Oil Free Bushings

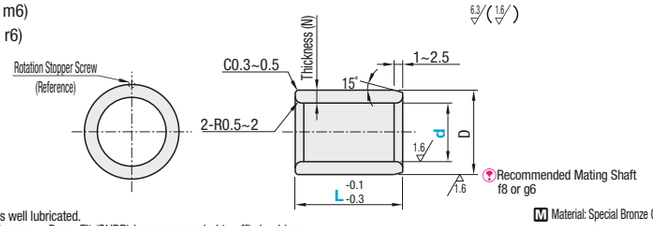
Bronze, Straight, I.D. F7 O.D. m6 / I.D. E7 O.D. r6 / Bronze, Flanged

Features: Minute sliding motion can be achieved. Excels in baking resistance. Alterations on Overall Length are available.

Straight

RoHS

SHBZ (I.D. F7 O.D. m6)
SHBR (I.D. E7 O.D. r6)



Recommended Mating Shaft f8 or g6

Ensure the bushing remains well lubricated.
Use of Rotation Stopper Screws or Press Fit (SHBR) is recommended to affix bushings.

M Material: Special Bronze Casting
Allowable Temperature: -40 ~ 150°C

Part Number Type	d	d F7	d E7	L	D	D m6	D r6	Thickness (N)	* Housing Dia. Ref. Dim.	* Housing Dia. Tolerance (H7)	* Rotation Stopper Screw (Reference)
SHBZ SHBR	5	+0.022 +0.010	+0.032 +0.020	8 10 12 15	9	+0.015 +0.006	+0.028 +0.019	2	9	+0.015 0	M4x8
	6			8 10 12 15 20	10				10		
	8	+0.028 +0.013	+0.040 +0.025	8 10 12 15 20 25	12	+0.018 +0.007	+0.034 +0.023		12	+0.018 0	
	10			8 10 12 15 20 25	14				14		
	12	+0.034 +0.016	+0.050 +0.032	10 12 15 20 25	18			3	18		
	13			15 20	19	+0.021 +0.008	+0.041 +0.028		19	+0.021 0	
	15			10 12 15 20 25	21				21		
	16			10 12 15 20 25 30 40	22				22		
	20	+0.041 +0.020	+0.061 +0.040	15 20 25 30 40 50	28	+0.025 +0.009	+0.050 +0.034	4	28	+0.025 0	M5x8
	25			20 25 30 40 50	33				33		
	30			25 30 40 50 60	38				38		M6x16

* Indicated dimensions of Housing Dia. and Rotation Stopper Screws are recommended dimensions. For working on SHBZ, the use of Rotation Stopper Screws is recommended.

Ordering Example

Part Number	-	L
SHBZ12	-	15
SHBR16	-	20
SHFZ16	-	20

Type	d	Unit Price L8	L10	L12	L15	L20	L25	L30	L40	L50	L60
SHBZ	5					-	-	-	-	-	-
	6						-	-	-	-	-
	8							-	-	-	-
	10							-	-	-	-
	12	-						-	-	-	-
	13	-	-	-			-	-	-	-	-
	15	-						-	-	-	-
	16	-								-	-
	20	-	-	-							-
	25	-	-	-	-						-
	30	-	-	-	-	-					

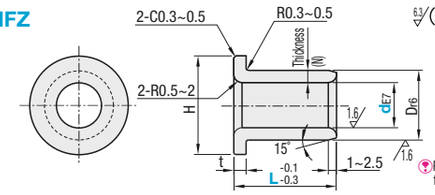
Type	d	Unit Price L8	L10	L12	L15	L20	L25	L30	L40	L50	L60
SHBR	5					-	-	-	-	-	-
	6						-	-	-	-	-
	8							-	-	-	-
	10							-	-	-	-
	12	-						-	-	-	-
	13	-	-	-			-	-	-	-	-
	15	-						-	-	-	-
	16	-								-	-
	20	-	-	-							-
	25	-	-	-	-						-
	30	-	-	-	-	-					

Features: Flanged, less likely to pull-out.

Flanged

RoHS

SHFZ



Recommended Mating Shaft f8 or g6

Ensure the bushing remains well lubricated.
Press fitting is recommended to affix bushings.

M Material : Special Bronze Casting
Allowable Temperature: -40 ~ 150°C

Features of I.D. E7 O.D. r6 Type

- Less likely to pull-out than I.D. F7 O.D. m6 Type.
- Inner Diameter after press fitting is almost equal to I.D. F7 O.D. m6 Type.

Bronze Bushings: I.D. Variations after Press Fitting (Reference)

Housing Diameter Tolerance: H7

I.D. E7 O.D. r6	I.D. F7 O.D. m6
99.82%	99.94%

Data above are obtained by test, not guaranteed.

Part Number Type	d E7		L	D r6		Thickness (N)	H	0 t -0.1	* Housing Dia. Ref. Dim.	* Housing Dia. Tolerance (H7)	Unit Price L10	L12	L15	L20	L25	L30	L40	L50
SHFZ	5	+0.032	10 12	9	+0.028	2	14	2	9	+0.015 0				-	-	-	-	-
	6	+0.020	10 12 15	10	+0.019		16		10						-	-	-	-
	8	+0.040	10 12 15 20	12	+0.034 +0.023		20		12	+0.018 0						-	-	-
	10	+0.025	10 12 15 20	14			22		14							-	-	-
	12	+0.050 +0.032	10 12 15 20 25 30	18		3	25	3	18	+0.021 0							-	-
	13		12 15 20	19	+0.041 +0.028		26		19		-					-	-	-
	15		10 12 15 20 25	21			28		21							-	-	-
	16		12 15 20 25 30	22			29		22		-						-	-
	20	+0.061 +0.040	15 20 25 30 40	30		5	40	5	30		-	-						-
	25		30 40 50	35	+0.050 +0.034		45		35	+0.025 0	-	-	-	-	-			
	30		30 40 50	40			50		40		-	-	-	-	-			

* Housing diameters listed here are recommended dimensions.

Ordering Example

Part Number	-	L
SHBZ12	-	15
SHBR16	-	20
SHFZ16	-	20

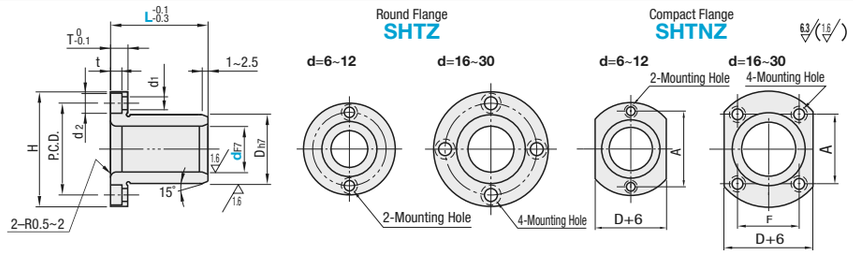
Oil Free Bushings

Bronze, Standard Flanged Housing Units / Center Flanged Housing Units (Built-In Copper Alloy Bushings)

Features: Flange Integrated Oil Free Bushings can reduce the time of assembling.

Standard Flanged

RoHS



Recommended Mating Shaft f8 or g6

Ensure the bushing remains well lubricated.

M Material: Special Bronze Casting
Allowable Temperature: -40 ~ 150°C
A Accessory: Hex Socket Low Head Cap Screws 2 ~ 4 pcs.

Part Number Type	d h7		L	D h7		H	T	t	d1	d2	P.C.D.	F	A	Accessory: Hex Socket Low Head Cap Screw
SHTZ SHTNZ	6	+0.022 +0.010	15	10	0 -0.015	25	4	2.2	3.5	6	17	-	17	M3-10x2
	8	+0.028	20 25	12	0 -0.018	27					19		19	
	10	+0.013	25 30	14		29					21		21	
	12	+0.034	25 30	18		36	5	3	4.5	7.5	26		26	M4-12x2
	16	+0.016	25 30 35 40	22	0 -0.021	40					30	18	24	M4-12x4
	20	+0.041 +0.020	30 35 40 50	28		49	6	3.7	5.5	9	38	22	31	M5-16x4
	25		30 35 40 50 60	33	0 -0.025	54					43	25	35	
	30		35 40 50 60 70	38		63	8	4.2	6.6	11	50	30	40	M6-20x4

Type	d	Unit Price L15	L20	L25	L30	L35	L40	L50	L60	L70
SHTZ	6		-	-	-	-	-	-	-	-
	8	-			-	-	-	-	-	-
	10	-	-			-	-	-	-	-
	12	-	-			-	-	-	-	-
	16	-	-				-	-	-	-
	20	-	-	-					-	-
	25	-	-	-						-
	30	-	-	-	-					

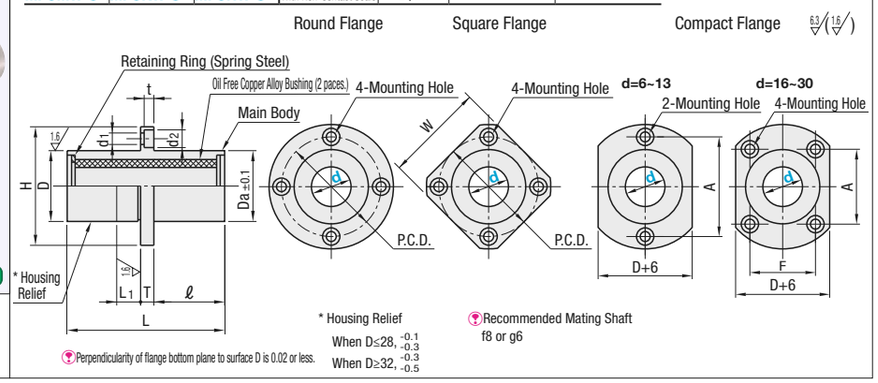
Type	d	Unit Price L15	L20	L25	L30	L35	L40	L50	L60	L70
SHTNZ	6		-	-	-	-	-	-	-	-
	8	-			-	-	-	-	-	-
	10	-	-			-	-	-	-	-
	12	-	-			-	-	-	-	-
	16	-	-					-	-	-
	20	-	-	-						-
	25	-	-	-						-
	30	-	-	-	-					

Features: Suitable for vertical use. Reduces the time of manufacturing and assembling the housing.
Workpiece located near the center of the bushing provides balanced load and clearance on both sides of the flange.

Center Flanged

RoHS

Type: Round Flange	Square Flange	Compact Flange	Seal	Housing: M Material	Housing: S Surface Treatment	Bushing: M Material
MFCMW	MFCKW	MFCNW	No Seal	EN 1.0038 Equiv.	Electroless Nickel Plating	High Tensile Brass Alloy, Solid Lubricant Embedded
MFCMW-S	MFCKW-S	MFCNW-S	With Non-Contact Seals			



With Non-Contact Seals Teflon seal of 0.3mm thick is attached on the inner side of each retaining ring.

Perpendicularity of flange bottom plane to surface D is 0.02 or less.

* Housing Relief
When D≤28, -0.1 -0.3
When D≥32, -0.3 -0.5

Recommended Mating Shaft f8 or g6

Part Number Type	d	Tolerance	D	Tolerance	Da	L	L1	ℓ	H	T	d1	d2	t	P.C.D.	W	F	A	(No Seal) Unit Price Round Flange	Square Flange	Compact Flange	(With Non-Contact Seals) Unit Price Round Flange	Square Flange	Compact Flange
Round Flange (No Seal) MFCMW (With Non-Contact Seals) MFCMW-S	6	+0.022 0	12	0 -0.018	11.8	37	5	16	28	5	3.5	6	3.1	20	22	-	20						
	8	+0.028 0	15		14.8	47		21	32					24	25	-	24						
	10		19		18.8	57		25.5	40	6	4.5	7.5	4.1	29	30	-	29						
Square Flange (No Seal) MFCKW (With Non-Contact Seals) MFCKW-S	12	+0.034 0	21	0 -0.021	20.8		10		42					32	32	-	32						
	13		23		22.8				43					33	34	-	33						
	16		28		27.8	67		30.5	48					38	37	22	31						
Compact Flange (No Seal) MFCNW (With Non-Contact Seals) MFCNW-S	20	+0.041 0	32	0 -0.025	31.6	77		34.5	54	8	5.5	9	5.1	43	42	24	36						
	25		40		39.6	108		50	62					51	50	32	40						
	30		45		44.6	128		59	74	10	6.6	11	6.1	60	58	35	49						

For Features of Non-Contact Seal Type, refer to P.393. Flanged Height-Adjusting Spacers are selectable from P. 330.

Ordering Example

Part Number
MFCMW6