

# Oil Free Bushings

## Copper Alloy, Flanged, Thin Wall

■ Features: Flanged, less likely to pull-out.

■ Thin Wall

**MPFZU (Thin Wall)**

Recommended Mating Shaft: d8: General Use (High-Load), e7: General Use (Light Load), f8: High Precision Use (Light Load), g6: High Precision Use (Intermittent Operation)  
 Material: High Tensile Brass Alloy, Solid Lubricant Embedded  
 Press fitting is recommended to affix bushings.

Part Number		L								Dm6		Thickness (N)	H	0 t-0.1	Housing Dia. (Recommended Dimension)	
Type	df7	10	12	15	20	25	30	35	40	45	50				Ref. Dim.	Tolerance (H7)
MPFZU	5	+0.032	10	12								7	11	2	7	+0.015
	6	+0.020	10	12	15							8	12	2	8	0
	8	+0.040	10	12	15	20						10	14	3	10	
	10	+0.025	10	12	15	20						12	16	3	12	
	12	+0.050	10	12	15	20	25	30				15	21	3	15	+0.018
	13		12	15	20						16	22	3	16	0	
	15	+0.032	10	12	15	20	25					18	24	4	18	
	16	+0.061	12	15	20	25	30					20	26	4	20	+0.021
	20		15	20	25	30	40				24	32	4	24	0	
	25	+0.040					30	40	50			29	37	4	29	
	30						30	40	50			34	42	4	34	+0.025

Ordering Example: **Part Number** - **L**  
**MPFZU12** - **15**

Part Number	Unit Price								
	d	L10	L12	L15	L20	L25	L30	L40	L50
MPFZU	5								
	6								
	8								
	10								
	12								
	13								
	15								
	16								
	20								
	25								
	30								

■ O.D. Dimension Comparison Table

d	Dimension Variation			Thin Wall MPFZU			Standard Type MPFZ		
	O.D. Dr6	Thickness (N)	H	O.D. Dr6	Thickness (N)	H	O.D. Dr6	Thickness (N)	H
5	-2	-1	-3	7	11	9	7	11	14
6	-2	-1	-4	8	12	10	8	12	16
8	-2	-1	-6	10	14	12	10	14	20
10	-2	-1	-6	12	16	14	12	16	22
12	-3	-1.5	-4	15	21	18	15	21	25
13	-3	-1.5	-4	16	22	19	16	22	26
15	-3	-1.5	-4	18	24	21	18	24	28
16	-2	-1.5	-3	20	26	22	20	26	29
20	-6	-3	-8	24	32	30	24	32	40
25	-6	-3	-8	29	37	35	29	37	45
30	-6	-3	-8	34	42	40	34	42	50

# Oil Free Bushings

## Copper Alloy, Thrust

■ Features: Lubricant is embedded in the flange so that one bushing can bear radial load and thrust load at the same time.

■ Thrust Type

**MPGZ (Standard)**

**MPSZ (Countersunk Hole)**  
d=6-40

**MPKZ (Low Head Screw Hole)**  
d=6-12

Recommended Mating Shaft: d8: General Use (High-Load), e7: General Use (Light Load), f8: High Precision Use (Light Load), g6: High Precision Use (Intermittent Operation)  
 Material: High Tensile Brass Alloy, Solid Lubricant Embedded

Part Number		L								Dm6		H	t	Housing Dia. (Recommended Dimension)	
Type	df7	10	12	15	20	25	30	35	40	45	50			Ref. Dim.	Tolerance (H7)
MPGZ (Standard)	6	+0.032	10	12								12	22	12	+0.018
	8	+0.040	10	12	15							14	25	14	0
	10	+0.025	10	12	15	20						16	30	16	
	12	+0.050	10	12	15	20	25					18	35	18	+0.021
	13		12	15	20						21	40	21	0	
	16	+0.032	12	15	20	25	30					22	45	22	
	18	+0.061	14	20	25	30	35					24	50	24	+0.025
	20		14	20	25	30	35	40			28	55	28	0	
	25	+0.040										33	65	33	
	30	+0.075										38	70	38	+0.030
	35		20	25	30	35	40				44	80	44		
	40	+0.050										50	90	50	
50											62	100	62		

Part Number		L								Dm6		MPSZ (Countersunk Hole)				MPKZ (Low Head Screw Hole)				Housing Dia. (Recommended Dimension)				
Type	df7	10	12	15	20	25	30	35	40	45	50	H	P.C.D	d1	d2	h	P.C.D	d1	d2	h	Accessories: Hex Socket Low Head Cap Screw	t	Ref. Dim.	Tolerance (H7)
MPSZ (Countersunk Hole)	6	+0.032	10	12								10	8.5	3.5	2.5	M3	3	6	3.5	2.2	M3-10x2 pcs.	4	10	+0.018
	8	+0.028	12	15								12	8.5	3.5	2.5	M3	3	6	3.5	2.2	M3-10x2 pcs.	4	14	0
	10	+0.013	12	15	20							14	8.5	3.5	2.5	M3	3	6	3.5	2.2	M3-10x2 pcs.	4	18	
	12	+0.034	12	15	20							18	8.5	3.5	2.5	M3	3	6	3.5	2.2	M3-10x2 pcs.	4	21	+0.021
	15		12	15	20							21	8.5	3.5	2.5	M3	3	6	3.5	2.2	M3-10x2 pcs.	4	24	0
	16	+0.016	12	15	20	25	30					22	8.5	3.5	2.5	M3	3	6	3.5	2.2	M3-10x2 pcs.	4	28	
	18	+0.041	20	25	30	35	40					24	13	6	3.5	M5	5	9	5.5	3.7	M5-16x4 pcs.	6	33	+0.025
	20		20	25	30	35	40					28	13	6	3.5	M5	5	9	5.5	3.7	M5-16x4 pcs.	6	38	0
	25	+0.020										33	13	6	3.5	M5	5	9	5.5	3.7	M5-16x4 pcs.	6	44	
	30	+0.050										38	16	7	4.5	M6	6	11	6.6	4.2	M6-20x4 pcs.	8	48	+0.030
	35		20	25	30	35	40					44	16	7	4.5	M6	6	11	6.6	4.2	M6-20x4 pcs.	8	50	
	40	+0.025										50	16	7	4.5	M6	6	11	6.6	4.2	M6-20x4 pcs.	8	55	
50											62	16	7	4.5	M6	6	11	6.6	4.2	M6-20x4 pcs.	8	62		

d-L	Unit Price			d-L	Unit Price			d-L	Unit Price			d-L	Unit Price			d-L	Unit Price		
	MPGZ	MPSZ	MPKZ		MPGZ	MPSZ	MPKZ		MPGZ	MPSZ	MPKZ		MPGZ	MPSZ	MPKZ		MPGZ	MPSZ	MPKZ
6-10				12-25				16-30				25-20				35-35			
6-12				13-12				18-14				25-25				35-40			
8-10				13-15				18-20				25-30				40-25			
8-12				13-20				18-25				25-35				40-30			
8-15				13-25				18-30				25-40				40-35			
10-10				15-12				18-35				30-20				40-40			
10-12				15-15				20-14				30-25				40-45			
10-15				15-20				20-20				30-30				40-50			
10-20				15-25				20-25				30-35				50-20			
12-10				16-12				20-30				30-40				50-35			
12-12				16-15				20-35				50-40				50-40			
12-15				16-20				20-40				50-45				50-50			
12-20				16-25				25-14				50-50				50-60			

Ordering Example: **Part Number** - **L**  
**MPGZ10** - **15**  
**MPSZ12** - **15**  
**MPKZ16** - **20**