

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.

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

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

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

Part Number	Type	dE7	L	MPBR		MPBRU	
				Dr6 (*1)	Thickness (N)	Dr6 (*1)	Thickness (N)
MPBR MPBRU	5	+0.032	8 10 (12) (15)	9	2	7	1.5
	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	+0.040	16 20 25 30 (40) (50)	33	29		
	30		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

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

Material: High Tensile Brass Alloy Solid Lubricant Embedded

How to Use MPBR / MPBPU
Ⓢ Use of Rotation Stopper Screws is recommended to affix bushings.
Ⓢ Recommended Mating Shaft for I.D. G6 Type g6: High Precision Use

Part Number	Type	dG6	L	MPBP		MPBPU	
				Dm6 (*1)	Thickness (N)	Dm6 (*1)	Thickness (N)
MPBP MPBPU	5	+0.012	8 10 12 (15)	9	2	7	1.5
	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	+0.020	12 15 16 20 25	21	18		
	16		+0.007	12 15 16 20 25	22	20	
	20	+0.007	15 16 20 25 30	28	24		
	25		16 20 25 30 40	33	29		
30	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

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	dE7	L	MPFZ			MPFZU			Housing Diameter (Recommended Dimensions)							
				dE7	Thickness (N)	H	0 t-0.1	Dr6	Thickness (N)	H	0 t-0.1	Ref. Dim.	Tolerance (H7)	Ref. Dim.	Tolerance (H7)		
MPFZ MPFZU	5	+0.032	10 12	9	2	14	2	7	1	11	2	9	+0.015	7	+0.018 0		
	6	+0.020	10 12 15	10		16		8		+0.028 +0.019		12	10	8		+0.015 0	
	8	+0.040	10 12 15 20	12	20	10	1.5	14	12	10	3	12	+0.018 0	12			
	10	+0.025	10 12 15 20 (25) (30)	14	22	12		16	14	14		12					
	12	+0.050	10 12 15 20 25 30	18	25	15	+0.034 +0.023	21	18	15	+0.018 0	15	+0.018 0				
	13		+0.032	(10) 12 15 20 (25) (30)	19	26	16	22	19	16	16	18	16	18			
	15	+0.041 +0.028	10 12 15 20 25 (30)	21	28	18	2	24	21	18	4	21	+0.021 0	20		+0.021 0	
	16		12 15 20 25 30 (35) (40)	22	29	20		+0.041 +0.028	26	22		20	20	+0.021 0		20	+0.021 0
	18	+0.061 +0.040	(15) (20) (25) (30) (35) (40)	24	32	—	5	—	—	—	5	24	—	—		—	—
	20		15 20 25 30 (35) 40	30	40	24		+0.041 +0.028	32	30		24	+0.021 0	24		+0.021 0	
25	+0.050 +0.034	(15) (20) (25) 30 (35) 40 50	35	45	29	2	37	4	35	29	35	29	0	29	0		
30		(20) (25) 30 (35) 40 50	40	50	34	+0.050 +0.034	42	—	40	+0.025 0	40	34	+0.025 0				
35	+0.075 +0.050	(20) (25) (30) (35) (40) (50)	45	60	—	5	—	—	—	5	45	—	—	—	—		
40		(20) (25) (30) (35) (40) (50)	50	65	—		—	—	—		50	—	50	—	—		
50	+0.060 +0.041	(30) (35) (40) (50) (60)	60	75	—	—	—	—	60	+0.030 0	—	—	—	—			

Part Number Example
MPFZ20 - 30
MPFZU12 - 15

Part Number	Type	d	Available Types								
			L10	L12	L15	L20	L25	L30	L35	L40	L50
MPFZ	5	•	•	•	•	•	•	•	•	•	•
	6	•	•	•	•	•	•	•	•	•	•
	8	•	•	•	•	•	•	•	•	•	•
	10	•	•	•	•	•	•	•	•	•	•
	12	•	•	•	•	•	•	•	•	•	•
	13	•	•	•	•	•	•	•	•	•	•
	15	•	•	•	•	•	•	•	•	•	•
	16	•	•	•	•	•	•	•	•	•	•
	18	•	•	•	•	•	•	•	•	•	•
	20	•	•	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•	•	•	
30	•	•	•	•	•	•	•	•	•	•	
35	•	•	•	•	•	•	•	•	•	•	
40	•	•	•	•	•	•	•	•	•	•	
50	•	•	•	•	•	•	•	•	•	•	

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