

Oil Free Bushings

Copper Alloy Straight / Thin Wall, I.D. F7 O.D. m6

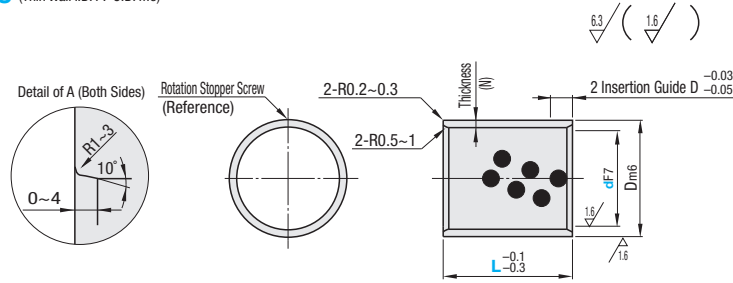
Oil Free Bushings

Copper Alloy Straight, Standard / Thin Wall, I.D. E7 O.D. r6 / I.D. G6 O.D. m6

■ Features: Suitable for use in limited space.

■ Thin Wall I.D. F7 O.D. m6

MPBZU (Thin Wall I.D. F7 O.D. m6)



☑ Recommended Mating Shaft for I.D. F7 Type d8: General Use (High-Load) f8: High Precision Use
 e7: General Use (Light Load) g6: High Precision Use (Intermittent Operation)
 ☑ Use of Rotation Stopper Screws is recommended to affix bushings. ☑ Material: High Tensile Brass Alloy Solid Lubricant Embedded

Part Number		Unit Price								Dm6	Thickness (N)	Housing Dia. (Recommended Dimension)		Rotation Stopper Screw (Reference)
Type	dF7	L8	L10	L12	L15	L16	L20	L25	L30			Ref. Dim.	Tolerance (H7)	
MPBZU	5	+0.022	8	10	12					7	+0.015	M4x8		
	6	+0.010	8	10	12	15	16			8	0			
	8	+0.028	8	10	12	15	16	20		10				
	10	+0.013	8	10	12	15	16	20	25	12	+0.018			
	12		10	12	15	16	20	25		15	0			
	13		10	12	15	16	20	25		16				
	15	+0.034	10	12	15	16	20	25	30	18				
	16	+0.016	10	12	15	16	20	25	30	20				
	18		12	15	16	20	25	30		22	+0.021			
	20		15	16	20	25	30	40		24	0			
	25	+0.041	15	16	20	25	30	40		29		M5x8		
	30	+0.020	15	16	20	25	30	40		34				
	35		20	25	30	40			40	+0.025				
	40	+0.050	20	25	30	40	50		45	0				
	45	+0.025	30	40	50				55	+0.030				
	50		30	40	50				55	+0.011				

■ O.D. Dimension Comparison Table

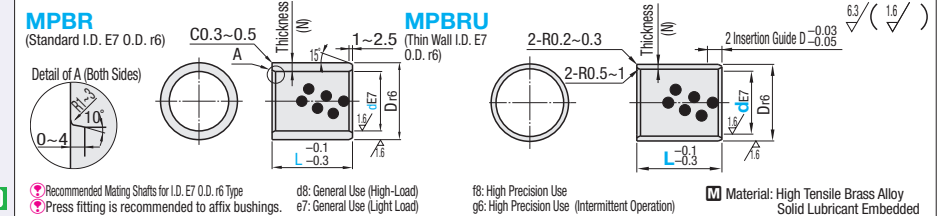
d	Dimension Variation		Thin Wall MPBZU		Standard Type MPBZ	
	O.D. Dm6	Thickness (N)	O.D. Dm6	Thickness (N)	O.D. Dm6	Thickness (N)
5	-2	-1	7		9	
6	-2	-1	8		10	
8	-2	-1	10		12	2
10	-2	-1	12		14	
12	-3	-1.5	15		18	
13	-3	-1.5	16	1.5	19	
15	-3	-1.5	18		21	3
16	-2	-1	20		22	
18	-2	-1	22		24	
20	-4	-2	24	2	28	
25	-4	-2	29		33	4
30	-4	-2	34		38	
35	-4	-2	40		44	4.5
40	-5	-2.5	45	2.5	50	5
50	-7	-3.5	55		62	6

Part Number	Type	d	Unit Price								
			L8	L10	L12	L15	L16	L20	L25	L30	L40
5											
6											
8											
10											
12											
13											
15											
16											
18											
20											
25											
30											
35											
40											
50											

Ordering Example: Part Number - L
 MPBZU16 - 20

■ Features: Bushings can be affixed only by Press-fit process. No process using Rotation Stopper Screws is required.

■ Standard / Thin Wall, I.D. E7 O.D. r6



☑ Recommended Mating Shafts for I.D. E7 O.D. r6 Type d8: General Use (High-Load) f8: High Precision Use
 e7: General Use (Light Load) g6: High Precision Use (Intermittent Operation)
 ☑ Press fitting is recommended to affix bushings. ☑ Material: High Tensile Brass Alloy Solid Lubricant Embedded

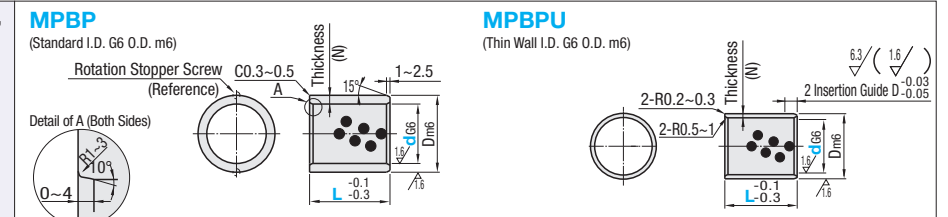
Part Number		Unit Price								D	O.D. r6 (*1)	Housing Dia. H7 (*2)
Type	dE7	L8	L10	L12	L15	L16	L20	L25	L30			
MPBR	5	+0.032	8	10	12	15	16	20		9		M4x8
	6	+0.020	8	10	12	15	16	20		10	+0.015	
	8	+0.040	8	10	12	15	16	20		12	0	
	10	+0.025	8	10	12	15	16	20	25	14	+0.018	
	12		10	12	15	16	20	25		18	0	
	13		10	12	15	16	20	25		18		
	15	+0.050	12	15	16	20	25		21	22		
	16	+0.032	12	15	16	20	25	30	40	22		
	20		15	16	20	25	30	40	50	28	+0.021	
	25	+0.061	16	20	25	30	40	50		33	0	
MPBRU	30	+0.040	16	20	25	30	40	50		38		M5x8
	35		20	25	30	40	50		38			
	40		25	30	40	50			38			
	50		30	40	50				38			

☑ Tolerance H7 (*2) to D dimensions (*1) is recommended for housing diameter.

Part Number		Unit Price								D	O.D. r6 (*1)	Housing Dia. H7 (*2)
Type	d	L8	L10	L12	L15	L16	L20	L25	L30			
5												
6												
8												
10												
12												
13												
15												
16												
20												
25												
30												

■ Features: More precise linear and rotary motion compared to I.D. F7 O.D. m6 (MPBZ, MPBZU) and I.D. E7 O.D. r6 (MPBR, MPBRU) can be achieved by keeping the clearance between bushings and g6 shafts small.

■ Standard / Thin Wall, I.D. G6 O.D. m6



☑ Use of Rotation Stopper Screws is recommended to affix bushings.
 ☑ Recommended Mating Shaft for I.D. G6 Type, g6: High Precision Use
 ☑ Material: High Tensile Brass Alloy Solid Lubricant Embedded

Part Number		Unit Price								D	O.D. m6 (*1)	Housing Dia. G7 (*2)
Type	dG6	L8	L10	L12	L15	L16	L20	L25	L30			
MPBP	5	+0.012	8	10	12	15	16	20		9		M4x8
	6	+0.004	8	10	12	15	16	20		10	+0.015	
	8	+0.014	8	10	12	15	16	20		12	0	
	10	+0.005	8	10	12	15	16	20	25	14	+0.018	
	12		10	12	15	16	20	25		18	0	
	13		10	12	15	16	20	25		18		
	15	+0.017	12	15	16	20	25		19	22		
	16	+0.006	12	15	16	20	25		21	22		
	20		15	16	20	25	30		28	29		
	25	+0.020	16	20	25	30	40		33	34		
MPBPU	30	+0.007	16	20	25	30	40		38		M5x8	
	35		20	25	30	40		38				
	40		25	30	40			38				
	50		30	40	50			38				

☑ Tolerance G7 (*2) to D dimensions (*1) for housing diameter

* Indicated dimensions of Rotation Stopper Screws are recommended dimensions.

Part Number		Unit Price								D	O.D. m6 (*1)	Housing Dia. G7 (*2)
Type	d	L8	L10	L12	L15	L16	L20	L25	L30			
5												
6												
8												
10												
12												
13												
15												
16												
20												
25												
30												

Ordering Example: Part Number - L
 MPBR12 - 12
 MPBP20 - 15