

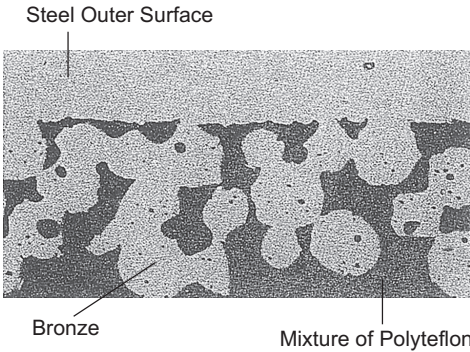
# Dry Bushings

## Smooth, Oilless Operation

The Dry Bushing (or MB bushing) is the ultimate in oilless bearing design, using lead and tetrafluoroethylene (Teflon) having excellent wear resistance which optimizes metal properties such as strength and dimensional stability.

Coefficients of static and dynamic friction are so small that the bearing surfaces run smoothly without lubrication, while at the same time eliminating sticking and slipping. Unlike regular bearings which require constant lubrication, the MB type does away with the need for costly maintenance. It is also possible to combine them with parts totally submerged in a lubricant.

## Design



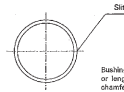
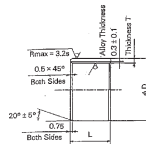
## FEATURES

- The bearing surfaces have such low coefficients of static and dynamic friction that they require no lubrication. MB bearings can also be used in lubricants.
- The operating temperature range extends from -200°C to 280°C.
- MB bearings operate smoothly under loads which exert high levels of resistance, impact, intermittent motion, and thrust.
- MB bearings are free from electrostatic induction. When installed, each MB bearing has an electrical resistance of 1Ω to 10Ω per 1 cm<sup>2</sup> wide contact area.)
- The bearing surface is highly resistant to most industrial chemicals and solvents including gas, oil, and alcohol.

- The mating surface (mounting shaft) is wear resistant.
- Service life is extended.
- MB bearings are light and thin (up to 3 mm thick), requiring little space and permit compact equipment design.
- MB bearings minimize operating noise.
- Standard MB bearings are available for quick delivery. Non-standard MB bearings can be made to order.

## Dimensions of Thickness for MB.... series

Bushing normal I.D.		Thickness T
Over	Or under	
ø3	ø18	1.0 <sup>0</sup> <sub>-0.025</sub>
ø18	ø25	1.5 <sup>0</sup> <sub>-0.030</sub>
ø25	ø40	2.0 <sup>0</sup> <sub>-0.030</sub>
ø40	ø60	2.5 <sup>0</sup> <sub>-0.040</sub>
ø60	ø160	2.47 <sup>0</sup> <sub>-0.050</sub>

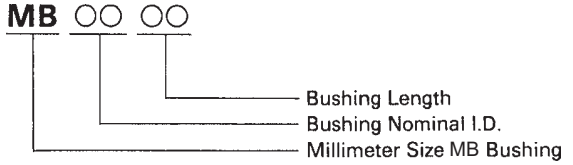


Bushings of O.D. 10 mm or under or length 7 mm or under are not chamfered.

## Characteristics

Product Name	Specific Load kgf/cm <sup>2</sup>		Slide Speed m/min		Operating Temp. Range °C		Friction Coefficient μ		Tolerance of Foreign Particles
	Max	Normal	Max	Normal	Max	Min	Min	Normal	
MB Dry Bearing	1400	500 or Under	60	15 or Under	280	200	0.03 (P270) Varies by PV Value	0.04 ~ 0.2	Dust intrusion shall be minimized.

# MB Bushing



DU Bushings

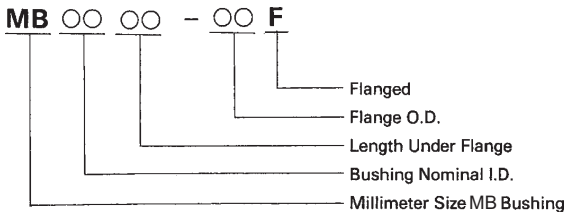
Bushing I.D.	Tolerances		Bushing Number and Bushing Length (mm)								
	Housing Dia.	Shaft Dia.	3	4	5	6	7	8	10	12	15
3	5H7 <sup>+0.012</sup> / <sub>0</sub>	3 <sup>-0.025</sup> / <sub>-0.025</sub>	MB0303	MB0304	MB0305	MB0306					
4	6 "	4 <sup>-0.025</sup> / <sub>0.037</sub>		MB0404		MB0406		MB0408			
5	7H7 <sup>+0.015</sup> / <sub>0</sub>	5 "	MB0504		MB0505	MB0506		MB0508			
6	8 "	6 "			MB0605	MB0606	MB0607	MB0608	MB0610		
7	9 "	7 <sup>-0.025</sup> / <sub>-0.040</sub>			MB0705		MB0707		MB0710	MB0712	
8	10 "	8 "			MB0805	MB0806	MB0807	MB0808	MB0810	MB0821	
9	11H7 <sup>+0.018</sup> / <sub>0</sub>	9 "							MB0910		
10	12 "	10 "				MB1006	MB1007	MB1008	MB1010	MB1012	MB1015
12	14 "	12 <sup>-0.025</sup> / <sub>-0.043</sub>				MB1206		MB1208	MB1210	MB1212	MB1215
13	15 "	13 "						MB1308	MB1310		MB1315
14	16 "	14 "						MB1410	MB1410	MB1412	MB1415
15	17 "	15 "						MB1508	MB1510	MB1512	MB1515
16	18 "	16 "							MB1610	MB1612	MB1615
17	19H7 <sup>+0.021</sup> / <sub>0</sub>	17 "									MB1715
18	20 "	18 "							MB1810	MB1812	MB1815
19	22 "	19 <sup>-0.025</sup> / <sub>-0.048</sub>							MB1910		MB1915
20	23 "	20 "							MB2010	MB2012	MB2015
22	25 "	22 "							MB2210	MB2212	MB2215
24	27 "	24 "									MB2415
25	28 "	25 "							MB2510	MB2512	MB2515
26	30 "	26 "									MB2615
28	32H7 <sup>+0.025</sup> / <sub>0</sub>	28 "								MB2812	MB2815
30	34 "	30 "								MB3012	MB3015
31	35 "	31 <sup>-0.025</sup> / <sub>-0.050</sub>									MB3115
32	36 "	32 "									
35	39 "	35 "								MB3512	
38	42 "	38 "									
40	44 "	40 "								MB4012	MB4015
45	50 "	45 "									
50	55H7 <sup>+0.030</sup> / <sub>0</sub>	50 "									
55	60 "	55 <sup>-0.025</sup> / <sub>-0.055</sub>									
60	65 "	60 "									
65	70 "	65 <sup>+0.035</sup> / <sub>+0.005</sub>									
70	75 "	70 "									
75	80 "	75 "									
80	85H7 <sup>+0.035</sup> / <sub>0</sub>	80 "									
85	90 "	85 <sup>+0.035</sup> / <sub>0</sub>									
90	95 "	90 "									
100	105 "	100 "									
110	115 "	110 "									
120	125H7 <sup>+0.040</sup> / <sub>0</sub>	120 "									
130	135 "	130 <sup>+0.035</sup> / <sub>0.005</sub>									
140	145 "	140 "									
150	155 "	150 "									
160	165 "	160 "									

Note: For standard bushing, min. clearance is 0.025mm.

# MB Bushing

Bushing Number and Bushing Length (mm)											
20	25	30	35	40	50	60	70	80	90	95	100
MB1020											
MB1220											
MB1420											
MB1520	MB1525										
MB1620	MB1625										
MB1820	MB1825										
MB2020	MB2025	MB2030									
MB2220	MB2225										
MB2420	MB2425	MB2430									
MB2520	MB2525	MB2530	MB2535								
MB2620		MB2630									
MB2820	MB2825	MB2830									
MB3020	MB3025	MB3030	MB3035	MB3040							
	MB3125			MB3140							
MB3220	MB3225	MB3230		MB3240							
MB3520	MB3525	MB3530	MB3535	MB3540	MB3550						
MB3820	MB3825	MB3830	MB3835	MB3840							
MB4020	MB4025	MB4030	MB4035	MB4040	MB4050						
MB4520	MB4525	MB4530	MB4535	MB4540	MB4550						
MB5020	MB5025	MB5030	MB5035	MB5040	MB5050	MB5060					
	MB5525	MB5530	MB5535	MB5540	MB5550	MB5560					
		MB6030	MB6035	MB6040		MB6060					
		MB6530		MB6540	MB6550	MB6560					
		MB7030	MB7035	MB7040	MB7050	MB7060		MB7080			
		MB7530	MB7535	MB7540	MB7550	MB7560		MB7580			
				MB8040	MB8050	MB8060		MB8080			
				MB8540	MB8550	MB8560		MB8580			
				MB9040		MB9060			MB9090		
					MB10050		MB10070				MB10095
					MB11050		MB11070				MB11095
					MB12050		MB12070				MB12095
					MB13050			MB13080			
					MB14050			MB14080			MB140100
					MB15050			MB15080			MB150100
					MB16050			MB16080			MB160100

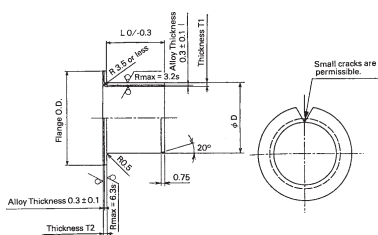
# MB Bushing-Flanged



Bushings		Tolerances		Thickness		Bushings Number and Bushing Length (mm)					
I.D.	Flanged O.D.	Housing Dia.	Shaft Dia.	Bushing T1	Flanged T2	3	4	5	6	7	
3	7	4.6H7 <sup>+0.012</sup> / <sub>0</sub>	3 <sup>-0.025</sup> / <sub>-0.035</sub>	0.8 <sup>0</sup> / <sub>-0.25</sub>	0.8 <sup>0</sup> / <sub>-0.15</sub>	MB0303-7F					
4	9	5.6	4 <sup>-0.025</sup> / <sub>-0.037</sub>					MB0404-9F			
5	10	7H7 <sup>+0.015</sup> / <sub>0</sub>	5	1.0 <sup>0</sup> / <sub>-0.25</sub>	1.0 <sup>0</sup> / <sub>-0.15</sub>		MB0504-10F	MB0505-10F			
6	12	8	6						MB0605-12F	MB0606-12F	MB0607-12F
7	13	9	7 <sup>-0.025</sup> / <sub>-0.040</sub>						MB0705-13F		MB0707-13F
8	15	10	8							MB0806-15F	
10	18	12H7 <sup>+0.018</sup> / <sub>0</sub>	10							MB1006-18F	MB1007-18F
12	20	14	12 <sup>-0.025</sup> / <sub>-0.430</sub>							MB1206-20F	
14	22	16	14								
15	23	17	15								
16	24	18	16								
18	26	20H7 <sup>+0.021</sup> / <sub>0</sub>	18								
20	31	23	20 <sup>-0.025</sup> / <sub>-0.046</sub>	1.5 <sup>0</sup> / <sub>-0.030</sub>	1.5 <sup>0</sup> / <sub>-0.15</sub>						
22	33	25	22								
24	35	27	24								
25	36	28	25								
26	38	30	26								
28	40	32H7 <sup>-0.025</sup> / <sub>0</sub>	28	2.0 <sup>0</sup> / <sub>-0.030</sub>	2.0 <sup>0</sup> / <sub>-0.15</sub>						
30	42	34	30								
31	45	35	31 <sup>-0.025</sup> / <sub>-0.050</sub>								
32	46	36	32								
35	49	39	35								
38	52	42	38								
40	54	44	40								
45	60	50	45								
50	65	55H7 <sup>-0.030</sup> / <sub>0</sub>	50	2.5 <sup>0</sup> / <sub>-0.040</sub>	2.5 <sup>0</sup> / <sub>-0.15</sub>						
55	70	60	55 <sup>-0.025</sup> / <sub>-0.055</sub>								
60	75	65	60								

DU Bushings

# MB Bushing-Flanged



Bushings of O.D. 10mm or under or bushing length 7mm or under are not chamfered.

Bushing Number and Bushing Length (mm)									
8	10	12	15	20	25	30	40	50	60
MB0608-12F	MB0610-12F								
	MB0710-13F	MB0712-13F							
MB0808-15F	MB0810-15F	MB0812-15F							
MB1008-18F	MB1010-18F	MB1012-18F	MB1015-18F						
MB1208-20F	MB1210-20F	MB1212-20F	MB1215-20F	MB1220-20F					
	MB1410-22F	MB1412-22F	MB1415-22F	MB1420-22F					
	MB1510-12F	MB1512-23F	MB1515-23F	MB1520-23F	MB1525-23F				
	MB1610-24F	MB1612-24F	MB1615-24F	MB1620-24F	MB1625-24F				
	MB1810-26F	MB1812-26F	MB1815-26F	MB1820-26F	MB1825-26F				
	MB2010-31F	MB2012-21F	MB2015-31F	MB2020-31F	MB2025-31F	MB2030-31F			
	MB2210-33F	MB2212-33F	MB2215-33F	MB2220-33F	MB2225-33F				
			MB2415-35F	MB2420-35F	MB2425-35F	MB2430-35F			
	MB2510-36F	MB2512-36F	MB2515-36F	MB2520-36F	MB2525-36F	MB2530-36F			
			MB2615-38F	MB2620-38F					
		MB2812-40F	MB2815-40F	MB2820-40F		MB2830-40F			
		MB3012-42F	MB3015-42F	MB3020-42F	MB3025-42F	MB3030-42F	MB3040-42F		
					MB3125-45F				
				MB3220-46F	MB3225-46F	MB3230-46F			
		MB3512-49F		MB3520-49F	MB3525-49F	MB3530-49F	MB3540-49F	MB3550-49F	
				MB3820-52F		MB3830-52F	MB3840-52F		
		MB4012-54F		MB4020-54F	MB4025-54F	MB4030-54F	MB4040-54F	MB4050-54F	
				MB4520-60F	MB4525-60F	MB4530-60F	MB4540-60F	MB4550-60F	
				MB5020-65F		MB5030-65F	MB5040-65F		MB5060-65F
						MB5530-70F	MB5540-70F		MB5560-70F
						MB6030-75F	MB6040-75F		MB6060-75F

DU Bushings