

# Saturn Type Ball Transfer Units

light duty, saturn type





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. zontal or "ball up" direction. P2702.320-SS and P2702.330-SS have 7 large fluid drain holes & no felt seal.

### Tips

Theses rollers can only be used in the hori-

Order No.	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	Housing	Ball	Load
										kg
										max.
P2702.160-CC	15	41.0	19.3	10.8	24.0	30.0	2 x 3,4	Steel	Steel	15
P2702.160-CS	15	41.0	19.3	10.8	24.0	30.0	2 x 3,4	Steel	Stainless	10
P2702.160-CA	15	41.0	19.3	10.8	24.0	30.0	2 x 3,4	Steel	Acetal	10
P2702.220-CC	23	45.0	27.7	9.8	33.0	39.0	3 x 3,5	Steel	Steel	120
P2702.220-CA	23	45.0	27.7	9.8	33.0	39.0	3 x 3,5	Steel	Acetal	90
P2702.320-SS	32	73.7	36.1	16.2	45.5	58.7	2 x 5,5	Stainless	Stainless	125
P2702.250-CA	25	56.0	30.0	14.6	36.0	45.0	2 x 4,0	Steel	Acetal	22
P2702.330-SS	32	74.0	36.1	16.2	46.0	58.7	3 x 5,5	Stainless	Stainless	125
P2702.220-CS	23	45.0	27.7	9.8	33.0	39.0	3 x 3,5	Steel	Stainless	22
P2702.250-CC	25	56.0	30.0	14.6	36.0	45.0	2 x 4,0	Steel	Steel	60
P2702.250-CS	25	56.0	30.0	14.6	36.0	45.0	2 x 4,0	Steel	Stainless	40
P2702.250-SS	25	47.1	29.6	14.3	38.1	-	-	Stainless	Stainless	55





## **Product selection**

Available materials	Housing	Ball F	Load								
	Steel	Steel	1,0	Но	using: AISI 1	.040 steel, mac	hined, tougher	ned & zinc plated	. Ball:		
	AISI 52100 chrome steel								I Balli		
	Steel Stainless 0,7 AISI 1040 steel, machined, toughened & Zinc plated.							. Dan.			
	Stainless Stainless 0,7 Housing: AISI 416 stainless steel. Ball: AISI 420 stainless ste							steel			
	Steel	Acetal	Ho	ousing: AISI 1040 steel, machined, toughened & zinc plated. Ball: POM aceta							
	Aluminium	Stainless		Housing: aluminium. Ball: AISI 420 stainless steel							
	Acetal Acetal			Housing: POM acetal. Ball: POM acetal							
	Acetai Stainless Housing: POM acetal. Ball: AISI 420 stainless steel										
Fixing clip selection	Part No.			F	Ball Size	Min	imum Bore ø	Maxim	Maximum Bore ø		
	672	02.W9015			15		24,8		25.0		
	672	02.W9022			22		37,0	3	37,2		
	672	02.W9030	)		30		46,3	Z	6,7		
	Clin requires a minimum plate thickness of 2mm to grin securely										
		5 a minim			s or smill to	grip securely					
How to select the correct unit	Ball Type	Max Load (Kg)	d Fric (% of	tion load)	Speed (m/s)	Shock Loads	Arduous Conditions	Orientation	Instant Change		
	Medium Duty	20-3500	) 29	%	1,5	J J J	J J		J J J		
	Light Duty	7-250	30	%	1,0	<i>✓</i>	11		J J J		
Variables to consider					- And			**			
	Shock Loads: Specify High Capacity series & spring loaded units			ck Hard nveyed I ndard m ts have dness o	ness/ Item Materia naterial ball Rockwell 'C of 60 minimu	Delicate S Delicate S al: Ball Units & Phenol	Surfaces: s - Acetal (POI ic Resin	Operating I N) Wet, dirty, o radioactive	Operating Environment Wet, dirty, outdoor, radioactive		
Operation temperature						Temperature	(° <b>C)</b> 140 120 100				
							80 60 40	Light Duty			



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0

-20 -50

100%

Medium Duty

90%

80%

70%

% Load Capacity



## Wixroyd Ball Transfer Unit





### 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 conveved 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.



## **Conveying speed and** load capacity

The maximum conveying speed allowed amounts to 2m/s. The load capacities specified apply to any mounting position and are based on 10<sup>6</sup> 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.

L =  $\frac{C^3}{F}$  10<sup>6</sup> rotations

## **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



L = travel life

C = load capacity (N)F = load(N)

## Friction

