

Material

Carbon steel, aluminium or stainless steel housing. Carbon steel or stainless steel balls.

Technical Notes

67200.W0161 and 67200.W0162 can be supplied with a flat top. All steel parts are supplied with a small amount of oil, to protect from oxidation.

Tips

Normally used in measuring equipment, small linear motion systems (e.g photo copier slides) and miniature mechanisms.

Order No.	Type	d ₁	d ₂	h ₁	h ₂	d ₃	l ₁	Housing	Ball	Max. load Kg
67200.W0051	type 1	4,8	13	9	1	M 6	15	Steel	Steel	10
67200.W0052	type 1	4,8	13	9	1	M 6	15	Stainless	Stainless	10
67200.W0053	type 2	4,8	8	6	1	M 2	2,5	Aluminium	Stainless	5
67200.W0064	type 1	6,4	17	11	2	M 6	15	Steel	Stainless	20
67200.W0065	type 2	6,4	13	10,5	2	M 3	6	Aluminium	Stainless	10
67200.W0072	type 1	6,4	17	11	2	M 6	15	Stainless	Stainless	20
67200.W0082	type 1	7,9	18	14	2	M 8	18	Stainless	Stainless	30
67200.W0084	type 1	7,9	18	14	2	M 8	18	Steel	Stainless	30
67200.W0093	type 2	7,9	15	12,5	2	M 4	8	Aluminium	Stainless	15
67200.W0101	type 1	9,6	23	20	2	M 8	20	Steel	Steel	40
67200.W0102	type 1	9,6	23	20	2	M 8	20	Stainless	Stainless	40
67200.W0131	type 1	12,7	28	25	3,5	M 8	23	Steel	Steel	50
67200.W0132	type 1	12,7	28	25	3,5	M 8	23	Stainless	Stainless	50
67200.W0151	type 1	15,8	28	20,5	4	M 6	12	Steel	Steel	70
67200.W0152	type 1	15,8	24	20,5	4	M 6	12	Stainless	Stainless	70
67200.W0161	type 1	15,8	24	20,5	4	M 6	12	Steel	Steel	70
67200.W0162	type 1	15,8	24	20,5	4	M 6	12	Stainless	Stainless	70



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	3 3 3	3 3		3 3 3
Light Duty	7-250	3%	1,0	3	3 3		3 3 3

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

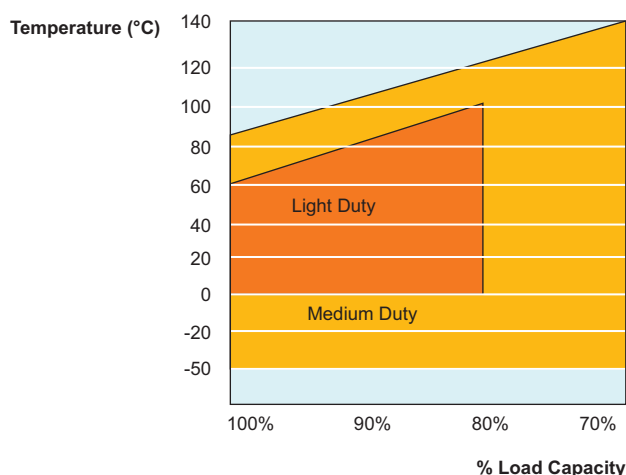


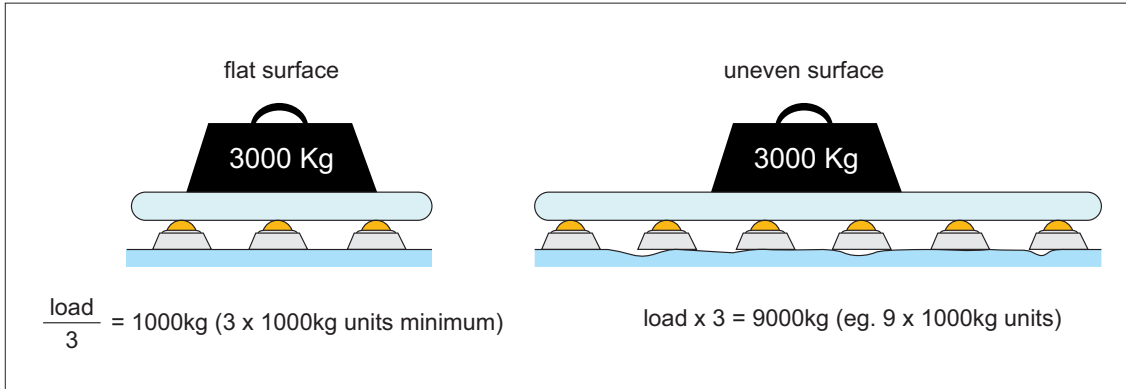
Delicate Surfaces:
Ball Units - Acetal (POM) & Phenolic Resin



Operating Environment:
Wet, dirty, outdoor, radioactive

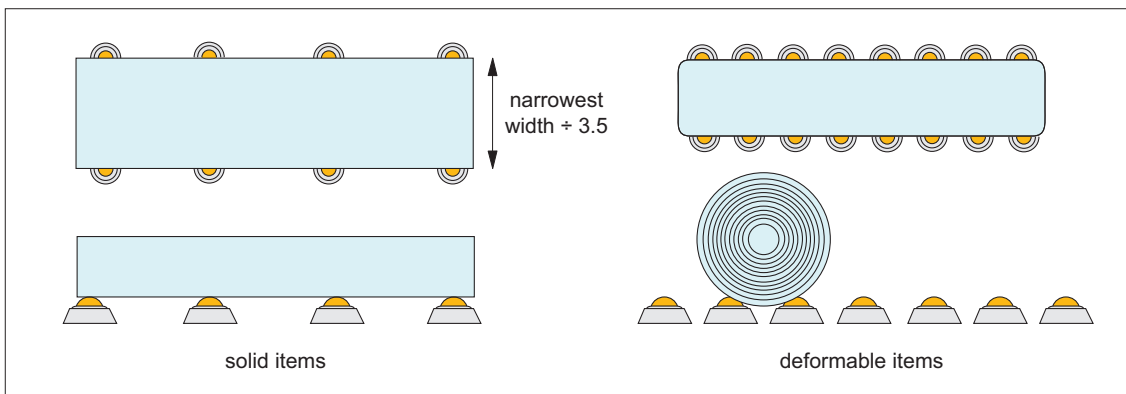
Operation temperature





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

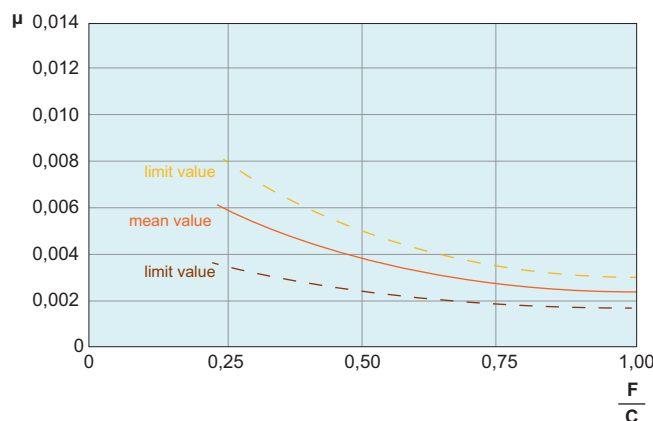
$$L = \frac{C^3}{F} 10^6 \text{ rotations}$$

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