

金相组织 (Metallurgical structure)

SF-20 碳钢基边界无铅自润滑轴承

Marginal Pb-free self-lubricating bearing

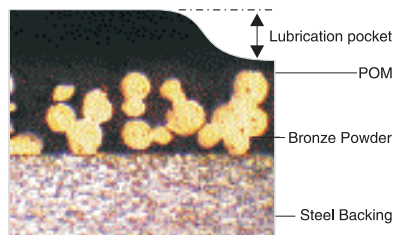
Lead Free

该产品以优质低碳钢为基体，中间烧结球形青铜层，表面轧制改性聚甲醛。在边界润滑条件下可长期使用而不加油，耐磨层表面有储油坑。产品广泛应用于冶金机械、矿山机械、水利机械、汽机车、建筑机械、农用

SF-20 Marginal Pb-free self-lubricating bearing is used steel-backing as its structure, sintered porous bronze as its interlayer, surface inlaid the modified POM. Suitable for marginally lubricated and dry operation on the conditions of lubrication indents grease. It has been widely applied to metallurgical machinery, Mine machinery, water conservancy machinery, vapor

※技术参数: Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	140N/mm ²
最高线速度 V Max Sliding Speed	脂润滑 Grease lubrication	2.5m/s
最高PV值 Max PV Value Limit	脂润滑 Grease lubrication	2.8N/mm ² · m/s
摩擦系数 μ Friction coefficient	脂润滑 Grease lubrication	0.05 ~ 0.25
使用温度 Working temperature		-40℃ ~ +130℃
导热系数 Thermal conductivity		4W/m · k
热膨胀系数 Coefficient of thermal expansion		11 × 10 ⁻⁶ /k



金相组织 (Metallurgical structure)

SF-21 碳钢基边界无铅自润滑轴承

Marginal Pb-free self-lubricating bearing

Lead Free

该产品与SF-20具有相同结构和使用性能，在边界润滑条件下可长期使用而不加油，耐磨层表面有储油坑。产品广泛应用于冶金机械、矿山机

SF-21 has the same structure and functional performance with SF-20. It can work long time without oil in the condition of prelubricated with lubrication indents. Widely applied to metallurgy machinery, Mining machinery, water conservancy machinery, automobile, building

※技术参数: Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	140N/mm ²
最高线速度 V Max Sliding Speed	脂润滑 Grease lubrication	2.5m/s
最高PV值 Max PV Value Limit	脂润滑 Grease lubrication	2.8N/mm ² · m/s
摩擦系数 μ Friction coefficient	脂润滑 Grease lubrication	0.05 ~ 0.25
使用温度 Working temperature		-40℃ ~ +130℃
导热系数 Thermal conductivity		4W/m · k
热膨胀系数 Coefficient of thermal expansion		11 × 10 ⁻⁶ /k

SF-22 碳钢基边界无铅自润滑轴承

Marginal Pb-free self-lubricating bearing

Lead Free

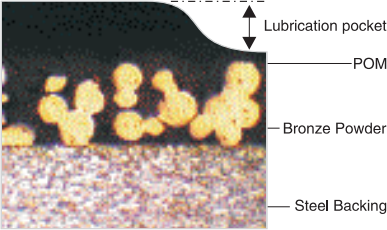


该产品以优质低碳钢为基体，中间烧结球形青铜层，表面轧制以缩醛树脂/亲油性纤维的特殊树脂。具有摩擦系数低、耐磨性能好、无油条件下润滑的特点。产品广泛应用于卷场机、推土机、印染机、采煤机、冲床、

SF-22 Marginal Pb-free self-lubricating bearing based on steel-backing, sintered porous bronze as its interlayer, surface rolled by acetal resin and polymer material containing oleophobicity 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,

※技术参数: Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	110N/mm ²
最高线速度 V Max Sliding Speed	脂润滑 Grease lubrication	2.5m/s
最高PV值 Max PV Value Limit	脂润滑 Grease lubrication	3.2N/mm ² · m/s
摩擦系数 μ Friction coefficient	脂润滑 Grease lubrication	0.03 ~ 0.20
使用温度 Working temperature		-60℃ ~ +130℃
导热系数 Thermal conductivity		4W/m · k
热膨胀系数 Coefficient of thermal expansion		11 × 10 ⁻⁶ /k

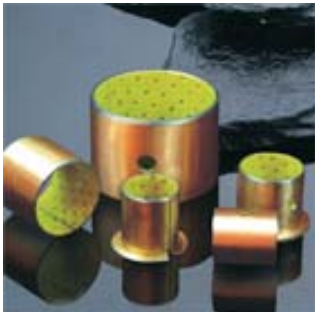


金相组织 (Metallurgical structure)

SF-23 碳钢基边界无铅自润滑轴承

Marginal Pb-free self-lubricating bearing

Lead Free

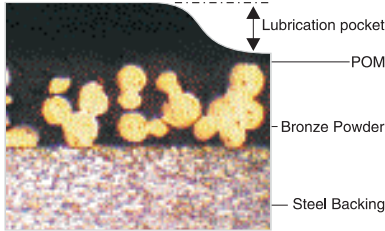


该产品与SF-20具有相同结构和使用性能，在边界润滑条件下可长期使用而不加油，耐磨层表面有储油坑。产品广泛应用于产品广泛应用于冶

SF-23 has the same structure and functional performance with SF-20. Suitable for marginal lubrication and dry operation conditions. It has been widely applied to metallurgy machinery, Mining machinery, water conservancy machinery, automobile, building machinery, agriculture

※技术参数: Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	250N/mm ²
	动载 Dynamic load	140N/mm ²
最高线速度 V Max Sliding Speed	脂润滑 Grease lubrication	2.5m/s
最高PV值 Max PV Value Limit	脂润滑 Grease lubrication	2.8N/mm ² · m/s
摩擦系数 μ Friction coefficient	脂润滑 Grease lubrication	0.05 ~ 0.25
使用温度 Working temperature		-40℃ ~ +130℃
导热系数 Thermal conductivity		4W/m · k
热膨胀系数 Coefficient of thermal expansion		11 × 10 ⁻⁶ /k



金相组织 (Metallurgical structure)

SF-20/21/22/23 标准公制轴套
Metric Standard Bushing

轴套外径公差表

Bushing O.D. Tolerances Table

外径 $\varnothing D$ Outer Diameter $\varnothing D$	外径公差 Outer Diameter Tolerance
$\varnothing D \leq 10$	+0.055 +0.025
$10 < \varnothing D \leq 18$	+0.065 +0.030
$18 < \varnothing D \leq 30$	+0.075 +0.035
$30 < \varnothing D \leq 50$	+0.085 +0.045
$50 < \varnothing D \leq 80$	+0.100 +0.055
$80 < \varnothing D \leq 120$	+0.120 +0.070
$120 < \varnothing D \leq 180$	+0.170 +0.100
$180 < \varnothing D \leq 250$	+0.210 +0.130
$250 < \varnothing D \leq 305$	+0.260 +0.170

轴套壁厚公差

Bushing Wall Thickness Tolerances Table

内径 $\varnothing d$ Inner Diameter $\varnothing d$	壁厚公差 t Wall Thickness Tolerance
$8 \leq \varnothing d \leq 18$	1.0 $\begin{smallmatrix} -0.020 \\ -0.045 \end{smallmatrix}$
$18 < \varnothing d \leq 25$	1.5 $\begin{smallmatrix} -0.025 \\ -0.055 \end{smallmatrix}$
$25 < \varnothing d < 45$	2.0 $\begin{smallmatrix} -0.030 \\ -0.065 \end{smallmatrix}$
$45 \leq \varnothing d < 80$	2.5 $\begin{smallmatrix} -0.040 \\ -0.085 \end{smallmatrix}$
$\varnothing d \geq 80$	2.5 $\begin{smallmatrix} -0.055 \\ -0.115 \end{smallmatrix}$

► 可供标准产品的标注方式

Standard Bushing Label Mode

■ 直套标注方式 Bushing Label Mode

SF-2□ ×× ××
直套型号 Bushing Type
直套内径 Bushing Inner Diameter
直套高度 Bushing Length

■ 板材标注方式 Strip Label Mode

SF-2□P ××× ×××
板材型号 Strip Type
板材厚度 Strip Wall Thickness
板材宽度 Strip Width

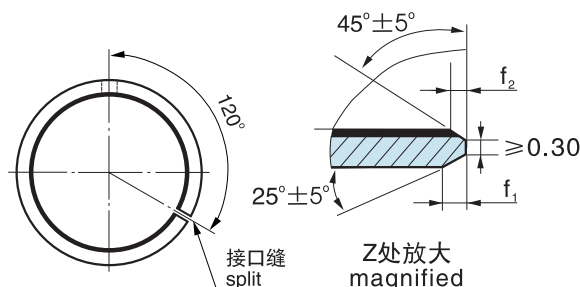
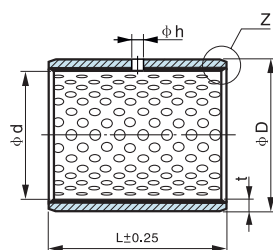
■ 垫片标注方式 Washer Label Mode

SF-2□W ××
垫片型号 Washer Type
垫片规格 Washer Specification

■ 英制直套标注方式 The Inch Bushing Label Mode

SF-2□ ×× DX ××
直套型号 Bushing Type
直套内径 Bushing Inner Diameter
直套高度 Bushing Length
英制 Inch

SF-20/21/22/23 标准公制轴承
Metric Standard bearings



※标准直套标注方式: Standard Bushing Label Mode SF-2□ 1010

单位Unit: mm

型号 Type	外径 ϕD	内径 ϕd	相配轴径 Axle	相配座孔 Housing	ϕh_1	f_1	f_2	$L \pm 0.25$						
								10	15	20	25	30	40	50
SF-2□	12	10	10 ⁰ _{-0.022}	12 ^{+0.018} ₀	$\phi 4$	0.6	0.3	1010	1015	1020				
SF-2□	14	12	12 ⁰ _{-0.027}	14 ^{+0.018} ₀				1210	1215	1220				
SF-2□	16	14	14 ⁰ _{-0.027}	16 ^{+0.018} ₀					1415	1420				
SF-2□	17	15	15 ⁰ _{-0.027}	17 ^{+0.018} ₀					1515	1520	1525			
SF-2□	18	16	16 ⁰ _{-0.027}	18 ^{+0.018} ₀					1615	1620	1625			
SF-2□	19	17	17 ⁰ _{-0.027}	19 ^{+0.021} ₀					1715	1720	1725			
SF-2□	20	18	18 ⁰ _{-0.027}	20 ^{+0.021} ₀					1815	1820	1825			
SF-2□	23	20	20 ⁰ _{-0.033}	23 ^{+0.021} ₀	$\phi 6$	0.8	0.4		2015	2020	2025	2030		
SF-2□	25	22	22 ⁰ _{-0.033}	25 ^{+0.021} ₀					2215	2220	2225	2230		
SF-2□	27	24	24 ⁰ _{-0.033}	27 ^{+0.021} ₀						2420	2425	2430		
SF-2□	28	25	25 ⁰ _{-0.033}	28 ^{+0.021} ₀						2520	2525	2530		
SF-2□	32	28	28 ⁰ _{-0.033}	32 ^{+0.025} ₀	$\phi 6$	1.2	0.6			2820	2825	2830		
SF-2□	34	30	30 ⁰ _{-0.033}	34 ^{+0.025} ₀						3020	3025	3030	3040	
SF-2□	36	32	32 ⁰ _{-0.039}	36 ^{+0.025} ₀						3220	3225	3230	3240	
SF-2□	39	35	35 ⁰ _{-0.039}	39 ^{+0.025} ₀						3520	3525	3530	3540	
SF-2□	44	40	40 ⁰ _{-0.039}	44 ^{+0.025} ₀	□ 8	1.6	0.8			4020	4025	4030	4040	
SF-2□	50	45	45 ⁰ _{-0.039}	50 ^{+0.025} ₀						4520	4525	4530	4540	
SF-2□	55	50	50 ⁰ _{-0.039}	55 ^{+0.030} ₀								5030	5040	5050
SF-2□	60	55	55 ⁰ _{-0.045}	60 ^{+0.030} ₀								5530	5540	5550
SF-2□	65	60	60 ⁰ _{-0.045}	65 ^{+0.030} ₀								6030	6040	6050
SF-2□	70	65	65 ⁰ _{-0.045}	70 ^{+0.030} ₀								6530	6540	6550
SF-2□	75	70	70 ⁰ _{-0.045}	75 ^{+0.030} ₀								7030	7040	7050
SF-2□	80	75	75 ⁰ _{-0.045}	80 ^{+0.030} ₀								7530	7540	7550

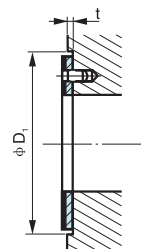
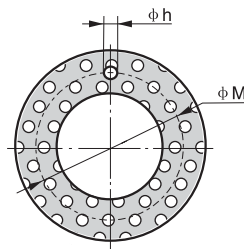
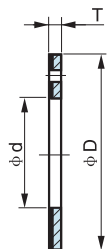
SF-20/21/22/23 标准公制轴承

Metric Standard bearings

型号 Type	外径 Ø D	内径 Ø d	相配轴径 Axle	相配座孔 Housing	Hole Ø h	f1	f2	L ± 0.25					
								40	50	60	80	100	120
SF-2□	85	80	80 ⁰ _{-0.045}	85 ^{+0.035} ₀	Ø 9.5	1.6	0.8	8040	8050	8060			
SF-2□	90	85	85 ⁰ _{-0.054}	90 ^{+0.035} ₀				8540	8550	8560			
SF-2□	95	90	90 ⁰ _{-0.054}	95 ^{+0.035} ₀					9050	9060	9080		
SF-2□	100	95	95 ⁰ _{-0.054}	100 ^{+0.035} ₀					9550	9560	9580		
SF-2□	105	100	100 ⁰ _{-0.054}	105 ^{+0.035} ₀					10050	10060	10080	100100	
SF-2□	110	105	105 ⁰ _{-0.054}	110 ^{+0.035} ₀					10550	10560	10580	105100	
SF-2□	115	110	110 ⁰ _{-0.054}	115 ^{+0.035} ₀					11050	11060	11080	110100	
SF-2□	120	115	115 ⁰ _{-0.054}	120 ^{+0.035} ₀					11550	11560	11580	115100	
SF-2□	125	120	120 ⁰ _{-0.054}	125 ^{+0.040} ₀						12060	12080	120100	
SF-2□	130	125	125 ⁰ _{-0.063}	130 ^{+0.040} ₀						12560	12580	125100	
SF-2□	135	130	130 ⁰ _{-0.063}	135 ^{+0.040} ₀						13060	13080	130100	
SF-2□	140	135	135 ⁰ _{-0.063}	140 ^{+0.040} ₀						13560	13580	135100	
SF-2□	145	140	140 ⁰ _{-0.063}	145 ^{+0.040} ₀						14060	14080	140100	
SF-2□	150	145	145 ⁰ _{-0.063}	150 ^{+0.040} ₀						14560	14580	145100	
SF-2□	160	155	155 ⁰ _{-0.063}	160 ^{+0.040} ₀							15580	155100	155120
SF-2□	170	165	165 ⁰ _{-0.063}	170 ^{+0.040} ₀							16580	165100	165120
SF-2□	180	175	175 ⁰ _{-0.063}	180 ^{+0.040} ₀							17580	175100	175120
SF-2□	190	185	185 ⁰ _{-0.072}	190 ^{+0.046} ₀							18580	185100	185120
SF-2□	200	195	195 ⁰ _{-0.072}	200 ^{+0.046} ₀							19580	195100	195120
SF-2□	210	205	205 ⁰ _{-0.072}	210 ^{+0.046} ₀							20580	205100	205120
SF-2□	220	215	215 ⁰ _{-0.072}	220 ^{+0.046} ₀							21580	215100	215120
SF-2□	230	225	225 ⁰ _{-0.072}	230 ^{+0.046} ₀							22580	225100	225120
SF-2□	240	235	235 ⁰ _{-0.072}	240 ^{+0.046} ₀							23580	235100	235120
SF-2□	250	245	245 ⁰ _{-0.072}	250 ^{+0.046} ₀							24580	245100	245120
SF-2□	260	255	255 ⁰ _{-0.081}	260 ^{+0.052} ₀							25580	255100	255120
SF-2□	270	265	265 ⁰ _{-0.081}	270 ^{+0.052} ₀							26580	265100	265120
SF-2□	280	275	275 ⁰ _{-0.081}	280 ^{+0.052} ₀								275100	275120
SF-2□	290	285	285 ⁰ _{-0.081}	290 ^{+0.052} ₀								285100	285120
SF-2□	300	295	295 ⁰ _{-0.081}	300 ^{+0.052} ₀								295100	295120
SF-2□	305	300	300 ⁰ _{-0.081}	305 ^{+0.052} ₀								300100	300120

SF-20W/21W/22W/23W 标准公制垫片

Metric Standard Washer



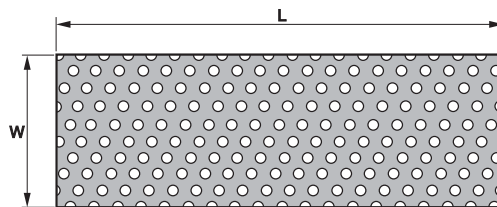
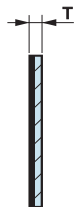
※标准垫片标注方式: Standard Washer Label Mode SF-2□W 10

单位Unit: mm

相配轴径 Axle	型号规格 Designation	垫片尺寸 Washer Dimension				安装尺寸 Installation Size		
		$\varnothing D_{-0.25}^0$	$\varnothing d_0^{+0.25}$	$T_{-0.05}^0$	$\varnothing M \pm 0.125$	$\varnothing h_{+0.10}^{+0.40}$	$t \pm 0.20$	$\varnothing D_{i_0}^{+0.12}$
8	SF-2□W 10	20	10	1.5	15	1.5	1.0	20
10	SF-2□W 12	24	12		18			24
12	SF-2□W 14	26	14		20			2.0
14	SF-2□W 16	30	16		23	30		
16	SF-2□W 18	32	18		25	32		
18	SF-2□W 20	36	20		28	3.0		36
20	SF-2□W 22	38	22		30			38
22	SF-2□W 24	42	24		33			42
24	SF-2□W 26	44	26		35			44
26	SF-2□W 28	48	28		38	4.0		48
30	SF-2□W 32	54	32		43			54
36	SF-2□W 38	62	38		50			62
40	SF-2□W 42	66	42		54			66
46	SF-2□W 48	74	48	2.0	61			1.5
50	SF-2□W 52	78	52		65	78		
60	SF-2□W 62	90	62		76	90		

SF-20P/21P/22P/23P 标准公制滑板

Metric Standard Strip



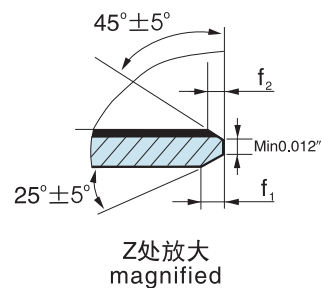
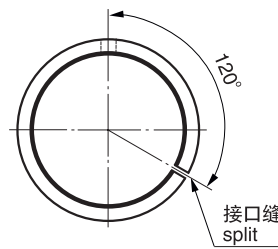
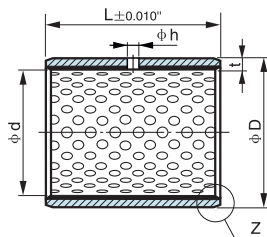
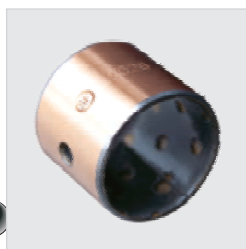
※标准滑板标注方式: Standard Strip Label Mode SF-2□P 010130

单位Unit: mm

相配轴径 Axle	长度 Length $L_0^{+5.0}$	宽度 Width $W_0^{+2.0}$	厚度 Thickness $T_{-0.050}^0$
SF-2□P 010130	500	130	1.0
SF-2□P 015130	500	130	1.5
SF-2□P 020130	500	130	2.0
SF-2□P 025130	500	130	2.5

SF-20/21/22/23 标准英制轴套

Inch Standard Bushing



※标准英制直套标注方式: Standard Inch Bushing Label Mode SF-2□ 06DX06

单位Unit: inch"

型号规格 Designation	公称尺寸 Nominal Diameter			Hole Ø h	壁厚 Bush Wall t	相配 轴径 Axle	相配 座孔 Housing	安装后内孔 Installed I.D	f1	f2
	□ d	□ D	L							
SF-2□ 06DX06	3/8	15/32	0.375	No hole	0.0510 0.0500	0.3648 0.3639	0.4694 0.4687	0.3694 0.3667	0.020 0.040	0.005 0.025
SF-2□ 06DX08			0.500							
SF-2□ 06DX12			0.750							
SF-2□ 07DX08	7 / 16	17 / 32	0.500	0.4273 0.4263		0.5319 0.5312	0.4319 0.4292			
SF-2□ 07DX12			0.750							
SF-2□ 08DX06	1 / 2	19 / 32	0.375	0.4897 0.4887		0.5944 0.5937	0.4944 0.4917			
SF-2□ 08DX08			0.500							
SF-2□ 08DX10			0.625							
SF-2□ 08DX14			0.875							
SF-2□ 09DX08	9 / 16	21 / 32	0.500	0.5522 0.5512		0.6569 0.6562	0.5569 0.5542			
SF-2□ 09DX12			0.750							
SF-2□ 10DX08	5 / 8	23 / 32	0.500	0.6146 0.6136		0.7195 0.7187	0.6195 0.6167			
SF-2□ 10DX10			0.625							
SF-2□ 10DX12			0.750							
SF-2□ 10DX14			0.875							
SF-2□ 12DX08	3 / 4	7 / 8	0.500	0.0669 0.0657	0.7390 0.7378	0.8758 0.8750	0.7444 0.7412			
SF-2□ 12DX12			0.750							
SF-2□ 12DX16			1.000							
SF-2□ 14DX12	7 / 8	1	0.750		0.8639 0.8627	1.0008 1.0000	0.8694 0.8662			
SF-2□ 14DX14			0.875							
SF-2□ 14DX16			1.000							
SF-2□ 16DX12	1	9 / 8	0.750		0.9888 0.9876	1.1258 1.1250	0.9944 0.9912			
SF-2□ 16DX16			1.000							
SF-2□ 16DX24			1.500							
SF-2□ 18DX12	9 / 8	41 / 32	0.750	0.0824 0.0810	1.1138 1.1126	1.2822 1.2812	1.1202 1.1164			
SF-2□ 18DX16			1.000							
SF-2□ 18DX24			1.500							

SF-20/21/22/23 标准英制轴套
Inch Standard Bushing

型号规格 Designation	公称尺寸 Nominal Diameter			Hole Ø h	壁厚 Bush Wall t	相配轴径 Axle	相配座孔 Housing	安装后内孔 Installed I.D	f1	f2
	Ø d	□ D	L							
SF-2□ 20DX12	5 / 4	45 / 32	0.750	1 / 4	0.0824 0.0810	1.2387 1.2371	1.4072 1.4062	1.2452 1.2414	0.020 0.040	0.005 0.025
SF-2□ 20DX16			1.000							
SF-2□ 20DX20			1.250							
SF-2□ 22DX16	11 / 8	49 / 32	1.000			1.3635 1.3619	1.5322 1.5312	1.3702 1.3664		
SF-2□ 22DX22			1.375							
SF-2□ 22DX28			1.750							
SF-2□ 24DX16	3 / 2	53 / 32	1.000	1.4884 1.4868		1.6572 1.6562	1.4952 1.4914			
SF-2□ 24DX20			1.250							
SF-2□ 24DX24			1.500							
SF-2□ 26DX16	13 / 8	57 / 32	1.000	1.6133 1.6117		1.7822 1.7812	1.6202 1.6164			
SF-2□ 26DX24			1.500							
SF-2□ 28DX16	7 / 4	31 / 16	1.000	0.0980 0.0962		1.7383 1.7367	1.9385 1.9375	1.7461 1.7415		
SF-2□ 28DX24			1.500							
SF-2□ 28DX28			1.750							
SF-2□ 30DX30	15 / 8	33 / 16	1.875		1.8632 1.8616	2.0637 2.0625	1.8713 1.8665			
SF-2□ 30DX36			2.250							
SF-2□ 32DX24	2	35 / 16	1.500		1.9881 1.9863	2.1887 2.1875	1.9963 1.9915			
SF-2□ 32DX32			2.000							
SF-2□ 32DX40			2.500							
SF-2□ 36DX32	9 / 4	39 / 16	2.000		2.2378 2.2360	2.4387 2.4375	2.2463 2.2415			
SF-2□ 36DX36			2.250							
SF-2□ 36DX40			2.500							
SF-2□ 40DX32	5 / 2	43 / 16	2.000		2.4875 2.4857	2.6887 2.6875	2.4963 2.4915			
SF-2□ 40DX40			2.500							
SF-2□ 44DX32	11 / 4	47 / 16	2.000	2.7351 2.7333	2.9387 2.9375	2.7457 2.7393				
SF-2□ 44DX40			2.500							
SF-2□ 44DX48			3.000							
SF-2□ 48DX32	3	51 / 16	2.000	3 / 8	0.0991 0.0965	2.9849 2.9831	3.1889 3.1875	2.9959 2.9893		
SF-2□ 48DX48			3.000							
SF-2□ 48DX60			3.750							
SF-2□ 56DX48	7 / 2	59 / 16	3.000			3.4844 3.4822	3.6889 3.6875	3.4959 3.4893		
SF-2□ 56DX60			3.750							
SF-2□ 64DX48	4	67 / 16	3.000			3.9839 3.9817	4.1889 4.1875	3.9959 3.9893		
SF-2□ 64DX60			3.750							



SF-30/31/32/33/34 双金属自润滑轴承
Bimetallic self-lubricating bearing

该产品以优质低碳钢为基体，表面烧结青铜粉，适用于高载低速下的旋转，摇摆运动。具有摩擦系数低、耐磨性能好、使用寿命长、抗咬合性能好等特点，铜合金层可根据要求加工出各种类型的油穴、油槽。产品被广泛应用于矿山机械、汽机车、建筑机械、农用机械、轧钢机械等。

SF-30/31/32/33/34 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.

※材料特性: Material Characterisitc

材料牌号 Material Trademark	合金成份 Alloy Composition	合金硬度 Alloy Hardness	国际标准 International Standard
SF-30	CuPb10Sn10	70 ~ 100HB	JIS-LBC3 / SAE-797 / GLACIER SY DAIDO L10 / GLYCO 66 / ACL F100
SF-31	CuPb24Sn4	45 ~ 70HB	JIS-LBC6 / SAE-799 / GLACIER SX DAIDO L23 / GLYCO 68 / ACL F250
SF-32	CuPb24Sn	40 ~ 60HB	SAE-49 / ACL F780
SF-33	CuPb30	30 ~ 45HB	SAE-48 / JIS-KJ3 / GLACIER SL
SF-34	AlSn20Cu	30 ~ 40HB	JIS-AJL / SAE-783 / GLAICER As15 GLYCO 74 / ACL 820

※技术参数: Technical Data

性能指标 Performance index	型号 Type	SF-30	SF-31	SF-32	SF-33	SF-34
最大承载 P (N/mm ²) Max Load Capacity		150	130	130	120	100
拉伸强度 (N/mm ²) Tensile Strength		185	150	150	200	200
最大线速度 (油润滑) V (m/s) Max Sliding Speed (Oil Lubrication)		5.0	10.0	10.0	15.0	25.0
摩擦系数 μ Friction coefficient		0.06 ~ 0.14	0.06 ~ 0.16	0.06 ~ 0.16	0.08 ~ 0.16	0.08 ~ 0.17
最高PV值 N/mm ² · m/s Max PV Value Limit	脂润滑 Grease lubrication	2.8	2.8	2.8	2.5	—
	油润滑 Oil lubrication	10	10	10	8	6

SF-30/31/32/33/34 双金属自润滑轴承

Bimetallic self-lubricating bearing

※应用特性 Application Characteristics

材料牌号 Material Trademark	适用条件	适用场合
SF-30	很高的耐疲劳强度和承载能力, 抗冲击能力强, 耐磨性/耐腐蚀性好 Very good resistance to fatigue strength, with high shock resistance and good corrosion resistance.	中速、高冲击载荷的衬套, 内燃机连杆活塞销衬套 Fit for middle load, high speed, bushes, washer and connecting rod bearing in internal combustion engine used in machinical equipment and high
SF-31	较高的耐疲劳强度和承载能力、较好的滑动性能, 易受润滑油腐蚀 Good resistance to fatigue strength and high load capacity, good performance of sliding, liable to be corrupted	中载中速、高速内燃机主轴套和连杆轴承 middle load middle speed, principle axis of internal combustion engine.
SF-32	较高的耐疲劳强度、承载能力、抗冲击能力 Good resistance to fatigue strength, load capacity, shock resistance and corrosion.	用于内燃机主轴和连杆轴承、止推垫片 Principle axis of internal combustion engine, connecting rod bushing.
SF-33	良好的抗咬性、异物埋没性, 工作表面镀软合金层 Good performance of anti-seizing, covering eyewinker, soft alloy be plated on working surface.	高速中低载荷的内燃机主轴套, 连杆轴套 High speed, middle or low load, principle axis internal combustion engine
SF-34	中等的耐疲劳强度和承载能力, 良好的抗磨性能, 较好轴承滑动性能。 Moderate fatigue strength, and load capacity, good performance of bearing sliding.	高速低载的内燃机轴瓦、气压机、制冷机轴承 High speed, low load, internal combustion engine half bearing, bushing used in compressing and refrigerating machine.



SF-35 双金属固体自润滑轴承

Bimetallic solid self-lubricating bearing

该产品以优质低碳钢为基体, 表面烧结铜粉。合金层表面轧制螺旋角度菱形油穴, 内嵌石墨或二硫化钼, 润滑面积25%。具有摩擦系数小, 良好的润滑性和抗磨损性。产品被广泛应用于汽车起动电机, 发电机, 升降机、冶金机械等。

SF-35 Bimetallic solid self-lubricating bearing based on high quality low-carbon steel backing, sintered porous bronze as its surface. Surface of alloy is rolled the spirally diamond type of the oil pockets, embedded lead and molybdenum disulfide, the lubrication area of the bearing surface is being about 25%. Performed well by low friction coefficient, good lubricating action and wear resistant action. particularly suit for starting motor for automobiles, generators, hoisting machines and metallurgical machinery.

※技术参数: Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	干摩擦 Dry friction	70N/mm ²
	油润滑 Oil lubrication	90N/mm ²
最高线速度 V Max line Speed	干摩擦 Dry friction	0.4m/s
	油润滑 Oil lubrication	2.0m/s
最高 PV 值 Max PV Value Limit	干摩擦 Dry friction	2.6N/mm ² · m/s
	油润滑 Oil lubrication	15N/mm ² · m/s
摩擦系数 μ Friction coefficient	干摩擦 Dry friction	<0.22
	油润滑 Oil lubrication	<0.08
使用温度 Working temperature	干摩擦 Dry friction	250℃
	油润滑 Oil lubrication	200℃
导热系数 Thermal conductivity		76W/m · k
热膨胀系数 Coefficient of thermal expansion		22X10 ⁻⁶ /K

SF-30/31/32/33/35

标准公制轴套

Metric Standard Bushing

轴套外径公差表

Bushing O.D. Tolerances Table

外径 $\varnothing D$ Outer Diameter $\square D$	外径公差 Outer Diameter Tolerance
$\square D \leq 10$	+0.055 +0.025
$10 < \square D \leq 18$	+0.065 +0.030
$18 < \square D \leq 30$	+0.075 +0.035
$30 < \square D \leq 50$	+0.085 +0.045
$50 < \square D \leq 80$	+0.100 +0.055
$80 < \square D \leq 120$	+0.120 +0.070
$120 < \square D \leq 180$	+0.170 +0.100

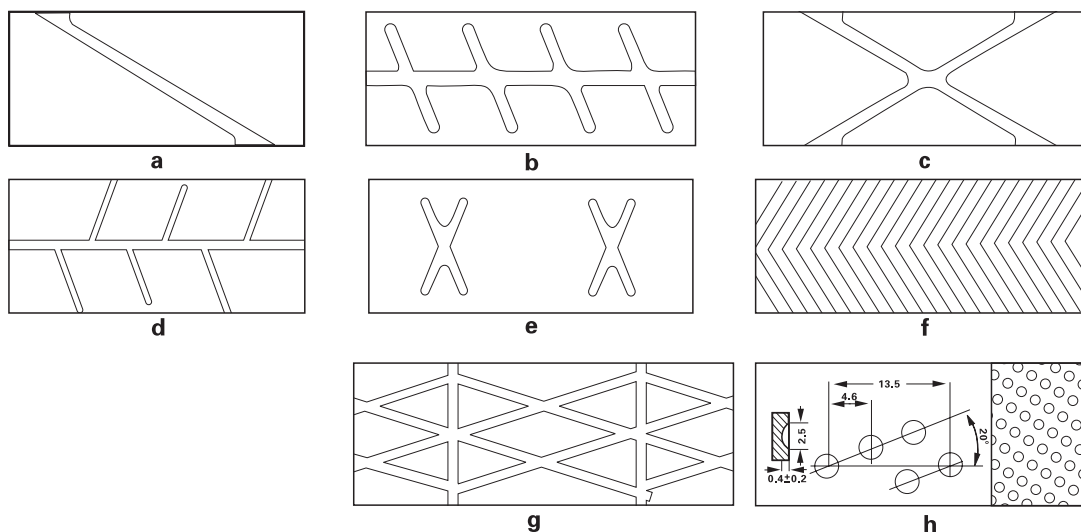
轴套内径公差

Bushing Inner Diameter Tolerances Table

内径 $\varnothing d$ Inner Diameter $\square d$	壁厚公差 t Wall Thickness Tolerance
$8 < \square d \leq 18$	$1.0 \begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$
$18 < \square d \leq 25$	$1.5 \begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$
$25 < \square d < 45$	$2.0 \begin{smallmatrix} 0 \\ -0.035 \end{smallmatrix}$
$45 \leq \square d \leq 150$	$2.5 \begin{smallmatrix} 0 \\ -0.050 \end{smallmatrix}$

※双金属自润滑轴套的油槽油穴形式:

Types for Bi-Metallic Bushing Grooves and Indents

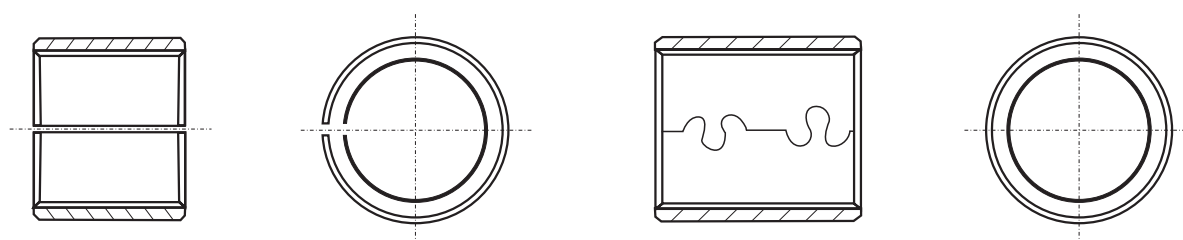


※双金属自润滑轴套的搭扣形式

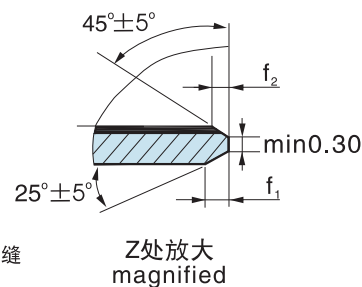
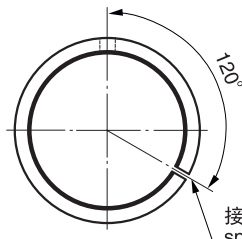
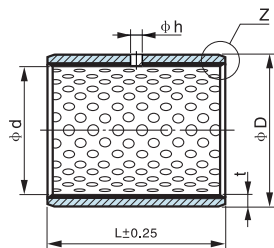
Lock Types for Bi-Metallic Bushing

a. 开口型 straight joint

b. 互锁搭扣型 Inter Locking Joint



SF-30/31/32/33/35 标准公制轴套
Metric Standard Bushing



※标准直套标注方式: Standard Bushing Label Mode SF-3□ 1015

单位Unit: mm

型号 Type	外径 Ø D	内径 Ø d	相配轴径 Axle	相配座孔 Housing	Hole Ø h	f1	f2	L ± 0.25							
								15	20	25	30	40	50		
SF-3□	12	10	10 ^{-0.013 -0.028}	12 ^{+0.018 0}	□ 4	0.6	0.3	1015	1020						
SF-3□	14	12	12 ^{-0.016 -0.034}	12 ^{+0.018 0}				1215	1220						
SF-3□	16	14	14 ^{-0.016 -0.034}	16 ^{+0.018 0}				1415	1420						
SF-3□	17	15	15 ^{-0.016 -0.034}	17 ^{+0.018 0}				1515	1520	1525					
SF-3□	18	16	16 ^{-0.016 -0.034}	18 ^{+0.018 0}				1615	1620	1625					
SF-3□	19	17	17 ^{-0.016 -0.034}	19 ^{+0.021 0}				1715	1720	1725					
SF-3□	20	18	18 ^{-0.016 -0.034}	20 ^{+0.021 0}				1815	1820	1825					
SF-3□	23	20	20 ^{-0.020 -0.041}	23 ^{+0.021 0}	□ 6	0.8	0.4	2015	2020	2025					
SF-3□	25	22	22 ^{-0.020 -0.041}	25 ^{+0.021 0}					2220	2225	2230				
SF-3□	27	24	24 ^{-0.020 -0.041}	27 ^{+0.021 0}					2420	2425	2430				
SF-3□	28	25	25 ^{-0.020 -0.041}	28 ^{+0.021 0}					2520	2525	2530				
SF-3□	30	26	26 ^{-0.020 -0.041}	30 ^{+0.021 0}					2620	2625	2630				
SF-3□	32	28	28 ^{-0.020 -0.041}	32 ^{+0.025 0}		1.2	0.6		2820	2825	2830				
SF-3□	34	30	30 ^{-0.020 -0.041}	34 ^{+0.025 0}					3020	3025	3030				
SF-3□	36	32	32 ^{-0.025 -0.050}	36 ^{+0.025 0}				3220	3225	3230	3240				
SF-3□	39	35	35 ^{-0.025 -0.050}	39 ^{+0.025 0}				3520	3525	3530	3540				
SF-3□	42	38	38 ^{-0.025 -0.050}	42 ^{+0.025 0}	□ 8			1.6	0.8		3820	3825	3830	3840	
SF-3□	44	40	40 ^{-0.025 -0.050}	44 ^{+0.025 0}								4025	4030	4040	
SF-3□	50	45	45 ^{-0.025 -0.050}	50 ^{+0.025 0}						4525	4530	4540			
SF-3□	55	50	50 ^{-0.025 -0.050}	55 ^{+0.025 0}							5030	5040	5050		
SF-3□	60	55	55 ^{-0.030 -0.060}	60 ^{+0.030 0}							5530	5540	5550		

SF-30/31/32/33/35 标准公制轴套
Metric Standard Bushing

型号 Type	外径 Ø D	内径 Ø d	相配轴径 Axle	相配座孔 Housing	Hole □ h	f1	f2	L ± 0.25					
								40	50	60	70	80	100
SF-3□	65	60	60 ^{-0.030 -0.060}	65 ^{+0.030 0}	□ 8	1.6	0.8	6040	6050	6060			
SF-3□	70	65	65 ^{-0.030 -0.060}	70 ^{+0.030 0}				6540	6550	6560			
SF-3□	80	75	75 ^{-0.030 -0.060}	80 ^{+0.030 0}	□ 9.5			7540	7550	7560			
SF-3□	85	80	80 ^{-0.030 -0.060}	85 ^{+0.035 0}				8040	8050	8060			
SF-3□	90	85	85 ^{-0.036 -0.071}	90 ^{+0.035 0}					8550	8560	8570		
SF-3□	95	90	90 ^{-0.036 -0.071}	95 ^{+0.035 0}					9050	9060	9070		
SF-3□	100	95	95 ^{-0.036 -0.071}	100 ^{+0.035 0}					9550	9560	9570		
SF-3□	105	100	100 ^{-0.036 -0.071}	105 ^{+0.035 0}					10050	10060	10070		
SF-3□	110	105	105 ^{-0.036 -0.071}	110 ^{+0.035 0}					10550	10560	10570		
SF-3□	115	110	110 ^{-0.036 -0.071}	115 ^{+0.035 0}					11050	11060	11070		
SF-3□	120	115	115 ^{-0.036 -0.071}	120 ^{+0.035 0}						11560	11570	11580	
SF-3□	125	120	120 ^{-0.036 -0.071}	125 ^{+0.040 0}						12060	12070	12080	
SF-3□	130	125	125 ^{-0.043 -0.083}	130 ^{+0.040 0}						12560	12570	12580	
SF-3□	135	130	130 ^{-0.043 -0.083}	135 ^{+0.040 0}						13060	13070	13080	
SF-3□	145	135	135 ^{-0.043 -0.083}	145 ^{+0.040 0}								13580	135100
SF-3□	150	145	145 ^{-0.043 -0.083}	150 ^{+0.040 0}								14580	145100
SF-3□	155	150	150 ^{-0.043 -0.083}	155 ^{+0.040 0}								15080	150100



SF-80/81/82 金属基弥散型自润滑轴承
Metal base point-lubricating bearings

该产品以金属基为基体，表面烧结含有固体润滑剂的铜合金粉，适用于高载低速而无法加油或无法形成润滑膜の場合。产品被广泛应用于水轮机、注塑机、汽车轮胎模具等。

SF-80/81/82 Steel point-lubricating bearings used metal as base, sintered porous bronze alloy powder containing solid lubricants as its surface. Suitable for hostile environments, for high load and low speed and dry operation conditions. The products are widely used in water turbines, injection molding machinery, tire moulds etc.

SF-80/81/82 金属基弥散型自润滑轴承

Metal base point-lubricating bearing

性能指标 Performance index		Type	型号	SF-80	SF-81	SF-82
金属基板 Backing Metal				钢板 Steel	不锈钢板 Stainless Steel	铜板 Bronze
耐磨层 Lining Layer	成份: Composition			CuSn13	CuSn13	CuSn13
	固体润滑剂:Solid Lubrications			6%	6%	6%
	硬度: Hardness			≥40HB	≥40HB	≥40HB
	抗拉强度:Compressive Strength			320N/mm ²	300N/mm ²	300N/mm ²
最大承载 P Max Load Capacity	静载 Static load			150N/mm ²	150N/mm ²	150N/mm ²
	动载 Dynamic load			100N/mm ²	100N/mm ²	100N/mm ²
最高线速度 V Max line Speed				0.5m/s	0.5m/s	0.5m/s
最大 PV 值 Max PV				1.5N/mm ² · m/s	1.5N/mm ² · m/s	1.5N/mm ² · m/s
使用温度 Working temperature				-150℃ ~ +250℃	-150℃ ~ +250℃	-150℃ ~ +250℃
摩擦系数 μ Friction coefficient				0.10 ~ 0.30	0.10 ~ 0.30	0.10 ~ 0.30

轴套外径公差表

Bushing O.D. Tolerances Table

外径 Ø D Outer Diameter Ø D	外径公差 Outer Diameter Tolerance
Ø D ≤ 10	+0.055 +0.025
10 < Ø D ≤ 18	+0.065 +0.030
18 < Ø D ≤ 30	+0.075 +0.035
30 < Ø D ≤ 50	+0.085 +0.045
50 < Ø D ≤ 80	+0.100 +0.055
80 < Ø D ≤ 120	+0.120 +0.070
120 < Ø D ≤ 180	+0.170 +0.100
180 < Ø D ≤ 250	+0.210 +0.130

轴套内径公差

Bushing Inner Diameter Tolerances Table

内径 Ø d Inner Diameter Ø d	安装后内径公差H9 Inner Diameter Tolerance
Ø d ≤ 10	+0.036 0
10 < Ø d ≤ 18	+0.043 0
18 < Ø d ≤ 30	+0.052 0
30 < Ø d ≤ 50	+0.062 0
50 < Ø d ≤ 80	+0.074 0
80 < Ø d ≤ 120	+0.087 0
120 < Ø d ≤ 180	+0.100 0
180 < Ø d ≤ 250	+0.115 0

※检验座孔公差表

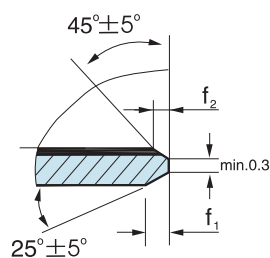
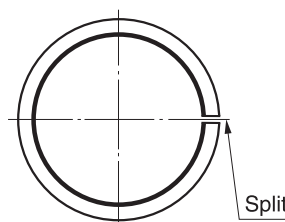
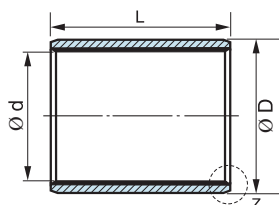
Test Housing Tolerances Table

外径 Ø D Outer Diameter Ø D	10 18	18 30	30 50	50 80	80 120	120 180	180 250
座孔H7中值 Housing H7 Middle	D+0.009	D+0.011	D+0.013	D+0.015	D+0.018	D+0.020	D+0.023

SF-80/81/82 系列产品压入座孔H7中值, 内孔精度达H9。

SF-80/81/82 series products press into Housing H7 Middle, accuracy of inner diameter can reach H9.

SF-80/81/82 金属基弥散型自润滑轴承
Metal base point-lubricating bearing



Detail Z

※标准产品标注方式 Standard Bushing Label Mode SF-8□ 1220

单位Unit: mm

型号 Type	外径 □ D	内径 □ d	相配轴径 Axle	相配座孔 Housing	f1	f2	L ± 0.25						
							10	20	30	40	60	80	100
SF-8□	14	12	12 ^{-0.016 -0.034}	14 ^{+0.018 0}	0.6	0.3	1210	1220					
SF-8□	16	14	14 ^{-0.016 -0.034}	16 ^{+0.018 0}			1410	1420					
SF-8□	18	16	16 ^{-0.016 -0.034}	18 ^{+0.018 0}			1610	1620					
SF-8□	20	18	18 ^{-0.016 -0.034}	20 ^{+0.021 0}				1820	1830				
SF-8□	23	20	20 ^{-0.020 -0.041}	23 ^{+0.021 0}	0.8	0.4		2020	2030				
SF-8□	25	22	22 ^{-0.020 -0.041}	25 ^{+0.021 0}				2220	2230				
SF-8□	28	25	25 ^{-0.020 -0.041}	28 ^{+0.021 0}				2520	2530				
SF-8□	34	30	30 ^{-0.020 -0.041}	34 ^{+0.025 0}				3020	3030				
SF-8□	39	35	35 ^{-0.025 -0.050}	39 ^{+0.025 0}	1.2	0.6		3520	3530	3540			
SF-8□	44	40	40 ^{-0.025 -0.050}	44 ^{+0.025 0}				4020	4030	4040			
SF-8□	50	45	45 ^{-0.025 -0.050}	50 ^{+0.025 0}				4520	4530	4540			
SF-8□	55	50	50 ^{-0.025 -0.050}	55 ^{+0.030 0}					5030	5040	5060		
SF-8□	60	55	55 ^{-0.030 -0.060}	60 ^{+0.030 0}	1.6	0.8			5530	5540	5560		
SF-8□	65	60	60 ^{-0.030 -0.060}	65 ^{+0.030 0}						6040	6060		
SF-8□	70	65	65 ^{-0.030 -0.060}	70 ^{+0.030 0}						6540	6560		
SF-8□	80	75	75 ^{-0.030 -0.060}	80 ^{+0.030 0}						7540	7560	7580	
SF-8□	85	80	80 ^{-0.030 -0.060}	85 ^{+0.035 0}						8040	8060	8080	
SF-8□	95	90	90 ^{-0.036 -0.071}	95 ^{+0.035 0}						9040	9060	9080	
SF-8□	105	100	100 ^{-0.036 -0.071}	105 ^{+0.035 0}						10040	10060	10080	
SF-8□	115	110	110 ^{-0.036 -0.071}	115 ^{+0.035 0}						11040	11060	11080	
SF-8□	125	120	120 ^{-0.036 -0.071}	125 ^{+0.040 0}							12060	12080	120100
SF-8□	135	130	130 ^{-0.043 -0.083}	135 ^{+0.040 0}							13060	13080	130100
SF-8□	155	150	150 ^{-0.043 -0.083}	155 ^{+0.040 0}							15060	15080	150100