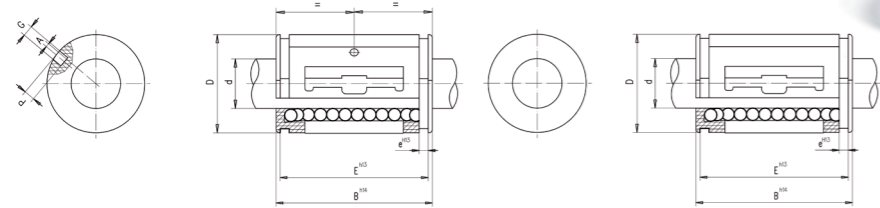


DBL Series - Linear bearings

From standard products to customized solutions
Linear bearings - Linear movement

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 to ISO 14728 (N)		
										stat. (C ₀)	dyn. (C _{100B})	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: polyoxymethylen (POM)
Balls and needles: stainless steel
Lubrication: standard: Winsor Lube L245X (other oils on request)
Temperature: -40°C to +60°C

Example of part number definition

DBL 307X precision linear bearing DBL-type
DBL 307X bore diameter = 3 mm
DBL 307X outer diameter = 7 mm
DBL 307X stainless steel balls and needles

Data subject to change without notice.

DBL	Recommended tolerances				Radial clearance with the proposed tolerances for the housing and shaft		
	Housing		Shaft		Nominal value	H5/h5 [µm]	H6/h6 [µm]
307	H5 [µm]	H6 [µm]	h5 [µm]	h6 [µm]	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

Data subject to change without notice.

Calculation of the theoretical life expectancy for linear bearings

C_{100B} is calculated according to ISO 14728. 100 stands for a nominal life expectancy of 100km and B for linear ball bearing. Without any precision, a C value may also correspond to C_{50B} (C_{50B} = 1.26 x C_{100B}).

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 velocity
- 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_{100B}: Dynamic load rating [N]
 P: Equivalent dynamic load [N]

$$L_m = \left(\frac{C_{100B}}{P}\right)^3 \cdot 10^5$$

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]

$$L_h = \left(\frac{C_{100B}}{P}\right)^3 \cdot \frac{10^5}{f \cdot s \cdot 60}$$

According to ISO 14728, one shall consider a static safety factor so that the actual load does not exceed half of the C₀ value.