



HDB-10/20/30 系列

无给油轴承 / 边界润滑轴承 / 塑料轴承

Oilless Bushings / Boundary-Lubrication Bushings / Plastic bearing

10 无给油轴承

Oilless Bushings

5220

Carbon Steel Self-lubricating Bushes
碳钢基自润滑轴套



P.88

5920

Bronze Pb-free Self-lubricating Bushes
铜基无铅自润滑轴套



P.89

5230

Flange Bushing Specification & Tolerance
翻边轴套规格及公差



P.92

5210

Thrust Washer Specification & Tolerance
垫片规格及公差



P.93

6201

板材规格及公差
Strip Specification & Tolerance



P.93

20 边界润滑轴承

Boundary-Lubrication Bushings

5420

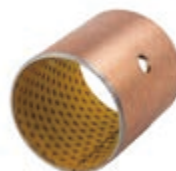
Marginal Pb-free Self-lubricating Bushes
边界无铅自润滑轴套



P.94

5421

Marginal Pb-free Self-lubricating Bushes
边界无铅自润滑轴套



P.95

5422

Marginal Pb-free Self-lubricating Bushes
边界无铅自润滑轴套



P.96

5410

Thrust Washer Specification & Tolerance
垫片规格及公差



P.99

6401

板材规格及公差
Strip Specification & Tolerance



P.99

30 塑料轴承

Plastic bearing

7021

Universal bearings
通用型轴承



P.100

7022

Food grade drug bearing
食品药品级轴承



P.101

7023

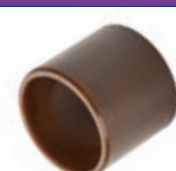
High speed bearing
低速移动轴承



P.102

7024

High dynamic load bearing
高动载荷轴承



P.103



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

Standard Size:

Straight sleeves, flanged bushings, thrust washers, plates.

Non-Standard Size:

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

可供标准产品:

直套, 翻边轴套, 止推垫片, 板材。

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。

5220 carbon steel self-lubricating bearings, used high quality low-carbon steel plate as base, sintered porous bronze as its interlayer and the compound of PTFE as its surface. It offers the property of good self-lubrication, low wear, low friction, good sliding characteristics, low noise.

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)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。

应用特点 Application Feature

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

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°C~+280°C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;

目前已广泛应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。

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 Roatating oscillating	60N/mm ²
最大PV值 (干摩擦) Max. PV (dry running)	间断性运作 Short-term operation	3.6N/mm ² ·m/s
	长期运作 Continuous operation	1.8N/mm ² ·m/s
使用温度 Temp. limit		-195°C~+280°C
摩擦系数 Friction coefficient		0.05~0.20μ
最大线速度 Max. speed	干摩擦 Dry running	2m/s
	流体润滑 Hydrodynamic operation	>2m/s
导热系数 Thermal conductivity		42 W/(m·k) ⁻¹
线胀系数 Coefficient of thermal expansion		11 × 10 ⁻⁶ ·K ⁻¹



材料组织 Material Structure



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

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

Standard Size:

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

Non-Standard Size:

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

可供标准产品:

直套, 翻边轴套, 止推垫片, 板材。

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。

5920 is one of high safety factory, and 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/mm².

5920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和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HLDB-1B耐磨层加厚的产品以取代纯PTFE板, 达到130N/mm²轴载使用的要求。

应用特点 Application Feature

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

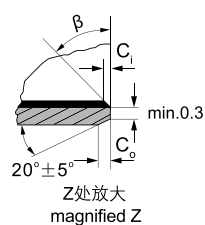
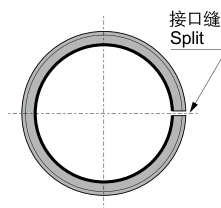
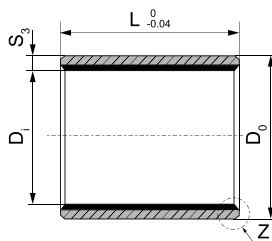
- 1.聚四氟乙烯与亲油性纤维混合物在运动时可形成很好的转移膜保护对磨轴。
- 2.烧结层与铜基板具有良好的导热性, 可迅速转移运作过程中产生的热量。
- 3.铜具有自润滑性能, 可用于长期运作而无法停机检修的部位。
- 4.基体铜具有良好的抗腐蚀能力, 可应用于弱酸、强碱场合。
- 5.具有良好的承载能力。
- 6.产品已广泛应用于冶金钢铁工业、高温炉钢环部位、水泥灌浆泵、螺旋式输送机、港口机械及船舶机械上等。
- 7.可在外部组合钢套; 或制成翻边, 达到内孔、端面同时使用的效果。

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	60N/mm ²
最大PV值 (干摩擦) Max. PV (dry running)	间断性运作 Short-term operation	3.6N/mm ² ·m/s
	长期运作 Continuous operation	1.8N/mm ² ·m/s
使用温度 Temp. limit		-195°C~+280°C
摩擦系数 Friction coefficient		0.03~0.20μ
最大线速度 Max. speed	干摩擦 Dry running	2m/s
	流体润滑 Hydrodynamic operation	>2m/s
导热系数 Thermal conductivity		60 W/(m·K) ⁻¹
线胀系数 Coefficient of thermal expansion		18×10 ⁻⁶ K ⁻¹

5220
5920

Sleeve Bushing Specification & Tolerance
轴套规格及公差



内外倒角 ID and OD chamfers

S_3	C_o	C_i	β
0.75	0.5 ± 0.3	0.25 ± 0.2	$30^\circ \pm 5^\circ$
1.00	0.6 ± 0.3	0.30 ± 0.2	$30^\circ \pm 5^\circ$
1.50	0.7 ± 0.3	0.50 ± 0.3	$30^\circ \pm 5^\circ$

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	0.60 ± 0.3	$45^\circ \pm 5^\circ$

单位Unit: mm

5920 Sleeve Bushing Specification & Tolerance

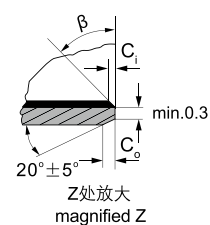
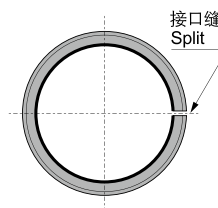
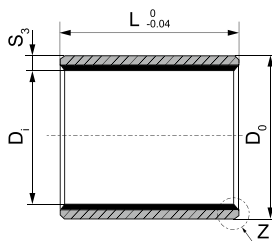
5920 轴套规格及公差

轴径 (f7) Shaft Ds	6	8	10	12	13	14	15	16	17	18	20	22	24	25	28	30	32	35	38	40	45	50	55	60
Ds	-0.010 -0.022	-0.013 -0.028					-0.016 -0.034							-0.020 -0.041				-0.025 -0.050			-0.050 -0.025		-0.060 -0.030	
座孔 (H7) Housing DH	8	10	12	14	15	16	17	18	19	20	23	25	27	28	32	34	36	39	42	44	50	55	60	65
DH	+0.015 +0.000				+0.018 +0.000						+0.021 +0.000							+0.025 +0.000				+0.030 +0.000		
(OD) 外径公差 Tolerance DO	8	10	12	14	15	16	17	18	19	20	23	25	27	28	32	34	36	39	42	44	50	55	60	65
DO	+0.055 +0.025				+0.065 +0.030						+0.075 +0.035							+0.085 +0.045				+0.100 +0.055		
(ID) 压装后 内孔公差 After fixed Di,a	6	8	10	12	13	14	15	16	17	18	20	22	24	25	28	30	32	35	38	40	45	50	55	60
Di,a	+0.055 -0.010				+0.058 -0.010				+0.61 -0.010		+0.071 -0.010				+0.085 -0.010			+0.085 -0.010			+0.105 -0.010		+0.110 -0.010	
壁厚 Wall thick- ness S3	1.0 +0.005 -0.020										1.5 +0.005 -0.025					2.0 +0.005 -0.030					2.5 +0.005 -0.040			
配合间隙 Clearance DD	0.077 0.000	0.083 0.003	0.086 0.003			0.092 0.006				0.095 0.006		0.112 0.010			0.126 0.010			0.135 0.015			0.155 0.015	0.160 0.015	0.170 0.020	
6	●	●	●	●																				
8	●	●	●	●																				
10	●	●	●	●	●	●	●	●	●	●	●	●	●	●										
12		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
15		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
20			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
25				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
30											●	●	●	●	●	●	●	●	●	●	●	●	●	●
40												●	●	●	●	●	●	●	●	●	●	●	●	●
50														●	●	●	●	●	●	●	●	●	●	●
60															●	●	●	●	●	●	●	●	●	●
70																							●	●
80																								●
100																								●
115																								●

5220
5920

Sleeve Bushing Specification & Tolerance

轴套规格及公差



内外倒角 ID and OD chamfers

S_3	C_o	C_i	β
0.75	0.5 ± 0.3	0.25 ± 0.2	$30^\circ \pm 5^\circ$
1.00	0.6 ± 0.3	0.30 ± 0.2	$30^\circ \pm 5^\circ$
1.50	0.7 ± 0.3	0.50 ± 0.3	$30^\circ \pm 5^\circ$

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	0.60 ± 0.3	$45^\circ \pm 5^\circ$

单位Unit: mm

5920 Sleeve Bushing Specification & Tolerance

5920 轴套规格及公差

轴径 (F7) Shaft Ds	65	70	75	80	85	90	95	100	105	110	120	125	130	140	150	160	180	190	200	220	250	260	280	300	
	-0.060 -0.030			-0.013 -0.028	-0.000 -0.045	-0.000 -0.054					-0.000 -0.063					-0.000 -0.072				-0.000 -0.081					
座孔 (H7) Housing DH	70	75	80	85	90	95	100	105	110	115	125	130	135	145	155	165	185	195	205	225	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 DO	70	75	80	85	90	95	100	105	110	115	125	130	135	145	155	165	185	195	205	225	255	265	285	305	
	+0.100 +0.055			+0.120 +0.070										+0.210 +0.130					+0.260 +0.170						
(ID) 压装后 内孔公差 After fixed Di,a	65	70	75	80	85	90	95	100	105	110	120	125	130	140	150	160	180	190	200	220	250	260	280	300	
	+0.110 -0.010			+0.155 +0.020					+0.155 +0.020		+0.210 +0.070					+0.216 +0.070			+0.222 +0.070						
壁厚 Wall thick- ness S3	2.5 +0.005 -0.040			2.5 -0.01 -0.060							2.5 -0.035 -0.085														
配合间隙 Clearance DD	0.170 0.020			0.201 0.020	0.209 0.020					0.264 0.070		0.273 0.070				0.279 0.070		0.288 0.070		0.294 0.070		0.030 0.070			
6																									
8																									
10																									
12																									
15																									
20																									
25																									
30	●	●	●																						
40	●	●	●	●	●	●																			
50	●	●	●	●	●	●	●	●																	
60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
70	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
80		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
100				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
115								●	●	●	●	●	●	●	●	●									



Order 订购

Catalog No. 目录号

5220
5920

D_i

D_o

L

020
020

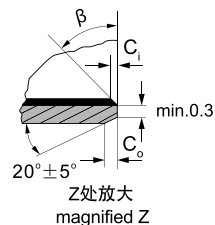
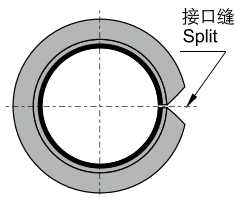
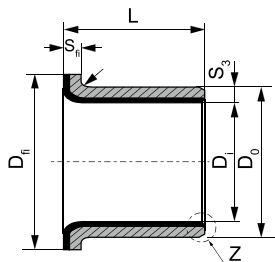
023
023

020
020

5230

Flange Bushing Specification & Tolerance

翻边轴套规格及公差



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

单位Unit: mm

5230 Flange Bushing Specification & Tolerance

5230 翻边轴套规格及公差

轴径(f7) Shaft D _s	6	8	10	12	14	15	16	18	20	22	25	30	35	40																		
	-0.013 -0.028		-0.016 -0.034						-0.016 -0.034			-0.025 -0.050																				
座孔(H7) Housing D _H	8	10	12	14	16	17	18	20	23	25	28	34	39	44																		
	+0.015 +0.000		+0.018 +0.000						+0.021 +0.000				+0.025 +0.000																			
(OD) 外径公差 Tolerance D _O	8	10	12	14	16	17	18	20	23	25	28	34	39	44																		
	+0.055 +0.025			+0.065 +0.030					+0.075 +0.035					35.085 34.990																		
(ID)压装后 内孔公差 After fixed D _{i,a}	6	8	10	12	14	15	16	18	20	22	25	30	35	40																		
	+0.055 -0.010		+0.058 -0.010						+0.61 -0.010	+0.071 -0.010			+0.085 -0.010																			
Wall thickness 壁厚 S ₃	1.0 +0.005 -0.020								1.5 +0.005 -0.025				2.0 +0.005 -0.030																			
配合间隙 Clearance C _O	0.077 0.000	0.083 0.003	0.086 0.003	0.092 0.006					0.095 0.006	0.112 0.010				0.126 0.010	0.135 0.015																	
D1	6	8	10	12	14	15	16	18	20	22	25	30	35	40																		
D2	8	10	12	14	16	17	18	20	56	58	5/	67	39	55																		
D _h ±0.5	12	15	18	20	22	23	24	26	30	32	35	42	47	53																		
L±0.25	4	7	5.5	7.5	7	9	12	7	9	12	12	17	9	12	17	12	17	20	11.5	16.5	21.5	15	20	11.5	16.5	21.5	16	26	16	26	26	40
S _h ·0.2	1								1.5				2																			



Order 订购

Catalog No. 目录号

5230

 D_I

020

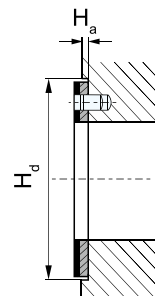
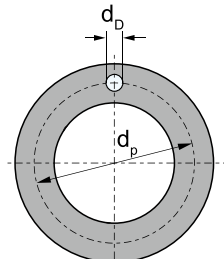
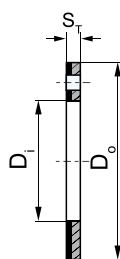
 L

020

5210

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		H _d +0.12
		D _i +0.25	D _o -0.25	S _T -0.05	d _b ±0.125	d _p ^{+0.4} _{+0.1}	H _a ±0.2	
8	W10	10	20	1.5	15	1.5	1	20
10	W12	12	24		18	2		24
12	W14	14	26		20			26
14	W16	16	30		23			3
16	W18	18	32		25	32		
18	W20	20	36		28	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

5210

· D_i

· 008

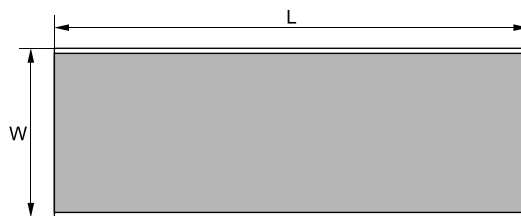
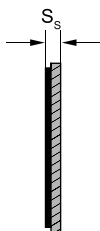
· S_t

· 001.5

6201

Strip Specification & Tolerance

板材规格及公差



单位Unit: mm

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



Order 订购

Catalog No. 目录号

6201

· W

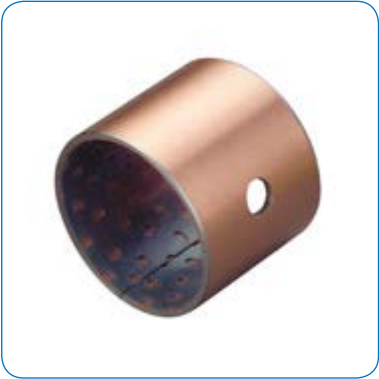
· 150

· L

· 500

· S_s

· 001



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。

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。

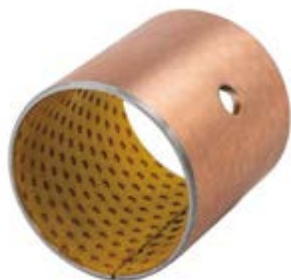
化学性能 Physical and Mechanical Performance

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:

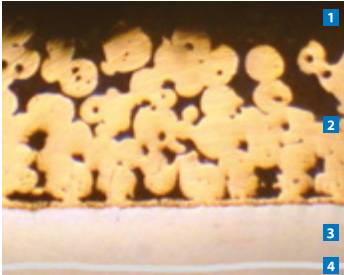
直套，止推垫片，板材。

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:
Straight Bearing, Thrust washer, Strip.

Non-Standard Size:
Straight 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。

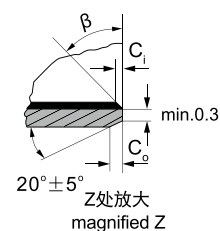
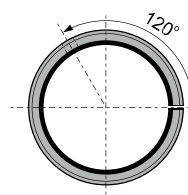
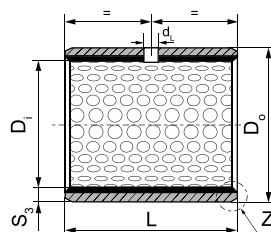
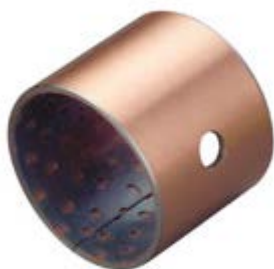
技术参数 Technical Data

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	12	14	16	17	18	20	23	25	28	32	34	39	44	50	55	60	65
Tolerance																	
D_o																	
(ID)压装后 内孔公差	10	12	14	15	16	18	20	22	25	28	30	35	40	45	50	55	60
After fixed																	
D_{ia}																	
壁厚 Wall thick-ness																	
S_3																	
配合间隙 Clearance	0.130			0.135		0.138		0.164		0.188		0.194		0.234	0.239		0.246
D_o	0.040			0.040		0.040		0.050		0.060		0.060		0.080	0.080		0.080
油孔 Oil hole	4				6				8				8				
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

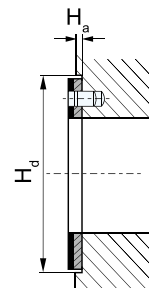
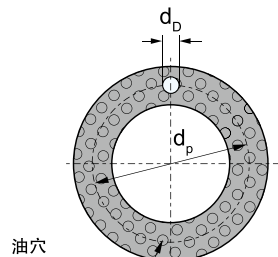
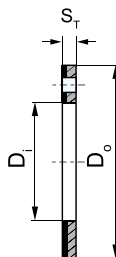
L

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 _a +0.12
8	W10	10	20	1.5	15	1.5	1	20
10	W12	12	24		18			24
12	W14	14	26		20			26
14	W16	16	30		23	2		30
16	W18	18	32		25			32
18	W20	20	36		28			36
20	W22	22	38		30	3		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	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

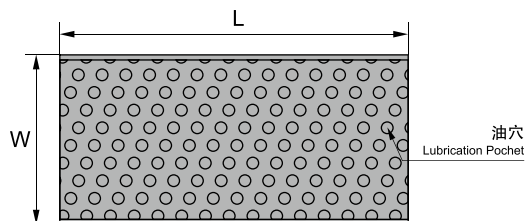
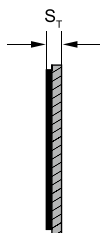
·

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



产品特性 Product Features

- The most common plastic bearing material. It is suitable for the application with working temperature not higher than 80°C. It is the preferable material with good wear resistance and economic efficient for a new designation
- Continuous working temperature: -40°C~ 80°C
- Very common; suitable for most of average and low load
- Maintenance-free dry operation
- Light wear against different shaft materials
- Low friction
- 通用性最强的塑料轴承。可满足工作温度80度以下的大部分应用场合，出色的耐磨性能和合理的价格往往是设计工程师的首选材料
- 连续使用温度：-40°C~ 80°C
- 通用性强适合多数中低载荷场合
- 适合干运行、免维护
- 不同轴材料磨损很小
- 较低的摩擦系数

材料性能 Material Properties	试验方法 Testing Method	单位 Unit	7021
密度Density	ISO1183	g/cm ³	1.46
颜色Color			深灰Dark Grey
对钢的动摩擦系数Dynamic friction/steel(dry)			0.05-0.15
最大PV值 Max.PV (dry)		n/mm ² ×m/s	0.4
最大旋转速度值Max.rotating velocity		m/s	1.0
最大摇摆速度值Max.oscillating velocity		m/s	0.7
最大直线速度值Max.linear velocity		m/s	3.0
抗拉强度 Tensile strength	ISO527	MPa	80
抗压强度（轴向）Compressive strength(Axial)		MPa	65
弹性模量E-module	ISO527	MPa	2300
允许最大表面静压力（20°C）Max.static pressure of the surface, 20°C		MPa	35
邵氏硬度 Rockwell hardness	ISO2039-2	HRR	108
连续工作温度 continuous work temperature		°C	-40/80
短时运行温度 Short-time		°C	-40/120
导热性 Thermal conductivity	ASTME1461	W/m k	0.2
线性热膨胀系数 Linear coef.of thermal expansion	ASTMD696	K-1×10 ⁻⁵	10
RH50/23°C时的吸湿性 Moisture absorption RH50/23°C	ASTMD570	%	0.2
最大吸水率23°C Max. water absorption,23°C		%	1.2
体电阻率Volume resistivity	IEC60093	Ωcm	> 10 ¹²
面电阻率Surface resistivity	IEC60093	Ω	> 10 ¹⁵



产品特性 Product Features

- it is a PTFE and Sillcon free material widely used in the food and packing macninerics.
- Continuous working temperature: -40°C/+80°C
- No special requirement on the surface roughness
- Low friction coefficient
- Applicable for flexible shaft
- FDA grade
- 不含PTFE和Sillcon材料。应用于食品加工和包装工业
- 连续使用温度：-40°C/+80°C
- 对轴表面粗糙度要求低
- 较低的摩擦系数
- 适用于软轴
- FDA等级食品安全认证

材料性能 Material Properties	试验方法 Testing Method	单位 Unit	7024
密度Density	ISO1183	g/cm ³	1.14
颜色Color			白色White
对钢的动摩擦系数Dynamic friction/steel(dry)			0.01-0.40
最大P.V值 Max.PV (dry)		n/mm ² ×m/s	0.1
最大旋转速度值Max.roatating velocity		m/s	0.6
最大摇摆速度值Max.oscillating velocity		m/s	0.4
最大直线速度值Max.linear velocity		m/s	1.0
抗拉强度 Tensile strength	ISO527	MPa	83
抗压强度（轴向） Coppersive strength(Axial)		MPa	50
弹性模量E-module	ISO527	MPa	2800
允许最大表面静压力（20°C） Max.static pressure of the surface, 20°C		MPa	20
邵氏硬度 Rockwell hardness	ISO2039-2	HRR	76
连续工作温度 continuous work temperature		°C	-40/+80
短时运行温度 Short-time		°C	-40/+170
导热性 Thermal conductivity	ASTME1461	W/m k	0.2
线性热膨胀系数 Linear coef.of thermal eapansion	ASTMD696	K-1×10-5	10
RH50/23°C时的吸湿性 Moisture absorption RH50/23°C	ASTMD570	%	1.5
最大吸水率23°C Max. water absorption,23°C		%	7.6
燃烧性能 Flammability	UL94		HB
体电阻率Volume resistivity	IEC60093	Ωcm	> 10 ¹²
面电阻率Surface resistivity	IEC60093	Ω	> 10 ¹⁵



产品特性 Product Features

- Low friction and high wear resistance. It could maintain a good stable wear resistance and friction factor for the rotation, linear and oscilation movement. It has no critical hardness requirement to the shaft
 - Continuous working temperature: -50°C /+ 90°C
 - Maintenance-free dry operation
 - Small wear off amount against various shaft materials
 - Lower friction
 - Suitable for soft shaft
 - Low water absorption
-
- 低摩擦系数和高耐磨性完美结合。旋转、直线和摆动应用中耐磨性和摩擦系数几乎保持一致。对轴材料硬度要求较低。不适合极高载荷
 - 连续使用温度：-50°C/+90°C
 - 适合干运行、免维护
 - 不同轴材料磨损很小
 - 较低的摩擦系数
 - 适用于软轴
 - 吸水性较低

材料性能 Material Properties	试验方法 Testing Method	单位 Unit	7022
密度Density	ISO1183	g/cm3	1.48
颜色Color			黄色 Yellow
对钢的动摩擦系数Dynamic friction/steel(dry)			0.05-0.15
最大PV值 Max.PV (dry)		n/mm2×m/s	0.4
最大旋转速度值Max. rotating velocity		m/s	1.5
最大摇摆速度值Max. oscillating velocity		m/s	1.1
最大直线速度值Max. linear velocity		m/s	8.0
抗拉强度 Tensile strength	ISO527	MPa	75
抗压强度（轴向）Compressive strength(Axial)		MPa	60
弹性模量E-module	ISO527	MPa	2400
允许最大表面静压力（20°C）Max. static pressure of the surface, 20°C		MPa	35
邵氏硬度 Rockwell hardness	ISO2039-2	HRR	74
连续工作温度 continuous work temperature		°C	-50/+90
短时运行温度 Short-time		°C	-50/+120
导热性 Thermal conductivity	ASTME1461	W/m k	0.25
线性热膨胀系数 Linear coef. of thermal expansion	ASTMD696	K-1×10-5	9
RH50/23°C时的吸湿性 Moisture absorption RH50/23°C	ASTMD570	%	0.2
最大吸水率23°C Max. water absorption, 23°C		%	1.2
燃烧性能 Flammability	UL94		HB
体电阻率Volume resistivity	IEC60093	Ωcm	> 1013
面电阻率Surface resistivity	IEC60093	Ω	> 1012



产品特性 Product Features

- It is a high load material with excellent low friction factor. Marginal load application is acceptable and it is with good wear resistance both for hard and soft shafts
- Continuous working temperature: -100°C/+250°C
- High load capacity
- Higher speed is permissible
- Marginal pressure is permissible
- Best performance for oscillating movement
- 高载荷和低摩擦系数出色的材料。可承受边缘载荷。软轴或硬轴配和使用同样耐磨
- 连续使用温度-100°C/+250°C
- 适合高载荷运动
- 允许较高的运行速度
- 允许边界压力
- 摆动运行性能尤为出色

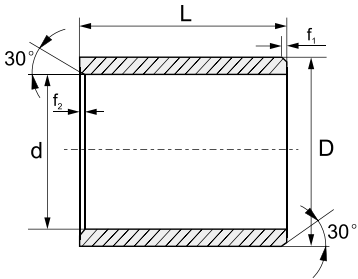
材料性能 Material Properties	试验方法 Testing Method	单位 Unit	7023
密度Density	ISO1183	g/cm ³	1.40
颜色Color			棕色Brown
对钢的动摩擦系数Dynamic friction/steel(dry)			0.05-0.15
最大P.V值 Max.PV (dry)		n/mm ² ×m/s	1.0
最大旋转速度值Max.rotating velocity		m/s	1.5
最大摇摆速度值Max.oscillating velocity		m/s	1.1
最大直线速度值Max.linear velocity		m/s	5.0
抗拉强度 Tensile strength	ISO527	MPa	90
抗压强度（轴向） Compressive strength(Axial)		MPa	65
弹性模量E-module	ISO527	MPa	2500
允许最大表面静压力（20°C） Max.static pressure of the surface, 20°C		MPa	150
邵氏硬度 Rockwell hardness	ISO2039-2	HRR	81
连续工作温度 continuous work temperature		°C	-100/+250
短时运行温度 Short-time		°C	-100/+310
导热性 Thermal conductivity	ASTME1461	W/m k	0.6
线性热膨胀系数 Linear coef.of thermal expansion	ASTMD696	K-1×10 ⁻⁵	4
RH50/23°C时的吸湿性 Moisture absorption RH50/23°C	ASTMD570	%	0.3
最大吸水率23°C Max. water absorption,23°C		%	1.1
燃烧性能 Flammability	UL94		V0
体电阻率Volume resistivity	IEC60093	Ωcm	> 10 ¹¹
面电阻率Surface resistivity	IEC60093	Ω	> 10 ¹¹

7021~7024

Standard Specifications
标准规格



直套



推荐安装公差座孔 : H7
轴 : h9

d	f ₁	f ₂
1-6	0.3	0.5
6-12	0.5	
12-30	0.8	
>30	1.2	

d [mm]	d- 公差 [mm]	D [mm]	L(h13) [mm]
3	+0.054 +0.014	4.5	3
		4.5	5
		4.5	6
		5	5
4	+0.068 +0.020	5.5	4
		5.5	6
		5.5	8
		6	6
5		7	5
		7	8
		7	10
		7	12
6		7	18
		8	4
		8	5
		8	6
		8	8
		8	10
8		8	11
		10	5
	10	6	
	10	8	
	10	10	
	10	11	
	10	12	
	10	15	
9	11	10	
10	11	6	
	12	4	
	12	5	
	12	6	
	12	8	
	12	10	
		12	12

d [mm]	d- 公差 [mm]	D [mm]	L(h13) [mm]
10	+0.083 +0.025	12	15
		14	10
		14	16
		12	18
		12	20
12	+0.102 +0.032	14	6
		14	8
		14	10
		14	12
		14	15
		14	20
		14	25
		14	30
		15	20
		16	12
13		15	7
14		15	10
		16	8
		16	10
		16	12
		16	15
		16	20
		16	25
15		17	10
		17	12
		17	15
		17	17
		17	20
16		17	25
		18	10
		18	12
		18	15
		18	20
16		18	25
		+0.015/+0.055	19

d [mm]	d- 公差 [mm]	D [mm]	L(h13) [mm]	
16	+0.102 +0.032	20	16	
18		20	15	
		20	20	
		20	25	
20	+0.124 +0.040	22	12	
		22	15	
		22	28	
		23	10	
		23	15	
		23	20	
		23	23	
		23	25	
		23	30	
		25	15	
		22	25	15
			25	20
25			25	
25			30	
25		28	10	
		28	12	
		28	15	
		28	20	
		28	25	
		28	30	
		29	25	
		30	25	
28		32	20	
		32	25	
		32	30	
30		34	20	
		34	25	
		34	30	
	34	40		

d [mm]	d- 公差 [mm]	D [mm]	L(h13) [mm]
32	+0.150 +0.050	36	20
		36	23
		36	25
		36	30
		36	40
35		39	15
		39	20
		39	25
		39	30
		39	40
40		39	50
		44	20
		44	30
		44	40
		44	50
45		50	30
		50	40
		50	50
50		55	10
		55	20
		55	30
		55	40
		55	50
54	+0.180 +0.060	56	30
60		65	50
70		75	50
80		85	40
85	+0.072/+0.212	90	40
125	+0.143	130	60
150	+0.043	155	60

*d 公差为压入标准 H7 座孔 (ISO3547-1) 后公差



Order 订购

Catalog No. 目录号

7021

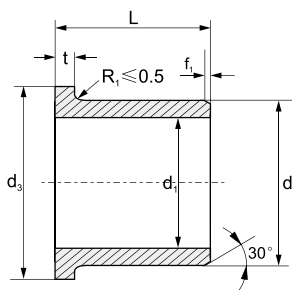
7022

7023

7024

. d . D . L
 . 008 . 010 . 010
 . 008 . 010 . 010
 . 008 . 010 . 010
 . 008 . 010 . 010

翻边轴套



推荐安装公差座孔 : H7
轴 : h9

d	f
1-6	0.3
6-12	0.5
12-30	0.8
>30	1.2

7021~7024-F

Standard Specifications

标准规格



d ₁ [mm]	d ₁ - 公差 [mm]	d ₂ [mm]	d ₃ [d13] [mm]	L[h13] [mm]	t _{0.14} [mm]
3	+0.054 +0.014	4.5	7.5	3	0.75
				5	0.75
4	+0.068 +0.020	5.5	9.5	3	0.75
				6	0.75
5		7	11	3	1
				4	1
6		8	12	5	1
				4	1
				5	1
				6	1
				8	1
				10	1
8	+0.083 +0.025	10	15	5	1
				6	1
				7	1
				9	1
				10	1
				12	1
				15	1
				18	1
				17	1
				10	2
9				10	2
				5	1
				6	1
				7	1
				8	1
10		12	18	9	1
				10	1
				12	1
				15	1
				17	1
	+0.071 +0.013		16	12	2
			18	10	2
12	+0.102 +0.032	14	20	4	1
				5	1
				6	1
				7	1
				9	1
				10	1
				12	1
				13	1
				15	1
				17	1
				18	1
				20	1
		17		4	1
				5	1
				12	2
		18		25	1
				40	2
	+0.016/+0.086			10	2
	+0.032/+0.102			12	2
	+0.086 +0.016	16	20	12	2
13	+0.032/+0.102	15	19	12	1

d ₁ [mm]	d ₁ - 公差 [mm]	d ₂ [mm]	d ₃ [d13] [mm]	L[h13] [mm]	t _{0.14} [mm]
14	+0.102 +0.032	16	22	5.2	1
				8	1
				10	1
				12	1
				17	1
	+0.086 +0.016		20	6	2
				15	2
		18	22	20	2
15	+0.102 +0.032			20	5
				23	9
				12	1
				20	12
				15	1
				17	1
				20	1
		18		12	1
				25	1
		17		12	1
16	+0.086 +0.016	18	24	17	1
				22	2
			24	16	2
				22	2
				12	1
18	+0.102 +0.032	20	26	17	1
	+0.016/+0.086		24	20	1
				22	2
20	+0.124 +0.040	22	25	15	1.5
				11.5	1.5
				16.5	1.5
				21.5	1.5
				25	1.5
	+0.104 +0.020			15	2
				22	2
		24		20	2
				15	2
		27	32	20	2
22	+0.124 +0.040	25	33	11.5	1.5
				11.5	1.5
				16.5	1.5
				21.5	1.5
				22	2
25	+0.104 +0.02	28		32	2
				20	2.5
		30		25	2.5
				4	1
		33		9	2
30	+0.124 +0.040			16	2
				26	2
				32	2
				37	2
				18	2
	+0.104 +0.020			22	2
	+0.04/+0.124			32	2
32	+0.05/+0.15	36	40	16	2

d ₁ [mm]	d ₁ - 公差 [mm]	d ₂ [mm]	d ₃ [d13] [mm]	L[h13] [mm]	t _{0.14} [mm]
32	+0.150 +0.050 +0.025/+0.125	36	40	26	2
35		39	47	16	2
			50	26	2
40	+0.150 +0.050	44	52	22	2
	+0.025/+0.125			55	30
	45	+0.150 +0.050	50	58	40
+0.025/+0.125		60			17
50		+0.150 +0.050	55	63	25
					50
					45
	+0.150 +0.050	55	63	45	2
				30	2

d_1 [mm]	d_1 - 公差 [mm]	d_2 [mm]	d_3 [d13] [mm]	L[h13] [mm]	$t_{0.14}$ [mm]
50	+0.150 +0.050	55	63	40	2
				50	2
	+0.125 +0.025		65	50	2
60	+0.06/+0.18	65	73	20.5	2.5
65	+0.03/+0.15	70	80	60	2
70	+0.060/+0.180	75	83	60	2.5
75	+0.150 +0.030	80	90	50	2
				25	2.5
90	+0.036/+0.176	95	110	40	2.5
120	+0.072/+0.212	125	140	50	2.5

* d_1 公差为压入标准 H7 座孔 (ISO3547-1) 后公差



Order 订购

Catalog No. 目录号

7021

7022

7023

7024

d

L

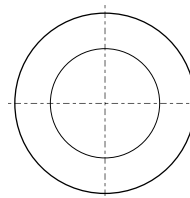
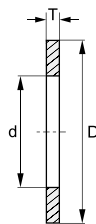
. 008 . 010 -F

. 008 . 010 -F

. 008 . 010 -F

. 008 . 010 -F

垫片



$d^{+0.25}$ [mm]	$D_{-0.25}$ [mm]	$T_{-0.05}$ [mm]
5	9	0.6
6	15	1.5
6	20	1.5
8	15	0.5
8	15	1.5
8	18	1.0
8	18	1.5
10	18	1.0
10	18	1.5
10	18	2.0
10	24	1.5
12	24	1.5
12	26	1.5
14	26	1.5
14	30	1.5
15	24	1.5
16	30	1.5
16	32	1.5
18	32	1.5
18	36	1.5

$d^{+0.25}$ [mm]	$D_{-0.25}$ [mm]	$T_{-0.05}$ [mm]
20	30	1.5
20	36	1.5
20	38	1.5
22	38	1.5
22	42	1.5
24	42	1.5
24	44	1.5
25	48	1.5
26	44	1.5
28	48	1.5
30	54	1.5
32	54	1.5
36	62	1.5
38	62	1.5
42	66	1.5
46	74	2.0
48	74	2.0
51	78	2.0
52	78	2.0
62	90	2.0



Order 订购

Catalog No. 目录号

7021

7024

d

D

T

. 010 . 018 . 001.0 -W

. 010 . 018 . 001.0 -W