

Oil-Free Bushings / Thrust Washers

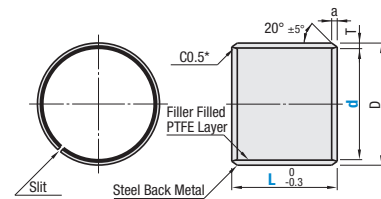
Straight / Flanged

Oil-Free Bushings - Straight / Shouldered



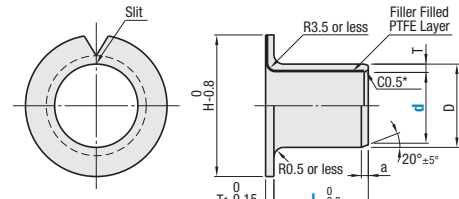
RoHS 10

MDZB Straight



- ① Applicable to linear and rotary motion.
- ② Press-fit is recommended to affix bushings.
- *1. Bushings with I.D. d<10 are only de-burred lightly instead of full chamfering.
- *2. Chamfering is C0.3 when the I.D. is d≥10 and the plate thickness is 1.0.

MDZF Flanged



Material: Filler Added PTFE Layer
Sintered Bronze Layer
Steel-backed Metal Layer (Low Carbon Steel: Tin Plating)
Allowable Temperature: -195~280°C

O.D. Chamfers
When T=1.0, a0.5
When T=1.5, a0.8
When T=2.0, a1.0
When T=2.5, a1.0

① There may be some color variations. ② Pillow Blocks with built-in MDZB are also available. P.461-462

Part Number	Type	d	L	MDZB		MDZF		*Shaft Diameter Reference Dimension	Tolerance	D	* Housing Dia. H7	I.D. after Press-Fit Tolerance (Reference Value)
				Tolerance	T	D	H					
3	(3) 4	3	(4) 5 (6)	5	+0.047	4.6	7	0.8	3	-0.025	0	-0.034
4	(3) 4 (5) 6 (8)	4		6	+0.017	5.6	9		4	-0.025	0	-0.037
5	(3) 4 5 6 (8)	5		7		7	10		5	-0.025	0	-0.040
6	(3) (4) 5 6 8 (10) (12)	6		8	+0.055	8	12		6	-0.025	0	-0.040
8	(5) 6 8 10 12 (15)	8		10	+0.025	10	15		8	-0.025	0	-0.040
10	6 8 10 12 15 (20)	10		12	+0.060	12	18		10	-0.025	0	-0.040
12	6 8 10 12 15 (20)	12		14	+0.030	14	20		12	-0.025	0	-0.040
13	(8) 10 12 15 (20)	13		15	+0.030	15	21		13	-0.025	0	-0.040
15	(8) 10 12 15 20 (25)	15		17	+0.065	17	23		15	-0.025	0	-0.043
16	10 (12) 15 20 (25)	16		18	+0.035	18	24		16	-0.025	0	-0.043
18	10 12 15 20 (25) (30)	18		20	+0.075	20	26		18	-0.025	0	-0.046
20	10 12 15 20 25 (30)	20		23	+0.040	23	31		20	-0.025	0	-0.046
22	10 12 15 20 (25) (30)	22		25	+0.085	25	33		22	-0.025	0	-0.046
25	10 12 15 20 25 (30) (35)	25		28	+0.050	28	36		25	-0.025	0	-0.046
30	12 15 20 25 30 (35) (40) (50)	30		34	+0.090	34	42		30	-0.025	0	-0.050
35	12* 15 20 25 30 (35) 40 (50)	35		39	+0.050	39	49		35	-0.025	0	-0.050
40	12 (15) 20 25 30 (35) 40 (50)	40		44	+0.085	44	54		40	-0.025	0	-0.050
50	20 (25) 30 (35) 40 (50) (60)	50		55	+0.105	55	65		50	-0.025	0	-0.050

* Housing diameters and shaft diameters listed here are recommended dimensions. ① MDZB is a rolled bushing with a slit. Indicated values of D tolerance are reference after press-fitted into ring gauge (±0.002).

Part Number	Type	d	Available Types															
			L3	L4	L5	L6	L8	L10	L12	L15	L20	L25	L30	L35	L40	L50	L60	
3	MDZB	3	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
4	MDZB	4	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
5	MDZB	5	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
6	MDZB	6	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
8	MDZB	8	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
10	MDZB	10	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
12	MDZB	12	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
13	MDZB	13	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
15	MDZB	15	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
16	MDZB	16	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
18	MDZB	18	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
20	MDZB	20	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
22	MDZB	22	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
25	MDZB	25	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
30	MDZB	30	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
35	MDZB	35	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
40	MDZB	40	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
50	MDZB	50	•	•	•	•	•	•	•	•	•	•	•	•	•	•		

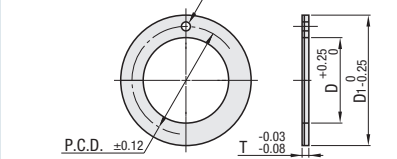
Part Number	Type	d	Available Types															
			L3	L4	L5	L6	L8	L10	L12	L15	L20	L25	L30	L40				
3	MDZF	3	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
4	MDZF	4	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
5	MDZF	5	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
6	MDZF	6	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
8	MDZF	8	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
10	MDZF	10	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
12	MDZF	12	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
13	MDZF	13	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
15	MDZF	15	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
16	MDZF	16	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
18	MDZF	18	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
20	MDZF	20	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
22	MDZF	22	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
25	MDZF	25	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
30	MDZF	30	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
35	MDZF	35	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
40	MDZF	40	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
50	MDZF	50	•	•	•	•	•	•	•	•	•	•	•	•	•	•		

Thrust Washers



RoHS 10

MDZW



Material: Filler Added PTFE Layer
Sintered Bronze Layer
Steel-backed Metal Layer (Low Carbon Steel: Tin Plating)
Allowable Temperature: -195~280°C

① There may be some color variations.

Part Number	Type	No.	T	D	D1	Mounting Hole			Bushing I.D.
						P	Tol.	P.C.D.	
6	MDZW	6	1.0	8	16	1.0	+0.30	12	6
8	MDZW	8	1.0	10	18	1.0	+0.10	14	8
10	MDZW	10	1.5	12	24	1.5		18	10
12	MDZW	12	1.5	14	26	1.5		20	12
14	MDZW	14	2.0	16	30	2.0		23	13
16	MDZW	16	2.0	18	32	2.0		25	15, 16
18	MDZW	18	1.5	20	36	1.5		28	18
20	MDZW	20	3.0	22	38	3.0	+0.375	30	20
22	MDZW	22	3.0	24	42	3.0	+0.125	33	22
25	MDZW	25	4.0	28	48	4.0		38	25
30	MDZW	30	4.0	32	54	4.0		43	30
35	MDZW	35	4.0	38	62	4.0		50	35
40	MDZW	40	4.0	42	66	4.0		54	40
50	MDZW	50	2.0	52	78	2.0		65	50

Part Number Example	Part Number	L
MDZB8	-	5
MDZF12	-	15
MDZW6	-	

Oil-Free Bushings

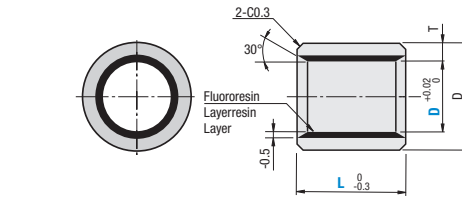
High-Precision / Flanged

Oil-Free Bushings - High-Precision



RoHS 10

BFLB



- ① Applicable to Linear and Rotary Motion.
- ② Thread locking adhesive is recommended to affix bushings.

Features

- BFLB is specifically effective if the mating material is soft such as stainless steel, aluminum, brass, etc. (Soft mating material is hardly damaged.)
- Excels in relative wear amount: 1.6×10^{-7} mm³/Nm and abrasion resistance. (It varies depending on condition of use.)

Material: Base Material: 2017 Aluminum Alloy
Sliding Material: Fluororesin
* Base and sliding materials are bonded.
Allowable Temperature: -50~140°C

Part Number	Type	d	L						D	Tolerance	T	Available Types		
			4	5	6	8	10	12				L5-8	L10-15	L20-25
BFLB		4	•	•	•	•	•	•	7	0 -0.015	1.5	•	•	•
		5	•	•	•	•	•	•	8			•	•	•
		6	•	•	•	•	•	•	9			•	•	•
		8	•	•	•	•	•	•	11			•	•	•
		10	•	•	•	•	•	•	13			•	•	•
		12	•	•	•	•	•	•	15	•	•	•		
		16	•	•	•	•	•	•	19	0 -0.020	•	•	•	

Part Number Example	Part Number	L
BFLB10	-	10

Oil-Free Bushings - Flanged



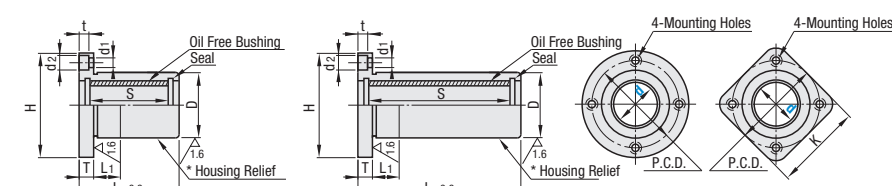
RoHS 10

MDRA Round Flange Single

MDSA Square Flange Single

MDRAW Round Flange Double

MDSAW Square Flange Double

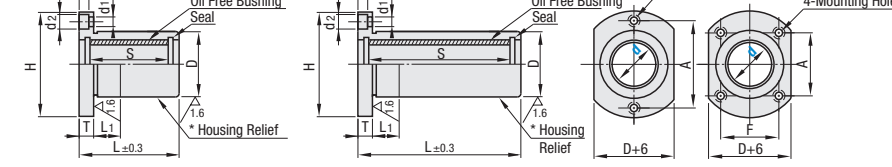


MDCA Compact Flange Single

MDCAW Compact Flange Double

MDCAW Compact Flange Double

MDCAW Compact Flange Double



Bushing : MDZB (see below)
Seals : NBR Nitrile Rubber (O-Ring)
*Housing Relief
When D≤28, D -0.1
-0.3
When D≥32, D -0.3
-0.5

- ① Perpendicularity of flange bottom plane to surface D is 0.02 or less.
- ② Effective length of D Tolerance is L.
- ③ 2 Oil Free Bushings are included in Single Type d25, d30.

Material: Aluminum Alloy (Housing)
Surface Treatment: Clear Anodizing

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