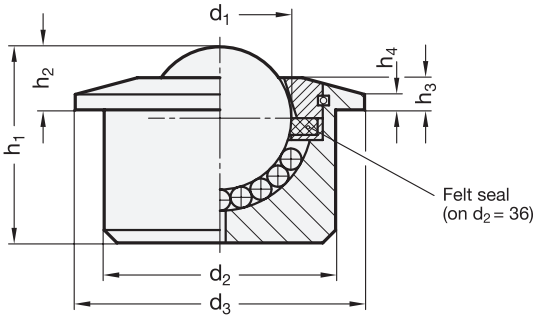


Inox
Stainless
Steel

1 Size	d_1 ball	d_2 ±0,08	d_3	h_1 ±0,3	h_2 ±0,3	h_3 ±0,3	h_4	Load C in N Type SBL	SNI	NNI
12	12,7	22	27	17	8	4	3,2	200	150	150
15	15,8	24	30	20	8,1	3,5	1	500	400	400
22	22,2	36	45	30,5	9,8	5	2,4	1300	1000	1000
30	30,1	45	55	36,8	13,8	7	4,5	2500	2000	2000
45	44,4	62	75	53,5	19	9,5	5,5	6000	4500	4500
60	60	100	117	77,5	30	15	10	13000	10000	10000

Specification

2

- Housing Steel **SBL**
  - turned
  - zinc plated, blue passivated
  - Ball Steel, blank
- Housing Steel **SNI**
  - turned
  - zinc plated, blue passivated
  - Ball Stainless Steel 440C
- Housing Stainless Steel AISI 301 **NNI**
  Ball Stainless Steel 440C
- *Stainless Steel characteristics* → *Page 1144*
- RoHS compliant

On request

- Plastic ball (Polyamide)

Accessory

- Spring rings GN 509.3 → *Page 607*

Information

Ball transfer units GN 509.1 are used on conveyer tracks. They assist a linear or rotary movement of heavy loads on a conveyer track.

see also...

- *More information to ball transfer units* → *Page 605*
- *Ball transfer units GN 509 (Steel housing)* → *Page 604*

How to order		
GN 509.1-30-SNI (1 2)	1	**Size**
	2	**Material / Finish**

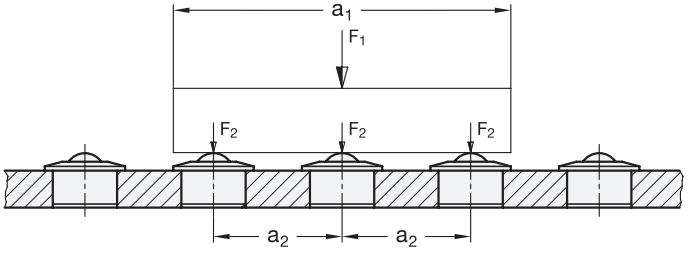
All ball operated conveyers are made up of a number of balls each located in a socket resting on a number of smaller support balls thus allowing the larger ball to rotate in any direction.

Arrangement and choice of ball size

When deciding on the size of the conveyer the following factors have to be taken into account: Weight, size, base material as well as the load to be carried.

The **max. distance between the roller balls „a2“** (on a plane surface) is arrived at by dividing the shortest edge length of the load to be conveyed by 2,5. This ensures that a load will always be supported by carrier balls thus preventing it from tipping over into an empty space.

The required **load carrying capacity** of the balls is determined by the weight of the actual load divided by three. This is arrived at from the assumption that, due to tolerances on the load carrying face and the spacing of the balls in general, only three balls will be under load at any one time.



a_1 = shortest edge length of the load — F_1 = Load weight

a_2 = max. distance between roller balls — F_2 = Load per roller ball

$$a_2 = \frac{a_1}{2,5} \qquad F_2 = \frac{F_1}{3}$$

Speed and friction

The permissible conveying speed is 2 m/sec. With larger roller balls at speeds exceeding 1m/sec., depending on the weight being conveyed, an increased temperature would be expected.

The **friction values** of the balls at a speed of 1 m/sec. will be in the region of 0,005 µ. This value is, however, dependent on application of usage and could be subject to large variations.

In comparison of balls with sheet metal housings (GN 509) with balls in heavy duty steel housing (GN 509.1), the latter have a higher rigidity. Hence the static values of balls in steel housing can be applied.

Lubrication to prevent corrosion is recommended. The general recommendations applicable to ordinary roller bearings will be sufficient. In most applications lubrication can be ignored.

Resistance to temperature

Balls from size 36 upwards are fitted with a felt seal as protection against ingress of dirt and dust. The latter have a max temperature of 100 °C only.

Balls without the felt seal can also be used at higher operating temperatures. This, however, will lead to a reduced conveying capacity (c). The following table gives indicative values:

125 °C ./. 10 %

150 °C ./. 20 %

170 °C ./. 30 %

200 °C ./. 50 %

The max. operating temperatur for ball transfer units with plastic ball is 60 °C.