

材料组织 Material Structure



- 1.POM with fiber 0.3~0.5mm
- 2.Porous bronze 0.2~0.3mm
- 3.Steel backing 0.4~2.2mm
- 4.Plated coating: Tin plating 0.005mm or Copper plating 0.008mm
- 1.聚甲醛与纤维混合物0.3-0.5mm
- 2.球形青铜粉0.2-0.3mm
- 3.钢背0.4-2.2mm
- 4.电镀层：镀锡层厚0.005mm或镀铜层厚0.008mm

Standard Size:
Stright Bearing, Thrust washer, Strip.

Non-Standard Size:
Stright Bearing, Thrust washer, Strip, Bearing bushing, Wear strips, Steel combine units

可供标准产品:
直套，止推垫片，板材。

可供非标产品:
直套，止推垫片，板材，轴瓦，滑板，钢套组合件。

5420 is designed for marginal lubricating bushing. It is backed with copper-plated steel with porous bronze sintered on it and polymers (POM) imbedded into the bores of the bronze. The steel back provides the products with high quality low carbon steel. Oil dents stamped on the surface of the polymer can achieve good lubrication between the bushing and its mating axis. It is of good anti-abrasion and load capality. The plating coating on the surface is erosion protective. And it is environmental protective as no lead included in the surface polymer POM. Products of 5420 series are widely used on automotive chassis, forging machines, mine quarrying machines, metal melting and casting machines and in water irrigating and steel rolling industries.

5420 边界润滑轴承以优质低碳钢为基体，中间烧结球形多孔青铜粉，与表面改性聚甲醛（POM）牢固嵌合。表面轧制储油坑，从而实现了摩擦副之间的良好润滑。它具有良好的耐磨性和承载能力，钢背表面镀层防腐蚀。由于表面改性聚POM不含铅，使轴承润滑条件更干净，符合环保要求，广泛应用于汽车底盘、锻压机床、矿山机械、冶金机械、水利和轧钢行业等。

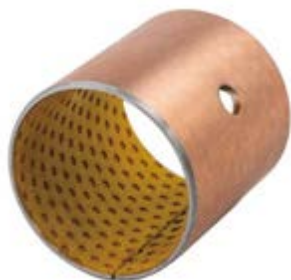
化学性能 Physical and Mechanical Performance

5420表面聚合物耐化学腐蚀，因此它的耐蚀性主要取决于钢背及外表电镀层。钢背表面镀铜或镀锡，可以有效防止大气的腐蚀；若于腐蚀介质中工作，钢背可以镀锌等。

Normally, the surface polymer of 5420 is of chemical-erosion resistant quality. So its erosion-prevention quality is primarily decided by the quality of the steel back and its plating layer. Air-erosion could be effectively prevented if the steel back is plated with bronze or tin. If the bushing is to be used in erosive environment, the steel back needs to be plated with zinc, etc.

技术参数 Technical Data

最大承载 Max.load	静载 Static Load	140N/mm ²
	动载 Dynamic Load	70N/mm ²
最大PV值 Max. PV	脂润滑 Grease Lubrication	2.8N/mm ² ·m/s
使用温度 Temp. limit		-40°C~+120°C
摩擦系数 Friction coefficient	脂润滑 Grease Lubrication	0.06~0.12μ
最大线速度 Max. speed	脂润滑 Grease Lubrication	2.5m/s
导热系数 Thermal conductivity		52W/(m·k) ⁻¹
热膨胀系数 Coefficient of thermal expansion		11×10 ⁻⁶ ·K ⁻¹
相配轴 Mating Axis	硬度 Hardness	>270HB
	粗糙度 Roughness	Ra=0.4~1.25



This product has the same structure and performance as the 5420. It can be used for a long time under the boundary lubrication condition without oiling. The surface of the wear layer has oil storage pits. Products are widely used in metallurgical machinery, mining machinery, hydraulic machinery, steam locomotives, construction machinery, agricultural machinery, steel rolling industry.

该产品与5420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、矿山机械、水利机械、汽机车、建筑机械、农用机械、轧钢行业等。

应用特点 Application Feature

1. Good load bearing and good wear resistance. 2. It is suitable for rotary motion, rocking motion under high load and low speed, and occasions that often open and close under load and are not easy to form hydrodynamic lubrication. 3. Under the condition of boundary lubrication, it can be maintained for a long time without oiling, and the oil is added in the overlayer to make the bearing last longer. 4. The surface plastic layer can leave a certain margin during processing and molding. After the assembly is pressed into the seat hole, it can be processed by itself to achieve a better assembly size. 5. The products are mainly used in automobile chassis, metallurgical machinery, mining machinery, water conservancy machinery, construction machinery, agricultural machinery, steel rolling equipment, etc. 6. Because it does not contain lead, it can be widely used in lead-free fields.

1. 承载好，耐磨性能良好。 2. 适用于高载低速下的旋转运动、摇摆运动及经常在载荷下启闭频繁而不易形成流体动力润滑的场合。 3. 在边界润滑条件下可长期不加油保养，而在过层中加油使轴承使用寿命更长。 4. 表面塑料层在加工成型时可留一定的余量，装配压入座孔后可自行加工，以达到更好的装配尺寸。 5. 产品主要应用于汽车底盘、冶金机械、矿山机械、水利机械、建筑机械、农用机械、轧钢设备等。 6. 因其不含铅，故可广泛应用于无铅领域。

技术参数 Technical Data

最大承载 Max. load	静承载 Static	250N/mm ²
	低速运转 Very low speed	140N/mm ²
	旋转、摇摆运动 Rotating oscillating	70N/mm ²
最大PV值（干摩擦）Max. PV (dry running)		3N/mm ² ·m/s
使用温度 Temp. limit		-40°C~+110°C
摩擦系数 Friction coefficient		0.05~0.20μ
最大线速度 Max. speed	脂润滑 Grease Lubrication	2m/s
	持续给油 Oil continued to	>2m/s
导热系数 Thermal conductivity		50W/(m·K) ⁻¹
热膨胀系数 Coefficient of thermal expansion		11×10 ⁻⁶ ·K ⁻¹
最初装配时必须在油穴中涂满润滑油脂 Initial pre-lubrication at assembly is strongly recommended		

材料组织 Material Structure



1. POM with fiber 0.3~0.5mm
 2. Porous bronze 0.2~0.3mm
 3. Steel backing 0.4~2.2mm
 4. Plated coating: Tin plating 0.005mm or Copper plating 0.008mm
1. 聚甲醛与纤维混合物0.3~0.5mm
 2. 球形青铜粉0.2~0.3mm
 3. 钢背0.4~2.2mm
 4. 电镀层：镀锡层厚0.005mm或镀铜层厚0.008mm

Standard Size:

Sright Bearing, Thrust washer, Strip.

Non-Standard Size:

Sright Bearing, Thrust washer, Strip, Bearing bushing, Wear strips, Steel combine units

可供标准产品:

直套，止推垫片，板材。

可供非标产品:

直套，止推垫片，板材，轴瓦，滑板，钢套组合件。



材料组织 Material Structure

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

1.聚甲醛与纤维混合物0.3-0.5mm
2.球形青铜粉0.2-0.3mm
3.钢背0.4-2.2mm
4.电镀层：镀锡层厚0.005mm
或镀铜层厚0.008mm

Standard Size:
Stright Bearing, Thrust washer, Strip.

Non-Standard Size:
Stright Bearing, Thrust washer, Strip,
Bearing bushing, Wear strips, Steel combine
units.

可供标准产品:
直套P11, 止推垫片P13, 板材P13。

可供非标产品:
直套, 止推垫片, 板材, 轴瓦, 滑板, 钢
套组合件。

The product is made of high-quality low-carbon steel with a spherical bronze layer in the middle and a special resin with acetal resin/lipophilic fiber on the surface. It has the characteristics of low friction coefficient, good wear resistance and lubrication under oil-free conditions. Products are widely used in yards, bulldozers, printing and dyeing machines, shearers, punching machines, cranes / driving aerial work and other fields.

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、吊车/行车高空作业等领域。

应用特点 Application Feature

1. Good load bearing and good wear resistance. 2. It is suitable for rotary motion, rocking motion under high load and low speed, and occasions that often open and close under load and are not easy to form hydrodynamic lubrication. 3. Under the condition of boundary lubrication, it can be maintained for a long time without oiling, and the oil is added in the overlayer to make the bearing last longer. 4. The surface plastic layer can leave a certain margin during processing and molding. After the assembly is pressed into the seat hole, it can be processed by itself to achieve a better assembly size. 5. The products are mainly used in automobile chassis, metallurgical machinery, mining machinery, water conservancy machinery, construction machinery, agricultural machinery, steel rolling equipment, etc. 6. Because it does not contain lead, it can be widely used in lead-free fields.

1.承载好，耐磨性能良好。 2.适用于高载低速下的旋转运动、摇摆运动及经常在载荷下启闭频繁而不易形成流体动力润滑的场合。 3.在边界润滑条件下可长期不加油保养，而在过层中加油使轴承使用寿命更长。 4.表面塑料层在加工成型时可留一定的余量，装配压入座孔后可自行加工，以达到更好的装配尺寸。 5.产品主要应用于汽车底盘、冶金机械、矿山机械、水利机械、建筑机械、农用机械、轧钢设备等。 6.因其不含铅，故可广泛应用于无铅领域。

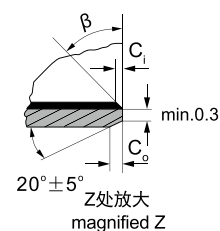
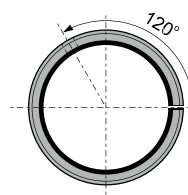
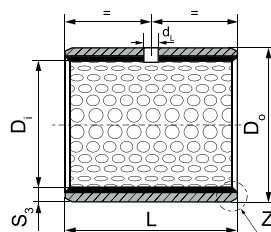
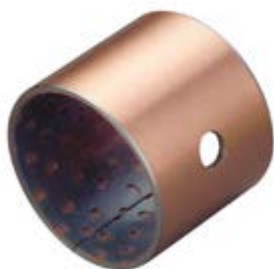
技术参数 Technical Data

最大承载 Max.load	静承载 Static	140N/mm ²
	低速运转 Very low speed	140N/mm ²
最大PV值（干摩擦） Max. PV (dry running)	连续 Continuous	2.8N/mm ² ·m/s
使用温度 Temp. limit		-150°C ~ 250°C
摩擦系数 Friction coefficient		0.08 ~ 0.12μ
最大线速度 Max. speed	干 Dry	2m/s
	流体 Lubrication	10m/s
导热系数 Thermal conductivity		52W/(m·k) ⁻¹
热膨胀系数 Coefficient of thermal expansion		11 × 10 ⁻⁶ ·K ⁻¹
最初装配时必须在油穴中涂满润滑油脂 Initial pre-lubrication at assembly is strongly recommended		

5420
5421
5422

Sleeve Bushing Specification & Tolerance

轴承规格及公差



内外倒角 ID and OD chamfers

S_3	C_o	C_i	β
1.0	0.6 ± 0.3	0.30 ± 0.2	$30^\circ \pm 5^\circ$
1.5	0.7 ± 0.3	0.50 ± 0.2	$30^\circ \pm 5^\circ$

S_3	C_o	C_i	β
2.00	1.2 ± 0.4	0.50 ± 0.3	$30^\circ \pm 5^\circ$
2.50	1.8 ± 0.6	0.80 ± 0.3	$45^\circ \pm 5^\circ$

单位Unit: mm

5420/5421/5422 Sleeve Bushing Specification & Tolerance

5420/5421/5422 轴承规格及公差

轴径 Shaft	10	12	14	15	16	18	20	22	25	28	30	35	40	45	50	55	60
D_s	-0.000			-0.000					0.000				0.000				0.000
h_8	-0.022			-0.027					-0.033				-0.039				-0.046
座孔 Housing	12	14	16	17	18	20	23	25	28	32	34	39	44	50	55	60	65
H7																	
D_H																	
(OD) 外径公差 Tolerance D_o	12	14	16	17	18	20	23	25	28	32	34	39	44	50	55	60	65
(ID) 压装后 内孔公差 After fixed D_{ia}	10	12	14	15	16	18	20	22	25	28	30	35	40	45	50	55	60
壁厚 Wall thick-ness S_3																	
配合间隙 Clearance D_o	0.130 0.040			0.135 0.040		0.138 0.040		0.164 0.050		0.188 0.060		0.194 0.060	0.234 0.080	0.239 0.080		0.246 0.080	
油孔 Oil hole d_i																	
10	●	●															
15	●	●	●	●	●	●	●	●	●								
20	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
25				●	●	●	●	●	●	●	●	●	●	●			
30							●	●	●	●	●	●	●	●	●	●	●
35											●	●	●	●	●	●	●
40											●	●	●	●	●	●	●
45												●	●	●	●	●	●
50													●	●	●	●	●
55														●	●	●	●
60																	

5420
5421
5422

Sleeve Bushing Specification & Tolerance
轴承规格及公差



5420/5421/5422 Sleeve Bushing Specification & Tolerance

5420/5421/5422 轴承规格及公差

轴径 Shaft D _s h8	65	70	75	80	85	90	100	105	110	120	125	130	140	150	160	170	180	190	200	220	240	250	260	280	300
	-0.000 -0.046				-0.000 -0.054					-0.000 -0.063							-0.000 -0.072				-0.000 -0.081				
座孔 Housing H7 D _H	70	75	80	90	95	105	110	115	125	130	135	145	145	155	165	175	185	195	205	225	245	255	265	285	305
	+0.030 -0.000			+0.035 +0.000					+0.040 +0.000							+0.046 +0.000				+0.052 +0.000					
(OD) 外径公差 Tolerance D _O	70	75	80	85	90	95	105	110	115	125	130	135	145	155	165	175	185	195	205	225	245	255	265	285	305
	+0.100 +0.055			+0.120 +0.070					+0.170 +0.100							+0.210 +0.130				+0.260 +0.170					
(ID)压装后 内孔公差 After fixed D _{Ia}	65	70	75	80	85	90	100	105	110	120	125	130	140	150	160	170	180	190	200	220	240	150	160	180	300
	+0.200 +0.080			+0.265 +0.100					+0.265 +0.110	+0.270 +0.110							+0.276 +0.110				+0.282 +0.110				
壁厚 Wall thick- ness S ₃	2.5 -0.040 -0.085			2.5 -0.050 -0.150																					
配合间隙 Clearance D _D	0.246 0.080			0.313 0.100	0.321 0.100					0.321 0.100							0.339 0.110				0.354 0.110				
油孔 Oil hole d _L	8			9.5										9.5					9.5						
40	●	●	●	●	●	●																			
50	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
80		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
90						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
95							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
100								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
110								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
120																		●	●	●	●	●	●	●	●



Order 订购

Catalog No. 目录号

5420
5421
5422

D_i

020
020
020

D_O

023
023
023

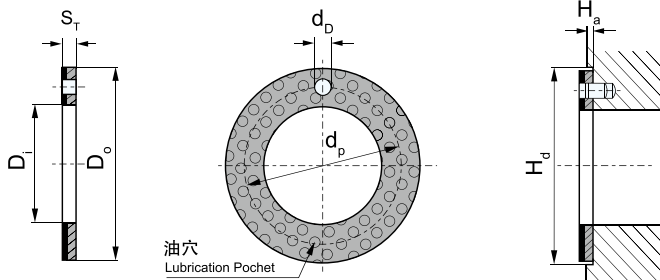
L

020
020
020

5410

Thrust Washer Specification & Tolerance

垫片规格及公差



单位Unit: mm

轴径 Shaft D _s	型号规格 Standard No.	垫片尺寸 Washer size				安装尺寸 Assemble size		
		D _i +0.25	D _o -0.25	S _T -0.05	d _p ±0.125	d _o ^{+0.4} _{+0.1}	H _i ±0.2	H _o +0.12
8	W10	10	20	1.5	15	1.5	1	20
10	W12	12	24		18			24
12	W14	14	26		20	2		26
14	W16	16	30		23			30
16	W18	18	32		25			32
18	W20	20	36		28	3		36
20	W22	22	38		30			38
22	W24	24	42		33			42
24	W26	26	44		35			44
26	W28	28	48		38	4		48
30	W32	32	54		43			54
36	W38	38	62		50			62
40	W42	42	66		54			66
46	W48	48	74	2	61	1.5	74	
50	W52	52	78		65		78	
60	W62	62	90		76		90	



Order 订购

Catalog No. 目录号

5410

·

 D_i

·

 S_T

·

012

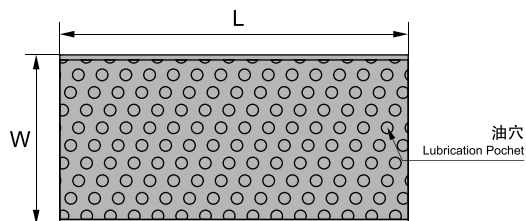
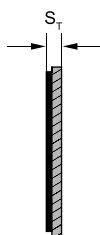
·

001.5

6401

Strip Standard Metric Size

板材标准公制尺寸



单位Unit: mm

型号规格 Standard No.	宽度 $W \pm 1$	长度 $L \pm 1$	厚壁 Wall thickness $S_s -0.05$
P	150	500	1.0
P	150	500	1.5
P	150	500	2.0
P	150	500	2.5



Order 订购

Catalog No. 目录号

6401

·

W

·

150

·

L

·

500

·

 S_s

·

001