

LM76 Bearings are available in two types, Ceramic Coated and Self Lubricating (SL)

Ceramic Coated Bearings

Manufactured from a special grade of aluminum then ceramic coated using a proprietary coating process. The surface hardness achieved is Rockwell C-85, which is why the bearings have extremely long wear life. The extreme hardness prevents particles from imbedding into the surface, the primary cause of bearing and shaft failures. The Ceramic Series must be lubricated with a constant thin film in order to perform according to catalogue specifications.

Self Lubricated (SL) bearings

The LM76 SL series is a maintenance-free bearing manufactured to the same exacting standards as the Ceramic Coated series, except the inside diameter is lined with a custom blended Teflon material. This bearing liner eliminates the need for lubrication, and because of its non-abrasive fillers, also allows the use of soft shaft materials (Rockwell B-25 min.), such as 300 series stainless steel, drill rod or aluminum.



Comparison of LM76 Ceramic Bearings and SL Series Bearings. Differences in coefficient of friction, life expectancy, abrasive resistance and speed limitations are indicated in the chart below.

In all other respects, the SL series and the original LM76 Ceramic coated bearing are identical. Where lubrication is possible, the Ceramic coated linear bearing is a logical first choice. It will accept higher loads, faster speeds, and has superior wear resistance, especially in abrasive atmospheres such as paper dust, grit, glass particles, etc.

	LM76 SL	LM76 Ceramic
Max. PV (cont.)	0.026N/mm ² m/s	1.4N/mm ² m/s
Max. P (static)	5.2N/mm ²	34.4N/mm ²
Max. V (no load)	2m/s	unlimited
Shaft Hardness (min.)	RB25	RC35-63
Shaft Finish (RMS)	8-16	8-16
Coefficient of friction	0.10-0.18	0.04-0.08
Temp. Limits- (typical)	-240°C to +190°C	-130°C to +200°C

Wear Data: Ceramic LM76

Test Parameters: Dynamic Test Load: 0.69 N/mm²
 Speed During Test: 0.51 m/s
 Lubrication: Lithium Stearate Grease

Results: Run-in Wear (10 Hours) 0.000254mm Total Wear
 Constant Wear Rate After Run-in 2.5 x 10⁻¹¹mm per metre of travel

Wear Data: Self-Lubricating (SL) LM76

Test Parameters: Dynamic Test Load: 0.69 N/mm²
 Speed During Test, 0.25 m/s
 Lubrication: none

Results: Run-in Wear (10 Hours) 0.00076 mm Total Wear
 Constant Wear Rate After Run-in 4.5 x 10⁻⁵ mm per metre of travel.

Linear Motion Performance Data

Maximum velocity: unlimited
Maximum load (static): 34.4 N/mm²
Coefficient of friction: as low as 0.04

PV Limits -Linear Motion

PV limits as applied to plane bearings vary depending upon the manufacturer's testing procedures. The PV limit for the LM76 bearing was determined to be the point in the testing where the constant coefficient of friction (e.g. 0.04 increased to 0.05) remained at that level or higher. At that point, the

test was terminated and that load and speed was determined to be the PV limit. Therefore it should be noted that the PV limit only signifies an increase in friction, **and not significant surface damage or wear.**

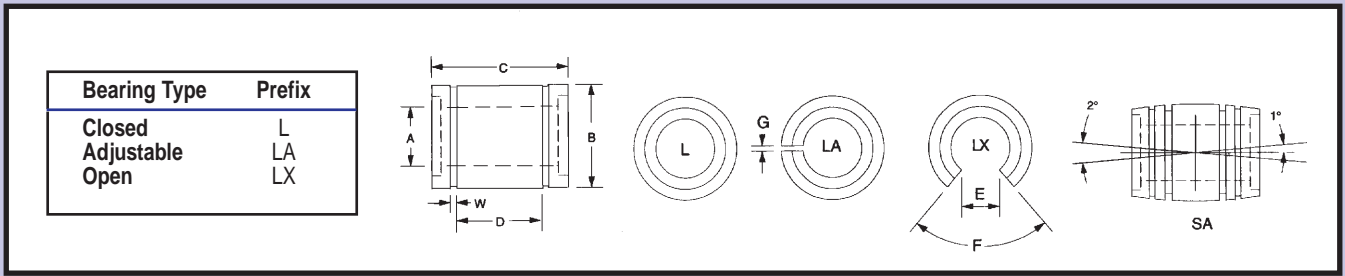
Rotary Performance Data

Maximum velocity: unlimited
Maximum load (static): 70 N/mm²
Coefficient of friction: as low as 0.04

Temperature Limitation

Low Temperature -130° C
High Temperature +200° C

- ✓ Available in any Shape or Configuration
- ✓ Lasting Precision Alignment
- ✓ Abrasion Resistance
- ✓ Elimination of Noise
- ✓ Interchangeable with Rolling Element
- ✓ Minimal Lubrication is Required
- ✓ Design Economies
- ✓ Rotary/Linear Motion Capability
- ✓ Zero Shake or Play
- ✓ Elimination of Galvanic Action
- ✓ High Operation Speeds
- ✓ Excellent Electrical Insulating Abilities
- ✓ Oscillatory Motion & Rapid Directional Change
- ✓ Unaffected by Salt Water or Corrosion
- ✓ Cleanliness
- ✓ Vacuum Applications
- ✓ No Catastrophic Failure
- ✓ Low Friction
- ✓ Food Machinery (FDA Approved Materials Available)



Standard “European” Sizes Available in Ceramic, Self Lubricating and Self Aligning styles

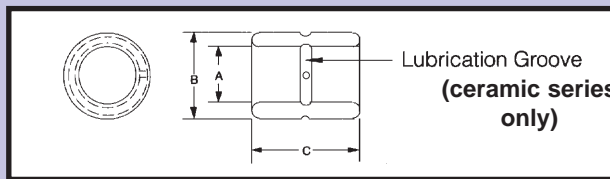
Part No. add prefix L, LX or LA	Working Bore		Outside Dia. h7 Tolerance	Length h14 Tolerance	Retaining Ring		Max. Shaft Dia.. (h6 or h7)	Housing Bore Dia. H7	Open(LX) Slot Width E	Open (LX) Slot Angle F	Adj. (LA) Slot Width G
	A	Tolerance -0,000 +			B	D					
5	5	0.038-0.065	12	22	12	1.1	5	12	-	-	2
8	8	"	16	25	14	1.1	8	16	-	-	2
12	12	"	22	32	20	1.3	12	22	7.6	78	2.5
16	16	"	26	36	22	1.3	16	26	10.8	78	3
20	20	0.047-0.074	32	45	28	1.6	20	32	10.8	60	3.5
25	25	"	40	58	40	1.85	25	40	13.2	60	4.5
30	30	"	47	68	48	1.85	30	47	14.2	50	5
40	40	0.049-0.089	62	80	56	2.15	40	62	18.7	50	7
50	50	"	75	100	72	2.65	50	75	23.6	50	8
60	60	"	90	125	95	3.2	60	90	29.6	54	10
80	80	0.122-0.173	120	165	125	4.2	80	120	38.4	54	14

Available with or without seals.

Ordering Information

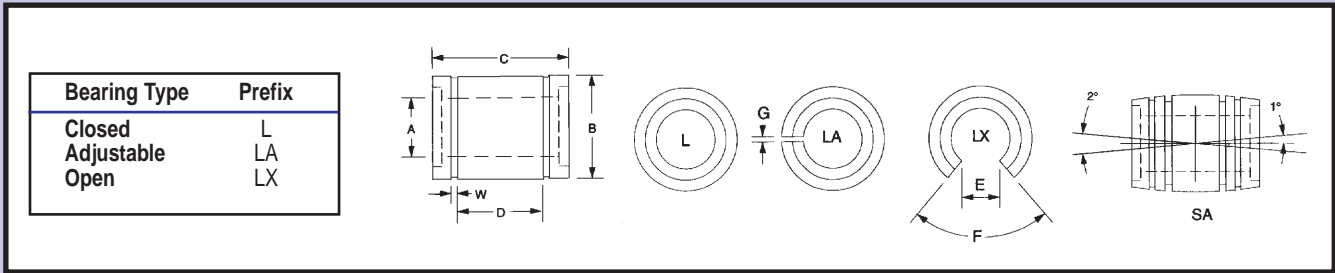
For self Lubricated Bearing, add the suffix SL to part number. Example: L25 SL
For Self Aligning Bearings, add the suffix SA to part number. Example: L25 SA

Thin Wall Bearings - Available in Ceramic, Self lubricating styles



Part No.	Working Bore		Outside Diameter B	Lengh h14 Tolerance C	Max. Shaft Dia.. (h6 or h7)	Housing Bore Dia. H7
	A	Tolerance -0,000 +				
L6 TWM	6	0,038-0,065	12	22	6	12
L8 TWM	8	"	15	24	8	15
LI 0 TWM	10	"	17	26	10	17
L12TWM	12	"	19	28	12	19
L14TWM	14	"	21	28	14	21
L16TWM	16	"	24	30	16	24
L20 TWM	20	0,047-0,074	28	30	20	28
L25 TWM	25	"	35	40	25	35
L30 TWM	30	"	40	50	30	40
L40 TWM	40	0,049-0,089	52	60	40	52
L50 TWM	50	"	62	70	50	62

LM76 Thin Wall Bearings (TWM series) are designed to be press fir into H7 tolerance housings.
Proper running clearances are achieved after press fit
For self Lubricated Bearing, add the suffix SL to part number. Example: L10 TWMSL



Standard “Japanese” sizes
Available in Ceramic, Self Lubricating and Self Aligning styles

Part No. add prefix L, LX or LA	Working Bore		Outside Dia. h7 Tolerance	Length h14 Tolerance	Retaining Ring		Max. Shaft Dia.. (h6 or h7)	Housing Bore Dia. H7	Open(LX) Slot Width E	Open (LX) Slot Angle F	Adj. (LA) Slot Width G
	A	Tolerance -0,000 +			B	D					
5SM	5	0.038-0.065	10	15	8	1.1	5	10	-	-	-
6 SM	6	"	12	19	11.3	1.1	6	12	-	-	-
8 SSM	8	"	15	17	9.2	1.1	8	15	-	-	-
8 SM	8	"	15	24	15.2	1.1	8	15	-	-	-
10 SM	10	"	19	29	19.3	1.3	10	19	-	-	-
12 SM	12	"	21	30	20.3	1.3	12	21	8	80	1.5
13 SM	13	"	23	32	20.3	1.3	13	23	9	80	1.5
16 SM	16	"	28	37	23.2	1.6	16	28	11	80	1.5
20 SM	20	0.047-0.074	32	42	27.2	1.6	20	32	11	60	2.0
25 SM	25	"	40	59	37.2	1.85	25	40	12	50	2.0
30 SM	30	"	45	64	40.7	1.85	30	45	15	50	2.0
35 SM	35	"	52	70	44.8	2.1	35	52	17	50	2.0
40 SM	40	0.049-0.089	60	80	56.1	2.1	40	60	20	50	2.0
50 SM	50	"	80	100	68.6	2.6	50	80	25	50	2.0

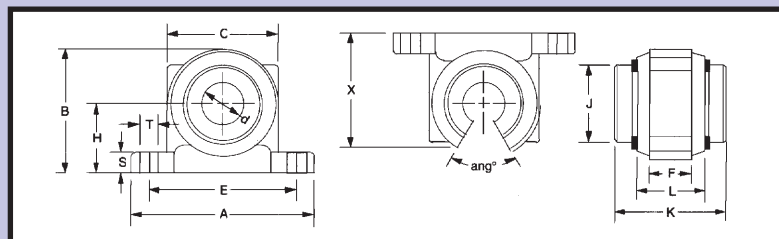
Available with or without seals.

Ordering Information

For self Lubricated Bearing, add the suffix SL to part number. Example: LX25 SMSL

For Self Aligning Bearings, add the suffix SA to part number. Example: LA5 SMSA

Complete bearing and housing series



Available in Ceramic, Self Lubricating and Self Aligning styles

Part No. add prefix L, LX	d	A	B	C	E	F	H	K	J	L	S	T	X	Angle°
PRA 12	12	52	35,8	31,6	42	12	20	32	22	20	6	5,5	31,5	78
PRA 16	16	56	37,5	35	46	15	20	36	26	22	6	5,5	33,5	78
PRA 20	20	70	48	46	58	20	25	45	32	28	8	6,6	45	60
PRA 25	25	80	58	56	68	28	30	58	40	40	10	6,6	54,5	60
PRA 30	30	88	67	64	76	32	35	68	47	48	10	6,6	63,5	54
PRA 40	40	108	83,5	77	94	40	45	80	62	56	12	9	79,5	54

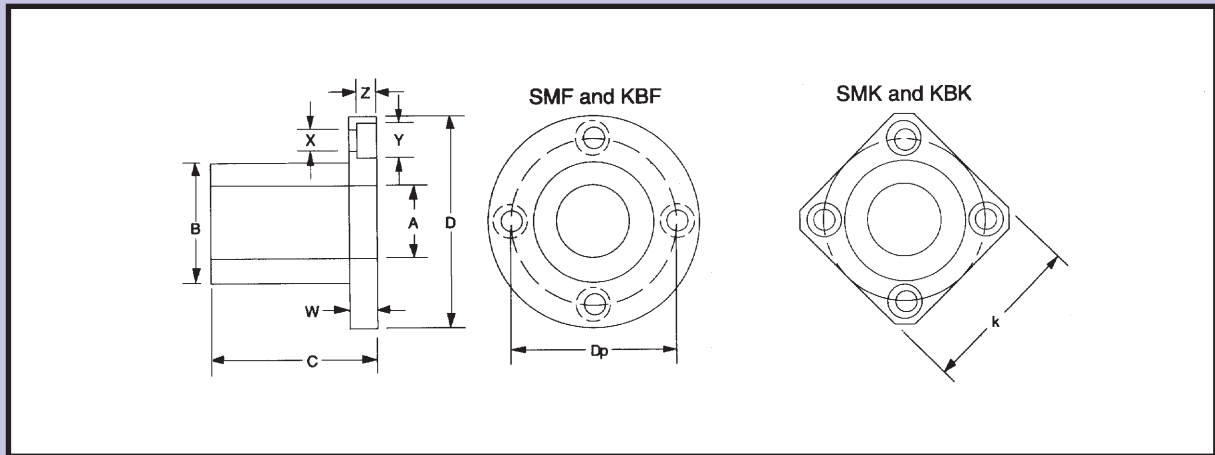
Includes housing and Bearing

Ordering Information

For self Lubricated Bearing, add the suffix SL to part number. Example: PRA 12 SL

For Self Aligning Bearings, add the suffix SA to part number. Example: PRA 20 SA

Flange Block Style Bearings



Standard “Japanese” sizes (SMF/SMK) Available in Ceramic, Self Lubricating styles

Part No. add suffix SMF or SMK	Working Bore		Outside Dia. h7 Tolerance	Length h12 Tolerance	Round Flange (SMF)		Square Flange (SMK)	Bolt Hole			Dp
	A	Tolerance -0.000 +			B	C		D	W	K	
L6	6	0.038-0.065	12	9	28	5	22	3.5	6	3.1	20
L8S	8	“	15	17	32	5	25	3.5	6	3.1	24
L8	8	“	15	24	32	5	25	3.5	6	3.1	24
L10	10	“	19	29	40	6	30	4.5	7.5	4.1	29
L12	12	“	21	30	42	6	32	4.5	7.5	4.1	32
L13	13	“	23	32	43	6	34	4.5	7.5	4.1	33
L16	16	“	28	37	48	6	37	4.5	7.5	4.1	38
L20	20	0.047-0.074	32	42	54	8	42	5.5	9	5.1	43
L25	25	“	40	59	62	8	50	5.5	9	5.1	51
L30	30	“	45	64	74	10	58	6.6	11	6.1	60
L35	35	“	52	70	82	10	64	6.6	11	6.1	67
L40	40	0.049-0.089	60	80	96	13	75	9	14	8.1	78
L50	50	“	80	100	116	13	92	9	14	8.1	98

Shaft tolerances, h6 or h7

For Self Lubricating Bearings, add the suffix SL to part number. Example: L10 SMFSL

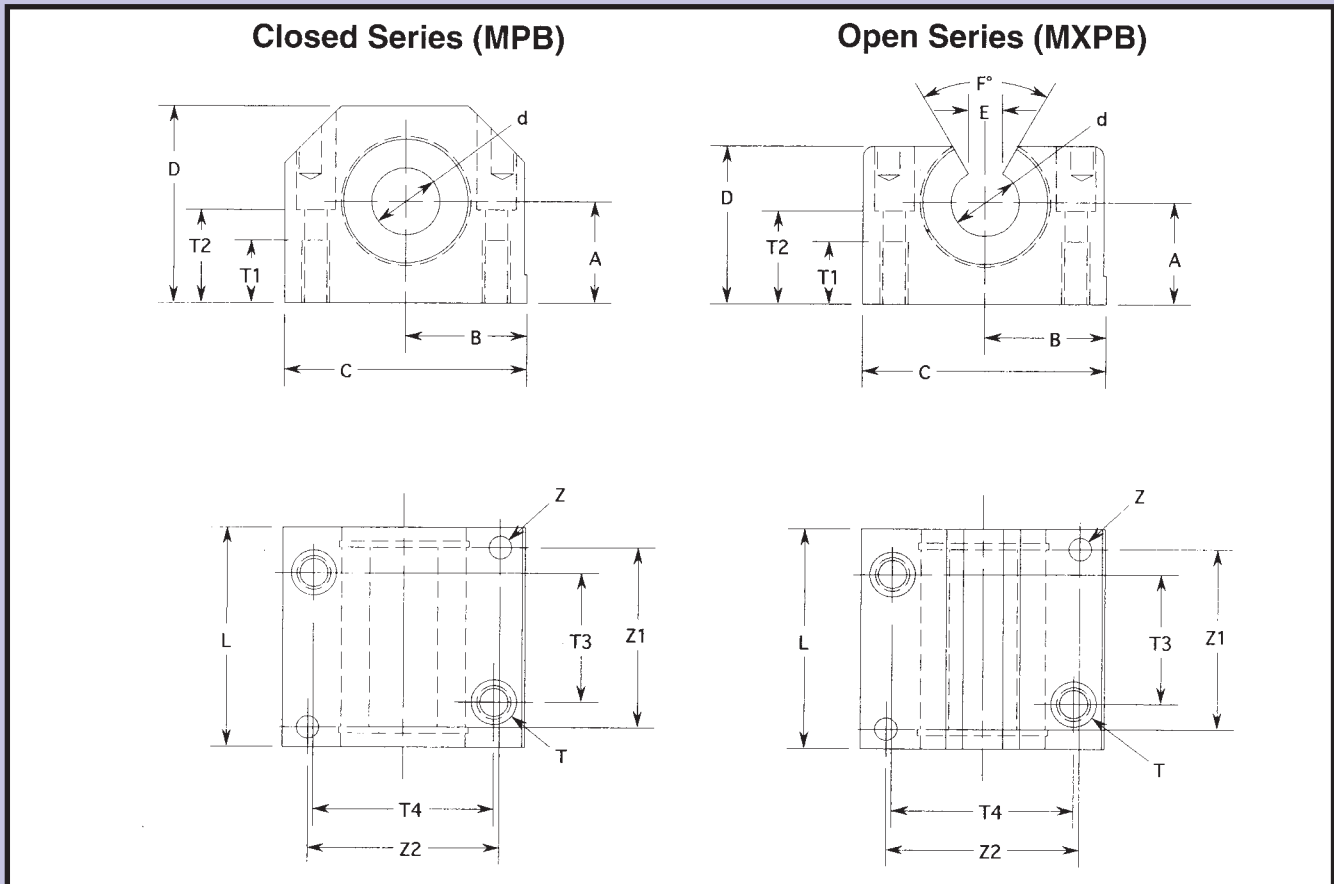
Standard “European” sizes (KBF/KBK) Available in Ceramic, Self Lubricating styles

Part No. add prefix L, LX or LA	Working Bore		Outside Dia. h7 Tolerance	Length h14 Tolerance	Round Flange (KBF)		Square Flange (KBK)	Bolt Hole			Dp
	A	Tolerance -0.000 +			B	C		D	W	K	
L5	5	0.038-0.065	12	22	28	5	22	3.5			20
L8	8	“	16	25	32	5	25	3.5	6	3.1	24
L12	12	“	22	32	42	6	32	4.5	7.5	4.1	32
L16	16	“	26	36	46	6	35	4.5	7.5	4.1	36
L20	20	0.047-0.074	32	45	54	8	42	5.5	9	5.1	43
L25	25	“	40	58	62	8	50	5.5	9	5.1	51
L30	30	“	47	68	76	10	60	6.6	11	6.1	62
L40	40	0.049-0.089	62	80	98	13	75	9	14	8.1	80
L50	50	“	75	100	112	13	88	9	14	8.1	94

Shaft tolerances, h6 or h7

For Self Lubricating Bearings, add the suffix SL to part number. Example: L12 KBKSL

PILLOW BLOCK ENGINEERING SPECIFICATIONS



Closed Series (MPB) Available in Ceramic, Self Lubricating and Self Aligning styles

PART NUMBER	d nom.	A +/- 0.015	B +/- 0.013	C Width	D Height	L Length	T Bolt	T1	T2	T3 +/- 0.15	T4 +/- 0.15	Z	Z1	Z2
MPB8	8	15	17.5	35	28	32	M4	9	14.5	20	25	N/A	N/A	N/A
MPB12	12	18	21.5	43	35	39	M5	11	16.5	23	32	4	32	34
MPB16	16	22	26.5	53	42	43	M6	13	21	26	40	4	35	42
MPB20	20	25	30	60	50	54	M8	18	24	32	45	5	45	50
MPB25	25	30	39	78	60	67	M10	22	29	40	60	6	20	64
MPB30	30	35	43.5	87	70	79	M10	22	34	45	68	6	30	72

Open Series (MXPB) Available in Ceramic, Self Lubricating and Self Aligning styles

PART NUMBER	d nom.	A +/- 0.015	B +/- 0.013	C Width	D Height	L Length	T Bolt	T1	T2	T3 +/- 0.15	T4 +/- 0.15	Z	Z1	Z2	E	F
MXPB12	12	18	21.5	43	28	39	M5	11	16.5	23	32	4	32	34	7.6	78
MXPB16	16	22	26.5	53	35	43	M6	13	21	26	40	4	35	42	10.8	78
MXPB20	20	25	30	60	42	54	M8	18	24	32	45	5	45	50	10.8	60
MXPB25	25	30	39	78	51	67	M10	22	29	40	60	6	20	64	13.2	60
MXPB30	30	35	43.5	87	60	79	M10	22	34	45	68	6	30	72	14.2	50

Ordering Information

For Self Lubricated Bearing, add the suffix SL to part number. Example: MPB16SL

For Self Aligning Bearings, add the suffix SA to part number. Example: MXPB25SLSA