



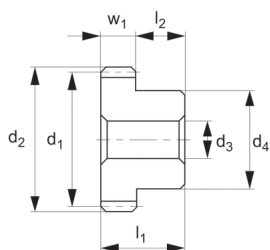
Spur Gears - Module 1.5

stainless steel - 15-100 teeth

Standard Spur
Gears



R5190



STANDARD SPUR GEARS

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.

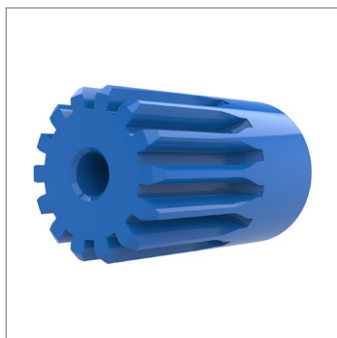
Tips

For module 1.5 stainless gears with 14
teeth see R5188.

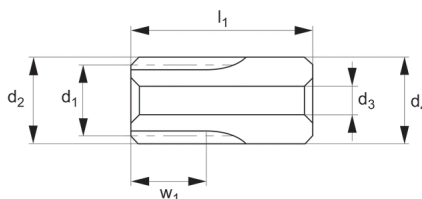
Max. allowable torque (Nm) is based on
standard operating conditions (see tech-

nical 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



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.

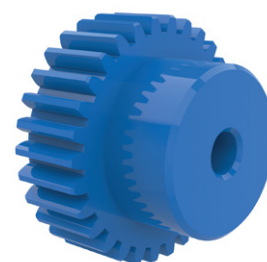
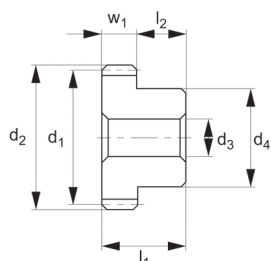
Order No.	Module	No. of teeth z	Pitch dia. d ₁	d ₂	w ₁	d ₃ tol. H9	d ₄	l ₁	Torque Nm max.	Weight g
R5191.150-014	m 1.5	14	21	24	18	6	24	40	1.36	21



Spur Gears - Module 1.5 - Plastic

blue polyacetal - 15-60 teeth

Standard Spur Gears



R5193

STANDARD SPUR GEARS

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

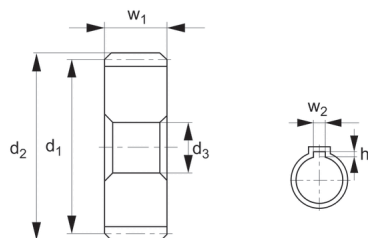
For module 1.5 blue plastic gears with 14 teeth see R5191.

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



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 ($w_2 \times h_1$)	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



Spur Gears - Module 1.5

carbon steel - 15-100 teeth



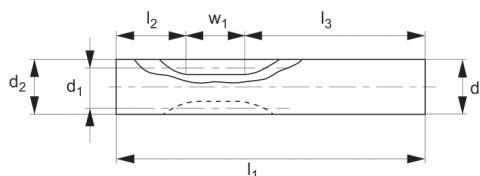
Standard Spur
Gears

Order No.	Module	No. of teeth z	Pitch dia. d_1	d_2	w_1	d_3 tol. H7	Keyway ($w_2 \times h_1$)	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

STANDARD SPUR GEARS



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 $x = 0.5$.

cient $x = 0.5$.

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).

R5204 (reduced weight version).

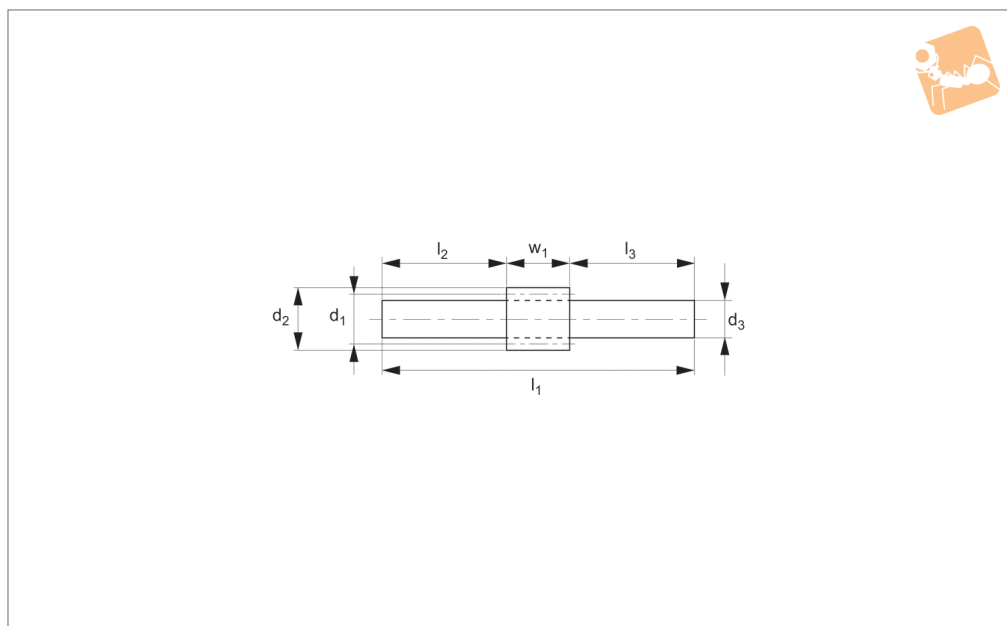
Max. allowable torque (Nm) is based on standard operating conditions (see technical pages) with a safety factor of 1.2. For non standard applications apply a suitable safety factor depending on frequency of use, type of working etc.

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



Spur Gears - Module 1.5

carbon steel - 8-10 teeth



R5199

STANDARD SPUR GEARS

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