



# lubricating bearings

An responsible/reliable partner

Tel: +886-2-29160506 Fax: +886-2-29160491 SMQ@CALLSMQ.COM

## SF-10 自潤滑卷制軸承 Self-lubricating bearings

### 材料組織結構 Structure

- 1、聚四氟乙烯與鉛混合物 PTFE with lead 0.01-0.03mm
- 2、球形青銅粉 Porous bronze 0.2-0.3 mm
- 3、鋼背 Steel backing
- 4、鍍錫或鍍銅 Copper/Tin plating 0.002mm

### 技術參數 Tech.Data

最大載荷 Max.Load	靜承載 Static	250N/mm <sup>2</sup>	磨擦係數 Friction Cofee.		0.03-0.20u
	動承載 Dynamic	140N/mm <sup>2</sup>	最大速率 Speed limit	幹磨擦 Dry	2m/s
	搖擺運動 Oscillating	60N/mm <sup>2</sup>		油潤滑 Oil	5m/s
最大 PV 值 PV limit	幹磨擦 Dry	3.6N/mm <sup>2</sup> ×m/s	導熱係數 Thermal conductivity		2.41Kcal/M.br.C
	油潤滑 Oil	50N/mm <sup>2</sup> ×m/s	熱膨脹係數 Coeff.of linear expansion		27×10 <sup>-6</sup> per°C
使用溫度 Temp.limit		-195°C ~+280°C			

### 應用特點 Application characteristics

- 1、無油潤滑或少油潤滑，適用於無法加油或很難加油的場所，可在使用時不保養或少保養。  
It may be used where no oil can be applied or oil is difficult to be applied.
- 2、耐磨性能好，摩擦係數小，使用壽命長。  
It has the advantage of low wear,low friction and with long life.
- 3、有適量的彈塑性，能將應力分佈在較寬的接觸面上，提高軸承的承載能力。  
Load will spread over a wider area due to the bearing material's elastic nature.
- 4、靜動摩擦係數相近，能消除低速下的爬行，從而保證機械的工作精度。  
Low stick slip properties ensuring accuracy of machine operation under low silding speeds.
- 5、能使機械減少振動、降低噪音、防止污染，改善勞動條件。  
Low vibration,low noise and non-pollution in operation.



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6、在運轉過程中能形成轉移膜，起到保護對磨軸的作用，無咬軸現象。

PTFE and Lead film is transferred to the mating shaft to improve running properties.

7、對於磨軸的硬度要求低，未經調質處理的軸都可使用，從而降低了相關零件的加工難度。

It can be used in low hardness of mating shaft,so the shafts processing is easy.

8、薄壁結構、品質輕，可減少機械體積。

The machine will be compact because of the thin thickness and low weight of the bush.

9、鋼背面可電鍍多種金屬，可在腐蝕介質中使用；目前已廣泛應用於各種機械的滑動部位，例如：印刷機、紡織機、煙草機械、微電機、汽車、摩托車與農林機械等等。

Electro plating is plssible to prevent corrosion.It is widely used in various sliding motions of defferent kind of machines such as textile machine,tobacco machines,hydraulic vehicles Automobiles,agriculture machines and so on.

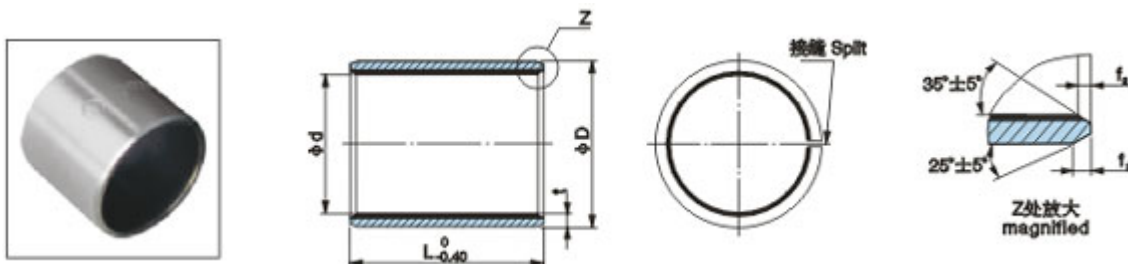
■ 可供標準產品：直套 P3、P7，翻邊軸套 P5、P9，止推墊片 P6、P10，板材 P6。

Provide standardized products:Cylindrical bushes P3、P7,flanged bushes P5、P9,thrust washers P6、P10,flat strip materila P6.

可供非標產品：直套，翻邊軸套，止推墊片，板材，軸瓦，滑板，鋼套組零件。

Provide non-standardized products:Cylindrical bushes,flanged bushes,thrust washers,flat strip material, half bearing, wear plate,SF-10 with steel bush.

## SF-10 自潤滑卷制軸承 Self-lubricating bearings metric sizes



單位 Unit:mm

样品照片:



SGS 仅对原报告照片中的样品负责

\*\*\*报告结束\*\*\*

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化学方法的试验结果 (单位: mg/kg)

测试项目:	方法 (参见)	1	MDL	RoHS 限值
镉(Cd)	(1)	ND	2	100
铅(Pb)	(2)	105	2	1000
汞(Hg)	(3)	ND	2	1000
点测试/沸水萃取法测六价铬(Cr VI)	(4)	Negative	参见备注 (4)	#

测试部件外观描述:

1. 银色金属轴套

备注:

- (1) mg/kg = ppm
- (2) ND = 未检出
- (3) MDL = 检测极限值
- (4) 点测试法:  
**Negative** = 镀层中未检测到六价铬, **Positive** = 镀层中检测到六价铬;  
 (当点测试结果无法确定时,将采用沸水萃取法作进一步的结果验证。)  
 沸水萃取法:  
**Negative** = 镀层中未检测到六价铬  
**Positive** = 镀层中检测到六价铬; 表明 50 cm<sup>2</sup> 表面积的被测试样品的沸水萃取液中六价铬的浓度等于或大于 0.02 mg/kg
- (5) # = **Positive** 表示在被测样品上检测到六价铬, 结果与 RoHS 要求相抵触。  
**Negative** 表示在被测样品上未检测到六价铬, 结果与 RoHS 要求不相抵触。
- (6) 最大允许极限值引用自 2002/95/EC RoHS 指令和后续修正指令 2005/618/EC。

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嘉善峰成三复轴承有限公司  
浙江省嘉善县魏塘镇城西工业园区

委托检验的样品及客户对样品的说明如下:

样品名称 : SF-11 无铅轴套  
SGS 相关号 : 10286942  
主要成份 : 铁, 铜, 锡, 聚四氟乙烯, 锌

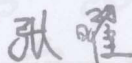
样品收到日期 : 2009-02-05  
样品试验日期 : 2009-02-05—2009-02-11

试验要求 : 参照 RoHS 指令 2002/95/EC 及后续修正指令。

试验方法 : (1) 参照 IEC 62321 Ed 111/54/CDV, 用 ICP 和 AAS 方法测定镉的含量  
(2) 参照 IEC 62321 Ed 111/54/CDV, 用 ICP 和 AAS 方法测定铅的含量  
(3) 参照 IEC 62321 Ed 111/54/CDV, 用 ICP 测定汞的含量  
(4) 参照 IEC 62321 Ed 111/54/CDV, 采用点测试法/比色法测定六价格的含量

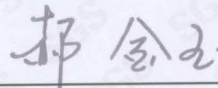
试验结果 : 见后续页

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张曜  
高级主管

SGS-CSTC 化学实验室授权签字



郝金玉  
实验室经理

根据客户申请, SGS 出具了此中文报告; 英文版本可根据客户要求提供。(The Chinese test report is issued according to the applicant's request. The English version is available from SGS if further needed.)

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SHCHEM 1085992



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Recommended				外徑 : OD.D		壁厚 Wall Thickness t	f <sub>1</sub>	f <sub>2</sub>	軸承長度及軸承規格 Bearing Length and Part Number															
相配軸徑 Shaft Dia.	相配座孔 Housing Bore								6	8	10	12	15	20	25	30	40	50						
2	0 -0.004	3.5	+0.008	3.5	+0.066 -0.026	0.75 <sup>0</sup> -0.080	0.4	0.3																
4	0 -0.004		0	4					0406	0408														
5	+0.010	7	+0.015	7					1.0 +0.065 +0.080	0.5	0.3	0506	0508	0610										
6	-0.068	8		8	0806	0608	0610																	
8	-0.018	10	0	10	0806	0808	0810	0812				0815												
10	-0.029	12	+0.018	12	1006	1008	1010	1012				1015	1020											
12		14		14	1206	1208	1410	1412				1415	1220	1225										
14	-0.016	16		0	16			1410				1412	1415	1420	1425									
16	-0.064	18			18			1610				1612	1615	1620	1625									
18		20	+0.021	20	1.5 +0.006 -0.026								1810	1812	1815	1820	1625							
20		23		23									2010	2012	2015	2020	2025	2030						
22		25		0				25				2210	2212	2215	2220	2225	2230							
24	-0.083	27						27					2415	2420	2425	2430								
25	-0.041	28						28				2510	2512	2515	2520	2525	2530	2540	2550					
28		32	+0.025	32	+0.086 0.040	+0.005 -0.050	1.0	0.6			2815	2820	2825	2830	2840									
30		34		34							3012	3015	3020	3025	3030	3040								
32		36		0					36					3220		3230	3240							
35	-0.025	39							39				3512	3515	3520	3525	3530	3540	3550					
38	-0.060	42		42					3815			3830	3840											
40		44		44					4012		4020	4025	4030	4040	4050									

長度可按要求定制 Other lengths to order

單位 Unit: mm

Recommended		外徑 OD.D	壁厚 Wall Thickness t	t1	t2	軸承長度及軸承規格 Bearing Length and Part Number								
相配軸徑 Shaft Dia.	相配座孔 Housing Bore					20	25	30	40	50	60	70	80	100



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45	-0.035	50	+0.026 0	50	+0.086 +0.046	2.5 <sup>+0.005</sup> <sub>-0.040</sub>	1.2	0.8	4520	4525	4530	4540	4550										
50	-0.060	55	+0.080 0	55	+0.100 +0.066				5020	5030	5040	5050	5060										
55	-0.030 -0.040	60		60					6030	6040	6050	6060	6070										
60		65		65					6530	6540	6550	6560	6570										
65		70		70					7040	7050	7060	7070											
70		75		75					7530	7540	7550	7560	7570	7580									
75		80		80					8040	8050	8060	8070	8080	80100									
80		0 -0.030		85					+0.086 0	85	+0.120 +0.070	8540	8560	8580	85100								
85	-0.056	90		90		9040	9050	9060		9080		90100											
90		95	95	9520	9550	9560	9580	95100															
95		100	100	10050	10060	10080																	
100		0 -0.056	105	105	10560	10580																	
105		-0.040	110	110	11060	11080																	
110			115	115	12060	12080	120100																
120	125		125	12560	125100																		
125	0		130	+0.040	135	+0.170	13060	13080	130100														
130			135	145	+0.100	14060	14080	140100															
140			0	145	0	15050	15060	15080	150100														
150		-0.040	155	155	16060	16080	160100																
160		-0.046	165	165	18080	180100																	
180			185	185	19080	190100																	
190	0		195	+0.046	195	+0.210	20060	20080	200100														
200			205	205	+0.180	22080	220100																
220			-0.046	225	225	25080	250100																
250			-0.052	255	+0.062	265	+0.260	26080	260100														
260		265		265	+0.170	28080	280100																
280		285		285	30080	300100																	
300	305	305																					

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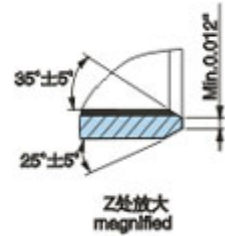
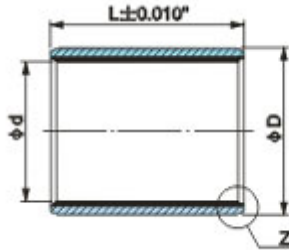


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## SF-10 自潤滑卷制軸承英制尺寸 Self-lubricating bearings inch sizes



單位 Unit:mm

尺寸 Nominal Bearing Bore	Recommended		內徑 Instrlled Bearing I.D.	軸承長度及軸承規格 Bearing Length and Part Number													
	軸徑 Shaft Dia.	座孔 Housing Bore		1/3	5/32	3/16	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	
1/8	0.1243	0.1873	0.1243	02/02		02/03											
	0.1236	0.1878	0.1268														
5/32	0.1554	0.2186	0.1556	025/025		025/04											
	0.1547	0.2191	0.1581														
3/16	0.1865	0.2497	0.1867			03/03	03/04	03/06									
	0.1858	0.2503	0.1893														
1/4	0.2490	0.3122	0.2492				04/04	04/06									
	0.2481	0.3128	0.2518														
5/16	0.3115	0.3747	0.3117					05/06	05/08								
	0.3106	0.3753	0.3143														
3/8	0.3740	0.4684	0.3742			06/03	06/04	06/06	06/08	06/10	06/12						
	0.3731	0.4691	0.3769														
7/16	0.4365	0.5309	0.4367						07/08		07/12						
	0.4355	0.5316	0.4394														
1/2	0.4990	0.5934	0.4992				08/04	08/06	08/08	08/10	08/12	08/14					
	0.4980	0.5941	0.5019														
9/16	0.5615	0.6559	0.5617					09/06	09/08	09/10	09/12						
	0.5605	0.6566	0.5644														
5/8	0.6240	0.7184	0.6242				10/04		10/08	10/10	10/12	10/14	10/16				
	0.6230	0.7192	0.6270														





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11/16	0.6865 0.6855	0.7809 0.7817	0.6867 0.6895								11/14			
3/4	0.7491 0.7479	0.8747 0.8755	0.7493 0.7525				12/04	14/06	12/08	12/10	12/12		12/16	
13/16	0.8116 0.8106	0.9372 0.9380	0.8118 0.8150								13/12		13/18	
7/8	0.8741 0.8729	0.9997 1.0005	0.8743 0.8775				14/04	14/06			14/12		14/16	14/20
1	0.9991 0.9979	1.1247 1.1255	0.9993 1.0025					16/06	06/08		16/12		16/16	16/20 16/24
11/8	1.1238 1.1226	1.2808 1.2818	1.1240 1.1278					18/06		18/10	18/12		18/16	
11/4	1.2488 1.2472	1.4058 1.4068	1.2490 1.2528					20/06			20/12	20/14	20/16	20/20
13/8	1.3738 1.3722	1.5308 1.5318	1.3740 1.3778								22/12		22/16	22/24
11/2	1.4988 1.4972	1.6558 1.6568	1.4990 1.5028						24/08				24/16	24/18 24/20 24/24
15/8	1.6238 1.6222	1.7808 1.7818	1.6240 1.6278										26/16	26/24

長度可按要求定制 Other lengths to order

單位 Unit:mm

尺寸 Nominal Bearing Bore	Recommended		內徑 Installed Bearing I.D.	軸承長度及軸承規格 Bearing Length and Part Number											
	軸徑 Shaft Dia.	座孔 Housing Bore		1	1 1/2	1 5/8	2	2 1/4	2 3/8	2 1/2	3	3 1/2	3 3/4	4	4 1/2
1 3/4	1.7487 1.7471	1.9371 1.9381	1.7489 1.7535	28/16	28/24		28/32								
1 7/8	1.8737 1.8721	2.0621 2.0633	1.8739 1.8787	30/16				30/36							
2	1.9987 1.9969	2.1871 2.1883	1.9989 2.0037	32/16	32/24		32/32			32/40					
2 1/8	2.1257 2.1239	2.3118 2.3130	2.1262 2.1326								34/48				
2 1/4	2.2507	2.4365	2.2509				36/32			36/40	36/48	36/56	36/60	36/64 36/72	



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	2.2489	2.4377	2.2573											
2 1/2	2.5011	2.6869	2.5013											
	2.4993	2.6881	2.5077			40/32			40/40	40/48	40/56	40/60	40/64	40/72
2 3/4	2.7500	2.9358	2.7502											
	2.7482	2.9370	2.7566			44/32	44/36		44/40	44/48	44/56	44/60	44/64	44/72
2 7/8	2.8752	3.0610	2.8754											
	2.8734	3.0623	2.8819			46/32	46/36		46/40	46/48	46/56	46/60	46/64	46/72
3	3.0000	3.1858	3.0002											
	2.9982	3.1872	3.0068			48/32	48/36		48/40	48/48	48/56	48/60	48/64	48/72
3 1/4	3.2500	3.4358	3.2502											
	3.2480	3.4372	3.2568			52/32		52/38	52/40	52/48	52/56	52/60	52/64	52/72
3 1/2	3.5000	3.6858	3.5002											
	3.4978	3.6872	3.5068			56/32		56/38	56/40	56/48	56/56	56/60	56/64	56/72
3 5/8	3.6250	3.8108	3.6252											
	3.6228	3.8122	3.6318			58/32	58/36		58/40	58/48	58/56	58/60	58/64	58/72
3 3/4	3.7500	3.9358	3.7502											
	3.7478	3.9372	3.7568			60/32	60/36		60/40	60/48	60/56	60/60	60/64	60/72
4	4.0000	4.1858	4.0002											
	3.9978	4.1872	4.0068			64/32	64/36		64/40	64/48	64/56	64/60	64/64	64/72
4 1/4	4.2500	4.4358	4.2502											
	4.2478	4.4372	4.2568			68/32	68/36		68/40	68/48	68/56	68/60	68/64	68/72
4 3/8	4.3750	4.5608	4.3752											
	4.3728	4.5622	4.3818			70/32	70/36		70/40	70/48	70/56	70/60	70/64	70/72
4 1/2	4.5000	4.6858	4.5002											
	4.4978	4.6872	4.5068			72/32	72/36		72/40	72/48	72/56	72/60	72/64	72/72
4 3/4	4.7500	4.9358	4.7502											
	4.7475	4.9374	4.7572			76/32	76/36		76/40	76/48	76/56	76/60	76/64	76/72
5	4.9986	5.1844	4.9988											
	4.9961	5.1860	5.0056			80/32	80/36		80/40	80/48	80/56	80/60	80/64	80/72
5 1/4	5.2500	5.4358	5.2502											
	5.2475	5.4374	5.2570			84/32	84/36		84/40	84/48	84/56	84/60	84/64	84/72
5 1/2	5.5000	5.6858	5.5002											
	5.4975	5.6874	5.5070			88/32	88/36		88/40	88/48	88/56	88/60	88/64	88/72
5 3/4	5.7500	5.9358	5.7502											
	5.7475	5.9374	5.7570			92/32	92/36		92/40	92/48	92/56	92/60	92/64	92/72



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6	6.000	6.1858	6.0002				96/32	96/36		96/40	96/48	96/56	96/60	96/64	96/72
	5.9975	6.1874	6.0070												
6 1/4	6.2500	6.4358	6.2502				100/32	100/36		100/40	100/48	100/56	100/60	100/64	100/72
	6.2475	6.4374	6.2570												
6 1/2	6.5000	6.6858	6.5002				104/32	104/36		104/40	104/48	104/56	106/60	104/64	104/72
	6.4975	6.6874	6.5070												
6 3/4	6.7500	6.9358	6.7502				108/32	108/36		108/40	108/48	108/56	108/60	108/64	108/72
	6.7475	6.9374	6.7570												
7	6.9954	7.1812	6.9956				112/32	112/36		112/40	112/48	112/56	112/60	112/64	112/72
	6.9929	7.1830	7.0026												

長度可按要求定制 Other lengths to order

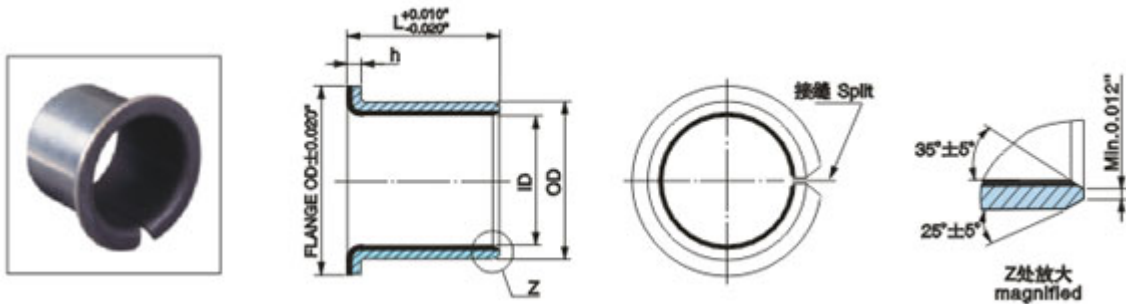


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## SF-10F 自潤滑卷制軸承英制尺寸 Flanged bearing inch sizes



單位 Unit:mm

尺寸 Norminal Bearing Bore	Recommended		內徑 Installed Bearling I.D.	法蘭尺 寸 Nominal Flange O.D.	法蘭厚度 Flange Thick-ness(h)	軸承長度 L 及軸承規格									
	軸徑 Shaft Dia.	座孔 Housing Bore				1/4	3/8	1/2	5/8	3/4	1	1 1/8	1 1/4	2	
3/8	0.3750 0.3740	0.4684 0.4691	0.3752 0.3779	11/16	0.052 0.044	06/04	06/06	06/08		06/12					
1/2	0.5000 0.4990	0.5834 0.5941	0.5002 0.5029	13/16	0.052 0.044	08/04	08/06	08/08		08/12					
5/8	0.6250 0.6240	0.7184 0.7192	0.6252 0.6280	15/16	0.052 0.044		10/06	10/06	10/10	10/12					
3/4	0.7500 0.7488	0.8747 0.8755	0.7502 0.7534	1 1/8	0.068 0.060		12/06	12/08		12/12	12/16				
7/8	0.8750 0.8734	0.9997 1.0005	0.8752 0.8784	1 1/4	0.068 0.060			14/08		14/12	14/16	14/20			
1	1.0000 0.9988	1.1247 1.1255	1.0002 1.0034	1 3/8	0.068 0.060			16/08		16/12	16/16	16/20			
1 1/4	1.2500 1.2484	1.4058 1.4068	1.2502 1.2540	1 3/4	0.083 0.075			20/16		20/20	20/24				
1 1/2	1.5000 4.4984	1.6558 1.6568	1.5002 1.5040	2	0.083 0.075			24/16		24/24	24/32				
1 3/4	1.7500 1.7484	1.9371 1.9381	1.7502 1.7548	2 3/8	0.098 0.090			28/16		28/24	28/32				

長度可按要求定制 Other lengths to order

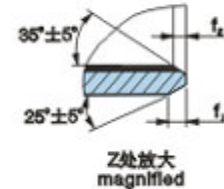
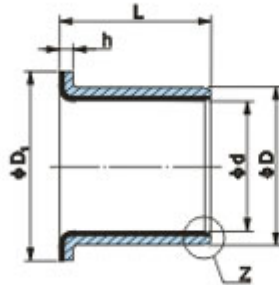


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## SF-10F 自潤滑翻邊軸承 Flanged bearings metric sizes



單位 Unit:mm

型號規格 Part No.	Recommended		尺寸 Size								
	相配軸徑 Shaft Die.	相配座孔	d	D	D1±0.5	L±0.25	h 0 0.2	F1	t2		
SF-10F 06040	6	-0.010 -0.022	8	+0.015	6	8	12	4	1	0.5	0.3
SF-10F 06070								7			
SF-10F 08055	8		10	0	8	10	15	5.5			
SF-10F 08075								7.5			
SF-10F 10070	10	-0.013 -0.028	12		10	12	18	7			
SF-10F 10090								9			
SF-10F 10120								12			
SF-10F 12070	12		14	+0.018	12	15	20	7			
SF-10F 12090								9			
SF-10F 12120								12			
SF-10F 14120	14		16	0	14	16	22	12			
SF-10F 14170								17			
SF-10F 15090	15	-0.016 -0.084	17		15	17	23	9			
SF-10F 15120								12			
SF-10F 15170								17			
SF-10F 16120	16		18		16	18	24	12			
SF-10F 16170								17			
SF-10F 18120	18		20	+0.021	18	20	26	12			
SF-10F 18170								17			
SF-10F 18200								20			
SF-10F 20115	20	-0.020 -0.041	23		20	23	30	11.5	1.5	0.8	0.4



# Lubricating bearings

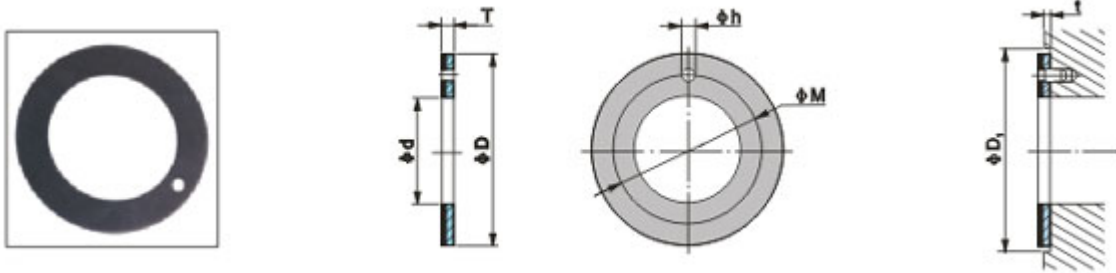
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SF-10F 20165							16.5			
SF-10F 20215							21.5			
SF-10F 22150	22		25		22	25	32	25		
SF-10F 22200		20								
SF-10F 25115	25		28		25	28	35	11.5		
SF-10F 25165		16.5								
SF-10F 25215		21.5								
SF-10F 30160	30		34		30	34	42	16		
SF-10F 30260		26								
SF-10F 35160	35	-0.026	39	+0.025 0	35	39	47	16	2	1.0
SF-10F 35260								26		
SF-10F 40260	40	-0.050	44		40	44	53	26		
SF-10F 40400								40		

長度可按要求定制 Other lengths to order

## SF-10W 止推墊片 Thrust washers metric sizes

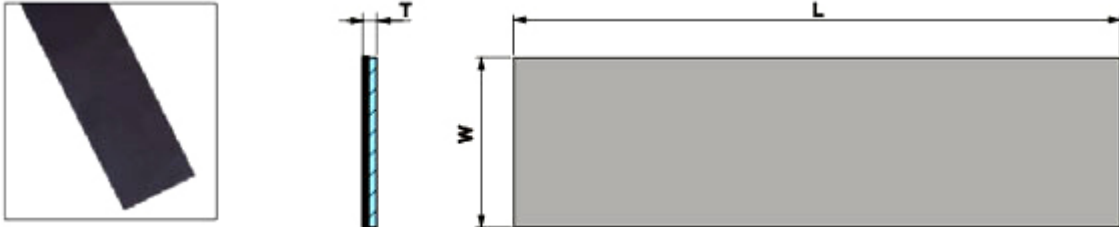


單位 Unit:mm

型號規格 Part No.	相配軸徑 Recommended	整片尺寸 Size of washer				安裝尺寸 Size for installation		
		$d^{+0.25}_0$	$D^0_{-0.25}$	$T^0_{-0.05}$	$M \pm 0.125$	$h +0.4 +0.1$	$t \pm 0.2$	$D1 +0.12 0$
SF-10W10	8	10	20	1.5	15	1.5	1	20
SF-10W12	10	12	24		18			24
SF-10W14	12	14	26		20	2		26
SF-10W16	14	16	30		23			30
SF-10W18	16	18	32		25			32
SF-10W20	18	20	36		28	3		36
SF-10W22	20	22	38		30			38
SF-10W24	22	24	42		33			42
SF-10W26	24	26	44		35			44
SF-10W28	26	28	48		38	4		48
SF-10W32	30	32	54		43			54
SF-10W36	36	38	62		50			62
SF-10W42	40	42	66		54			66
SF-10W48	46	48	72		61			1.5
SF-10W52	50	52	78	65	78			
SF-10W62	60	62	90	76	90			

長度可按要求定制 Other lengths to order

## SF-10L 板材 Flat strip material metric sizes



單位 Unit:mm

型號規格 Part No.	長度 Length±1	寬度 Width±1	厚度 Thickness 0 -0.05
SF-10L1.0	500	130	1.0
SF-10L1.5	500	130	1.5
SF-10L2.0	500	130	2.0
SF-10L2.5	500	130	2.5

長度可按要求定制 Other lengths to order



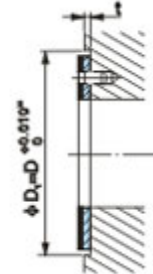
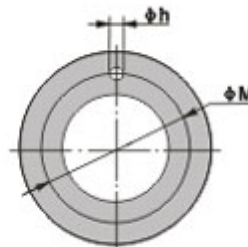
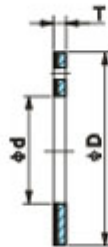


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## SF-10W 止推墊片英制尺寸 Thrust washers inch sizes



單位 Unit:mm

型號規格 Part No.	內徑 Inside Dia. d +0.010 0	外徑 Outside Dia. D 0 -0.010	厚度 Thickness T+0.002 0	定位孔直徑 Pitch Hole Dia. h <sup>+0.010</sup> <sub>0</sub>	定位孔位置 Pitch Circle Dia. M 0 -0.010	裝配尺寸 Housing Recess Depth T +0.010 0
SF-10W06G	0.500	0.875	0.0585	0.067	0.692	0.040
SF-10W07G	0.562	1.000	0.0585	0.067	0.786	0.040
SF-10W08G	0.625	1.125	0.0585	0.099	0.880	0.040
SF-10W09G	0.687	1.187	0.0585	0.099	0.942	0.040
SF-10W10G	0.750	1.250	0.0585	0.099	1.005	0.040
SF-10W11G	0.812	1.375	0.0585	0.099	1.099	0.040
SF-10W12G	0.875	1.500	0.0585	0.130	1.192	0.040
SF-10W13G	.0937	1.625	0.0585	0.130	1.286	0.040
SF-10W14G	1.000	1.750	0.0585	0.130	1.380	0.040
SF-10W16G	1.125	2.000	0.0585	0.161	1.567	0.040
SF-10W18G	1.250	2.125	0.0585	0.161	1.692	0.040
SF-10W20G	1.375	2.250	0.0585	0.161	1.317	0.040
SF-10W22G	1.500	2.500	0.0585	0.192	2.005	0.040
SF-10W24G	1.625	2.625	0.0585	0.192	2.130	0.040
SF-10W26G	1.750	2.750	0.0585	0.192	2.255	0.040
SF-10W28G	2.000	3.000	0.0895	0.192	2.505	0.070
SF-10W30G	2.125	3.125	0.0895	0.192	2.630	0.070
SF-10W32G	2.250	3.250	0.0895	0.192	2.755	0.070

長度可按要求定制 Other lengths to order

#### SF-11 無鉛自潤滑卷制軸承 Pb-Free self-lubricating bearing



應用特點：該產品是在 SF-10 的基礎上根據國際環保要求而開發的一種新產品。該產品除廣泛適用於一般通用機械外，對食品機械、制藥機械、煙草機械尤其適用。

Application characteristics : It's a new type bushing without lead composition which is developed aiming at increasing demands on environmental protection. Besides its wide application on general machines, SF-11 is particularly suitable for food machine, pharmaceutical machine, gobacco machine etc.

可供標準產品：直套 P3、P7，翻邊軸套 P5、P9，止推墊片 P6、P10，板材 P6。

Provide standardized products : Cylindrical bushes P3、P7, flanged bushes P5、P9, thrust washers P6、P10, Flat strip material P6.

可供非標產品：直套，翻邊軸套，止推墊片，板材，軸瓦，滑板，鋼套組套件。Provide non-standardized products : Cylindrical bushes, flanged bushes, thrust washers, flat strip material, half Bearing, wear plate, SF-11 with steel bush.

#### SF-12 青銅自潤滑卷制軸承 Wrapped bronze self-lubricating bearing



應用特點：該產品是以特殊配方的高密度銅合金為基體，中間燒結多孔青銅層，表面軋製 PTFE 和 Pb 的混合物。產品應用于冶金行業，連鑄軋機、水泥灌漿機和螺旋式輸送機等。Application characteristics : It's based on bronze alloy of a particular formulation with high density, with sintered bronze layer as its interlayer, with the compound of PTFE and Pb as its surface. It's used in steel metallurgical industry, such as those used in roller grooves of successive casting machines, cement grout pumps and spiral conveyers for cement, etc.

可供標準產品：直套 P3、P7，翻邊軸套 P5、P9，止推墊片 P6、P10，板材 P6。

Provide standardized products : Cylindrical bushes P3、P7, flanged bushes P5、P9, thrust washers P6、P10, Flat strip material P6.

可供非標產品：直套，翻邊軸套，止推墊片，板材，軸瓦，滑板，鋼套組套件。Provide non-standardized products : Cylindrical bushes, flanged bushes, thrust washers, flat strip material, half Bearing, wear plate, SF-12 with steel bush

### SF-13 不銹鋼自潤滑軸承 Stainless steel self-lubricating bearing



應用特點：該產品是以不銹鋼為基體，中間燒結多孔青銅層，在表面軋製以 PTFE 為主的混合物，該材料可以不含鉛。產品適用於食品機械，制藥機械，印染機械等。

Application characteristics : The material of this product is based on stainless steel plate with a sintered porous bronze layer as its interlayer which is coated with the compound of PTFE on its surface. The material can without Pb. It's used in foodstuff machines, pharmaceutical machines, printing and dyeing machines, etc.

可供標準產品：直套 P3、P7，止推墊片 P6、P10，板材 P6。

Provide standardized products : Cylindrical bushes P3·P7, thrust washers P6·P10, Flat strip material P6.

可供非標產品：直套，翻邊軸套，止推墊片，板材，軸瓦，滑板，鋼套組合件。

Provide non-standardized products : Cylindrical bushes, flanged bushes, thrust washers, flat strip material, half Bearing, wear plate, SF-13 with steel bush.

#### SF-14 齒輪泵專用軸承 Gear pump bearing



應用特點：該產品是在 SF-10 材料的基礎上，根據齒輪油泵的高 PV 值特定工藝條件而設計的產品，產品主要應用於齒輪油泵，葉片油泵等。

Application characteristics : It's a new kind of SF-10 which composes of a specially designed surface layer of PTFE formulations and is specifically applied for the high PV value of gear pump bearing. It's used in gear pumps, vane pumps, etc.

可供標準產品：直套 P3、P7，翻邊軸套 P5、P9，止推墊片 P6、P10，板材 P6。

Provide standardized products : Cylindrical bushes P3、P7, flanged bushes P5、P9, thrust washers P6、P10, Flat strip material P6.

可供非標產品：直套，翻邊軸套，止推墊片，板材，軸瓦，滑板，鋼套組合件。Provide non-standardized products : Cylindrical bushes, flanged bushes, thrust washers, flat strip material, half Bearing, wear plate, SF-14 with steel bush.

#### SF-15 往復運動軸承 Reciprocating motion bearing



應用特點：該產品是在 SF-10 材料的基礎上，根據往復運動的特殊工藝條件而設計的產品，產品主要應用於汽車、摩托車減震器、液壓油缸，汽缸等。

Application characteristics : It's nes kind of SF-10 which is composed of a specially designed product according to it's reciprocating motion workmanship condition. It's used in shock absorber of automobiles & motorcycles, hydraulic and pneumatic cylinder.

可供標準產品：直套 P3、P6，翻邊軸套 P5、P9，止推墊片 P6、P10，板材 P6。

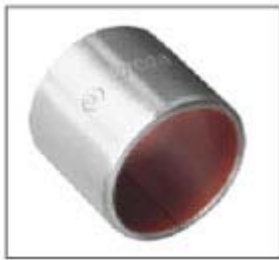
Provide standardized products : Cylindrical bushes P3、P7, flanged bushes P5、P9, thrust washers P6、P10, Flat strip material P6.

可供非標產品：直套，翻邊軸套，止推墊片，板材，軸瓦，滑板，鋼套組合件。

Provide non-standardized products : Cylindrical bushes, flanged bushes, thrust washers, flat strip material, half Bearing, wear plate, SF-15 with

steel bush.

#### SF-16 液壓專用軸承 Hydraulic pressure bearing



應用特點：該產品是在 SF-15 的基礎上結合油缺及減震器工作原理而設計的一種新型材料，其性能與國外 DP4 相似，該產品除具有 SF-15 的優點外，特別適用於往復頻率的大側向力場合，目前該產品逐步替代 SF-15 產品適用於汽車、摩托車減震器以及各種液壓缸等領域。Application characteristics : SF-16 hydraulic bushing is developed on the basis of SF-15 and meanwhile considering the motion way of oil pump and damper. It is the substitute of and parallels in performance with abroad DP4. In addition to covering the same usage of SF-15, SF-16 in particular fits frequently reciprocating motion with a high side force. It is a tendency to gradually replace SF-15 with SF-16, the latter will cover a wide application in automobile, motor damper and oil pumps etc.

可供標準產品：直套 P3、P7，翻邊軸套 P5、P9，止推墊片 P6、P10，板材 P6。

Provide standardized products : Cylindrical bushes P3、P7, flanged bushes P5、P9, thrust washers P6、P10, Flat strip material P6.

可供非標產品：直套，翻邊軸套，止推墊片，板材，軸瓦，滑板，鋼套組合件。

Provide non-standardized products : Cylindrical bushes, flanged bushes, thrust washers, flat strip material, half Bearing, wear palte, SF-16 with steel bush.

#### SF-17 不銹鋼耐腐蝕軸承 Anti corrosion stainless steel bearing



應用特點：該產品是以耐腐蝕不銹鋼材料為基體，表面用特殊的工藝、將以 PTFE 為主的混合物粘結在上面，它具有耐磨、耐酸、耐鹼、耐海水的特點。產品應用於化工設備的流量計、泵、閥等。Application characteristics : It's based on stainless steel plate which is anti-corrosive, through special workmanship, the compound with PTFE layer mainly is located on the surface, it is with the characteristics of wear-resistant, acid-resistant, alkalirestant and seawater-resistant. It's used in flow meters, pumps and valves of chemical equipments.

可供標準產品：直套 P3、P7，止推墊片 P6、P10，板材 P6。

Provide standardized products : Cylindrical bushes P3、P7, thrust washers P6、P10, flat strip material P6.

可供非標產品：直套，止推墊片，板材，軸瓦，滑板，鋼套組合件。

Provide non-standardized products : Cylindrical bushes, thrust washers, flat strip material, half Bearing, wear plate, SF-17 with steel bush.

#### SF-18 銅網四氟軸承 Bronze mesh self-lubricating bearing



應用特點：該產品是以青銅絲網為基體，通過特殊工藝。表面軋製四氟乙烯和其他填充減摩材料的混合物。它具有較低的摩擦係數，較好的耐磨性。由於它的柔軟性能好，可以做銅與銅對磨的隔離膜，實現無間隙，無噪音，無油潤滑，無需保養，無污染的理想目的。目前，產品已廣泛應用在紡織機械關節軸承、汽車操縱杆等場合。Application characteristics : It's a composite material with bronze wire mesh as frame and calendered with a film if filled polyterafluoroethylene. This is of low friction and low wear, surfaces, and can fulfill the ideal aim of no noise, no lubricating, no maintenance and no pollution. At present, this is applied in those mechanical elements under relatively low load and low speed. Such as in textile machines, sphenical bearings. Automobile door hinge and the operating rod for cars.

可供標準產品：/

Provide standardized products : /

可供非標產品：直套，翻邊軸套，止推墊片，板材，軸瓦。



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Provide non-standardized products : Cylindrical bushes, flanged bushes, thrust washers, flat strip material, half bearing.

### SF-19 四氟軟帶 PTFE soft strip



應用特點：該產品是以聚四氟（PTFE）乙烯為主要原料，填充其他耐磨潤滑材料，經過模具壓制燒結而成。產品具有較好的韌性、貼服性，耐磨性能好，摩擦係數低，在有油潤滑和無油條件下都能正常使用，是汽車減震器、活塞環的最佳選擇。目前，一汽奧迪和大眾桑塔納、富康轎車都採用此產品，它能長期保持較低的摩擦係數，保護缸筒不受磨損。Application characteristics : It's a kind of material made of filled PTFE which is mold pressed and sintered. The mass is than cut into thin strip by particular technipue. The strip is soft and elastic, and is of low friction and low wear. It can work with or without oil, and so is the best choice for bushes and piston rings of oil dampers in automobiles and motorcycles. At present, SF-19 material is various famous cars in our country. The friction is low, the cylind surface is prolonged working period. During installation, the strip can be easily pushed into the cylinder together with the piston.

可供標準產品：/

Provide standardized products : /

可供非標產品：條料：

Provide non-standardized products : PTFE soft strip.



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## SF-20 邊界潤滑軸承 Prelubricated bearings

### ■ 材料組織結構 Structure

- 1、聚甲醛與鉛混合物 POM with lead 0.3-0.5mm
- 2、球形青銅粉 Porous bronze 0.2-0.3mm
- 3、鋼背 Steel backing
- 4、鍍銅層：Copper plating 0.002m

### ■ 技術參數 Tech.Data

最大載荷 Max.Load	靜承載 Static	250N/mm <sup>2</sup>	磨擦係數 Friction Cofee.	0.05-0.25u
	動承載 Dynamic	140N/mm <sup>2</sup>	最大速率 Speed limit(油潤滑 Oil)	2.5m/s
	搖擺運動 Oscillating	60N/mm <sup>2</sup>	導熱係數 Thermal conductivity	2.03Kcal/M.br.C
最大 PV 值 PV limit	幹磨擦 Dry	2.8N/mm <sup>2</sup> xm/s	熱膨脹係數 Coeff.of linear expansion	51x10 <sup>-6</sup> per°C
	油潤滑 Oil	22N/mm <sup>2</sup> xm/s	裝配時內孔塗潤滑油脂 Initial pre-lubrication at assembly required	
使用溫度 Temp.limit		-40°C ~+130°C		

### ■ 應用特點 Application characteristics

- 1、在少油情況下工作，性能超過其他已知邊界潤滑材料。  
It is superior to those known marginal lubricating materials when lacking of lubrication oil.
- 2、磨擦面較硬且厚，耐磨性好。  
Owing to its thick and hard surface of friction, it has the advantage of low wear.
- 3、機械強度大，能承受較大的動、靜載荷。適用於高載低速下的旋轉運動，搖擺運動及經常在載荷下啓閉頻繁而不易形成流體動力潤滑的結合。  
High mechanical strength,it can stand heavy dynamic and static load. It is used in high load capacities and low speed with rotational, oscillating or frequent stop-start motion.
- 4、在邊界潤滑條件下可長期不加油保養，而在過程中加油使軸承使用壽命更長。  
It can work long time without oil in the condition of boundary lubrcation,under oil or grease





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lubrication Interval, the work is longer.

- 5、表面塑膠層在加工成型時可留一定的餘量，裝配壓入座孔後可自行加工，以達到更好的裝配尺寸。

It is machinable for the thicker of POM.

- 6、產品主要運用於汽車底盤、冶金機械、礦山機械、水利機械、建築機械、農用機械、軋鋼設備等。

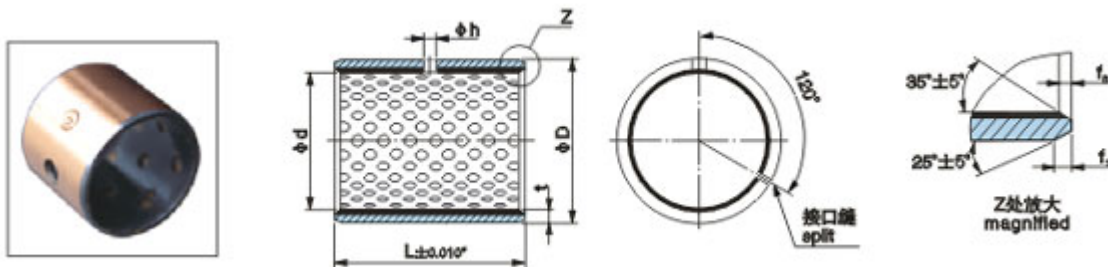
The bushes can be applied in auto chassis, forging machine, metallurgical, civil engineering, power station, strip rolling industries etc.

- 可供標準產品：直套 P15、P18，止推墊片 P17、P19，板材 P17。

Provide standardized products:Cylindrical bushes P15、P18,thrust washers P17、P19, flat strip material P17.

可供非標產品：直套，翻邊軸套，止推墊片，板材，軸瓦，滑板，鋼套組合件。

provide non-standardized products:Cylindrical bushes, flanged bushes, thrust washers, flat strip material, half bearing, wear plate, SF-20 with steel bush.



單位 Unit:mm

Recommended				軸承長度及軸承規格													
相配軸徑 shaft Dia.		相配座孔 Housing Bore		外徑 OD.D		壁厚 Wall Thickness t	油孔 Hole Dia. h	t1	t2	10	15	20	25	30	40	50	60
10	-0.013 -0.028	12	+0.018 0	12	+0.065 +0.030	1.0 0	4	0.50	0.3	1010	1015	1020					
12	-0.016	14		14		-0.030				1210	1215	1220					
14	-0.034	16		16						1410	1415	1420					
15		17		17						1510	1515	1520	1525				



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16		18		18						1610	1615	1620	1625				
18		20		20						1810	1815	1820	1825				
20		23		23						2010	2015	2020	2025				
22		25	+0.021	25	+0.075	1.5 0				2210	2215	2220	2225				
24		27	0	27	+0.035	-0.035				2410	2415	2420	2425	2430			
25	-0.080	28		28						2515	2520	2525	2530				
26	-0.041	30		30						2615	2620	2625	2630				
28		32		32				6		2815	2820	2825	2830	2840			
30		34		34						3015	3020	3025	3030	3040			
32		36	+0.025	36	+0.085	2.0 0				3215	3220	3225	3230	3240			
35	-0.025	39	0	39	+0.045	-0.040			1.00.6		3520	3525	3530	3550			
38	-0.090	42		42							3820	3825	3830	3840	3850		
40		44		44				8			4020	4025	4030	4040	4050		

長度可按要求定制 Other lengths to order

單位 Unit:mm

Recommended				外徑 OD.D		壁厚 Wall Thickness t	油孔 Hole Dia.h	t1	t2	軸承長度及軸承規格 Bearing Length and Part Number									
相配軸徑 Shaft Dia.	相配座孔 Housing Bore									40	50	60	65	80	90	95	100		
65	0	70	+0.030	70	+0.100	2.5-0.040	8	1.2	0.8	6540		6560							
70		75		75	+0.055					-0.085	7040	7050		7065	7085				
75		80		80							7540		7560		7680				
80		85		85		-0.050				8040		8060		8080					
85		90		90		-0.115				8540		8560		8580					
90		95	+0.035	95	+0.120					9040		9060		9080	9090				
100	0	105	0	105	+0.070						10050			10080		10095			
105	-0.054	110		110								10560		10580		10595	105100		
110		115		115								11060		11080		11095	110100		
120		125	+0.040	125	+0.170								12060		12080			120100	
125	0	130	0	130	+0.100								12560		12580			125100	
130	-0.063	135		135									13050	13060		13080			130100



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140		145		145				14050	14060		14080			140100
150		155		155				15050	15060		15080			150100
160		165		165				16050	16060		16080			160100
170		175		175				17050	17060		17080			170100
180		185		185				18050	18060		18080			180100
190		195	+0.046	195	+0.210			19050	19060		19080			190100
200	0	205	0	205	+0.130			20050	20060		20080			200100
220	-0.072	225		225				22050	22060		22080			220100
240		245		245				24050	24060		24080			240100
250		255		255				25050	25060		25080			250100
260	0	265	+0.052	265	+0.260			26050	26060		26080			260100
280	-0.081	285	0	285	+0.170			28050	28060		28080			280100
300		305		305				30050	30060		30080			300100

長度可按要求定制 Other lengths to order





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1 3/4	1.7500	1.9371	1.7515
	1.7484	1.9381	1.7577
1 7/8	1.8750	2.0621	1.8765
	1.8734	2.0633	1.8829
2	2.0000	2.1871	2.0015
	1.9982	2.1883	2.0079
2 1/2	2.5000	2.6871	2.5015
	2.4982	2.6883	2.5079
3	3.0000	3.1875	3.0019
	2.9982	3.1889	3.0085

				28/16	28/24	28/32		
				30/16	30/24	30/32	30/36	
				32/16	32/24	32/32		
					40/24	40/32		40/40
					48/24	48/32		48/40

長度可按要求定制 Other lengths to order



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## SF-3 系列双金属轴承 Series of bimetal bearings

### SF-3 产品简介 Introduction

SF-3 系列双金属轴套、轴瓦、止推垫片，是以优质低碳钢为基体，表面烧结铅锡青铜合金或轧制铝锡合金，经多次烧结轧制而成，产品主要应用于汽车发动机连杆、摇臂、变速箱齿轮、汽车转向节、钢板弹簧、工程机械、农业机械等。SF-3 series bimetal cylindrical bushes, half bearing, thrust washer is sintered and rolled for many times is a bushing based on high quality, low-carbon steel as its backing and sintered with lead, tin and bronze alloy or rolled with aluminium tin alloy as its surface. The products are mainly applied in connecting rod of automobile engine, rocker, gear-box, automobile knuckle arm, steel plate spring, construction machinery, agriculture machinery, etc.

SF-3 轴承的合金牌号及相应代号 The alloy number and it's correlative code

产品型号 Type	合金牌号 alloy number	合金层硬度 Hardness of alloy layer	相应代号 Corresponding code
SF-30	CuPb10Sn10	60-90HB	SAE-797,DIN CuPb10Sn,JIS-LBC3.UNS C93700.Clevfte F100. Daldo L10.D.A.B.D57.federal Mogul HF2.Glacler SY.Glyco66.Miba2-1010.Talho HF2.Kart Schmidt Ds94OS
SF-31	CuPb24Sn4	45-70HB	SAE-799.GLYOO 68.RS-LBC6.DAIDO L23
SF-32	CuPb24Sn	40-60HB	SAE-49
SF-33	CuPb30	30-45HB	SAE-783.GLYCO74JIS-AJL
SF-34	AlSn20Cu	30-40HB	SAE-48.JIS-KJS

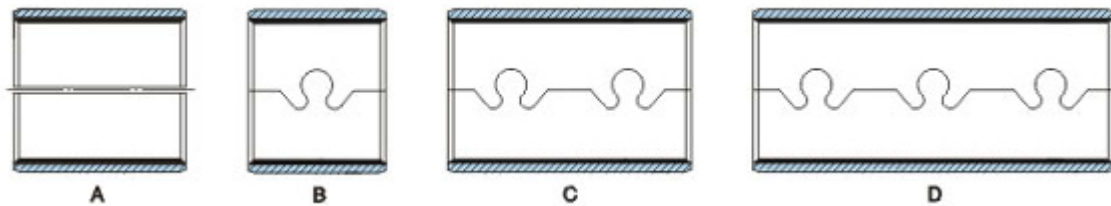
SF-3 轴承的合金牌号及相应代号 The alloy number and it's correlative code

产品型号 Type	合金牌号 alloy number	合金层硬度 Hardness of alloy layer	相应代号 Corresponding code
SF-30	CuPb10Sn10	60-90HB	SAE-797,DIN CuPb10Sn,JIS-LBC3.UNS C93700.Clevfte F100. Daldo L10.D.A.B.D57.federal Mogul HF2.Glacler SY.Glyco66.Miba2-1010.Talho HF2.Kart Schmidt Ds94OS
SF-31	CuPb24Sn4	45-70HB	SAE-799.GLYOO 68.JIS-LBC6.DAIDO L23
SF-32	CuPb24Sn	40-60HB	SAE-49
SF-33	CuPb30	30-45HB	SAE-783.GLYCO74JIS-AJL
SF-34	AlSn20Cu	30-40HB	SAE-48.JIS-KJS

### 技术参数 Tech.Data

产品型号 Product Model	最大承载压力 Max load (N/mm <sup>2</sup> )	拉伸强度Tensile strength (N/mm <sup>2</sup> )	最大速度 (油润滑) Max speed (Oil lubricating)(m/s)	摩擦系数 Coeff.of friction	最大PV值PV Limit (N/mm <sup>2</sup> m/s)	
					脂润滑 fat lubricating	油润滑 oil lubricating
SF-30	150	185	5	0.06-0.14	2.8	10
SF-31	130	150	10	0.06-0.16	2.8	10
SF-32	130	170	10	0.06-0.16	2.8	10
SF-33	120	200	15	0.08-0.16	2.5	8
SF-34	100	200	25	0.08-0.17	/	6

SF-3 卷制轴承搭口形式 Joint forms of SF-3 wrapped Bearings



### 应用特点 Application characteristics

**SF-30:** 有很高的耐疲劳强度和承载能力, 高的抗冲击能力, 很好的耐腐蚀性和耐磨性, 与淬硬轴配合, 轴颈强度不低于 53HRC。适用于中载、中到高速, 以及有大冲击载荷的轴承, 机械设备上用的卷制轴承、止推垫片、内燃机连杆活塞销轴套。

**SF-30:** Very high fatigue strength and load capacity, with high shock resistance and good corrosion resistance. When cooperated with hard shaft, the journal rigidity is not less than 53HRC. Fit for middle load, middle to high speed. Suitable for wrapped bushing and thrust washer and connecting rod bearing in internal combustion engine used in mechanical equipment and high shock bushings.

**SF-31:** 有高的耐疲劳强度, 承载能力, 抗冲击能力, 耐腐蚀, 有较好的轴承表面性能 (嵌藏性、顺应性、相容性), 与淬硬轴配合, 轴颈硬度不低于 48HRC。适用于高速、摆动和旋转工作条件下的轴承, 当轴承滑动表面镀有软合金层时, 可用于高速、重载的内燃机主轴和连杆轴承、止推垫片、卷制轴承、轧钢机用轴承、机床轴承等。

**SF-31:** Very high fatigue strength, load capacity, shock resistance and corrosion (inlay, acclimatization and compatibility.) When cooperated with hard shaft, the journal rigidity is not less than 48HRC. Fit for bushings under conditions of high speed, oscillating or rotating motion. When plating soft-alloy of surface of bushing, it can be used in high load and speed internal combustion



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engine, principle axis and connecting rod bushing, thrust washer, wrapped bushing, bushings used in steel rolling machines and machine tool bushing etc.

SF-32: 有较高疲劳强度和承载能力, 较好的轴承表面性能, 易受润滑油渗透, 有软合金镀层时可以与硬轴或软轴配合。轴颈硬度不低于 45HRC。常用于内燃机主轴和连杆轴承、止推垫片、卷制轴承等。

SF-32: Relatively high fatigue strength and load capacity, good performance of bushing surface and be liable to be corrupted with lubricating oil. It can be cooperated with hard or soft shafts if there is soft alloy coating. Journal rigidity is not less than 45HRC. It is mainly used in principle axis of internal combustion engine, connecting rod bushing, thrust washer, wrapped bushings etc.

SF-33: 有中等的疲劳强度和承载能力, 良好的抗腐蚀性, 较好的轴承表面性能, 可以与软轴相配合, 轴颈硬度不低于 250HB。常用于内燃机主轴和连杆轴承、止推垫片、卷制轴承或压气机、制冷机用轴承。

SF-33: Moderate fatigue strength and load capacity, It has good corrosion resistance and relatively good surface performance. It can be worked with soft shaft with journal rigidity being not less than 250HB. It is mainly used in principle axis of internal combustion engine, connecting rod bushing, thrust washer, wrapped bushing or bushings used in compressing and refrigerating machine.

SF-34: 有中等疲劳强度和承载能力, 较好的轴承表面性能, 易受润滑油渗透, 轴承工作表面必须镀软合金层, 相配轴颈的硬度不低于 270HB。常用于内燃机主轴和连杆轴承、止推垫片、卷制轴承。

SF-34: Moderate fatigue strength and load capacity. Good surface performance. Being liable to be corrupted with lubricating oil. The working surface of the bushing must be plated with soft alloy layer and its corresponding journal rigidity is not less than 270HB. Mainly used in principle axis of internal combustion engine, connecting rod bushing, thrust washer as well as wrapped bushing.

可供标准产品: 直套 P23, 止推垫片 P17、P19, 板材 P17。

Provide standardized products: Cylindrical bushes P23, thrust washers P17、P19, flat strip material P17.

可供非标产品: 直套, 翻边轴套, 止推垫片, 板材, 轴瓦, 滑板, 钢套组合件。

Provide non-standardized products: Cylindrical bushes, flanged bushes, thrust washers, flat strip material, half bearing, wear plate, SF-3 with steel bush.



#### SF-4 系列青銅卷制軸承 Series of wrapped bronze bearings



SF-40 表銅卷制軸承 Wrapped bronze bearing



Sf-41 表銅卷制軸承 Wrepped bronze bearing



SF-42 青銅卷制軸承 Qrapped bronze bearing

#### 產品概述 Introduction

SF-4 系列青銅卷制軸承套是我公司在SF-3 鋼-銅鉛雙金屬軸套產品基礎上開發設計的新一代軸套，該產品在國外應用十分普遍。隨著我國引進機械設備的新機種日益增多，設計師們對新穎摩擦材料、軸套的要求也日益需要。因此該產品在我國機械製造集中有著寬廣應用領域和實用價值。

SF-4 系列軸套最大特點是薄壁結構，不佔據很大的裝配空間。軸套材料採用特殊配方高密度銅合金帶材。它與傳統的鑄型銅套相比，具有密度高、無氣縮孔、承載能力大，又有耐磨耐疲勞等優點。軸套製造採用先進的工裝模具，可在帶材摩擦面上加工出適應各種工況條件的油穴、油坑、油槽，從而使軸套在使用中可儲存大量潤滑油脂，延長加油間隔時間，有效地提高了使用壽命。SF-4 系列軸承廣泛應用於農業機械、建築機械、工程機械、汽車行業等。

Thin wall thickness is the most important peculiarity of the SF-4 Bush series. They are light and compact, The inner-layer of the bush being a kind of high density copper alloy of special compositions, there is no hole and pit and provides higher load capacity and fatigue strength, in compare with traditional casting bronze bushes. It is manufactured by advanced technology and machines, various kinds of lubricating indentations or grooves may be readily provided on the sliding surface, and so the re-oiling period is remarkably prolonged and the service lift is accordingly prolonged. It's used in agricultural machinery, construction machinery as well as engineering machinery etc.

#### SF-4 系列產品的優點 Advantages

1 · 節約大量銅材、節省車制銅套工時；

Saving copper material, saving labor hours of tuming ;

2 · 與車制軸套、滾動軸承相比其重量輕、成本低；

Low weight and low cost;

3 · 可在摩擦面加工出各種油穴、油坑、儲存一定油脂，延長加油時間是銅套的 5 倍；



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Re-oiling period is prolonged usually to 5 times;

4 · 極高的承載能力，特別是適用於較粗糙的摩擦副；

High load capacity, particularly fitted for relatively rough wear, Mating surface;

5 · 更換方便，標準系列採購容易。

Ready for change, available from stock.

可供標準產品：直套 P26，翻邊軸套 P28，止推墊片 P17、P19，板材 P17。

Provide standardized products: Cylindrical bushes P26, flanged bushes P28, thrust washers P17、P19, flat strip material P17.

可供非標產品：直套，翻邊軸套，止推墊片，板材，軸瓦，滑板，鋼套組合件。

Provide non-standardized products: Cylindrical bushes, flanged bushes, thrust washers, flat strip material, half bearing, wear plate, SF-4 with steel bush.






### SF-5 系列鑲嵌式固體潤滑軸承 Series of solid-lubricant-inlaid bearings

#### 產品概述 Introduction

SF-5 系列鑲嵌式固體潤滑軸承以高強度銅合金作為基礎材料，並在其工作面上鑽出孔穴嵌入固體潤滑劑，以使其能在摩擦過程中釋放和生成一層固體潤滑膜達到自我潤滑的目的。其材料結合了金屬與非金屬的優點，特別適用於高載，高溫，低速等無法加油的工作場合。

SF-5 Serles of self-lubricating Bearings use high grade metal alloys as their base material and have finely finished surface with holes in which a specially formulated solid lubricant is embedded. The lubricant cover up to 25-30% of the working surface. During operation the lubricant film is deposited automatically over the complete moving surface.

#### 技術參數 Tech.Data

型號 Type	SF-50	SF-51	SF-52	SF-53	SF-54
示意圖					
基本材質 Base material	CuZn25Al6Mn4	CuSn6Zn6Pb3	CuPb10Sn10	GCr15	HT250
最高使用溫度 Temp limit	300°C	250°C	300°C	350°C	400°C
極限動載荷 Dynamic load limit	100N/mm <sup>2</sup>	60N/mm <sup>2</sup>	70N/mm <sup>2</sup>	250N/mm <sup>2</sup>	60N/mm <sup>2</sup>
極限載荷 load limit under(1m/min)	25N/mm <sup>2</sup>	15N/mm <sup>2</sup>	20N/mm <sup>2</sup>	70N/mm <sup>2</sup>	15N/mm <sup>2</sup>
最高滑動速度 Sliding velocity limit	幹油 0.40m/s 5m/s	2m/s	2m/s	0.1m/s	0.2m/s

#### 磨損性能 Wear Performance

試驗壓強 load Applled		62N/mm <sup>2</sup>		24.5N/mm <sup>2</sup>		14.7N/mm <sup>2</sup>	
項目 Item		磨損量 Wear depth	時間 Time	磨損量 Wear depth	時間 Time	磨損量 Wear depth	時間 Time
型號 Type	潤滑條件 Lubrication	(mm)	(hrs)	(mm)	(hrs)	(mm)	(hrs)
銅套 Bush CuSn6Zn3	油潤滑 oil	0.098	10	0.125	100	0.10	100
SF-50	幹摩擦 dry	0.011	100	0.015	100	0.012	100



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SF-51	幹摩擦 dry	0.025	30	0.11	100	0.025	100
SF-52	幹摩擦 dry	0.03	30	0.12	100	0.015	100
SF-53	幹摩擦 dry	0.03	10	0.25	20	0.011	100
SF-54	幹摩擦 dry	0.0022	100	0.013	100	0.01	100

## 應用特點 Application characteristics

SF-50 是通用的基礎產品，無論高壓、低壓、高溫、低溫，有油潤滑、無油潤滑還是不中潤滑，都能適應。產品的基體是高力黃銅，比一般的銅套硬度提高一倍，耐磨性能提高一倍以上，因此在冶金行業的連鑄機、軋機、輸送機上都可採用。還用於塑膠注塑機鎖模機構，擠出機構，高壓電的自動開關，建築機械的起吊支撐部位，以及水利樞紐工程的弧門支撐，滑輪和傳動輪部位，還有造紙機烘道、汽車模具、船舶起錨滑動部分等。

Can be used under low, middle and high load. When under high load, wear performance degrades accordingly. It's a general-purpose product and be applied under low or high pressuer, low or high temperature, and oil, water or dry lubrication. The bass material is high strength brass and its hardness double than normal bronze so that wear performance improves in large degree. Can be applied in consistent cast machine, rolling machine, conveyor equipment; plastic injection machine, high voltage switch; hoisting supporter, hydraulic gate supporter, paper-making machine, automobile die etc.

SF-51 主要適應低載高溫中速的使用場合，例如壁爐門鉸鏈、烘爐滾道、輕工機械、機床工業等。

Suitable for low load position, wear performance worsens greatly when under middle or high load. Can be applied in furnace door linge, furnace, conveyor, tool machines, light industries, etc.

SF-52 的內材與 SF-51 同樣，除了具有 SF-52 的功能外，還體現了節省成本，提高抗壓強度和可以端面與基體焊接安裝的作用，適用於建築機械、冶金機械和輸送機械中的不加油潤滑部分。

Suitable for low load position, wear performance worsens when under middle or high load. The mating layer is same as SF-51 so that more cost-saving than SF-51 whereas compression strength increases and weldable. Most suitable for dry position in construction, metallurgical machines, conveyor machines etc.

SF-53 是一種加強型的產品，它具有極高的抗壓性能，在起重機械的支撐部位特別適應，例：挖土機支承、捲揚機支承、吊車支承等。但由於基體為鋼材，所以不宜在水中或酸、堊的場合使用。

Can be used under low, middle and high load. Due to its superb high hardness, when under high load, it over performs than other SF-5 type. Not suitable for water, acid, ahkili circumstances. Most suitable for the supporting position of hoisting machine, e.g. bulldozer supporter, hoister supporter, reeling machine supporter etc.



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SF-54 是一種典型的省材產品，在機械性能要求不是很高的地方，可作取 SF-51 替代材料使用，能大大地降低成本，滿足使用要求，例：模具導柱、注塑機模架等。

Very good performance when under low load. Not suitable for middle and high. A typical cost saving material, can substitute SF-51 to be applied in the position without high requirements such as die guider, plastic injection machines etc.

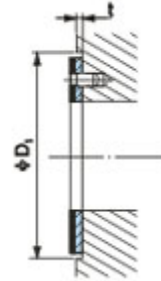
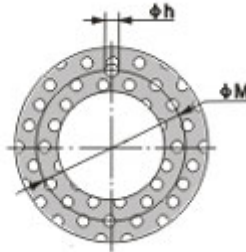
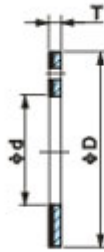
可供標準產品：直套 P31、P33，翻邊軸套 P35，止推墊片 P36、滑板 P37。

Provide standardized products : Cylindrical bushes P31、P33, flanged bushes P35, thrust washers P36, wear plate P37.

可供非標產品：直套、翻邊軸套，止推墊片、板材、軸瓦、滑板。

Provide non-standardized products : Cylindrical bushes, flanged bushes, thrust washers, flat strip material, half bearing, wear plate.

### SF-20W 止推墊片 Thrust washers metric sizes



單位 Unit:mm

型號 Part No.	相配軸徑 Recommended Shaft Dia.	墊片尺寸 Size of Washer				安裝尺寸 Size for Installation		
		$d^{+0.25}_0$	$D^0_{-0.25}$	$T0 -0.05$	$M\pm 0.125$	$h^{+0.4}_{+0.1}$	$t\pm 0.2$	$D1^{+0.12}_0$
SF-20W10	8	10	20	1.5	15	1.5	1	20
SF-20W12	10	12	24		18			24
SF-20W14	12	14	26		20	2		26
SF-20W16	14	16	30		23			30
SF-20W18	16	18	32		25	3		32
SF-20W20	18	20	36		28			36
SF-20W22	20	22	38		30	4		38
SF-20W24	22	24	42		33			42
SF-20W26	24	26	44		35	1.5		44
SF-20W28	26	28	48		38			48
SF-20W32	30	32	54	43	1.5	54		
SF-20W38	36	38	62	50		62		
SF-20W42	40	42	66	54	2	66		
SF-20W48	46	48	74	61		74		
SF-20W52	50	52	78	65	1.5	78		
SF-20W62	60	62	90	76		90		

長度可按要求定制 Other lengths to order

### SF-20L 板材 Flat strip material metric sizes

單位 Unit:mm



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型號規格 Part No.	長度 Length $\pm 1$	寬度 Width $\pm 1$	厚度 Thickness $\begin{matrix} 0 \\ -0.05 \end{matrix}$
SF-20L1.0	500	130	1.0
SF-20L1.5	500	130	1.5
SF-20L2.0	500	130	2.0
SF-20L2.5	500	130	2.5

長度可按要求定制 Other lengths to order

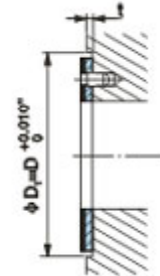
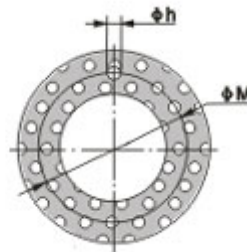


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## SF-20W 止推墊片英制尺寸 Thrust washers inch sizes



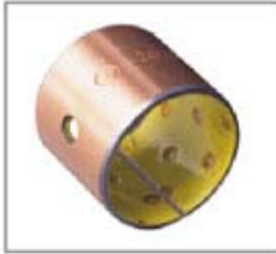
單位 Unit:mm

型號規格 Part No.	內徑Inside Dia. $d^{+0.010}_0$	外徑Outside Dia. $D^0_{-0.010}$	厚度Thickness $T^{+0.0035}_0$	定位孔直徑Pitch Hole Dia. $h^{+0.010}_0$	定位孔位置Pitch Circle Dia. $M^0_{-0.010}$	裝配尺寸 Housing Recess Depth $T^{+0.010}_0$
SF-20W08G	0.625	1.125	0.0625	0.099	0.680	0.040
SF-20W10G	0.750	1.250	0.0625	0.099	1.005	0.040
SF-20W12G	0.875	1.500	0.0625	0.130	1.192	0.040
SF-20W14G	1.000	1.750	0.0625	0.130	1.380	0.040
SF-20W16G	1.125	2.000	0.0625	0.161	1.567	0.040
SF-20W18G	1.250	2.125	0.0625	0.161	0.692	0.040
SF-20W20G	1.375	2.250	0.0625	0.161	1.817	0.040
SF-20W22G	1.500	2.500	0.0625	0.192	2.005	0.040
SF-20W24G	1.625	2.625	0.0625	0.192	2.130	0.040
SF-20W26G	1.750	2.750	0.0625	0.192	2.255	0.040
SF-20W28G	2.000	3.000	0.0895	0.192	2.505	0.070
SF-20W30G	2.125	3.125	0.0895	0.192	2.630	0.070
SF-20W32G	2.250	3.250	0.0895	0.192	2.755	0.070

長度可按要求定制 Other lengths to order



#### SF-21 边界润滑无铅轴承 Pb-Free prelubricated bearing

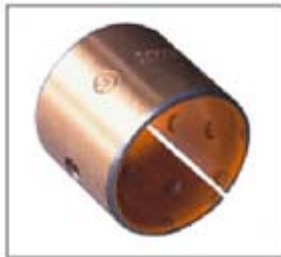


应用特点: SF-21 是在 SF-20 的基础上改进而成。其性能与 SF-20 相同, 但使用领域可扩展至无铅领域。Application characteristics: Non-lead boundary lubrication bushing is improved on the basis of SF-20. Therefore, it almost has the same properties with SF-20. but its application can be extended to where non-lead is required.

可供标准产品: 直套 P15、P18, 止推垫片 P17、P19, 板材 P17。

Provide standardized products: Cylindrical bu

#### SF-22 自润滑轴承 Self-lubricating bearing



应用特点: 以钢背为基体, 中间烧结球形锡青铜粉, 表面轧制以缩醛树脂并含有亲油性纤维和特殊润滑剂的聚合物材料。国外的相同产品为 DS 轴承, 应常温条件下工作的干摩擦和少润滑场合, 具有摩擦系数低, 耐磨性能好, 无油条件润滑的优点。目前产品已应用在摇摆运动, 易磨损, 易腐蚀的场合, 如卷扬机、推土机、印染机、采煤机及吊车, 行车高空作业机等场合。Application characteristics: SF-22 is similar to foreign made DS bush, and may be operated without lubricant or under a trace of oil. It is of low friction, anticorrosion and is of long life. This is now applied in machines under oscillating motion and in open field or in corrosive environment such as hoisters, bulldogger, tower cranes, and printing or dyeing machines for textiles.

可供标准产品: 直套 P15、P18, 止推垫片 P17、P19, 板材 P17。

Provide standardized products: Cylindrical bushes P15、P18, thrust washers P17、P19, flat strip material P17.

可供非标产品: 直套, 止推垫片, 板材, 轴瓦, 滑板, 钢套组合件。

Provide non-standardized products: Cylindrical bushes, thrust washers, flat strip material, half bearing, wear plate, SF-22 with steel bush.

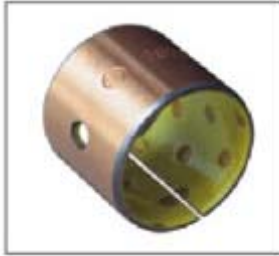


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## SF-23 边界润滑轴承 **Prelubricated bearing**



应用特点：是在 SF-20 基础上改进而成，性能与 SF-20 似。Application characteristics: It is improved form SF-20 products, it almost has the same prop

可供标准产品：直套 P15、P18，止推垫片 P17、P19，板材 P17。

Provide standardized products: Cylindrical bushes P15、P18, thrust washers P17、P19, flat strip material P17.

可供非标产品：直套，止推垫片，板材，轴瓦，滑板，钢套组合件。

Provide non-standardized products: Cylindrical bushes, thrust washers, flat strip material, half bearing, wear plate, SF-23 with steel bush.

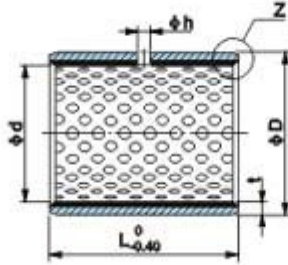


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## SF-30 雙金屬軸承標準尺寸 SBimetal bearings metric sizes



單位 Unit:mm

Recommended				壁厚 Wall		油孔		軸承長度及軸承規格								
相配軸徑	相配座孔	外徑 OD.D	Thickness	Hole	t1	t2	10	15	20	25	30	40	50	60		
Sheft Dia.	Housing Bore														t	Dia.h
10	-0.013 -0.028	12	+0.018 0	12	+0.085 +0.030	1.0 <sup>0</sup> <sub>-0.030</sub>	4	0.5	0.3	1010	1015	1020				
12	-0.016 -0.034	14		14						1210	1215	1220				
14		16		16						1410	1415	1420				
15		17		17						1510	1515	1520	1525			
16		18		18						1610	1615	1620	1625			
18		20		20						1810	1815	1820	1825			
20	-0.020 -0.041	23	+0.021 0	23	+0.075 +0.035	1.5 <sup>0</sup> <sub>-0.065</sub>	6	0.8	0.4	2010	2015	2020	2025			
22		25		25						2210	2215	2220	2225			
24		27		27						2410	2415	2420	2425	2430		
25		28		28						2515	2520	2525	2530			
26		30	30	2615	2620	2625	2630									
28		32	32	2815	2820	2825	2830	2840								
30		34	34	3015	3020	3025	3030	3040								
32		36	36	3215	3220	3225	3230	3240								
35	-0.025	39	+0.025 0	39	+0.055 +0.046	2.0 <sup>0</sup> <sub>-0.040</sub>	1.0	0.6		3520	3525	3530	3540	3550		
38	-0.050	42		42					3820	3825	3830	3840	3850			
40		44		44					4020	4025	4030	4040	4050			

長度可按要求定制 Other lengths to order



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單位 Unit:mm

Recommended				外徑 OD.D		壁厚 Wall	油孔	f1	f2	軸承長度及軸承規格化											
相配軸徑		相配座孔				Thickness	Hole			25	30	40	50	60	80	90	100				
Shaft Dia.		Housing Bore				t	Dia.h														
45	-0.025	50	+0.025	50	+0.085	2.5 <sup>0</sup> <sub>-0.060</sub>	8	1.2	0.8	4525	4530	4540	4550								
			0		+0.045																
50	-0.050	55		55										5030	5040	5050	5060				
55		60		60										5530	5540	5550	5560				
60		65	+0.030	65	+0.100									6030	6040	6050	6060				
65	-0.030	70	0	70	+0.055									6530	6540	6550	6560				
70	-0.060	75		75										7030	7040	7050	7060	7080			
75		80		80										7530	7540	7550	7560				
80		85		85								8040	8050	8060	8080						
85		90		90							8530		8550	8560	8580		85100				
90		95		95									9050	9060	9080		90100				
95		100	+0.035	100	+0.120									9560	9580		95100				
100	-0.036	105	0	105	+0.070									10060	10080	10090	100100				
105	-0.071	110		110										10560	10580		105100				
110		115		115				9.5	1.4	0.8				11060	11080		110100				
115		120		120										11550		11580					
120		125		125									12050	12060			120100				
125		130		130													125100				
130	-0.043	135	+0.040	135	+0.170								13060				130100				
135	-0.083	140	0	140	+0.100								13560	13580							
140		145		145									14060	14080		140100					
150		155		155									15060	15080		150100					

長度可按要求定制 Other lengths to order

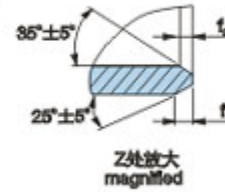
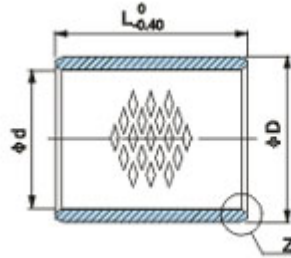


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## SF-40 青銅卷制軸承 Wrapped bronze bearings



單位 Unit:mm

壓入 H7 座孔內徑 Installed Bearing I.D.		外徑 O.D.		f1	f2	軸承長度及軸承規格 Bearing Length and Part Number																
						10	15	20	25	30	35	40	50	60	70	80	90					
10	+0.060	12	+0.055	0.5	0.3	1010	1015	1020														
12		14				1210	1215	1220														
14		16				1410	1415	1420	1425													
15		+0.006				17	1510	1515	1520	1525												
16						18	1610	1615	1620	1625												
18						20	1810	1815	1820	1825												
20	+0.070	23	+0.075	0.8	0.4	2010	2015	2020	2025													
22		25				2210	2215	2220	2225													
24	-0.010	27	+0.085	0.8	0.4	2415	2420	2425	2430													
25		28				2515	2520	2525	2530													
28	+0.080 -0.010	32	+0.086	1.0	0.6	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	+0.090 -0.018	55	+0.100	1.2	0.8		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	+0.1900	85	+0.120	1.4	0.8					8030	8035	8040	8050	8060	8070	8080						



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85	90	+0.070					8530	8535	8540	8550	8560	8570	8580	8590
90	95						9030	9035	9040	9050	9060	9070	9080	9090
95	100								9540	9550	9570	9570	9580	9590
100	105									10050	10070	10070	10080	10090
105	110									10550	10560	10570	10580	10590
110	115									11050	11060	11070	11080	11090

長度可按要求定制 Other lengths to order

單位 Unit:mm

壓入 H7 座孔內徑 Installed bearing I.D.		外徑 OD.		f1	f2	軸承長度及軸承規格 Braring Length and Part							
						Number							
						35	40	50	60	70	80	90	100
115	+0.130 0	120	+0.120 +0.070	1.4	0.8			11550	11560	11570	11580	11590	115100
120	+0.140	125							12060	12070	12080	12090	120100
125	0	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	+0.170						14560	14570	14580	14590	145100
150		155	+0.100						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	+0.210						18060	18070	18080	18090	180100
185		190	+0.130						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	20590
215		220							21560	21570	21580	21590	215100



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225	230				22560	22570	22580	22590	225100
230	235				23060	23070	23080	23090	230100
240	245				24080	24070	24080	24090	240100
250	255				25060	25070	25080	25090	250100
260	265				26060	26070	26080	26090	260100
270	275		+0.250		27060	27070	27080	27090	270100
280	285		+0.170		28060	28070	28080	28090	280100
290	295				29060	29070	29080	29090	290100
300	305				30060	30070	30080	30090	300100

長度可按要求定制 Other lengths to order

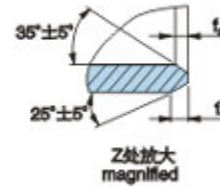
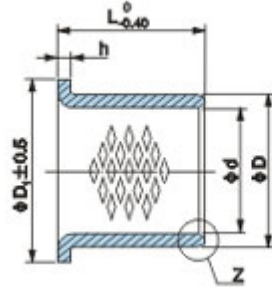


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## SF-40 翻邊軸承標準尺寸 Flanged bearings



单位 Unit:mm

d	D	Dt	f1	f2	$L_{-0.40}^0$														
					15	20	25	30	35	40	50	60	70	80	90				
25	28	35	0.8	0.4	25150	25200	25250												
30	34	45	1.0	0.6		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	1.2	0.8				50300	50350	50400	50600								
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			1.4	0.8					80350	80400	80500	80600	80700	80800			
90	95	110												90500	90600	90700	90800	90900	
100	115	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					





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180	185	215							180600	180700	180800	180900
190	195	225							190600	190700	190800	190900
200	205	235							200600	200700	200800	200900
225	230	260							255600	255700	255800	255900
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

长度可按要求定制 Other lengths to order

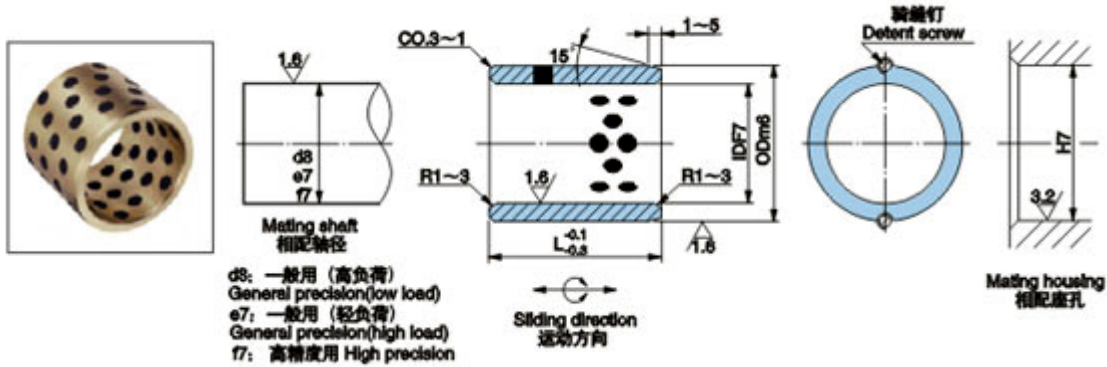


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## SF-50 鑲嵌式固體潤滑軸承 Solid-lubricant-inlaid bearings



單位 Unit:mm

內徑 IDE7	外徑 ODr6	軸承長度及軸承規格 Bearing Length adn Part Number													
		8	10	12	15	16	20	25	30	35	40	50	60	70	80
6	+0.032	10	061008	061010	061012										
	+0.020														
8	+0.040	12	081208	081210	081212	081215									
	+0.025						14	101408	101410	101412	101415	101420			
10	+0.034	+0.023													
	12	+0.050	18		121810	121812	121815	121816	121820	121825	121830				
13		+0.032		19		131910	131912	131915	131920						
	14	+0.041	20			142010	142012	142015	142020	142025	142030				
15		+0.028		21		152110	152112	152115	152116	152120	152125	152130			
	16	+0.041	22			162210	162212	162215	162216	162220	162225	162230	162235	162240	
17		+0.028		23				172315							
	18	+0.050	24				182412	182415	182416	182420	182425	182430	182435	182440	
19		+0.041		26				192615	192620						
	20	+0.028	28			202810	202812	202815	202816	202820	202825	202830	202835	202840	202850
20		+0.050		30					203016	203020	203025	203030	203035	203040	
	22	+0.034	32				223212	223215	223220	223225					
25		+0.028		33			253312	253315	253316	253320	253325	253330	253335	253340	253350
	25	+0.050	35				253512	253515	253516	253520	253525	253530	253535	253540	253550
28		+0.028		38						283820	283825	283830	283835	283840	283850
	30	+0.050	38				303812	303815		303820	303825	303830	303835	303840	303850



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30		40			304012	304015		304020	304025	304030	304035	304040	304050	304060		
31.5		40								314030		314040				
32	+0.075	42						324220		324230		324240				
35	+0.050	44						354420	354425	354430	354435	354440	354450	354460		
35		45						354520	354525	354530	354535	354540	354550	354560		

長度可按要求定制 Other lengths to order

單位 Unit:mm

內徑 IDf7	外徑		軸承長度及軸承規格 Bearing Length adn Part Number													
	ODm6		30	35	40	50	60	70	80	100	120	130	140	150		
38	48	+0.025	483840	483835	483840	483850	483860	483870	483880							
40	50	+0.009	405030	405035	405040	405050	405060	405070	405080							
40	55		405530	405535	405540	405550	405560									
45	55		455530	455535	455540	455550	455560									
45	56	+0.050	455630	455635	455640	455650	455660									
45	60	+0.025	456030	456035	456040	456050	456060									
50	60		506030	506035	506040	506050	506060	506070	506080							
50	62	+0.030	506230	506235	506240	506250	506260									
50	65	+0.011	506530		506540	506550	506560	506570	506580	5065100						
55	70				557040	557050	557060	557070								
60	74		607430	607435	607440	607450	607460	607470	607480							
60	75		607530	607535	607540	607550	607560	607570	607580	6075100						
63	75						637560	637570	637580							
65	80					658050	658060	658070	658080							
70	85	+0.060		708535	708540	708550	708560	708570	708580	7085100						
70	90	+0.030				709050	709060		709080	7090100						
75	90						759060	759070	759080	7590100						
75	95						759560	759570	759580	7595100						
80	96			809640	809650	809660	809670	809680	8096100	8096120						
80	100			8010040	8010050	8010060	8010070	8010080	80100100	80100120			80100140			
85	100	+0.071			8510050	8510060	8510070	8510080	85100100	85100120						
90	110	+0.036				9011060	9011070	9011080	90110100	90110120			90110140			



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100		120							10012080	100120100	100120120			
110		130							11013080	110130100	110130120		110130140	
120		140								120140100	120140120			
125		145								125145100				
130		150	+0.040							130150100			130150140	
140		160	+0.015							140160100				140160150
+0.063		170								150170100				150170150
+0.043		180									160180120			160180150
170		190										170190130		
180		200	+0.046							180200100			180200140	
190	+0.096	210	+0.017								190210120			190210150
200	+0.050	230										200230130		200230150

長度可按要求定制 Other lengths to order

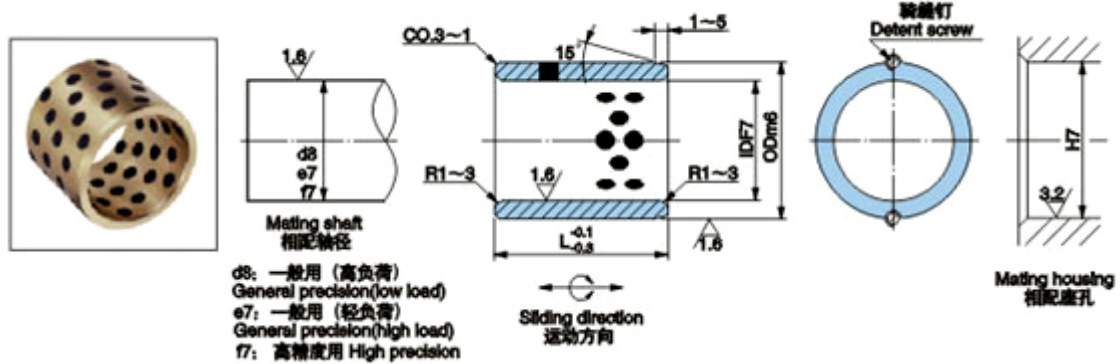


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## SF-50B 鑲嵌式固體潤滑軸承 Self-lubricating bearings



單位 Unit:mm

內徑 IDE7	外徑 ODR6	軸承長度及軸承規格													
		8	10	12	15	16	20	25	30	35	40	50	60	70	80
6	+0.032	10	061008	061010	061012										
	+0.020														
8	+0.040	12	081208	081210	081212	081215									
	+0.025						14	101408	101410	101412	101415	101420			
12		18		121810	121812	121815							121816	121820	121825
	13		19		131910	131912	131915		131920						
14		20			142010	142012	142015		142020	142025	142030				
	15		+0.050	21		152110	152112	152115	152116	152120	152125	152130			
16		+0.032			22		162210	162212	162215	162216	162220	162225	162230	162235	162240
	17		+0.041	23					172315						
18		+0.028			24			182412	182415	182416	182420	182425	182430	182435	182440
	19		+0.061	26					192615		192620				
20		+0.040			28		202810	202812	202815	202816	202820	202825	202830	202835	202840
	20		30						203016	203020	203025	203030	203035	203040	
22		+0.050		32			223212	223215		223220	223225				
	25		+0.034		33			253312	253315	253316	253320	253325	253330	253335	253340
25		35					253512	253515	253516	253520	253525	253530	253535	253540	253550
	28		38							283820	283825	283830	283835	283840	283850



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30		38			303812	3038		303820	303825	303830	303835	303840	303850	303860		
30		40			304012	3040		304020	304025	304030	304035	304040	304050	304060		
31.5		40								314030		314040				
32	+0.075	42						324220		324230		324240				
35	+0.050	44						354420	354425	354430	354435	354440	354450	354460		
35		45						354520	354525	354530	354535	354540	354550	354560		

長度可按要求定制 Other lengths to order

單位 Unit:mm

內徑 IDE7	外徑 OD6		軸承長度及軸承規格														
			30	35	40	50	60	70	80	100	120	130	140	150			
38	+0.050	48	483830	483835	483840	483850	483860	483870	483880								
40		50	405030	405035	405040	405050	405060	405070	405080								
40	+0.075	55	405530	405535	405540	405550	405560	405570	405580								
45		55	455530	455535	455540	455550	455560										
45	+0.050	56	455630	455635	455640	455650	455660										
45		60	456030	456035	456040	456050	456060										
50	+0.060	60	506030	506035	506040	506050	506060	506070	506080								
50		62	506230	506235	506240	506250	506260	506270									
50	+0.041	65	506530		506540	506550	506560	506570	506580	5065100							
55		70			557040	557050	557060	557070									
60	+0.062	74	607430	607435	607440	607450	607460	607470	607480								
60		75	607530	607535	607540	607550	607560	607570	607580	6075100							
63	+0.043	75					637560	637570	637580								
65		80				658050	658060	658070	658080								
70	+0.073	85		708535	708540	708550	708560	708570	708580	7085100							
70		90				709050	709060		709080	7090100							
75	+0.051	90					759060	759070	759080	7590100							
75		95					759560	759570	759580	7595100							
80		96			809640	809650	809660	809670	809680	8096100	8096120						



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80	100			8010040	8010050	8010060	8010070	8010080	80100100	80100120		80100140	
85	100				8510050	8510060	8510070	8510080	85100100	85100120			
90	110	+0.076				9011060	9011070	9011080	90110100	90110120		90110140	
100	120	+0.054						10012080	100120100	100120120			
110	130	+0.088						11013080	110130100	110130120		110130140	
120	140	+0.065							120140100	120140120			
125	145								125145100				
130	150	+0.090							130150100			130150140	
140	160	+0.065							140160100				140160150
150	170	+0.125							150170100				150170150
160	180	+0.085								160180120			160180150
170	190	+0.106									170190130		
180	200	+0.077								180200100		180200140	
190	210	+0.109								190210120			190210150
		+0.146											
200	230	+0.100									200230130		200230150
		+0.113											
		+0.084											

長度可按要求定制 Other lengths to order

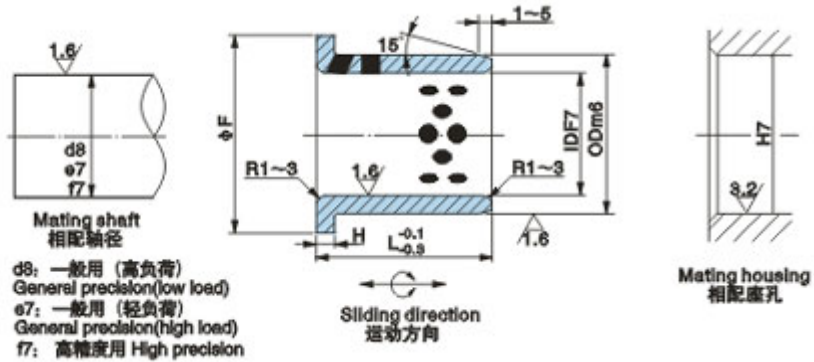


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## SF-50F 鑲嵌式固體潤滑軸承 Flanged solid-lubricant-inlaid bearings



單位 Unit:mm

內徑 IDE7		外徑 OD		F	H0-0.10	軸承長度 L 及軸承規格 Bearing Length(L) and Part Number										
						15	20	25	30	35	40	50	60	80	100	
10	+0.040	14	+0.034	22	2	1015	1020									
	+0.025		+0.023													
12	+0.050	18	+0.041	25	3	1215	1220	1225	1230							
13		19		26		1315	1320	1325	1330							
14		20		27		1415	1420	1425	1430							
15		21		28		1515	1520	1525	1530							
16		22		29		1615	1620	1625	1630	1635	1640					
18		24		32		1815	1820	1825	1830	1835	1840					
20		+0.061		30		+0.050	40	5	2015	2020	2025	2030	2035	2040		
25	35		45	2515	2520		2525		2530	2535	2540					
30	40		50		3020		3025		3030	3035	3040	3050				
31.5	+0.075	40	+0.034	50	5		3120		3130	3135	3140					
35		45		60			3520	3525	3530	3535	3540	3550				
40		50		60			4020	4025	4030	4035	4040	4050				
45		55		70					4530	4535	4540	4550	4560			
50	+0.050	60	+0.060	75	5				5030	5035	5040	5050	5060			
55		65		80							5540		5560			
60	+0.060	75	+0.062	90	7.5						6040	6050	6060	6080		





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65		80	+0.043	95								6560	6580	
70		85		105								7050		7080
75		90	+0.073	110								7560		
80		100	+0.051	120								8060	8080	80100
90		110	+0.078	130								9060	9080	
100	+0.107	120	+0.054	150	10								10080	100100
120	+0.072	140	+0.088	170									12080	120100
			+0.063											

長度可按要求定制 Other lengths to order

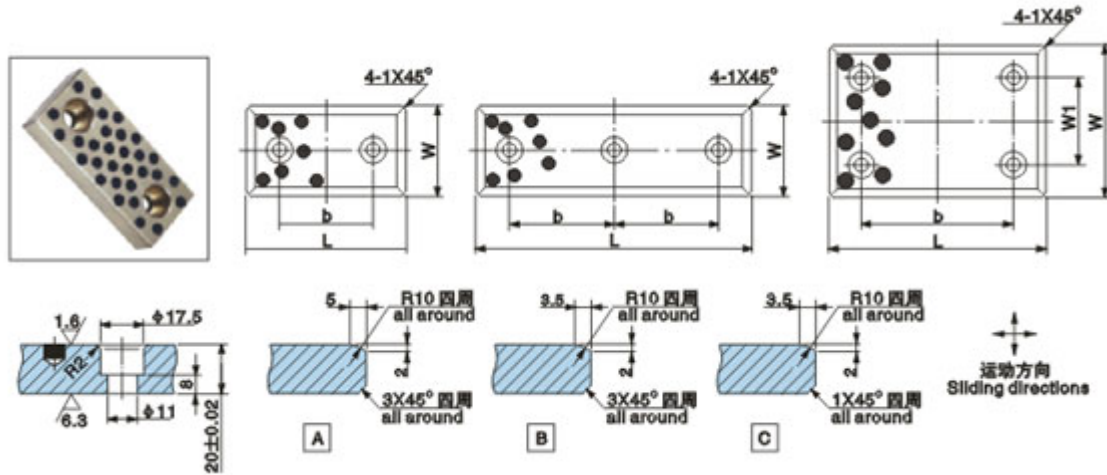


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## SF-50L 滑板 Wear plate



單位 Unit:mm

型號規格 Parts No.	$W^{-0.1}_{-0.3}$	$L^{-0.1}_{-0.2}$	$W1 \pm 0.2$	$B \pm 0.2$	No.of holes	圖示 Sketch
SF-50L2875	28	75	-	45	2	C
SF-50L28100		100		50		
SF-50L28150		150		100		
SF-50L3875	38	75	45			
SF-50L38100		100	50			
SF-50L38150		150	100			
SF-50L4875	48	75	45	-	-	B
SF-50L48100		100	50			
SF-50L48125		125	75			
SF-50L48150		150	100			
SF-50L48200		200	100			
SF-50L48250		250	100	100	3	
SF-50L5875	58	75	45	45	2	
SF-50L58100		100	50			
SF-50L58150		150	100			
SF-50L7575	75	75	45	45		A
SF-50L75100		100	50			
SF-50L75125		125	75			



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SF-50L75150		150		100	
SF-50L75200		200		150	
SF-50L100100	100	100	50	50	4
SF-50L100125		125		75	
SF-50L100150		150		100	
SF-50L100200		200		150	
SF-50L100250		250		200	
SF-50L125125	125	125	75	75	
SF-50L125150		150	50	100	
SF-50L125200		200		150	
SF-50L125250		250		200	
SF-50L150150	150	150	100	100	
SF-50L150200		200		150	
SF-50L150250		250		200	

長度可按要求定制 Other lengths to order

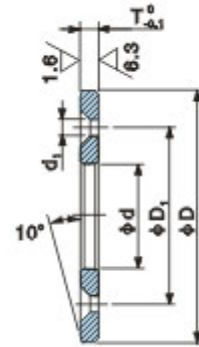
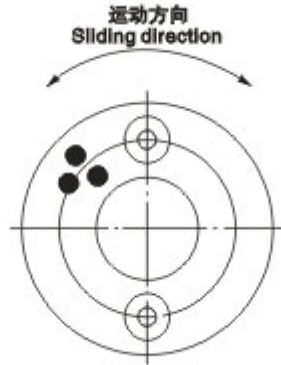


# Lubricating bearings

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Tel : +886-2-29160506 Fax : +886-2-29160491 SMQ@CALLSMQ.COM

## SF-50W 止推墊片 Thrust washers sizes



單位 Unit:mm

型號規格 Parts No.	$d^{+0.2}_{+0.1}$	D	$T_{-0.1}^0$	螺栓 Bolt						
				D1	數量 Qty	尺寸 size	d1			
SF-50W10	10.2	30	3	20	2	M3	3.5			
SF-50W12	12.2	40		28						
SF-50W13	13.2									
SF-50W14	14.2									
SF-50W15	15.2									
SF-50W16	16.2	50		35						
SF-50W16N			-	-	-	-				
SF-50W18	18.2	55	5	35	2	M3	3.5			
SF-50W20	20.2			M5		6				
SF-50W20N						-	-	-	-	
SF-50W25	25.2			60		40	2	M5	6	
SF-50W25N						-		-	-	-
SF-50W30						70		45	M5	6
SF-50W35		50								
SF-50W40	40.2	80	7	60	2	M6	7			
SF-50W45	45.3	90		67.5						
SF-50W50	50.3	100		75				4		
SF-50W55	55.3	110	85							
SF-50W60	60.3	120	90	M8	9					



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SF-50W65	65.3	125	10	95	M10	11
SF-50W70	70.3	130		100		
SF-50W75	75.3	140		110		
SF-50W80	80.3	150		120		
SF-50W90	90.5	170		140		
SF-50W100	100.5	190		160		
SF-50W120	120.5	200		175		

長度可按要求定制 Other lengths to order

### SF-58 固體潤滑卷制軸承 Wrapped bearings of solid lubricant



應用特點：SF-58 軸承是以 SF-30 雙金屬材料為基體，再埋入特殊固體潤滑劑製作而成的新穎滑動軸承。由於高強度承載的合金材料作基體，理想的並經過嚴格選別的高分子填充材料為耐磨劑，合理的螺旋角度菱形塊狀均分佈的潤滑面，潤滑面積達 25%，因此，能發揮超群的低摩擦，良好的潤滑性和抗磨耗性。產品適用於汽車起動電機、發電機、升降機、吊車及冶金機械等行業。

Application characteristics : It's a kind of steel-lead bronze alloys based bearing which is embedded with particular formulation of solid lubricants. Owing to the high strength, high load capacity and the spirally distributed diamond type of the embedded solid lubricant, the high. Temperature lubricating action and wear resistant action as extraordinary exploited. The lubrication area of the bearing surface is being about 25%. This type of bearing is particularly applied in starting motor for automobiles, generators, hoisting machines, various cranes and those machines in metallurgical industry.

最大載荷 Max load	幹摩擦 Dry	70N/mm <sup>2</sup>	密度 Density	7.8g/cm <sup>2</sup>
	油潤滑 Oil	90N/mm <sup>2</sup>	硬碟 Hardness	70~90HB
摩擦係數 Flicion coefficient	幹摩擦 Dry	< 0.22μ	抗拉強度 Tensile	420N/mm <sup>2</sup>
	油潤滑 Oil	< 0.06μ	延伸率 Elangation rate	>10%
最高使用溫度 Max.Temp.	幹摩擦 Dry	250℃	屈服強度 Yield strengyth	230N/mm <sup>2</sup>
	油潤滑 Oil	200℃	彈性係數 Coefficient of elasticity	100KN/mm <sup>2</sup>
最大速率 Max.Speed	幹摩擦 Dry	0.4m/s	熱膨脹係數 Coefficient of expansion(20℃~℃)	22×10 <sup>-6</sup> /℃
	油潤滑 Oil	2.0m/s		
適應工作條件 applicable work condition: 中載中速 middle-load,middle-speed				



應用特點：是以青銅材料為基體，再埋入固體潤滑劑製作而成。其性能等與 SF-58 相同。

Application characteristics : It's based bronze material and embedded with solid lubricants in its diamond or round shape pockets which are evenly distributed on its inside layers. It has almost the same performance and application condition with SFB-58.



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最大載荷 Max load	幹摩擦 Dry	80N/mm <sup>2</sup>	密度 Density	8.3g/cm <sup>2</sup>
	油潤滑 Oil	100N/mm <sup>2</sup>	硬碟 Hardness	90~110HB
摩擦係數 Fliction coefficient	幹摩擦 Dry	< 0.25μ	抗拉強度 Tensile	450N/mm <sup>2</sup>
	油潤滑 Oil	< 0.10μ	延伸率 Elangation rate	>12%
最高使用溫度 Max.Temp.	幹摩擦 Dry	250°C	屈服強度 Yield strengyth	250N/mm <sup>2</sup>
	油潤滑 Oil	200°C	彈性係數 Coefficient of elasticity	110KN/mm <sup>2</sup>
最大速率 Max.Speed	幹摩擦 Dry	0.2m/s	熱膨脹係數 Coefficient of expansion(20 °C~°C)	20×10 <sup>-6</sup> /°C
	油潤滑 Oil	1.0m/s		
適應工作條件 applicable work condition: 中載中速 middle-load,middle-speed				

**SF-58、59 可供標準產品：**直套P23，止推墊片P17、P19。

Provide standardized products of SF-58、59：Cylindrical bushes P23, thrust washers P17、P19.

**SF-58、59 可供非標產品：**直套，翻軸套，止推墊片，板材，軸瓦，滑板，鋼套組套件。

Provide non-standardized products of SF-58、59：Cylindrical bushes, flanged bushes, thrust washers, flat strip material, half bearing, wear plate, SF-3 with steel bus