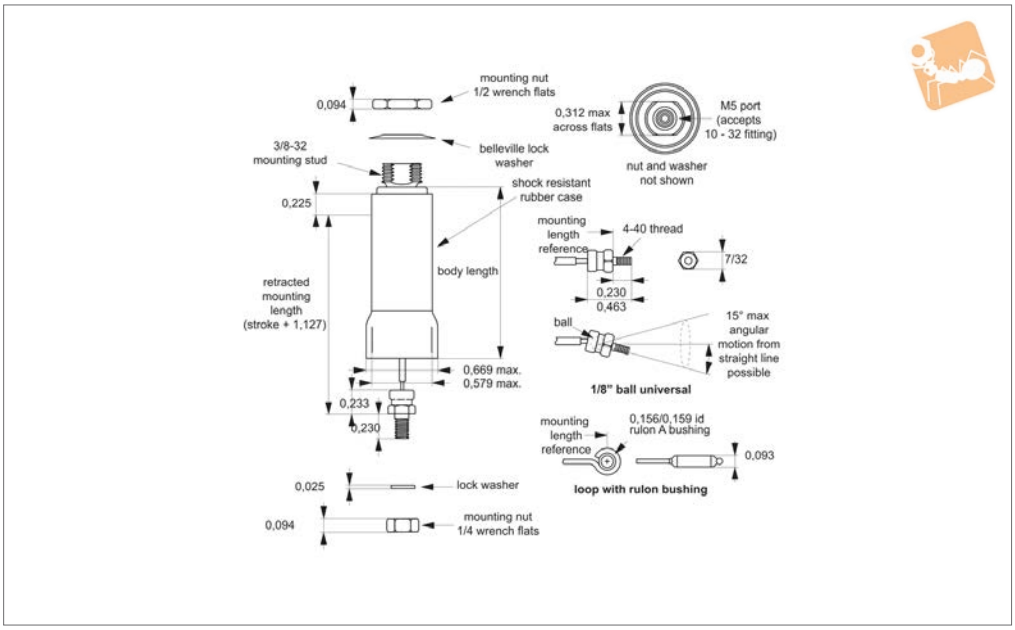
Important Notes
Please see technical pages for information on end linkages.

Order No.	Stroke	Rod end linkage	Bore dia.	Leak at 65psi SL/min max.	Leak at 125 psi SL/min max.	Body length
L4590.A0500	0,5“	Pin	0,22“	0.19	0.57	0,916“
L4590.A1000	1,0“	Pin	0,22“	0.19	0.57	1,416“
L4590.A1500	1,5“	Pin	0,22“	0.19	0.57	1,916“
L4590.A2000	2,0“	Pin	0,22“	0.19	0.57	2,416“
L4590.B0500	0,5“	Loop	0,22“	0.19	0.57	0,916“
L4590.B1000	1,0“	Loop	0,22“	0.19	0.57	1,416“
L4590.B1500	1,5“	Loop	0,22“	0.19	0.57	1,916“
L4590.B2000	2,0“	Loop	0,22“	0.19	0.57	2,416“

Actuator
0,366“ bore



L4592



Material
Graphite carbon piston.
Annealed borosilicate glass cylinder.
Precision fire-polished bore.
Stainless steel piston rod (AISI 304).
Shock resistant rubber case.

Technical Notes
Piston area = 0.701 in^2 (452.25mm^2)
Pressure range = full vacuum - 100 psi (0.69 MPa)
Force factor:
Piston area x pressure = output force.

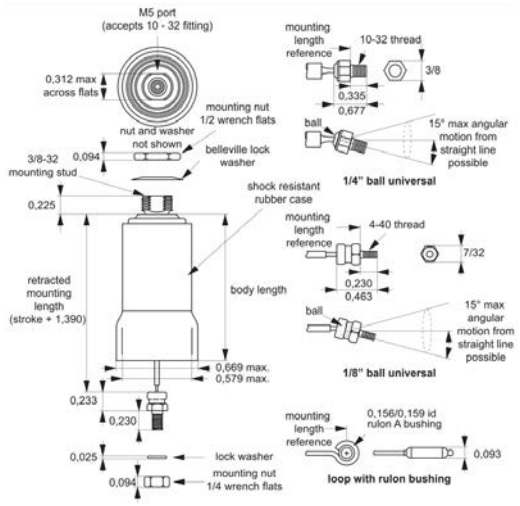
Max force = 46.83N (at 0.69 MPa)
Minimum pressure differential required for actuation = 0.05 psi (345 Pa)
Friction coefficient = 0.2
Force without side load typically 0.5% - 1.5% of load.
Operating temperature range: -55°C to 150°C.
If operating at temperatures about +70°C, please advise when placing order.

Mounting data:

Mounting hole:
Round 0.375“ (10mm)
Suggested mounting bracket thickness = 0.060“ - 0.125“ (1.52mm - 3.18mm).
Mounting nut torque:
Head = 4-8 in-lb (0.45-0.90 Nm).
Rod end = 2-5 in-lb (0.23-0.56 Nm).
Fitting = 12 in-lb max

*Full stroke is obtained with customer held mounting tolerance of ±0.015“ (0.038mm).

Order No.	Stroke	Rod end linkage	Bore dia.	Leak at 50 psi SL/min max.	Leak at 100 psi SL/min max.	Body length
L4592.A0500	0,5“	1/8“ Ball	0,366“	0.36	1.17	1,092“
L4592.A1000	1,0“	1/8“ Ball	0,366“	0.36	1.17	1,492“
L4592.A1500	1,5“	1/8“ Ball	0,366“	0.36	1.17	2,092“
L4592.A2000	2,0“	1/8“ Ball	0,366“	0.36	1.17	2,492“
L4592.A3000	3,0“	1/8“ Ball	0,366“	0.36	1.17	3,492“
L4592.A4000	4,0“	1/8“ Ball	0,366“	0.36	1.17	4,492“
L4592.B0500	0,5“	Loop	0,366“	0.36	1.17	1.092
L4592.B1000	1,0“	Loop	0,366“	0.36	1.17	1,592“
L4592.B1500	1,5“	Loop	0,366“	0.36	1.17	2,092“
L4592.B2000	2,0“	Loop	0,366“	0.36	1.17	2,592“
L4592.B3000	3,0“	Loop	0,366“	0.36	1.17	3,592“
L4592.B4000	4,0“	Loop	0,366“	0.36	1.17	4,592“





L4594

Material

Graphite carbon piston.
Annealed borosilicate glass cylinder.
Precision fire-polished bore.
Stainless steel piston rod (AISI 304) or Aluminium 2024-T4.
Shock resistant rubber case.

Technical Notes

Piston area = 0.309 in² (199.20mm²)
Pressure range = full vacuum - 100 psi (0.69 MPa)
Force factor:
Piston area x pressure = output force.
Max force = 137.45N (at 0.69 MPa)

Minimum pressure differential required for actuation = 0.05 psi (345 Pa)
Friction coefficient = 0.2
Force without side load typically 0.5% - 1.5% of load.
Operating temperature range: -55°c to 150°c.
If operating at temperatures about +70°c, please advise when placing order.

Mounting data:
Mounting hole:
Rectangular: 0.312“ x 0.375“ (8mm x 10mm)
Round: 0.375“ (10mm)
Suggested mounting bracket thickness = 0.060“ - 0.125“ (1.52mm - 3.18mm).
Mounting nut torque:
Head = 4-8 in-lb (0.45-0.90Nm).
Rod end = 2-5 in-lb (0.23-0.56 Nm).
Fitting = 12 in-lb max.

*Full stroke is obtained with customer held mounting tolerance of ±0.015“ (0.038mm).

Important Notes

Stainless steel piston rod not for use above 35 psi.

Order No.	Stroke	Rod end linkage	Piston type	Bore dia.	Leak at 50 psi SL/min max.	Leak at 100 psi SL/min max.	Body length
L4594.A0500	0,5“	1/8 Ball	Stainless	0,627“	-	-	1,255“
L4594.A1000	1,0“	1/8 Ball	Stainless	0,627“	-	-	1,755“
L4594.A1500	1,5“	1/8 Ball	Stainless	0,627“	-	-	2,255“
L4594.A2000	2,0“	1/8 Ball	Stainless	0,627“	-	-	2,755“
L4594.A3000	3,0“	1/8 Ball	Stainless	0,627“	-	-	3,755“
L4594.A4000	4,0“	1/8 Ball	Stainless	0,627“	-	-	4,755“
L4594.A5000	5,0“	1/8 Ball	Stainless	0,627“	-	-	5,755“
L4594.A6000	6,0“	1/8 Ball	Stainless	0,627“	-	-	6,755“
L4594.B0500	0,5“	Loop	Stainless	0,627“	-	-	1,255“
L4594.B1000	1,0“	Loop	Stainless	0,627“	-	-	1,755“
L4594.B1500	1,5“	Loop	Stainless	0,627“	-	-	2,255“
L4594.B2000	2,0“	Loop	Stainless	0,627“	-	-	2,755“
L4594.B3000	3,0“	Loop	Stainless	0,627“	-	-	3,755“
L4594.B4000	4,0“	Loop	Stainless	0,627“	-	-	4,755“
L4594.B5000	5,0“	Loop	Stainless	0,627“	-	-	5,755“
L4594.B6000	6,0“	Loop	Stainless	0,627“	-	-	6,755“
L4594.E0500	0,5“	1/4 Ball	Aluminium	0,627“	0.74	2.78	1,300“
L4594.E1000	1,0“	1/4 Ball	Aluminium	0,627“	0.74	2.78	1,800“
L4594.E1500	1,5“	1/4 Ball	Aluminium	0,627“	0.74	2.78	2,300“
L4594.E2000	2,0“	1/4 Ball	Aluminium	0,627“	0.74	2.78	2,800“
L4594.E3000	3,0“	1/4 Ball	Aluminium	0,627“	0.74	2.78	3,800“
L4594.E4000	4,0“	1/4 Ball	Aluminium	0,627“	0.74	2.78	4,800“

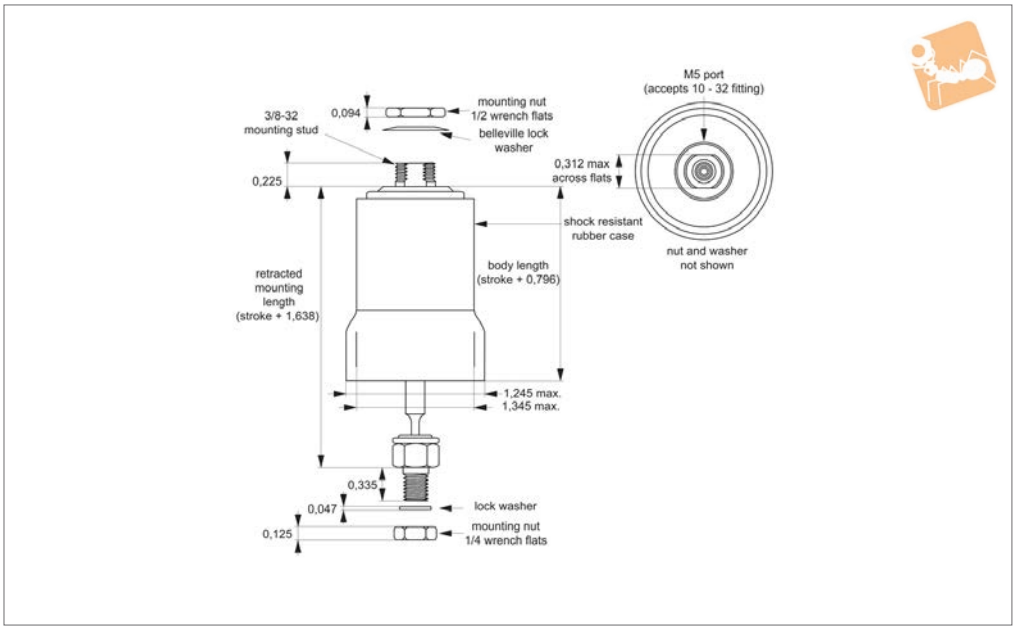


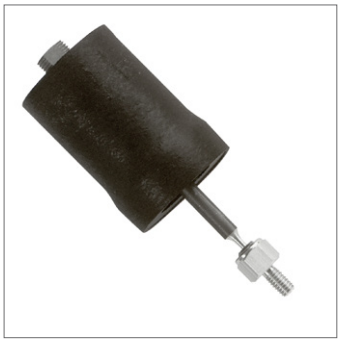
Actuator

0,627“ bore



Order No.	Stroke	Rod end linkage	Piston type	Bore dia.	Leak at 50 psi SL/min max.	Leak at 100 psi SL/min max.	Body length
L4594.E5000	5,0“	1/4 Ball	Aluminium	0,627“	0.74	2.78	5,800“
L4594.E6000	6,0“	1/4 Ball	Aluminium	0,627“	0.74	2.78	6,800“





L4596

Material

Graphite carbon piston.
Annealed borosilicate glass cylinder.
Precision fire-polished bore.
Aluminium 2024-T4 piston rod.
Shock resistant rubber case.

Technical Notes

Piston area = 0.701 in² (452.25mm²)
Pressure range = full vacuum - 100 psi (0.69 MPa)
Force factor:
Piston area x pressure = output force.
Max force = 312.05N (at 0.69 MPa)

Minimum pressure differential required for actuation = 0.05 psi (345 Pa)
Friction coefficient = 0.2
Force without side load typically 0.5% - 1.5% of load.
Operating temperature range: -55°c to 150°c.
If operating at temperatures about +70°c, please advise when placing order.

Mounting data:
Mounting hole:
Rectangular: 0.312“ x 0.375“ (8mm x 10mm)
Round: 0.375“ (10mm).

Suggested mounting bracket thickness = 0.060“ - 0.125“ (1.52mm - 3.18mm).
Mounting nut torque:
Head = 4-8 in-lb (0.45-0.90 Nm).
Rod end = 5-15 in-lb (0.56-1.70 Nm
Fitting = 12 in-lb max.

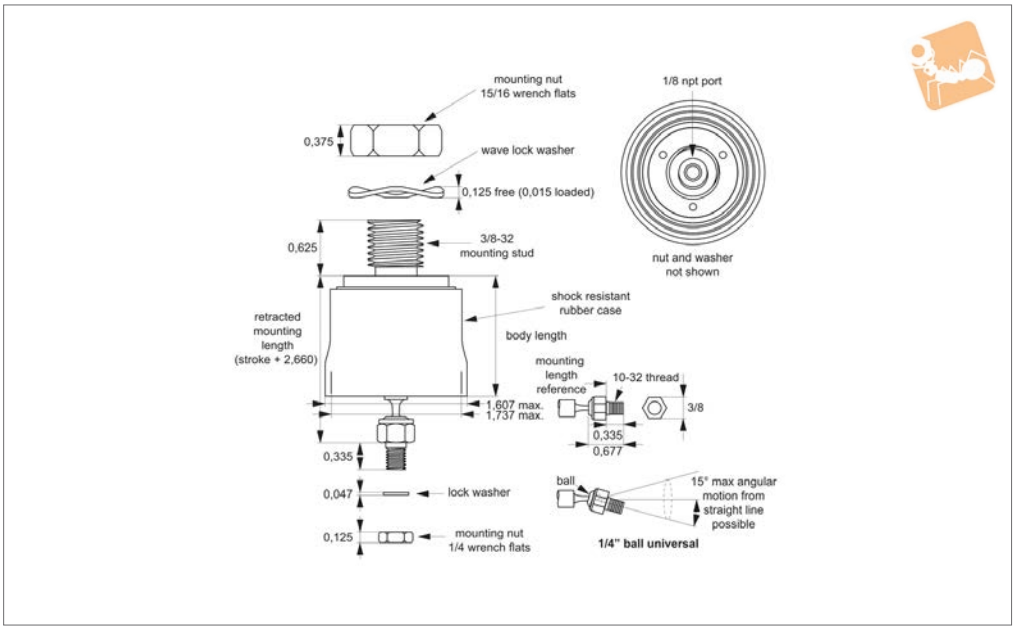
*Full stroke is obtained with customer held mounting tolerance of ±0.015“ (0.038mm).

Order No.	Stroke	Rod end linkage	Bore dia.	Leak at 50 psi SL/min max.	Leak at 100 psi SL/min max.	Body length
L4596.0500	0,5“	1/4“ Ball	0,945“	1.06	5.60	1,296“
L4596.1000	1,0“	1/4“ Ball	0,945“	1.06	5.60	1,796“
L4596.2000	2,0“	1/4“ Ball	0,945“	1.06	5.60	2,796“
L4596.3000	3,0“	1/4“ Ball	0,945“	1.06	5.60	3,796“
L4596.4000	4,0“	1/4“ Ball	0,945“	1.06	5.60	4,796“
L4596.5000	5,0“	1/4“ Ball	0,945“	1.06	5.60	5,796“
L4596.6000	6,0“	1/4“ Ball	0,945“	1.06	5.60	6,796“

Actuator
1.281“ bore



L4598



Material
Graphite carbon piston.
Annealed borosilicate glass cylinder.
Precision fire-polished bore.
Stainless steel piston rod (AISI 304).
Shock resistant rubber case.

Technical Notes
Piston area = 1.288 in^2 (830.97mm^2)
Pressure range = full vacuum - 100 psi (0.69 MPa)
Force factor:
Piston area x pressure = output force.

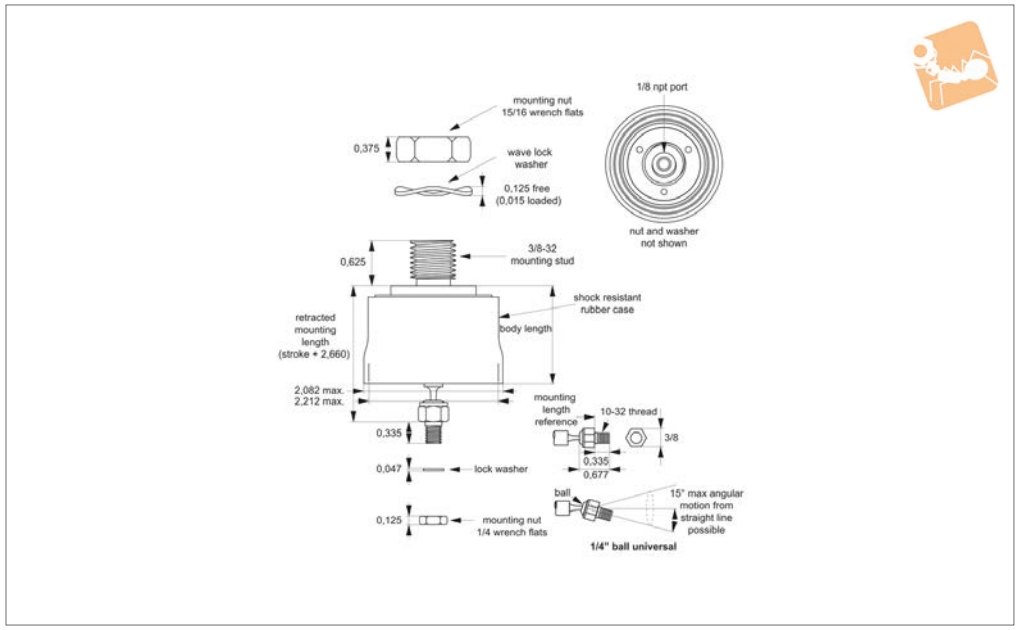
Max force = 573.37N (at 0.69 MPa)
Minimum pressure differential required for actuation = 0.05 psi (345 Pa)
Friction coefficient = 0.2
Force without side load typically 0.5% - 1.5% of load.
Operating temperature range: -55°C to 150°C.
If operating at temperatures about +70°C, please advise when placing order.

Mounting data:

Mounting hole:
Round: 0.625“ (16mm).
Suggested mounting bracket thickness = 0.250“ max (6.35mm).
Mounting nut torque:
Head = 40-60 in-lb (4.5-6.8 Nm).
Rod end = 5-15 in-lb (0.56-1.70 Nm).

*Full stroke is obtained with customer held mounting tolerance of ±0.015“ (0.038mm).

Order No.	Stroke	Rod end linkage	Bore dia.	Leak at 50 psi SL/min max.	Leak at 100 psi SL/min max.	Body length
L4598.0500	0,5“	1/4“ Ball	1,281“	2.12	9.6	1,725“
L4598.1000	1,0“	1/4“ Ball	1,281“	2.12	9.6	2,225“
L4598.2000	2,0“	1/4“ Ball	1,281“	2.12	9.6	3,225“
L4598.3000	3,0“	1/4“ Ball	1,281“	2.12	9.6	4,225“
L4598.4000	4,0“	1/4“ Ball	1,281“	2.12	9.6	5,225“
L4598.5000	5,0“	1/4“ Ball	1,281“	2.12	9.6	6,225“
L4598.6000	6,0“	1/4“ Ball	1,281“	2.12	9.6	7,225“





L4600

Material

Graphite carbon piston.
Annealed borosilicate glass cylinder.
Precision fire-polished bore.
Stainless steel piston rod (AISI 304).
Shock resistant rubber case.

Technical Notes

Piston area = 2.405 in² (1551.61mm²)
Pressure range = full vacuum - 100 psi (0.69 MPa)
Force factor:
Piston area x pressure = output force.
Max force = 1070.61N (at 0.69 MPa)
Minimum pressure differential required for actuation = 0.05 psi (345 Pa)
Friction coefficient = 0.2
Force without side load typically 0.5% - 1.5% of load.
Operating temperature range: -55°c to 150°c.
If operating at temperatures about +70°c, please advise when placing order.

Mounting data:

Mounting hole:
Round: 0.625“ min (16mm).
Suggested mounting bracket thickness = 0.250“ max (6.35mm).
Mounting nut torque:
Head = 40-60 in-lb (4.5-6.8 Nm).
Rod end = 5-15 in-lb (0.56-1.70 Nm).

*Full stroke is obtained with customer held mounting tolerance of ±0.015“ (0.038mm).

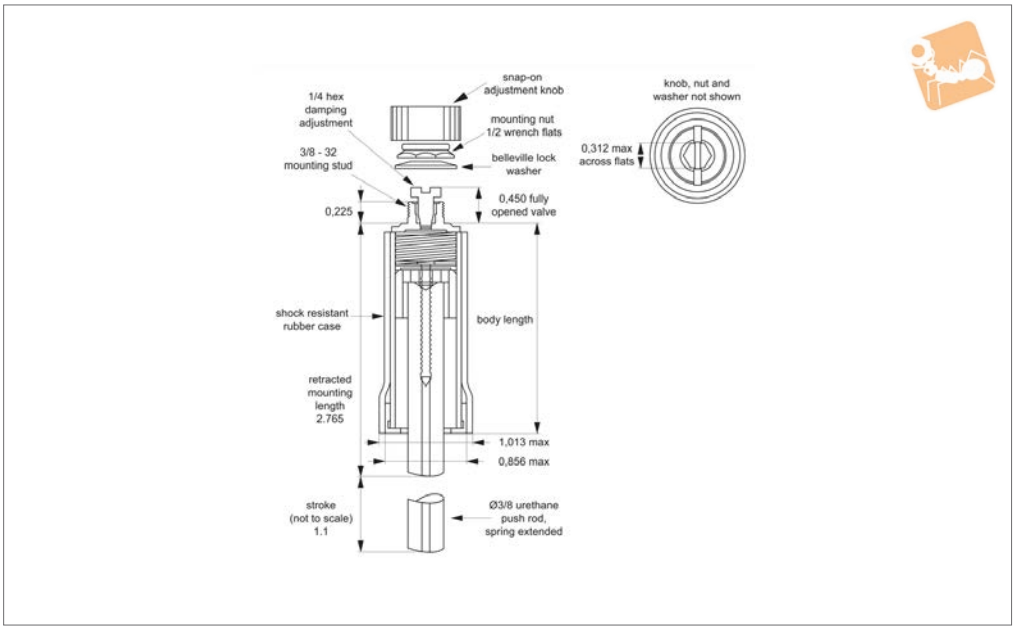
Order No.	Stroke	Rod end linkage	Bore dia.	Leak at 50 psi SL/min max.	Leak at 100 psi SL/min max.	Body length
L4600.0500	0,5“	1/4“ Ball	1,75“	3.6	15.0	1,697“
L4600.1000	1,0“	1/4“ Ball	1,75“	3.6	15.0	2,197“
L4600.2000	2,0“	1/4“ Ball	1,75“	3.6	15.0	3,197“
L4600.3000	3,0“	1/4“ Ball	1,75“	3.6	15.0	4,197“
L4600.4000	4,0“	1/4“ Ball	1,75“	3.6	15.0	5,197“
L4600.5000	5,0“	1/4“ Ball	1,75“	3.6	15.0	6,197“
L4600.6000	6,0“	1/4“ Ball	1,75“	3.6	15.0	7,197“

Shock Absorber

0.627“ bore



L4620

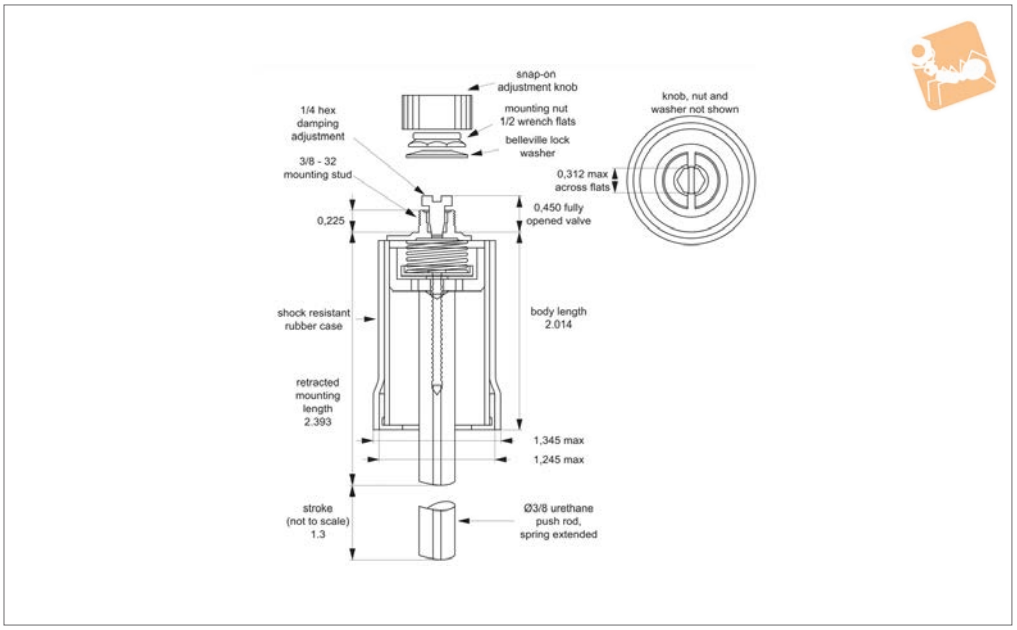


Material
Shock resistant rubber case.
Urethane push rod.
Pyrex glass cylinder.

Technical Notes
Max operating temperature: -55°c to +150°c.
(Please advise if operating at temperatures over +70°c).
Piston friction force without side load = less than 1 gram.

Mounting data:
Mounting hole:
Rectangular: 0.312“ x 0.375“ (8mm x 10mm)
Round: 0.375“ (10mm)
Suggested mounting bracket thickness: 0.060“ - 0.125“ (1.52 - 3.18mm)
Mounting nut torque:
Head: 4-8 in-lb (0.45 to 0.90 Nm)
Level of shock absorption adjustable by hand.

Order No.	Stroke	Energy capacity ft·lb	Spring force extended lb	Spring force retracted lb	Push rod reset time with valve fully open m/s	Push rod reset time with valve fully closed m/s	Friction coefficient
L4620.627	1,1“	0-0,3	0,16	0,28	30	50	0,2





L4622

Material

Shock resistant rubber case.
Urethane push rod.
Pyrex glass cylinder.

Technical Notes

Max operating temperature: -55°C to +150°C.
(Please advise if operating at temperatures over +70°C).
Piston friction force without side load = less than 1 gram.

Mounting data:
Mounting hole:
Rectangular: 0.312“ x 0.375“ (8mm x 10mm)
Round: 0.375“ (10mm)
Suggested mounting bracket thickness: 0.060“ - 0.125“ (1.52 - 3.18mm)
Mounting nut torque:
Head: 4-8 in-lb (0.45 to 0.90 Nm)
Level of shock absorption adjustable by hand.

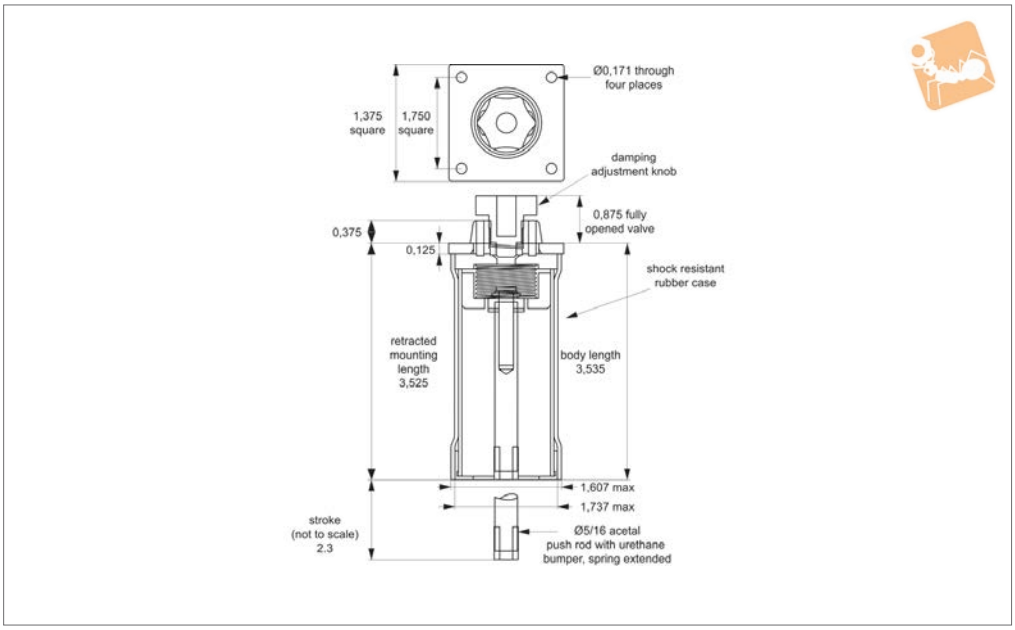
Order No.	Stroke	Energy capacity ft·lb	Spring force extended lb	Spring force retracted lb	Push rod reset time with valve fully open m/s	Push rod reset time with valve fully closed m/s	Friction coefficient
L4622.945	1,3	0-0,75	0,13	0,27	60	90	0,2

Shock Absorber

1.281“ bore



L4624



Material

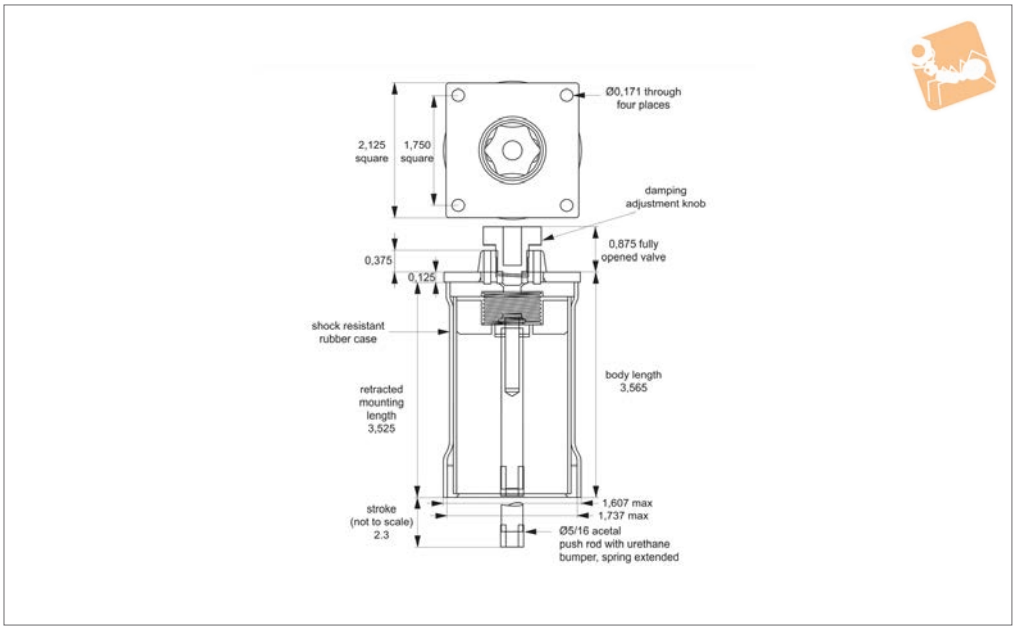
Shock resistant rubber case.
Urethane push rod.
Pyrex glass cylinder.

Technical Notes

Max operating temperature: -55°c to +150°c.
(Please advise if operating at temperatures over +70°c).
Piston friction force without side load = less than 4 grams.

Level of shock absorption adjustable by hand.

Order No.	Stroke	Energy capacity ft·lb	Spring force extended lb	Spring force retracted lb	Push rod reset time with valve fully open m/s	Push rod reset time with valve fully closed m/s	Friction coefficient
L4624.1281	2,3“	0-3	0,25	0,5	70	150	0,2





L4626

Material
Shock resistant rubber case.
Urethane push rod.
Pyrex glass cylinder.

Technical Notes
Max operating temperature: -55°c to +150°c.
(Please advise if operating at temperatures over +70°c).
Piston friction force without side load = less than 8 gram.

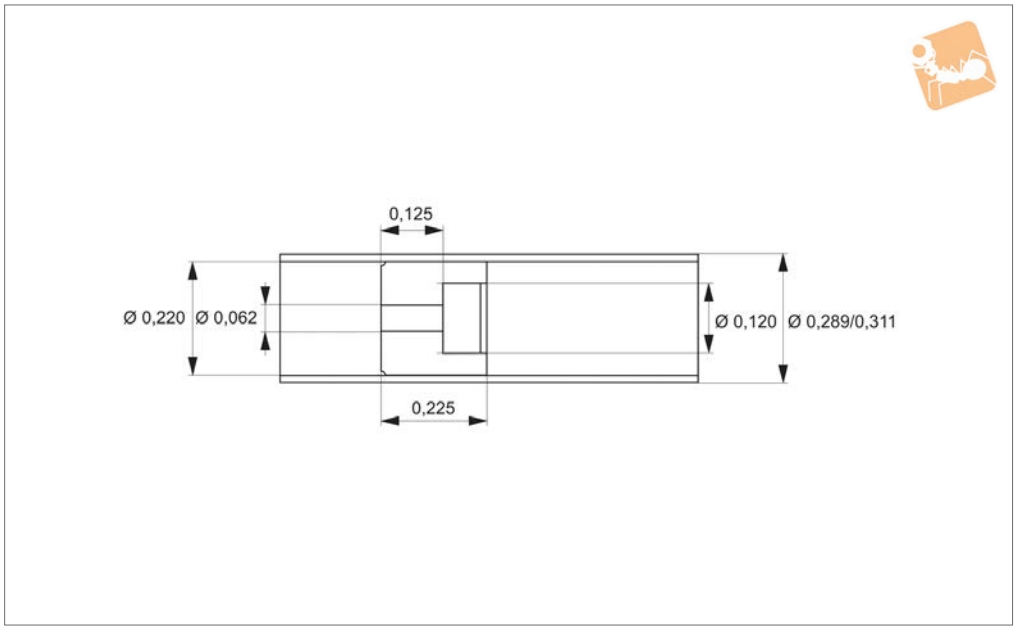
Level of shock absorption adjustable by hand.

Order No.	Stroke	Energy capacity ft·lb	Spring force extended lb	Spring force retracted lb	Push rod reset time with valve fully open m/s	Push rod reset time with valve fully closed m/s	Friction coefficient
L4626.1750	2,3“	0-7	0,25	0,5	161	430	0,2

Cylinder / Piston Set
0,22“ bore



L4630

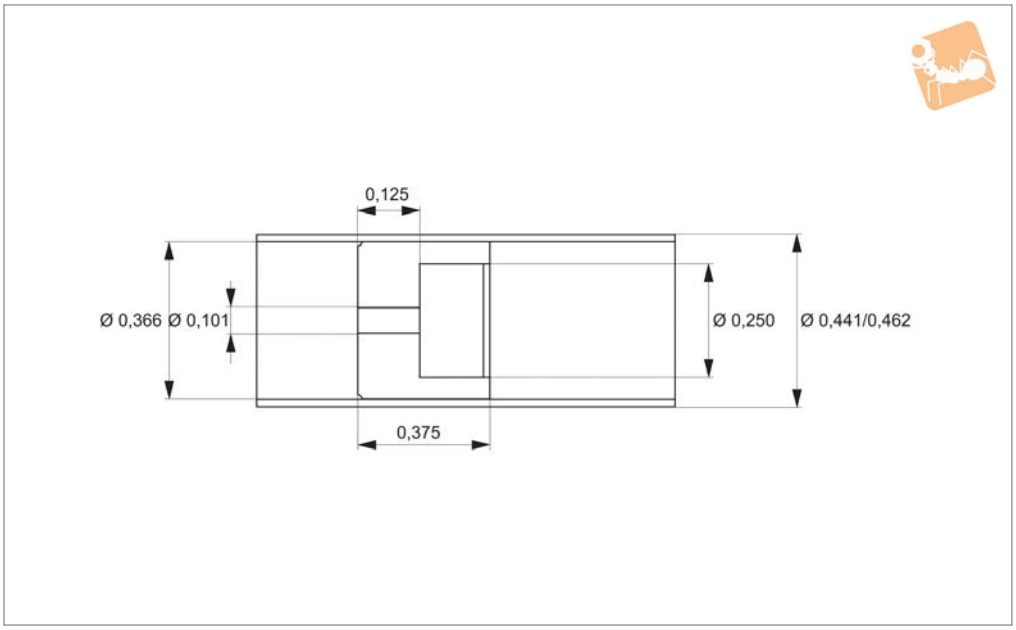


Material
Piston: Carbon graphite
Cylinder: Glass

Technical Notes
Max operating temp = 260°C

Important Notes
Specials available on request.

Order No.	Stroke	Bore dia.	Outside dia.	Cylinder length	Piston length	Piston area in²	Friction W/O sideload g	Cylinder weight g	Piston weight g
L4630.0500	0,5“	0.220	0.311	0,825“	0.225	0.038	< 1	1.39	0.20
L4630.1000	1,0“	0.220	0.311	1,325“	0.225	0.038	< 1	1.39	0.20
L4630.2000	2,0“	0.220	0.311	2,325“	0.225	0.038	< 1	1.39	0.20
L4630.3000	3,0“	0.220	0.311	3,325“	0.225	0.038	< 1	1.39	0.20
L4630.4000	4,0“	0.220	0.311	4,325“	0.225	0.038	< 1	1.39	0.20
L4630.5000	5,0“	0.220	0.311	5,325“	0.225	0.038	< 1	1.39	0.20
L4630.6000	6,0“	0.220	0.311	6,325“	0.225	0.038	< 1	1.39	0.20
L4630.7000	7,0“	0.220	0.311	7,325“	0.225	0.038	< 1	1.39	0.20
L4630.8000	8,0“	0.220	0.311	8,325“	0.225	0.038	< 1	1.39	0.20





L4632

Material
Piston: Carbon graphite
Cylinder: Glass

Technical Notes
Max operating temp = 260°C

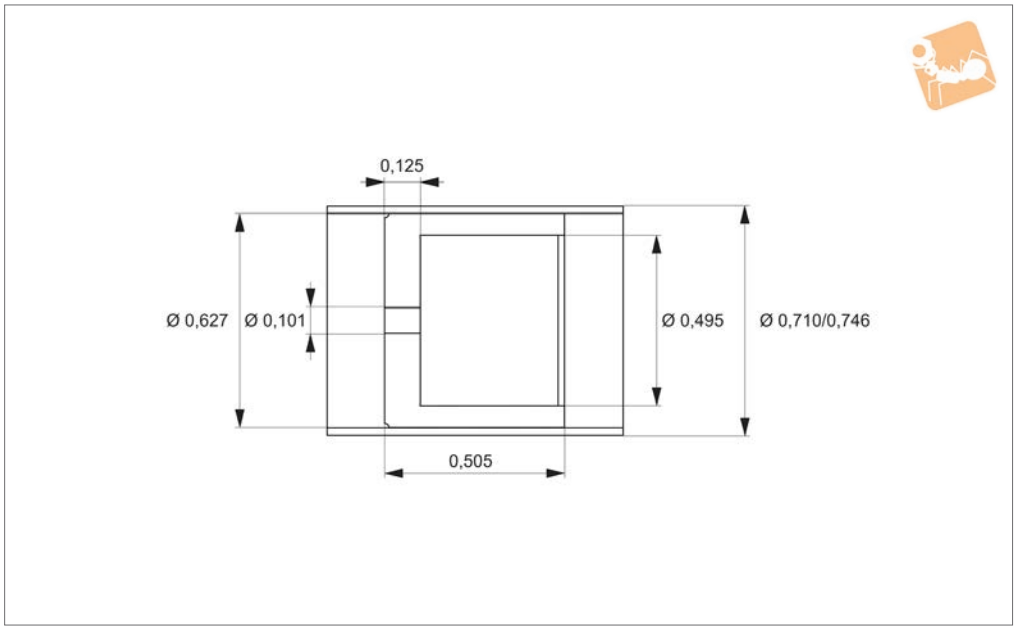
Important Notes
Specials available on request.

Order No.	Stroke	Bore dia.	Outside dia.	Cylinder length	Piston length	Piston area in²	Friction W/O sideload g	Cylinder weight g	Piston weight g
L4632.0500	0,5“	0.336	0.462	0,975“	0.375	0.105	< 1	2.29	0.77
L4632.1000	1,0“	0.336	0.462	1,475“	0.375	0.105	< 1	2.29	0.77
L4632.2000	2,0“	0.336	0.462	2,475“	0.375	0.105	< 1	2.29	0.77
L4632.3000	3,0“	0.336	0.462	3,475“	0.375	0.105	< 1	2.29	0.77
L4632.4000	4,0“	0.336	0.462	4,475“	0.375	0.105	< 1	2.29	0.77
L4632.5000	5,0“	0.336	0.462	5,475“	0.375	0.105	< 1	2.29	0.77
L4632.6000	6,0“	0.336	0.462	6,475“	0.375	0.105	< 1	2.29	0.77
L4632.7000	7,0“	0.336	0.462	7,475“	0.375	0.105	< 1	2.29	0.77
L4632.8000	8,0“	0.336	0.462	8,475“	0.375	0.105	< 1	2.29	0.77

Cylinder / Piston Set
0,627“ bore



L4634

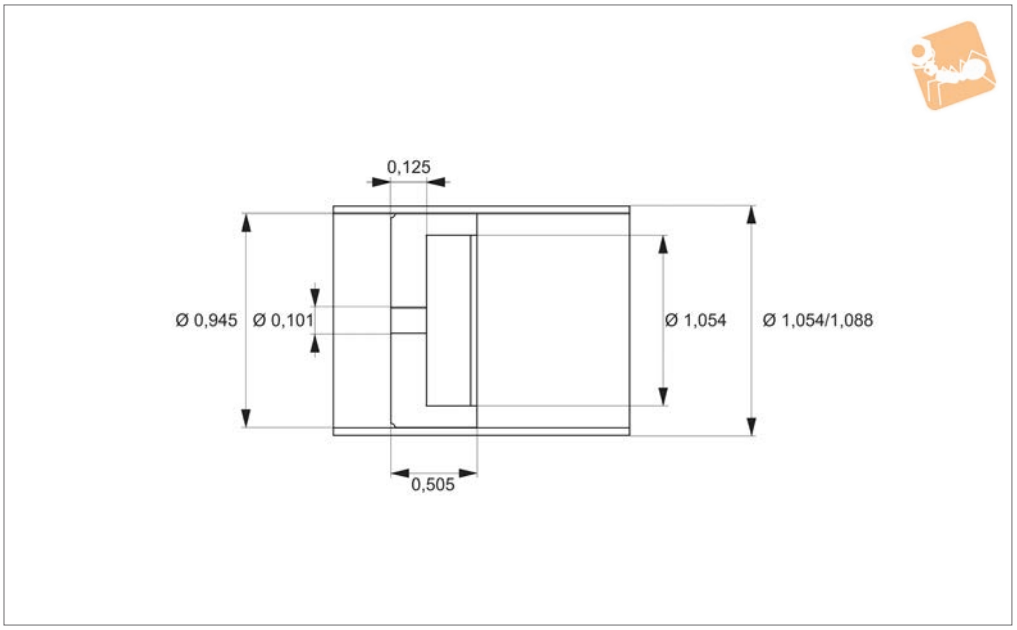


Material
Piston: Carbon graphite
Cylinder: Glass

Technical Notes
Max operating temp = 260°C

Important Notes
Specials available on request.

Order No.	Stroke	Bore dia.	Outside dia.	Cylinder length	Piston length	Piston area in²	Friction W/O sideload g	Cylinder weight g	Piston weight g
L4634.0500	0.5“	0.627	1,246“	0.605	0.505	0.309	< 1	4.71	2.37
L4634.1000	1,0“	0.627	1,746“	0.605	0.505	0.309	< 1	4.71	2.37
L4634.2000	2,0“	0.627	2,746“	0.605	0.505	0.309	< 1	4.71	2.37
L4634.3000	3,0“	0.627	3,746“	0.605	0.505	0.309	< 1	4.71	2.37
L4634.4000	4,0“	0.627	4,746“	0.605	0.505	0.309	< 1	4.71	2.37
L4634.5000	5,0“	0.627	5,746“	0.605	0.505	0.309	< 1	4.71	2.37
L4634.6000	6,0“	0.627	6,746“	0.605	0.505	0.309	< 1	4.71	2.37
L4634.7000	7,0“	0.627	7,746“	0.605	0.505	0.309	< 1	4.71	2.37
L4634.8000	8,0“	0.627	8,746“	0.605	0.505	0.309	< 1	4.71	2.37





L4636

Material
Piston: Carbon graphite
Cylinder: Glass

Technical Notes
Max operating temp = 260°C

Important Notes
Specials available on request.

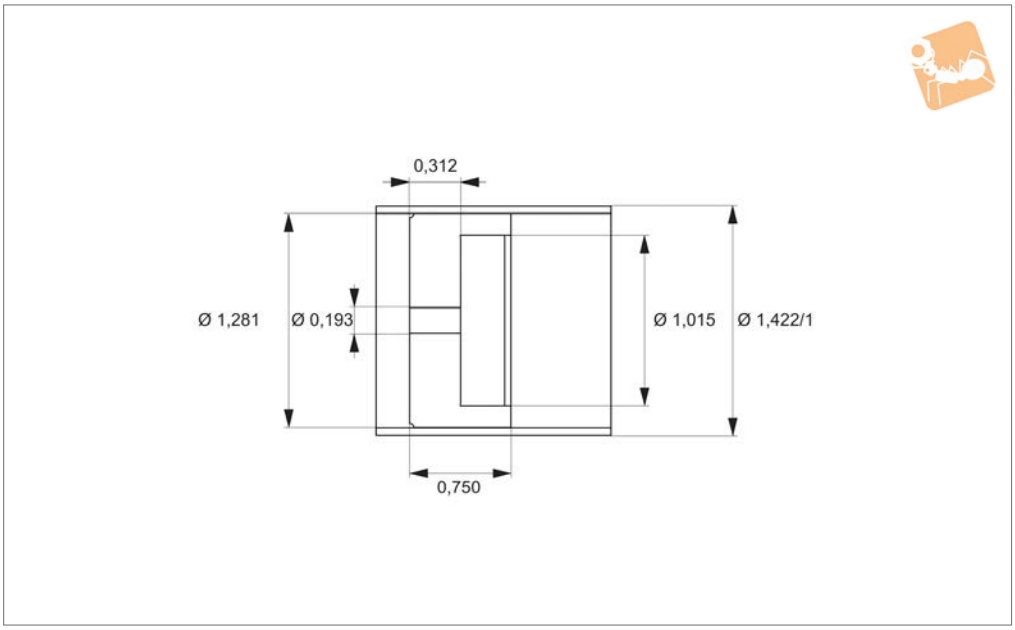
Order No.	Stroke	Bore dia.	Outside dia.	Cylinder length	Piston length	Piston area in²	Friction W/O sideload g	Cylinder weight g	Piston weight g
L4636.0500	0,5“	0.945	1.088	1,105“	0.505	0.701	< 1	8.39	4.66
L4636.1000	1,0“	0.945	1.088	1,605“	0.505	0.701	< 1	8.39	4.66
L4636.2000	2,0“	0.945	1.088	2,605“	0.505	0.701	< 1	8.39	4.66
L4636.3000	3,0“	0.945	1.088	3,605“	0.505	0.701	< 1	8.39	4.66
L4636.4000	4,0“	0.945	1.088	4,605“	0.505	0.701	< 1	8.39	4.66
L4636.5000	5,0“	0.945	1.088	5,605“	0.505	0.701	< 1	8.39	4.66
L4636.6000	6,0“	0.945	1.088	6,605“	0.505	0.701	< 1	8.39	4.66
L4636.7000	7,0“	0.945	1.088	7,605“	0.505	0.701	< 1	8.39	4.66
L4636.8000	8,0“	0.945	1.088	8,605“	0.505	0.701	< 1	8.39	4.66

Cylinder / Piston Set

1,281“ bore



L4638

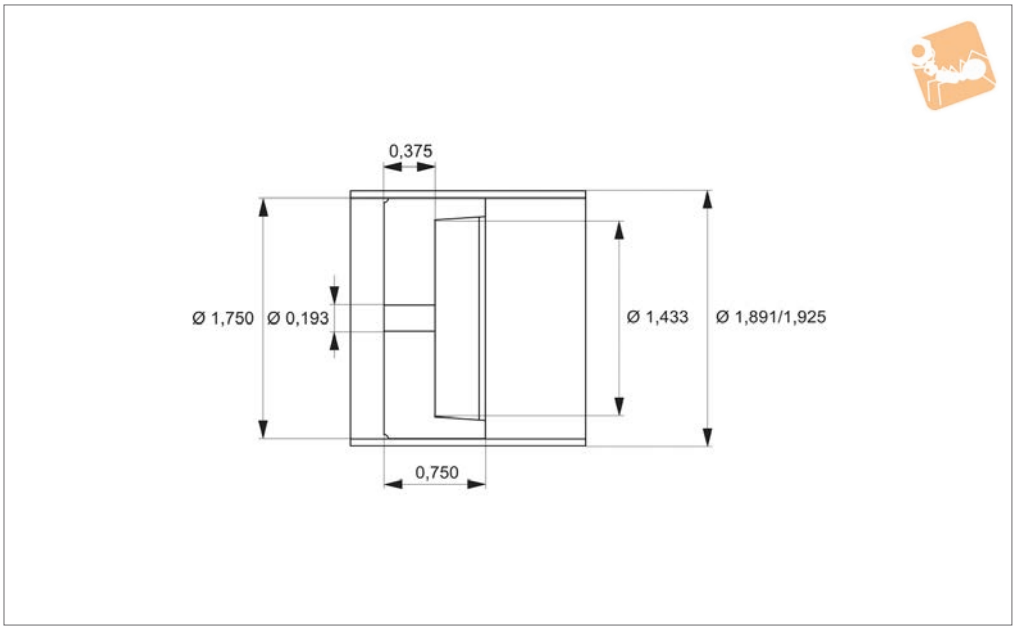


Material
Piston: Carbon graphite
Cylinder: Glass

Technical Notes
Max operating temp = 260°C

Important Notes
Specials available on request.

Order No.	Stroke	Bore dia.	Outside dia.	Cylinder length	Piston length	Piston area in^2	Friction g W/O sideload	Cylinder weight g	Piston weight g
L4638.0500	0,5“	1.281	1.456	1,350“	0.750	1.289	< 1	13.82	17.75
L4638.1000	1,0“	1.281	1.456	1,850“	0.750	1.289	< 1	13.82	17.75
L4638.2000	2,0“	1.281	1.456	2,850“	0.750	1.289	< 1	13.82	17.75
L4638.3000	3,0“	1.281	1.456	3,850“	0.750	1.289	< 1	13.82	17.75
L4638.4000	4,0“	1.281	1.456	4,850“	0.750	1.289	< 1	13.82	17.75
L4638.5000	5,0“	1.281	1.456	5,850“	0.750	1.289	< 1	13.82	17.75
L4638.6000	6,0“	1.281	1.456	6,850“	0.750	1.289	< 1	13.82	17.75
L4638.7000	7,0“	1.281	1.456	7,850“	0.750	1.289	< 1	13.82	17.75
L4638.8000	8,0“	1.281	1.456	8,850“	0.750	1.289	< 1	13.82	17.75





L4640

Material
Piston: Carbon graphite
Cylinder: Glass

Technical Notes
Max operating temp = 260°C

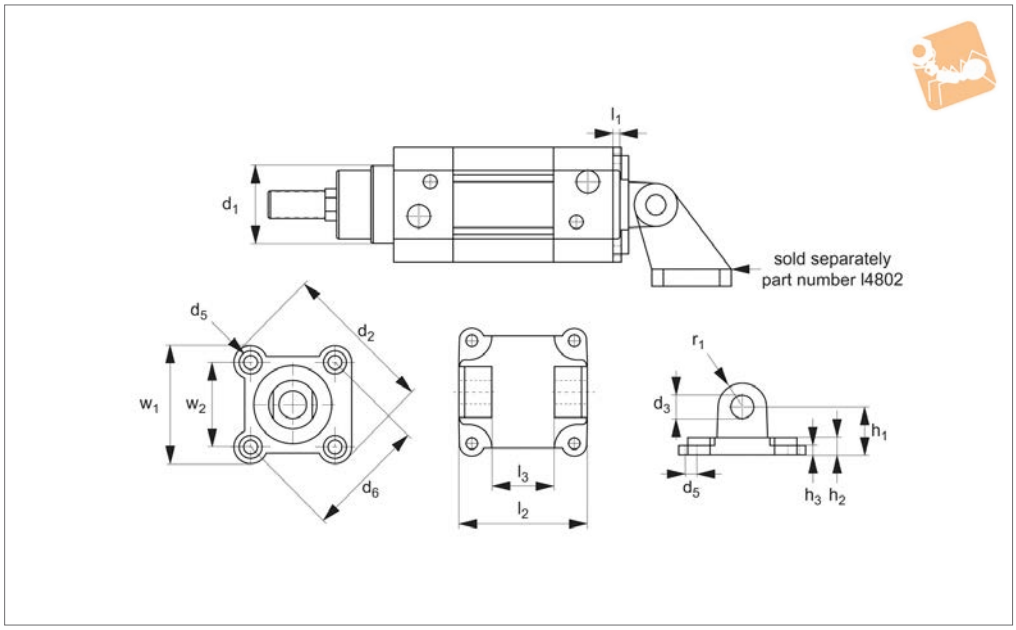
Important Notes
Specials available on request.

Order No.	Stroke	Bore dia.	Outside dia.	Cylinder length	Piston length	Piston area in²	Friction W/O sideload g	Cylinder weight g	Piston weight g
L4640.0500	0,5“	1.750	1.925	1.350	0.750	2.406	< 1	18.56	34.60
L4640.1000	1,0“	1.750	1.925	1.850	0.750	2.406	< 1	18.56	34.60
L4640.2000	2,0“	1.750	1.925	2.850	0.750	2.406	< 1	18.56	34.60
L4640.3000	3,0“	1.750	1.925	3.850	0.750	2.406	< 1	18.56	34.60
L4640.4000	4,0“	1.750	1.925	4.850	0.750	2.406	< 1	18.56	34.60
L4640.5000	5,0“	1.750	1.925	5.850	0.750	2.406	< 1	18.56	34.60
L4640.6000	6,0“	1.750	1.925	6.850	0.750	2.406	< 1	18.56	34.60
L4640.7000	7,0“	1.750	1.925	7.850	0.750	2.406	< 1	18.56	34.60
L4640.8000	8,0“	1.750	1.925	8.850	0.750	2.406	< 1	18.56	34.60

Air Cylinder Mounts - ISO Series
swivel flange



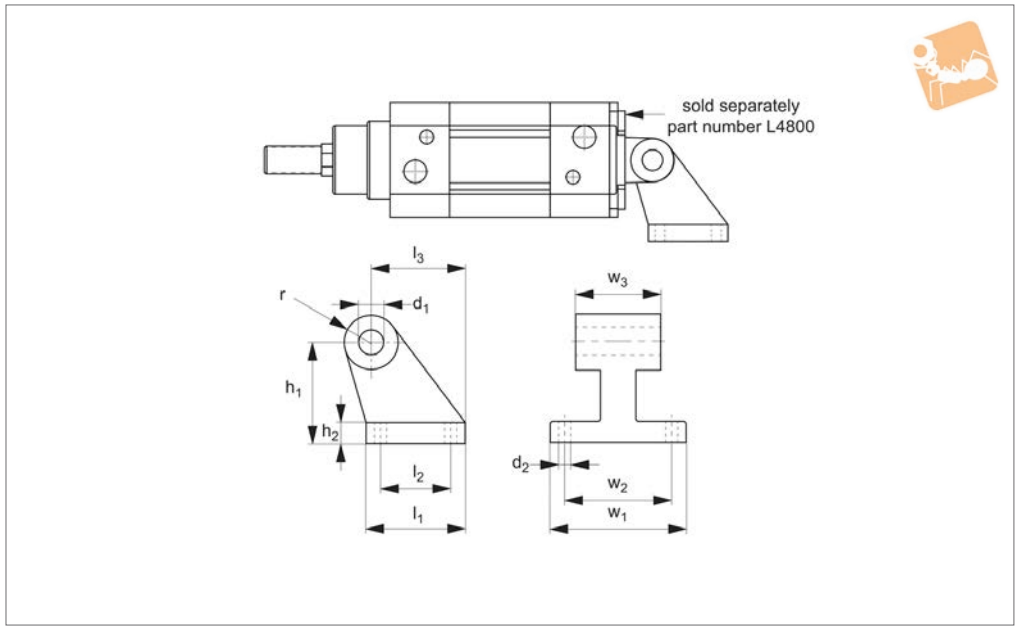
L4800



Material
Steel (DIN 1040).

Technical Notes
ISO 15552

Order No.	Cylinder dia.	d_1	d_2	d_3	d_4	d_5	d_6	r_1	l_1	l_2	l_3	w_1	w_2	h_1	h_2	h_3
L4800.032	32	30	59.0	10	7	11	46.0	10	4	45	26	45	32.5	22	10	6.5
L4800.040	40	35	70.2	12	7	11	53.7	12	4	52	28	54	38.0	25	10	7.0
L4800.050	50	40	84.2	12	9	15	65.7	13	4	60	32	65	46.5	27	11	5.5
L4800.063	63	45	99.5	16	9	15	80.0	16	4	70	40	76	56.5	32	11	6.5
L4800.080	80	45	123.8	16	11	18	101.8	16	5	90	50	94	72.0	36	14	7.0
L4800.100	100	55	148.8	20	11	18	125.9	19	6	110	60	112	89.0	41	14	7.0
L4800.125	125	60	179.5	25	13	20	155.5	25	7	130	70	134	110.0	50	20	10.0
L4800.160	160	65	252.0	30	17	26	198.0	32	8	170	90	186	140.0	55	20	15.0





L4802

Material
Steel (DIN 1040).

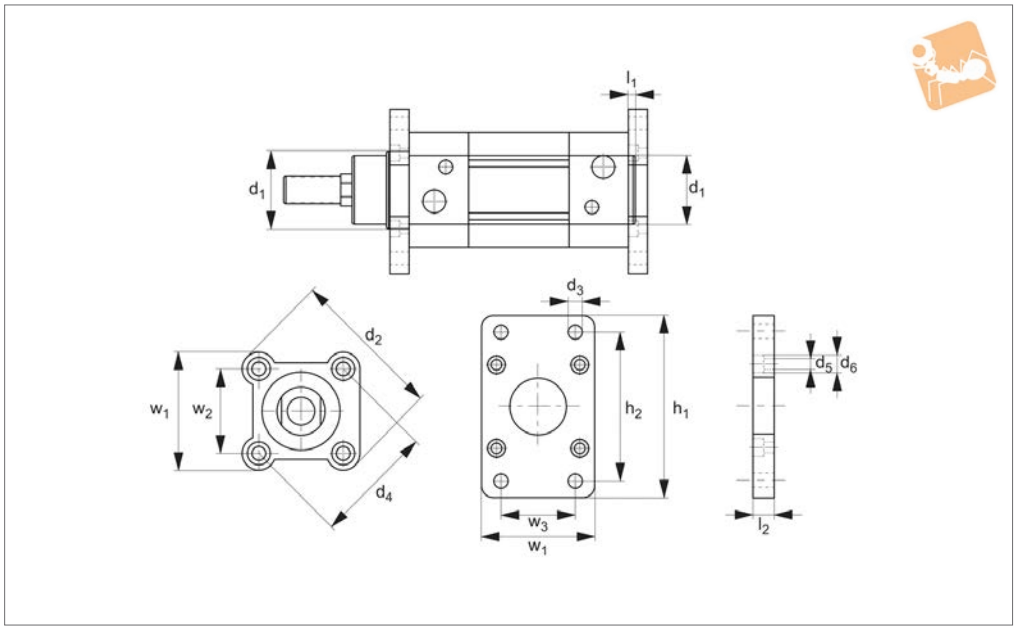
Technical Notes
ISO series

Order No.	Cylinder dia.	d_1	d_2	r	l_1	l_2	l_3	w_1	w_2	w_3	h_1	h_2
L4802.032	32	10	7	10.0	31	18	27.5	51	38	26	32	8
L4802.040	40	12	7	11.0	35	22	30.5	54	41	28	36	10
L4802.050	50	12	9	13.0	45	30	40.5	65	50	32	45	12
L4802.063	63	16	9	15.0	50	35	44.5	67	52	40	50	12
L4802.080	80	16	11	15.0	60	40	57.0	86	66	50	63	14
L4802.100	100	20	11	20.0	70	50	65.0	96	76	60	71	15
L4802.125	125	25	13	22.5	90	60	85.0	124	94	70	90	20
L4802.160	160	30	14	31.5	126	88	116.0	156	118	90	115	25

Air Cylinder Mounts - ISO Series
mounting flange



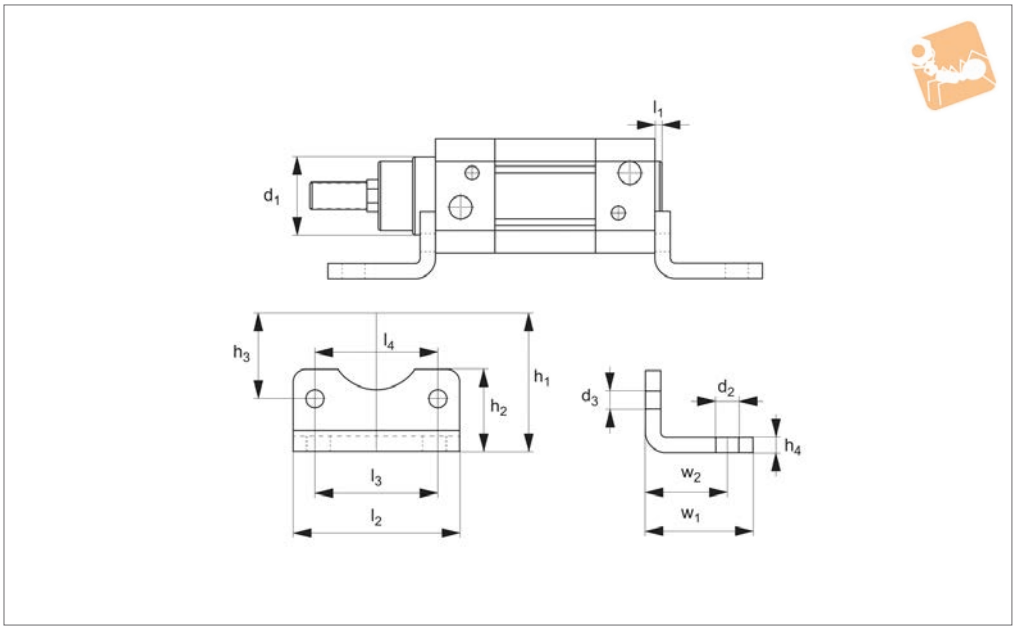
L4804



Material
Steel (DIN 1040).

Technical Notes
ISO series

Order No.	Cylinder dia.	d_1	d_2	d_3	d_4	d_5	d_6	l_1	l_2	w_1	w_2	w_3	h_1	h_2
L4804.032	32	30	59.0	7	46.0	7	11	4	10	46	32.5	32	77	64
L4804.040	40	35	70.2	9	53.7	7	11	4	10	54	38.0	36	90	72
L4804.050	50	40	84.2	9	65.7	9	15	4	12	65	46.5	45	110	90
L4804.063	63	45	99.5	9	80.0	9	15	4	12	80	56.5	50	120	100
L4804.080	80	45	123.8	12	101.8	11	18	5	16	94	72.0	63	150	126
L4804.100	100	55	148.8	14	125.9	11	18	6	16	112	89.0	75	175	150
L4804.125	125	60	179.5	16	155.5	13	20	7	20	140	110.0	90	220	180
L4804.160	160	65	252.0	18	198.0	17	26	8	20	186	140.0	115	280	230





L4806

Material
Steel (DIN 1040).

Technical Notes
ISO series

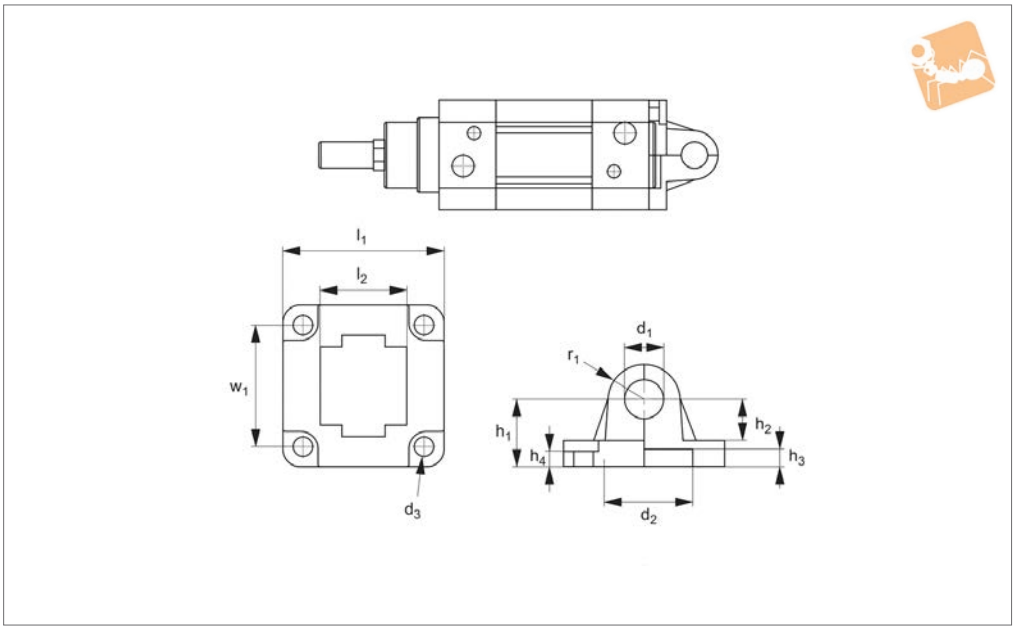
Order No.	Cylinder dia.	d_1	d_2	d_3	l_1	l_2	l_3	l_4	w_1	w_2	h_1	h_2	h_3	h_4
L4806.032	32	30	7	7	4	45	32	32.5	35	24	32	31.0	16.3	4
L4806.040	40	35	9	7	4	52	36	38.0	36	28	36	31.5	19.0	4
L4806.050	50	40	9	9	4	65	45	46.5	47	32	45	37.0	23.3	5
L4806.063	63	45	9	9	4	75	50	56.5	45	32	50	36.0	28.3	5
L4806.080	80	45	12	1	5	95	63	72.0	53	41	63	47.8	36.0	6
L4806.100	100	55	14	1	6	115	75	89.0	56	41	71	53.0	44.5	6
L4806.125	125	60	16	13	7	139	90	110.0	70	45	90	80.5	55.0	8
L4806.160	160	65	18	17	8	186	115	140.0	85	60	115	100.0	70.0	10

Air Cylinder Mounts - ISO Series

EBX mounting foot



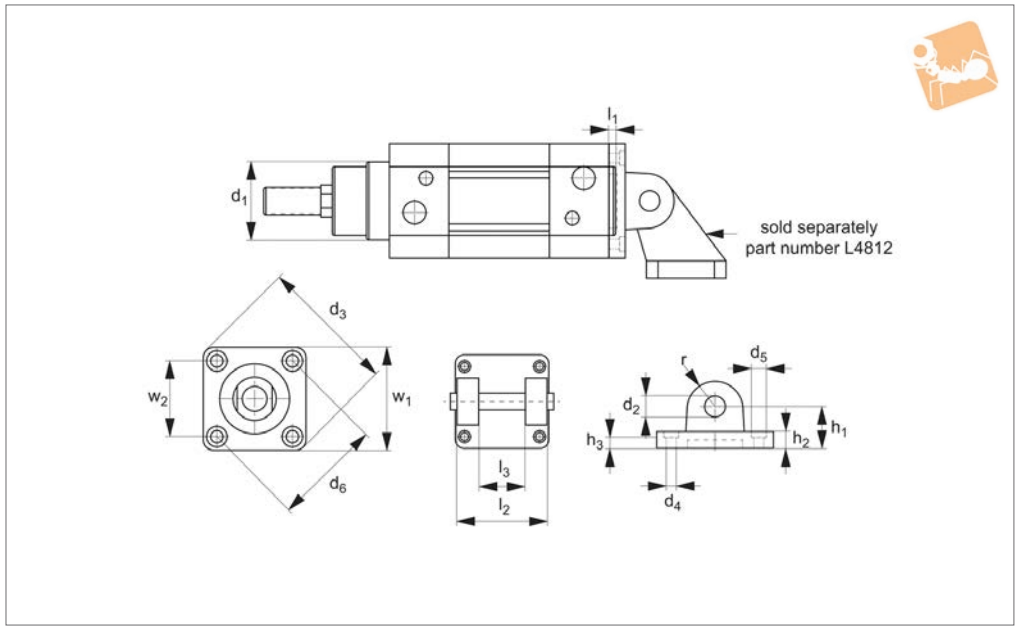
L4808



Material
Steel (DIN 1040).

Technical Notes
ISO series

Order No.	Cylinder dia.	d_1	d_2	d_3	r_1	l_1	l_2	w_1	h_1	h_2	h_3	h_4
L4808.032	32	10	30	7	10	45	26	32.5	22	11	4.5	7.0
L4808.040	40	12	35	7	12	52	28	38.0	25	16	4.5	6.0
L4808.050	50	12	40	9	13	64	32	46.5	27	16	4.5	8.0
L4808.063	63	16/18	45	9	16	78	40	56.5	32	20	6.5	6.5
L4808.080	80	16	45	11	16	96	50	72.0	36	22	6.5	10.0
L4808.100	100	20	55	11	20	115	60	89.0	41	27	8.0	10.0
L4808.125	125	25	60	13	25	136	70	110.0	55	30	11.0	13.0





L4810

Material
Steel (DIN 1040).

Technical Notes
CETOP Series

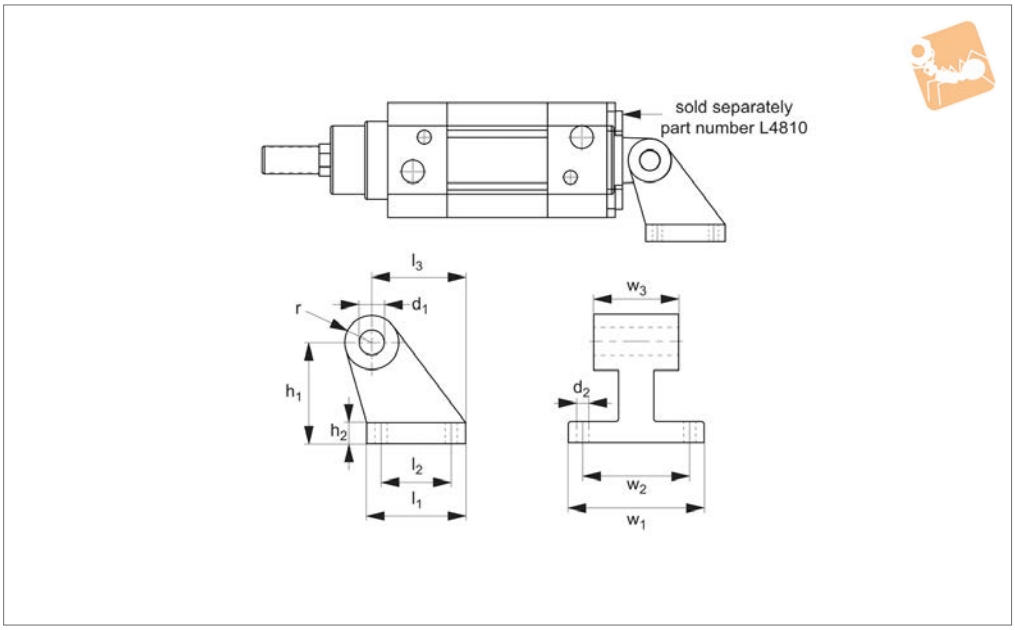
Order No.	Cylinder dia.	d_1	d_2	d_3	d_4	d_5	d_6	R	l_1	l_2	l_3	w_1	w_2	h_1	h_2	h_3
L4810.032	32	30	10	58	7	11	46	10	4	45	26	45	32.5	22	8	3
L4810.040	40	35	12	71	7	11	56	13	5	52	28	54	39.6	25	9	4
L4810.050	50	40	12	85	9	15	68	16	5	60	32	65	48.0	27	11	5
L4810.063	63	42	16	105	9	15	84	18	6	70	40	80	59.4	35	12	5
L4810.080	80	48	16	125	11	18	100	18	6	90	50	96	70.7	38	14	6
L4810.100	100	56	20	166	11	18	132	23	7	110	60	126	93.4	43	15	7
L4810.125	125	63	25	190	13	20	150	30	10	130	70	140	106.0	55	20	8
L4810.160	160	80	30	252	17	26	190	32	10	170	90	180	134.4	60	22	8

Air Cylinder Mounts - CETOP Series

clevis mounting foot



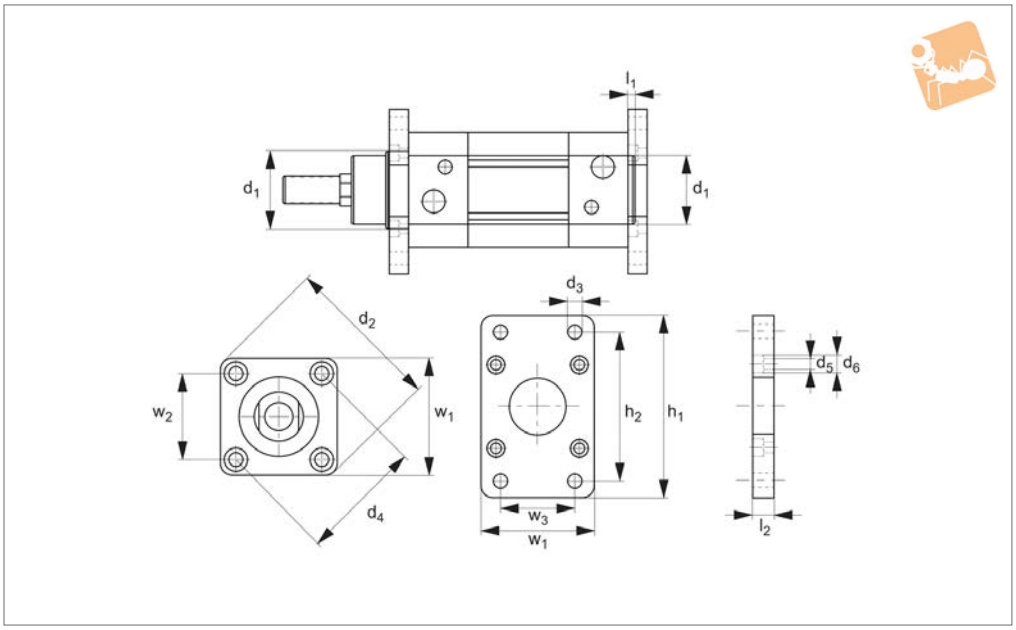
L4812



Material
Steel (DIN 1040).

Technical Notes
CETOP Series

Order No.	Cylinder dia.	d_1	d_2	r	l_1	l_2	l_3	w_1	w_2	w_3	h_1	h_2
L4812.032	32	10	5.5	10.0	31	18	27.5	51	38	26	32	8
L4812.040	40	12	5.5	11.0	35	22	30.5	54	41	28	36	10
L4812.050	50	12	6.5	13.0	45	30	40.5	65	50	32	45	12
L4812.063	63	16	6.5	15.0	50	35	44.5	67	52	40	50	12
L4812.080	80	16	9.0	15.0	60	40	57	86	66	50	63	14
L4812.100	100	20	9.0	20.0	70	50	65	96	76	60	71	15
L4812.125	125	25	11.0	22.5	90	60	85	124	94	70	90	20
L4812.160	160	30	14.0	31.5	126	88	116	156	118	90	115	25





L4814

Material
Steel (DIN 1040).

Technical Notes
CETOP Series

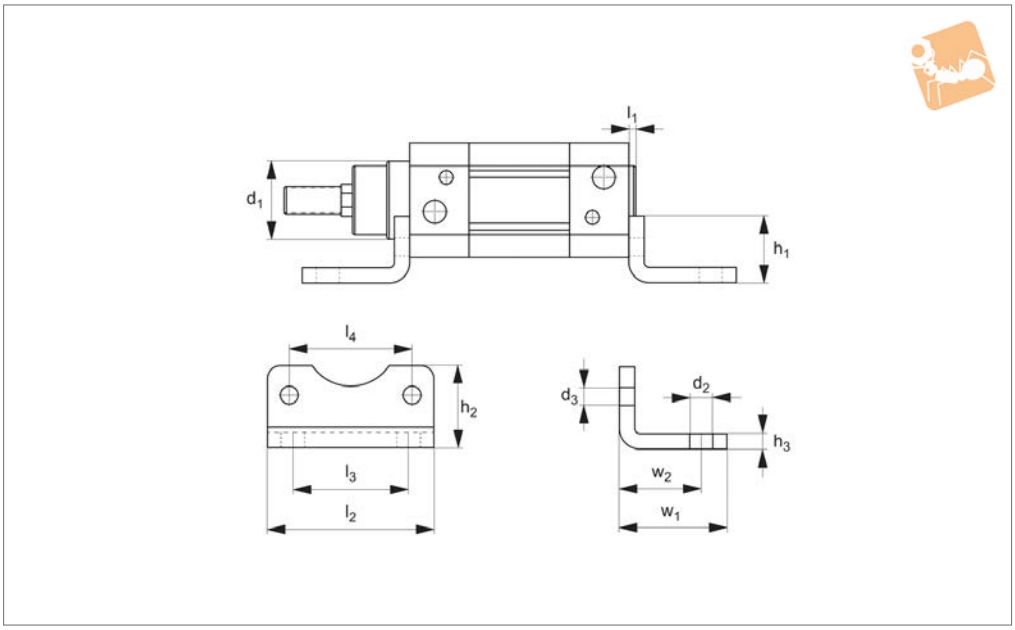
Order No.	Cylinder dia.	d_1	d_2	d_3	d_4	d_5	d_6	l_1	l_2	w_1	w_2	w_3	h_1	h_2
L4814.032	32	30	58	7	46	6	11	4	10	46	32.5	32	77	64
L4814.040	40	35	71	9	56	6	11	5	10	54	39.6	36	90	72
L4814.050	50	40	85	9	68	7	15	5	12	65	48.0	45	110	90
L4814.063	63	42	105	9	84	7	15	6	15	80	59.4	50	125	100
L4814.080	80	48	125	12	100	9	18	6	18	94	70.7	63	154	126
L4814.100	100	56	166	14	132	9	18	7	18	125	93.4	75	186	150
L4814.125	125	63	190	16	150	13	20	10	25	140	106.0	90	220	180
L4814.160	160	80	252	18	190	15	26	10	25	186	134.4	115	280	230

Air Cylinder Mounts - CETOP Series

clevis foot bracket



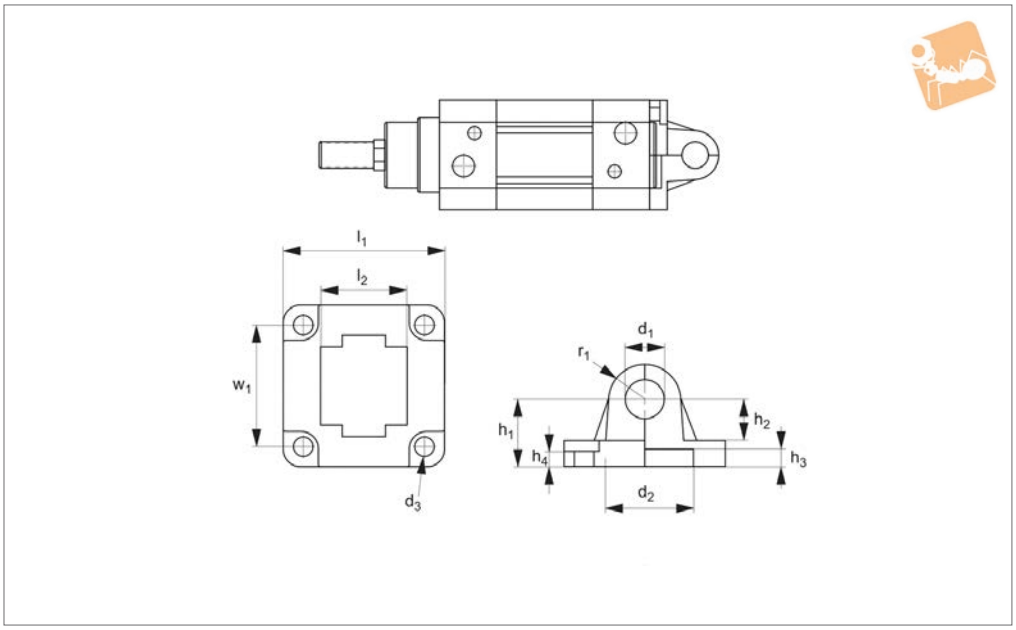
L4816



Material
Steel (DIN 1040).

Technical Notes
CETOP Series

Order No.	Cylinder dia.	d_1	d_2	d_3	l_1	l_2	l_3	l_4	w_1	w_2	h_1	h_2	h_3
L4816.032	32	30	7	6	4	45	32	32.5	32	24	32	24	4
L4816.040	40	35	9	6	5	54	36	39.6	38	28	36	25	5
L4816.050	50	40	9	7	5	65	45	48.0	42	32	45	32	6
L4816.063	63	42	9	7	6	80	50	59.4	50	35	50	36	6
L4816.080	80	48	12	9	6	96	63	70.7	60	43	63	47	8
L4816.100	100	56	14	9	7	126	75	93.4	57	43	71	54	8
L4816.125	125	63	16	13	10	140	90	106.0	69	50	90	55	11
L4816.160	160	80	18	15	10	180	115	134.4	87	65	115	70	13





L4818

Material
Steel (DIN 1040).

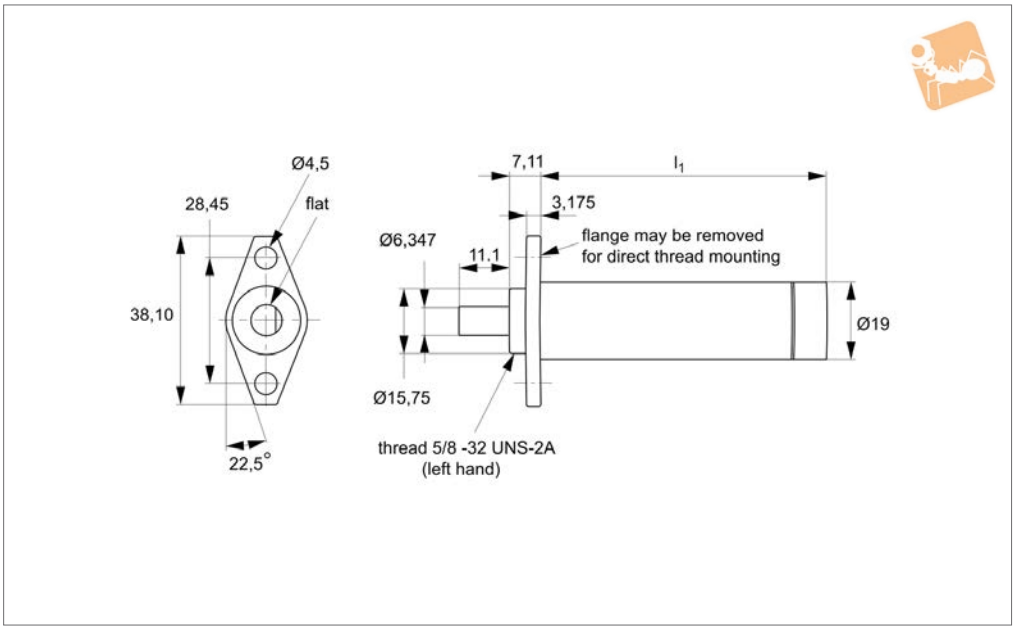
Technical Notes
CETOP Series

Order No.	Cylinder dia.	d_1	d_2	d_3	r_1	l_1	l_2	w_1	h_1	h_2	h_3	h_4
L4818.032	32	10	30	6	10	45	26	32.5	22	14	4.5	7.0
L4818.040	40	12	35	6	12	52	28	39.6	25	16	4.5	6.0
L4818.050	50	12	40	7	12	64	32	48.0	27	16	4.5	7.0
L4818.063	63	16/18	42	7	16	78	40	59.4	32	23	6.5	6.5
L4818.080	80	16/18	48	9	16	95	50	70.7	36	24	6.5	10.0
L4818.100	100	20	56	9	20	115	60	93.4	43	28	7.0	10.0
L4818.125	125	25	63	11	30	136	70	106.0	55	35	10.0	13.0

Miniature Air Motors



R4100



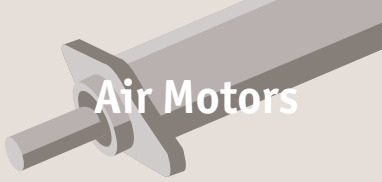
Material
Precision air motor of stainless steel body and aluminium construction.
The balanced rotor is positioned between precision ball bearings which virtually eliminates friction and wear.
A hardened planetary gear system provides increased torque transmission capabilities and long-life.

Technical Notes
For medical, robotic and industrial applications.
Gears slip above the torque*.
Figures below relate to average free speed and stall torque specifications at 90 psi.
Maximum shaft loading 7,5Kg.
Please read operating and installation manual carefully, to ensure product life.

Tips
Shaft seals available for units having free speeds of 2000 rpm or less. If you require a sealed motor please clearly specify when ordering and add -S to part number.

LF=lubrication free version

Order No.	Type	Free speed rpm	Lubricate?	Stall torque Nm	l_1	Weight g
R4100.MMF5000	Right hand	50.000	Yes	0.03	65.0	92
R4100.MMF2800	Right hand	28.000	Yes	0.05	65.0	92
R4100.MMF0700	Right hand	7.000	Yes	0.17	65.0	92
R4100.MMF0014	Right hand	1.750	Yes	0.78	81.0	120
R4100.MMF0001	Right hand	110	Yes	12.35	112.8	140
R4100.MMF5001	Right hand	28	Yes	12.35*	128.5	184
R4100.MMF6001	Right hand	7	Yes	12.35*	144.5	198
R4100.MMR5000	Reversible	50.000	Yes	0.03	65.0	92
R4100.MMR0001	Reversible	110	Yes	12.35	4.44	140
R4100.MMF0004	Right hand	450	Yes	3.10	96.8	135
R4100.MMF0002	Right hand	225	Yes	6.00	96.8	135
R4100.MMR5001	Reversible	28	Yes	12.35*	128.5	184
R4100.MMR6001	Reversible	7	Yes	12.35*	144.5	198
R4100.MMR2800	Reversible	28.000	Yes	0.05	65.0	92
R4100.MMR0700	Reversible	7.000	Yes	0.17	65.0	92
R4100.MMR0004	Reversible	450	Yes	3.10	96.8	135
R4100.MMR0002	Reversible	225	Yes	6.00	96.8	135
R4100.MMR0014	Reversible	1.750	Yes	0.78	81.0	120
R4100.MMF5000-LF	Right hand	50.000	No	0.03	65.0	92
R4100.MMF2800-LF	Right hand	28.000	No	0.05	65.0	92
R4100.MMF5001-LF	Right hand	28	No	12.35*	128.5	184
R4100.MMF6001-LF	Right hand	7	No	12.35*	144.5	188
R4100.MMF0700-LF	Right hand	7.000	No	0.17	65.0	92
R4100.MMF0014-LF	Right hand	1.750	No	0.78	81.0	120
R4100.MMF0004-LF	Right hand	450	No	3.10	96.8	135
R4100.MMF0002-LF	Right hand	225	No	6.00	96.8	140
R4100.MMF0001-LF	Right hand	110	No	12.35	112.8	184
R4100.MMR5000-LF	Reversible	50.000	No	0.03	65.0	92

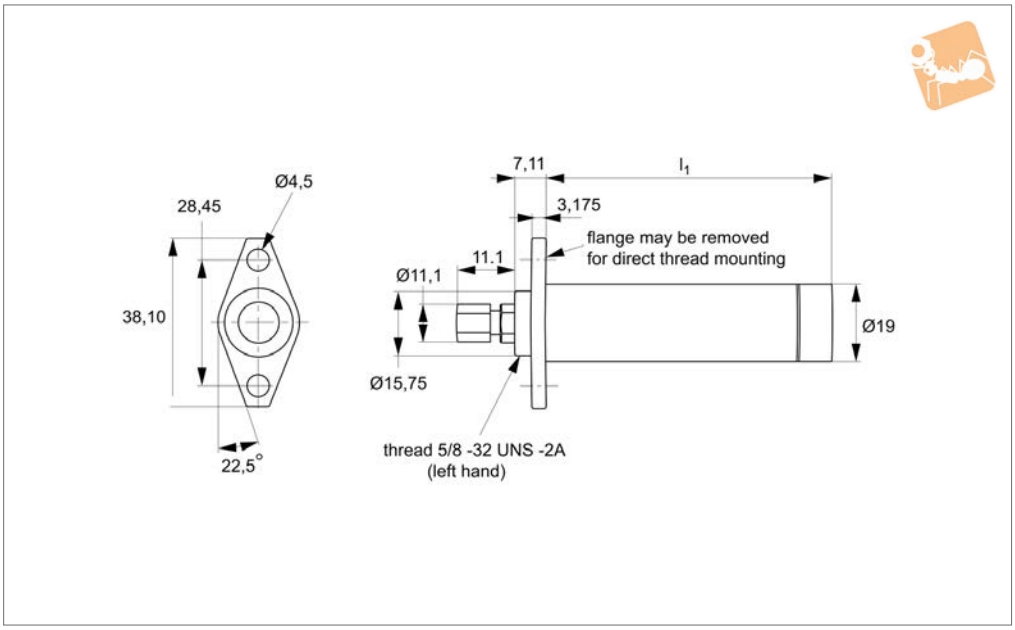


Order No.	Type	Free speed rpm	Lubricate?	Stall torque Nm	I_1	Weight g
R4100.MMR2800-LF	Reversible	28.000	No	0.05	65.0	92
R4100.MMR0700-LF	Reversible	7.000	No	0.17	65.0	92
R4100.MMR0014-LF	Reversible	1.750	No	0.78	81.0	120
R4100.MMR0004-LF	Reversible	450	No	3.10	96.8	135
R4100.MMR0002-LF	Reversible	225	No	6.00	96.8	135
R4100.MMR0001-LF	Reversible	110	No	12.35	4.44	140
R4100.MMR5001-LF	Reversible	28	No	12.35*	128.5	184
R4100.MMR6001-LF	Reversible	7	No	12.35*	144.5	198

Miniature Air Drills



R4110



Material

Precision air motor of stainless steel body and aluminium construction.
The balanced rotor is positioned between precision ball bearings which virtually eliminates friction and wear.
A hardened planetary gear system provides increased torque transmission capabilities and long-life.

Technical Notes

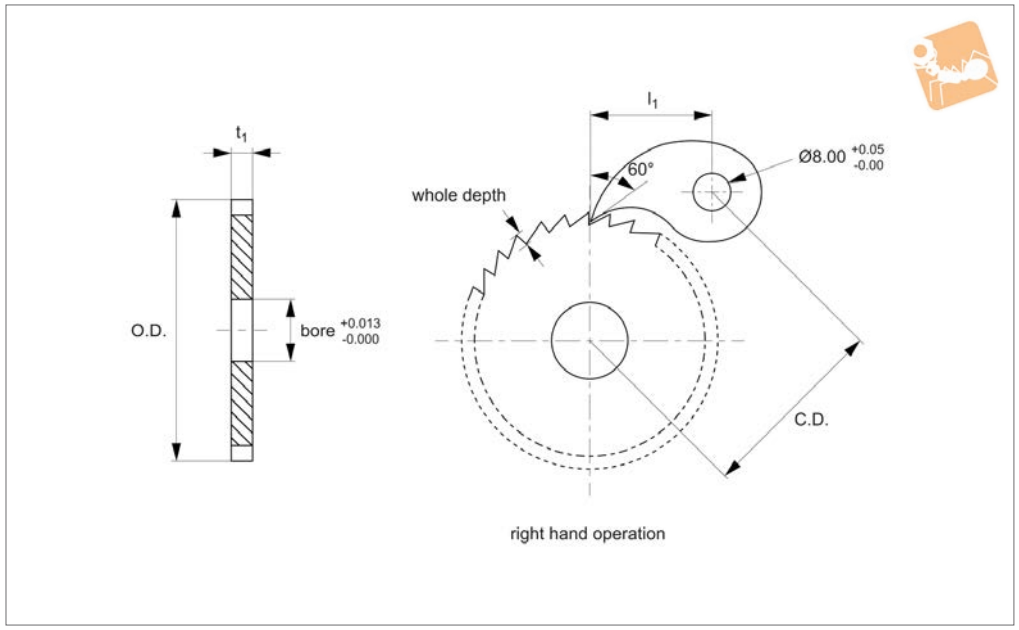
For medical, robotic and industrial applications.
Figures below relate to average free speed and stall torque specifications at 90 psi.
Maximum shaft loading 7,5Kg.
Please read operating and installation manual carefully, to ensure product life.

Tips

Shaft seals available for units having free speeds of 2000 rpm or less. If you require a sealed motor please clearly specify when ordering and add -S to part number.

LF=lubrication free version

Order No.	Type	Free speed rpm	Lubricate?	Stall torque Nm	l_1	Weight g
R4110.MMD5000	Right hand	50.000	Yes	0.03	65.0	92
R4110.MMD2800	Right hand	28.000	Yes	0.05	65.0	92
R4110.MMD0700	Right hand	7.000	Yes	0.17	65.0	92
R4110.MMD0014	Right hand	1.750	Yes	0.78	81.0	120
R4110.MMD0004	Right hand	450	Yes	3.10	96.8	135
R4110.MMD5000-LF	Right hand	50.000	No	0.03	65.0	92
R4110.MMD2800-LF	Right hand	28.000	No	0.05	65.0	92
R4110.MMD0700-LF	Right hand	7.000	No	0.17	65.0	92
R4110.MMD0014-LF	Right hand	1.750	No	0.78	81.0	120
R4110.MMD0004-LF	Right hand	450	No	3.10	96.8	135
R4110.MMDR5000	Reversible	50.000	Yes	0.03	65.0	92
R4110.MMDR2800	Reversible	28.000	Yes	0.05	65.0	92
R4110.MMDR0700	Reversible	7.000	Yes	0.17	65.0	92
R4110.MMDR0014	Reversible	1.750	Yes	0.78	81.0	120
R4110.MMDR0004	Reversible	450	Yes	3.10	96.8	135
R4110.MMDR5000-LF	Reversible	50.000	No	0.03	65.0	92
R4110.MMDR2800-LF	Reversible	28.000	No	0.05	65.0	92
R4110.MMDR0700-LF	Reversible	7.000	No	0.17	65.0	92
R4110.MMDR0014-LF	Reversible	1.750	No	0.78	81.0	120
R4110.MMDR0004-LF	Reversible	450	No	3.10	96.8	135





R4040

Material
Stainless steel 303.

Technical Notes
Right hand operation.

Order pawl and mounting shoulder screw separately.
Hardness of pawl - HRc32-38, material 17-4PH stainless steel.

Mounting shoulder screw - stainless steel 416.

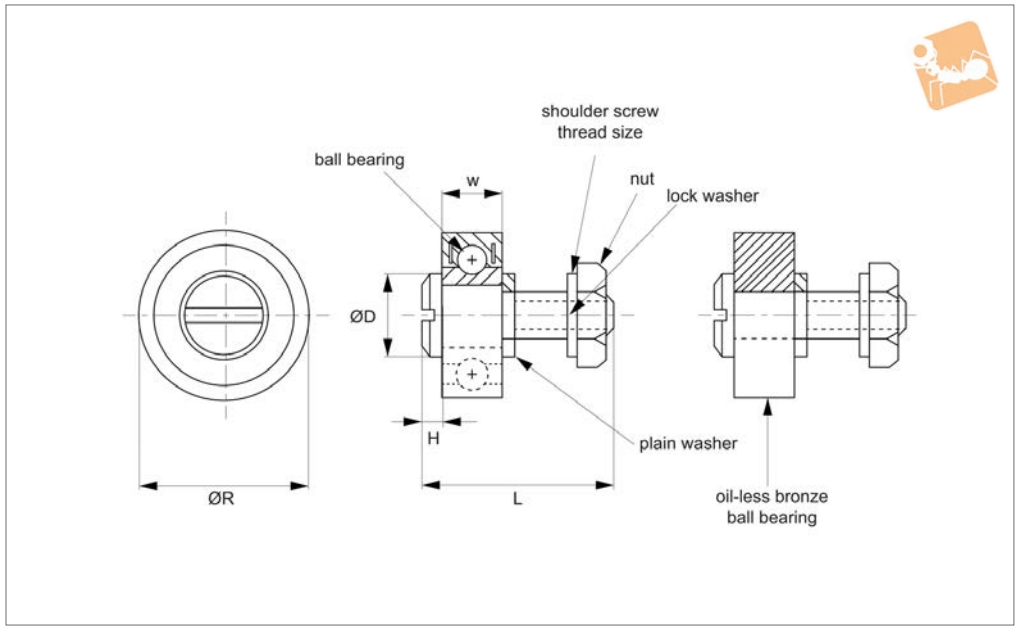
Tips
Special ratchet and pawls made to order.

Order No.	No. of teeth	Module	Ø d	Bore dia.	t	C.D. +0.06|-0.00	Whole depth	Pawl
R16S120-20	20	1.59	31.7	16	9.5	38.9	3.1	Size 1
R16S120-24	24	1.59	38.1	16	9.5	40.6	3.1	Size 1
R16S120-32	32	1.59	50.8	16	9.5	44.5	3.1	Size 1
R16S120-48	48	1.59	76.2	16	9.5	53.3	3.1	Size 1
R16S120-56	56	1.59	88.9	16	9.5	58.4	3.1	Size 1
R16S120-65	65	1.59	101.6	16	9.5	63.5	3.1	Size 1
R24S106-24	24	1.05	25.4	10	6.4	28.2	1.8	Size 2
R24S106-30	30	1.05	31.7	10	6.4	30.0	1.8	Size 2
R24S106-36	36	1.05	38.1	10	6.4	32.0	1.8	Size 2
R24S106-48	48	1.05	50.8	10	6.4	36.8	1.8	Size 2
R24S106-72	72	1.05	76.2	10	6.4	47.2	1.8	Size 2
R32S103-24	21	0.79	19.0	10	3.0	26.4	1.5	Size 2
R32S103-32	32	0.79	25.4	10	3.0	28.2	1.5	Size 2
R32S103-40	40	0.79	31.7	10	3.0	30.0	1.5	Size 2
R32S103-48	48	0.79	38.1	10	3.0	32.0	1.5	Size 2
R32S103-64	64	0.79	50.8	10	3.0	36.8	1.5	Size 2
R48S103-36	36	0.53	19.0	10	3.0	26.2	0.9	Size 2
R48S103-48	48	0.53	25.4	10	3.0	28.4	0.9	Size 2
R32S103-96	96	0.79	76.2	10	3.0	47.2	1.5	Size 2
R48S103-60	60	0.53	31.7	10	3.0	30.5	0.9	Size 2
R48S103-72	72	0.53	38.1	10	3.0	32.5	0.9	Size 2
R48S103-96	96	0.53	50.8	10	3.0	37.3	0.9	Size 2
R48S103-144	144	0.53	76.2	10	3.0	47.8	0.9	Size 2

Ratchets and Pawl
stainless



Order No.	Thickness T	Length L	Shoulder screw Order No.
RP-2M	6,2	19	PLM-28
RP-375M	9,4	33	PLM-30





R4030

Material
Stainless steel 303, bearing - stainless steel or bonze.

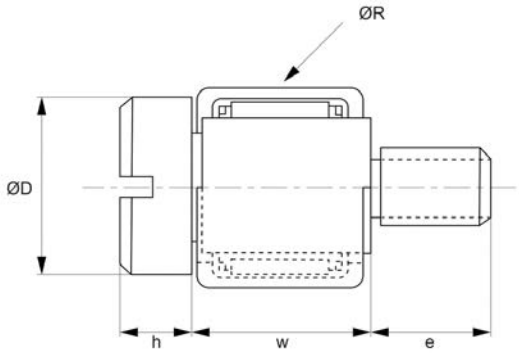
Technical Notes
ABEC 5.

Order No.	Ø R	w	l	d	h	Thread	Bearing
R4030.B07	7	3	12	5	3	M 3x0,5	Ball
R4030.B09	9	4	11	6	3	M 3x0,5	Ball
R4030.B11	11	5	13	8	4	M 4x0,7	Ball
R4030.B13	13	4	14	8	4	M 4x0,7	Ball
R4030.B16	16	5	13	8	4	M 4x0,7	Ball
R4030.B19	19	6	17	10	5	M 5x0,8	Ball
R4030.BR08	8	4	11	6	3	M 3x0,5	Bronze
R4030.BR10	10	5	14	8	4	M 4x0,7	Bronze
R4030.BR13	13	5	14	8	4	M 4x0,7	Bronze
R4030.BR16	16	5	16	10	5	M 5x0,8	Bronze

Roller Bearing and Cam Follower
heavy duty



R4032



Material
Roller cup - case hardened steel.
Needle bearings - hardened steel.
Bearing cage - low carbon steel.
Screw - stainless steel (DIN 1,4005).

Technical Notes
High load, low profile, low friction.

Order No.	Ø R	w	Ø d	h	e	Screw
R4032.008	8.00	8.00	6.0	2.7	4	M3x0,5
R4032.009	9.00	9.00	8.0	4.0	5	M4x0,7
R4032.010	10.00	9.00	8.5	5.0	6	M5x0,8
R4032.012	12.00	10.00	10.5	5.7	11	M6x1,0
R4032.014	14.00	10.00	12.5	6.7	12	M8x1,25
R4032.016	16.00	12.00	14.5	7.7	16	M10x1,50