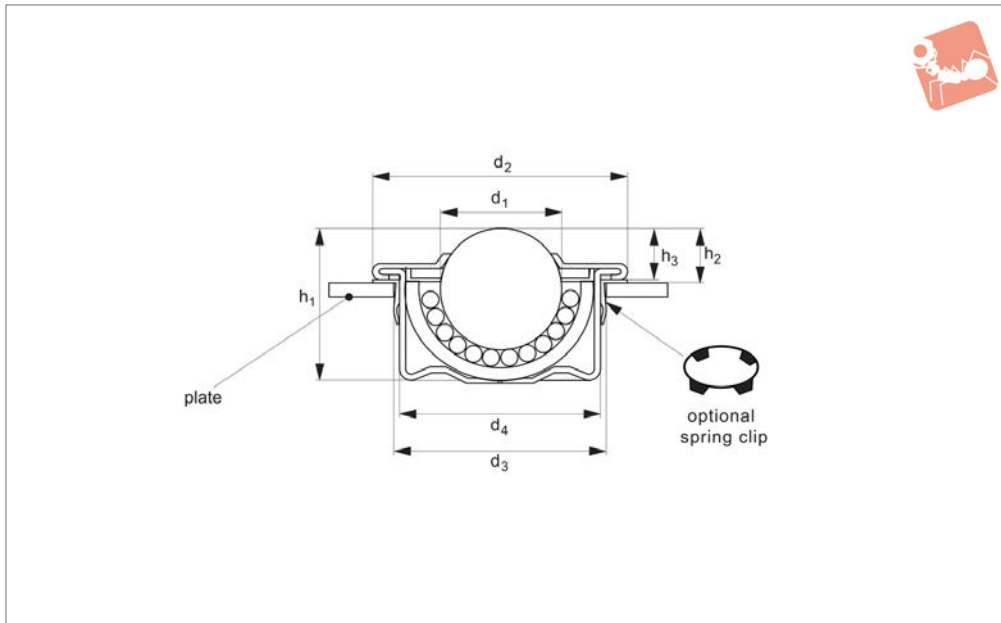




Push-Fit Ball Transfer Units

light duty, push fit

Transfer Rollers



67202

TRANSFER ROLLERS

Material

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

Technical Notes

Cost-effective and light-weight units formed from sheet steel material. No reduction in load carrying capacity even

when installed upside down. Sizes 22 and 30 have a felt seal for the ball. Low friction 1:0,03, speeds up to 1m/s. Temperature range -20°C to +70°C.

Tips

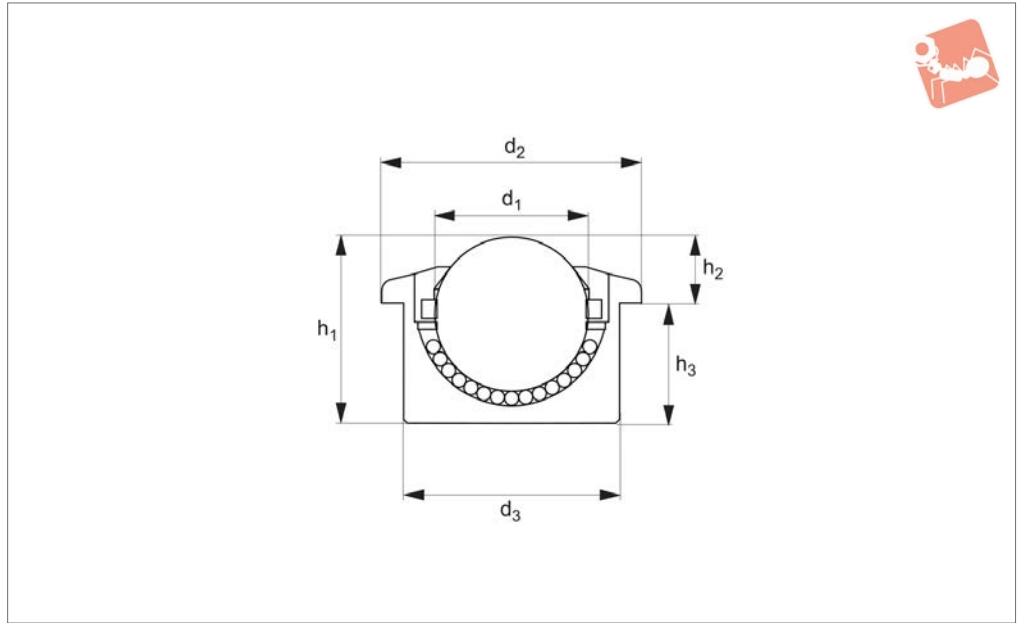
To compensate for irregular bore diameters we recommend using the spring clip (stainless) part no. P2730.

Clip requires a minimum plate thickness of 3mm to grip securely. 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 min.	d_3 max.	d_4	h_3	Housing	Ball	Load kg max.
67202.W0151	15	31	21	10.1	25	25.5	24	9.8	Steel	Steel	60
67202.W0154	15	31	21	10.1	25	25.5	24	9.8	Steel	Stainless	60
67202.W0155	15	31	21	10.1	25	25.5	24	9.8	Steel	Acetal	10
67202.W0152	15	31	21	10.1	25	25.5	24	9.8	Stainless	Stainless	40
67202.W0221	22	45	29.5	10.4	37.0	37.5	36	10.1	Steel	Steel	160
67202.W0224	22	45	29.5	10.4	37.0	37.5	36	10.1	Steel	Stainless	160
67202.W0225	22	45	29.5	10.4	37.0	37.5	36	10.1	Steel	Acetal	20
67202.W0222	22	45	29.5	10.4	37.0	37.5	36	10.1	Stainless	Stainless	90
67202.W0301	30	55	37	14.4	46	46.5	45	14.1	Steel	Steel	280
67202.W0304	30	55	37	14.4	46	46.5	45	14.1	Steel	Stainless	280
67202.W0305	30	55	37	14.4	46	46.5	45	14.1	Steel	Acetal	25
67202.W0302	30	55	37	14.4	46	46.5	45	14.1	Stainless	Stainless	200



67204



Material

Acetal (POM) housing with acetal or stainless (AISI 316) balls.

Technical Notes

Push-fit units, these acetal units resist

salt water and chemicals.

They are non-conductive and non-magnetic, low friction 1:0,03.

Temperature range -20°C to +70°C, speeds up to 1m/s.

Tips

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

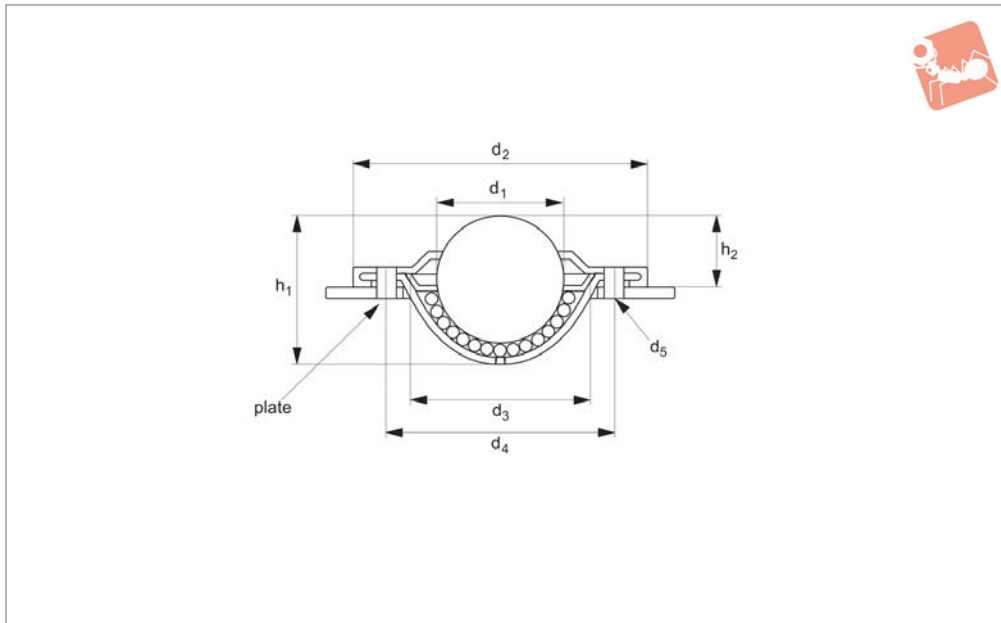
Order No.	d_1	d_2	h_1	h_2	d_3	h_3	Housing	Ball
67204.W0156	15	31	21	9.5	24	11.5	Acetal	Stainless
67204.W0157	15	31	21	9.5	24	11.5	Acetal	Acetal
67204.W0226	22	45	30.5	9.8	36	20.7	Acetal	Stainless
67204.W0227	22	45	30.5	9.8	36	20.7	Acetal	Acetal
67204.W0306	30	55	37	13.8	45	23.2	Acetal	Stainless
67204.W0307	30	55	37	13.8	45	23.2	Acetal	Acetal
67204.W0456	45	75	53.5	19	62	34.5	Acetal	Stainless
67204.W0457	45	75	53.5	19	62	34.5	Acetal	Acetal



Saturn Type Ball Transfer Units

light duty, saturn type

Transfer Rollers



67208

TRANSFER ROLLERS

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

Cost-effective and light-weight units

formed from sheet steel material.

No reduction in load carrying capacity even when installed upside down.

Low friction 1:0,03, temperature range - 20°C to +70°C, speeds up to 1m/s.

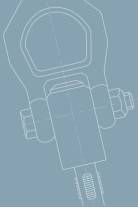
Tips

Theses rollers can only be used in the hori-

zontal or „ball up“ direction.

67208.320-SS and 67208.330-SS have 7 large fluid drain holes & no felt seal.

Order No.	d ₁	d ₂	h ₁	h ₂	d ₃	d ₄	d ₅	Housing	Ball	Load kg max.
67208.W0161	15	41.0	19.3	10.8	24.0	30.0	2 x 3,4	Steel	Steel	15
67208.W0164	15	41.0	19.3	10.8	24.0	30.0	2 x 3,4	Steel	Stainless	10
67208.W0165	15	41.0	19.3	10.8	24.0	30.0	2 x 3,4	Steel	Acetal	10
67208.W0221	23	45.0	27.7	9.8	33.0	39.0	3 x 3,5	Steel	Steel	120
67208.W0225	23	45.0	27.7	9.8	33.0	39.0	3 x 3,5	Steel	Acetal	90
67208.W0322	32	73.7	36.1	16.2	45.5	58.7	2 x 5,5	Stainless	Stainless	125
67208.W0255	25	56.0	30.0	14.6	36.0	45.0	2 x 4,0	Steel	Acetal	22
67208.W0332	32	74.0	36.1	16.2	46.0	58.7	3 x 5,5	Stainless	Stainless	125
67208.W0224	23	45.0	27.7	9.8	33.0	39.0	3 x 3,5	Steel	Stainless	22
67208.W0252	25	56.0	30.0	14.6	36.0	45.0	2 x 4,0	Steel	Steel	60
67208.W0254	25	56.0	30.0	14.6	36.0	45.0	2 x 4,0	Steel	Stainless	40
67208.W0251	25	47.1	29.6	14.3	38.1	-	-	Stainless	Stainless	55



Product selection

Available materials

Housing	Ball	Load Factor	
Steel	Steel	1,0	Housing: AISI 1040 steel, machined, toughened & zinc plated. Ball: AISI 52100 chrome steel
Steel	Stainless	0,7	Housing: AISI 1040 steel, machined, toughened & zinc plated. Ball: AISI 420 stainless steel
Stainless	Stainless	0,7	Housing: AISI 416 stainless steel. Ball: AISI 420 stainless steel
Steel	Acetal		Housing: AISI 1040 steel, machined, toughened & zinc plated. Ball: POM acetal
Aluminium	Stainless		Housing: aluminium. Ball: AISI 420 stainless steel
Acetal	Acetal		Housing: POM acetal. Ball: POM acetal
Acetal	Stainless		Housing: POM acetal. Ball: AISI 420 stainless steel

Fixing clip selection

Part No.	Ball Size	Minimum Bore ø	Maximum Bore ø
67202.W9015	15	24,8	25,0
67202.W9022	22	37,0	37,2
67202.W9030	30	46,3	46,7

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

How to select the correct unit

Ball Type	Max Load (Kg)	Friction (% of load)	Speed (m/s)	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:
Specify High Capacity series & spring loaded units



Track Hardness/ Conveyed Item Material:
Standard material ball units have Rockwell 'C' hardness of 60 minimum

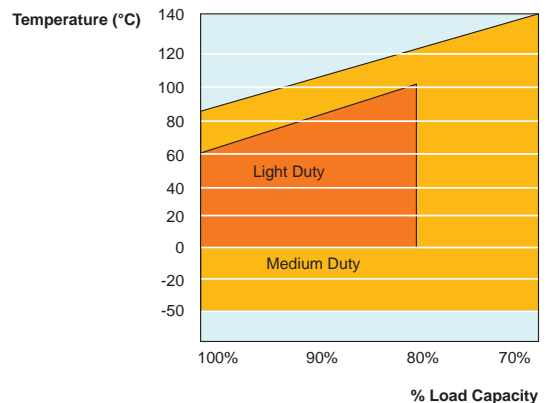


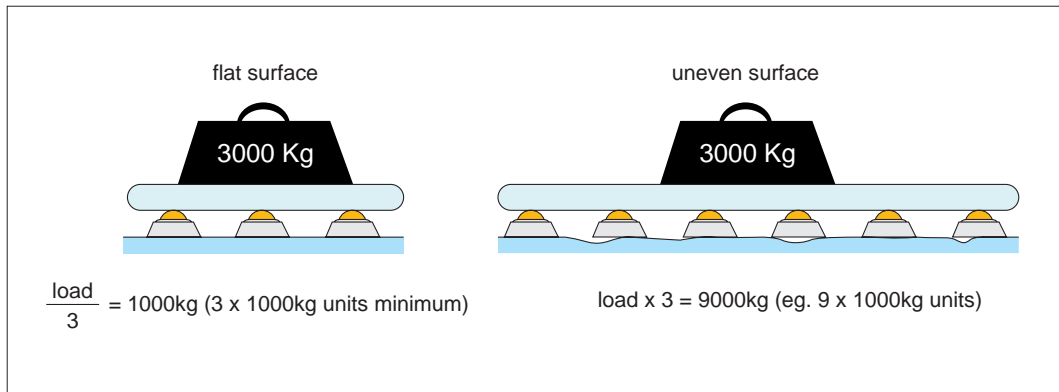
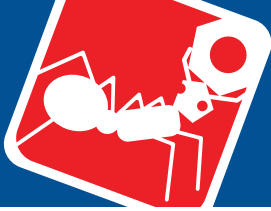
Delicate Surfaces:
Ball Units - Acetal (POM) & Phenolic Resin



Operating Environment:
Wet, dirty, outdoor, radioactive

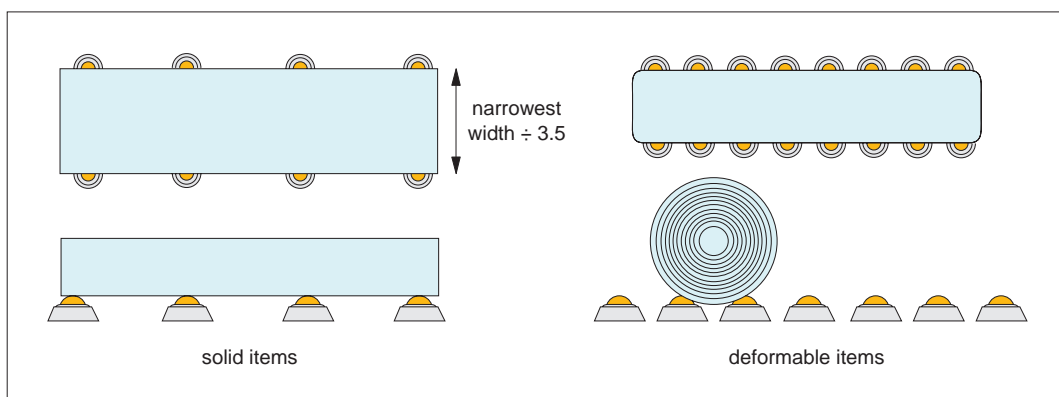
Operation temperature





Load and stability

To determine the load of a ball transfer unit, the weight of the article to be conveyed should be divided by 3. If the height tolerance of the load balls is good and the surface of the workpiece to be conveyed is suitable, the calculation can be based on the number of ball transfer units under the load.



Pitching and spacing

How the ball transfer units should be arranged depends on the bottom surface of the load to be transported. For loads with a uniform, even bottom surface, e.g. packing cases, the distance between the ball transfer units is calculated by dividing the smallest dimension by 3,5.

The maximum conveying speed allowed amounts to 2m/s. The load capacities specified apply to any mounting position and are based on 10^6 rotations of the load ball. With the units being used over a longer time at speeds exceeding 1m/s, an increase in temperature as well as a reduction in travel life must be expected depending on the load.

Conveying speed and load capacity

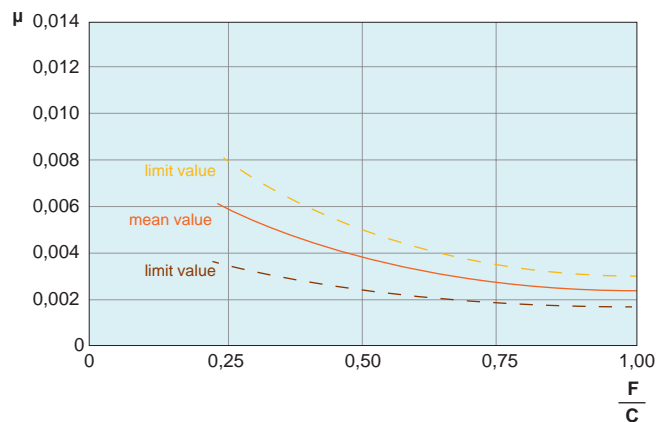
$$L = \frac{C^3}{F} 10^6 \text{ rotations}$$

L = travel life
C = load capacity (N)
F = load (N)

Calculation of travel life

The diagram shows the friction values as a function of load and speed for ball transfer units. These approximate values apply to all mounting positions with operation on a hardened steel plate.

v = 1m/s



Friction