



# Jiashan TD Composite Bearing Factory

嘉善天地复合轴承厂



# SF-1

## Carbon Steel Self-lubricating Bearing



### 基材特性 Material Features

该产品以优质低碳钢为基体，中间烧结球形青铜层，表面轧制聚四氟乙烯(PTFE)和铅的混合物。它具有较好的自润滑、耐磨损、摩擦系数低、走合性能好、低噪音等性能，产品广泛应用于各种机械的滑动部位。

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

### 应用特点 Application Feature

1. 无油润滑或少油润滑，适用于无法加油或较难加油的场合，可以在使用时不保养或少保养；
  2. 耐磨性能好，摩擦系数小，使用寿命长；
  3. 可在-195℃~+280℃范围内使用；
  4. 走合性能好，低噪音，无污染；
  5. 薄壁结构，质量轻，可缩小机械体积；
  6. 在运作时能形成转移膜，起到保护对磨轴的作用，无咬轴现象；
  7. 对磨轴的硬度要求低，未经调质处理的轴都可使用，从而降低了相关零件的加工难度；
  8. 无吸水、吸油性，热膨胀系数小，散热性好，尺寸稳定；
  9. 钢背面可电镀多种金属，因此可在腐蚀性介质中使用，不会生锈；
- 目前已广泛运用于各种机械的滑动部位，如自动化机械设备(伸缩、摇摆、滑动、弯曲、回旋、回转部位)油压气缸导套、齿轮泵、纺织机械、自动售货机、塑胶成型机、压铸机、橡胶机械、烟草机、健身器材、办公机械、液压搬运车、汽机车、摩托车、农林机械等。

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

### 材料组织 Material Structure



1. 聚四氟乙烯与铅混合物0.01-0.03mm
  2. 球形青铜粉0.2-0.3mm
  3. 钢背0.7-2.3mm
  4. 电镀层:镀锡层厚0.005mm, 或镀铜层厚0.008mm
1. PTFE with lead 0.01~0.03mm
  2. Porous bronze 0.2~0.3mm
  3. Steel backing 0.7~2.3mm
  4. Tin-plating 0.005mm or copper plating 0.008mm

### 主要参数 Specification

性能指标 Performance Index		有关数据 Data
最大承载压力 P Max Load Capacity P	静载 Static Load	250N/mm <sup>2</sup>
	动载 Dynamic Load	140N/mm <sup>2</sup>
最大线速度 V Max Line Speed V	干摩擦 Dry friction	2.5m/s
	油润滑 Oil Lubrication	5m/s
最高PV值 Maximum PV Value	干摩擦 Dry friction	3.6N/mm <sup>2</sup> · m/s
	油润滑 Oil Lubrication	50N/mm <sup>2</sup> · m/s

性能指标 Performance Index		有关数据 Data
摩擦系数 μ Friction Coef μ	干摩擦 Dry friction	0.08-0.20
	油润滑 Oil Lubrication	0.02-0.07
工作温度 Working Temperature		-195℃~+280℃
导热系数 Thermal Conductivity		42W/m · k
线膨胀系数 Coefficient of Linear Expansion		11 × 10 <sup>-6</sup> /K

# SF-1T

## Carbon Steel Gear Pump Self-lubricating Bearing 碳钢基齿轮泵自润滑轴承

### 基材特性 Material Features

SF-1T是根据齿轮油泵的高PV值工况条件而设计推出的特殊配方产品。产品具有特殊的抗疲劳冲击优点。适应的油泵压力：16~25Mpa，线速度为3.5~5m/s。产品具有特殊的抗疲劳、抗冲击的优点，在流体润滑境界下PV值可达到120N/mm<sup>2</sup>·m/s是各种齿轮油泵、柱塞泵、叶片泵的最佳选择。

SF-1T is composed of a specially designed surface layer of PTFE formulations and is specifically applied for the high PV bushes of gear oil pumps. It is to be used in hydrodynamic or boundary lubricating condition of medium or high pressure gear oil pumps such as P=16-25 Mpa, V=3.5-5m/s, it shows the benefit of low friction coefficient, wear resistant and anti-impact properties. At hydrodynamic lubrication. The PV limit reaches to 120N/mm<sup>2</sup>·m/s. It is a best choice for the bushes of various kinds of gear pumps as well as plunger pumps, vane pumps and so on.

### 应用特点 Application Feature

- 1.在有油润滑条件下摩擦系数小而稳定。
  - 2.耐磨性能好、抗冲击性能好。
  - 3.在流体润滑条件TPV值可达120N/mm<sup>2</sup>·m/s。
  - 4.该产品目前已广泛运用于各种齿轮油泵、柱塞泵、叶片泵等场合，对流体润滑或境界润滑条件下的中高压齿轮泵尤其适用。
- 1.Low friction under oil condition.
  - 2.Wear resistant and anti-impact.
  - 3.At hydrodynamic lubrication, the PV limit reaches to 120N/mm<sup>2</sup>·m/s.
  - 4.It is the best choice for the bushes in various kinds of gear pumps as well as plunger, vane pumps and so on.

### 主要参数 Specification

性能指标 Performance Index		有关数据 Data
最大承载压力 P Max Load Capacity P	静载 Static Load	250N/mm <sup>2</sup>
	动载 Dynamic Load	140N/mm <sup>2</sup>
最大线速度 V Max Line Speed V	干摩擦 Dry friction	2m/s
	油润滑 Oil Lubrication	10m/s
最高PV值 Maximum PV Value	干摩擦 Dry friction	4.3N/mm <sup>2</sup> ·m/s
	油润滑 Oil Lubrication	60N/mm <sup>2</sup> ·m/s
摩擦系数 μ Friction Coef μ	干摩擦 Dry friction	0.08-0.22
	油润滑 Oil Lubrication	0.01-0.05
工作温度 Working Temperature		-195℃~+280℃
导热系数 Thermal Conductivity		42W/m·k
线膨胀系数 Coefficient of Linear Expansion		12×10 <sup>-6</sup> /K



### 材料组织 Material Structure



- 1.聚四氟乙烯与铅及其他填充混合物0.01-0.03mm
  - 2.球形青铜粉0.2-0.3mm
  - 3.钢背0.7-2.3mm
  - 4.电镀层：镀锡层厚0.005mm，或镀铜层厚0.008mm
- 1.PTFE with lead 0.01~0.03mm
  - 2.Porous bronze 0.2~0.3mm
  - 3.Steel backing 0.7~2.3mm
  - 4.Tin-plating 0.005mm or copper plating 0.008mm

# SF-1B

## Bronze Pb-free Self-lubricating Bearing

### 铜基自润滑轴承



#### 基材特性 Material Features

SF-1B青铜基轴承，是以锡青铜为基体，中间烧结青铜球粉，表面轧制聚四氟乙烯 (PTFE)和耐高温填充材料而成。它具有很高的安全系数，在连续工作不能停机修理的场所核高温不能加油的场所特别适用。目前已广泛应用在冶金钢铁工业，连铸机方坯滚道、高温炉前设备，水泥灌浆泵和螺旋式输送机上。它可以在外部组合钢套，也可以制成翻边，达到端面、内孔同时摩擦使用的效果。桥梁支座滑动部位，就是采用SF-1B耐磨层加厚的产品以取代纯PTFE板，达到130N/mm<sup>2</sup>轴载使用的要求。

SF-1B is of high safety factory, and is particularly appropriate for high temperature environment where no oil is efficient and where the machine must be under successive long period working condition.

This is widely used in steel metallurgy industry such as bushes for roller grooves of successive casting machines.cement grouting pumps and screw conveyers for cement.It can also be composed in steel housing or fabricated into Flanged bushes which can move both in radial and in axial directions.

It can be applied in bridge bearing plate because of thicker inner surface layer to arrive 130N/mm<sup>2</sup>.

#### 材料组织 Material Structure



1. 聚四氟乙烯与亲油性纤维混合物0.01~0.03mm
2. 球形青铜粉0.2~0.3mm
3. 铜背0.7~2.3mm

#### 应用特点 Application Feature

1. 聚四氟乙烯与亲油性纤维混合物在运动时可形成很好的转移膜保护对磨轴。
2. 烧结层与铜基板具有良好的导热性，可迅速转移运作过程中产生的热量。
3. 铜具有自润滑性能，可用于长期运作而无法停机检修的部位。
4. 基体铜具有良好的抗腐蚀能力，可运用于弱酸、强碱场合。
5. 具有良好的承载能力。
6. 产品已广泛运用于冶金钢铁工业、高温炉钢环部位、水泥灌浆泵、螺旋式输送机、港口机械及船舶机械上等。
7. 可在外部组合钢套；或制成翻边，达到内孔、端面同时使用的效果。

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

#### 主要参数 Specification

性能指标 Performance Index		有关数据 Data
最大承载压力 P Max Load Capacity P	静载 Static Load	250N/mm <sup>2</sup>
	动载 Dynamic Load	140N/mm <sup>2</sup>
最大线速度 V Max Line Speed V	干摩擦 Dry friction	2m/s
	油润滑 Oil Lubrication	5m/s
最高PV值 Maximum PV Value	干摩擦 Dry friction	3.6N/mm <sup>2</sup> · m/s
	油润滑 Oil Lubrication	50N/mm <sup>2</sup> · m/s

性能指标 Performance Index	有关数据 Data
工作温度 Working Temperature	-195℃~+280℃
导热系数 Thermal Conductivity	70W/m · k
线膨胀系数 Coefficient of Linear Expansion	17 × 10 <sup>-6</sup> /K

# SF-1W

## Carbon Steel Pb-free Self-lubricating Bearing

### 碳钢基自润滑轴承



#### 基材特性 Material Features

SF-1W无铅轴承，是在SF-1材料基础上根据国际环保要求而开发的一种新产品。该产品除广泛适用于一般通用机械外，对食品机械、制药机械、烟草机械尤其适用，无铅效过符合欧洲卫生标准，是无油润滑轴承发展的方向。

SF-1W is 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-1 is particularly suitable for food machine, Pharmaceutical machine, tobacco, machine etc.

#### 应用特点 Application Feature

- 1.PTFE、纤维的混合物在运动时可形成很好的转移膜保护对磨轴。
- 2.因其不含铅，故对人体无害。
- 3.具有很好的承协载能力和耐磨性。
- 4.铜和钢板具有良好的导热性能。
- 5.表面的电镀层具有较好的耐腐蚀性。
- 6.产品已广泛运用于食品机械、医疗机械、烟草机械、饮料机械及其它绿色机械上。随着国际环保的逐步发展，SF-1W将是SF-1产品的替代品。

- 1.PTFE and fibre can protect the shaft while in operation.
- 2.It is suitable for the machine required harmless to people because of Lead-free.
- 3.Good load capacity and anti-wear.
- 4.Bronze and steel have good thermal conductivity.
- 5.Anti-corrosion because of surface plating.
- 6.It is widely used in general machines, and suitable for food machine, pharmaceutical machine, tobacco machine etc. It will substitute SF-1 in future because of environment protection.

#### 主要参数 Specification

性能指标 Performance Index		有关数据 Data
最大承载压力 P Max Load Capacity P	静载 Static Load	250N/mm <sup>2</sup>
	动载 Dynamic Load	140N/mm <sup>2</sup>
最大线速度 V Max Line Speed V	干摩擦 Dry friction	2.5m/s
	油润滑 Oil Lubrication	5m/s
最高PV值 Maximum PV Value	干摩擦 Dry friction	3.6N/mm <sup>2</sup> · m/s
	油润滑 Oil Lubrication	50N/mm <sup>2</sup> · m/s
摩擦系数 μ Friction Coef μ	干摩擦 Dry friction	0.08~0.22
	油润滑 Oil Lubrication	0.02~0.07
工作温度 Working Temperature		-195℃~+280℃
导热系数 Thermal Conductivity		42W/m · k
线膨胀系数 Coefficient of Linear Expansion		11 × 10 <sup>-6</sup> /K

#### 材料组织 Material Structure



- 1.聚四氟乙烯与纤维混合物0.01~0.03mm
  - 2.球形青铜粉0.2~0.3mm
  - 3.钢背0.7~2.3mm
  - 4.电镀层：镀锡层厚0.005mm，或镀铜层厚0.008mm
- 1.PTFE with fibre 0.01~0.03mm
  - 2.Porous bronze 0.2~0.3mm
  - 3.Steel backing 0.7~2.3mm
  - 4.Tin-plating 0.005mm or copper plating 0.008mm

# SF-1P

## Reciprocate Pb-free Self-lubricating Bearing

### 往复自润滑轴承



#### 基材特性 Material Features

该材料是根据减震器往复运动且侧向受力较大的特殊条件而开发的产品。它有很低的摩擦系数和较好的耐磨损性，能在半干燥条件下使用。产品主要用于汽车减震器、摩托车减震器、液压油缸等。

The Product is developed according to reciprocating motion of shock absorber and high pressure in flank. It can offer low friction coefficient and good anti-abrasion, be used in semi-dry condition. The product is applied to shock absorber of automobiles, motorcycles and pneumatic cylinder.

#### 应用特点 Application Feature

1. 具有在断油情况下润滑能力强、耐磨性好、保护油膜清晰的优点。
  2. 能较好的保护对轴表面的不受磨损。
  3. 对往复运动场合较能适用。
  4. 因其不含铅，故符合了环保要求。
  5. 产品适用于摩托车减震器、各种液压油缸、液压马达、气动元件等领域。
1. It is efficient even under sudden break off the lubricating oil, wear resistant, and so can keep the lubricating oil clear after long period of working.
  2. It can protect the mating surface from wearing.
  3. It is particularly suitable for bushes in reciprocating motion.
  4. It is suitable for the machine requiring harmless to people because of lead-free.
  5. It is used in shock absorber of motorcycles and various hydraulic cylinders, hydraulic motors and pneumatic elements etc.

#### 主要参数 Specification

性能指标 Performance Index		有关数据 Data
最大承载压力 P Max Load Capacity P	静载 Static Load	250N/mm <sup>2</sup>
	动载 Dynamic Load	140N/mm <sup>2</sup>
最大线速度 V Max Line Speed V	干摩擦 Dry friction	2.5m/s
	油润滑 Oil Lubrication	5m/s
最高PV值 Maximum PV Value	干摩擦 Dry friction	3.6N/mm <sup>2</sup> · m/s
	油润滑 Oil Lubrication	50N/mm <sup>2</sup> · m/s
摩擦系数 μ Friction Coef μ	干摩擦 Dry friction	0.08~0.22
	油润滑 Oil Lubrication	0.02~0.07
工作温度 Working Temperature		-195℃~+280℃
导热系数 Thermal Conductivity		42W/m · k
线膨胀系数 Coefficient of Linear Expansion		12 × 10 <sup>-6</sup> /K

#### 材料组织 Material Structure



1. 聚四氟乙烯与铜混合物0.01~0.03mm
  2. 球形青铜粉0.2~0.3mm
  3. 钢背0.7~2.3mm
  4. 电镀层：镀锡层厚0.005mm，或镀铜层厚0.008mm
1. PTFE with CU 0.01~0.03mm
  2. Porous bronze 0.2~0.3mm
  3. Steel backing 0.7~2.3mm
  4. Tin-plating 0.005mm or copper plating 0.008mm

# SF-1D

## Hydraulic Pb-free Self-lubricating Bearing

### 液压专用自润滑轴承



#### 基材特性 Material Features

液压专用轴承，是在SF-1P的基础上结合油缸及减震工作原理而设计的一种新型材料，在无油的条件下显得更耐磨，该产品队具有SF-1P的优点外，特别适用于往复频繁的大侧向力场合，其性能与国外DP4相似，目前该产品逐步替代SF-1P产品。

Besides it have the advantages of SF-1P, it is suitable for the places of big sides force of frequently reciprocate. The function is similar as DP4 in foreign country. Now it has replace the SF-1P step by step.

#### 应用特点 Application Feature

1. PTFE、亲油性纤维的混合物在运动时可形成很好的转移膜保护对磨轴。
2. 耐磨性能好、摩擦系数低。
3. 走合性能好、无咬轴现象。
4. 可运用于旋转、摇摆、往复运动中。
5. 由于不含铅，故可运用于食品机械，医疗机械等绿色环保设备。
6. 产品除具有SF-1P的特点外，特别适用于往复运动频繁，大侧向力的场合，适用于汽车，摩托车减震器及各类液压油缸等领域。

1. The thing mingles with PTFE, oleophilic fiber could form the good transform membrane to protect the rubbing each other bearing.
2. Good anti-wear, low friction value.
3. Good break in, no block appearance.
4. Could use in the active of revolve around, swing and reciprocate
5. No lead content so that it could use in the food machinery, medical machinery and other green environmental protection equipment.
6. Besides content the advantages of SF-1P, it is suit for the place of reciprocates frequently and big side force. It is suit for the dashpot and hydrocylinder in vehicle and motorbike.

#### 主要参数 Specification

性能指标 Performance Index		有关数据 Data
最大承载压力 P Max Load Capacity P	静载 Static Load	250N/mm <sup>2</sup>
	动载 Dynamic Load	140N/mm <sup>2</sup>
最大线速度 V Max Line Speed V	干摩擦 Dry friction	3.0m/s
	油润滑 Oil Lubrication	5m/s
最高PV值 Maximum PV Value	干摩擦 Dry friction	3.8N/mm <sup>2</sup> · m/s
	油润滑 Oil Lubrication	60N/mm <sup>2</sup> · m/s
摩擦系数 μ Friction Coef μ	干摩擦 Dry friction	0.08~0.22
	油润滑 Oil Lubrication	0.02~0.07
工作温度 Working Temperature		-195℃~+280℃
导热系数 Thermal Conductivity		40W/m · k
线膨胀系数 Coefficient of Linear Expansion		12 × 10 <sup>-6</sup> /K

#### 材料组织 Material Structure



1. 聚四氟乙烯与亲油性纤维混合物0.01~0.03mm
2. 球形青铜粉0.2~0.3mm
3. 钢背0.7~2.3mm
4. 电镀层：镀锡层厚0.005mm，或镀铜层厚0.008mm

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

# SF-1S

## Stainless Steel Pb-free Self-lubricating Bearing

### 不锈钢基自润滑轴承



#### 基材特性 Material Features

SF-1S不锈钢耐腐蚀轴承，是以不锈钢材料为基体，中间烧结耐腐蚀合金粉末，表面轧制以聚四氟乙烯为主的低摩擦材料，经过卷制成型的一种十分有效的耐腐蚀材料。它具有耐油、耐酸、耐碱、耐海水和耐磨损的特点，表面的PTFE材料不含铅成份。在食品饮料机械、印染机械、化工机械、海洋工业耐腐蚀滑动部位最适合使用。

SF-1S is of oil resistant, acid resistant, alkali resistant and seawater resistant, more over, there is no lead in the PTFE surface layer and so is particularly fit for bushings in food stuff machines, alkali flow meters, pumps motion elements in pharmaceutical machines, printing machines chemical engineering machines and other ocean industry. This is a triple layers composites bush, the base material being a bronze plate and a film of heat resistant power filled PTFE being calendered onto the sintered spherical bronze interlayer.

#### 应用特点 Application Feature

1. PTFE和亲油性混合物在运动是可形成很好的转移膜保护对磨轴。 2. 耐磨性好，摩擦系数低。 3. 走合性能好，无咬轴现象。 4. 可运行于旋转、摇摆、往复运动中。 5. 耐腐蚀性能好。 6. 由于不含铅，故可用于食品饮料机械、医药机械等绿色环保设备。 7. 典型用途：主要运用于中酸、强碱场合，例如：化工中酸碱流量计、泵、阀，印染机械、海洋工业耐腐蚀滑动部位。

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

#### 主要参数 Specification

性能指标 Performance Index		有关数据 Data
最大承载压力 P Max Load Capacity P	静载 Static Load	250N/mm <sup>2</sup>
	动载 Dynamic Load	140N/mm <sup>2</sup>
最大线速度 V Max Line Speed V	干摩擦 Dry friction	2.5m/s
	油润滑 Oil Lubrication	5m/s
最高PV值 Maximum PV Value	干摩擦 Dry friction	3.6N/mm <sup>2</sup> · m/s
	油润滑 Oil Lubrication	50N/mm <sup>2</sup> · m/s
摩擦系数 μ Friction Coef μ	干摩擦 Dry friction	0.08~0.20
	油润滑 Oil Lubrication	0.02~0.07
工作温度 Working Temperature		-195℃~+280℃
导热系数 Thermal Conductivity		42W/m · k
线膨胀系数 Coefficient of Linear Expansion		12 × 10 <sup>-6</sup> /K

#### 材料组织 Material Structure



1. 聚四氟乙烯与亲油性纤维混合物0.01-0.03mm
2. 球形青铜粉0.2-0.3mm
3. 不锈钢背0.7-2.3mm

1. PTFE with Oil fibre 0.01~0.03mm
2. Porous bronze 0.2~0.3mm
3. Stainless steel backing 0.7~2.3mm

# SF-1/1W/1B/1T/1P/1D/1S

## Metric Standard Bushing

### SF-1系列自润滑轴承

轴套外径公差表 Bushing O.D.Tolerances Table

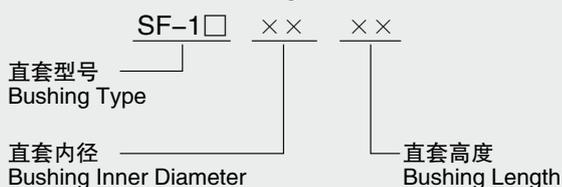
外径 $\Phi D$ Outer Diameter $\Phi D$	外径公差 Outer Diameter Tolerance
$\Phi D \leq 10$	+0.055 +0.025
$10 < \Phi D \leq 18$	+0.065 +0.030
$18 < \Phi D \leq 30$	+0.075 +0.035
$30 < \Phi D \leq 50$	+0.085 +0.045
$50 < \Phi D \leq 80$	+0.100 +0.055
$80 < \Phi D \leq 120$	+0.120 +0.070
$120 < \Phi D \leq 180$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

轴套壁厚公差表 Bushing Wall Thickness Tolerance Table

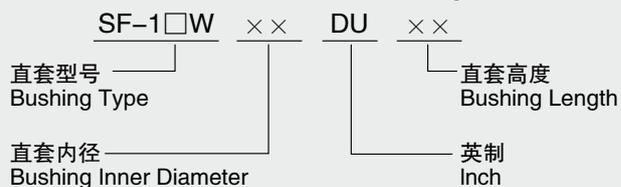
内径 $\Phi d$ Inner Diameter $\Phi d$	壁厚公差 Wall Thickness Tolerance
$\Phi d < 5$	$0.75 \begin{matrix} 0 \\ -0.020 \end{matrix}$
$5 \leq \Phi d \leq 18$	$1.0 \begin{matrix} +0.005 \\ -0.020 \end{matrix}$
$18 < \Phi d \leq 25$	$1.5 \begin{matrix} +0.005 \\ -0.025 \end{matrix}$
$25 < \Phi d < 45$	$2.0 \begin{matrix} +0.005 \\ -0.030 \end{matrix}$
$45 \leq \Phi d < 80$	$2.5 \begin{matrix} +0.005 \\ -0.040 \end{matrix}$
$80 \leq \Phi d < 120$	$2.5 \begin{matrix} -0.010 \\ -0.060 \end{matrix}$
$\Phi d \geq 120$	$2.5 \begin{matrix} -0.035 \\ -0.085 \end{matrix}$

可供标准产品的标注方式 Standard Bushing Label Mode

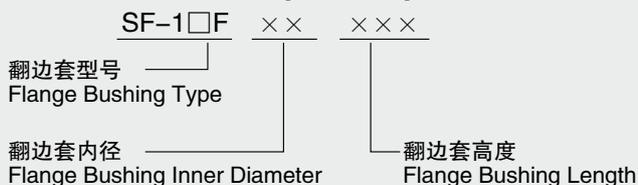
#### 直套标注方式 Bushing Label Mode



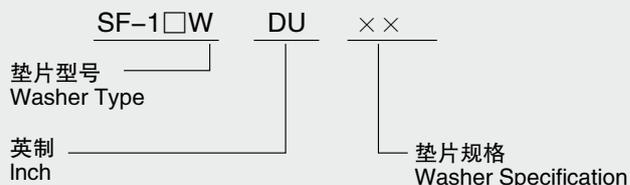
#### 英制直套标注方式 The Inch Bushing Label Mode



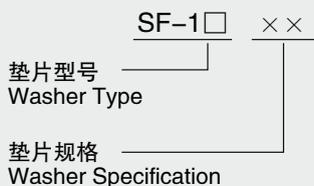
#### 翻边套标注方式 Flange Bushing Label Mode



#### 英制垫片标注方式 The Inch Washer Label Mode



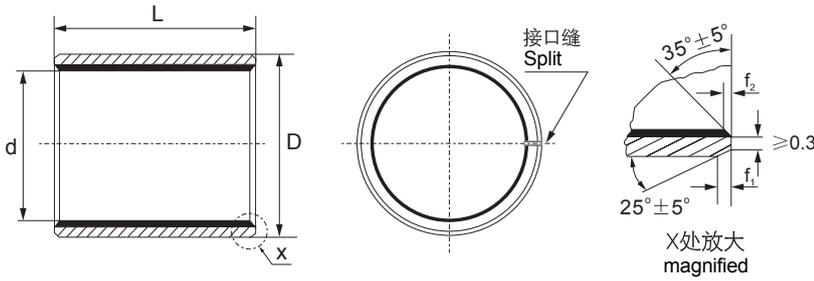
#### 垫片标注方式 Washer Label Mode



# SF-1/1W/1B/1T/1P/1D/1S

## Self-lubricating Bearings Metric Size

### 自润滑卷制轴承尺寸



单位unit:mm

d	D	f <sub>7</sub> 相配轴径 Axle	H <sub>7</sub> 相配座孔 Housing	壁厚 Wall Thickness		f <sub>1</sub>	f <sub>2</sub>	L <sup>0</sup> <sub>-0.40</sub> ( ≤Φ28 L-0.30 ) ( >Φ30 L-0.40 )															
				最小 Min.	最大 Max.			6	8	10	12	15	20	25	30	40	50	60					
6	8	6 <sup>-0.013</sup> <sub>-0.028</sub>	8 <sup>+0.015</sup>	0.980	1.005	0.5	0.3	0606	0608	0610													
8	10	8 <sup>-0.013</sup> <sub>-0.028</sub>	10 <sup>+0.015</sup>					0806	0808	0810	0812	0815											
10	12	10 <sup>-0.016</sup> <sub>-0.034</sub>	12 <sup>+0.018</sup>					1006	1008	1010	1012	1015	1020										
12	14	12 <sup>-0.016</sup> <sub>-0.034</sub>	14 <sup>+0.018</sup>					1206	1208	1210	1212	1215	1220	1225									
13	15	13 <sup>-0.016</sup> <sub>-0.034</sub>	15 <sup>+0.018</sup>												1310		1320						
14	16	14 <sup>-0.016</sup> <sub>-0.034</sub>	16 <sup>+0.018</sup>												1410	1412	1415	1420	1425				
15	17	15 <sup>-0.016</sup> <sub>-0.034</sub>	17 <sup>+0.018</sup>												1510	1512	1515	1520	1525				
16	18	16 <sup>-0.016</sup> <sub>-0.034</sub>	18 <sup>+0.018</sup>												1610	1612	1615	1620	1625				
17	19	17 <sup>-0.016</sup> <sub>-0.034</sub>	19 <sup>+0.021</sup>												1710	1712		1720					
18	20	18 <sup>-0.016</sup> <sub>-0.034</sub>	20 <sup>+0.021</sup>												1810	1812	1815	1820	1825				
20	23	20 <sup>-0.020</sup> <sub>-0.041</sub>	23 <sup>+0.021</sup>	1.475	1.505	0.8	0.4				2010	2012	2015	2020	2025	2030							
22	25	22 <sup>-0.020</sup> <sub>-0.041</sub>	25 <sup>+0.021</sup>					22010	2212	2215	2220	2225	2230										
24	27	24 <sup>-0.020</sup> <sub>-0.041</sub>	27 <sup>+0.021</sup>									2415	2420	2425	2430								
25	28	25 <sup>-0.020</sup> <sub>-0.041</sub>	28 <sup>+0.021</sup>									25010	2512	2515	2520	2525	2530	2540	2550				
28	32	28 <sup>-0.020</sup> <sub>-0.041</sub>	32 <sup>+0.025</sup>	1.970	2.005	1.0	0.6					2815	2820	2825	2830	2840							
30	34	30 <sup>-0.020</sup> <sub>-0.041</sub>	34 <sup>+0.025</sup>											3012	3015	3020	3025	3030	3040				
32	36	32 <sup>-0.025</sup> <sub>-0.050</sub>	36 <sup>+0.025</sup>													3220		3230	3240				
35	39	35 <sup>-0.025</sup> <sub>-0.050</sub>	39 <sup>+0.025</sup>												2512	2515	2520	2525	2530	2540	3550		
38	42	38 <sup>-0.025</sup> <sub>-0.050</sub>	42 <sup>+0.025</sup>													3815		3830	3840				
40	44	40 <sup>-0.025</sup> <sub>-0.050</sub>	44 <sup>+0.025</sup>												4012	4015	4020	4025	4030	4040	4050		

注：孔径壁厚符合样本，宽度尺寸不在样本范围内客户要求，制造厂可定制加工。

Note: Bearing size besides above mentioned sizes, can be customized and produced. Customer please offer us the dimensions.

# SF-1/1W/1B/1T/1P/1D/1S

## Self-lubricating Bearings Metric Size

### 自润滑卷制轴承尺寸

单位unit:mm

d	D	f <sub>7</sub> 轴径 Axle	H <sub>7</sub> 座孔 Housing	壁厚 Wall Thickness		f <sub>1</sub>	f <sub>2</sub>	L <sup>0</sup> <sub>-0.40</sub>									
				最小 Min.	最大 Max.			20	25	30	40	50	60	70	80	100	115
45	50	45 <sup>-0.025</sup> <sub>-0.050</sub>	50 <sup>+0.025</sup>					4520	4525	4530	4540	4550					
50	55	50 <sup>-0.025</sup> <sub>-0.050</sub>	55 <sup>+0.030</sup>					5020		5030	5040	5050	5060				
55	60	55 <sup>-0.030</sup> <sub>-0.060</sub>	60 <sup>+0.030</sup>							5530	5540	5550	5560				
60	65	60 <sup>-0.030</sup> <sub>-0.060</sub>	65 <sup>+0.030</sup>	2.460	2.505	1.2	0.8			6030	6040	6050	6060	6070			
65	70	65 <sup>-0.030</sup> <sub>-0.060</sub>	70 <sup>+0.030</sup>							6530	6540	6550	6560	6570			
70	75	70 <sup>-0.030</sup> <sub>-0.060</sub>	75 <sup>+0.030</sup>								7040	7050	7060	7070	7080		
75	80	75 <sup>-0.030</sup> <sub>-0.060</sub>	80 <sup>+0.030</sup>							7530	7540	7550	7560	7570	7580		
80	85	80 <sup>-0.030</sup>	85 <sup>+0.035</sup>								8040	8050	8060	8070	8080	80100	
85	90	85 <sup>-0.035</sup>	90 <sup>+0.035</sup>								8540		8560		8580	85100	
90	95	90 <sup>-0.035</sup>	95 <sup>+0.035</sup>								9040	9050	9060		9080	90100	
95	100	95 <sup>-0.035</sup>	100 <sup>+0.035</sup>	2.440	2.490	1.4	0.8					9550	9560		9580	95100	
100	105	100 <sup>-0.035</sup>	105 <sup>+0.035</sup>									10050	10060		10080		100115
105	110	105 <sup>-0.035</sup>	110 <sup>+0.035</sup>										10560		10580		105115
110	115	110 <sup>-0.035</sup>	115 <sup>+0.035</sup>											11060		11080	110115
120	125	120 <sup>-0.035</sup>	125 <sup>+0.040</sup>											12060		12080	120100
125	130	125 <sup>-0.040</sup>	130 <sup>+0.040</sup>											12560			125100 125115
130	135	130 <sup>-0.040</sup>	135 <sup>+0.040</sup>	2.415	2.465	1.4	0.8							13060		13080	130100
140	145	140 <sup>-0.040</sup>	145 <sup>+0.040</sup>											14060		14080	140100
150	155	150 <sup>-0.040</sup>	155 <sup>+0.040</sup>											15060		15080	150100
160	165	160 <sup>-0.040</sup>	165 <sup>+0.040</sup>											16060		16080	160100 160115
180	185	180 <sup>-0.040</sup>	185 <sup>+0.046</sup>													18080	180100
190	195	190 <sup>-0.046</sup>	195 <sup>+0.046</sup>													19080	190100
200	205	200 <sup>-0.046</sup>	205 <sup>+0.046</sup>	2.415	2.465	1.4	0.8									20080	200100
220	225	220 <sup>-0.046</sup>	225 <sup>+0.046</sup>											20060		22080	220100
250	255	250 <sup>-0.046</sup>	255 <sup>+0.052</sup>													25080	250100
260	265	260 <sup>-0.052</sup>	265 <sup>+0.052</sup>	2.415	2.465	1.4	0.8									26080	260100
280	285	280 <sup>-0.052</sup>	285 <sup>+0.052</sup>													28080	280100



# SF-1/1W/1B/1T/1P/1D/1S

## Self-lubricating Bearings Metric Size

### 自润滑卷制轴承尺寸

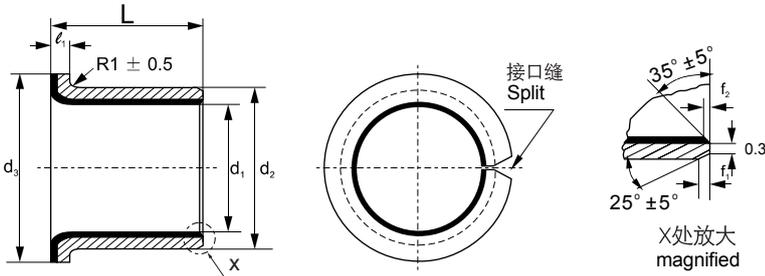
单位unit:mm

d	D	f <sub>7</sub> 轴径 Axle	H <sub>7</sub> 座孔 Housing	壁厚 Wall Thickness		f <sub>1</sub>	f <sub>2</sub>	L <sup>0</sup> <sub>-0.40</sub>									
				最小 Min.	最大 Max.			20	25	30	40	50	60	70	80	100	115
45	50	45 <sup>-0.025</sup> <sub>-0.050</sub>	50 <sup>+0.025</sup>					4520	4525	4530	4540	4550					
50	55	50 <sup>-0.025</sup> <sub>-0.050</sub>	55 <sup>+0.030</sup>					5020		5030	5040	5050	5060				
55	60	55 <sup>-0.030</sup> <sub>-0.060</sub>	60 <sup>+0.030</sup>							5530	5540	5550	5560				
60	65	60 <sup>-0.030</sup> <sub>-0.060</sub>	65 <sup>+0.030</sup>	2.460	2.505	1.2	0.8			6030	6040	6050	6060	6070			
65	70	65 <sup>-0.030</sup> <sub>-0.060</sub>	70 <sup>+0.030</sup>							6530	6540	6550	6560	6570			
70	75	70 <sup>-0.030</sup> <sub>-0.060</sub>	75 <sup>+0.030</sup>								7040	7050	7060	7070	7080		
75	80	75 <sup>-0.030</sup> <sub>-0.060</sub>	80 <sup>+0.030</sup>							7530	7540	7550	7560	7570	7580		
80	85	80 <sup>-0.030</sup>	85 <sup>+0.035</sup>								8040	8050	8060	8070	8080	80100	
85	90	85 <sup>-0.035</sup>	90 <sup>+0.035</sup>								8540		8560		8580	85100	
90	95	90 <sup>-0.035</sup>	95 <sup>+0.035</sup>								9040	9050	9060		9080	90100	
95	100	95 <sup>-0.035</sup>	100 <sup>+0.035</sup>	2.440	2.490	1.4	0.8					9550	9560		9580	95100	
100	105	100 <sup>-0.035</sup>	105 <sup>+0.035</sup>									10050	10060		10080		100115
105	110	105 <sup>-0.035</sup>	110 <sup>+0.035</sup>										10560		10580		105115
110	115	110 <sup>-0.035</sup>	115 <sup>+0.035</sup>											11060		11080	110115
120	125	120 <sup>-0.035</sup>	125 <sup>+0.040</sup>											12060		12080	120100
125	130	125 <sup>-0.040</sup>	130 <sup>+0.040</sup>											12560			125100 125115
130	135	130 <sup>-0.040</sup>	135 <sup>+0.040</sup>	2.415	2.465	1.4	0.8							13060		13080	130100
140	145	140 <sup>-0.040</sup>	145 <sup>+0.040</sup>											14060		14080	140100
150	155	150 <sup>-0.040</sup>	155 <sup>+0.040</sup>											15060		15080	150100
160	165	160 <sup>-0.040</sup>	165 <sup>+0.040</sup>											16060		16080	160100 160115
180	185	180 <sup>-0.040</sup>	185 <sup>+0.046</sup>													18080	180100
190	195	190 <sup>-0.046</sup>	195 <sup>+0.046</sup>													19080	190100
200	205	200 <sup>-0.046</sup>	205 <sup>+0.046</sup>	2.415	2.465	1.4	0.8									20080	200100
220	225	220 <sup>-0.046</sup>	225 <sup>+0.046</sup>											20060		22080	220100
250	255	250 <sup>-0.046</sup>	255 <sup>+0.052</sup>													25080	250100
260	265	260 <sup>-0.052</sup>	265 <sup>+0.052</sup>	2.415	2.465	1.4	0.8									26080	260100
280	285	280 <sup>-0.052</sup>	285 <sup>+0.052</sup>													28080	280100

# SF-1F

## Self-lubricating Bearings Metric Size

### 自润滑卷制轴承尺寸



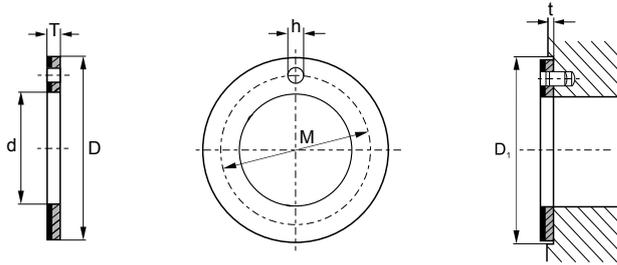
单位unit:mm

f <sub>7</sub> 轴径 Axle	H <sub>7</sub> 座孔 Housing	规格 Designation	(Size)					f <sub>1</sub>	f <sub>2</sub>
			d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub> ± 0.5	L ± 0.25	l <sub>1-0.2</sub>		
6 -0.013 -0.028	8 <sup>+0.015</sup>	06040	6	8	12	4	1	0.5	0.3
		06070				7			
8 -0.013 -0.028	10 <sup>+0.015</sup>	08055	8	10	15	5.5	1	0.5	0.3
		08075				7.5			
10 -0.016 -0.034	12 <sup>+0.018</sup>	10070	10	12	18	7	1	0.5	0.3
		10090				9			
		10120				12			
12 -0.016 -0.034	14 <sup>+0.018</sup>	12070	12	14	20	7	1	0.5	0.3
		12090				9			
		12120				12			
14 -0.016 -0.043	16 <sup>+0.018</sup>	14120	14	16	22	12	1	0.5	0.3
		14170				17			
		15090				9			
15 -0.016 -0.034	17 <sup>+0.018</sup>	15120	15	17	23	12	1	0.5	0.3
		15170				17			
		16120				12			
16 -0.016 -0.034	18 <sup>+0.018</sup>	16170	16	18	24	17	1	0.5	0.3
		18120				12			
		18170				17			
18 -0.016 -0.034	20 <sup>+0.021</sup>	18200	18	20	26	20	1	0.5	0.3
		20115				11.5			
		20165				16.5			
20 -0.020 -0.041	23 <sup>+0.021</sup>	20215	20	23	30	21.5	1.5	0.8	0.4
		22150				15			
		22200				20			
22 -0.020 -0.041	25 <sup>+0.021</sup>	25115	22	25	32	11.5	1.5	0.8	0.4
		25165				16.5			
		25215				21.5			
25 -0.020 -0.041	28 <sup>+0.021</sup>	30160	25	28	35	16	1.5	0.8	0.4
		30260				26			
		35160				16			
30 -0.025 -0.050	34 <sup>+0.025</sup>	35260	30	34	42	26	2	1.0	0.6
		40260				26			
		40400				40			

# SF-1WC

## Thrust Washer Metric Size

### 止推垫片尺寸

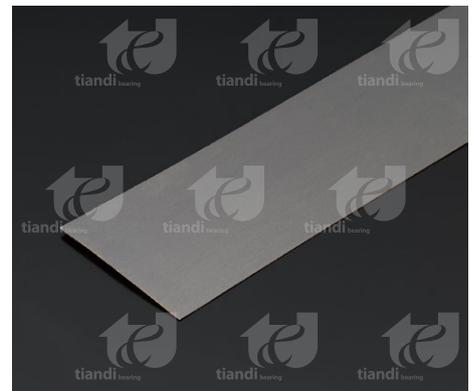
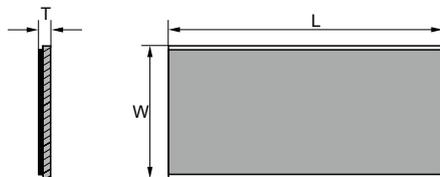


单位unit:mm

轴径 Axle	代号 Code number	垫片尺寸 Washer size				安装尺寸 Install size		
		d +0.25	D -0.25	T -0.05	M ± 0.125	$h^{+0.4}_{+0.1}$	t ± 0.2	D <sub>1</sub> +0.12
8	WC 10	10	20	1.5	15	1.5	1	20
10	WC 12	12	24		18			24
12	WC 14	14	26		20			26
14	WC 16	16	30		23			30
16	WC 18	18	32		25			32
18	WC 20	20	36		28	36		
20	WC 22	22	38		30	38		
22	WC 24	24	42		33	42		
24	WC 26	26	44		35	44		
26	WC 28	28	48		38	48		
30	WC 32	32	54	43	54			
36	WC 38	38	62	50	62			
40	WC 42	42	66	54	66			
46	WC 48	48	74	61	74			
50	WC 52	52	78	2	65	1.5	78	
60	WC 62	62	90		76		90	

## SF-1P Strips Metric Size

### 板材



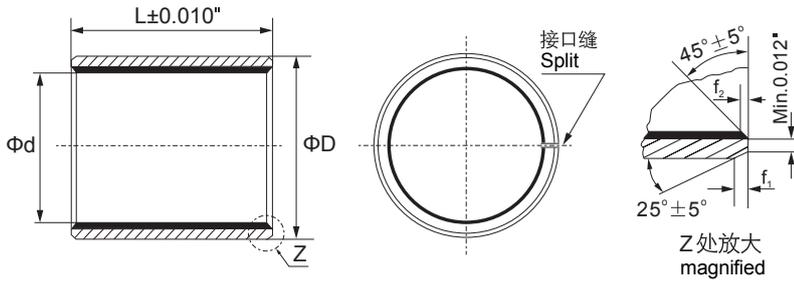
单位unit:mm

代号 Code number	长度(L) ± 1	宽度(W) ± 1	壁厚(T) -0.05
P	500	150	1.0
P	500	150	1.5
P	500	150	2.0
P	500	150	2.5

# SF-1/1W/1B/1T/1P/1D/1S

## Inch Standard Cylindrical Bushes

### 英制标准直套



单位unit:inch"

型号规格 Designation	公称尺寸 Nominal Diameter			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									
	Φd	ΦD	L															
02DU02	1/8	3/16	1/8	0.0315 0.0305	0.1243	0.1878	0.1268	0.008 0.024	0.004 0.012									
02DU03			3/16		0.1236	0.1873	0.1243											
03DU03	3/16	1/4	3/16		0.1865	0.2503	0.1893											
03DU04			1/4		0.1858	0.2497	0.1867											
03DU06			3/8		0.2490	0.3128	0.2518											
04DU04	1/4	5/16	1/4		0.2481	0.3122	0.2492											
04DU06			3/8		0.3115	0.3753	0.3143											
05DU06	5/16	3/8	3/8		0.3106	0.3747	0.3117											
05DU08			1/2		0.3740	0.4691	0.3769											
06DU06	3/8	15/32	3/8		0.3731	0.4684	0.3742											
06DU08			1/2	0.4365	0.5316	0.4394												
06DU12			3/4	0.4355	0.5309	0.4367												
07DU08	7/16	17/32	1/2	0.0471 0.0461	0.4990 0.4980	0.5941 0.5934	0.5019 0.4992	0.020 0.040	0.005 0.025									
07DU12			3/4							0.5615	0.6566	0.5644						
08DU08			1/2							0.5605	0.6559	0.5617						
08DU10	1/2	19/32	5/8							0.6240	0.7192	0.6270						
08DU14			7/8							0.6230	0.7184	0.6242						
09DU08	9/16	21/32	1/2							0.0627 0.0615	0.7491 0.7479	0.8755 0.8747	0.7525 0.7493	0.8741 0.8729	1.0005 0.9997			
09DU12			3/4													0.8741	1.0005	0.8775
10DU08			1/2													0.8729	0.9997	0.8743
10DU10	5/8	23/32	5/8													0.7491	0.8755	0.7525
10DU12			3/4													0.7479	0.8747	0.7493
12DU08	3/4	7/8	1/2	0.8741	1.0005	0.8775												
12DU12			3/4	0.8729	0.9997	0.8743												
12DU16			1	0.7491	0.8755	0.7525												
14DU12	7/8	1	3/4	0.7479	0.8747	0.7493												
14DU16			1	0.8741	1.0005	0.8775												

# SF-1/1W/1B/1T/1P/1D/1S

## Inch Standard Cylindrical Bearings

### 英制标准直套

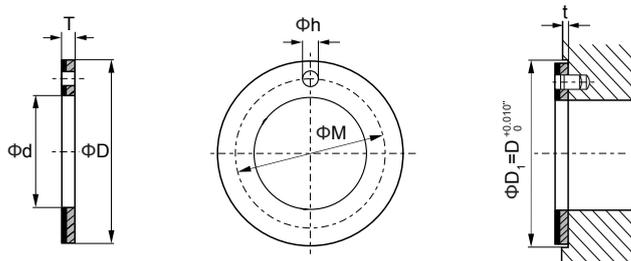
单位unit:inch"

型号规格 Designation	公称尺寸 Nominal Diameter			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		
	Φd	ΦD	L								
16DU12	1	9/8	3/4	0.0627	0.9991	1.1256	1.0026	0.020 0.040	0.005 0.025		
16DU16			1	0.0615	0.9979	1.1246	0.9992				
18DU12	9/8	41/32	3/4	0.0784 0.0770	1.1238	1.2818	1.1278				
18DU16			1		1.1226	1.2808	1.1240				
20DU12	5/4	45/32	3/4		1.2488	1.4068	1.2528				
20DU16			1		1.2472	1.4058	1.2490				
20DU22			5/4								
22DU16	11/8	49/32	1		1.3738	1.5318	1.3778				
22DU22			11/8		1.3722	1.5308	1.3740				
24DU16	3/2	53/32	1		0.0941 0.0923	1.4988	1.6568			1.5028	
24DU24			3/2			1.4972	1.6558			1.4990	
24DU32			2								
26DU16	13/8	57/32	1			1.6238	1.7818			1.6278	
26DU24			3/2			1.6222	1.7808			1.6240	
28DU16	7/4	31/16	1	0.0928 0.0902		1.7487	1.9381			1.7535	
28DU28			7/4			1.7471	1.9371			1.7489	
28DU32			2								
30DU16	15/8	33/16	1			0.0928 0.0902	1.8737			2.0633	1.8787
30DU30			15/8				1.8721			2.0621	1.8739
30DU36			9/4								
32DU16	2	35/16	1				0.0928 0.0902			1.9987	2.1883
32DU32			2		1.9969					2.1871	1.9989
32DU40			5/2								
36DU32	9/4	39/16	2		0.0928 0.0902					2.2507	2.4377
36DU36			9/4					2.2489	2.4365	2.2509	
36DU48			3								
40DU32	5/2	43/16	2	0.0928 0.0902				2.5011	2.6881	2.5077	
40DU48			3					2.4993	2.6869	2.5013	
44DU32	11/4	47/16	2					0.0928 0.0902	2.7500	2.9370	2.7566
44DU48			3			2.7482			2.9358	2.7502	
48DU32	3	51/16	5/2			0.0928 0.0902			3.0000	3.1872	3.0068
48DU48			3						2.9982	3.1858	3.0002
48DU60			15/4								
64DU48	4	67/16	3				0.0928 0.0902		4.0000	4.1872	4.0068
64DU60			15/4						3.9978	4.1858	4.0002
64DU76			19/4								

# SF-1WC

## Inch Standard Washer

### 标准英制垫片



单位unit:inch"

型号规格 Designation	垫片尺寸 Washer Diameter				安装尺寸 Installation Size		
	$\Phi D \begin{smallmatrix} 0 \\ -0.010 \end{smallmatrix}$	$\Phi d \begin{smallmatrix} +0.010 \\ 0 \end{smallmatrix}$	$T \begin{smallmatrix} 0 \\ -0.002 \end{smallmatrix}$	$\Phi M \begin{smallmatrix} +0.010 \\ 0 \end{smallmatrix}$	$\Phi h \begin{smallmatrix} +0.010 \\ 0 \end{smallmatrix}$	$t \begin{smallmatrix} +0.010 \\ 0 \end{smallmatrix}$	$\Phi D_1 \begin{smallmatrix} +0.010 \\ 0 \end{smallmatrix}$
DU06	0.875	0.500	0.063	0.682	0.067	0.040	0.875
DU07	1.000	0.562		1.000			
DU08	1.125	0.625		1.125			
DU09	1.187	0.687		0.099	1.187		
DU10	1.250	0.750			1.250		
DU11	1.375	0.812			1.375		
DU12	1.500	0.875		0.130	1.500		
DU14	1.750	1.000			1.750		
DU16	2.000	1.125			2.000		
DU18	2.125	1.250		0.161	2.125		
DU20	2.250	1.375			2.250		
DU22	2.500	1.500			2.500		
DU24	2.625	1.625	0.192	2.625			
DU26	2.750	1.750		2.750			
DU28	3.000	2.000		3.000			
DU30	3.125	2.215	0.093	3.125	0.070	3.125	
DU32	3.250	2.250		3.250			



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