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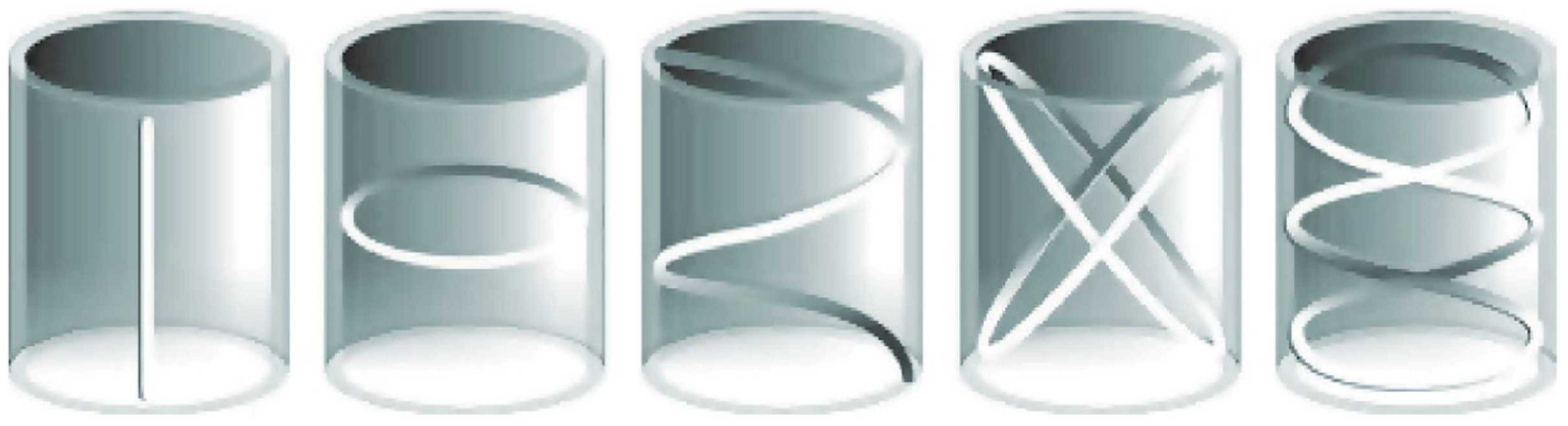
High-strength Metal Alloy Embedded Solid Self-lubricating Bearing

Rolled alloy polymer bearings

Copper Alloy Bushing with Oil Groove

Conventional tank selection



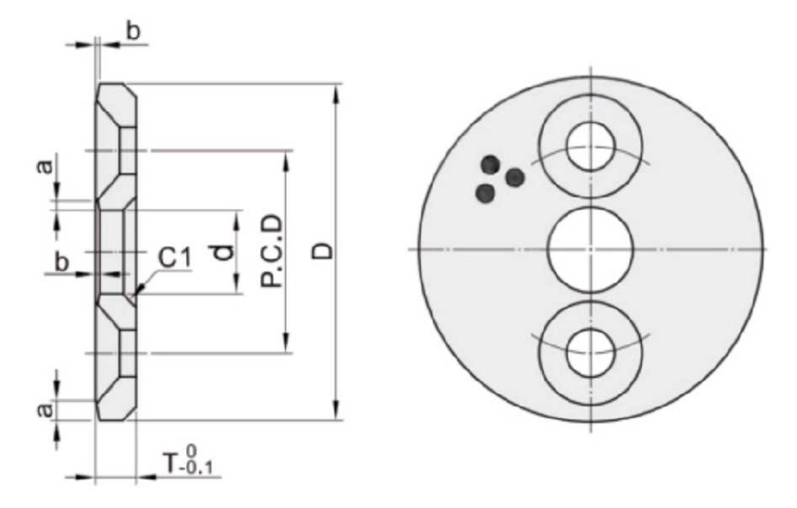
Material selection

Composition and physical properties		Material type					
		ZCuZn25Al6Fe3Mn3 High-strength Brass H65	ZCuSn5Pb5Zn5 Tin Bronze 5-5-5	ZCuSn6Zn6Pb3 Tin Bronze 6-6-3	ZCuSn10P1 Tin Bronze 10-1	ZCuPb10Sn10 Tin Bronze 10-10	ZCuAl9Fe4Ni4Mn2 Aluminum Bronze 9-4
Cu		Margin	Margin	Margin	Margin	Margin	Margin
Zn		25	4.0−6.0	4.0−7.0			
Sn		0.2	4.0−6.0	4.0−7.0	9.0−11.5	9.0−11.0	
Pb		0.2	4.0−6.0	2.0−4.0	0.0−2.0	8.0−11.0	0.2
Al		4.5−7.0				0.01	8.5−10
Fe		2.0−4.0				0.25	4.0−5.0
Mn		1.5−4.0				0.2	0.8−2.5
P					0.5−1.0	0.05	
Ni						2	4.0−5.0
Tensile strength (MPa)		750	220	230	360	≤220	≤630
Yield point (MPa)		400	100	110	170	≤140	≤250
Elongation (%)		10	13		6	≥5	≥16
Hardness (HB)		210−270	60−80	60−80	88	65	150
Density		8	8.7	8.5	8.7	8.9	7.6
Line expansion α/10-6℃-1		19.8	19.1	19.5	18.5	19.2	20
Thermal conductivity W/(M℃)		50	56	55	50	45	71
Friction factor	Lubricant	0.12	0.01	0.02	0.08	0.005	0.01
	No Lubricants		0.16	0.2	0.1	0.1	0.18
耐蚀性(质量损失)/[g/(m² · 24h)	In 10% of the acid	1.46	4.9	4.9	4.9	0.14	0.14
	In seawater		0.67	0.67	0.67	0.92	0.92

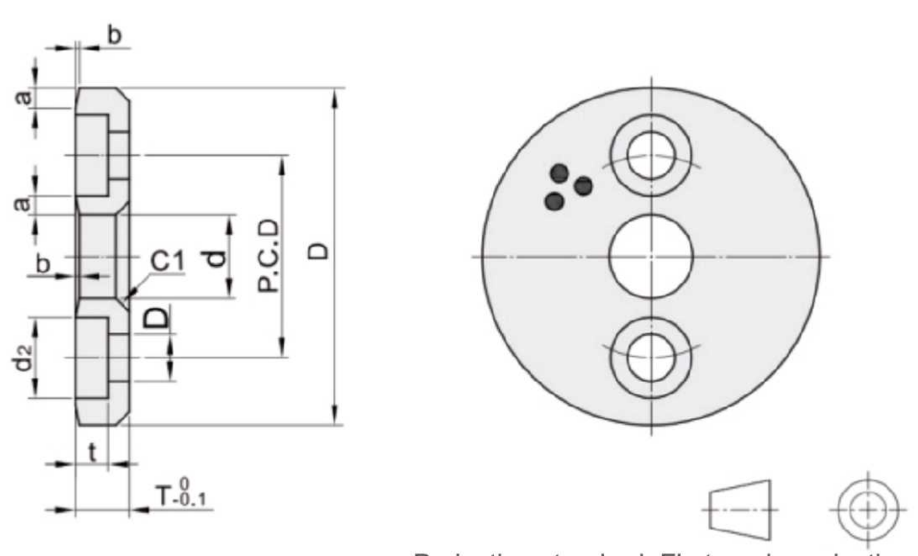
LW High-Strength Brass Inlaid Graphite-Free Thrust Washer

Material	ZCuZN25Al6Fe3Mn3+Graphite

LW01 Tapered hole type



LW02 Countersunk type



Screws must be purchased separately.

Projection standard: First-angle projection

Unit:mm

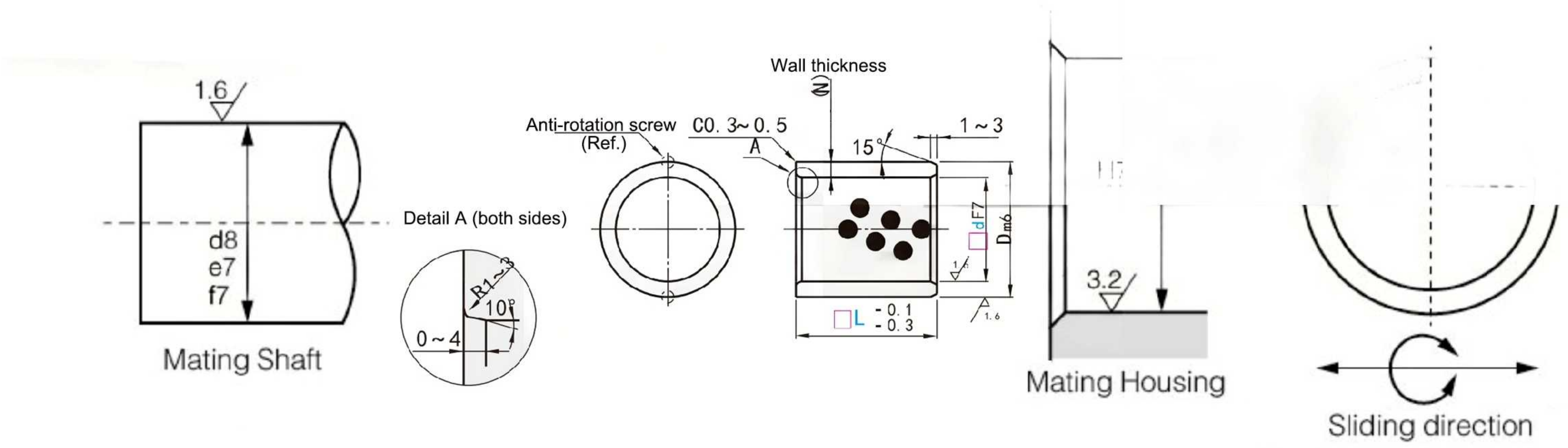
Standard No.	d	D	$T_{-0.1}^{0}$	Bolt			
				P.C.D	No. of screw holes	Screw hole size	d_1
LW01-6	6.2	25	3	15	2	M3	3.5
LW01-8	8.2	28		18			
LW01-10	10.2	30		20			
LW01-12	12.2	40		28			
LW01-13	13.2						
LW01-14	14.2						
LW01-15	15.2	50		35			
LW01-16							
LW01-16N				———	———	———	———
LW01-18	18.2			35	2	M3	3.5
LW01-20	20.2		5			M5	6
LW01-20N				———	———	———	———
LW01-25	25.2	55		40	2	M5	6
LW01-25N				———	———	———	———
LW01-30	30.2	60	7	45	2	M5	6
LW01-35	35.2	70		50			
LW01-40	40.2	80		60		M6	7
LW01-45	45.3	90		67.5			
LW01-50	50.3	100	8	75	4		
LW01-55	55.3	110		85			
LW01-60	60.3	120		90		M8	9
LW01-65	65.3	125		95			
LW01-70	70.3	130	10	100			
LW01-75	75.3	140		110			
LW01-80	80.3	150		120			
LW01-90	90.3	170		140		M10	11
LW01-100	100.3	190		160			
LW01-120	120.3	200		175			

LB High Strength Brass Inlaid Graphite-Straight Column Oil-Free Bushing

LB High Strength Brass Inlaid Graphite-Straight Column Oil-Free Bushing

Material	ZCuZN25Al6Fe3Mn3+Graphite

d8 : High load
e7 : Light load
f7 : High precision



Unit:mm

ID (d)	Tol. (E7)	OD (D)	Tol. (r6)	Height L (tolerance:-0.1 to -0.3 mm)														
4	+0.010 +0.022	8	+0.006 +0.015	8	10	12	15											
5		9		8	10	12	15	16	20									
6		10		6	8	9	10	12	15	16	20	25						
8	+0.013 +0.028	12	+0.007 +0.018	8	10	12	15	16	18	20	25	30	35					
10		14		8	10	12	15	16	18	20	25	30	35	50				
10		16		8	10	15	18	20	22									
12	+0.016 +0.034	16		10	12	15	16	20	25	30	35							
12		18		8	10	12	15	16	18	19	20	25	30	35	40	45	50	
13		19	+0.008 +0.021	10	12	15	16	20	25	30	35	40	50					
14		20		10	12	15	18	20	25	30	35							
14		20		10	12	15	18	20	25	30	35							
15	+0.016 +0.034	20		12	15	20												
15		21		10	12	15	16	20	25	30	35	40	50					
16		22		10	12	15	16	18	19	20	25	30	35	40	50	60		
16		24		10	15	20	25	30	40	50								
16		25	+0.008 +0.021	15	20	25	30	35	40	50								
17		23		15														
18		24		10	12	15	16	18	19	20	25	30	40	45	50			
19	+0.020 +0.041	26		15	20													
20		25		15	20	30	40											
20		26		15	20	25	30	35	40									
20		28		10	12	15	16	20	25	30	40	45	50	60	70			
20		30		10	12	15	16	20	25	30	35	40	45	50	60	70		
22		28		30	40													
22		30		20	25	30	40	50										
22		32	+0.009 +0.025	12	15	20	25	30	40									
23		26	+0.008 +0.021	20	25													
25	+0.020 +0.041	30	+0.009 +0.025	15	20	25	30	40	50									
25		32		20	25	30	35	40	45	50	60							
25		33		10	12	15	16	20	25	30	35	40	45	50	60	70		
25		35		12	15	16	20	25	30	35	40	45	50	60	70	80		
28		38		20	25	30	40											
30		36		20	25	30	35	40										

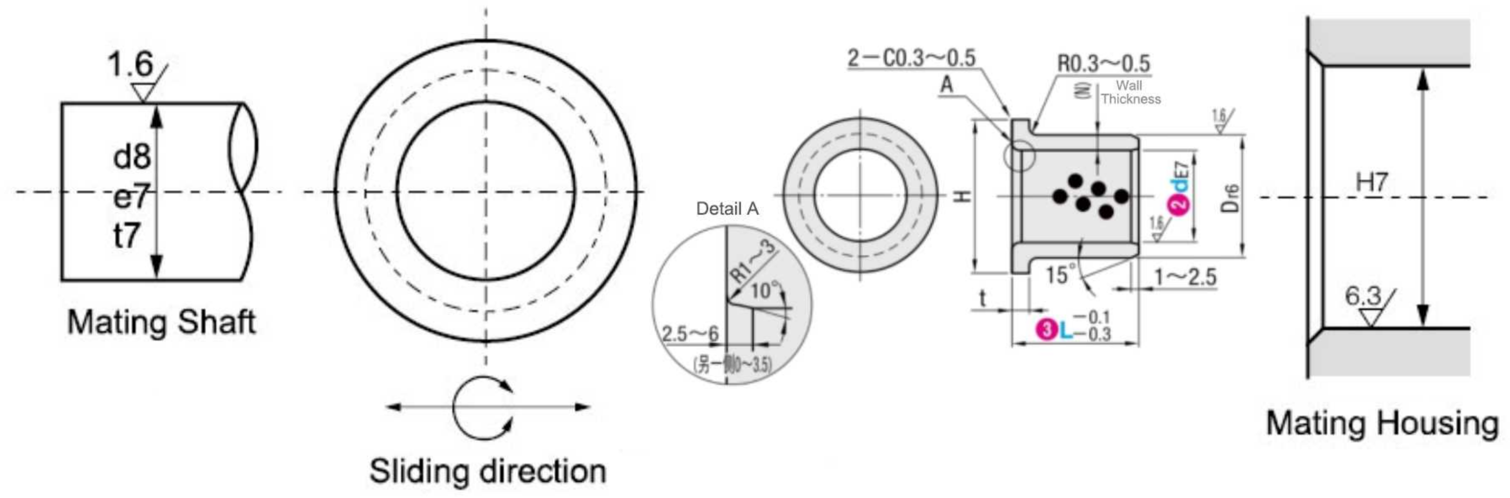
ID (d)	Tol. (E7)	OD (D)	Tol. (r6)	Height L (tolerance:-0.1 to -0.3 mm)														
30	+0.020 +0.041	38	+0.009 +0.025	12	15	16	20	25	30	35	40	45	50	60	70	80		
30		40		12	15	20	25	30	35	40	45	50	60	70	80			
30		42	+0.009 +0.025	20	25	30	35	40	50	60								
32	+0.025 +0.050	40		20	30	32	40	50										
32		42		20	25	30	40											
32		45		30	40													
35		44		16	20	25	30	35	40	50	60	70	80					
35		45		15	20	25	35	40	45	50	55	60	70					
35		48		30	35	40	50	60										
38		48		30	40													
40		48		20	30	40	50											
40		50		15	20	25	30	35	40	45	50	60	70	80	90	100		
40		52	+0.011 +0.031	30	40	50	60	70										
40		55		15	20	25	30	35	40	50	55	60						
40		60		30	40	50	60											
45	+0.025 +0.050	55		20	25	30	35	40	45	50	60	70	80	90	100			
45		56		30	35	40	50	60										
45		60		30	35	40	50	60	70	80								
50		58		40	50													
50		60		20	25	30	35	40	45	50	60	70	80	90	100			
50		62		25	30	35	40	45	50	60	70	80	90					
50		65		30	40	50	60	70	80	90	100							
50		70	+0.011 +0.031	40	50	60												
55	+0.030 +0.060	65		30	35	40	50	60	70	80								
55		70		30	35	40	50	60	70	80								
60		70		30	35	40	50	60	70	80	90	100						
60		74		30	35	40	50	60	70	80								
60		75		30	35	40	45	50	55	60	70	80	90	100	120			
60		80		30	40	50	60	70	80	90								
63		75		60	70	80												
65		75		30	35	40	45	50	60									
65		80		30	40	50	60	70	80	100								
65		85	+0.013 +0.035	50	60	80												
70	+0.030 +0.060	80		30	40	45	50	60	70	80	100							
70		85		30	35	40	50	60	70	80	85	100						
70		90		40	50	60	70	80										
75		85		40	50	60	70	80	90									
75		90		40	50	60	70	80	100									
75		95		40	60	70	80	100										
80		90		30	40	50	60	70	80	90	100							
80		95		40	50	60	70	80	90	100	120							
80		96		40	50	60	70	80	90	100	120							
80		100		40	50	60	70	80	90	100	120	140						
85	+0.036 +0.071	95		50	60	100												
85		100		40	50	60	80	90										
85		105	+0.013 +0.035	40	70	80	100											
90		100		30	40	50	80											
90		105		50	80	90	100											
90		110		40	50	60	70	80	90	100	110	120	140					
90		115		80	100													
100		110		40	50	80	100	120										
100		115		40	60	70	80	100										
100		120		40	50	60	70	80	100	110	120	140						
100		125	+0.015 +0.040	80	100	120												
110	+0.036 +0.071	130		50	70	80	100	120										
120		140		50	60	70	80	90	100	120	140							
125	+0.043 +0.083	145	+0.015 +0.040	70	80	100	120											
130		150		80	100	120	130											
140		160		50	80	100	120	140										
150	+0.043 +0.083	170	+0.015 +0.040	80	100	150												
160		180		80	100	150												
170	+0.043 +0.083	190	+0.017 +0.046	100	150													
180		200		100	150													
190	+0.050 +0.096	210	+0.017 +0.046	100	150													
200		230		150	200													

FHD Bearings | Empowering Precision

LF High-Strength Brass Inlaid Graphite - Shoulder-Type Oil-Free Bushing

d8 : High-load use
e7 : Light-load use
f8 : High-precision use
g6 : High-precision use (intermittent operation)

Material	ZCuZn25Al6Fe3Mn3+ Graphite

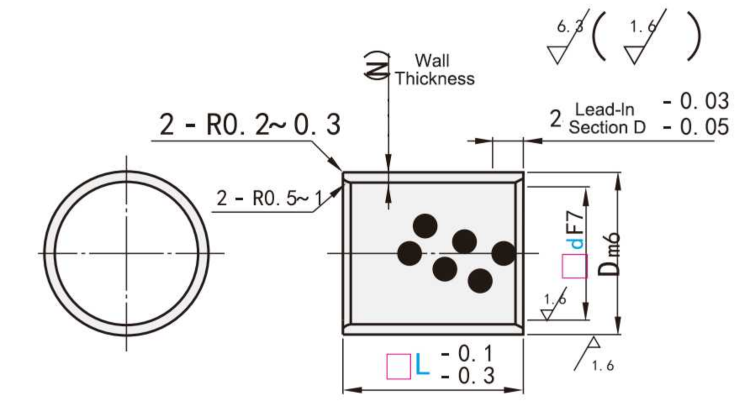


Unit:mm

ID(d)	Tol.(E7)	OD(D)	Tol.(r6)	Flange OD(F)	FlangeT	Height L (tolerance:-0.1 to -0.3 mm)												
5	+0.020 +0.032	9	+0.019 +0.028	14	2	10	12	15										
6		10		16	2	10	12	15	20									
8	+0.025 +0.040	12	+0.023 +0.034	20	2	8	10	12	15	20	25							
10		14		22	2	10	12	15	20	25	30	35						
12	+0.032 +0.050	18		25	3	10	12	15	20	25	30	35						
13		19	+0.028 +0.041	26	3	10	12	15	20	25	30	35						
14		20		27	3	10	12	15	20	25	30	35						
16		22		29	3	10	12	15	20	25	30	35	40	50				
18		24		32	3	15	20	25	30	35	40	50						
20	+0.040 +0.061	28		40	5	15	20	20	25	30	40							
20		30		40	5	15	20	25	30	35	40	45	50	60				
25	+0.040 +0.061	33	+0.034 +0.050	40	5	15	20	30										
25		33		45	5	15	20	25	30	40								
25		35		45	5	15	20	25	30	35	40	45	50	60				
30		38		50	5	15	20	25	30	40								
30		40		50	5	15	20	25	30	35	40	45	50	60				
35	+0.050 +0.075	45		60	5	15	20	25	30	35	40	45	50	60				
40		50		60	5	20	25	30	35	40	50							
40		50		65	5	20	25	30	35	40	45	50	60					
45		55	+0.041 +0.060	70	5	30	35	40	50	60								
50		60		75	5	25	30	35				60						
55	+0.060 +0.090	65		80	5	40	60											
60		75	+0.043 +0.062	90	7.5	30	40	50										
63		75		90	7.5	67												
65		80		95	7.5	60												
70		85	+0.051 +0.073	105	7.5	50	60	80										
75		90		110	7.5	60	90											
80		100		120	10	50	60	80	100									
90	+0.072 +0.107	110	+0.054 +0.076	130	10	60	80	100										
100		120		150	10	60	80	100										
90		110		130	10	50	60	80	100									
100		120		150	10	50	60	80	100									
120		140	+0.063 +0.088	170	10	60	80	100	120									
130	+0.085 +0.125	150	+0.065 +0.090	180	10	80	100											
140		160		190	10	80	100											
150		170	+0.068 +0.093	200	10	100	120											
160		180		210	10	100	120											

LBB High Strength Brass Inlaid Graphite -Thin-Walled Vertical Oil-Free Bushing

Q Standard Type / Thin-Walled
F7 ID M6 OD Type



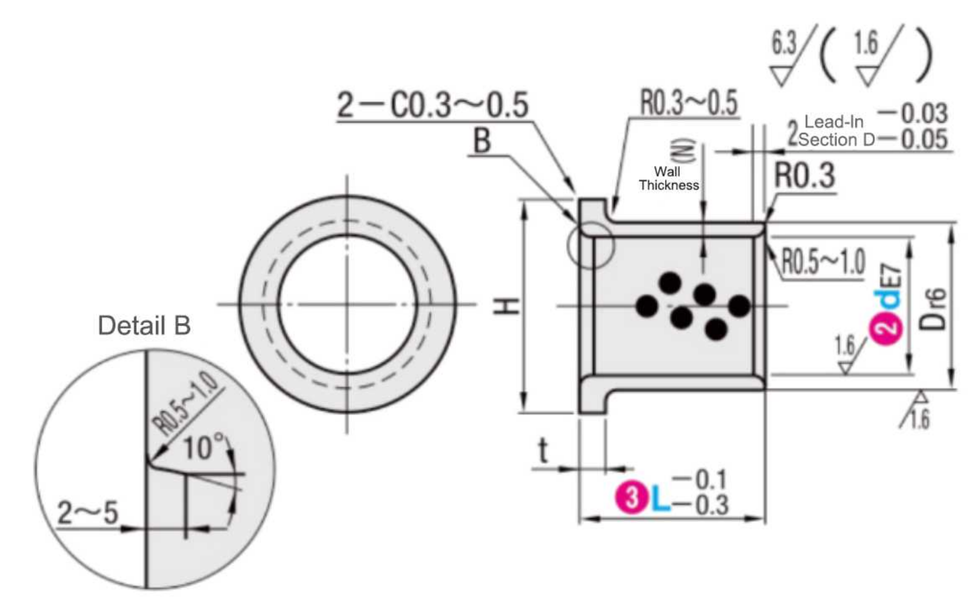
E Recommended Mating Shaft for F7 Inner Diameter d8: General use(high load)
f8: High-precision use
e7:General use (light load)
g6: High-precision use (intermittent operation)

E Precautions for Use It is recommended to secure the bushing with an anti-rotation set screw.

M Material High-Strength Brass Alloy
Inlaid Solid Lubricant

ID(d)	ECO Tol.	N(F7)	OD(D)	ECO Tol.	N(M6)	Height L (tolerance:-0.1 to -0.3 mm)												
5	+0.00 +0.05	+0.010 +0.022	7	+0.00 +0.05	+0.006 +0.015	8	10	12	16	20								
6			8			10	12	15	16	20	25							
8		+0.013 +0.028	10			8	10	12	15	16	20	25	30					
10			12		+0.007 +0.018	8	10	12	15	16	20	25	30	35				
12	+0.01 +0.06	+0.016 +0.034	15			8	10	12	15	16	20	25	30	35	40			
15			18			10	12	15	16	20	25	30	35	40	50			
16			20		+0.008 +0.021	10	12	15	16	20	25	30	35	40	50			
18			22			10	12	15	16	20	25	30	35	40	50			
20	+0.01 +0.07	+0.020 +0.041	24			10	12	15	16	20	25	30	35	40	50	60	70	
25			29			12	15	16	20	25	30	40	50	60	70			
30			34		+0.009 +0.025	12	15	16	20	25	30	35	40	50	60	70	80	
35		+0.025 +0.050	40			16	20	25	30	35	40	50	60	70	80			
40			45			20	25	30	40	50	60	70	80					
50			55		+0.011 +0.031	25	30	40	50	60	70	80						

LFB High-Strength Brass Inlaid with Graphite - Thin-Walled Shouldered Oil-Free Bushing



Recommended Mating Shaft for F7 Inner Diameter d8: General use(high load)
e7:General use (light load)
f8: High-precision use
g6: High-precision use (intermittent operation)

Usage Precaution: It is recommended to press-fit the bushing for secure fixation.

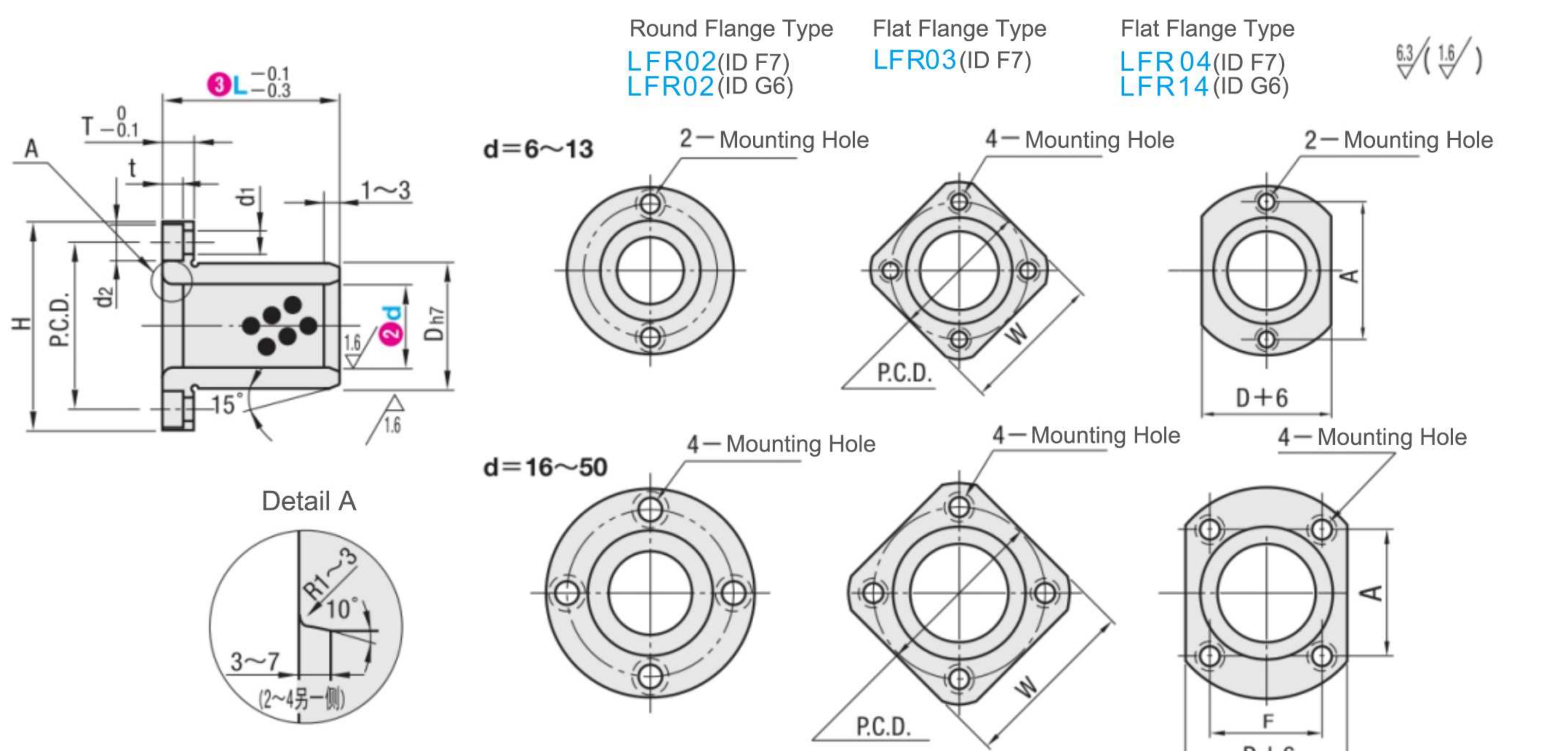
M Material High-Strength Brass Alloy Inlaid Solid Lubricant

ID(d)	ECO Tol.	N(E7)	OD(D)	ECO Tol.	N(r6)	Flange OD(F)	Flange T.	Height L (tolerance:-0.1 to -0.3 mm)						
5	+0.00 +0.05	+0.020 +0.032	7	+0.00 +0.05	+0.019 +0.028	11	2	10	12	15				
6			8			12	2	10	12	15				
6			8			12	2	20						
8	+0.00 +0.08	+0.025 +0.040	10			14	2	10	12	15	20			
10			12		+0.023 +0.034	16	2	10					30	
12	+0.02 +0.07	+0.032 +0.050	15			21	3	10	12	15	20	25	30	
13			16			22	3	12	15					
15			18			24	3	10	12	15	20	25	30	
16			20	+0.01 +0.06	+0.028 +0.041	26		12	15	20		30	40	
20	+0.03 +0.08	+0.040 +0.061	24			32	4	15	20	25	30	40	50	
25			29			37	4	20	25	30	40	50		
30			34	+0.02 +0.07	+0.034 +0.050	42	4	25	30	40	50			

LFR High-Strength Brass Inlaid Graphite-Flanged Oil-Free Bushing

—Copper Alloy, Flange Type: F7 ID / G6 ID





Recommended Mating Shaft for F7 Inner Diameter d8: General use (high load) f8: High-precision use e7: General use (light load) g6: High-precision use (intermittent operation)

Recommended Mating Shaft for G6 Inner Diameter g6: For high-precision applications

Material High-Strength Brass Alloy Inlaid Solid Lubricant

Precautions for Use It is recommended to secure the bushing with an anti-rotation set screw.

Accessory Short-Head Hex Socket Bolt, 2–4 pcs

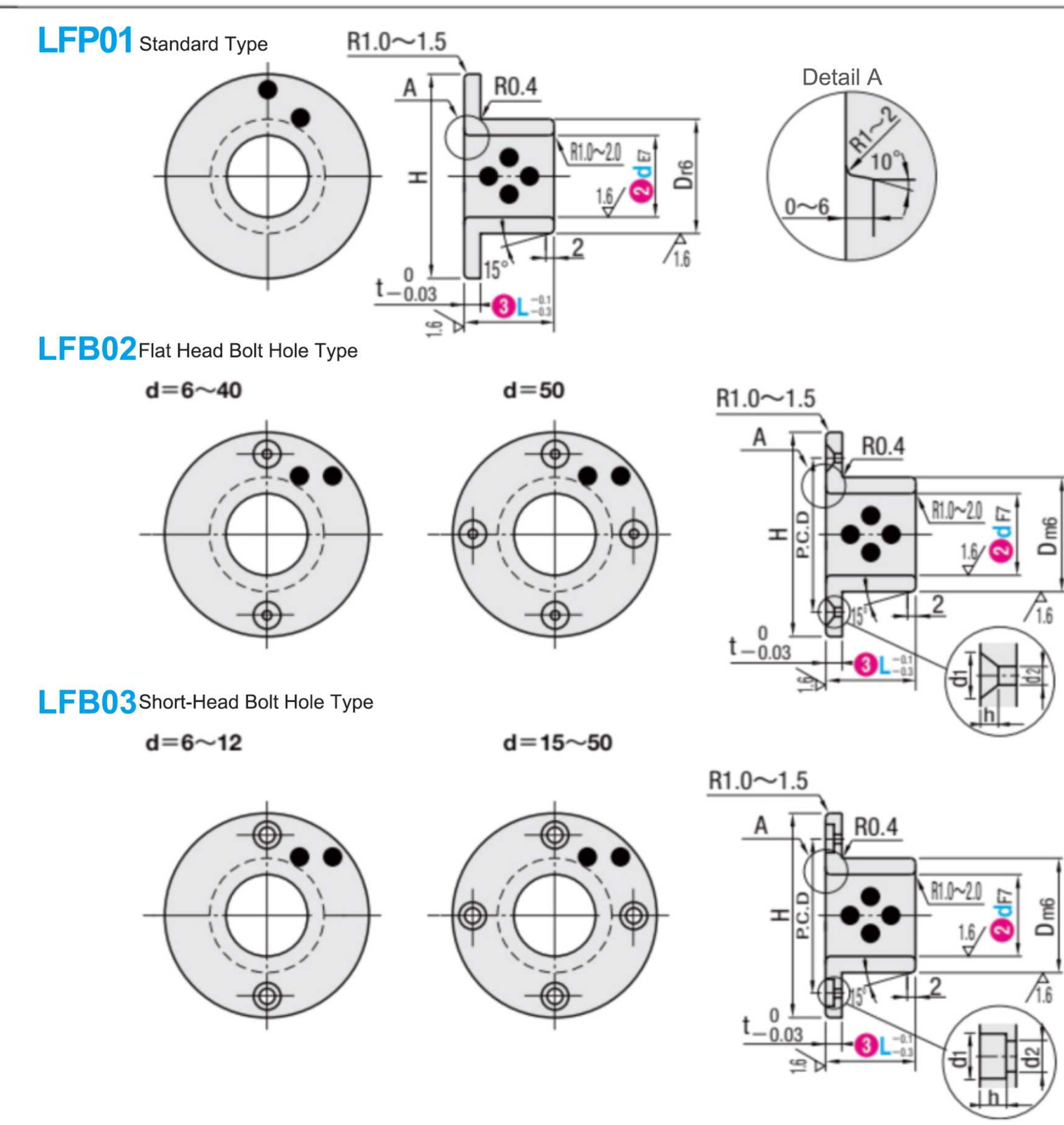
Model No. Type	dF7		L	Dh7		H	T	t	d1	d2	P.C.D.	W	F	A	Accessory Short-Head Hex Socket Bolt
ID F7 LFR01 LFR03 LFR04	6	+0.022 +0.010	15 20	10	0 −0.015	25	4	2.2	3.5	6	17	20	–	17	M3−10×2 *(4)
	8	+0.028 +0.013	20 25	12	0 −0.018	27					19	22		19	
	10		20 25 30	14		29					21	23		21	
	12	+0.034 +0.016	20 25 30	18		36	5	3	4.5	7.5	26	28		26	M4−12×2 *(4)
	13		20 25 30 35	19	0 −0.021	37					27	29		27	
	16		20 25 30 35 40	22		40					30	31	18	24	M4−12×4
	20	+0.041 +0.020	25 30 35 40 50	28		49	6	3.7	5.5	9	38	38	22	31	M5−16×4
	25		30 35 40 50 60	33	0 −0.025	54					43	42	25	35	
	30		35 40 50 60 70	38		63	8	4.2	6.6	11	50	50	30	40	M6−20×4
	35	+0.050 +0.025	50 60 70	44		69					56	54	36	43	
	40		60 70 80	50		82	10	5.2	9	14	66	64	38	54	M8−25×4
	50		70 80 100	62	0 −0.030	94					78	73	50	60	

*( )indicates the number of bolts for MPTSZ.

Model No. Type	dG6		L	Dh7		H	T	t	d1	d2	P.C.D.	F	A	Accessory Short-Head Hex Socket Bolt
ID G6 LFR12 LFR05	6	+0.012 +0.004	15	10	0 −0.015	25	4	2.2	3.5	6	17	–	17	M3−10×2
	8	+0.014 +0.005	20	12	0 −0.018	27					19		19	
	10		25	14		29					21		21	
	12	+0.017 +0.006	25 30	18		36	5	3	4.5	7.5	26		26	M4−12×2
	13		25 30 35	19	0 −0.021	37					27		27	
	16		25 30 35 40	22		40					30	18	24	M4−12×4
	20	+0.020 +0.007	30 35 40	28		49	6	3.7	5.5	9	38	22	31	M5−16×4
	25		30 35 40	33	0 −0.025	54					43	25	35	
	30		35 40 50	38		63	8	4.2	6.6	11	50	30	40	M6−20×4

LFP High-Strength Brass Inlaid GraphiteThrust Flange Oil-Free Bushing





Recommended Mating Shaft for F7 Inner Diameter d8: General use (high load) f8: High-precision use e7: General use (light load) g6: High-precision use (intermittent operation)

Precautions for Use It is recommended to secure the bushing with an anti-rotation set screw.

Material High-Strength Brass Alloy Inlaid Solid Lubricant

Model No. Type	dE7		L	Dr6		H	t	Mounting Base Dia.(Rec.) Reference Dimension	Tol.(H7)
LFP01 (Standard Type)	6	+0.032 +0.020	10 12	12	+0.034 +0.023	22	3	12	+0.018 0
	8	+0.040 +0.025	10 12 15	14		25		14	
	10		10 12 15 20	16				16	
	12	+0.050 +0.032	10 12 15 20 25	18		30		18	
	13		12 15 20 25	19	+0.041 +0.028			19	+0.021 0
	15		12 15 20 25	21		35		21	
	16		12 15 20 25 30	22				22	
	18		14 20 25 30 35	24		40		24	
	20	+0.061 +0.040	14 20 25 30 35 40	28		45	5	28	
	25		14 20 25 30 35 40	33	+0.050 +0.034	50		33	+0.025 0
	30		20 25 30 35 40	38		55		38	
	35	+0.075 +0.050	20 25 30 35 40	44		65		44	
	40		25 30 35 40 45 50	50		70	7	50	
	50		30 35 40 45 50 60	62	+0.060 +0.041	90	8	62	+0.030 0

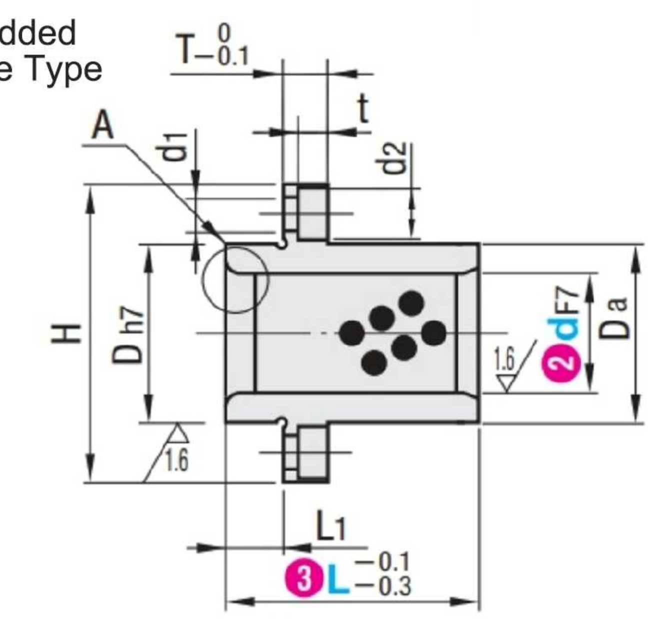
Model No. Type	dF7		L	Dm6		LFB02 H	LFB02 Mounting Hole P.C.D.	d1	d2	h	Flat Head Bolt	T	LFB03 H	LFB03 Mounting Hole P.C.D.	d1	d2	h	Accessory Short-Head Hex Socket Bolt	t	Mounting Base Dia.(Rec.) Reference Dimension	Tol.(H7)
LFP02 (Flat Head Bolt Hole Type) LFP03 (Short-Head Bolt Hole Type)	6	+0.022 +0.010	10 12	10	+0.015 +0.006	25	15	8.5	3.5	2.5	M3	3	25	17	6	3.5	2.2	M3−10×2个	4	10	+0.015 0
	8	+0.028 +0.013	12 15	12	+0.018 +0.007	28	18						27	19						12	+0.018 0
	10		12 15 20	14		30	20						29	21						14	
	12	+0.034 +0.016	12 15 20	18		40	28						36	26	7.5	4.5	3	M4−12×2个	5	18	
	15		12 15 20	21	+0.021 +0.008	50	35						39	29				M4−12×4个		21	+0.021 0
	16		12 15 20 25 30	22									40	30						22	
	18		20 25 30	24									42	32						24	
	20	+0.041 +0.020	20 25 30 35 40	28				13	6	3.5	M5	5	49	38	9	5.5	3.7	M5−16×4个	6	28	
	25		20 25 30 35 40	33	+0.025 +0.009	55	40						54	43						33	+0.025 0
	30		20 25 30 35 40	38		60	45						63	50	11	6.6	4.2	M6−20×4个	8	38	
	35	+0.050 +0.025	20 25 30 35 40	44		70	52						69	56						44	
	40		25 30 35 40 45	50		80	60	16	7	4.5	M6	7	82	66	14	9	5.2	M8−25×4个	10	50	
	50		30 35 40 45	62	+0.030 +0.011	100	75					8	94	78						62	+0.030 0

LFR High-Strength Brass Inlaid Graphite -Offset/Intermediate Flange Type Oil-Free Bushing

— Copper Alloy Embedded Flange Type Mid-Flange Type Flat Head Bolt Type Short Head Bolt Type

Features: Flange-integrated design reduces assembly time.
Embedded type: The oil-free bushing does not protrude to the opposite side of the mounting surface, providing ample space on the opposite side.
Intermediate type: Workpieces can be mounted near the center of the oil-free bushing body, resulting in good balance on both sides of the flange and even distribution of load and space.

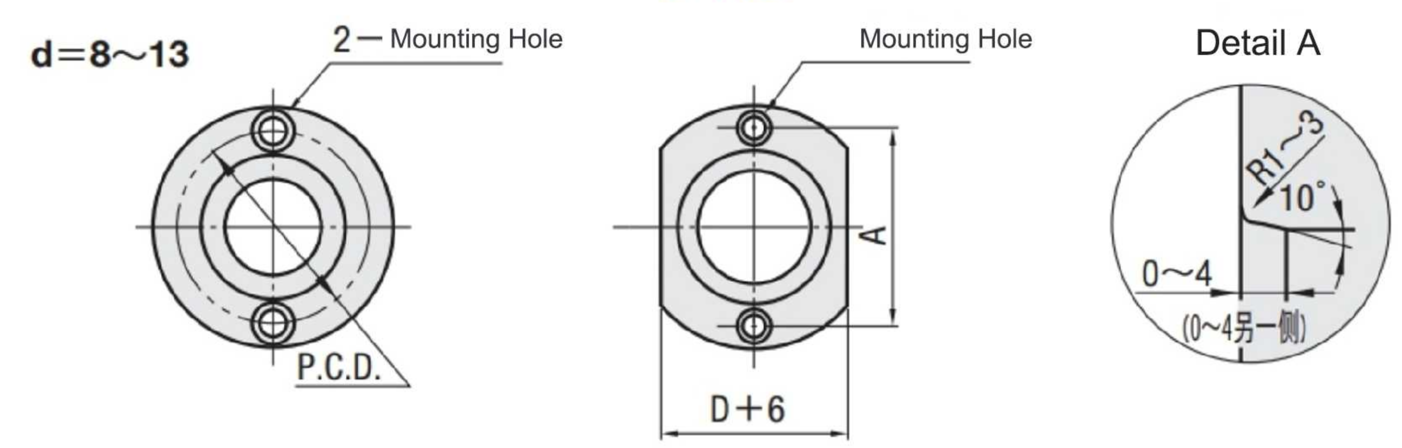
Embedded Flange Type



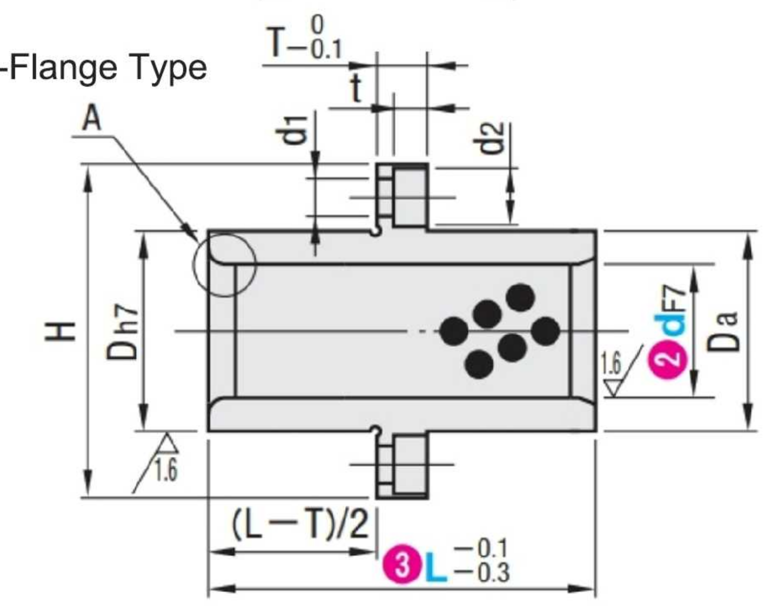
Round Flange Type
LFR11 (Embedded Flange Type)
LFR21 (Mid-Flange Type)

Double-Sided Cut Flange Type
LFR12 (Embedded Flange Type)
LFR22 (Mid-Flange Type)

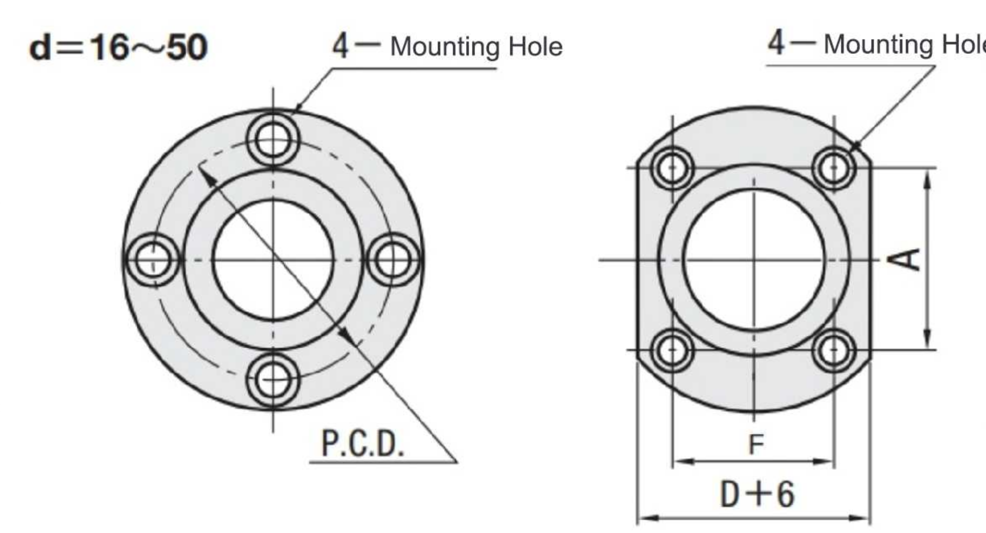
d=8～13



Mid-Flange Type



d=16～50



Recommended Mating Shaft
d8: General purpose (heavy load)
e7: General purpose (light load)
f8: For high precision applications
g6: For high precision applications (intermittent operation)

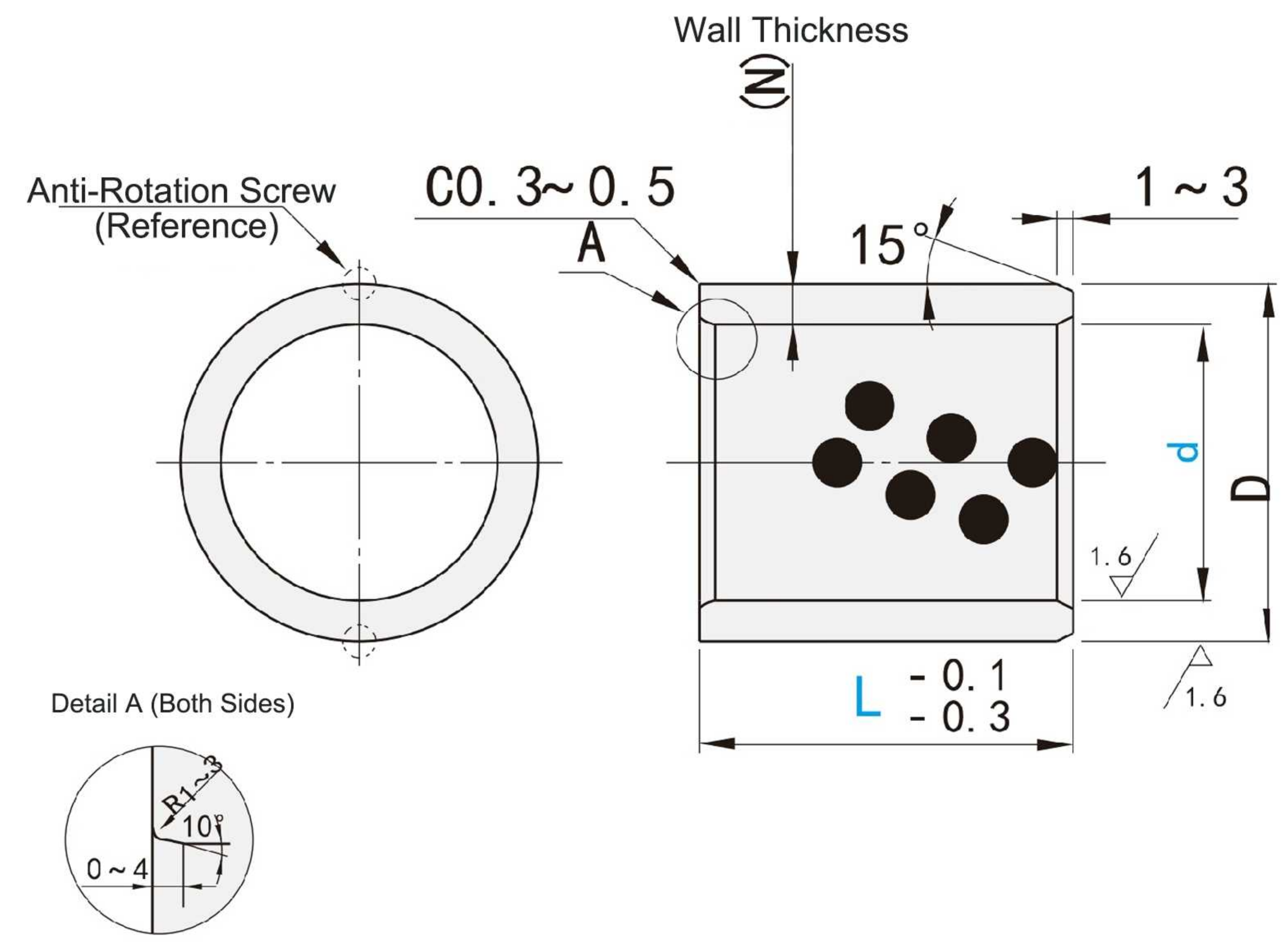
Precautions for Use
It is recommended to secure the bushing with an anti-rotation set screw.

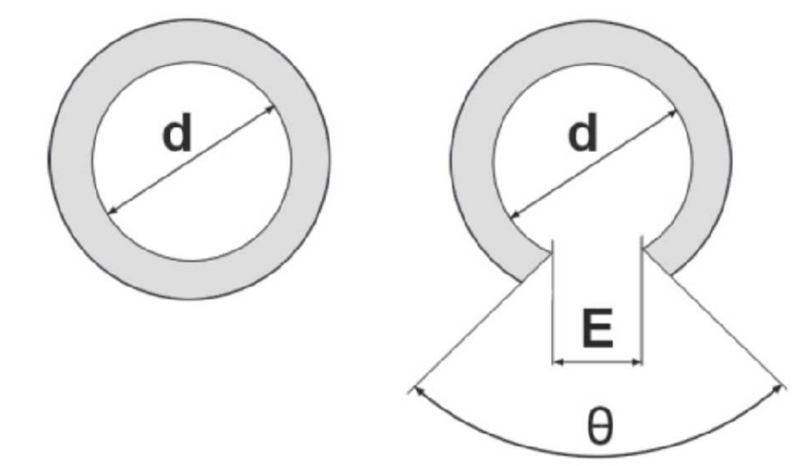
M Material High-Strength Brass Alloy Inlaid Solid Lubricant

A Accessory Short-Head Hex Socket Bolt, 2–4 pcs

Model No. Type	dF7		L	Dh7		Da	L1	H	T	t	d1	d2	P.C.D.	F	A	Compatible with Short-Head Hex Socket Bolt
Embedded Flange Type LFR11 LFR12	8	+0.028 +0.013	20 (25)	12	0 −0.018	11.5	5	27	4	2.2	3.5	6	19	–	19	M3−10×2
	10		25 30	14		13.5	6	29					21		21	
	12	+0.034 +0.016	25 30	18		17.5		36	5	3	4.5	7.5	26		26	M4−12×2
	13		(25) (30) 35	19	0 −0.021	18.5		37					27		27	
Mid-Flange Type LFR21 LFR22	16		25 30 35 40	22		21.5		40					30	18	24	M4−12×4
	20	+0.041 +0.020	30 35 40 50	28		27.5	8	49	6	3.7	5.5	9	38	22	31	M5−16×4
	25		(30) (35) (40) (50) 60	33	0 −0.025	32.5		54					43	25	35	
	30		(35) (40) (50) (60) 70	38		37.5	10	63	8	4.2	6.6	11	50	30	40	M6−20×4
	35	+0.050 +0.025	(50) 70	44		43.5		69					56	36	43	
★L ( ) — Applicable only to Embedded Flange Type.	40		(60) (70) 80	50		49.5	13	82	10	5.2	9	14	66	38	54	M8−25×4
	50		(70) 100	62	0 −0.030	61.5		94					78	50	60	

LBLM High Strength Brass Inlaid Graphite-Replacement for Linear Bearings





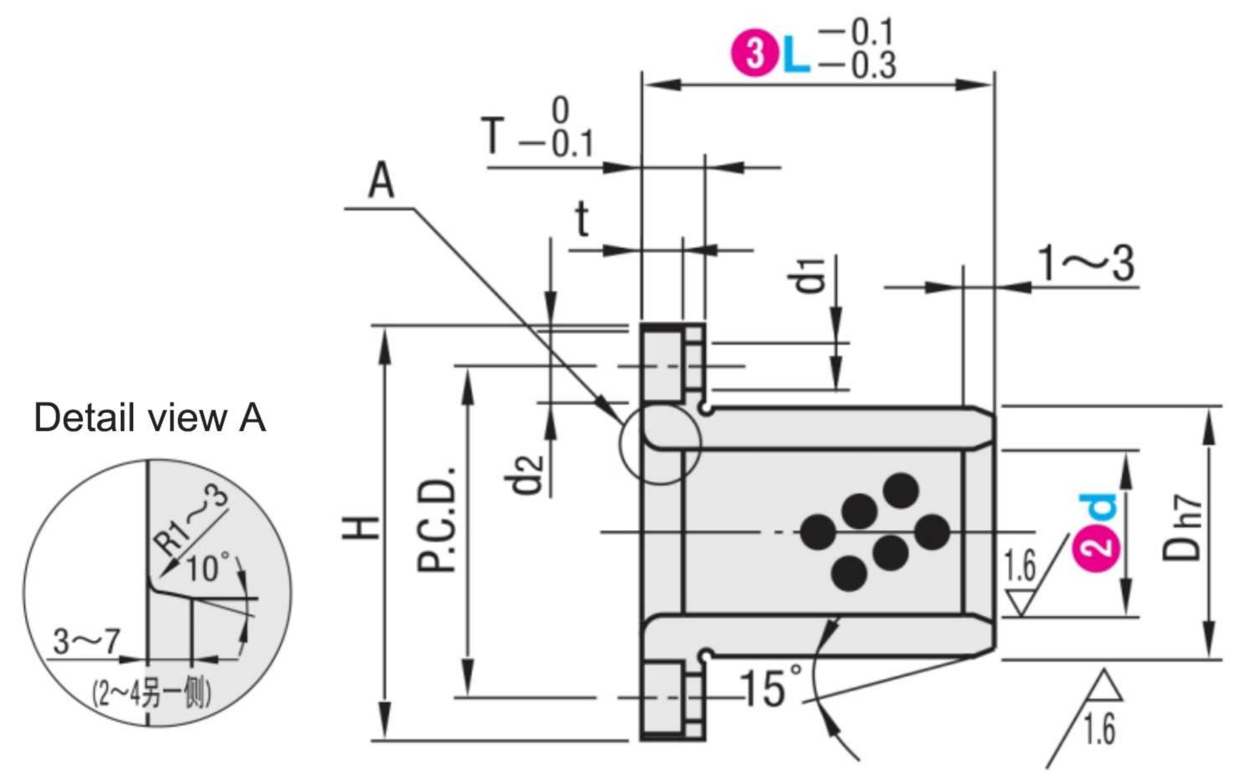
Bearing Model	Dim. Tol.								LM…LUU Ext. Ver.	
LM. . . UU (Standardization)	d (mm)	Tol. (mm)	D (mm)	Tol. (mm)	L (mm)	Tol. (mm)	E (mm)	θ	L	Tol. (mm)
LM6UU	6	+0. 02 +0. 05	12	0 −0. 03	19	0 −0. 2	–	–	35	0 −0. 30
LM8UU	8		15		24		–	–	45	
LM10UU/-OP	10		19		29		6. 8	80°	55	
LM12UU/-OP	12		21		30		8	80°	57	
LM13UU/-OP	13		23		32		9	80°	61	
LM16UU/-OP	16		28		37		11	80°	70	
LM20UU/-OP	20	+0. 04 +0. 075	32		42		11	60°	80	
LM25UU/-OP	25		40		59	0 −0. 3	12	50°	112	
LM30UU/-OP	30		45		64		15	50°	123	0 −0. 40
LM35UU/-OP	35	+0. 045 +0. 08	52		70		17	50°	135	
LM40UU/-OP	40		60		80		20	50°	151	
LM50UU/-OP	50		80		100	0 −0. 4	25	50°	192	
LM60UU/-OP	60	+0. 05 +0. 09	90		110		30	50°	209	

FHD Bearings | Empowering Precision

LFLMF/K/H High-Strength Brass Inlaid Graphite - Replacement for Linear Bearings Series

LMF LMK

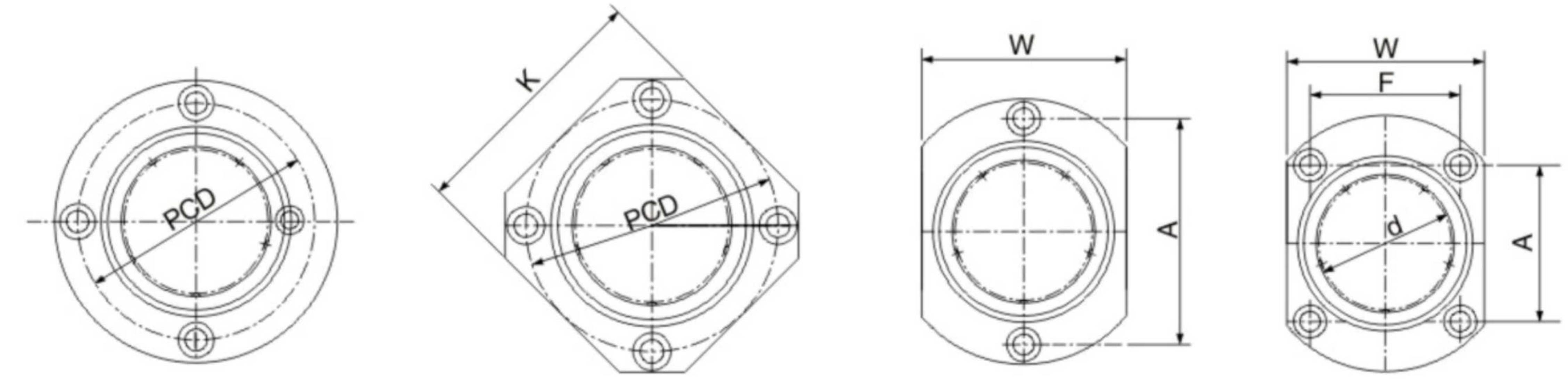
LMH
ID Ø16-50



Optional: LMFP/LMKP/LMHP with extended flange housing
LMFC/LMKC/LMHC with intermediate flange housing.

Model	ID		Dimension (mm)						LMF/K/H... LUU-L	
Round/Square/Oval	d (mm)	Tol. (mm)	D (mm)	D Tol. (mm)	L (mm)	L Tol. (mm)	H (mm)	H Tol. (mm)	L	Tol. (mm)
LMF/K/H6UU	6	+0.02 +0.05	12	0 -0.03	19	0 -0.2	28	0 -0.2	35	0 -0.30
LMF/K/H8UU	8		15		24		32		45	
LMF/K/H10UU	10		19		29		40		55	
LMF/K/H12UU	12		21		30		42		57	
LMF/K/H13UU	13		23		32		43		61	
LMF/K/H16UU	16		28		37		48		70	
LMF/K/H20UU	20	+0.04 +0.075	32		42		54		80	
LMF/K/H25UU	25		40		59	0 -0.3	62	0 -0.3	112	
LMF/K/H30UU	30		45		64		74		123	0 -0.40
LMF/K/H35UU	35	+0.045 +0.08	52		70		82		135	
LMF/K/H40UU	40		60		80		96		151	
LMF/K/H50UU	50		80		100		116		192	
LMF/K/H60UU	60	+0.05 +0.09	90		110		134		209	

LFLMF/K/H High-Strength Brass Inlaid Graphite - Replacement for Linear Bearings Series

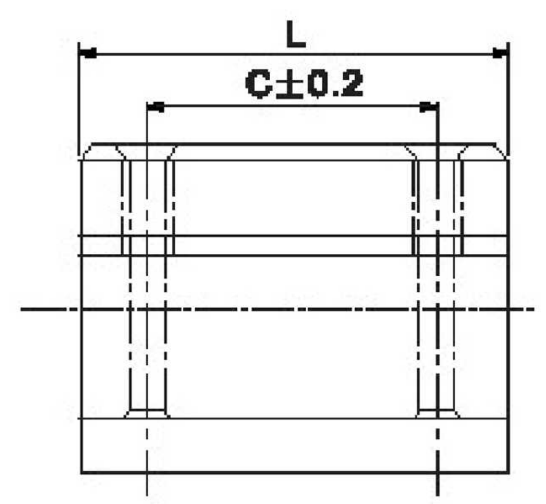


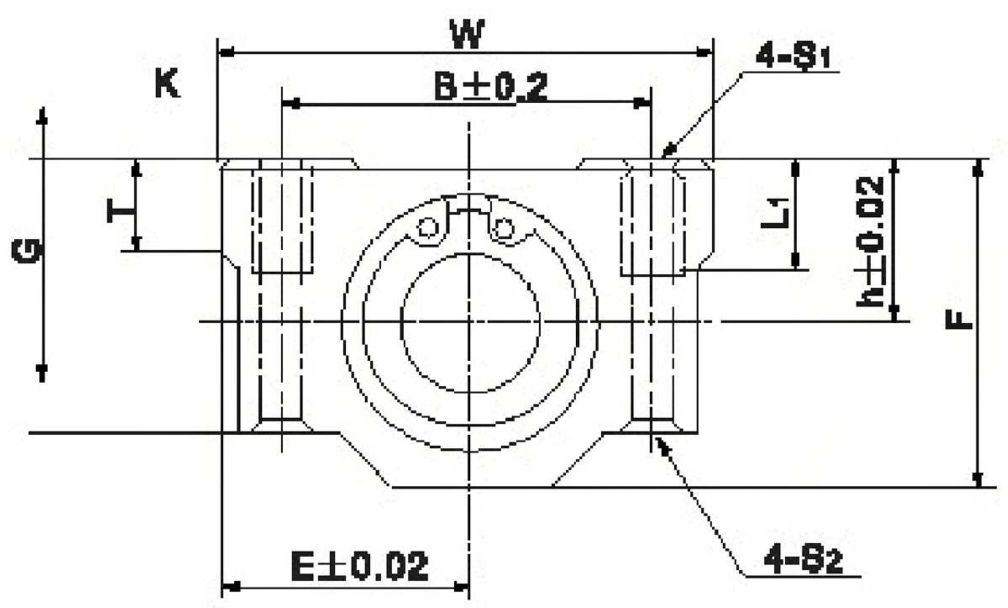
LMF LMK LMH

LMH, ID 6–13 mm: two holes ID 16–50 mm: four holes.

Model	Dimension (mm)						
Round/Square/Oval	T	PCD	K	W	A	F	d1xd2xt
LMF/K/H6UU	5	20	22	18	20	-	3.4×6.5×3.3
LMF/K/H8UU	5	24	25	21	24	-	3.4×6.5×3.3
LMF/K/H10UU	6	29	30	25	29	-	4.5×8×4.4
LMF/K/H12UU	6	32	32	27	32	-	4.5×8×4.4
LMF/K/H13UU	6	33	34	29	33	-	4.5×8×4.4
LMF/K/H16UU	6	38	37	34	31	22	4.5×8×4.4
LMF/K/H20UU	8	43	42	38	36	24	5.5×9.5×5.4
LMF/K/H25UU	8	51	50	46	40	32	5.5×9.5×5.4
LMF/K/H30UU	10	60	58	51	49	35	6.6×11×6.5
LMF/K/H35UU	10	67	64	60	55	38	6.6×11×6.5
LMF/K/H40UU	13	78	75	70	64	45	9×14×8.6
LMF/K/H50UU	13	98	92	86.5	80	56	9×14×8.6
LMF/K/H60UU	18	112	106	-	-	-	11×17.5×10.8

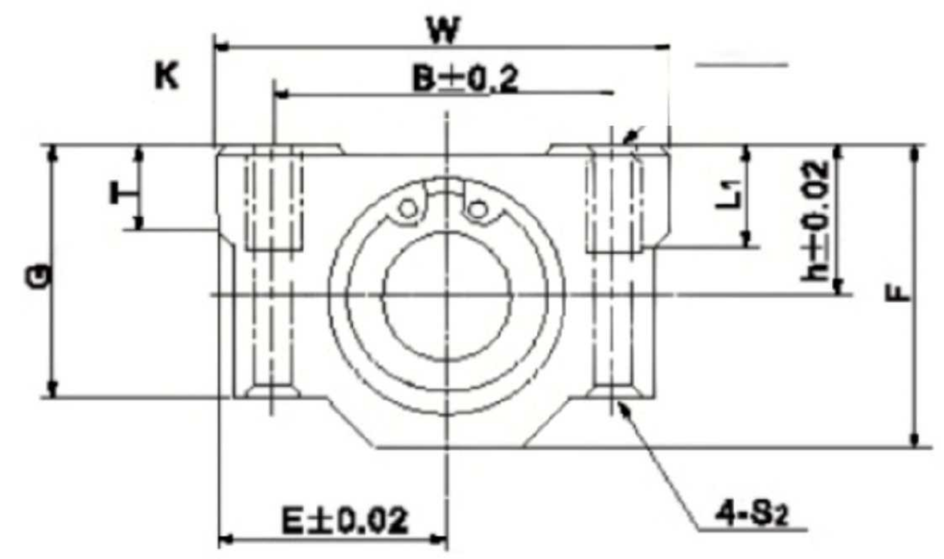
Built-in Graphite Copper Sleeve SCS/SBR Linear Aluminum Base

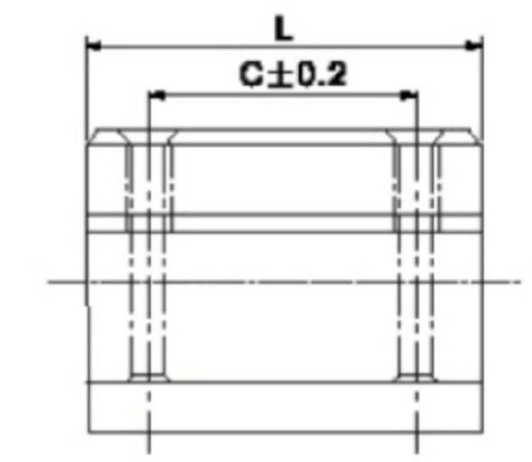




Model No.	Main Dim.													w/ LB			Weight
	t	h	E	W	L	F	G	B	C	K	S_1	S_2	L_1	Mod.	Basic Load Rating		
															Dynamic	Static	
SCS6UU	6	9	15	30	25	18	15	20	15	5	M4	3.4	8	LM6UU	206	265	34
SCS8UU	6	11	17	34	30	22	18	24	18	5	M4	3.4	8	LM8UU	274	392	52
SCS10UU	8	13	20	40	35	26	21	28	21	6	M5	4.3	12	LM10UU	372	549	92
SCS12UU	8	15	21	42	36	28	24	30.5	26	5.75	M5	4.3	12	LM12UU	510	784	102
SCS13UU	8	15	22	44	39	30	24.5	33	26	5.5	M5	4.3	12	LM13UU	510	784	120
SCS16UU	9	19	25	50	44	38.5	32.5	36	34	7	M5	4.3	12	LM16UU	774	1180	200
SCS20UU	11	21	27	54	50	41	35	40	40	7	M6	5.2	12	LM20UU	882	1370	255
SCS25UU	12	26	38	76	67	51.5	42	54	50	11	M8	7	18	LM25UU	980	1570	600
SCS30UU	15	30	39	78	72	59.5	49	58	58	10	M8	7	18	LM30UU	1570	2740	735
SCS35UU	18	34	45	90	80	68	54	70	60	10	M8	7	18	LM35UU	1670	3140	1100
SCS40UU	20	40	51	102	90	78	62	80	60	11	M10	8.7	25	LM40UU	2160	4020	1590
SCS50UU	25	52	61	122	110	102	80	100	80	11	M10	8.7	25	LM50UU	3820	7940	3340
SCS60UU	30	58	66	132	122	114	94	108	90	12	M10	10.7	25	LM60UU	4700	10000	4270

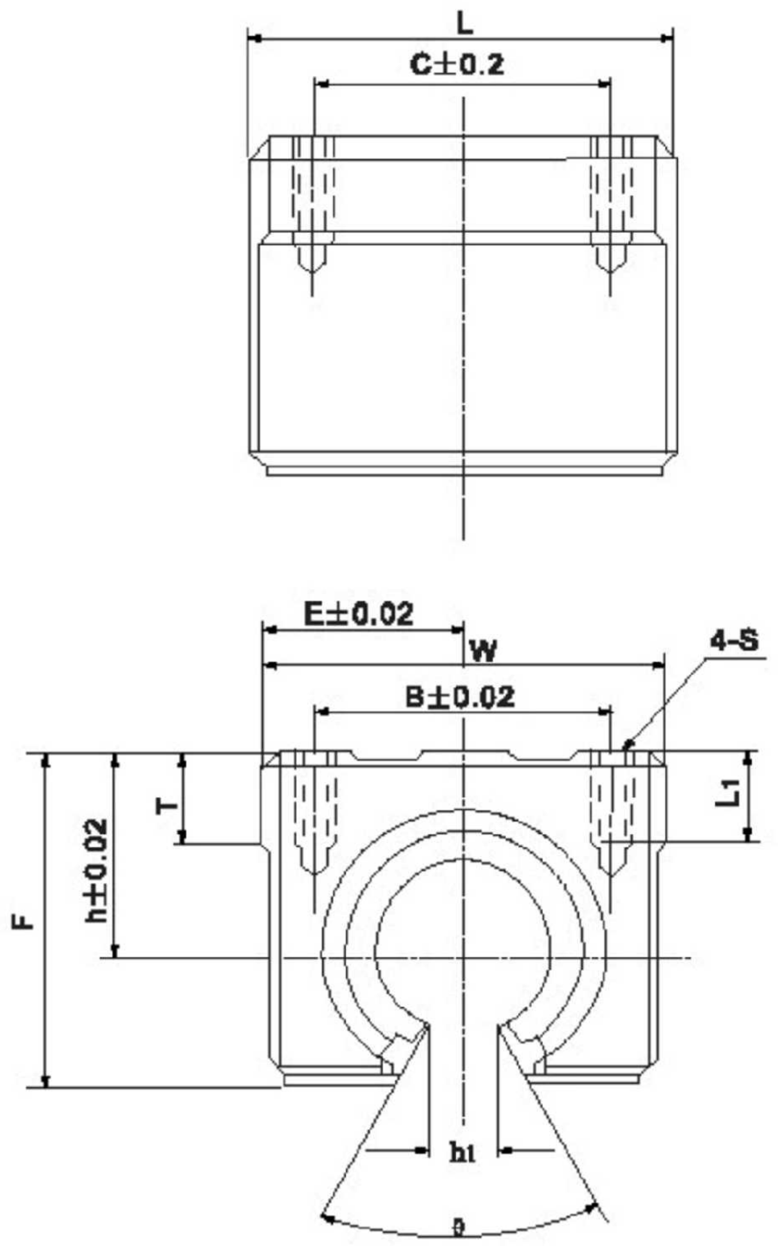
Built-in Graphite Copper Sleeve SCS/SBR Linear Aluminum Base





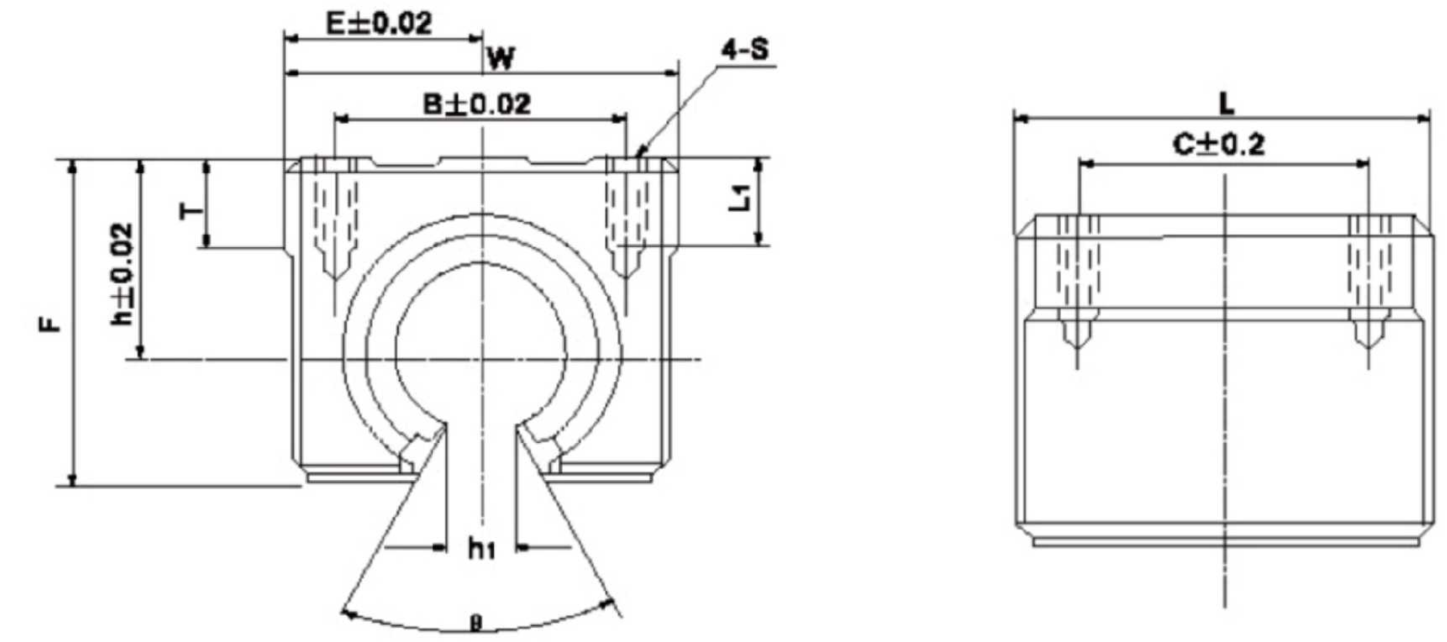
Model No.	Main Dim.													w/ LB			Weight
	t	h	E	W	L	F	G	B	C	K	S_1	S_2	L_1	Mod.	Basic Load Rating		
															Dynamic	Static	
SCS8LUU	6	11	17	34	58	22	18	24	42	5	M4	3.4	8	LM8UU×2	274	392	0.1
SCS10LUU	8	13	20	40	68	26	21	28	45	6	M5	4.3	12	LM10LUU×2	372	549	0.18
SCS12LUU	8	15	21	42	70	28	24	30.5	50	5.75	M5	4.3	12	LM12LUU×2	510	784	0.20
SCS13LUU	8	15	22	44	75	30	24.5	33	50	5.5	M5	4.3	12	LM13LUU×2	510	784	0.23
SCS16LUU	9	19	25	50	85	38.5	32.5	36	60	7	M5	4.3	12	LM16LUU×2	774	1180	0.39
SCS20LUU	11	21	27	54	96	41	35	40	70	7	M6	5.2	12	LM20LUU×2	882	1370	0.49
SCS25LUU	12	26	38	76	130	51.5	42	54	100	11	M8	7	18	LM25LUU×2	980	1570	1.165
SCS30LUU	15	30	39	78	140	59.5	49	58	110	10	M8	7	18	LM30LUU×2	1570	2740	1.43
SCS35LUU	18	34	45	90	155	68	54	70	120	10	M8	7	18	LM40LUU×2	2160	4020	3.09
SCS40LUU	20	40	51	102	175	78	62	80	140	11	M10	8.7	25	LM35LUU×2	1670	3140	1100
SCS50LUU	25	52	61	122	215	102	80	100	160	11	M10	8.7	25	LM50LUU×2	3820	7940	6.53
SCS60LUU	30	58	66	132	240	114	94	108	180	12	M12	10.7	25	LM60LUU×2	4700	10000	9.29

Built-in Graphite Copper Sleeve SCS/SBR Linear Aluminum Base



Model No.	Main Dim.												w/ LB			Weight
	h	E	W	L	F	h_1	θ	B	C	S	L_1	T	Mod.	Basic Load Rating Dynamic	Basic Load Rating Static	
SBR10UU	15	18	36	32	24	6	80°	25	20	M5	10	7	LM10UU-OP	350	500	63
SBR12UU	15	18	40	39	24	6	80°	28	20	M5	10	7	LM12UU-OP	372	549	65
SBR13UU	17	20	40	39	27.6	8.5	80°	28	28	M5	10	8	LM13UU-OP	510	784	100
SBR16UU	20	22.5	45	45	33	10	80°	32	30	M5	12	9	LM16UU-OP	774	1180	150
SBR20UU	23	24	48	50	39	10	60°	35	35	M5	12	11	LM20UU-OP	882	1370	200
SBR25UU	27	30	60	65	47	11.5	50°	40	40	M6	12	14	LM25UU-OP	980	1570	450
SBR30UU	33	35	70	70	56	14	50°	50	50	M8	18	15	LM30UU-OP	1570	2740	630
SBR35UU	37	40	80	80	63	16	50°	55	55	M8	18	18	LM35UU-OP	1670	3140	925
SBR40UU	42	45	90	90	72	19	50°	65	65	M10	20	20	LM40UU-OP	2160	4020	1330
SBR50UU	53	60	120	110	92	23	50°	94	80	M10	20	25	LM50UU-OP	3820	7940	3000

Built-in Graphite Copper Sleeve SCS/SBR Linear Aluminum Base

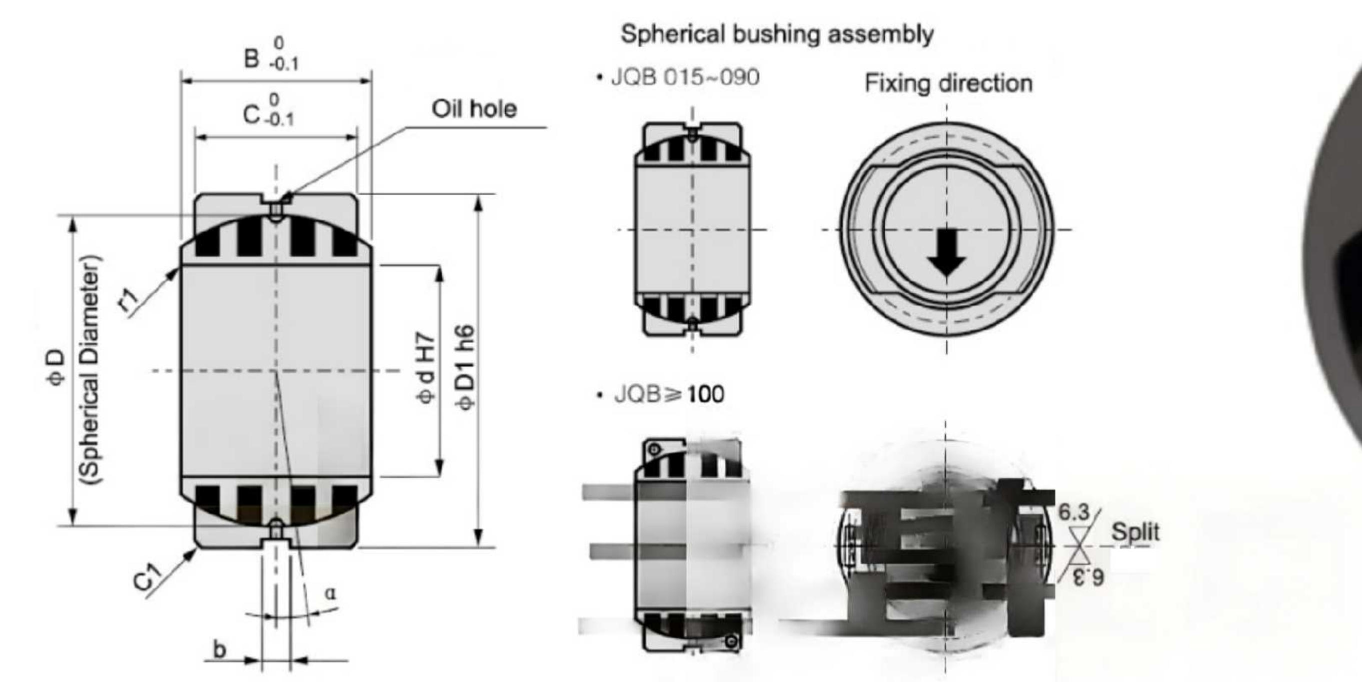


Model No.	Main Dim.												w/ LB			Weight
	h	E	W	L	F	h_1	θ	B	C	S	L_1	T	Mod.	Basic Load Rating Dynamic	Basic Load Rating Static	
SBR16LUU	20	22.5	45	85	33	10	80°	32	60	M5	12	9	LM16UU-OP×2	1548	2360	300
SBR20LUU	23	24	48	96	39	10	60°	35	70	M6	12	11	LM20UU-OP×2	1764	2740	400
SBR25LUU	27	30	60	130	47	11.5	50°	40	100	M6	12	14	LM25UU-OP×2	1960	3140	900
SBR30LUU	33	35	70	140	56	14	50°	50	110	M8	18	15	LM30UU-OP×2	3140	5480	1260
SBR40LUU	42	45	90	175	72	19	50°	65	140	M10	20	20	LM40UU-OP×2	4320	8040	2660
SBR50LUU	53	60	120	215	92	23	50°	94	160	M10	160	20	LM50UU-OP×2	7640	15580	6000

LQB Self-Lubricating Spherical Bearings

Inner ring	Material	650# + Gr
Outer ring	Material	S45C
	Hardness	HRC25～30

Recommend shaft & housing
Housing: H7
Shaft: g6

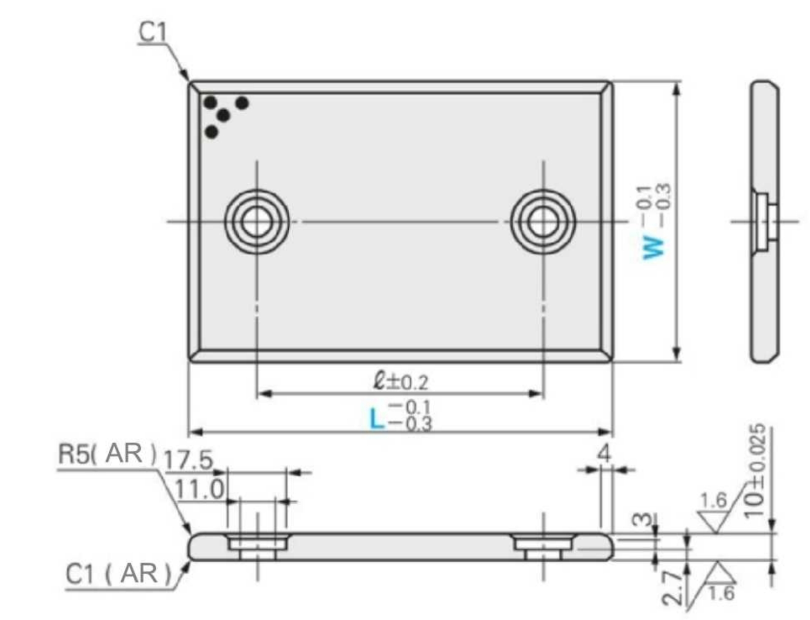


Unit:mm

Standard No.	d	H7	D1	h6	B	C	D	b	Alignment Angle α°	Allowable Radial Load(kN)	Allowable Thrust Load(kN)
LQB -015	15	$^{+0.018}_{0}$	26	$^{0}_{-0.013}$	12	9	22		8	6.5	0.5
LQB -020	20		32		16	14	28		4	12.6	1.4
LQB -025	25	$^{+0.021}_{0}$	42	$^{0}_{-0.016}$	21	18	36		5	21.8	2.5
LQB -030	30		50		27	23	44		6	32.0	3.5
LQB -035	35		55		30	26	49		5	43.7	4.8
LQB -040	40	$^{+0.025}_{0}$	62	$^{0}_{-0.019}$	33	28	55	4	6	54.7	5.7
LQB -045	45		72		36	31	62		5	69.7	7.2
LQB -050	50		80		42	36	70			92.4	10
LQB -060	60		100		53	45	90		6	143	16
LQB -070	70	$^{+0.030}_{0}$	110	$^{0}_{-0.022}$	58	50	99		5	181	20
LQB -080	80		130		70	60	115			254	30
LQB -090	90		140		76	65	125		6	313	36
LQB -100	100	$^{+0.035}_{0}$	160	$^{0}_{-0.025}$	88	75	145			544	64
LQB -110	110		170		93	80	155		5	642	73
LQB -120	120		190		105	90	170		6	797	94
LQB -130	130		200		110	95	180		5	880	105
LQB -140	140		210	$^{0}_{-0.029}$	90	70	180	6	7	668	56
LQB -150	150	$^{+0.040}_{0}$	220		120	105	200		5	1135	129
LQB -160	160		230		105	80	200		8	891	73
LQB -180	180		260	$^{0}_{-0.032}$	105	80	225		6	1002	74
LQB -200	200		290		130	100	250		7	1434	117
LQB -220	220	$^{+0.046}_{0}$	320		135	100	275		8	1577	118
LQB -240	240		340	$^{0}_{-0.036}$	140	100	300			1720	118
LQB -260	260		370		150	110	325	9	7	2075	143
LQB -280	280	$^{+0.052}_{0}$	400		155	120	350		6	2455	172
LQB -300	300		430	$^{0}_{-0.040}$	165	120	375		7	2630	172

SLTW/SLTWT Self-Lubricating Graphite Copper Slider

—2-Bolt Hole Type RoHS
SLTW W=28～75
SLTWT W=100～150

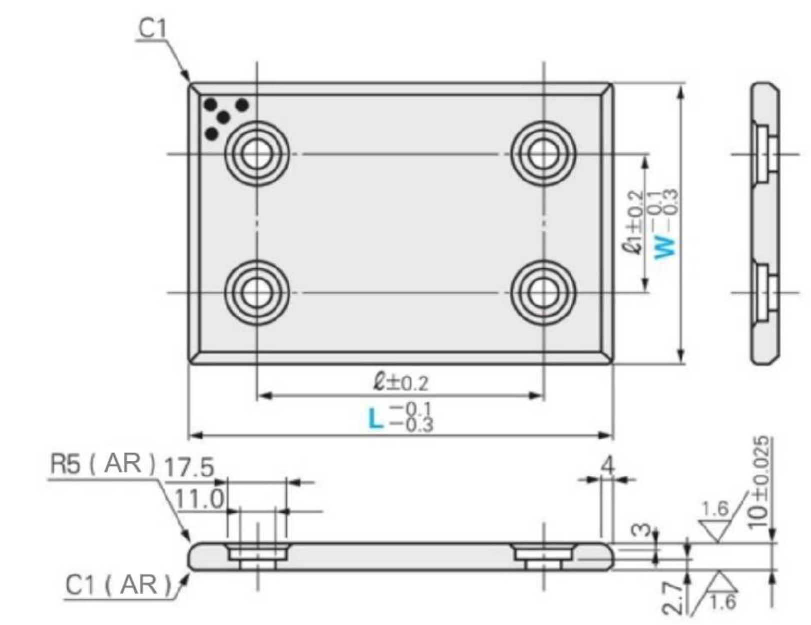


※ For W = 28/38, the longitudinal radius is R2.

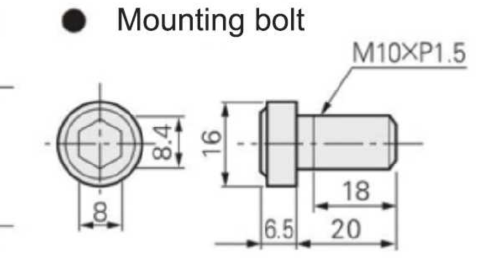
● Sliding direction
When W=28/38, the movement is only in the longitudinal (L)direction.

● Applying grease during initial use will improve performance.

—4-Bolt Hole Type RoHS
SLTW W=100～150



● Mounting bolt



M Material High-Strength Brass Embedded Graphite

A Accessories Special Low-Head Bolts

ℓ	Catalog NO.		W
45	—2-Bolt Hole Type SLTW	28	75
50			100
75			125
100			150
45		38	75
50			100
75			125
100			150
45		48	75
50			100
75			125
100			150
150			200
45		58	75
50			100
75			*125
100			150
150			*200
25		75	75
50			100
75			125
100			150
125			*175
150			200
50	—2-Bolt Hole Type SLTWT	100	100
75			125
100			150
150			200
200			250
100		125	150
150			200
200			250
100		150	150
150			200

ℓ	ℓ1	Catalog NO.		W
50	50	—4-Bolt Hole Type SLTW	100	100
75				125
100				150
150				200
200				250
100	50		125	150
150				200
200				250
100	100		150	150
150				200

Order

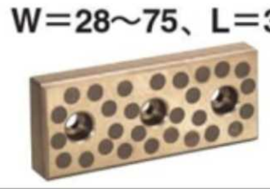
Catalog No.	W	—	L
SLTW	75	—	100
SLTWT	100	—	200

■ Self-Lubricating Sliding Plate Washer

SLEW/SLEWT Self-Lubricating Graphite Copper Slider

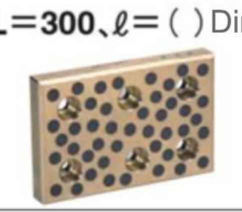
—2-Bolt Hole Type RoHS
SLEW W= 28~ 75
SLEWT W=100~150

—3-Bolt Hole Type RoHS
SLEW W=28~75、L=300

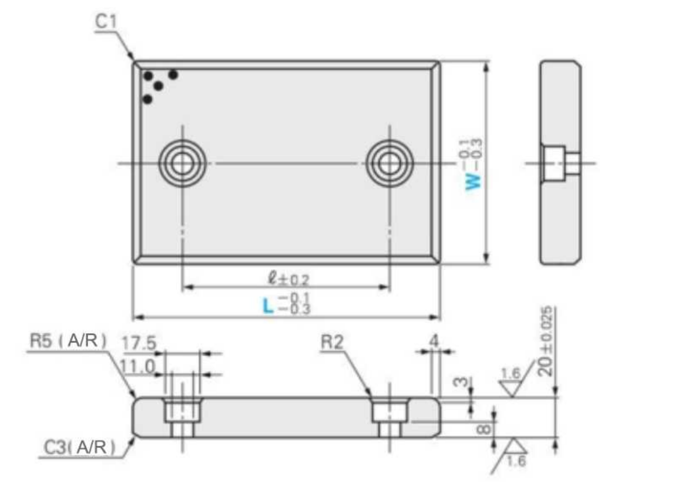


—4-Bolt Hole Type RoHS
SLEW W=100~150

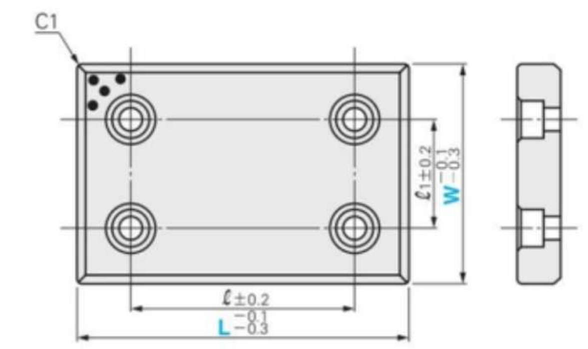
—6-Bolt Hole Type RoHS
SLEW W=100~200、L=300、ℓ=( ) Dims.



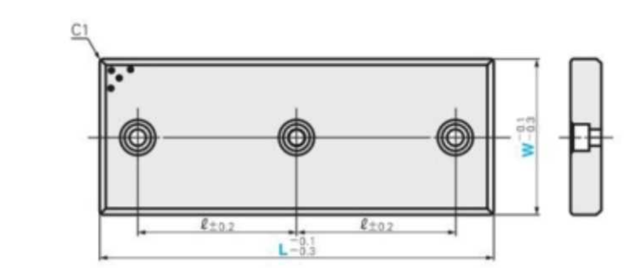
—2-Bolt Hole Type



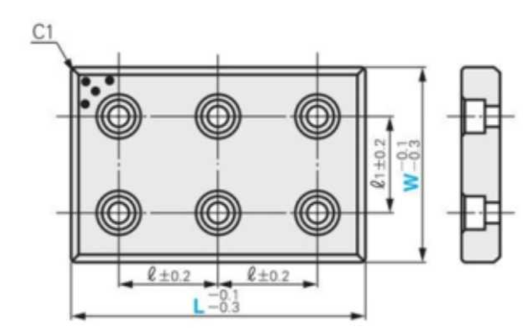
—4-Bolt Hole Type



—3-Bolt Hole Type



—6-Bolt Hole Type



※Note: Longitudinal R is R2 for W = 28/38.

● Sliding direction
For W = 28 and 38, longitudinal direction only (L direction).
● Applying grease during initial use will improve performance.

M Material High-Strength Brass Embedded Graphite

ℓ	Catalog NO.	W	NO.(L)	No. of holes
45	SLEW	28	75	2
50			100	2
75			*125	2
100			150	2
150			*200	2
200			*250	2
125			*300	3
45		38	75	2
50			100	2
75			*125	2
100			150	2
150			*200	2
200			*250	2
125			*300	3
45		48	75	2
50			100	2
75			125	2
100			150	2
150			200	2
200			*250	2
125			*300	3
45		58	75	2
50			100	2
75			*125	2
100			150	2
150			*200	2
200			*250	2
125			*300	3
25		75	75	2
50			100	2
75			125	2
100			150	2
150			200	2
200			*250	2
100			*300	3
125			*300-H	3
50	SLEWT	100	100	2
75			125	2
100			150	2
150			200	2
200			*250	2
200			*300	2
75		125	125	2
100			150	2
150			200	2
200			250	2
200			*300	2
100		150	150	2
150			200	2
200			250	2
250			*300	2

ℓ		Catalog NO.	W	NO.(L)	No. of holes
50	50	SLEW	100	100	4
75				125	4
100				150	4
150				200	4
200				250	4
200				*300	4
125				*300-H	6
75	50		125	125	4
100				150	4
150				200	4
200				250	4
200				*300	4
200				*350	4
75	75			*125-H	4
100				*150-H	4
150				*200-H	4
200				*250-H	4
125				*300-H	6
200				*350-H	4
100	100		150	150	4
150				200	4
200				250	4
250				*300	4
125				*300-H	6
150	150		200	*200	4
200				*250	4
250				*300	4
125				*300-H	6

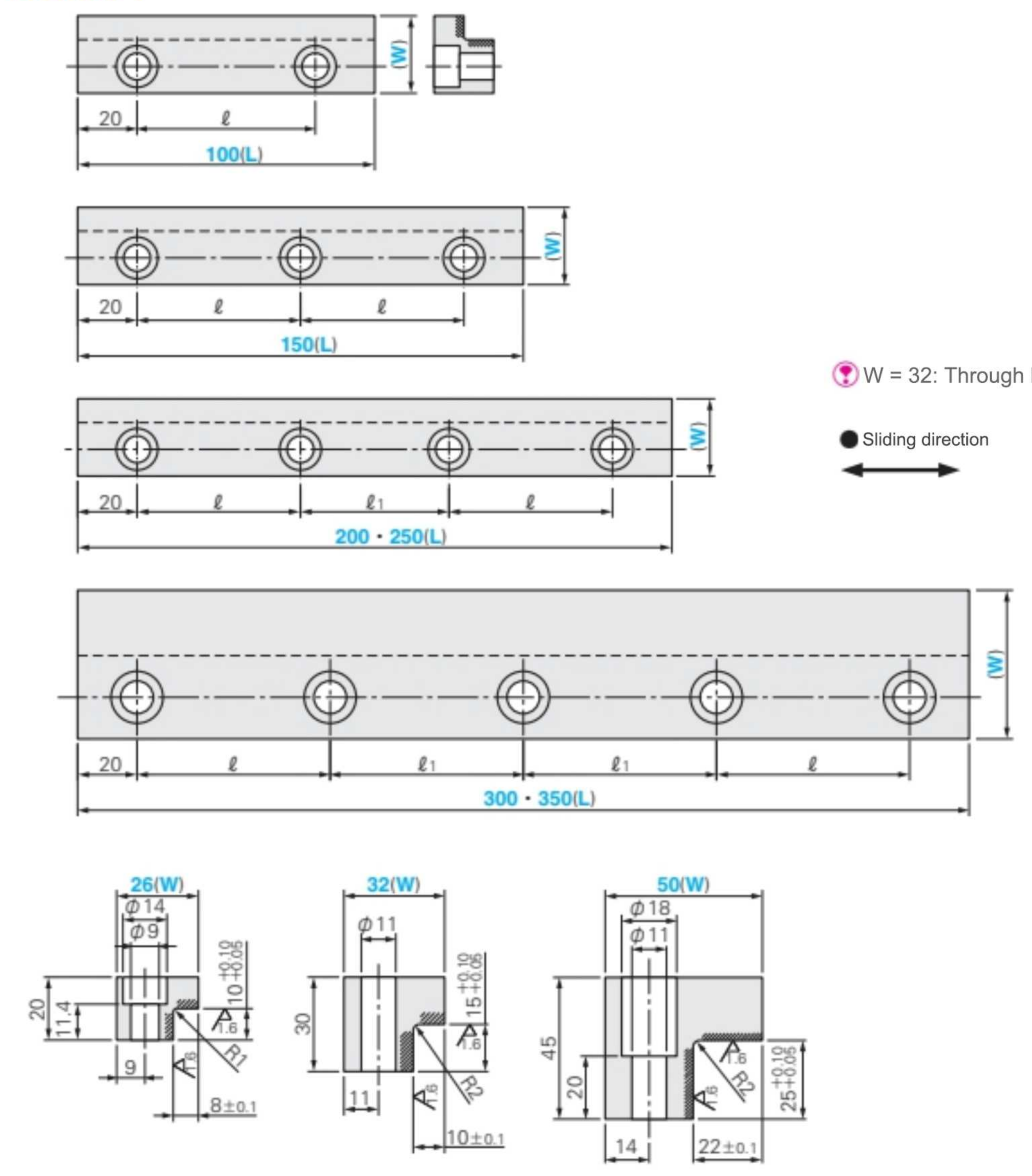
Order

Catalog No.	W	—	NO. (L)
SLEW	75	—	300
SLEWT	150	—	200
SLEW	100	—	300-H

■ Self-Lubricating Wear Pad

LBG31 Self-Lubricating Graphite Copper Slider

LBG31



W = 32: Through hole

● Sliding direction

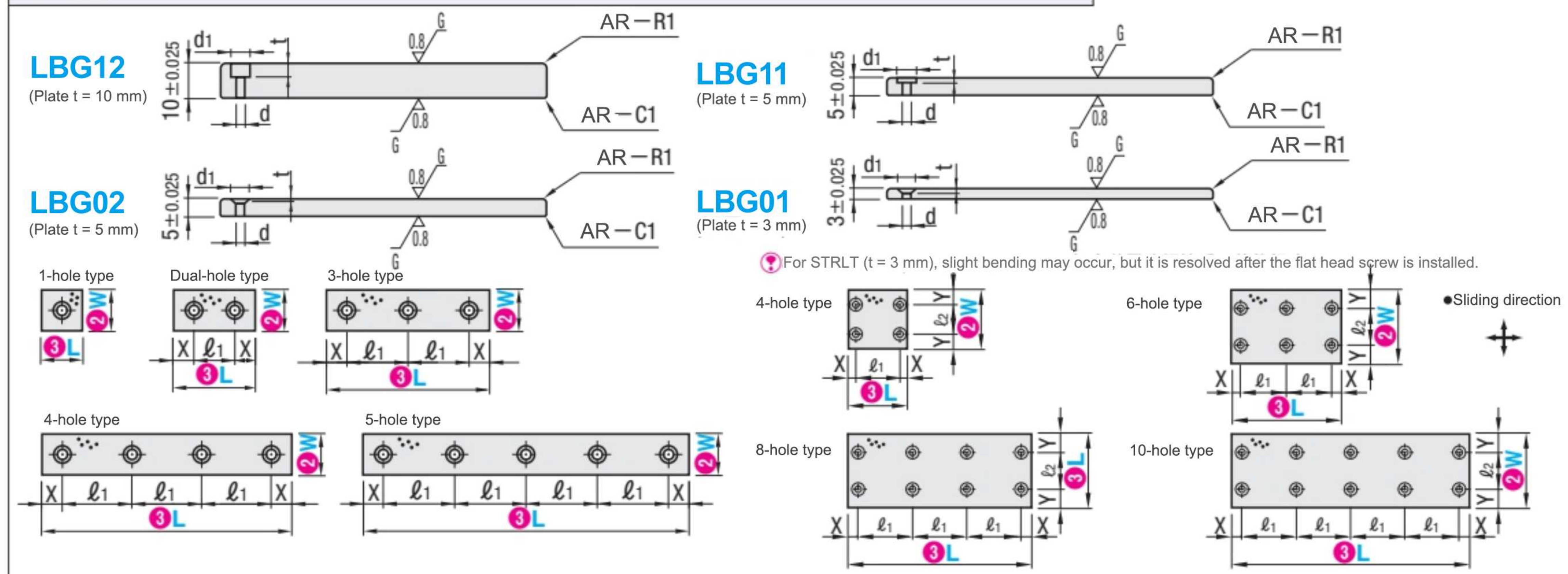
M Material High-Strength Brass Embedded Graphite

Safety Bolt		Bolt Mounting Position		Catalog NO.	(W)	(L)
Spec.	Qty.	ℓ		ℓ 1		
M8	2	60	–	LBG31	26	100
	3	55				150
	4		50			200
M10	2	60	–		32	100
	3	55				150
	4		50			200
		70	70			250
		55	50		50	200
		70	70			250
	5	65	65			300
		80	75			350

LBG01/02/11/12 Self-Lubricating Graphite Copper Slider

M Material CAC304 (former JIS HBsC4 copper alloy)
Embedded Special Solid Lubricant

A Attachments
STRL – Short head hex socket screw
STRLU – Hex socket flat head screw
STRLUP – Short head hex socket screw
STRLT – Hex socket flat head screw



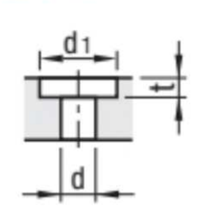
Applying grease during initial use will improve performance.

Form Type	Form W	L	Mounting holes (Qty.)	Hole position	X	ℓ1	Y	ℓ2
LBG12 (Plate t = 10 mm) LBG02 (Plate t = 5 mm) LBG11 (Plate t = 5 mm) (Countersunk hole) (Only for W20) LBG01 (Plate t = 3 mm) (Only dimensions marked with *)	20	*30	1	1row	—	—	—	—
		*40	2		10	20	—	—
		*50	2		10	30	—	—
		*60	2		10	40	—	—
		80	2		10	60	—	—
		100	3		10	40	—	—
		120	3		10	50	—	—
		150	3		10	65	—	—
		200	4		10	60	—	—
		250	5		13	56	—	—
		300	5		14	68	—	—
	30	*30	1		—	—	—	—
		*40	2		10	20	—	—
		*50	2		10	30	—	—
		*60	2		10	40	—	—
		80	2		10	60	—	—
		100	3		10	40	—	—
		120	3		10	50	—	—
		150	3		10	65	—	—
		200	4		10	60	—	—
		250	5		13	56	—	—
		300	5		14	68	—	—
	40	40	1		—	—	—	—
		60	2		10	40	—	—
		80	2		10	60	—	—
		100	3		12	38	—	—
		120	3		12	48	—	—
		150	3		12	63	—	—
		200	4		13	58	—	—
		250	5		13	56	—	—
		300	5		14	68	—	—

Form Type	Form W	L	Mounting holes (Qty.)	Hole position	X	ℓ1	Y	ℓ2
LBG12 (Plate t = 10 mm) LBG02 (Plate t = 5 mm) LBG11 (Plate t = 5 mm) (Countersunk hole) (Only for W20) LBG01 (Plate t = 3 mm) (Only dimensions marked with *)	50	50	1	1row	—	—	—	—
		60	2		10	40	—	—
		80	2		10	60	—	—
		100	3		13	37	—	—
		120	3		13	47	—	—
		150	3		13	62	—	—
		200	4		13	58	—	—
		250	5		13	56	—	—
		300	5		14	68	—	—
	60	60	2		10	40	—	—
		80	2		10	60	—	—
		100	3		13	37	—	—
		120	3		13	47	—	—
		150	3		13	62	—	—
		200	4		13	58	—	—
		250	5		13	56	—	—
		300	5		14	68	—	—
	80	80	4	2row	10	60	20	40
		100	4		13	74	20	40
		120	6		13	47	20	40
		150	6		13	62	20	40
		200	6		13	87	20	40
		250	8		14	74	20	40
		300	10		14	68	20	40

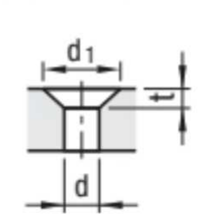
Hole machining detail

LBG12 (Short head hex socket screw)



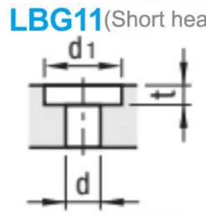
W	d	d1	t	Auxiliary bolt size
20	4.5	8	4	M4−20
30	5.5	9.5	5	M5−20
40	6.5	11	6	M6−20
50	9	15	6	M8−20
60				
80				

LBG02 (Hex socket flat head screw)



W	d	d1	t	Auxiliary bolt size
20	4.5	9.5	2.5	M4−20
30	5.5	11.1	2.8	M5−20
40	6.5	13.1	3.3	M6−20
50	9	17.6	4.3	M8−20
60				
80				

LBG11 (Short head hex socket screw)



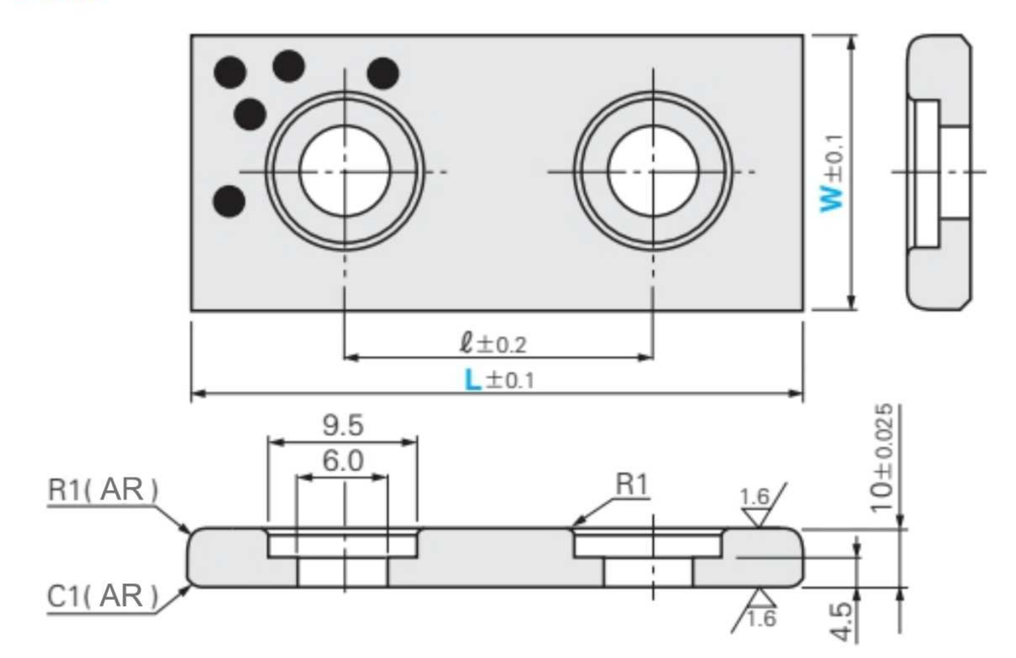
W	d	d1	t	Auxiliary bolt size
20	4.5	8	3	M4−10

LBG01 (Hex socket flat head screw)

W	d	d1	t	Auxiliary bolt size
20	4.5	9.5	2.5	M4−20
30	5.5	11.1	2.8	M5−20
40				

SLTS Self-Lubricating Graphite Copper Slider

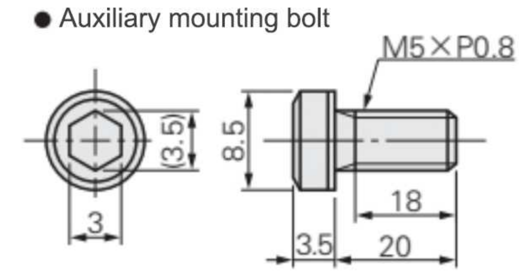
RoHS10 **SLTS**



● Sliding direction

● Applying grease during initial use will improve performance.

● Auxiliary mounting bolt



M Material High-Strength Brass MoS2(embedded)

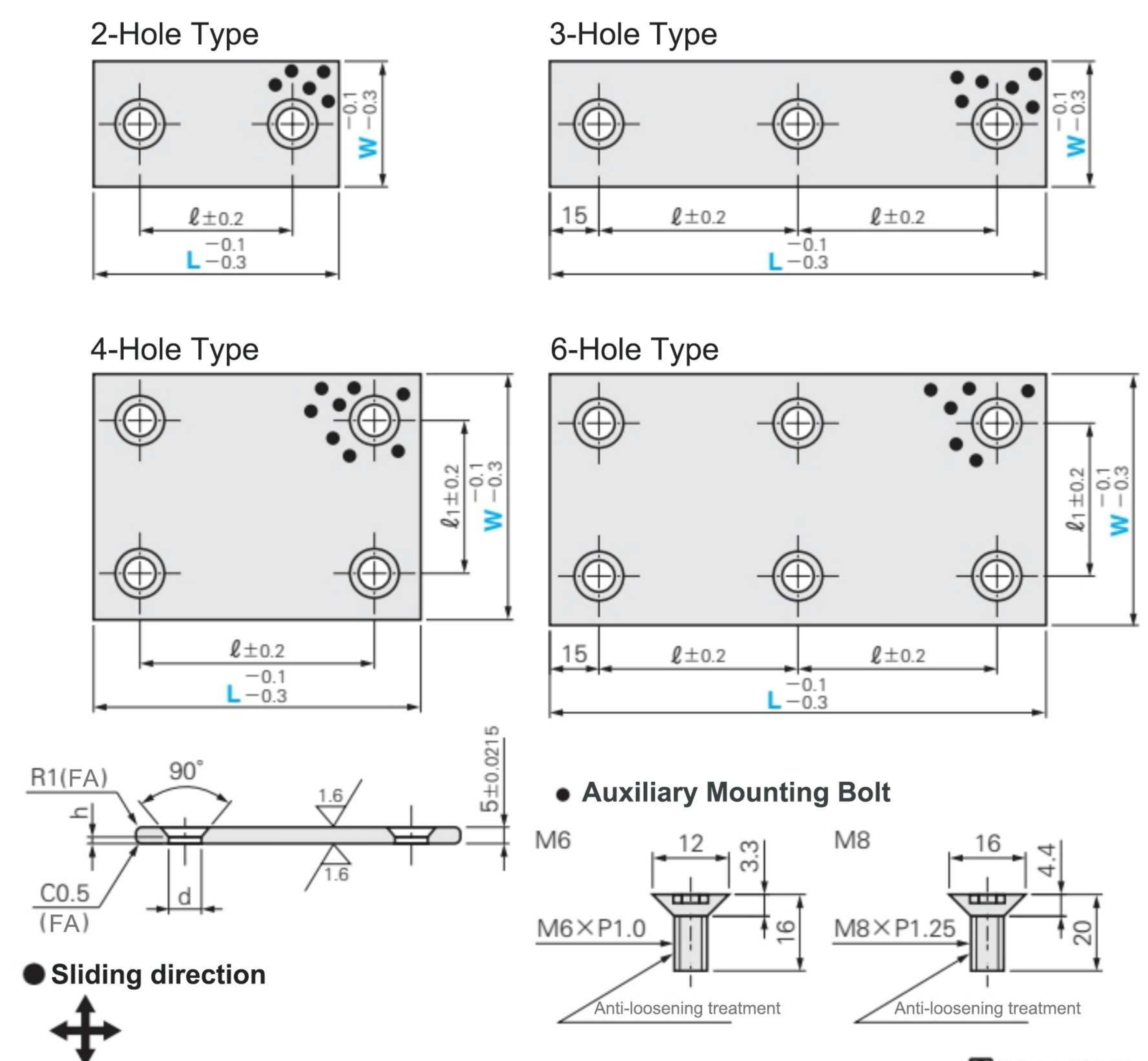
A Accessory Low-Head Bolt CBS5-20

ℓ1	Catalog NO.	W	L
14	SLTS	15	30
20			40
30			50
50			75
14		18	30
20			40
30			50
50			75
14		22	30
20			40
30			50
50			75

LBJ Self-Lubricating Graphite Copper Slider

RoHS10

LBJ01



● Sliding direction

When W = 18, 28, or 38, the movement is only in the longitudinal (L) direction.

● Applying lubricant during initial use will yield better results.

M Material High-Strength Brass Embedded Graphite

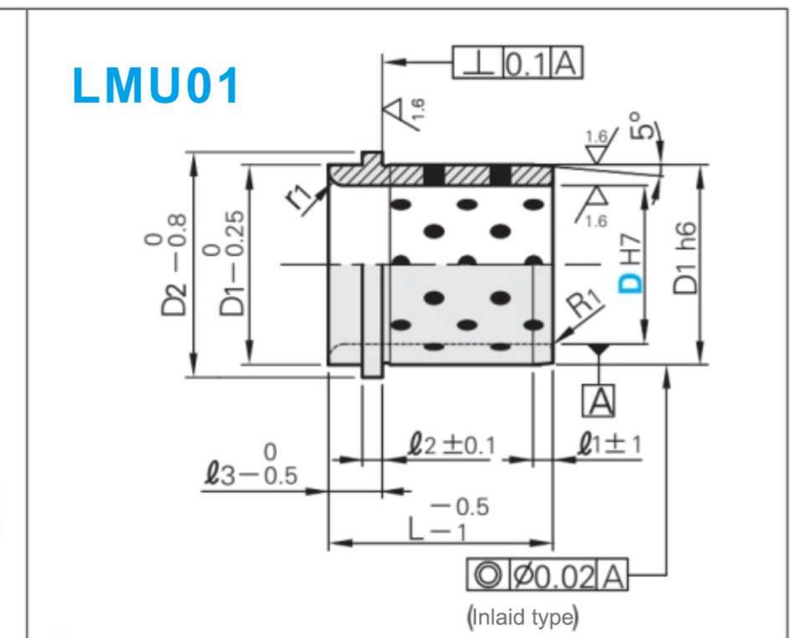
A Attachment Special Flat Head Hex Socket Bolt

ℓ	ℓ1	d	h	Mounting Hole Type	Mounting Bolt	Catalog NO.	W	L
20	–	6.5	1.0	2	M6	LBJ01	18	*50
45								*75
70								*100
60				3				*150
20	–	10	0.8	2	M8		28	50
45								75
70								100
60				3				150
20	–			2			38	50
45								75
70								100
60				3				150
45	–			2			48	75
70								100
95								125
60				3				150
45	45			4			75	75
70								100
95								125
60				6				150
70	70			4			100	100
95								125
60				6				150

LMU High Strength Brass Inlaid Graphite - Mold Guide Bushing

Guide Bushing
—DIN9834—

LMU01



All unspecified dimensions shall comply with DIN ISO 2768-m

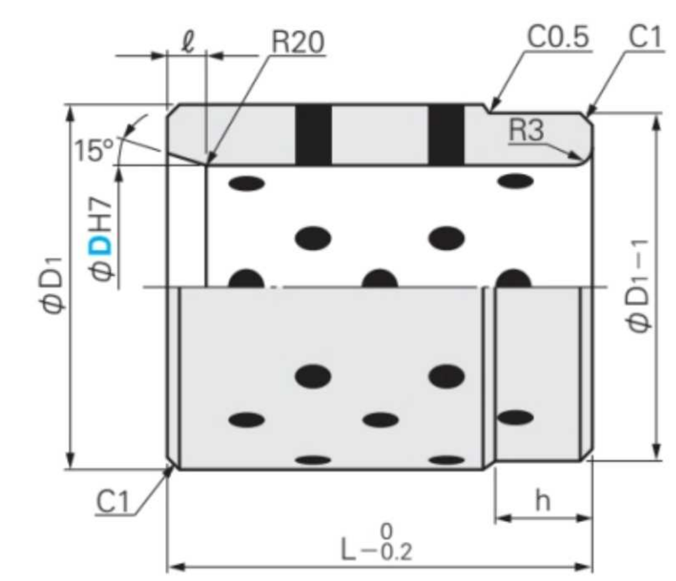
M Material High-Strength Brass Embedded Graphite

D H7	D1 h6	D2	L	ℓ1	ℓ2	ℓ3	r1	DIN Desig.	Catalog No. Type	D
25	32	40	40	3	6.3	10	3	DIN9834— 25	LMU01	25
32	40	50	50	4		12	3	DIN9834— 32		32
40	50	63	63	5		15	3	DIN9834— 40		40
50	63	71	71	6.3		17	5	DIN9834— 50		50
63	80	90	80	8	10	19	6	DIN9834— 63		63
80	100	112	100	10		22	8	DIN9834— 80		80
100	125	140	125	12.5		21	10	DIN9834—100		100
125	160	180	160	16		30	12	DIN9834—125		125
160	200	220	200	16		32	18	DIN9834—160		160

■ Self-Lubricating Guide Bushing

RoHS10

LMU02
LMU04



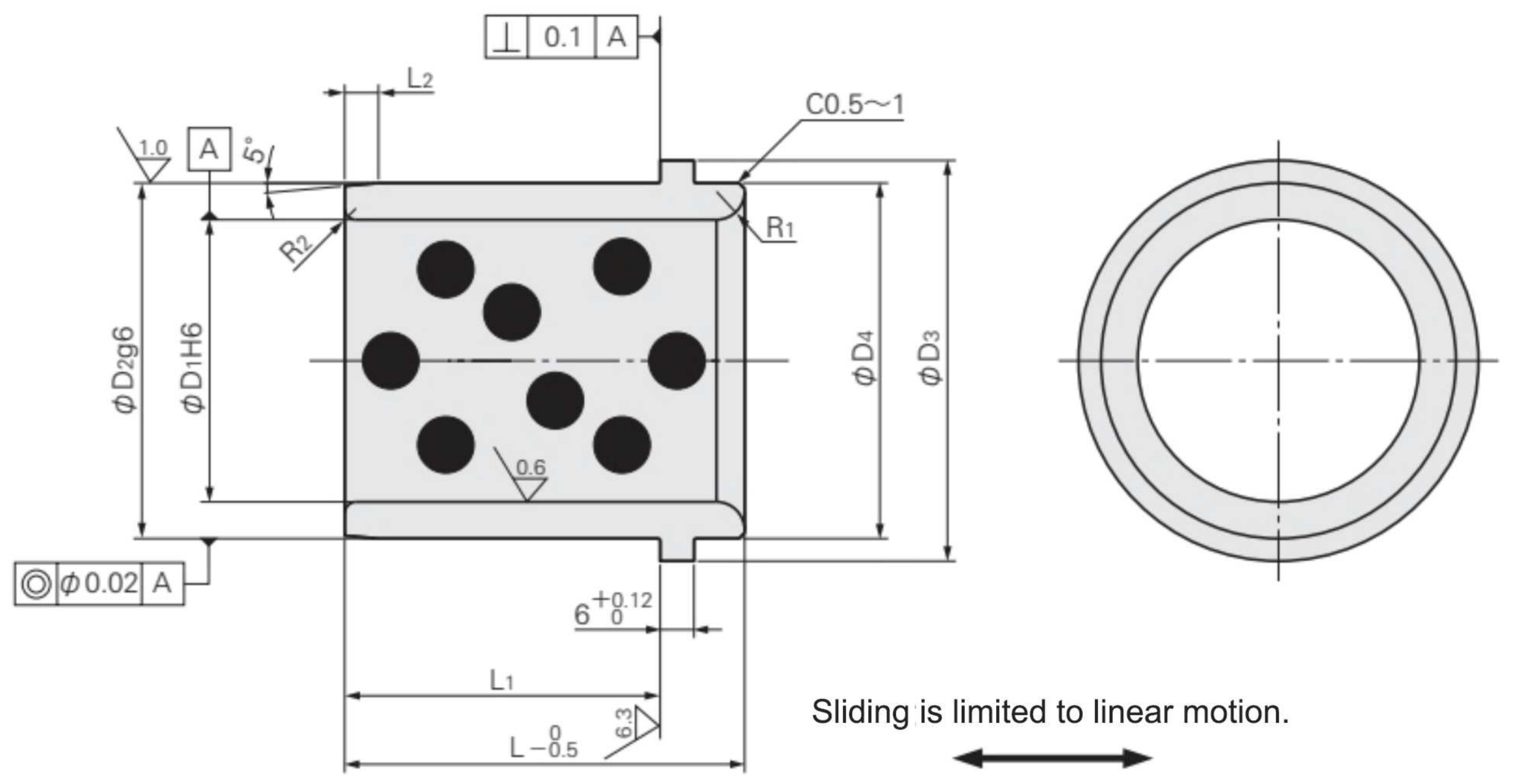
Sliding motion: linear only

M Material GBF FC250 Embedded Graphite
GBW High-Strength Brass Embedded Graphite

D1		Dh7		L	h	ℓ	Catalog NO. Type	NO.
50	±0.008	30	+0.021 / 0	50	10	5	LMU02 (casting type) / LMU04 (copper alloy type)	30
60	±0.0095	40	+0.025 / 0	60				40
70		50		75	15	10		50
80	±0.011	60	+0.030 / 0	90	20			60
100		80		120	25			80
120	±0.013	100	+0.035 / 0	150				100
80	±0.0095	60	+0.030 / 0	60	20			60–L60
100	±0.011	80		80	25			80–L80
120	±0.013	100	+0.035 / 0	100				100–L100

LMU High Strength Brass Inlaid Graphite - Mold Guide Bushing

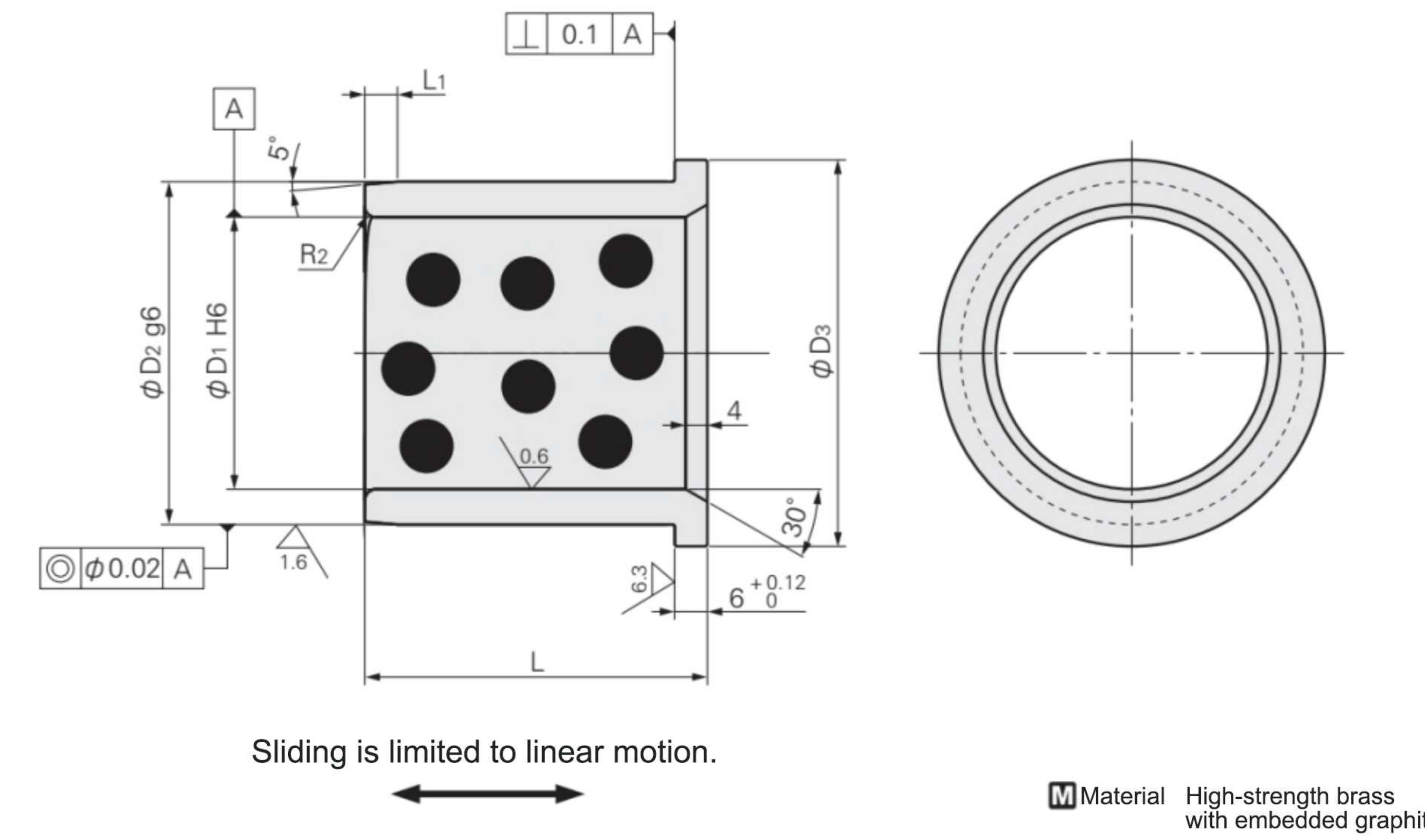
LMU03



D1	D2	D3	D4	L	L1	L2	R	NAAMS Cd.	Catalog NO.	
									Series Name	NO.
25	32	40	32	40	30	4	3	G612540	LMU03	2540
32	40	50	40	50	40	4	3	G613250		3250
40	50	63	50	63	50	5	3	G614063		4063
50	63	71	63	71	56	6	5	G615071		5071
63	80	90	80	80	63	8	6	G616380		6380
80	100	112	100	100	80	10	8	G618010		8010
100	125	140	125	125	106	12	10	G611012		1012
115	140	155	140	140	120	12	10	G611114		1114
125	160	180	160	160	132	12	12	G611216		1216

LMU High Strength Brass Inlaid Graphite - Mold Guide Bushing

LMU03-PAD



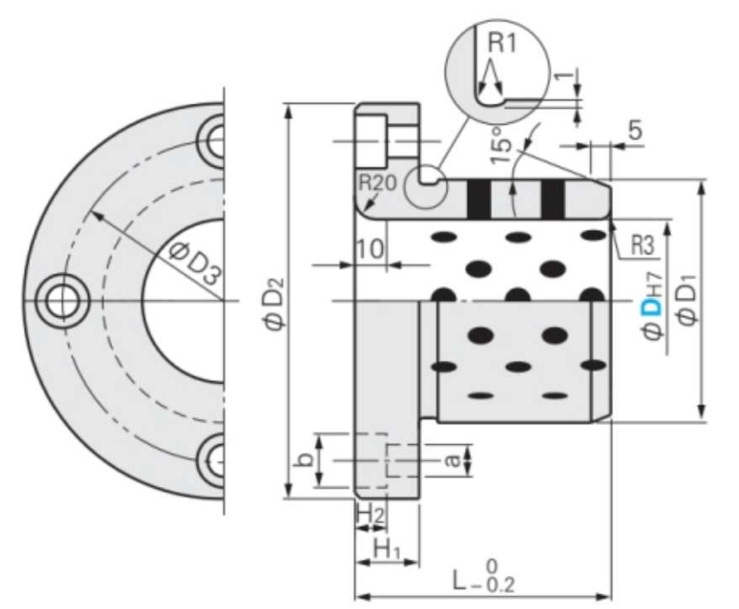
D1	D2	D3	L	L1	NAAMS Cd.	Catalog NO.	
						Series Name	NO.
25	32	40	40	4	G712540	LMU03-PAD	2540
32	40	50	50	4	G713250		3250
40	50	63	55	5	G714055		4055
50	63	71	63	6	G715063		5063
63	80	90	75	8	G716375		6375
80	100	112	90	10	G718090		8090
100	125	140	115	12	G711011		1011
125	160	180	138	12	G711213		1213

LMU High Strength Brass Inlaid Graphite - Mold Guide Bushing

■Shoulder-type self-lubricating bushing

LMU05

RoHS10



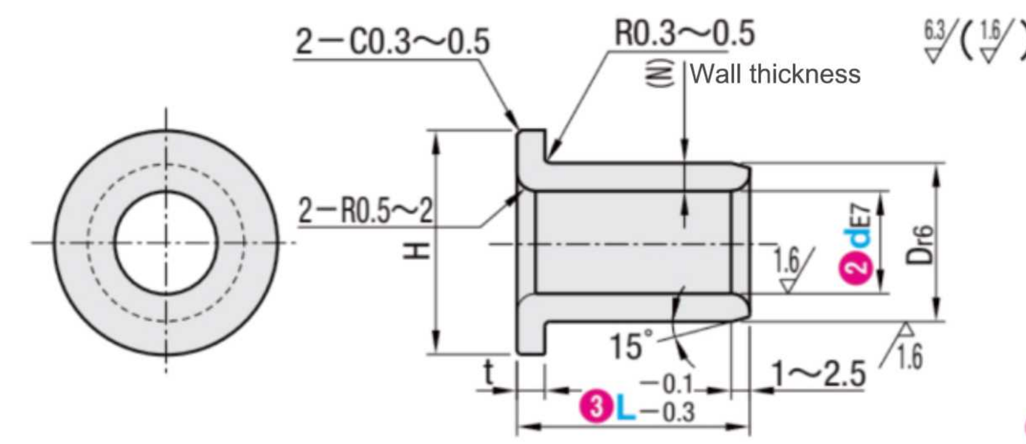
M Material FC250 Graphite(embedded)
A Accessory Hex socket bolt

D2	D3	D1		Dh7		L	H1	H2	a	b	Accessories Mounting bolts	Catalog NO. Type	D
90	70	50	±0.008	30	+0.021 0	50	20	10.8	11	17.5	CB10−30 4个	LMU05	30
100	80	60	±0.0095	40	+0.025 0	65							40
125	100	75		50		80							50
135	110	85	±0.011	60	+0.030 0	100							60
170	140	110		80		130	25	13	14	20	CB12−40 4个		80
190	160	130	±0.0125	100	+0.035 0	160							100

LP Alloy Oil-Free Bushing

■Feature: Shoulder-type design to prevent detachment.

LP02



Use under regular lubrication conditions is recommended based on the material properties.
For fixation, press-fit installation of the bushing is recommended.

Recommended mating shaft f8 or g6
M Material Special bronze casting
Heat resistance −40~150 °C

Form Type	dE7		L								Dr6		Wall t (N)	H	t 0 -0.1	*Base diameter Nominal Size (NS)	Tol.(H7)
LP02	5	+0.032 +0.020	10	12							9	+0.028 +0.019	2	14	2	9	+0.015 0
	6		10	12	15						10			16		10	
	8	+0.040 +0.025	10	12	15	20					12	+0.034 +0.023		20		12	+0.018 0
	10		10	12	15	20					14			22		14	
	12	+0.050 +0.032	10	12	15	20	25	30			18		3	25	3	18	
	13			12	15	20					19	+0.041 +0.028		26		19	+0.021 0
	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	

★ The base diameter is a recommended dimension.

■ID E7 / OD r6 type – Features

- This type is a more secure design than the inner diameter F7 / outer diameter m6 type.
- After press-fitting, its inner diameter is almost identical to that of the F7 / m6 type.

■ID change of bronze bushing after press-fit (Ref.)

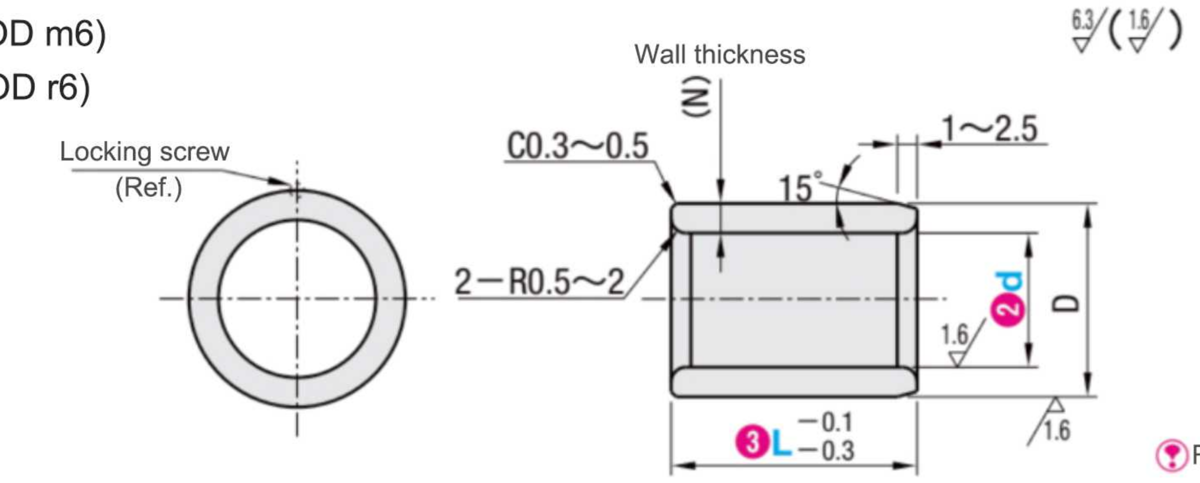
Base hole tol.: H7

ID F7 / OD m6	ID F7 / OD m6
99.82%	99.94%

The above values are experimental and are not guaranteed.

LP Alloy Oil-Free Bushing

LP01(ID F7 / OD m6)
LP05(ID E7 / OD r6)



Use under regular lubrication conditions is recommended based on the material properties.
For fixation, anti-rotation (SHBZ) or press-fit (SHBR) mounting of the bushing is recommended.

Recommended mating shaft f8 or g6
M Material Special bronze casting
Heat resistance −40~150 °C

Form Type	d	F7	E7	L										D	m6	r6	Wall t (N)	*Base diameter Nominal Size (NS)	Tol.(H7)	* Locking bolt (Ref.)
LP01 (ID F7 / OD m6) LP05 (ID F7 / OD m6)	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	M4×8
	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			4	28		M5×8
	25							20	25	30	40	50		33	+0.025 +0.009	+0.050 +0.034		33	+0.025 0	
	30								25	30	40	50	60	38				38		M6×16

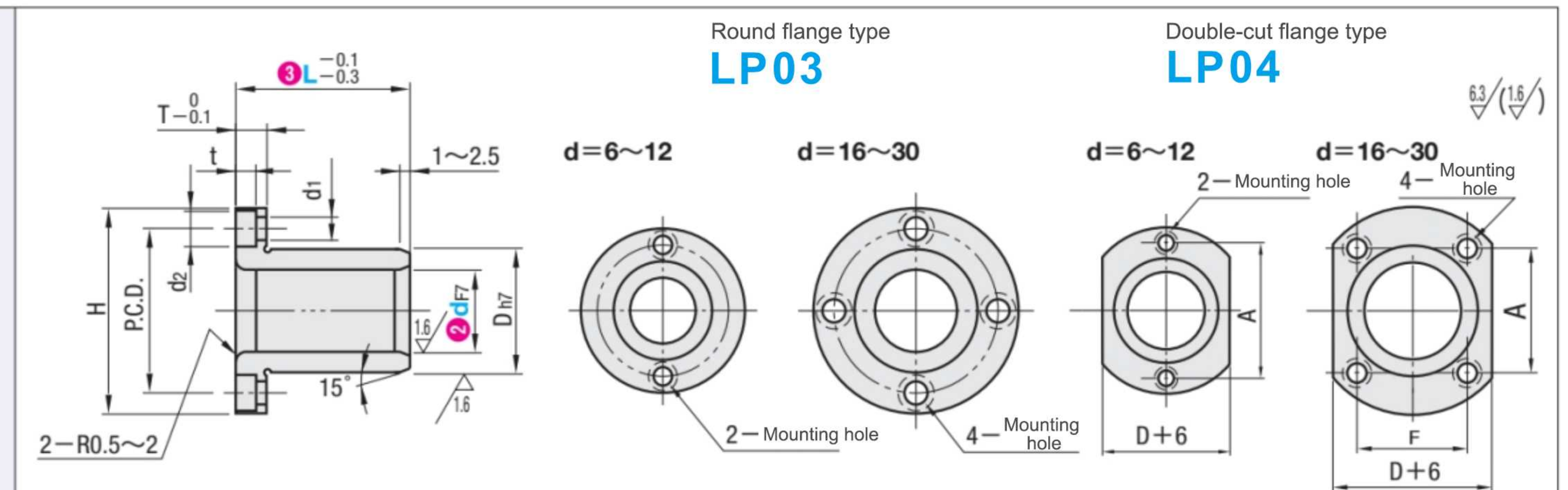
★ The base diameter and locking screw are recommended dimensions. When using SHBZ, the use of the recommended locking screw is advised

■Standard flange type

CAD 2D 3D
RoHS10

Round flange type
LP03

Double-cut flange type
LP04



Use under regular lubrication conditions is recommended based on the material properties.

Recommended mating shaft f8 or g6
M Material Special bronze casting
A Heat resistance −40~150 °C
Accessories 2–4 short-head hex socket bolts.

Form Type	dF7		L									Dh7		H	T	t	d1	d2	P.C.D.	F	A	Short-head hex socket bolt (Acc.)
LP03 LP04	6	+0.022 +0.010	15									10	0 −0.015	25	4	2.2	3.5	6	17	—	17	M3−10×2
	8	+0.028 +0.013		20	25							12	0 −0.018	27					19		19	
	10				25	30						14		29					21		21	
	12	+0.034 +0.016			25	30						18		36	5	3	4.5	7.5	26		26	M4−12×2
	16				25	30	35	40				22	0 −0.021	40					30	18	24	M4−12×4
	20	+0.041 +0.020				30	35	40	50			28		49	6	3.7	5.5	9	38	22	31	M5−16×4
	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	M6−20×4

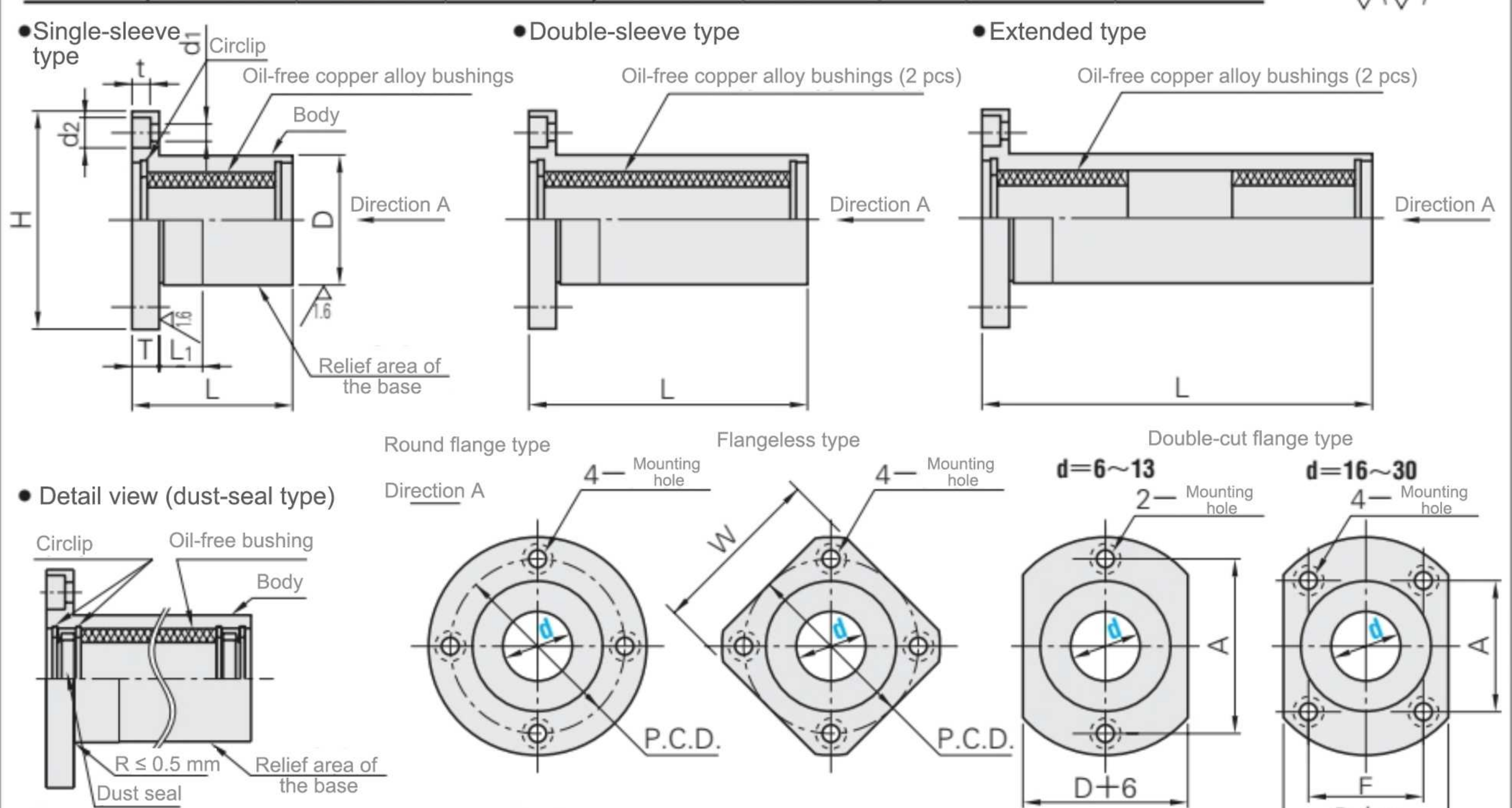
FHD Bearings | Empowering Precision

MF Steel Sleeve with built-in Graphite Copper Sleeve - Flange Oil-Free Bushing

Base Type	Type: Round flange	Type: Flangeless	Type: Double-cut flange	With/without seal	Seal Material	Base Material	Base Surface treatment	Bushing Material
Single-sleeve	MFMS	MFKS	MFNS	No seal	—	SS400	Electroless nickel plating	High-strength brass alloy with embedded solid lubricantccc
	MFMS−S	MFKS−S	MFNS−S	With non-contact seal	PTFE			
	MFMS−DS	—	MFNS−DS	With dust seal	Buna-N			
	SMFMS	SMFKS	SMFNS	No seal	—	SUS304	—	
	SMFMS−S	SMFKS−S	SMFNS−S	With non-contact seal	PTFE			
Double-sleeve	MFMW	MFKW	MFNW	No seal	—	SS400	Electroless nickel plating	
	MFMW−S	MFKW−S	MFNW−S	With non-contact seal	PTFE			
	MFMW−DS	—	MFNW−DS	With dust seal	Buna-N			
Extended type	MFML	MFKL	—	No seal	—			
	MFML−S	MFKL−S	—	With non-contact seal	PTFE			

✱ Relief area of base
D≤28 $^{-0.1}_{-0.3}$
D≥32 $^{-0.3}_{-0.5}$

Recommended mating shaft: f8 or g6.



Dust-seal type should be used only on F8 guide shafts. The perpendicularity between the shoulder base and section D is within 0.02.

Form: Type					d	d Tol.	D	D Tol.	L Without seal / Contact seal: Single-sleeve	Double-sleeve	Extended type	Single-sleeve	Double-sleeve	L_1	H	T	D_1	D_2	t	P.C.D.	W	F	A
		Round flange	Flangeless	Double-cut flange																			
●Single-sleeve	(No seal)	MFMS	MFKS	MFNS	6	+0.022 0	12	0 −0.018	22	37	52	—	—	5	28	5	3.5	6	3.1	20	22	—	20
												—	—										
	(With non-contact seal)	MFMS−S	MFKS−S	MFNS−S	8	+0.028 0	15		27	47	67	—	—		32					24	25	—	24
	(With dust seal)	MFMS−DS		MFNS−DS	10		19	0 −0.021	32	57	82	—	—	10	40	6	4.5	7.5	4.1	29	30	—	29
	(No seal)	SMFMS	SMFKS	SMFNS	12	+0.034 0	21					—	—		42					32	32	—	32
	(With non-contact seal)	SMFMS−S	SMFKS−S	SMFNS−S	13		23					—	—		43					33	34	—	33
					16✱		28		37	67	97	45	75		48					38	37	22	31
●Double-sleeve	(No seal)	MFMW	MFKW	MFNW	20✱	+0.041 0	32	0 −0.025	42	77	112	51	86		54	8	5.5	9	5.1	43	42	24	36
	(With non-contact seal)	MFMW−S	MFKW−S	MFNW−S	25✱		40		58	108	158	70	120		62					51	50	32	40
	(With dust seal)	MFMW−DS		MFNW−DS	30✱		45		68	128	188	81	141		74	10	6.6	11	6.1	60	58	35	49
					35	+0.050 0	52	0 −0.030	68	128	—	—	—	15	82					67	64	—	—
●Extended type	(No seal)	MFML	MFKL		40		60		80	150	—	—	—		96	13	9	14	8.1	78	75	—	—
	(With non-contact seal)	MFML−S	MFKL−S		50		80		90	170	—	—	—		116					98	92	—	—

The dust-seal type is available only for specifications marked with .

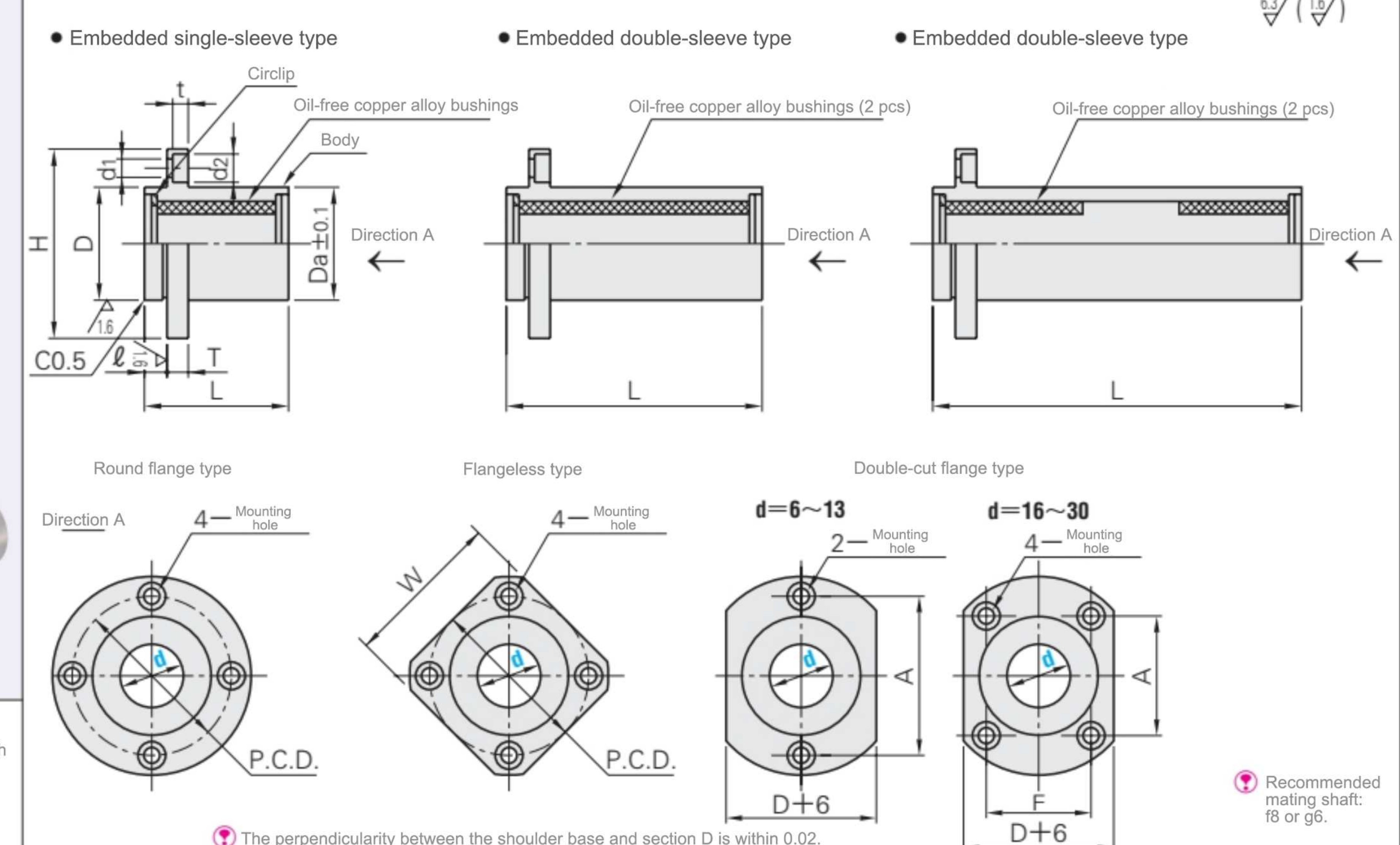
■Features of the dust-seal type and non-contact seal type

The dust-seal type features an embedded contact-type seal to prevent fine dust from entering the sliding section.
The sliding resistance of the dust-seal type should refer to the sliding resistance test data.
The dust seal is based on SER series manufactured by SAKAGAMI.
The non-contact seal type is mainly used to prevent the intrusion of large dust particles.
There is a clearance of approximately 0.1 mm between the shaft and the bushing, resulting in lower sliding resistance compared to the dust-seal type.

MF Steel Sleeve with built-in Graphite Copper Sleeve - Flange Oil-Free Bushing

■Embedded type RoHS

Base Type	Type: Round flange	Type: Flangeless	Type: Double-cut flange	Seal	Base Material	Base Surface treatment	Bushing Material
Single-sleeve	MFIMS	MFIKS	MFINS	No seal	SS400	Electroless nickel plating	High-strength brass alloy with embedded solid lubricantccc
	MFIMS−S	MFIKS−S	MFINS−S	With seal			
Double-sleeve	MFIMW	MFIKW	MFINW	No seal			
	MFIMW−S	MFIKW−S	MFINW−S	With seal			
Extended type	MFIML	MFIKL	—	No seal			
	MFIML−S	MFIKL−S	—	With seal			



✱ With seal: Both sides feature retaining rings with 0.3 mm PTFE sealing rings.

The perpendicularity between the shoulder base and section D is within 0.02.

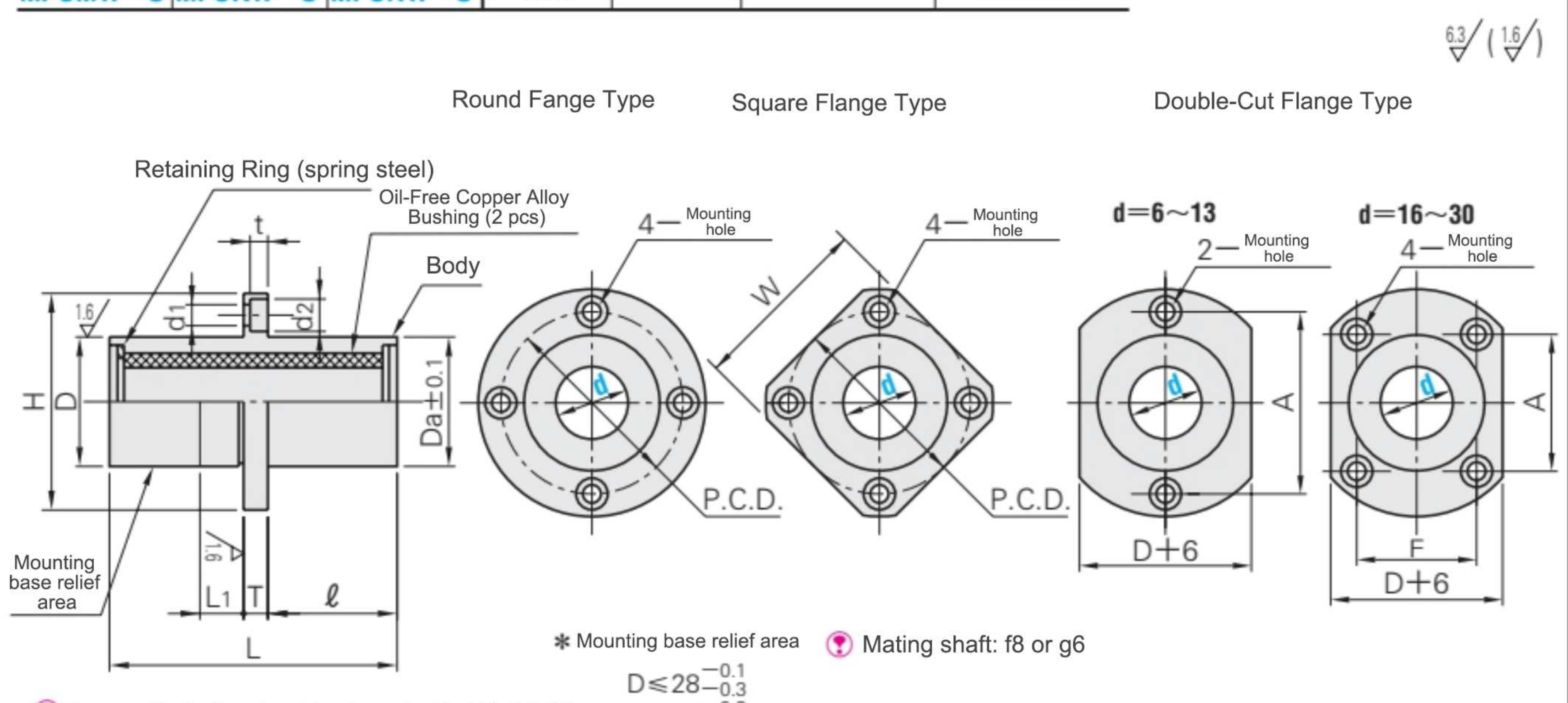
Recommended mating shaft: f8 or g6.

Form: Tpye					d	Tol.		Tol.		L: Single-sleeve	Double-sleeve	Extended type	e	H	T	d_1	d_2	t	P.C.D.	W	F	A
		Round flange	Flangeless	Double-cut flange																		
●Single-sleeve	(No seal) (With seal)	MFIMS MFIMS−S	MFIKS MFIKS−S	MFINS MFINS−S	6	$^{+0.022}_{0}$	12	0 −0.018	11.8	22	37	52	5	28	5	3.5	6	3.1	20	22	—	20
					8	+0.028 0	15		14.8	27	47	67		32					24	25	—	24
					10		19	0 −0.021	18.8	32	57	82	6	40	6	4.5	7.5	4.1	29	30	—	29
					12	+0.034 0	21		20.8					42					32	32	—	32
					13		23		22.8					43					33	34	—	33
					16		28		27.8	37	67	97		48					38	37	22	31
●Double-sleeve	(No seal) (With seal)	MFIMW MFIMW−S	MFIKW MFIKW−S	MFINW MFINW−S	20	+0.041 0	32	0 −0.025	31.6	42	77	112	8	54	8	5.5	9	5.1	43	42	24	36
					25		40		39.6	58	108	158		62					51	50	32	40
					30		45		44.6	68	128	188	10	74	10	6.6	11	6.1	60	58	35	49
●Extended type	(No seal) (With seal)	MFIML MFIML−S	MFIKL MFIKL−S		35	+0.050 0	52	0 −0.030	51.6	68	128	—	10	82					67	64	—	—
					40		60		59.6	80	150	—	13	96	13	9	14	8.1	78	75	—	—
					50		80		79.6	90	170	—	13	116					98	92	—	—

MF Steel Sleeve with Built-in Graphite Copper Sleeve - Flange Oil-Free Bushing

RoHS

Type			Seal Type	Mounting Base		Bushing
Round Flange	Square Flange	Double-Cut Flange		Material	Surface Treatment	Material
MFCMW	MFCKW	MFCNW	Unsealed	SS400	Electroless nickel plating	High-strength brass alloy with embedded solid lubricant.
MFCMW—S	MFCKW—S	MFCNW—S	Sealed			



* With sealing rings
Both sides of the retaining rings are fitted with 0.3mm thick Teflon resin sealing rings.

* Mounting base relief area $D \leqslant 28^{-0.1}_{-0.3}$ $D \geqslant 32^{-0.3}_{-0.5}$

Mating shaft: f8 or g6

Perpendicularity: shoulder base to Part D ≤ 0.02 mm

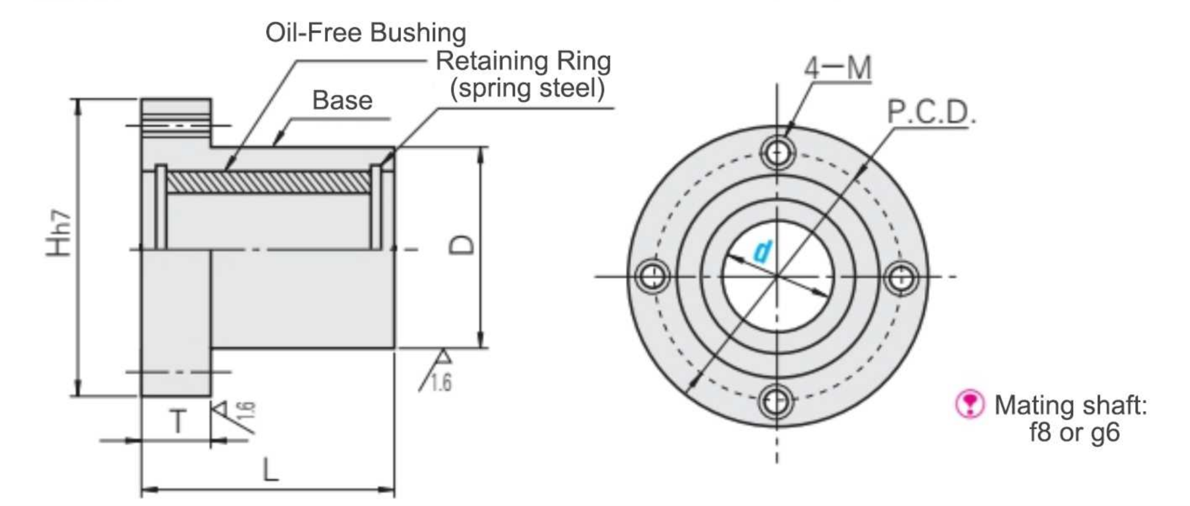
Form Type	d	Tol.	D	Tol.	Da	L	L1	ℓ	H	T	D1	D2	t	P.C.D.	W	F	A
Round Fange Type (Unsealed) MFCMW (Sealed) MFCMW—S	6	+0.022 0	12	0 −0.018	11.8	37	5	16	28	5	3.5	6	3.1	20	22	—	20
	8	+0.028 0	15		14.8	47		21	32					24	25	—	24
	10		19	0 −0.021	18.8	57		25.5	40	6	4.5	7.5	4.1	29	30	—	29
Square Flange Type (Unsealed) MFCKW (Sealed) MFCKW—S	12	+0.034 0	21		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
Double-Cut Flange Type (Unsealed) MFCNW (Sealed) 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

[speciality]

- Because the outer diameter of this product is 5-8 mm smaller than that of the original flanged self-lubricating bushing, it is suitable for use in confined spaces.
- Shell strength tests have shown that even when subjected to torque loads during use, this product maintains a strength equal to or greater than that of the original flanged self-lubricating bushing.

■ Miniature Flange Type RoHS

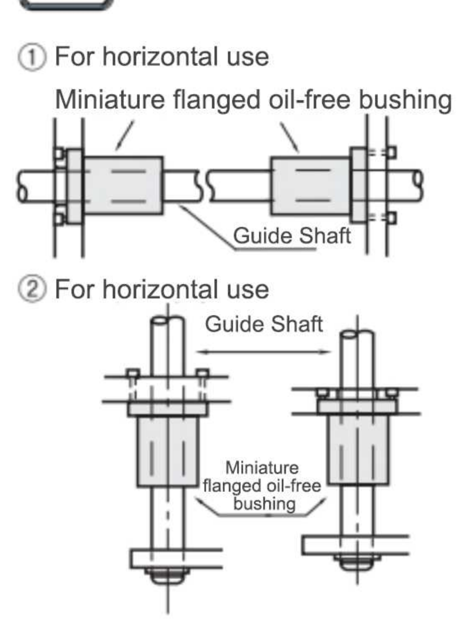
Type	Seal Type	Mounting Base		Bushing
		M Material	S Surface Treatment	M Material
MFST	Unsealed	SS400	Electroless nickel plating	High-strength brass alloy with embedded solid lubricant.
MFST—S	Sealed			



※With sealing rings
Both sides of the retaining rings are fitted with 0.3mm thick Teflon resin sealing rings.

Mating shaft: f8 or g6

ex Example



Form Type	d	Tol.	D	L	Hh7	T	M	P.C.D.
MFST (Unsealed) MFST—S (Sealed)	6	+0.022 0	12	22	23	6	M3	17
	8	+0.028 0	15	27	27			21
	10		19	32	34	8	M4	26
	12	+0.034 0	21		37			29
	13		23		38			30
	16		28	37	43			35
	20	+0.041 0	32	42	48	10	M5	39
	25		40	58	56			47
	30		45	68	66	12	M6	55

Other Special Material Selection

LBU Copper Alloy Oil Groove Bearings

LBU copper alloy oil groove bearings are high-strength brass bearings that utilize oil groove lubrication. This product possesses the functions of traditional tin bronze bearings, but due to the use of high-strength brass, its hardness is doubled. Therefore, when used in low-speed applications, its lifespan can be twice as long as that of ordinary bronze bushings. Furthermore, it has a high load-bearing capacity and is suitable for heavy-duty applications. Currently, this product is mainly used in the stressed joints of excavators and in large gearboxes.

LFU Copper-Based Self-Lubricating Bearings

LFU copper-based self-lubricating bearings are made from tin bronze powder, pressed in a mold, and then sintered at high temperature and shaped. They have fine, evenly distributed pores, which are then impregnated with lubricating oil under vacuum to create a self-lubricating state. This product features short-term lubrication without the need for additional oiling, low operating costs, and high dimensional accuracy of both inner and outer diameters. It is suitable for use in medium-speed and low-load applications. The product has been widely used in miniature motors, household appliances, power tools, textile machinery, chemical machinery, the automotive industry, and office equipment.

LU Ball Bearing Bushings/Ball Retainers/Ball Cages

Ball bearing bushings are mainly composed of a copper base and steel balls. The base is machined according to industry standards to create several regularly spaced holes, into which the steel balls are installed. The steel balls can move flexibly and are not easily dislodged. The steel balls conform to the GB308-84 G10 precision standard, with a tolerance and roundness of less than 0.0025mm and a hardness of 64~64HRC. Ball bearing bushings are suitable for high-precision axial and radial motion. When used with shafts and sleeves, they utilize an interference fit, allowing for gap-free assembly and achieving extremely high assembly precision. Therefore, they are widely used in the mold industry, machinery and equipment industry, and other industries requiring high-precision operation or motion.

Other Special Material Selection

LB-1 High Wear-Resistant Embedded Solid Lubricant Bearings

LB-1 high wear-resistant embedded solid lubricant bearings are coated with a high-performance polymer wear-resistant layer with solid lubrication properties on the surface of the LB-1 bearing. In harsh working environments, this layer can quickly form a dense transfer film on the mating material, reducing the initial friction coefficient of the product, shortening the break-in period, and preventing product failure caused by excessive initial friction. This significantly extends the service life of the product.

LB-2 Steel-Copper Cast Oil Groove Bearings

The LB-2 steel-copper cast oil groove bearing is a high-strength and material-saving sliding bearing. Compared with ordinary copper bushings, its outer casing is made of medium or low carbon steel with higher strength and toughness, resulting in higher load capacity and better impact resistance. It can also be welded to the steel housing bore, preventing the bushing from rotating or dislodging under heavy loads.

LB-3 Cast Iron Graphite Grooved Solid Lubricated Bearing

The LB-3 cast iron graphite grooved solid lubricated bearing uses high-strength cast iron as the base material. A spiral groove with a specific pitch is machined into the inner diameter of the bearing, and then molybdenum disulfide solid lubricant is embedded in the groove. After precision machining of the inner and outer diameters, a highly wear-resistant solid lubricated bearing is produced. This product is , particularly suitable for reciprocating linear motion applications such as guide bushings in precision molds and precision guide rails. During use, due to frictional heat, the solid lubricant in the inner diameter groove expands slightly, thus creating friction with the shaft and forming a transfer film on the shaft. This reduces the friction coefficient, minimizes wear between the shaft and the bushing, and extends the service life.

Other Special Material Selection

LB-4 Copper Alloy Water-Lubricated Bearings

The LB-4 water-lubricated bearing is a self-lubricating bearing based on an aluminum bronze alloy matrix, with modified PTFE embedded as a solid lubricant. Due to the excellent friction-reducing and wear-resistant properties of PTFE, especially when operating in humid and seawater environments, and unlike graphite as a solid lubricant, it does not cause electrochemical corrosion with the shaft. Therefore, this product is particularly suitable for use in port machinery, offshore wind turbines, and other equipment.

LB-5 High Wear-Resistant Embedded Solid Lubricant Bearing

The LB-5 copper alloy graphite groove solid lubricant bearing uses aluminum bronze as the base material. Annular grooves with equal spacing are machined into the inner diameter of the bearing, and then solid lubricant material is embedded into these grooves. The bearing is then precisely machined on both its inner and outer diameters. This results in a high wear-resistant solid lubricant bearing. During operation, due to frictional heat, the solid lubricant material in the aluminum bronze grooves on the inner diameter surface expands slightly, thus creating initial friction with the shaft. This forms a transfer film on the shaft, reducing the friction coefficient, minimizing wear between the shaft and the bushing, and extending the service life. This product is particularly suitable for reciprocating linear motion applications such as guide bushings in precision molds and precision guide rails.

LB-6 Steel-Copper Cast and Embedded Solid Lubricated Bearings

The LB-6 steel-copper cast and embedded solid lubricated bushing is a high-strength and material-saving self-lubricating bearing. Compared with general copper alloy embedded solid lubricated bearings, its outer shell uses lower-cost low-carbon steel, while the inner surface is made of the same material as the copper alloy base of the copper alloy embedded solid lubricated bearing, with a thickness of 1-2mm. Therefore, the material cost of the product is significantly reduced. In addition, because the base material used is low-carbon steel, it has better impact resistance compared to centrifugal cast high-hardness, high-strength brass alloys, and will not crack under heavy impact loads. This product is suitable for low-speed, heavy-load applications with impact loads.

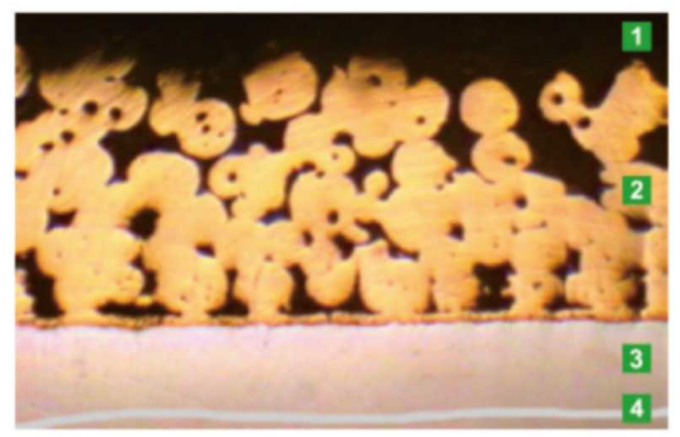
LSF-1 Carbon Steel Self-Lubricating Bushing

LSF-1 carbon steel self-lubricating bearings, used high quality low-carbon steel plate as base, sintered porous bronze as its interlayer and the compound of PTFE as its surface. It offers the property of good self-lubrication, low wear, low friction, good sliding characteristics, low noise.

Application Feature

1. Working under oilless or minim oil state, maintenance free or just need a little maintenance. 2. Resist Abrasion, low coefficient of friction long operating life. 3. Operating in -195℃～+280℃. 4. Good mending, low-noise, non-pollution. 5. Thin-walled structure, light in weight, which can reduce the machine to small size. 6. Forming a transferred film during operation to protect shaft and trouble free. 7. Low demand to the shaft even no surface hardness treatment, which lower the cost of the mating components. 8. No absorption to water/oil, small coefficient of Thermal emption, good thermal conductivity and size stability. 9. The back of the steel strip can be plated with various metals, anti-corrosion. The products have been used in sliding components of different machines, such as auto machines, piston pump, gear pump, textile machine, auto-sides machine, Injection Machine, sports Machine office equipment etc.

Material Structure



1.PTFE with mixture 0.01～0.03mm
2.Porous bronze 0.2～0.3mm
3.Steel backing 0.7～2.3mm
4.Tin-plating 0.005mm or copper plating 0.008mm

Technical Data

Max.load	Static	$250N/mm^2$
	Very low speed	$140N/mm^2$
	Roatating oscillating	$60N/mm^2$
Max. PV (dry running)	Short-term operation	$3.6N/mm^2$ m/s
	Continuous operation	$1.8N/mm^2$ m/s
Temp. limit		-195℃～+280℃
Friction coefficient		0.05～0.20 μ
Max. speed	Dry running	2m/s
	Hydrodynamic operation	>2m/s
Thermal conductivity		42 W(m k)$^{-1}$
Coefficient of thermal expansion		11×10^{-6} K^{-1}

LSF-1B Copper-Based Lead-Free Self-Lubricating Bushing

LSF-1B is one of high safty factory, and particularly appropriate for high temperature environment where no oil is effcient and where the machine must be under successive long period working condition.
This is widely used in steel metallurgy industry such as bushes for roller grooves of successive casting machines. cement grouting pumps and screw converyers for cement. It can also be composed in steel housing or fabricated into Flanged bushes which can move both in radial and in axial directions.
It can be applied in bridge bearing plate because of thicker inner surface layer to arrive $130N/mm^2$.

Application Feature

1.PTFE and lipophilic Friber can protect the shaft,while the machine in operation.
2.Bronze have good thermal conductivity, it'll divert heat while the machine operating.
3.It can be applied in the machine, working long time, which examine and repair is incapable, because the bronze can lubricate itself.
4.It is used in the feeble acid and alkali condition because of good anti-corrosion of bronze backing.
5.Good load capacity.
6.It is widely used in steel metallurgy industry, such as bushes for foller grooves of successive casting machines, cement grouting pumps and scrow conveyers of machine.
7.It can be composed in steel housing, or fabricated into fianged bushes which result in function for montion both on fiange and I.D.

Material Structure

1.PTFE with Fiber 0.01～0.03mm
2.Porous bronze 0.2～0.3mm
3.Bronze backing 0.7～2.3mm

Technical Data

Max.load	Static	$250N/mm^2$
	Very low speed	$140N/mm^2$
	Roatating oscillating	$60N/mm^2$
Max. PV (dry running)	Short-term operation	$3.6N/mm^2$·m/s
	Continuous operation	$1.8N/mm^2$·m/s
Temp. limit		-195℃～+280℃
Friction coefficient		0.03～0.20 μ
Max. speed	Dry running	2m/s
	Hydrodynamic operation	>2m/s
Thermal conductivity		60 W(m·k)$^{-1}$
Coefficient of thermal expansion		18×10^{-6}·K^{-1}

LSF-1S Stainless Steel Self-Lubricating Bearing

Material Features

LSF-1S is of oil resistant acid resistant, alkali resistant and. seawater resistant,.mare over.There is no lead in the PTEE Surface laver and so is particularly fit for bushings in food stuff Machines alkali flow meters. pumps motion elements in Pharmaceutical machines, printing ma-chines chemical engineering mathihes and other ocean industry. This is a triple layrs composites bush.The base material being a bronze plate and a film of heat resistant power filled PTFE being calenderered onto the sintered spherical bronze interlayer.

Application Feature

1. PTFE with oil fibre can protect the shaft. while machine in operation.
2. It is of low friction coefficient, good anti-wear.
3. Good running in property.
4. It fits well in motion of circumgyration, sway and reciprocate.
5. Good anticorrosion.
6. It can be used in food machine. Pharmaceutical etc. due to leadfree.
7. It is mainly used in the condition of strong acid and alkali. Such as chemical industry,pumps, vales etc.

Material Structure

1. PTFE with Oil Fiber 0.01-0;03mm
2. Porous bronze 0.2-0.3mm
3. Stainless Steel backing 0.7-2.3mm

Technical Data

Performance Index	Data
Max Load Capacity P	140N/mm²
Friction Coef μ	0.04~0.20
Working Temperature	-190℃~+128℃
Speed Limit V	2.5m/s
Maximum PV Value	(Dry)3.6N/mm² · m/s
	(Oil)50N/mm² · m/s

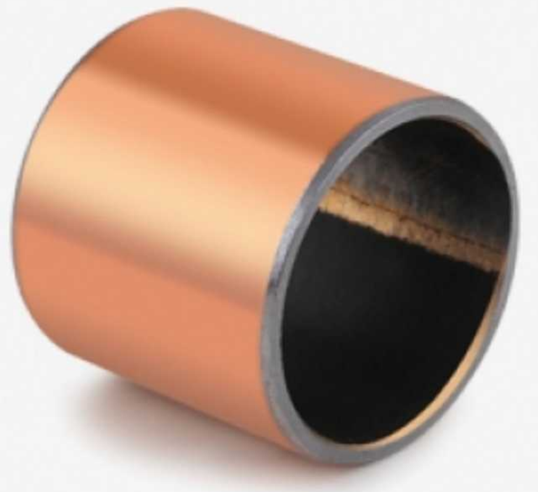
Type 1 Other Special Materials

LSF-1P Reciprocating Motion Bearing

The LSF-1P reciprocating motion bearing is a novel product designed based on the structure of SF-1X material, specifically for the unique operating conditions of reciprocating motion. Its performance is similar to that of the foreign DD2 bearing. It features strong self-lubricating capabilities under oil-deficient conditions, excellent wear resistance, and the ability to maintain a clear oil film. This product effectively protects the mating shaft surface from wear. Currently, this product is widely used in automotive shock absorbers, motorcycle shock absorbers, various hydraulic cylinders, hydraulic motors, pneumatic components, and other fields.

LSF-1H High-Pressure Wear-Resistant Bearing

The LSF-1H high-pressure wear-resistant bearing is a sliding bearing specifically developed for medium-to-high pressure gear pump applications. It features excellent impact resistance, high load capacity, superior wear resistance, and is lead-free and environmentally friendly. The product can withstand 1 million impact cycles at 30 MPa. Maximum load capacity is 140 N/mm², with a friction coefficient of μ 0.03~0.18.

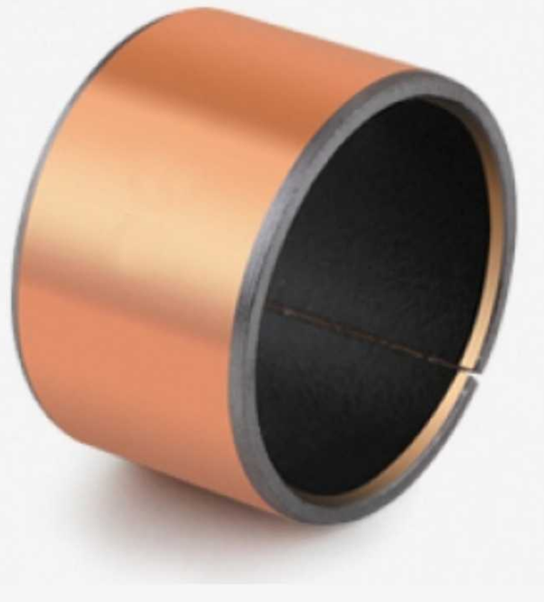


LSF-1W(P4) High-Performance Environmentally Friendly Oil-Free Bearing

This sliding bearing is made by rolling a mixture of PTFE and environmentally friendly polymer materials onto a steel base with sintered spherical bronze powder in the middle layer. The product features lead-free and environmentally friendly properties, excellent wear resistance, high bonding strength between the plastic and copper layers, and good fatigue and impact resistance.

LSF-1A Shock Absorber Bearing

The shock absorber bearing is a long-life, high-wear-resistant, and self-lubricating three-layer composite bearing specifically developed for medium and high-end automobile and motorcycle shock absorbers. In low-speed reciprocating motion, its friction coefficient is lower than that of conventional three-layer composite self-lubricating bearings, and the friction force fluctuation is smaller, effectively solving the creeping problem of shock absorbers and making the damping effect smoother. Due to the excellent protective properties of the added self-lubricating material on the shaft, it effectively reduces piston rod wear and prevents oil leakage in the shock absorber. The special tapered design of the lubricating surface shortens the initial break-in time in practical use, further extending the service life of the shock absorber.



Type 1 Other Special Materials

LSF-1L Seat Wear-Resistant Bearing

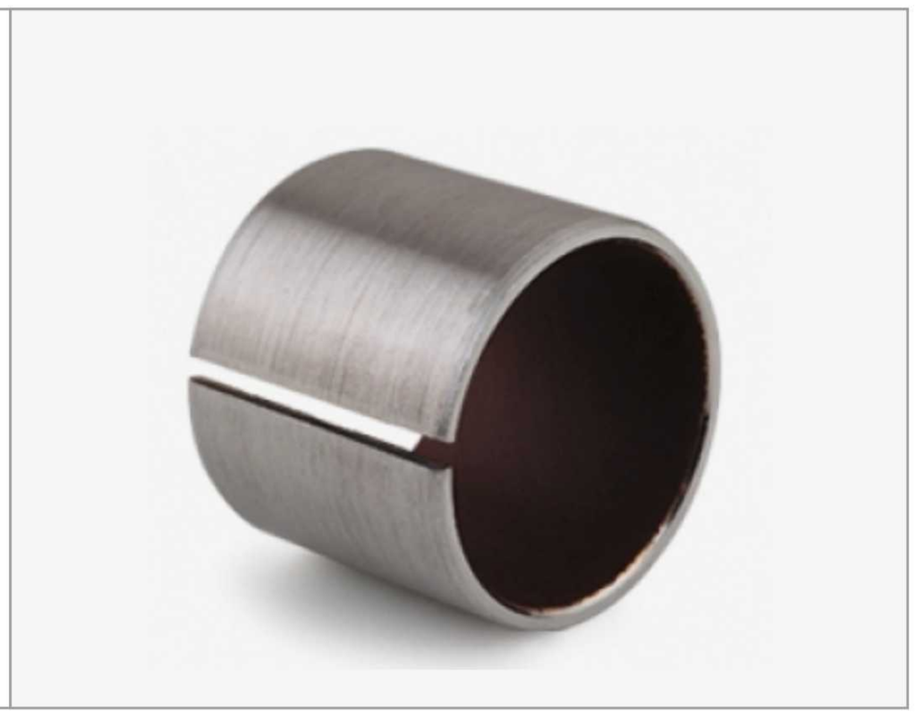
The LSF-1L seat wear-resistant bearing is a sliding bearing specifically developed for the mechanical operating conditions of automotive seat adjustment mechanisms. It features flexible rotation, a low friction coefficient, smooth operation, and low noise. Through improvements to the formula of the surface wear-resistant layer, the product's wear resistance has been further improved by more than 30%, fully meeting the application requirements of automotive seats.

LSF-1SS Stainless Steel Coated Bearing

The LSF-1SS stainless steel coated bearing is a high-corrosion -resistant and high-wear-resistant bearing made from stainless steel as the base material, with a surface coated with PTFE. The material is then rolled and formed into a bearing. This product is particularly suitable for applications involving strong acids, strong bases, light loads, and low to medium speeds. Its wear resistance is significantly superior to single-component PTFE bearings and graphite bearings. Currently, this product is widely used in chemical acid and alkali flow meters, pumps, valves, and sliding parts in the marine industry that require corrosion and wear resistance.

LSF-1S Stainless Steel Corrosion-Resistant Bearing

The LSF-1S stainless steel corrosion-resistant bearing is a highly effective corrosion-resistant bearing made from a stainless steel base material, with corrosion-resistant alloy powder sintered in the middle, and a low-friction material primarily composed of PTFE rolled onto the surface. It is then formed by rolling. It features resistance to oil, acid, alkali, seawater, and wear. The surface PTFE material is lead-free. It is most suitable for use in food and beverage machinery, pumps and valves handling moderately acidic and alkaline fluids in the chemical industry, pharmaceutical machinery, printing and dyeing machinery, chemical machinery, and corrosion-resistant sliding parts in the marine industry.



LSF-1CS Automotive Transmission Planetary Gear Oil-Free LubricatingBearing

The LSF-1CS automotive transmission planetary gear oil-free lubricating bearing is a new lead-free, environmentally friendly product based on LSF-1W material, designed according to the special working conditions of automotive automatic transmission planetary gears. Its surface plastic layer is white, and its performance is similar to that of the foreign P141. It boasts excellent self-lubricating properties, superior wear resistance, high fatigue strength, and a long service life. This product is recommended for use in sliding parts such as automotive transmission planetary gears, shift forks, and various types of solenoid valves.

LSF-2Y Boundary Lead-Free Self-Lubricating Bushing

LSF-2Y has the same structure and functional performance with LSF-2Y. It can work for certain long time without oil in the condition of prelubricated with lubrication indents. Widely applied in metallurgy machinery, Mining machinery, water conservancy machinery, automobile, building machinery, agriculture machinery, rolling steel industry etc.

Application Feature

1.Good load capacity and anti-wear. 2.It is used in high load capacities and low speed with rotational, oscillating or frequent stop-start motion. 3.It can work for a long time without oil in the condition of boundary lubrication, under oil or grease lubrication interval, the working-life will be longer. 4.It is machinable for the thicker of POM. 5.The bushes can be applied in auto chassis, forging machine, metallurgical, civil engineering, power station, strip rolling industries etc. 6.S F - 2 Y is widely used in the machine where Lead is unacceptable.

Material Structure

1.POM with fiber 0.3~0.5mm
2.Porous bronze 0.2~0.3mm
3.Steel backing 0.4~2.2mm
4.Plated coating: Tin plating 0.005mm or Copper plating 0.008mm

Technical Data

Max.load	Static	$250N/mm^2$
	Very low speed	$140N/mm^2$
	Roatating oscillating	$70N/mm^2$
Max. PV (dry running)		$3N/mm^2 \cdot m/s$
Temp. limit		-40℃~+110℃
Friction coefficient		0.05~0.20μ
Max. speed	Grease Lubrication	2m/s
	Oil continued to	>2m/s
Thermal conductivity		$50W(m \cdot k)^{-1}$
Coefficient of thermal expansion		$11 \times 10^{-6} \cdot K^{-1}$
Initial pre-lubrication at assembly is strongly recommended		

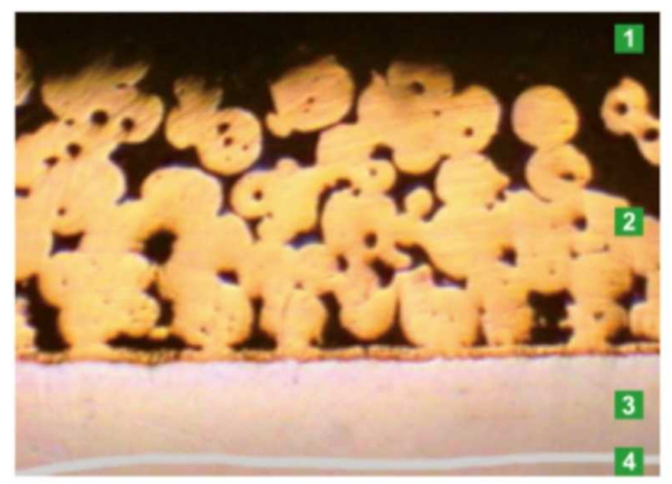
LSF-2S Boundary Lead-Free Self-Lubricating Bushing

LSF-2S Marginal Pb-free self-lubricating bearing based on low carbon steel backing, sintered porous bronze as its interlayer, surface rolled by acetal resin and polymer material constaining oleophylicity fiber and perform well on low friction factor, well wear performance and oil free condition lubrication. It has been widely applied to winding engines, printing and dyeing machinery, coal-cutters, punch, winch truck, traveling crane etc.

Application Feature

1.Good load capacity and anti-wear. 2.It is used in high load capacities and low speed with rotational,oscillating or frequent stop-start motion. 3.It can work long time without oil in the condition of boundary lubrication,under oil or grease lubrication interval, the work is longer. 4.It is machinable for the thicker of POM. 5.The bushes can be applied in auto chassis,forging machine, metallurgical, civil engineering, power station, strip rolling industries etc. 6.SLB-2S is widely used in the machine where Lead is unacceptable.

Material Structure



1.POM with fiber 0.3~0.5mm
2.Porous bronze 0.2~0.3mm
3.Steel backing 0.4~2.2mm
4.Plated coating: Tin plating 0.005mm or Copper plating 0.008mm

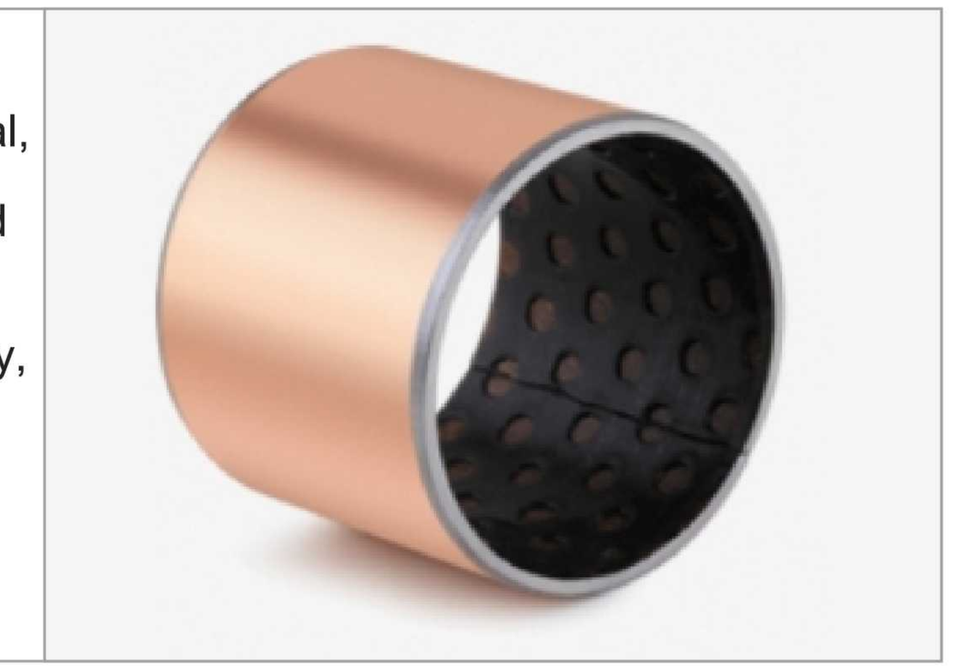
Technical Data

Max.load	Static	250N/mm^2
	Very low speed	140N/mm^2
	Roatating oscillating	70N/mm^2
Max. PV (dry running)		3N/mm^2·m/s
Temp. limit		-40℃~+110℃
Friction coefficient		0.05~0.20μ
Max. speed	Grease Lubrication	2m/s
	Oil continued to	>2m/s
Thermal conductivity		50W(m·k)$^{-1}$
Coefficient of thermal expansion		11×10^{-6}·K^{-1}
Initial pre-lubrication at assembly is strongly recommended		

Type 2 Other Special Materials

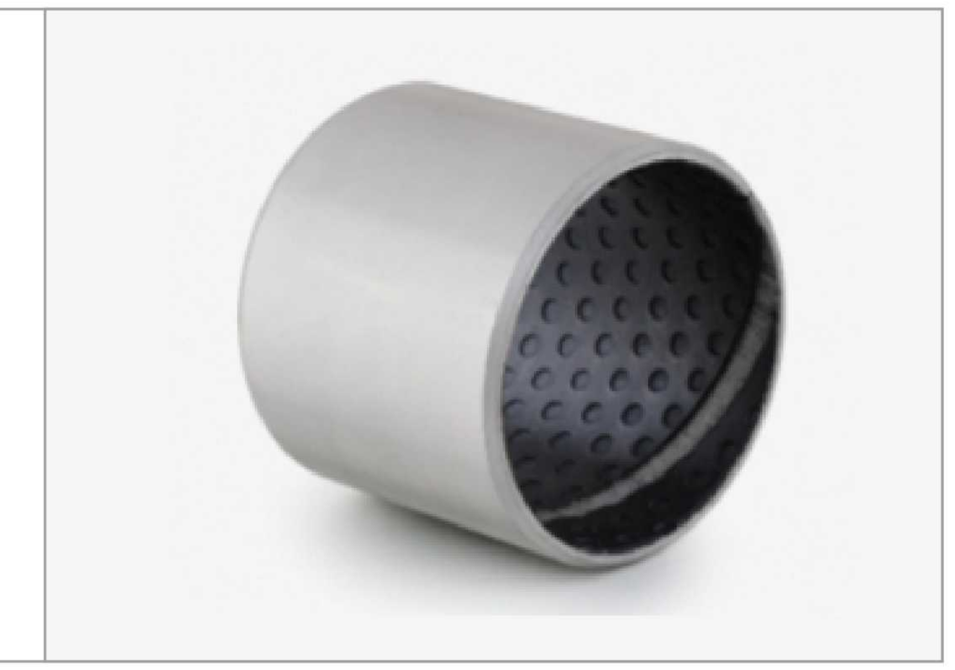
LSF-2X Boundary Lubricated Bearings

This product uses high-quality low-carbon steel as the base material, with a sintered spherical bronze layer in the middle and a modified polyoxymethylene (POM) surface layer. It can be used for extended periods without lubrication under boundary lubrication conditions, and the wear-resistant layer has oil reservoirs on its surface. The product is widely used in metallurgical machinery, mining machinery, hydraulic machinery, automobiles, construction machinery, agricultural machinery, and the steel rolling industry, etc.



LSF-PK Polyether Ether Ketone Self-Lubricating Bearings

The LSF-PK three-layer composite bearing is a new type of sliding bearing, composed of a steel plate, a copper powder layer, and modified PEEK. Its main performance characteristics are derived from the modified PEEK surface, which is a high-performance, temperature-resistant, wear-resistant, and corrosion-resistant polymer material. Its performance is particularly outstanding in water-lubricated and low-lubrication applications. Due to the wear-resistant PEEK layer having a thickness of more than 0.1mm, its service life is significantly longer than that of general LSF-1 materials. It is currently used in high-quality shock absorber guide parts, tank and rocket lifting mechanisms, and machine tool slides, making it a high-performance product.

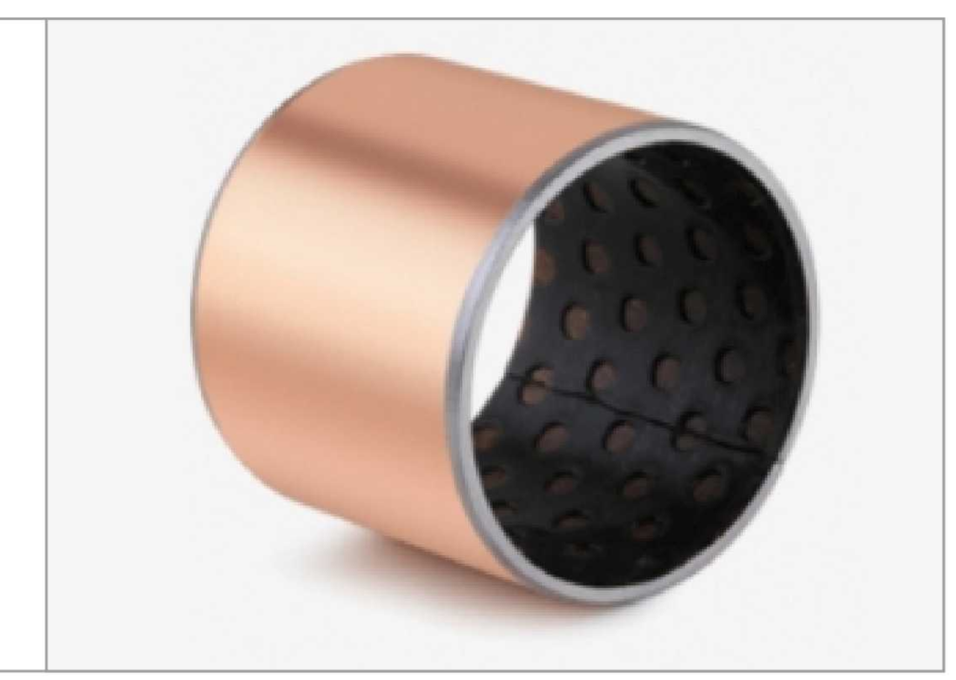


LSF-2L Boundary Lubricated Lead-Free Bearings

The LSF-2L boundary lubricated lead-free bearing is an improved version of the SF-2 bearing. It features a low friction coefficient, excellent wear resistance, and a long service life. Because the product is lead-free, it can be used in applications with high environmental requirements, such as food processing machinery.

LSF-3 Nylon Self-Lubricating Bearing

The LSF-3 nylon self-lubricating bearing is a new type of sliding bearing composed of a steel plate, a copper powder layer, and modified PA46 material. Its main performance characteristics are derived from the modified PA46 surface, which exhibits excellent high-temperature resistance, capable of withstanding ambient temperatures exceeding 160°C. Furthermore, it maintains its hardness, fatigue resistance, and friction resistance at this temperature. The product can be used in various operating conditions, including low-speed heavy-load rotation, oscillation, or linear reciprocating motion.



LSF-1/LSF-2 Straight Column Composite Bushings - Standard Tolerance Table

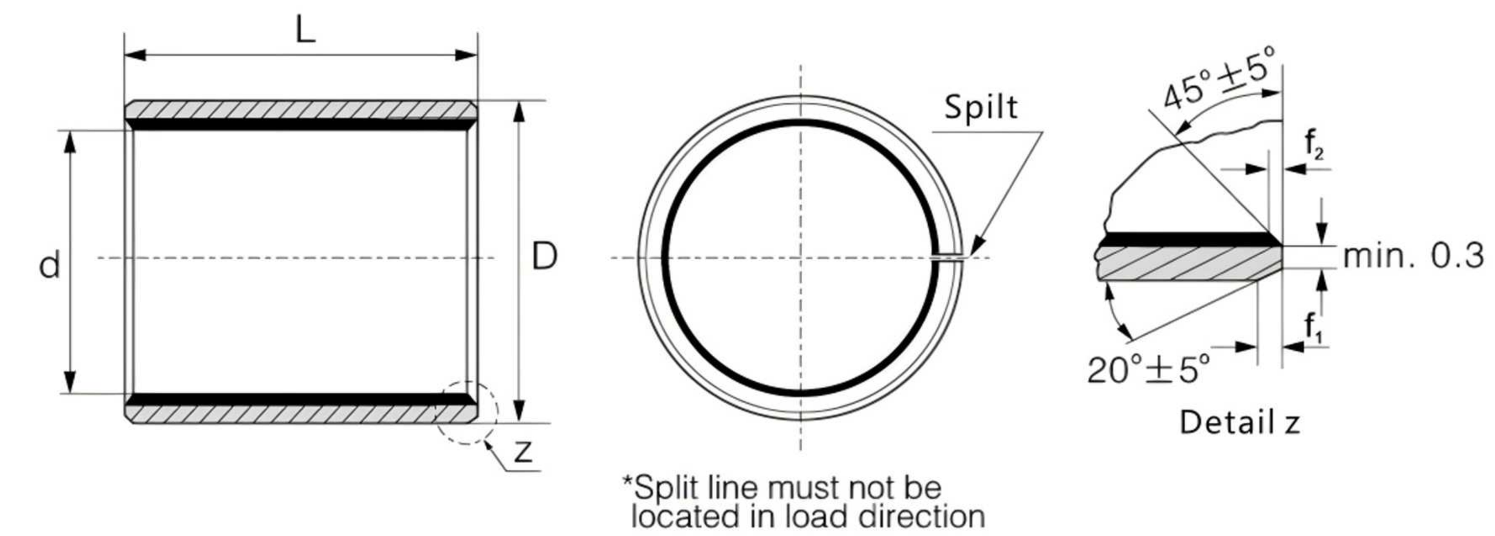
OD tolerance (mm) – Standard metric products

OD	OD Tol.
≤10	+0.055 +0.025
10<d≤18	+0.065 +0.030
18<d≤30	+0.075 +0.035
30<d≤50	+0.085 +0.045
50<d≤80	+0.100 +0.055
80<d≤105	+0.120 +0.070
105<d≤180	+0.170 +0.100
180<d≤250	+0.210 +0.130
250<d≤305	+0.260 +0.170

Wall thickness Tol. – Standard metric products

ID	WTNS	WTT
10<d≤18	1.0	+0.020 +0.045
20<d≤28	1.5	+0.025 +0.055
28<d≤45	2.0	+0.030 +0.065
45<d≤80	2.5	+0.040 +0.085
80≤d	2.5	+0.050 +0.115

LSF-1/LSF-2 Straight Column Composite Bushings - Standard Tolerance Table



Unit:mm

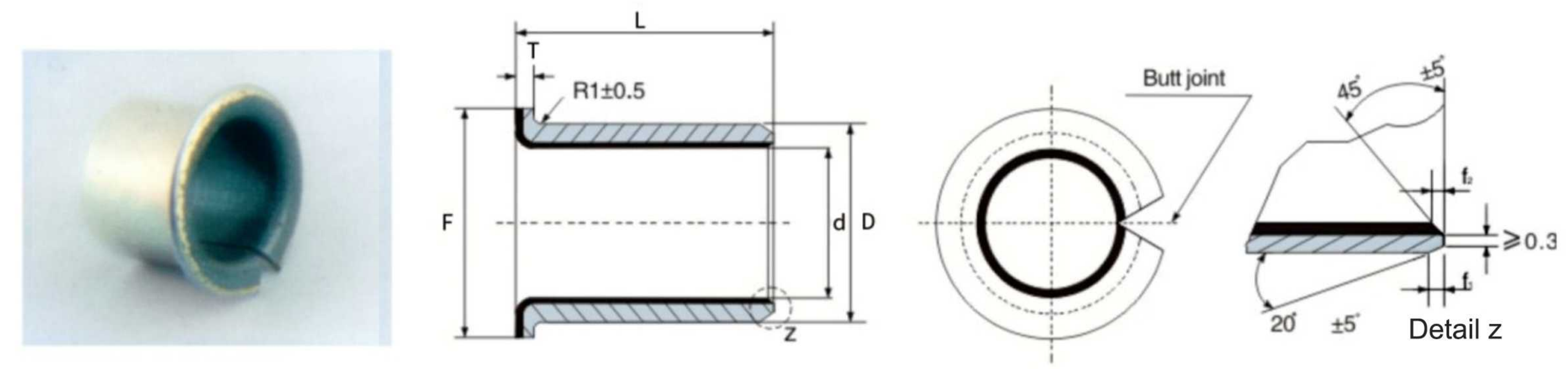
ID(d)	OD(D)	Height L (tolerance: -0.1 to -0.3 mm)										
3	5	3	4	5	6							
4	6	3	4	5	6	8	10					
5	7	3	4	5	6	8	10					
6	8	3	4	5	6	7	8	10	12	15		
7	9	5	6	7	8	10	12					
8	10	5	6	7	8	10	12	15	20			
9	11	6	10									
10	12	5	6	7	8	10	12	15	20			
12	14	5	6	8	10	12	15	20	25			
13	15	8	10	12	15	20						
14	16	8	10	12	14	15	16	20	25			
15	17	8	10	12	15	20	25					
16	18	10	12	15	20	25	30					
17	19	10	15	20								
18	20	10	12	15	20	25	30					
19	22	10	12	15	20	25						
20	22	10	12	15	20	25	30	35	40			
20	23	10	12	15	20	25	30	35	40	45	50	
20	24	10	12	15	20	25	30	35	40	45	50	
20	25	15	20	25	30	35	40	45	50			
22	25	10	12	15	20	25	30					
23	26	20	25	30								
24	27	15	20	25	30	35	40	45	50			
25	28	10	12	15	20	25	30	35	40	45	50	
25	29	12	15	20	25	30	35	40	45	50		
25	30	15	20	25	30	35	40	45	50			

LSF-1/LSF-2 Straight Column Composite Bushings - Standard Tolerance Table

Unit:mm

ID (d)	OD (D)	Height L (tolerance: -0.1 to -0.3 mm)										
28	32	12	15	20	25	30	35	40	45	50		
30	34	12	15	20	25	30	35	40	45	50	60	70
30	35	15	20	25	30	35	40	45	50	55		
31	35	15	25	30								
32	36	15	20	25	30	35	40					
35	39	12	15	20	25	30	35	40	45	50	60	
35	40	20	25	30	35	40	45	50				
36	40	20	25	30	35	40	50					
38	42	20	25	30	35	40	50					
40	44	12	15	20	25	30	35	40	45	50	60	
40	45	20	25	30	35	40	45	50	60			
42	47	15										
45	50	15	20	25	30	35	40	45	50	55	60	
50	55	20	25	30	35	40	45	50	55	60	70	80
55	60	30	35	40	45	50	60	70				
60	65	30	35	40	45	50	60	70	80			
65	75	30	35	40	45	50	60	70	80			
70	75	30	35	40	50	60	70	80				
75	80	30	35	40	50	60	80					
80	85	30	40	50	60	80						
85	90	30	40	50	60	80						
90	95	40	50	60	80	90	100					
95	100	30	40	50	60	70	80					
100	105	30	35	40	50	60	70	80	90	100	110	120
110	105	60	80	100								
110	115	50	60	70	80	95	100					
120	125	50	70	95	100							
125	130	60	100									
130	135	50	60	80	100							
140	145	50	60	80	100							
150	155	50	60	80	100							
160	165	50	60	80	100							
180	185	80	100									
200	205	80	100									
220	225	60	80	100								

LSF-1F Flanged Composite Bushings – Standard Tolerance Table



Unit : mm

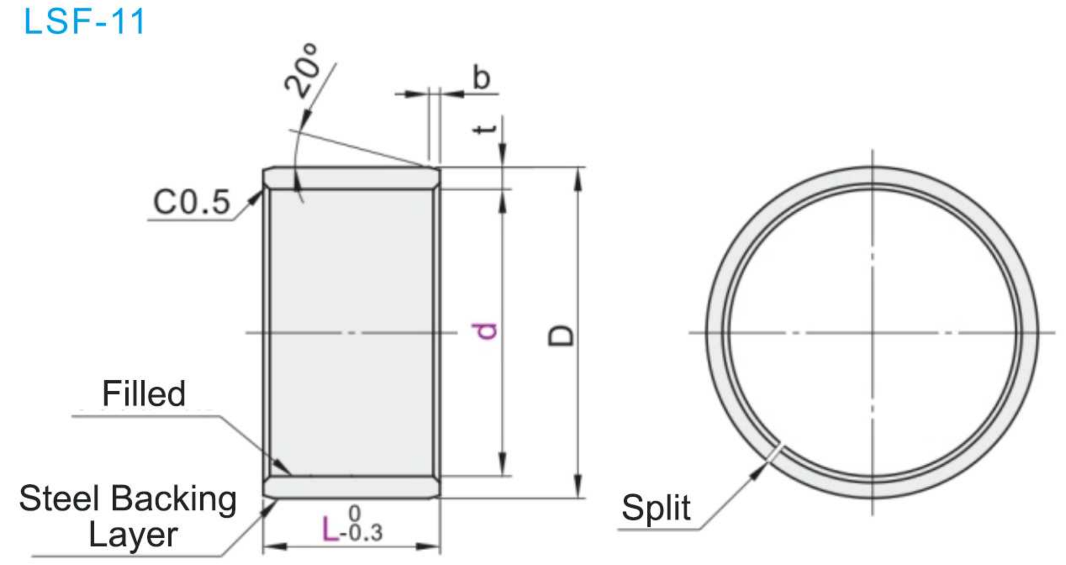
Unit:mm

ID (d)	OD (D)	F	Height L (tolerance: -0.1 to -0.3 mm)										
3	4.6	7	3	5									
4	5.6	9	4	6									
5	7	10	4	5	6								
6	8	12	4	5	6	7	8	10					
7	9	13	5	7	8	10	12	15					
8	10	15	5	6	7	8	10	12	13	15			
9	11	16	10										
10	12	18	6	7	8	9	10	12	15	20			
12	14	20	6	7	8	9	10	12	15	20			
13	15	21	10	15									
14	16	22	10	12	15	17	20						
15	17	23	9	10	12	15	17	20	25				
16	18	24	8	10	12	15	17	20	25				
18	20	26	10	12	15	17	20	25					
20	23	30	10	12	15	16.5	20	25	30				
22	25	32	10	12	15	20	25	30					
24	27	34	15	20	25	30							
25	28	35	10	12	15	16.5	20	21.5	25	30	35		
26	30	38	15	20									
28	32	40	12	15	20	30							
31	35	44	25										
35	39	47	12	15	20	25	30	40	50				
38	42	51	20	30	40								
40	44	53	12	15	20	25	30	40	50				
45	50	59	20	25	30	40	50						
50	55	64	20	30	40	50	60						
55	60	69	30	40	60								
60	65	74	30	40	60								

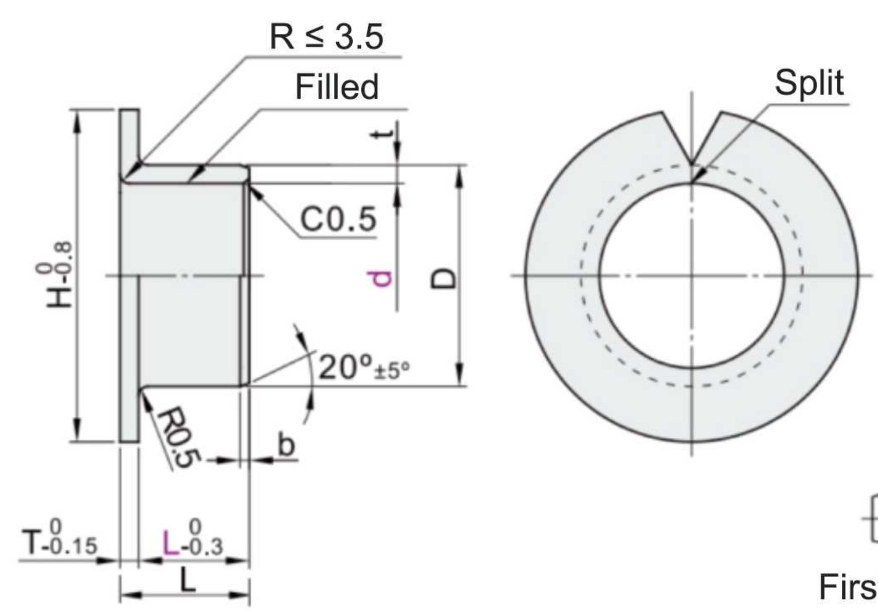
LSF-11 Tin-plated Composite Bushing Standard Dimensions (Export Type)

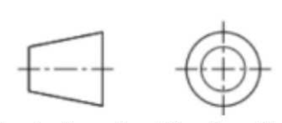
Code	Type	Material				Surface Treatment	Heat Resistance
		Base		Intermediate Layer	Surface Layer		
		GB	Equal				
LSF-11 Tin-plated Composite Bushing	Cylindrical Type	SPCC	SPCC	Bronze Powder	PTFE	Tin Plating	-180~280℃
LSF-11F Tin-plated Composite Bushing	Shouldered Type						

Cylindrical Type
LSF-11



Shouldered Type
LSF-11F





First Angle Projection

Mating seat diameter tolerance: H7 (for reference only)

Model Code	d	L	LSF-11 D		LSF-11 t		LSF-11 b	LSF-11F D	LSF-11F H	LSF-11F t/T	LSF-11F Tolerance T	LSF-11F b	Shaft Diameter Basic Dimension	Shaft Diameter Tolerance	ID Tolerance After Press-fit
Cylindrical Type LSF-11 / Shouldered Type LSF-11F	3	3 4 5 (6)	5	+0.047 +0.017				4.6	7	0.8		—	3	-0.025 -0.034	+0.062 0
	4	3 4 5 6 (8)	6					5.6	9				4		
	5	3 4 5 6 8	7					7	10				5	-0.025 -0.037	
	6	3 4 5 6 8 10 12	8	+0.055 +0.025				8	12				6		+0.065 0
	8	3 4 5 6 8 10 12 15	10					10	15				8		
	10	5 6 8 10 12 15 20	12					12	18		0 -0.025		10	-0.025 -0.040	
	12	5 6 8 10 12 15 20	14	+0.060 +0.030	1.0	±0.025	0.3	14	20	1.0		0.3	12		
	13	5 6 8 10 12 15 20	15					15	21				13		+0.068 0
	15	5 6 8 10 12 15 20 25 30	17	+0.065 +0.035				17	23				15	-0.025 -0.043	
	16	8 10 12 15 20 25 30	18	+0.070 +0.035				18	24				16		
	18	8 10 12 15 20 25 30 35	20	+0.075 +0.040				20	26				18		+0.071 0
	20	8 10 12 15 20 25 30 35	23	+0.080 +0.045				23	31				20		
	22	8 10 12 15 20 25 30 35 40	25		1.5		0.5	25	33	1.5		0.5	22	-0.025 -0.046	+0.081 0
	25	10 12 15 20 25 30 35 40 (50)	28	+0.085 +0.050				28	36				25		
	30	10 12 15 20 25 30 35 40 50	34	+0.090 +0.050		±0.030		34	42		0 -0.030		30		
	35	10 12 15 20 25 30 35 40 50	39	+0.095 +0.055	2.0			39	49	2.0			35		+0.085 0
	40	10 12 15 20 25 30 35 40 50 60	44				0.8	44	54			0.8	40	-0.025 -0.050	
	50	12 15 20 25 30 35 40 50 60	55	+0.105 +0.060	2.5	±0.040		55	65	2.5	0 -0.040		50		+0.110 0

L( ) apply only to LSF-11 straight column type.

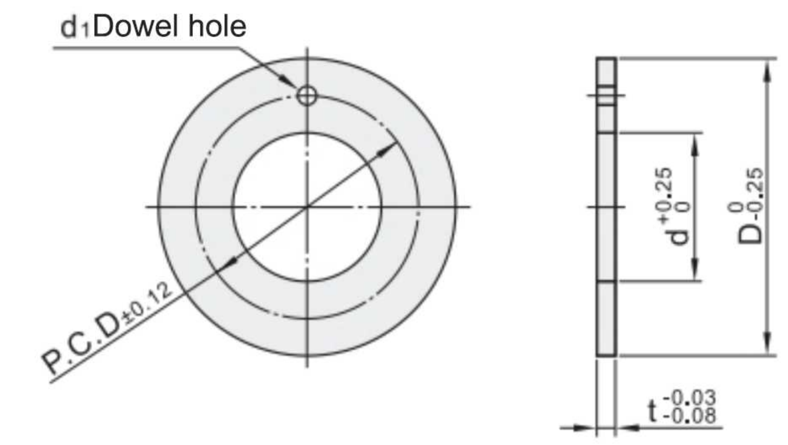
Shaft diameter is the recommended size.

Both LSF-11 and LSF-11F are open-rolled bushings. All tolerances in the above table are reference values after press-fit gauge (±0.002).

LSF-1W Tin-plated Composite Bushing Standard Dimensions (Export Type)

Thrust Washer

Code	Type	Material			Surface Treatment	Heat Resistance
		Base	Intermediate Layer	Surface Layer		
LSF-1W	Thrust Washer	SPCC	Bronze Powder	PTFE	Tin Plating	-200～280℃



First Angle Projection

Model Code	Specification	t	d	D	Mounting Hole d1		P.C.D
LSF-1W	6		8	16	1.0	+0.30 +0.10	12
	8		10	18			14
	10		12	24	1.5		18
	12		14	26			20
	14		16	30	2.0		23
	16		18	32			25
	18	1.5	20	36			28
	20		22	38	3.0	+0.375 +0.125	30
	22		24	42			33
	25		28	48			38
	30		32	54			43
	35		38	62	4.0		50
	40		42	66			54
	50	2.0	52	78			65

SFB-08G Solid Lubricated Bushing

SFB-08G solid lubrication bearing is a new type of sliding bearing made of SJF-800 bimetal material and embedded with special solid lubricant. Due to the high-strength bearing alloy material as the matrix, and the strictly selected polymer filling material is the anti-wear agent, the reasonable spiral angle diamond-shaped uniform lubrication surface has a lubrication area of 25%, so it can play a superior low Friction, good lubricity and abrasion resistance are free of refueling. This product has been widely used in cranes, micro motors, elevators, cranes and metallurgical machinery.

Technical Data

Max.load	Static	150N/mm²
	Dynamic	40N/mm²
Max. PV (dry running)		2.8N/mm²·m/s
Temp. limit		-100℃~+200℃
Friction coefficient		0.06~0.25 μ
Max. speed	Grease Lubrication	1.5m/s
Thermal conductivity		58W(m·k)⁻¹
Coefficient of thermal expansion		18×10⁻⁶·K¹
Hardness		HB110-150
Tensile strength		450N/mm²
Elongation		40%

SFB-09G Series Bronze Rolled Bushing

It has the same production process and application occasions as SFB-090. Its base is a bronze substrate, and its diamond-shaped oil hole is filled with graphite-based solid lubricant, which enables the product to have a lower initial stage and process. The coefficient of friction maintains a good working condition in the case of short oil cuts. Therefore, it is widely used in construction machinery, gearbox rotating parts, high-speed medium-speed parts such as automobile clutches, and rotating parts of outdoor high-altitude equipment.

Technical Data

Max.load	Static	120N/mm²
	Dynamic	40N/mm²
Max. PV (dry running)		2.8N/mm²·m/s
Temp. limit		-100℃~+200℃
Friction coefficient		0.05~0.25 μ
Max. speed	Grease Lubrication	2.5m/s
Thermal conductivity		58W(m·k)⁻¹
Coefficient of thermal expansion		18.5×10⁻⁶·K¹
Hardness		HB＞110
Tensile strength		450N/mm²
Elongation		40%

Tolerance

Recommend housing tolerance H7 and the shaft as f7.

SFB-090 Series Bronze Coiled Bushing

SFB-090 Series Bronze Coiled Bushing

SFB-090 serie bronze rolled bushing is our new generation bushing based upon steel-bronze lead double metal bushings. This product is widely applied overseas. With the increase of our country's bring-in of foreign machineries, designers requirement on new abrasive materials and bushings are accordingly increasing. Therefore, our products have a wide application scope and practical value in machinery production.

The major feature of SFB-090 serie bushing is their thin-wall structure, which doesn't take up too large assembly space. Specially formulated high-density bronze alloy bands are used for the building of the bushing, which compared with traditional bushings, is featured in the high density, no shrinkage blowholes, high load sustainability and anti-wearing and anti-fatigue. The production of the bushing is by means of advanced fixture and molds, able to make oil holes, hole dents and grooves on the frication surfaces of the bands to suit various engineering applications, making it possible for the bushing to store large amount of lubricating grease when working. Therefore, the lubrication interval is prolonged and the service hours are effectively lengthened.

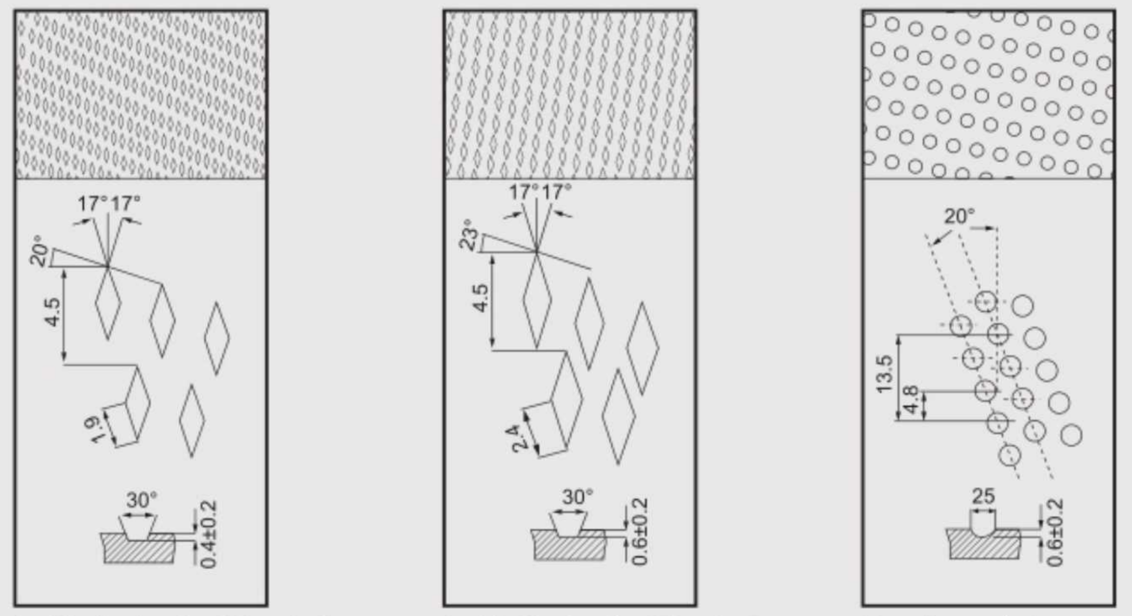
SFB-090 serie bearings are widely used in applications such as agricultural machineries, construction machineries, engineering machineries and automobile industry.

Product Benefits

1. Saving large amount of bronze material and save the working hours normally spent for lathing the bronze bushing.
2. Compared with lathed bushings and roller bearings, it is light in weight and more cost-effective.
3. Various holes and dents can be made on the frication surface for grease storage, prolonging the lubrication interval to 5 times as long as required by the bronze bushing.
4. Extremely high load sustainability, especially suitable for coarse abrasion surfaces.

Material Structure

High-density bronze is rolled into shape or oil bags and oil holes specially integrated into the inner surface to reduce the wearing and prolong the service hours. Besides, it has excellent anti-corrosion functions.



Inside the bush of the shaft Rhomb oil holes r≤φ22

Inside the bush of the shaft Rhomb oil holes r>φ22

Forming a circle

Application scope

This serie of bearing is widely applied to agricultural, construction and engineering machineries, etc.

Categories of oil holes (As per to DIW1494/ISO3457)。

Chemical Composition

Material: CuSn8P	Cu	Sn	P

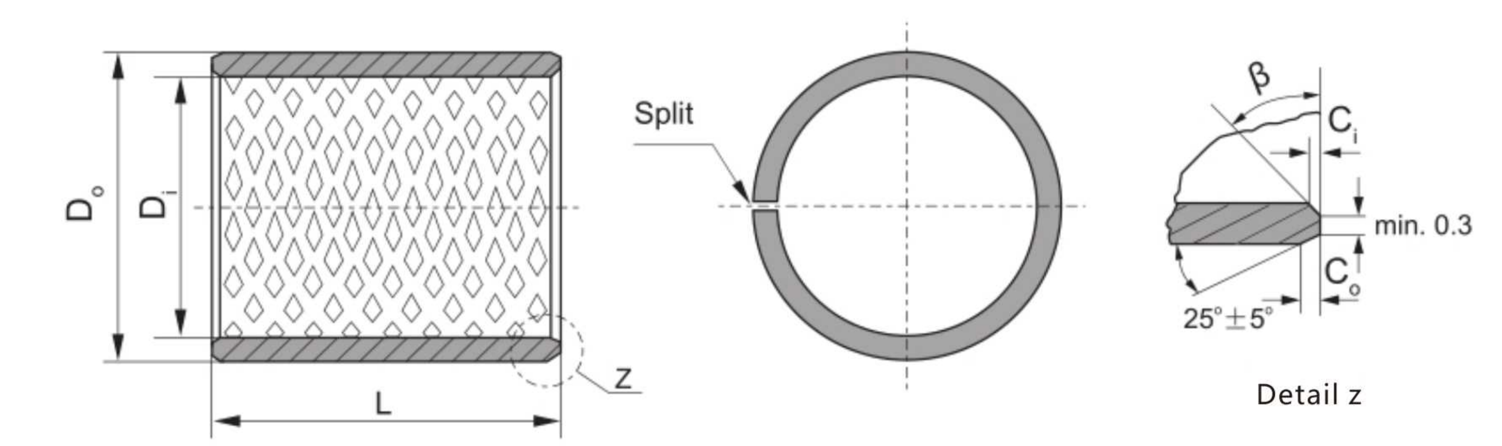
Physical Property

Type	Density	Heat dissipation & expansion	Heat Conducting	Hardness	Compression strength	Elongation
SFB - 090	8.8g/cm^3	$18.5\times10^{-6}\times K^{1}$	58W(m k)	90~150HB	470N/mm^2	40%

Standard tolerance for bushes (As per to DIW W91/1503547)

Standard Dia.	O.D.Size	Housing Bore	I.D.Size	Axle
10~18	+0.065 +0.030	+0.018 0	+0.046 0	- 0.016 - 0.043
18~30	+0.075 +0.035	+0.021 0	+0.052 0	- 0.020 - 0.020
30~50	+0.085 +0.045	+0.025 0	+0.062 0	- 0.025 - 0.064
50~80	+0.100 +0.055	+0.030 0	+0.074 0	- 0.030 - 0.076
80~120	+0.120 +0.070	+0.035 0	+0.087 0	- 0.036 - 0.090
120~180	+0.170 +0.100	+0.400 0	+0.100 0	- 0.043 - 0.106
180~250	+0.210 +0.130	+0.046 0	+0.115 0	- 0.050 - 0.122
250~315	+0.260 +0.170	+0.052 0	+0.130 0	- 0.056 - 0.137

SFB-090 Series Bronze Coiled Bushing



ID and OD chamfers

S_3	C_o	C_i	β
0.75	0.5±0.3	0.25±0.2	35°±5°
1.00	0.6±0.3	0.30±0.2	35°±5°
1.50	0.7±0.3	0.50±0.3	35°±5°

S_3	C_o	C_i	β
2.00	1.2±0.4	0.50±0.3	35°±5°
2.50	1.8±0.6	0.60±0.3	45°±5°

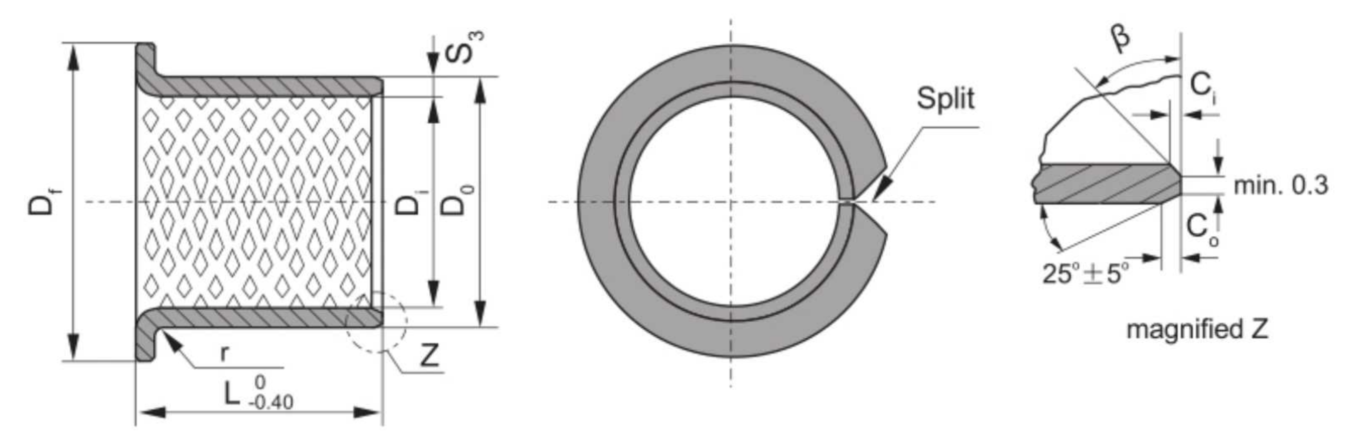
Unit: mm

D_i ϕd	D_o ϕD	$L^{0}_{-0.40}$												
		10	15	20	25	30	35	40	50	60	70	80	90	100
10	12	1010	1015	1020										
12	14	1210	1215	1220										
14	16	1410	1415	1420	1425									
15	17	1510	1515	1520	1525									
16	18	1610	1615	1620	1625									
18	20	1810	1815	1820	1825									
20	23	2010	2015	2020	2025									
22	25	2210	2215	2220	2225	2230								
24	27		2415	2420	2425	2430								
25	28		2515	2520	2525	2530								
28	31		2815	2820	2825	2830								
30	34		3015	3020	3025	3030	3035	3040						
32	36		3215	3220	3225	3230	3235	3240						
35	39		3515	3520	3525	3530	3535	3540						
40	44			4020	4025	4030	4035	4040	4050					
45	50			4520	4525	4530	4535	4540	4550					
50	55			5020	5025	5030	5035	5040	5050	5060				
55	60			5520	5525	5530	5535	5540	5550	5560				
60	65				6025	6030	6035	6040	6050	6060	6070			
65	70					6530	6535	6540	6550	6560	6570			
70	75					7030	7035	7040	7050	7060	7070	7080		
75	80					7530	7535	7540	7550	7560	7570	7580		
80	85					8030	8035	8040	8050	8060	8070	8080		
85	90					8530	8535	8540	8550	8560	8570	8580	8590	
90	95					9030	9035	9040	9050	9060	9070	9080	9090	
95	100							9540	9550	9560	9570	9580	9590	95100

SFB-090 Series Bronze Coiled Bushing Specifications and Tolerances

D_i ϕd	D_o ϕD	$L^{0}_{-0.40}$									
		25	30	35	40	50	60	70	80	90	100
100	105					10050	10060	10070	10080	10090	100100
105	110					10550	10560	10570	10580	10590	105100
110	115					11050	11060	11070	11080	11090	110100
115	120					11550	11560	11570	11580	11590	115100
120	125						12060	12070	12080	12090	120100
125	130						12560	12570	12580	12590	125100
130	135						13060	13070	13080	13090	130100
135	140						13560	13570	13580	13590	135100
140	145						14060	14070	14080	14090	140100
145	150						14560	14570	14580	14590	145100
150	155						15060	15070	15080	15090	150100
155	160						15560	15570	15580	15590	155100
160	165						16060	16070	16080	16090	160100
165	170						16560	16570	16580	16590	165100
170	175						17060	17070	17080	17090	170100
175	180						17560	17570	17580	17590	175100
180	185						18060	18070	18080	18090	180100
185	190						18560	18570	18580	18590	185100
190	195						19060	19070	19080	19090	190100
195	200						19560	19570	19580	19590	195100
200	205						20060	20070	20080	20090	200100
205	210						20560	20570	20580	20590	205100
215	220						21560	21570	21580	21590	215100
225	230						22560	22570	22580	22590	225100
230	235						23060	23070	23080	23090	230100
240	245						24060	24070	24080	24090	240100
250	255						25060	25070	25080	25090	250100
260	265						26060	26070	26080	26090	260100
270	275						27060	27070	27080	27090	270100
280	285						28060	28070	28080	28090	280100
290	295						29060	29070	29080	29090	290100
300	305						30060	30070	30080	30090	300100

SFB-090 Series Bronze Coiled Bushing Specifications and Tolerances



S_3	1.0	1.5	2.0	2.5
r	$1^{-0.5}$	1±0.5	1.5±0.5	2±0.5

Unit: mm

D_i φd	D_O φD	D_{fl}	$L^{0}_{-0.40}$										
			15	20	25	30	35	40	50	60	70	80	90
25	28	35	25150	25200	25250								
30	34	45		30200	30250	30300							
35	39	50		35200	35250	35300	35350						
40	44	55			40250	40300	40350	40400					
45	50	60				45300	45350	45400	45500				
50	55	65				50300	50350	50400	50500				
55	60	70				55300	55350	55400	55500				
60	65	75				60300	60350	60400	60500	60600			
65	70	80				65300	65350	65400	65500	65600			
70	75	85					70350	70400	70500	70600	70700		
75	80	90					75350	75400	75500	75600	75700		
80	85	100					80350	80400	80500	80600	80700	80800	
90	95	110							90500	90600	90700	90800	90900
100	105	120							100500	100600	100700	100800	100900
110	115	130							110500	110600	110700	110800	110900
120	125	140							120500	120600	120700	120800	120900
130	135	155								130600	130700	130800	130900
140	145	165								140600	140700	140800	140900
150	155	180								150600	150700	150800	150900
160	165	190								160600	160700	160800	160900
170	175	200								170600	170700	170800	170900
180	185	215								180600	180700	180800	180900
190	195	225								190600	190700	190800	190900
200	205	235								200600	200700	200800	200900
225	230	260								225600	225700	225800	225900
250	255	290								250600	250700	250800	250900
265	270	305								265600	265700	265800	265900
285	290	325								285600	285700	285800	285900
300	305	340								300600	300700	300800	300900

SFB-092 Series Bronze Rolled Bushing

SFB-092 serie bronze rolled bushing is our new generation bushing based upon steel-bronze lead double metal bushings. It has same structure with F B - 0 9 2. We based on the same type of overseas products and make further development to produce. The design has be improved and can make a replacement of original one and cut down the cost. Therefore, our products have a wide application scope and practical value in machinery production.

The major feature of SFB-092 serie bushing is their thin-wall structure, which doesn't take up too large assembly space. Specially formulated high-density bronze alloy bands are used for the building of the bushing, which compared with traditional bushings, is featured in the high density, no shrinkage blowholes, high load sustainability and anti-wearing and anti-fatigue. The production of the bushing is by means of advanced fixture and molds, able to make oil holes, hole dents and grooves on the frication surfaces of the bands to suit various engineering applications, making it possible for the bushing to store large amount of lubricating grease when working. Therefore, the lubrication interval is prolonged and the service hours are effectively lengthened.

SFB-092 serie bearings are widely used in applications, such as agricultural machineries, construction machineries, engineering machineries and automobile industry.

Standard Size:

Stright Bearing P40, Flange Bearing P42.

Non-Standard Size:

Stright Bearing, Flange Bearing, Thrust washer, Strip, Bearing bushing, Wear strips, Steel combine units.

Product Benefits

1. Saving large amount of bronze material and save the working hours normally spent for lathing the bronze bushing.
2. Compared with lathed bushings and roller bearings, it is lights and more cost-effective.
3. Various holes and dents can be made on the frication surface for grease storage, prolonging the lubrication interval to 5 times as long as required by the bronze bushing.
4. Extremely high load sustainability, especially suitable for coarse abrasion surfaces.

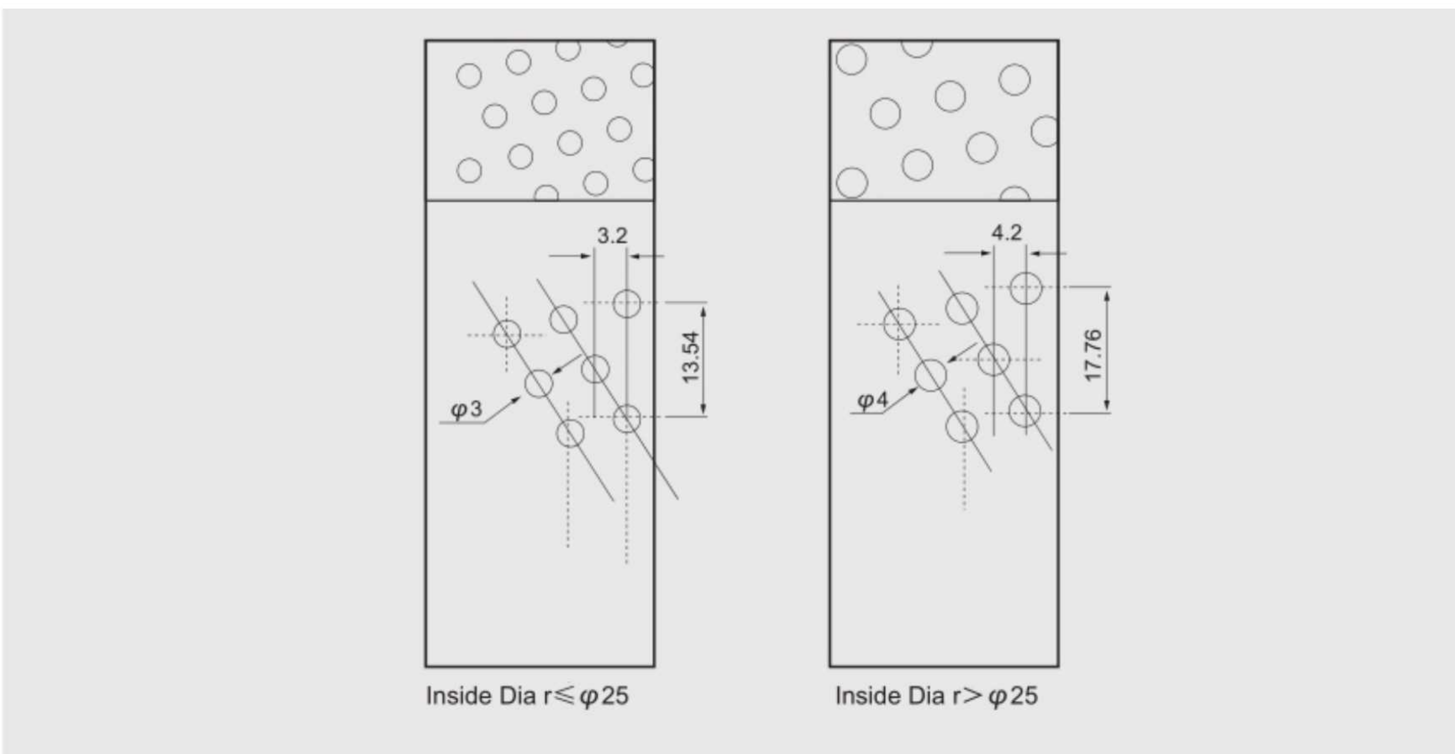
SFB-092 Series Bronze Rolled Bushing

Material Structure

High-density bronze is rolled into shape or oil bags and oil holes, specially integrated into the inner surface to reduce the wearing and prolong the service hours. Besides, it has excellent anti-corrosion functions.

Application scope

This series of bearing is widely applied to agricultural, construction and engineering machineries, etc.



Chemical Composition

Material: CuSn8P	Cu	Sn	P

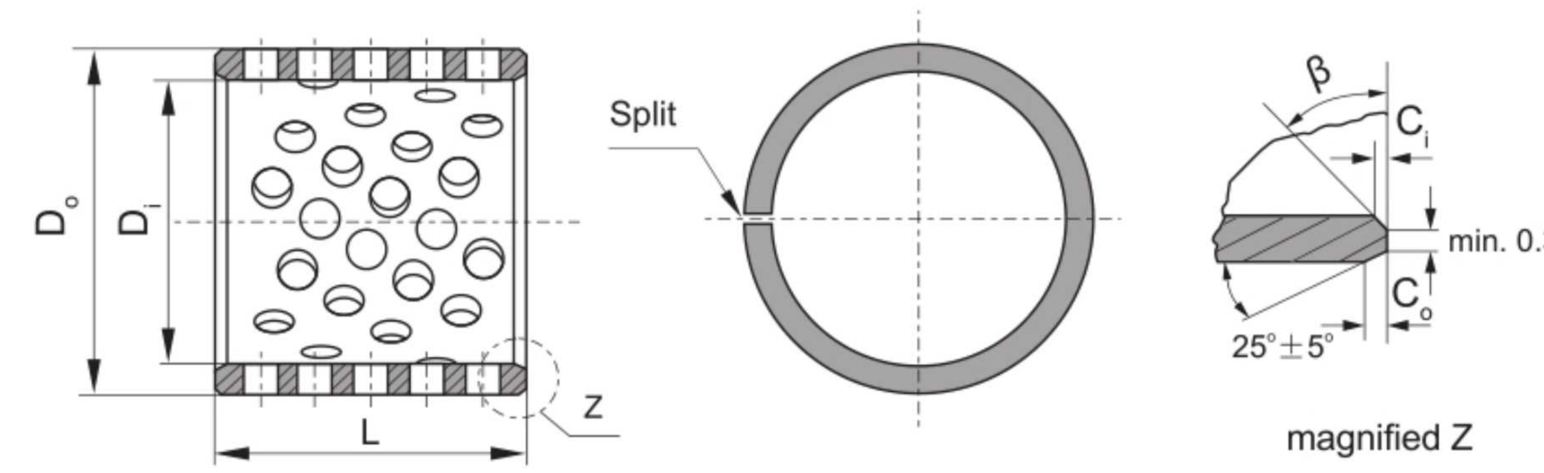
Physical Property

Type	Density	Heat Emission and Expansion	Heat Conducting	Hardness	Compression strength	Extensile
SFB-092	8.8g/cm³	$18.5\times10^{-6}\times K^{-1}$	58W(m k)	90~150HB	470N/mm²	40%

Standard tolerance for bushes (As per to DIW W91/1503547)

Standard Dia.	O.D.Size	Housing Bore	I.D.Size	Axle
10~18	+0.065 +0.030	+0.018 0	+0.046 0	-0.016 -0.043
18~30	+0.075 +0.035	+0.021 0	+0.052 0	-0.020 -0.020
30~50	+0.085 +0.045	+0.025 0	+0.062 0	-0.025 -0.064
50~80	+0.100 +0.055	+0.030 0	+0.074 0	-0.030 -0.076
80~120	+0.120 +0.070	+0.035 0	+0.087 0	-0.036 -0.090
120~180	+0.170 +0.100	+0.400 0	+0.100 0	-0.043 -0.106
180~250	+0.210 +0.130	+0.046 0	+0.115 0	-0.050 -0.122
250~315	+0.260 +0.170	+0.052 0	+0.130 0	-0.056 -0.137

FB-092 Bronze Bushing Specifications and Tolerances



ID and OD chamfers

S_3	C_o	C_i	β
0.75	0.5±0.3	0.25±0.2	35°±5°
1.00	0.6±0.3	0.30±0.2	35°±5°
1.50	0.7±0.3	0.50±0.3	35°±5°

S_3	C_o	C_i	β
2.00	1.2±0.4	0.50±0.3	35°±5°
2.50	1.8±0.6	0.60±0.3	45°±5°

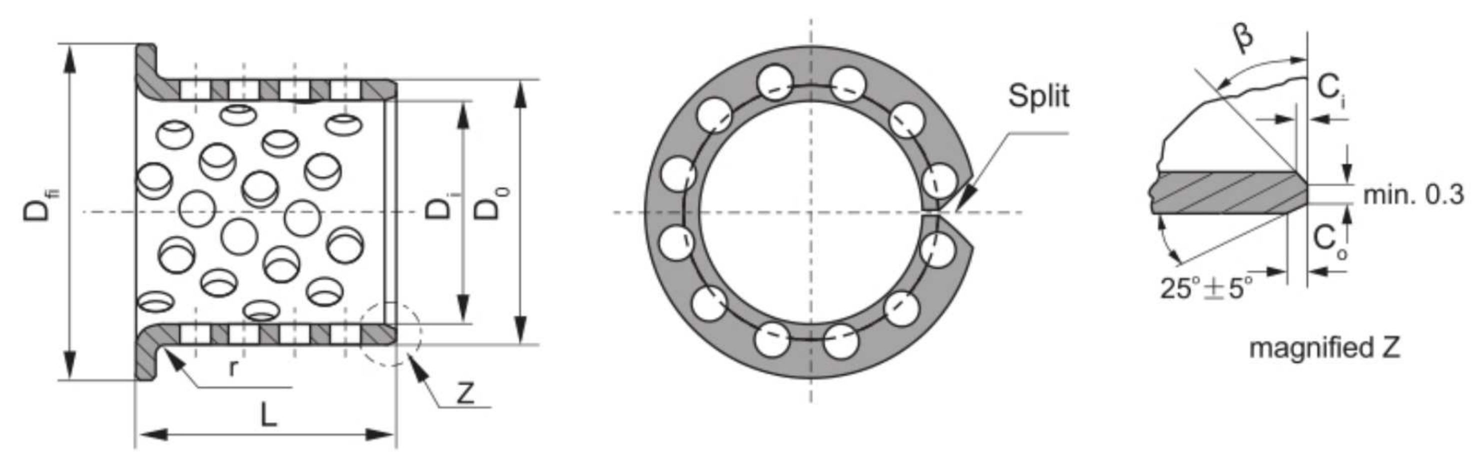
Unit: mm

D_i φd	D_o φD	$L^{0}_{-0.40}$												
		10	15	20	25	30	35	40	50	60	70	80	90	100
10	12	1010	1015	1020										
12	14	1210	1215	1220										
14	16	1410	1415	1420	1425									
15	17	1510	1515	1520	1525									
16	18	1610	1615	1620	1625									
18	20	1810	1815	1820	1825									
20	23	2010	2015	2020	2025									
22	25	2210	2215	2220	2225	2230								
24	27		2415	2420	2425	2430								
25	28		2515	2520	2525	2530								
28	31		2815	2820	2825	2830								
30	34		3015	3020	3025	3030	3035	3040						
32	36		3215	3220	3225	3230	3235	3240						
35	39		3515	3520	3525	3530	3535	3540						
40	44			4020	4025	4030	4035	4040	4050					
45	50			4520	4525	4530	4535	4540	4550					
50	55			5020	5025	5030	5035	5040	5050	5060				
55	60			5520	5525	5530	5535	5540	5550	5560				
60	65				6025	6030	6035	6040	6050	6060	6070			
65	70					6530	6535	6540	6550	6560	6570			
70	75					7030	7035	7040	7050	7060	7070	7080		
75	80					7530	7535	7540	7550	7560	7570	7580		
80	85					8030	8035	8040	8050	8060	8070	8080		
85	90					8530	8535	8540	8550	8560	8570	8580	8590	
90	95					9030	9035	9040	9050	9060	9070	9080	9090	
95	100							9540	9550	9560	9570	9580	9590	95100

FB-092 Bronze Bushing Specifications and Tolerances

D_i ϕd	D_o ϕD	$L\ ^{0}_{-0.40}$									
		25	30	35	40	50	60	70	80	90	100
100	105					10050	10060	10070	10080	10090	100100
105	110					10550	10560	10570	10580	10590	105100
110	115					11050	11060	11070	11080	11090	110100
115	120					11550	11560	11570	11580	11590	115100
120	125						12060	12070	12080	12090	120100
125	130						12560	12570	12580	12590	125100
130	135						13060	13070	13080	13090	130100
135	140						13560	13570	13580	13590	135100
140	145						14060	14070	14080	14090	140100
145	150						14560	14570	14580	14590	145100
150	155						15060	15070	15080	15090	150100
155	160						15560	15570	15580	15590	155100
160	165						16060	16070	16080	16090	160100
165	170						16560	16570	16580	16590	165100
170	175						17060	17070	17080	17090	170100
175	180						17560	17570	17580	17590	175100
180	185						18060	18070	18080	18090	180100
185	190						18560	18570	18580	18590	185100
190	195						19060	19070	19080	19090	190100
195	200						19560	19570	19580	19590	195100
200	205						20060	20070	20080	20090	200100
205	210						20560	20570	20580	20590	205100
215	220						21560	21570	21580	21590	215100
225	230						22560	22570	22580	22590	225100
230	235						23060	23070	23080	23090	230100
240	245						24060	24070	24080	24090	240100
250	255						25060	25070	25080	25090	250100
260	265						26060	26070	26080	26090	260100
270	275						27060	27070	27080	27090	270100
280	285						28060	28070	28080	28090	280100
290	295						29060	29070	29080	29090	290100
300	305						30060	30070	30080	30090	300100

FB-092F Bronze Flanged Bushing Specifications and Tolerances



S_3	1.0	1.5	2.0	2.5
r	$1^{-0.5}$	1±0.5	1.5±0.5	2±0.5

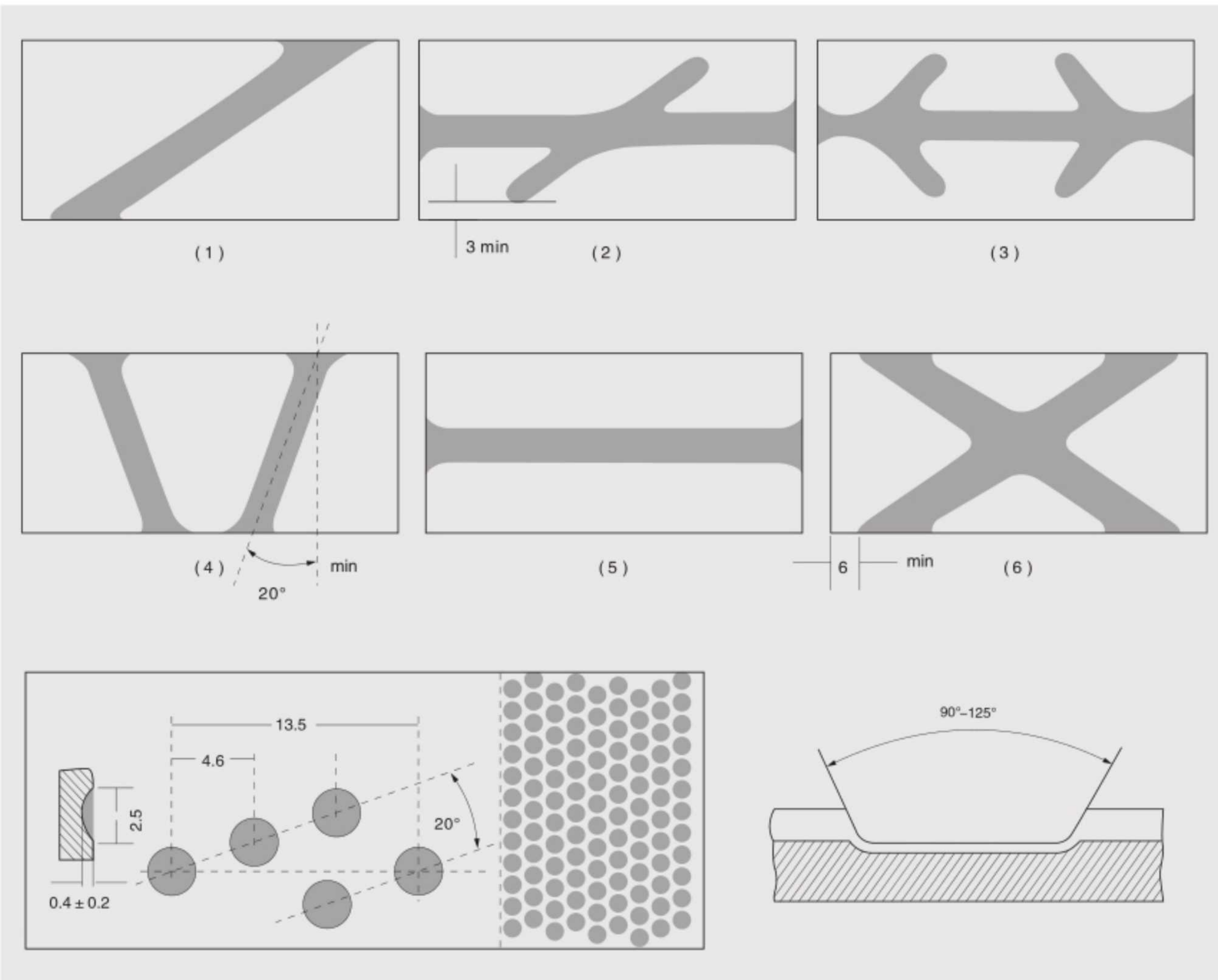
Unit: mm

D_i ϕd	D_o ϕD	D_{fl}	$L\ ^{0}_{-0.40}$										
			15	20	25	30	35	40	50	60	70	80	90
25	28	35	25150	25200	25250								
30	34	45		30200	30250	30300							
35	39	50		35200	35250	35300	35350						
40	44	55			40250	40300	40350	40400					
45	50	60				45300	45350	45400	45500				
50	55	65				50300	50350	50400	50500				
55	60	70				55300	55350	55400	55500				
60	65	75				60300	60350	60400	60500	60600			
65	70	80				65300	65350	65400	65500	65600			
70	75	85					70350	70400	70500	70600	70700		
75	80	90					75350	75400	75500	75600	75700		
80	85	95					80350	80400	80500	80600	80700	80800	
90	95	110							90500	90600	90700	90800	90900
100	105	120							100500	100600	100700	100800	100900
110	115	130							110500	110600	110700	110800	110900
120	125	140							120500	120600	120700	120800	120900
130	135	165								130600	130700	130800	130900
140	145	165								140600	140700	140800	140900
150	155	180								150600	150700	150800	150900
160	165	190								160600	160700	160800	160900
170	175	200								170600	170700	170800	170900
180	185	215								180600	180700	180800	180900
190	195	225								190600	190700	190800	190900
200	205	235								200600	200700	200800	200900
225	230	260								225600	225700	225800	225900
250	255	290								250600	250700	250800	250900
265	270	305								265600	265700	265800	265900
285	290	325								285600	285700	285800	285900
300	305	340								300600	300700	300800	300900

SJF-800 Bimetallic Self-Lubricating Bushing

SJF-800 Bimetallic Self-Lubricating Bushing

Bimetallic self-lubricating bearing tank shape



Surface Roughness of Bimetal Bushes:

List	Precision bushes (size in place)	Bronze Surface
Bronze Surface	R20.8	R26.3
Steel Backing	R21.6	R210
Other Surfaces	R22.5	R2100

According to DIN4768, Part1

Technical Data

Performance index \ Type		JF-800	CNP-720	CNP-700	CNP-20	CNP-930
P (N/mm^2) Max Load Capacity		150	130	120	100	150
(N/mm^2) Tensile Strength		185	150	200	200	185
V(m/s) Max Sliding Speed (Oil Lubrication)		5	10	15	25	5
Friction coefficient		0.05～0.20	0.06～0.16	0.08～0.16	0.08～0.17	0.06～0.16
N/mm^2 m/s Max PV Value Limit	Grease lubrication	2.8	2.8	2.5	–	2.8
	Oil lubrication	10	10	8	6	-

Application Characteristics

Material Trademark	Using Conditions	Use Occasions
SJF-800	High fatigue strength and bearing capacity, strong impact resistance, wear resistance and corrosion resistance.	Medium speed, high impact load bushing, internal combustion engine connecting rod piston pin bushing
SJF-720	High fatigue strength and load carrying capacity, good sliding performance, easy to be corroded by lubricating oil	middle load middle speed, principle axis of internal combustion engine.
SJF-700	Good resistance to fatigue strength, load capacity, shock resistance.	Principle axis of internal combustion engine, connecting rod bushing.
SJF-20	Good performance of anti-seizing, covering eyewinker, soft alloy be plated on working surface.	High speed, middle or low load, principle axis internal combustion engine
SJF-930	Medium fatigue resistance and load carrying capacity, good corrosion resistance, good bearing sliding performance	High speed and low load internal combustion engine bearing bush, air compressor, refrigerator

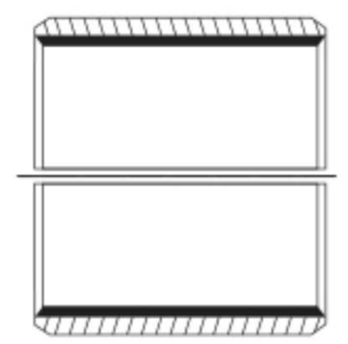
SJF-800 Bimetallic Self-Lubricating Bushing

J F - 8 0 0 Bimetallic self-lubricating bearing used high quality low-carbon steel plate as base, sintered porous bronze as its surface, suitable for rotatory oscillating, reciprocating movements on the conditions of high load.low speed, low friction, well wear resistance, long lifetime and better prevent from holding-on.The bronze layer surface can be machined with various of grooves, oil pockets in terms of different work condition. The product is widely used in mining machinery, automobile, building machinery, agriculture equipment, rolling steel industry etc.

Material Characterisitc

Material Trademark	Alloy Composition	Alloy Hardness	International Standard
JF-800	CuPb10Sn10	70～100HB	SAE-797. DIN CuPb10Sn. JIS-LBC3. UNS C93700. Clevite F100. Daido L10. D. A. B. D57. Federal Mogul HF2. Glacier SY. Glyco66. Miba2. 1010.Taiho HF2. Kar l Schmiat KS940SSAE-797. DIN CuPb10Sn. JIS-LBC3. UNS C93700. Clevite F100. Daido L10. D. A. B D57. Federal Mogul HF2 Glacier SY. Glyco66. Miba2. 1010. Taiho HF2. Karl Schmiat Ks940s
JF-720	CuPb24Sn4	45～70HB	SAE=799. GLYCO 68. JIS-LBC6. DAIDO L23. Claciersx. ACLF250
JF-700	CuPb30	30～45HB	SAE-783. GLYCO74. JIS-AJL
JF-20	AlSn20Cu	30～40HB	SAE-48. JIS-KJ3
JF-930	CuPb6.5P0.1	69～90HB	

Material Characterisitc



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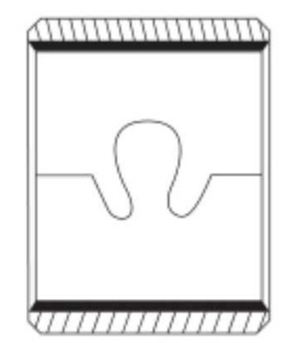

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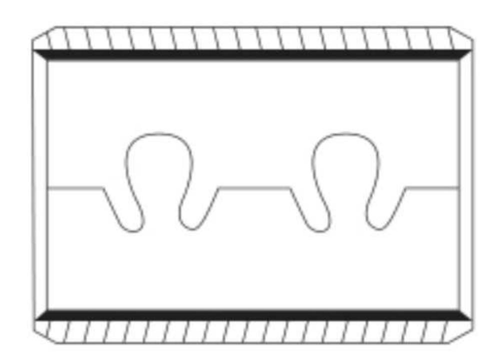

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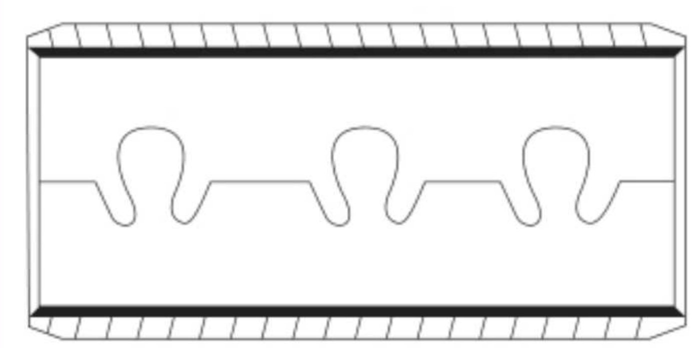
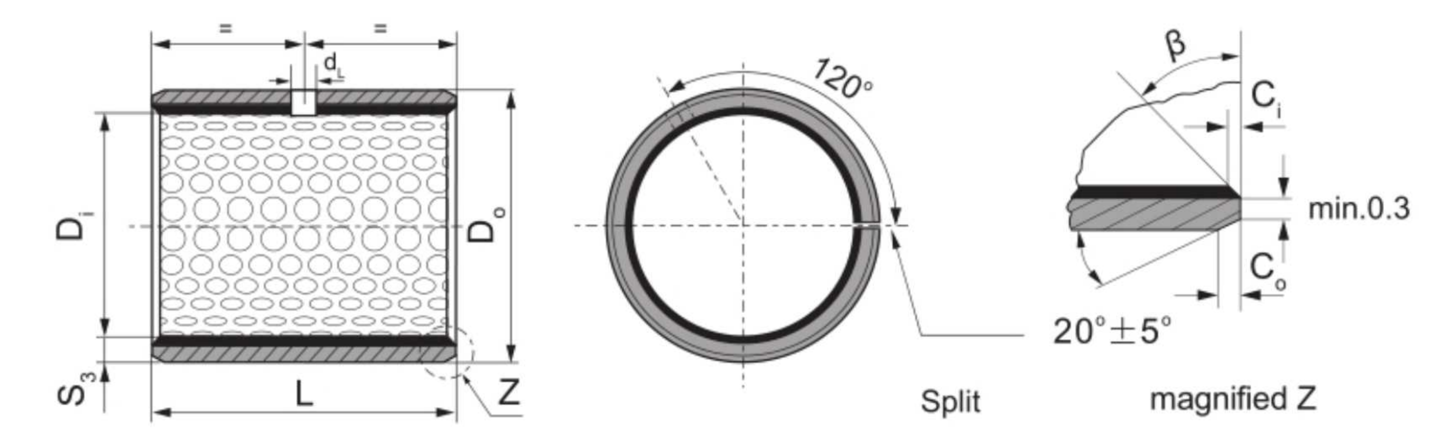
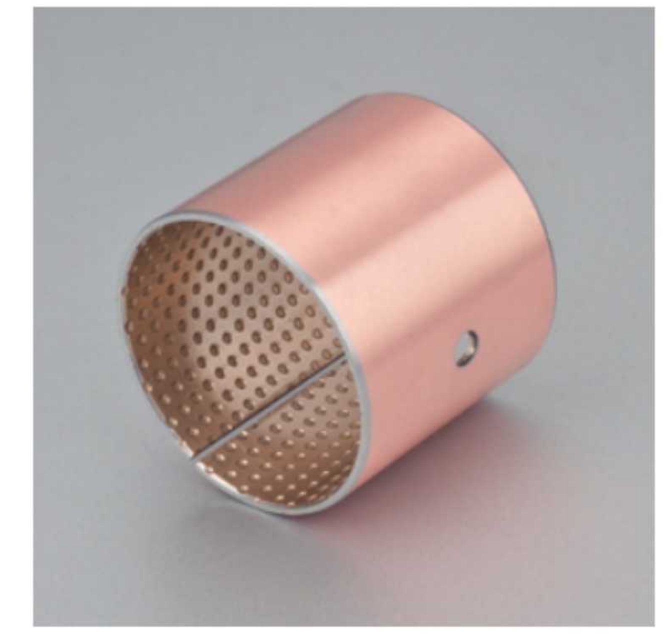


D

SJF-800 Bimetallic Bearing Specifications and Tolerances





ID and OD chamfers

S_3	C_o	C_i	β
0.75	0.5±0.3	0.25±0.2	35°±5°
1.00	0.6±0.3	0.30±0.2	35°±5°
1.50	0.7±0.3	0.50±0.3	35°±5°

S_3	C_o	C_i	β
2.00	1.2±0.4	0.50±0.3	35°±5°
2.50	1.8±0.6	0.60±0.3	45°±5°

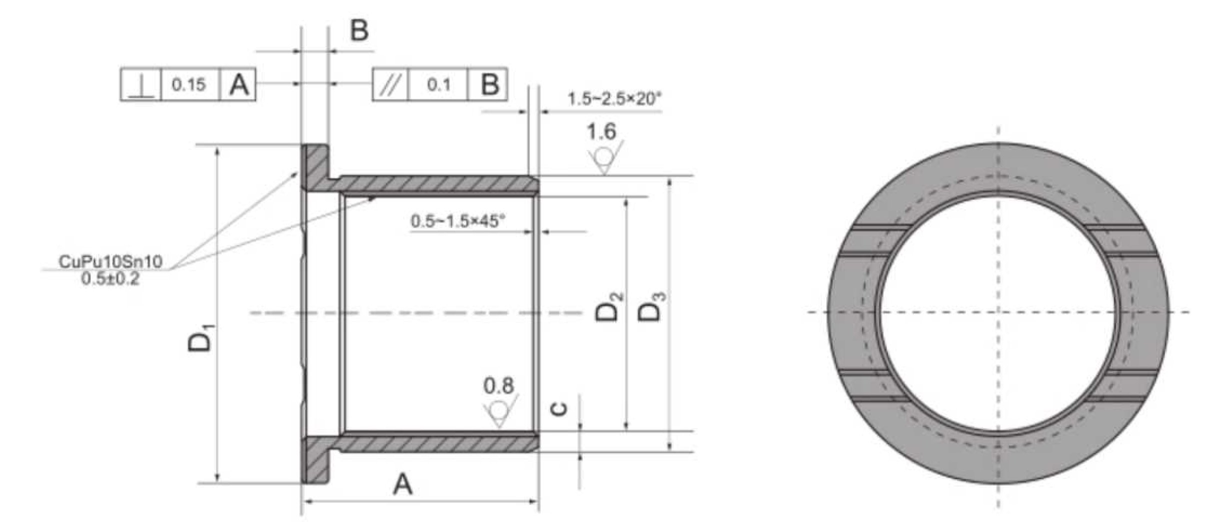
unit:mm

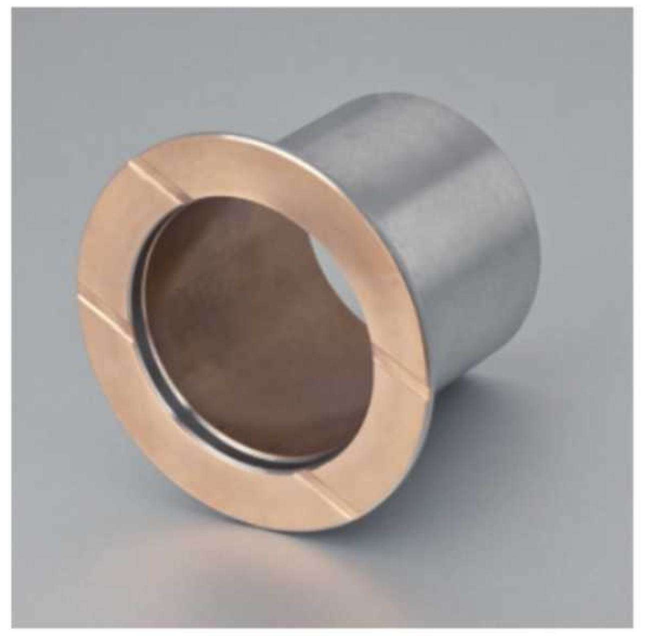
D_i φd	D_O φD	Shaft D_s	Housing D_H	Arter fixed $D_{i,a}$	Clearance C_D	Wall thickness S_3	Oil hole d_L	L $^{0}_{-0.40}$						
								10	15	20	25	30	40	50
10	12	$10_{-0.022}$	$12^{+0.018}$	$^{+0.148}_{+0.010}$	$^{0.170}_{0.010}$	$^{0.995}_{0.935}$	4	1010	1015	1020				
12	14	$12_{-0.027}$	$14^{+0.018}$		$^{0.175}_{0.010}$			1210	1215	1220				
14	16	$14_{-0.027}$	$16^{+0.018}$					1410	1415	1420				
15	17	$15_{-0.027}$	$17^{+0.018}$					1510	1515	1520				
16	18	$16_{-0.027}$	$18^{+0.018}$					1610	1615	1620				
18	20	$18_{-0.027}$	$20^{+0.021}$	$^{+0.151}_{+0.010}$	$^{0.178}_{0.010}$			1810	1815	1820	1825			
20	23	$20_{-0.033}$	$23^{+0.021}$	$^{+0.161}_{+0.020}$	$^{0.194}_{0.020}$	$^{1.490}_{1.430}$		2010	2015	2020	2025			
22	25	$22_{-0.033}$	$25^{+0.021}$				6	2210	2215	2220	2225			
24	27	$24_{-0.033}$	$27^{+0.021}$					2410	2415	2420	2425	2430		
25	28	$25_{-0.033}$	$28^{+0.021}$						2515	2520	2525	2530		
26	30	$26_{-0.033}$	$30^{+0.021}$	$^{+0.181}_{+0.040}$	$^{0.214}_{0.040}$	$^{1.980}_{1.920}$			2615	2620	2625	2630		
28	32	$28_{-0.033}$	$32^{+0.025}$	$^{+0.185}_{+0.040}$	$^{0.218}_{0.040}$				2815	2820	2825	2830	2840	
30	34	$30_{-0.033}$	$34^{+0.025}$						3015	3020	3025	3030	3040	
32	36	$32_{-0.039}$	$36^{+0.025}$		$^{0.224}_{0.040}$				3215	3220	3225	3230	3240	
35	39	$35_{-0.039}$	$39^{+0.025}$							3520	3525	3530	3540	3550
38	42	$38_{-0.039}$	$42^{+0.025}$				8			3820	3825	3830	3840	3850
40	44	$40_{-0.039}$	$44^{+0.025}$							4020	4025	4030	4040	4050

SJF-800 Bimetallic Bearing Specifications and Tolerances

D_i φd	D_O φD	Shaft D_s	Housing D_H	Arter fixed $D_{i,a}$	Clearance C_D	Wall thickness S_3	Oil hole d_L	$L^{0}_{-0.40}$ 25	30	40	50	60	80	90	100
45	50	$45_{-0.039}$	$50^{+0.025}$	$^{+0.225}_{+0.080}$	0.264 0.080	2.460 2.400	8	4525	4530	4540	4550				
50	55	$50_{-0.039}$	$55^{+0.030}$	$^{+0.230}_{+0.080}$	0.269 0.080				5030	5040	5050	5060			
55	60	$55_{-0.046}$	$60^{+0.030}$		0.276 0.080				5530	5540	5550	5560			
60	65	$60_{-0.046}$	$65^{+0.030}$						6030	6040	6050	6060			
65	70	$65_{-0.046}$	$70^{+0.030}$						6530	6540	6550	6560			
70	75	$70_{-0.046}$	$75^{+0.030}$						7030	7040	7050	7060	7080		
75	80	$75_{-0.046}$	$80^{+0.030}$				9.5		7530	7540	7550	7560	7580		
80	85	$80_{-0.046}$	$85^{+0.035}$	$^{+0.235}_{+0.080}$	0.281 0.080				8030	8040	8050	8060	8080	8090	
85	90	$85_{-0.054}$	$90^{+0.035}$		0.289 0.080				8530	8540	8550	8560	8580	8590	85100
90	95	$90_{-0.054}$	$95^{+0.035}$							9040	9050	9060	9080	9090	90100
95	100	$95_{-0.054}$	$100^{+0.035}$								9550	9560	9580	9590	95100
100	105	$100_{-0.054}$	$105^{+0.035}$								10050	10060	10080	10090	100100
105	110	$105_{-0.054}$	$110^{+0.035}$								10550	10560	10580	10590	105100
110	115	$110_{-0.054}$	$115^{+0.035}$								11050	11060	11080	11090	110100
115	120	$115_{-0.054}$	$120^{+0.035}$								11550	11560	11580	11590	115100
120	125	$120_{-0.054}$	$125^{+0.040}$	$^{+0.240}_{+0.080}$							12050	12060	12080	12090	120100
125	130	$125_{-0.063}$	$130^{+0.040}$		0.303 0.080							12560	12580	12590	125100
130	135	$130_{-0.063}$	$135^{+0.040}$									13060	13080	13090	130100
135	140	$135_{-0.063}$	$140^{+0.040}$									13560	13580	13590	135100
140	145	$140_{-0.063}$	$145^{+0.040}$									14060	14080	14090	140100
150	155	$150_{-0.063}$	$155^{+0.040}$									15060	15080	15090	150100

SJF-800 Bimetallic Bearing Specifications and Tolerances





unit:mm

D_1	B	D_3	D_2	A	C
42	3.5	37	30	30	3.5
43	2	34	30	28	2
44	3.5	39	32	35	3.5
47	3.5	39	32	50	3.5
48	2	39	35	37	2
52	3	41	35	35	3
55	3.5	42	35	35	3.5
55	3.5	45	38	35	3.5
55	3.5	45	38	40	3.5
60	3	41	35	42	3
60	3	46	40	62	3
63	3.5	47	40	40	3.5
65	3.5	52	45	40	3.5
68	3.5	54	47	35	3.5
70	3.5	54	47	40	3.5
70	3.5	57	50	48	3.5
72	3.5	57	50	45	3.5
72	3.5	57	50	50	3.5
75	3.5	57	50	50	3.5
77	3	60	54	55	3
83	3.5	66	59	53	3.5
85	3.5	65	58	60	3.5
87	3.5	67	60	53	3.5
87	3.5	67	60	60	3.5

D_1	B	D_3	D_2	A	C
87	3.5	67	60	65	3.5
87	4	68	60	60	4
94	3.5	72	65	60	3.5
87	3.5	72	65	65	3.5
87.5	1.95	69.12	65.22	64.5	2
88	3.5	67	60	60	3.5
88	3.5	72	65	65	3.5
92	3.5	77	70	67	3.5
93	3.5	75	68	60	3.5
94	3.5	77	70	70	3.5
95	3.5	77	70	65	3.5
95	4	78	70	70	4
97	3.48	77.14	70.18	62	3.5
97	3.5	82	75	74	3.5
100	5	85	75	70	5
103	3.525	70.8	63.75	73	3.5
105	3.5	82	75	75	3.5
105	3.5	87	80	70	3.5
107	4	83	75	74	4
115	5	100	90	75	5
128	3.8	92.6	85	103	4
108	3.5	72	65	75	3.5
108	3.5	77	70	98	3.5
108	5	80	70	90	5