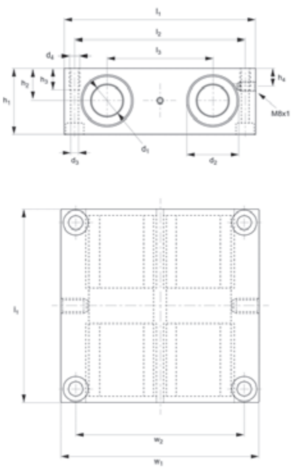
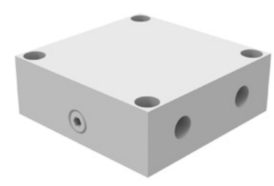




L1758

Material
Aluminium alloy body.
Steel bearings with plastic ball retainer and end seals.

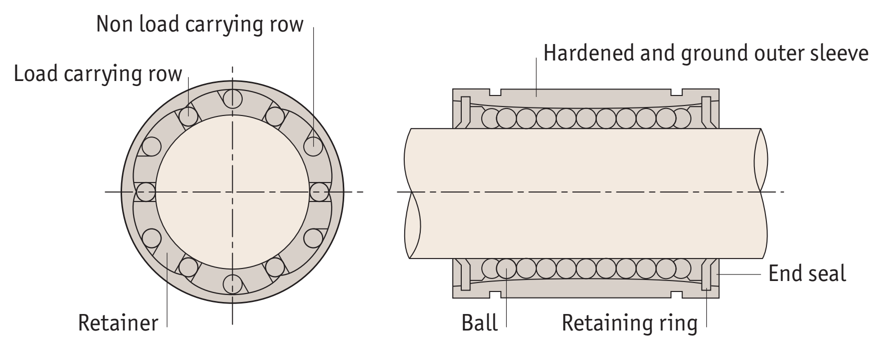
Technical Notes
Quadruple, closed, self-aligning linear ball bearings with two integral seals and lubrication hole.
Bearings are fixed in the housing by retaining rings (DIN 472).
For use with hardened shafts only (see part no.s L1770 - L1772). Load ratings apply for hardened and ground shafts only.
Temperature range: -20°C to +80°C.

For applications requiring higher temperatures we can make the bushings suitable for use up to +120°C by changing the ball retainers, end plates, and seals. Please advise at time of ordering if this is required.

Order No.	d_1 for h_7	d_2 tol. h6	w_1	h_1	h_2 +0.01 | -0.02	h_3	h_4	l_1	Weight kg
L1758.012	12	22	85	32	16	13	13	85	0.70
L1758.016	16	26	100	36	18	13	15	100	1.02
L1758.020	20	32	130	46	23	18	19	130	2.15
L1758.025	25	40	160	56	28	22	24	160	4.07
L1758.030	30	47	180	64	32	26	27	180	5.87
L1758.040	40	62	230	80	40	34	35	230	11.78

Order No.	l_2 & w_2	l_3 ±0.02	d_3	d_4	Dyn. load C kN max.	Static load C_0 kN max.
L1758.012	73	42	5.3	M 6	1.3	2.0
L1758.016	88	54	5.3	M 6	1.4	2.2
L1758.020	115	72	6.8	M 8	3.2	4.9
L1758.025	140	88	9.0	M10	5.5	8.5
L1758.030	158	96	10.5	M12	6.2	9.5
L1758.040	202	122	13.5	M16	10.5	14.0

Linear ball bushings



Applications

- Computers and peripheral equipment.
- Recording equipment.
- Linear motion systems.
- Multi-axis drilling machine.
- Printing machines.
- Food packaging machines.
- Punching presses.
- Tool grinders.
- Assembly systems.
- Card selectors.

Interchangeability

Our linear bushing systems are designed to have full interchangeability, with other manufacturers' parts. **For shafting see part numbers L1770 to L1785.**

High precision retainer

The single body retainer guides 4-6 ball circuits. It precisely guides the balls with a smooth motion.

Tolerance of housing bore

Normal fit is standard, pressed fit is for without clearance.

Type	Case	
Part no.	Normal fit	Pressed fit
L1706 to L1733	H7	K6, J6
L1706...$^{-1}$ to L1733...$^{-1}$	H7	J7

Rigid outer sleeve

The hardened and precisely ground outer sleeve is made of bearing steel.

L1750 bushing carriages

Consists of light aluminium case and L1706 type linear bushing, so the installation can be finished simply by bolting. Longer life can be obtained by adjusting the orientation of the ball circuits in the linear carriage element against the direction of load.

Tolerance of shaft

Type	Shaft	
Part no.	Normal fit	Tight fit
L1706 to L1733	h6	k6
L1706...$^{-1}$ to L1733...$^{-1}$	f6, g6	h6

Basic dynamic load rating C

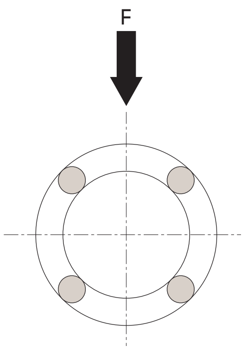
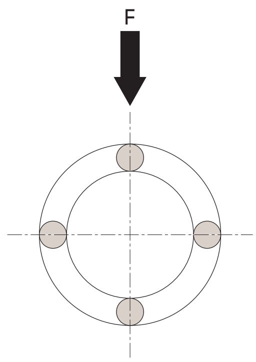
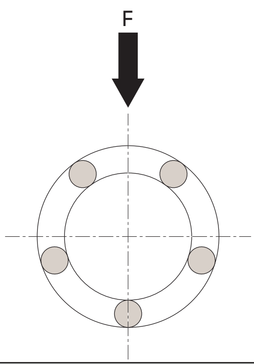
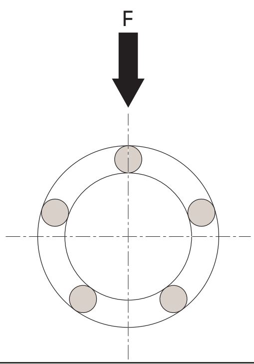
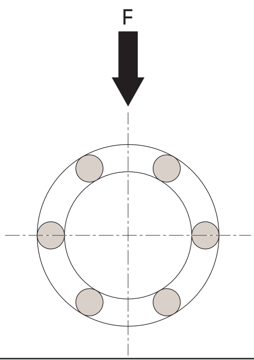
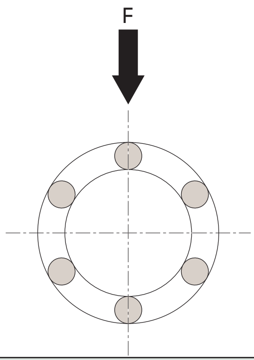
The basic dynamic load rating is defined as the constant load both in direction and magnitude under which a group of identical linear bushings are individually operated. 90% of the units can travel 50Km without failing due to rolling contact fatigue.

Basic static load rating C_0

If a linear bushing is subject to an excessive load or impact, a permanent deformation occurs between the raceway and the rolling element. The basic static load rating is defined as the static load that gives a prescribed constant contact stress at the centre of the contact area between the rolling element and raceway receiving the maximum load.

Relationships between load ratings and the position of ball circuits

Load ratings of linear bushing are affected by the position of the ball circuits as shown below.

No of ball rows	Orientation of balls	
	Maximum load rating	Minimum load rating
4		
	F = 1.41 x C	F = C
5		
	F = 1.46 x C	F = C
6		
	F = 1.26 x C	F = C

Load ratings and orientation of balls.

ov-linear-ball-bushings-load-rating-a-rnh - Updated - 22-02-2023

Technical Information

Load rating important information

When designing a linear motion system it is necessary to consider how the application will affect performance. The following examples demonstrate how the position of the load and the centre of gravity can influence product selection. When evaluating your application, review each of the forces acting on your system and determine the product that best suits your needs.

Horizontal application

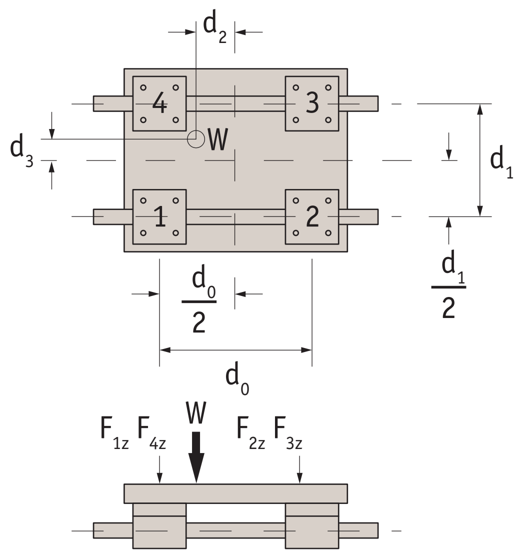
For uniform speed or when stopped.

$$F_{1z} = \frac{W}{4} + \left(\frac{W}{2} \cdot \frac{d_2}{d_0}\right) - \left(\frac{W}{2} \cdot \frac{d_3}{d_1}\right)$$

$$F_{2z} = \frac{W}{4} - \left(\frac{W}{2} \cdot \frac{d_2}{d_0}\right) - \left(\frac{W}{2} \cdot \frac{d_3}{d_1}\right)$$

$$F_{3z} = \frac{W}{4} - \left(\frac{W}{2} \cdot \frac{d_2}{d_0}\right) + \left(\frac{W}{2} \cdot \frac{d_3}{d_1}\right)$$

$$F_{4z} = \frac{W}{4} + \left(\frac{W}{2} \cdot \frac{d_2}{d_0}\right) + \left(\frac{W}{2} \cdot \frac{d_3}{d_1}\right)$$



Horizontal application

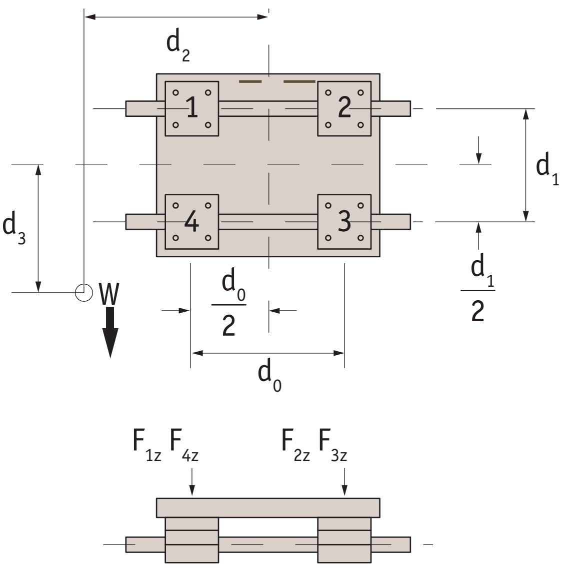
For uniform speed or when stopped.

$$F_{1z} = \frac{W}{4} + \left(\frac{W}{2} \cdot \frac{d_2}{d_0}\right) - \left(\frac{W}{2} \cdot \frac{d_3}{d_1}\right)$$

$$F_{2z} = \frac{W}{4} - \left(\frac{W}{2} \cdot \frac{d_2}{d_0}\right) - \left(\frac{W}{2} \cdot \frac{d_3}{d_1}\right)$$

$$F_{3z} = \frac{W}{4} - \left(\frac{W}{2} \cdot \frac{d_2}{d_0}\right) + \left(\frac{W}{2} \cdot \frac{d_3}{d_1}\right)$$

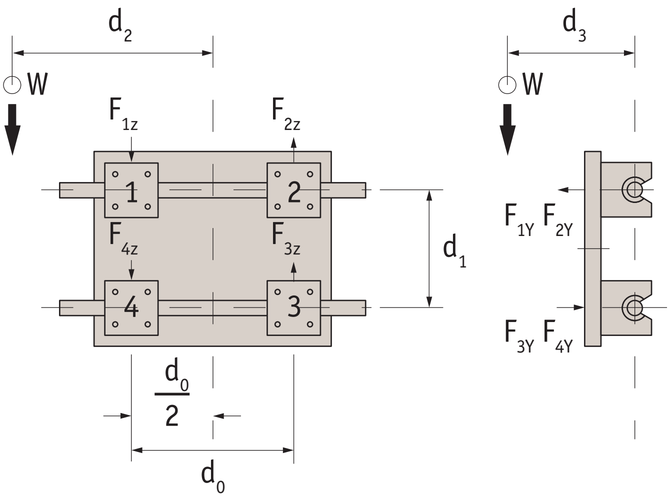
$$F_{4z} = \frac{W}{4} + \left(\frac{W}{2} \cdot \frac{d_2}{d_0}\right) + \left(\frac{W}{2} \cdot \frac{d_3}{d_1}\right)$$



$$F_{1Y} \sim F_{4Y} = \left(\frac{W}{2} \cdot \frac{d_3}{d_0}\right)$$

$$F_{1Z} = F_{4Z} = \frac{W}{4} + \left(\frac{W}{2} \cdot \frac{d_2}{d_0}\right)$$

$$F_{2Z} = F_{3Z} = \frac{W}{4} + \left(\frac{W}{2} \cdot \frac{d_2}{d_0}\right)$$



Side mounted application

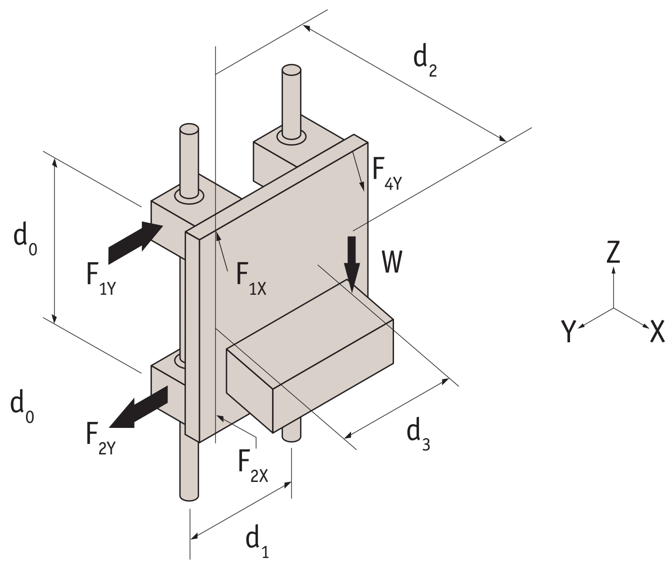
For uniform speed or when stopped.

$$F_{1X} \sim F_{4X} = \left(\frac{W}{2} \cdot \frac{d_2}{d_0}\right)$$

$$F_{1Y} \sim F_{4Y} = \left(\frac{W}{2} \cdot \frac{d_3}{d_0}\right)$$

$$F_{1X} + F_{4X} \sim F_{2X} + F_{3X}$$

$$F_{1Y} + F_{4Y} \sim F_{2Y} + F_{3Y}$$



Vertical application

For uniform speed or when stopped. On start up/stop the load varies due to inertia in the system.