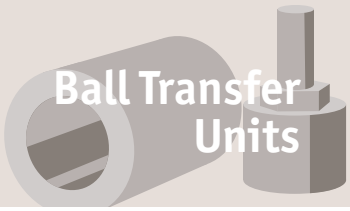


Available materials

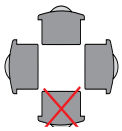
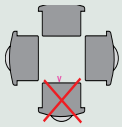
- CC	Chrome steel AISI 52100 Balls. Machined AISI 1016 steel housing, toughened & zinc plated
Solve specific application requirements by upgrading materials. Select option by adding suffix i.e. - CS	
- CS	Stainless Steel Balls (AISI 420) but other materials as Standard. Reduce load by 30%.
- SS	All parts in Stainless Steel - out housing AISI 416, Balls AISI 420. Reduce load by 30%.
- CD	Acetal (POM) main ball option - reduce load. See chart overleaf

Fixing clip selection

Part No.	Ball Size	Minimum Bore ø	Maximum Bore ø
P2730.015	15	24,8	25,0
P2730.022	22	37,0	37,2
P2730.030	30	46,3	46,7

Clip requires a minumum plate thickness of 3mm to grip securely

How to select the correct unit

Ball Type	Max Load (Kg)	Friction (% of load)	Speed m/sec	Shock Loads		Arduous Conditions	Orientation	Instant Change
Medium Duty	20-3500	2%	1,5	✓✓✓	✓✓	✓✓		✓✓✓
Light Duty	7-250	3%	1,0	✓		✓✓		✓✓✓

Variables to consider:

Shock Loads:

Standard material ball units have Rockwell 'C' hardness of 60 minimum

Track Hardness/ Conveyed Item Material:

Standard material ball units have Rockwell 'C' hardness of 60 minimum

Delicate Surfaces:

Ball Units - Acetal (POM) & Phenolic Resin

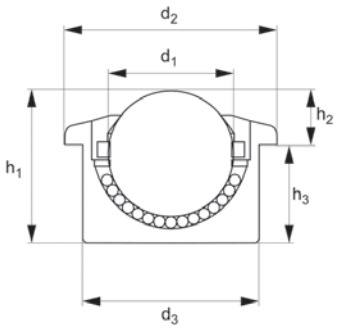
Operating Environment:

Wet, dirty, outdoor, radioactive

Ball Transfer Units from Automotion Components

Push-Fit Ball Transfer Units
medium duty

P2710



Material
Steel (AISI 1040 housing and AISI 52100 for balls),
stainless steel (AISI 416 for housing and AISI 420 for balls) and acetal (POM).

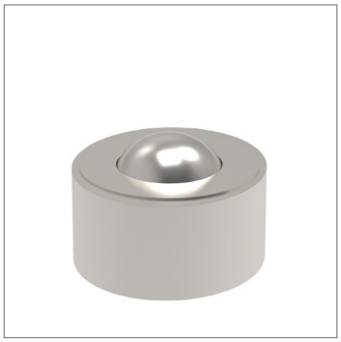
Technical Notes
These ball transfer units are made of a solid steel block with a precision machined hemispherical carrying bowl.
Top cover plates are shaped to ensure the perfect conveyance of items which have possible burred or bent edges. This design also prevents possible damage to the carrying ball.
Provided with a hole in the base of the bearing cup to dispose of particles of dirt and swarf (this may also be used for re-lubrication purposes).

Tips
These rollers can only be used in the horizontal or ball up direction.

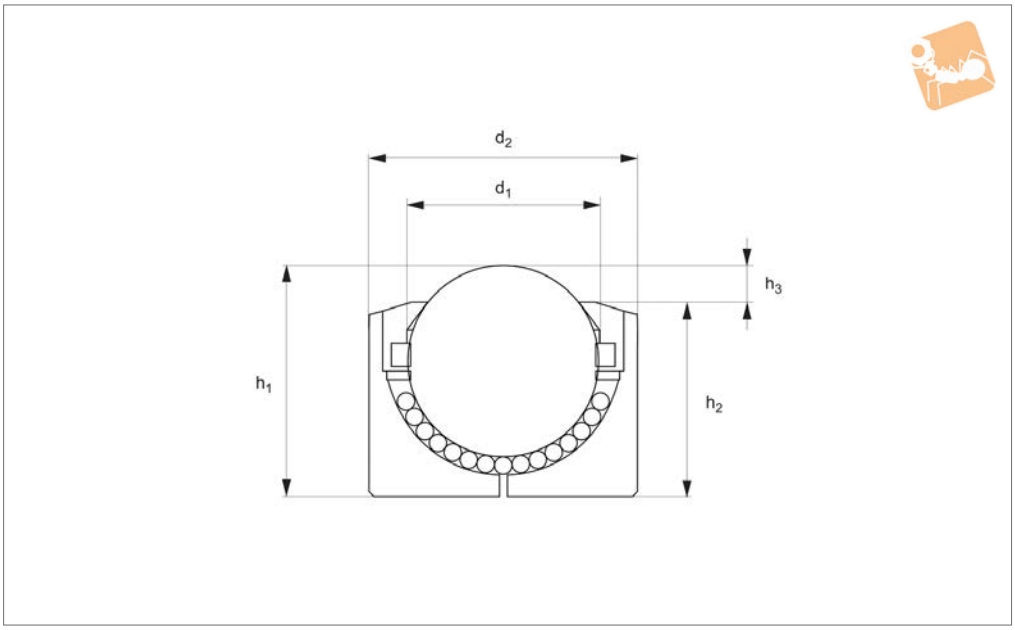
Order No.	d_1	d_2	h_1	h_2	d_3	h_3	Housing	Ball	Load kg max.
P2710.450-CS	45	75	53.5	19.0	62	34.5	Steel	Stainless	600
P2710.300-CS	30	55	36.8	13.8	45	23.0	Steel	Stainless	350
P2710.250-CS	25	46	30.5	13.0	38	17.5	Steel	Stainless	140
P2710.220-CS	22	45	30.5	9.8	36	20.7	Steel	Stainless	180
P2710.150-CS	15	30	20	8.1	24	11.9	Steel	Stainless	50
P2710.120-CS	12	27	16.7	8.0	22	8.7	Steel	Stainless	20
P2710.120-CC	12	27	16.7	8.0	22	8.7	Steel	Steel	25
P2710.120-CA	12	27	16.7	8.0	22	8.7	Steel	Acetal	5
P2710.120-SS	12	27	16.7	8.0	22	8.7	Stainless	Stainless	20
P2710.150-CC	15	30	20	8.1	24	11.9	Steel	Steel	60
P2710.150-CA	15	30	20	8.1	24	11.9	Steel	Acetal	10
P2710.150-SS	15	30	20	8.1	24	11.9	Stainless	Stainless	40
P2710.160-CC	15	31	21	9.5	24	11.5	Steel	Steel	60
P2710.160-CA	15	31	21	9.5	24	11.5	Steel	Acetal	10
P2710.160-CS	15	31	21	9.5	24	11.5	Steel	Acetal	50
P2710.160-SS	15	31	21	9.5	24	11.5	Stainless	Stainless	40
P2710.220-CC	22	45	30.5	9.8	36	20.7	Steel	Steel	180
P2710.220-CA	22	45	30.5	9.8	36	20.7	Steel	Acetal	20
P2710.220-SS	22	45	30.5	9.8	36	20.7	Stainless	Stainless	126
P2710.250-CC	25	46	30.5	13.0	38	17.5	Steel	Steel	200
P2710.250-CA	25	46	30.5	13.0	38	17.5	Steel	Acetal	25
P2710.250-SS	25	46	30.5	13.0	38	17.5	Stainless	Stainless	140
P2710.300-CC	30	55	36.8	13.8	45	23.0	Steel	Steel	350
P2710.300-CA	30	55	36.8	13.8	45	23.0	Steel	Acetal	25
P2710.300-SS	30	55	36.8	13.8	45	23.0	Stainless	Stainless	220
P2710.450-CC	45	75	53.5	19.0	62	34.5	Steel	Steel	600
P2710.450-CA	45	75	53.5	19.0	62	34.5	Steel	Acetal	25
P2710.450-SS	45	75	53.5	19.0	62	34.5	Stainless	Stainless	350

Order No.	d_1	d_2	h_1	h_2	d_3	h_3	Housing	Ball	Load kg max.
P2710.600-CC	60	117	77.5	30.0	100	47.5	Steel	Steel	1500
P2710.600-CA	60	117	77.5	30.0	100	47.5	Steel	Acetal	35
P2710.600-SS	60	117	77.5	30.0	100	47.5	Stainless	Stainless	1050

Plain-Fit Ball Transfer Units
medium duty



P2711



Material
Steel (AISI 1040 housing and AISI 52100 for balls),
stainless steel (AISI 416 for housing and AISI 420 for balls) and acetal (POM).

Technical Notes
These ball transfer units are made of a solid steel block
with a precision machined hemispherical carrying bowl.

Top cover plates are shaped to ensure the perfect conveyance of items which have possible burred or bent edges. This design also prevents possible damage to the carrying ball.
Provided with a hole in the base of the bearing cup to dispose of particles of dirt and swarf
(this may also be used for re-lubrication purposes).

Manufactured without a flange on the housing,
therefore the whole load is being supported only by the bottom face of the unit.

Tips
These rollers can only be used in the horizontal or „ball up“ direction.

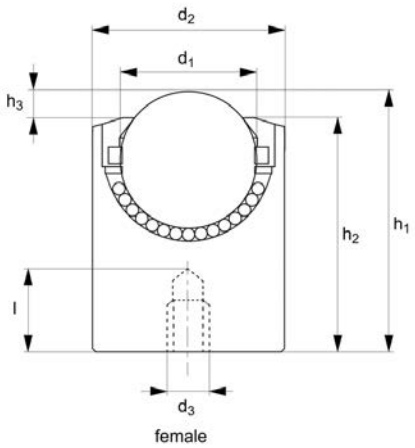
Order No.	d_1	d_2	h_1	h_2	h_3	Housing	Ball	Load kg max.
P2711.080-CC	8	18	12.0	10.0	2.0	Steel	Steel	13
P2711.080-CS	8	18	12.0	10.0	2.0	Steel	Stainless	10
P2711.080-SS	8	18	12.0	10.0	2.0	Stainless	Stainless	8.4
P2711.120-CS	12	20	16.5	13.5	3.0	Steel	Stainless	20
P2711.150-CS	15	24	20.0	15.0	5.0	Steel	Stainless	50
P2711.220-CS	22	36	30.5	27.9	4.5	Steel	Stainless	180
P2711.300-CS	30	45	36.8	30.3	6.5	Steel	Stainless	350
P2711.450-CS	45	62	53.5	45.0	8.5	Steel	Stainless	600
P2711.600-CS	60	100	77.5	61	16.5	Steel	Stainless	1100
P2711.120-CC	12	20	16.5	13.5	3.0	Steel	Steel	25
P2711.120-CA	12	20	16.5	13.5	3.0	Steel	Acetal	5
P2711.120-SS	12	20	16.5	13.5	3.0	Stainless	Stainless	14
P2711.150-CC	15	24	20.0	15.0	5.0	Steel	Steel	60
P2711.150-CA	15	24	20.0	15.0	5.0	Steel	Acetal	10
P2711.150-SS	15	24	20.0	15.0	5.0	Stainless	Stainless	40
P2711.220-CC	22	36	30.5	27.9	4.5	Steel	Steel	180
P2711.220-CA	22	36	30.5	27.9	4.5	Steel	Acetal	20
P2711.220-SS	22	36	30.5	27.9	2.6	Stainless	Stainless	125
P2711.300-CC	30	45	36.8	30.3	6.5	Steel	Steel	350
P2711.300-CA	30	45	36.8	30.3	6.5	Steel	Acetal	25
P2711.300-SS	30	45	36.8	30.3	6.5	Stainless	Stainless	245
P2711.450-CC	45	62	53.5	45.0	8.5	Steel	Steel	600
P2711.450-CA	45	62	53.5	45.0	8.5	Steel	Acetal	25
P2711.450-SS	45	62	53.5	45.0	8.5	Stainless	Stainless	420
P2711.600-CC	60	100	77.5	61	16.5	Steel	Steel	1500

Order No.	d_1	d_2	h_1	h_2	h_3	Housing	Ball	Load kg max.
P2711.600-CA	60	100	77.5	61	16.5	Steel	Acetal	35
P2711.600-SS	60	100	77.5	61	16.5	Stainless	Stainless	1000

Threaded Ball Transfer Units

medium duty, female

P2712



Material

Steel (AISI 1040 housing and AISI 52100 for balls),
stainless steel (AISI 416 for housing and AISI 420 for balls) and acetal (POM).

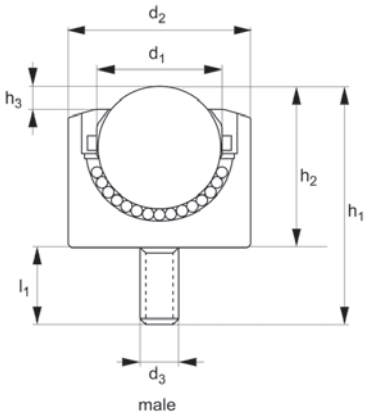
Technical Notes

These ball transfer units are made of a solid steel block
with a precision machined hemispherical carrying bowl.
Top cover plates are shaped to ensure the perfect conveyance of items which have possible burred or bent edges. This design also prevents possible damage to the carrying ball.
Provided with a hole in the base of the bearing cup to dispose of particles of dirt and swarf (this may also be used for re-lubrication purposes).
Manufactured without a flange on the housing,
therefore the whole load is being supported only by the bottom face of the unit.

Tips

For male version see P2713.

Order No.	Type	d_1	d_2	h_1	h_2	d_3	h_3	l_1	Housing	Ball	Load kg max.
P2712.120-CC	Female	12	22	24.0	20.5	M8	3.5	5	Steel	Steel	25
P2712.120-CA	Female	12	22	24.0	20.5	M8	3.5	5	Steel	Acetal	5
P2712.120-SS	Female	12	22	24.0	20.5	M8	3.5	5	Stainless	Stainless	17
P2712.120-CS	Female	12	22	24.0	20.5	M8	3.5	5	Steel	Stainless	20
P2712.220-CS	Female	22	36	40.5	34	M8	4.5	10	Steel	Stainless	180
P2712.450-CS	Female	45	62	63.5	50.5	M8	13.0	10	Steel	Stainless	600
P2712.300-CS	Female	30	45	46.8	38.8	M8	8.0	10	Steel	Stainless	350
P2712.150-CS	Female	15	24	28.0	23	M8	5.0	8	Steel	Stainless	50
P2712.150-CC	Female	15	24	28.0	23	M8	5.0	8	Steel	Steel	60
P2712.150-CA	Female	15	24	28.0	23	M8	5.0	8	Steel	Acetal	10
P2712.150-SS	Female	15	24	28.0	23	M8	5.0	8	Stainless	Stainless	40
P2712.220-CC	Female	22	36	40.5	34	M8	4.5	10	Steel	Steel	180
P2712.220-CA	Female	22	36	40.5	34	M8	4.5	10	Steel	Acetal	20
P2712.220-SS	Female	22	36	40.5	34	M8	4.5	10	Stainless	Stainless	126
P2712.300-CC	Female	30	45	46.8	38.8	M8	8.0	10	Steel	Steel	350
P2712.300-CA	Female	30	45	46.8	38.8	M8	8.0	10	Steel	Acetal	25
P2712.300-SS	Female	30	45	46.8	38.8	M8	8.0	10	Stainless	Stainless	245
P2712.450-CC	Female	45	62	63.5	50.5	M8	13.0	10	Steel	Steel	600
P2712.450-CA	Female	45	62	63.5	50.5	M8	13.0	10	Steel	Acetal	25
P2712.450-SS	Female	45	62	63.5	50.5	M8	13.0	10	Stainless	Stainless	420



P2713

Material
Steel (AISI 1040 housing and AISI 52100 for balls),
stainless steel (AISI 416 for housing and AISI 420 for balls) and acetal (POM).

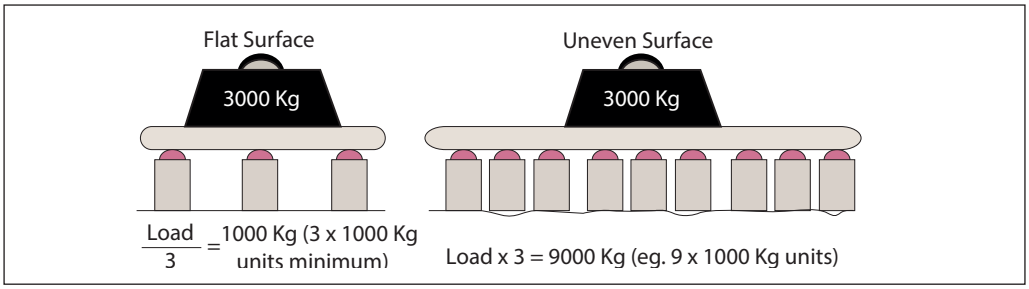
Technical Notes
These ball transfer units are made of a solid steel block
with a precision machined hemispherical carrying bowl.
Top cover plates are shaped to ensure the perfect conveyance of items which have possible burred or bent edges. This design also prevents possible damage to the carrying ball.
Provided with a hole in the base of the bearing cup to dispose of particles of dirt and swarf (this may also be used for re-lubrication purposes).
Manufactured without a flange on the housing,
therefore the whole load is being supported only by the bottom face of the unit.

Tips
For female version see P2712.

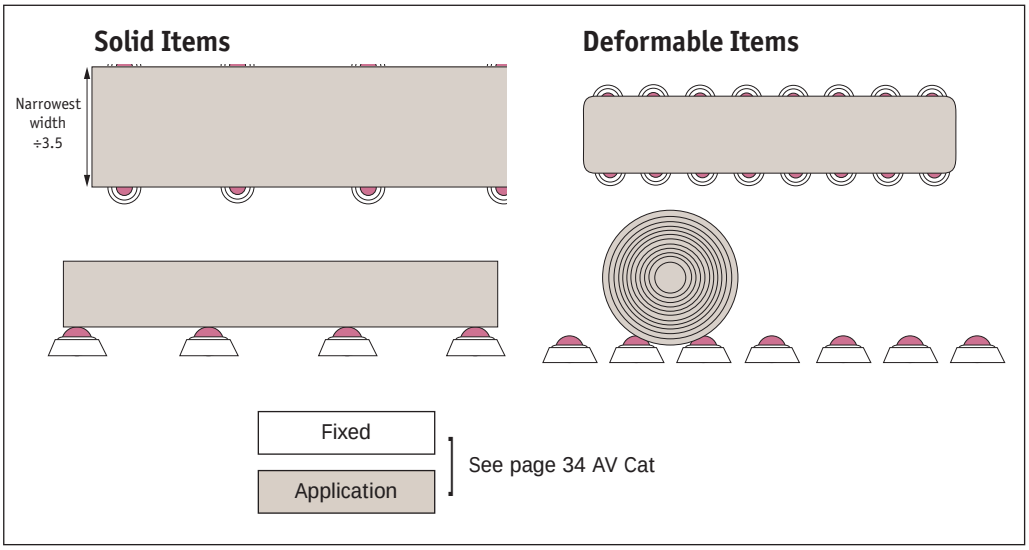
Order No.	Type	d_1	d_2	h_1	h_2	d_3	h_3	l_1	Housing	Ball	Load kg max.
P2713.220-CS	Male	22	36	62.9	37.5	M12	4.5	25.4	Steel	Stainless	126
P2713.450-CS	Male	45	62	107.3	66.0	M20	8.5	41.3	Steel	Stainless	420
P2713.300-CS	Male	30	45	69.2	43.8	M12	6.5	25.4	Steel	Stainless	245
P2713.150-CS	Male	15	24	32.5	20.5	M6	3.9	12.0	Steel	Stainless	35
P2713.120-CS	Male	12	20	29.8	17.8	M8	3.0	12.0	Steel	Stainless	14
P2713.120-CC	Male	12	20	29.8	17.8	M8	3.0	12.0	Steel	Steel	20
P2713.120-CA	Male	12	20	29.8	17.8	M8	3.0	12.0	Steel	Acetal	4
P2713.120-SS	Male	12	20	29.8	17.8	M8	3.0	12.0	Stainless	Stainless	14
P2713.150-CC	Male	15	24	32.5	20.5	M6	3.9	12.0	Steel	Steel	50
P2713.150-CA	Male	15	24	32.5	20.5	M6	3.9	12.0	Steel	Acetal	10
P2713.150-SS	Male	15	24	32.5	20.5	M6	3.9	12.0	Stainless	Stainless	30
P2713.220-CC	Male	22	36	62.9	37.5	M12	4.5	25.4	Steel	Steel	180
P2713.220-CA	Male	22	36	62.9	37.5	M12	4.5	25.4	Steel	Acetal	20
P2713.220-SS	Male	22	36	62.9	37.5	M12	4.5	25.4	Stainless	Stainless	126
P2713.300-CC	Male	30	45	69.2	43.8	M12	6.5	25.4	Steel	Steel	350
P2713.300-CA	Male	30	45	69.2	43.8	M12	6.5	25.4	Steel	Acetal	210
P2713.300-SS	Male	30	45	69.2	43.8	M12	6.5	25.4	Stainless	Stainless	245
P2713.450-CC	Male	45	62	107.3	66.0	M20	8.5	41.3	Steel	Steel	600
P2713.450-CA	Male	45	62	107.3	66.0	M20	8.5	41.3	Steel	Acetal	35
P2713.450-SS	Male	45	62	107.3	66.0	M20	8.5	41.3	Stainless	Stainless	420

Ball Transfer Units

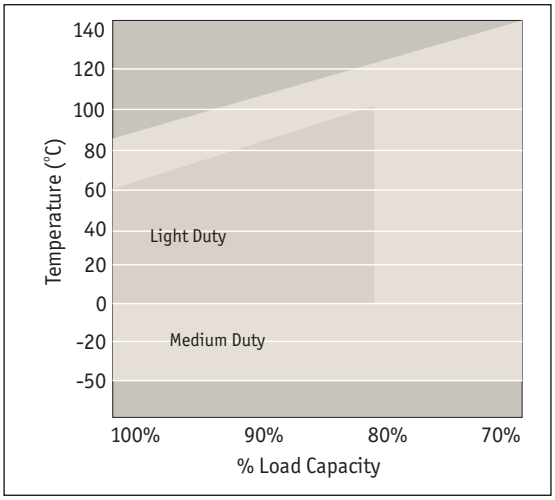
Load & Stability



Pitch & Spacing



Operating Temperature



Ball Transfer Units from Automotion Components