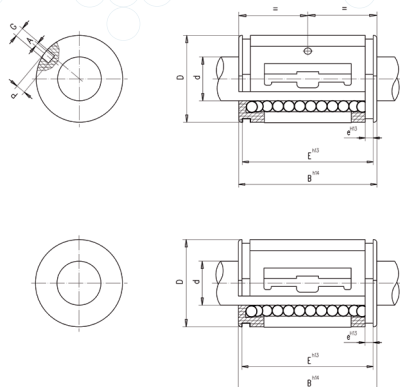


LINEAR MOVEMENT

LINEAR BEARINGS

Standard product line - microlinea

Miniature high precision linear bearings.
 DBL – series with plastic body (POM) with stainless steel balls and needles.



Reference	d (mm)	D (mm)	B (mm)	e (mm)	E (mm)	Ø balls (mm)	A (mm)	P (mm)	G (mm)	Load ratings		
										stat. (Co)	dyn. (C)	no. of ball rows
DBL 307X	3	7	10	-	-	1.0	0.0	0.75	1.0	27	26	3
DBL 408X	4	8	12	-	-	1.0	0.0	0.9	1.0	50	44	4
DBL 510X	5	10	15	-	-	1.2	0.1	1.0	1.2	84	72	4
DBL 612X	6	12	19	-	-	1.0	0.0	1.0	1.0	132	114	4
DBL 815X	8	15	24	1.1	23	1.5	0.85	1.0	1.5	204	167	5
DBL 1017X	10	17	26	1.1	25	1.5	0.85	1.2	1.5	234	186	5
DBL 1219X	12	19	28	1.3	26.4	1.5	1.25	1.2	1.5	257	202	6
Bearings have wipers on both sides												
DBL 1222X-JR	12	22	32	1.3	22.60	2.0	-	-	-	352	310	6
DBL 1626X-JR	16	26	36	1.3	24.60	2.0	-	-	-	440	372	7
DBL 2032X-JR	20	32	45	1.6	31.20	2.5	-	-	-	689	591	7
DBL 2540X-JR	25	40	58	1.85	43.70	3.5	-	-	-	1332	1162	7

Materials

Housing: polyamide
 Balls and needles: stainless steel
 Temperature: -40°C to +60°C
 Lubrication: standard: Winsor Lube L245X (other oils on request)

Example of part number definition

DBL 307X precision linear bearing
 DBL 307X bore diameter = 3 mm
 DBL 307X outer diameter = 7 mm
 DBL 307X stainless steel

DBL	Recommended tolerances				Radial clearance with the proposed tolerances for the housing and shaft		
	Housing		Shaft		Nominal value	H5/h5 [µm]	H6/h6 [µm]
	H5 [µm]	H6 [µm]	h5 [µm]	h6 [µm]			
307	0/+6	0/+9	0/-4	0/-6	0-6	0-16	0-21
408	0/+6	0/+9	0/-5	0/-8	0-6	0-17	0-23
510	0/+6	0/+9	0/-5	0/-8	0-6	0-17	0-23
612	0/+8	0/+11	0/-5	0/-8	0-6	0-19	0-25
815	0/+8	0/+11	0/-6	0/-9	0-6	0-20	0-26
1017	0/+8	0/+11	0/-6	0/-9	0-6	0-20	0-26
1219	0/+9	0/+13	0/-8	0/-11	0-6	0-23	0-30
1222	0/+9	0/+13	0/-8	0/-11	0-6	0-23	0-30
1626	0/+9	0/+13	0/-8	0/-11	0-6	0-23	0-30
2032	0/+11	0/+16	0/-9	0/-13	0-6	0-26	0-35
2540	0/+11	0/+16	0/-9	0/-13	0-7	0-27	0-36

Calculation of the theoretical life expectancy for linear bearings

In Europe we consider a nominal life of 100'000 meters travel distance; that is the reason of the 10^5 factor in the following formula (in Japan: 50'000 meters). The load rating is calculated according to DIN 636.

General formulas

The theoretical life has no practical value unless the following conditions are scrupulously observed:

- Magnitude and direction of constant load carefully determined
- Constant speed
- Constant temperature not exceeding 60°C
- Rigorous cleanliness in mounting and during running
- Careful choice and dosage of lubricant

Life in achievable distance

L_m : Life expectancy in meters [m]

C: Dynamic load rating [N]

P: Equivalent dynamic load [N]

$$L_m = \left(\frac{C}{P}\right)^3 \cdot 10^5$$

Life in hours

L_h : Life expectancy in hours [h]

f: Number of double strokes per minute [min^{-1}]

s: Length of a double stroke [m]

$$L_h = \left(\frac{C}{P}\right)^3 \cdot \frac{10^5}{f \cdot s \cdot 60}$$

Specifications subject to change without notice