

Oil-Free Bushings (Copper Alloy Straight Standard)

Thin Wall I.D. E7 O.D. r6 / Thin Wall I.D. G6 O.D. m6

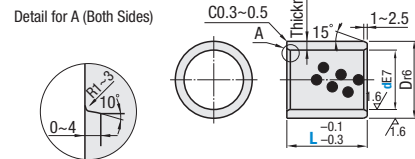
Oil-Free Bushings – Standard / Thin Wall I.D. E7 O.D. r6 Type



RoHS10

MPBR

Standard I.D. E7 O.D. r6

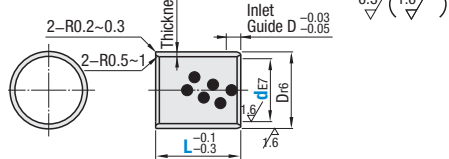


- Recommended Mating Shafts for I.D. E7 O.D. r6 Type
- Press-fit recommended to affix bushings.

d8: General Use (High-Load) f8: High Precision Use
e7: General Use (Light Load) g6: High Precision Use (Intermittent Operation)

MPBRU

Thin Wall I.D. E7 O.D. r6



Material: High Tensile Brass Alloy Solid Lubricant Embedded (Graphite)

Part Number	Type	d _{E7}	L	MPBR		MPBRU	
				Dr6 (*1)	Thickness (N)	Dr6 (*1)	Thickness (N)
MPBR MPBRU	5	+0.032	8 10 (12) (15)	9	7	1	
	6	+0.020	8 10 12 15 16 (20)	10	8		
	8	+0.040	8 10 12 15 16 (20)	12	10		
	10	+0.025	(8) 10 12 15 16 (20) (25)	14	12		
	12	+0.050	(10) 12 15 16 20 (25)	18	15		
	15	+0.032	12 15 16 20 (25)	21	18		
	16	+0.061	12 15 16 20 25 (30) (40)	22	20		
	20	+0.040	15 16 20 25 30 (40) (50)	28	24		
	25	+0.061	16 20 25 30 (40) (50)	33	29		
	30	+0.040	16 20 25 30 (40) (50)	38	34		

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

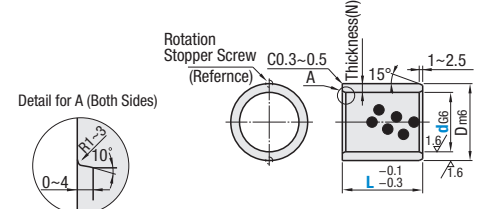
Oil-Free Bushings – Standard / Thin Wall I.D. G6 O.D. m6



RoHS10

MPBP

Standard I.D. G6 O.D. m6



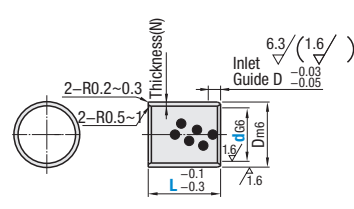
Material: High Tensile Brass Alloy Solid Lubricant Embedded

How to Use MPBR / MPBP

- Use of Rotation Stopper Screws is recommended to affix bushings.
- Recommended Mating Shaft for I.D. G6 Type g6: High Precision Use

MPBPU

Thin Wall I.D. G6 O.D. m6



Part Number	Type	d _{G6}	L	MPBP		MPBPU	
				Dm6 (*1)	Thickness (N)	Dm6 (*1)	Thickness (N)
MPBP MPBPU	5	+0.012	8 10 12 (15)	9	7	1	
	6	+0.004	8 10 12 15 16	10	8		
	8	+0.014	10 12 15 16 20	12	10		
	10	+0.005	10 12 15 16 20 25	14	12		
	12	+0.017	12 15 16 20 25	18	15		
	13	+0.006	12 15 16 20 25	19	16		
	15	+0.006	12 15 16 20 25	21	18		
	16	+0.020	12 15 16 20 25	22	20		
	20	+0.007	15 16 20 25 30	28	24		
	25	+0.007	16 20 25 30 40	33	29		
30	+0.007	16 20 25 30 40	38	34			

For housing diameter, tolerance G7 (*2) to D dimensions (*1), and tolerance H7 (*4) to D dimension (*3) are recommended. *Indicated dimensions of Rotation Stopper Screw are recommended dimensions.

Part Number Example: MPBR12 - 12, MPBP20 - 15

D	MPBP / MPBPU	
	O. D. m6 (*1)	Housing Dia. G7 (*2)
7-10	+0.015 / +0.006	+0.020 / +0.005
11-18	+0.018 / +0.007	+0.024 / +0.006
19-30	+0.021 / +0.008	+0.028 / +0.007
31-50	+0.025 / +0.009	+0.034 / +0.009

Features of Thin Wall Type P.438.



Oil-Free Bushings (Copper Alloy with Oil Groove)

Standard with Shoulder & Thin Wall

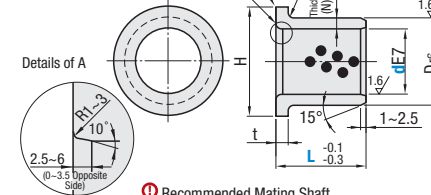
Oil-Free Bushings – Standard with Shoulder / Thin Wall



RoHS10

MPFZ

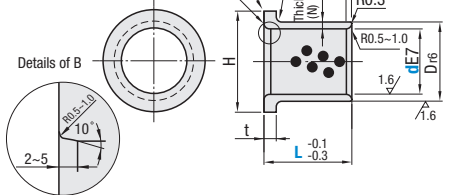
Standard



- Recommended Mating Shaft
- d8: General Use (High-Load) f8: High Precision Use
- e7: General Use (Light Load) g6: High Precision Use (Intermittent Operation)
- Press-fit is recommended to affix bushings.

MPFZU

Thin Wall



Material: High Tensile Brass Alloy Solid Lubricant Embedded (Graphite)

Part Number	Type	d _{E7}	L	D _{r6}	Thk (N)	H	t	0	Ref. Dim.	Recommended Housing Diameter (H7)
6	+0.020	10 12 15	10	+0.019	16	10	0			
8	+0.040	10 12 15 20	12	0	20	2	0			
10	+0.025	10 12 15 20 25 30	14	+0.034	22	14	+0.018			
12	+0.050	10 12 15 20 25 30	18	+0.028	25	18	0			
13	+0.032	10 12 15 20 25 30	19	0	26	19	0			
15	+0.050	10 12 15 20 25 30	21	+0.041	28	3	21			
16	+0.032	12 15 20 25 30 35 40	22	+0.028	29	22	0			
18	+0.061	15 20 25 30 35 40	24	0	32	24	0			
20	+0.040	15 20 25 30 35 40	30	0	40	30	0			
25	+0.061	15 20 25 30 35 40 50	35	+0.034	45	35	+0.025			
30	+0.040	20 25 30 35 40 50	40	+0.050	50	40	0			
35	+0.075	20 25 30 35 40 50	45	+0.041	60	5	45			
40	+0.050	20 25 30 35 40 50	50	0	65	50	0			
45	+0.075	30 35 40 50 60	55	+0.060	70	55	0			
50	+0.050	30 35 40 50 60	60	+0.041	75	60	0			
60	+0.090	40 50 60 80	75	+0.062	90	7.5	75			
70	+0.060	50 80	85	+0.073	105	7.5	85			
80	+0.060	60 80 100	100	+0.051	120	100	0			
90	+0.107	60 80	110	+0.076	130	10	110			
100	+0.072	80 100	120	+0.054	150	120	+0.035			

Part Number Example: MPFZ20 - 30, MPFZU12 - 15

Part Number	Type	d	Available Types													
			L10	L12	L15	L20	L25	L30	L35	L40	L50	L60	L80	L100		
5			•	•	•	•	•	•	•	•	•	•	•	•	•	•
6			•	•	•	•	•	•	•	•	•	•	•	•	•	•
8			•	•	•	•	•	•	•	•	•	•	•	•	•	•
10			•	•	•	•	•	•	•	•	•	•	•	•	•	•
12			•	•	•	•	•	•	•	•	•	•	•	•	•	•
13			•	•	•	•	•	•	•	•	•	•	•	•	•	•
15			•	•	•	•	•	•	•	•	•	•	•	•	•	•
16			•	•	•	•	•	•	•	•	•	•	•	•	•	•
18			•	•	•	•	•	•	•	•	•	•	•	•	•	•
20			•	•	•	•	•	•	•	•	•	•	•	•	•	•
25			•	•	•	•	•	•	•	•	•	•	•	•	•	•
30			•	•	•	•	•	•	•	•	•	•	•	•	•	•
35			•	•	•	•	•	•	•	•	•	•	•	•	•	•
40			•	•	•	•	•	•	•	•	•	•	•	•	•	•
45			•	•	•	•	•	•	•	•	•	•	•	•	•	•
50			•	•	•	•	•	•	•	•	•	•	•	•	•	•
60			•	•	•	•	•	•	•	•	•	•	•	•	•	•
70			•	•	•	•	•	•	•	•	•	•	•	•	•	•
80			•	•	•	•	•	•	•	•	•	•	•	•	•	•
90			•	•	•	•	•	•	•	•	•	•	•	•	•	•
100			•	•	•	•	•	•	•	•	•	•	•	•	•	•

Part Number	Type	d	Available Types							
			L10	L12	L15	L20	L25	L30	L40	L50
5			•	•	•	•	•	•	•	•
6			•	•	•	•	•	•	•	•
8			•	•	•	•	•	•	•	•
10			•	•	•	•	•	•	•	•
12			•	•	•	•	•	•	•	•
13			•	•	•	•	•	•	•	•
15			•	•	•	•	•	•	•	•
16			•	•	•	•	•	•	•	•
20			•	•	•	•	•	•	•	•
25			•	•	•	•	•	•	•	•
30			•	•	•	•	•	•	•	•