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港平机械

Gangping Machinery

滑动轴承专业制造商

Professional manufacturer of plain bearings

产品手册

公司简介
Introduction

GANGPING MACHINERY

嘉善港平机械有限公司是专业生产各种系列无油轴承的实体企业，公司生产滑动轴承，复合轴承，轴套，衬套，固体镶嵌轴承，轴瓦，平面轴承，导套，双金属轴套，青铜布孔轴承等产品的企业。产品广泛适用于汽车转向节衬套，摇臂衬套，助力转向泵衬套，齿轮泵衬套，减震器。阀门，升降机，液压搬运车，电动工具，纺织机械，橡胶机械，印刷机械，食品机械，包装机械，起重机械，矿山机械，健身器材，水利机械，机床，水轮机，汽轮机，冶金设备，模具，液压机械，油缸，石油机械，塑料机械，制药机械，自动化设备，工程机械，建筑机械，锻压设备，轧钢设备等。

作为滑动轴承生产的制造企业，我公司十分注重产品的高质量与售后服务。我们一直致力于新产品、新材料、高技术含量的研究与新领域的推广和应用，不断提升企业品位，充分整合企业优势，以高质量、优服务满足国内外客户的需求。

www.ccvk-bearing.com

Jiashan Gangping Machinery Co., Ltd is a professional corporate entity of producing various series oil-bearings. The company produces sliding bearings, composite bearings, bushings, soiled inlaid bearing, backing, surface bearing, guide bushing, bimetal bushes, Bronze cloth hole bearing and other productions. The productions are widely used in Automotive steering knuckle bushings, rocker arm bushings, power steering pump bushing, gear pump bushing, shock absorbers, valves, elevator, hydraulic van, electric tools, textiles machinery, rubber machinery, printing machinery, food machinery, packaging machinery, lifting machinery, mining machinery, fitness equipment, water conservancy machines, machine tools, turbines, steam turbines, metallurgical equipment, tooling, hydraulic machinery, oil cylinders, petroleum machinery, plastic machinery, pharmaceutial machinery, automatic equipment, engineering machinery, construction machinery, metalforming equipment, steel rolling equipment, etc.

As a manufacturing enterprise producing sliding bearings, our company takes a great attention on the quality of products and after-sales service. We have been committed to new products, new materials, high-tech research and the promotion and application of new areas. We improve enterprise grade; integrate business advantage fully and meet the needs of domestic and foreign customers with high-quality and excellent service.

Jiashan gangping machinery

港平为所有工业提供自润滑轴承产品

Jiashan latitude machinery provides self-lubricating bearing products for all industries






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GANGPING MECHANICAL 港平机械

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GPB-1 碳钢基自润滑轴套
GPB-1 Carbon Steel Self-lubricating Bushes

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。

GPB-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 as its surface. It o□ers 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。

1. Working under oilless or minim oil state, maintenance free or just need a little maintenance. 2. Resist Abrasion, low coe□cient of friction long operating life.
3. Operating in -195℃～+280℃. 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 □lm 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 coe□cient 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 di□erent machines, such as auto machines, piston pump, gear pump, textile machine, auto-sides machine, Injection Machine, sports Machine o□ce equipment etc.

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℃~+280℃
摩擦系数 Friction coe□cient		0.05~0.20 μ
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 Coe□cient of thermal expansion		11 × 10^{-6}·K^{-1}

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 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

可供标准产品：
直套P05，翻边轴套P07，止推垫片P08，板材P08。

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。

Standard Size：
Stright Bearing P05, Flange Bearing P07, Thrust washer P08, Strip P08.

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

GANGPING MECHANICAL 港平机械

GPB-1B 铜基无铅自润滑轴套
GPB-1B Bronze Pb-free Self-lubricating Bushes

GPB-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GPB-1B耐磨层加厚的产品以取代纯PTFE板，达到130N/mm^{2}轴载使用的要求。

GPB-1B is one of high safty factory, and particularly appropriate for high temperature environment where no oil is effcient 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 converyers 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^2.

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。

1.PTFE and lipophilic Friber 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 foller grooves of successive casting machines, cement grouting pumps and scrow conveyers of machine.
7.It can be composed in steel housing, or fabricated into □anged bushes which result in function for montion both on □ange and I.D.

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℃~+280℃
摩擦系数 Friction coe□cient		0.03~0.20 μ
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 Coe□cient of thermal expansion		18 × 10^{-6}·K^{-1}

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

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

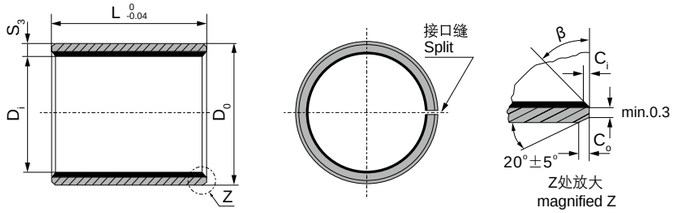
可供标准产品：
直套P05，翻边轴套P07，止推垫片P08，板材P08。

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。

Standard Size：
Stright Bearing P05, Flange Bearing P07, Thrust washer P08, Strip P08.

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

GPB-1 轴套规格及公差
GPB-1 Sleeve Bushing Speci□cation & Tolerance



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° ± 5°
1.00	0.6 ± 0.3	0.30 ± 0.2	30° ± 5°
1.50	0.7 ± 0.3	0.50 ± 0.3	30° ± 5°
2.00	1.2 ± 0.4	0.50 ± 0.3	30° ± 5°
2.50	1.8 ± 0.6	0.60 ± 0.3	45° ± 5°

单位Unit: mm

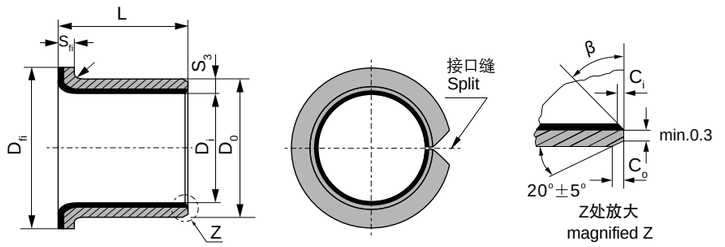
轴径(f7) Shaft D_s	座孔(H7) Housing D_H	(OD) 外径公差 Tolerance D_O	(ID)压装后 内孔公差 After □xed $D_{i,a}$	配合间隙 Clearance D_D	壁厚 Wall thick-ness S_3	长度 L 0 -0.40 (ds≤Φ28 L-0.30 ds>Φ30 L-0.40)									
						6	8	10	12	15	20	25	30	40	50
6 -0.010 -0.022	8 +0.015	8 +0.055 +0.025	6.055 5.990	0.077 0.000	1.005 0.980	0606	0608	0610							
8 -0.013 -0.028	10 +0.015	10 +0.055 +0.025	8.055 7.990	0.083 0.003		0806	0808	0810	0812	0815					
10 -0.013 -0.028	12 +0.018	12 +0.065 +0.030	10.058 9.990	0.086 0.003		1006	1008	1010	1012	1015	1020				
12 -0.016 -0.034	14 +0.018	14 +0.065 +0.030	12.058 11.990	0.092 0.006		1206	1208	1210	1212	1215	1220	1225			
13 -0.016 -0.034	15 +0.018	15 +0.065 +0.030	13.058 12.990					1310	1312	1315	1320	1325			
14 -0.016 -0.034	16 +0.018	16 +0.065 +0.030	14.058 13.990					1410	1412	1415	1420	1425			
15 -0.016 -0.034	17 +0.018	17 +0.065 +0.030	15.058 14.990					1510	1512	1515	1520	1525			
16 -0.016 -0.034	18 +0.018	18 +0.065 +0.030	16.058 15.990					1610	1612	1615	1620	1625			
17 -0.016 -0.034	19 +0.021	19 +0.075 +0.035	17.061 16.990	0.095 0.006				1710	1712	1715	1720	1725			
18 -0.016 -0.034	20 +0.021	20 +0.075 +0.035	18.061 17.990					1810	1812	1815	1820	1825			
20 -0.020 -0.041	23 +0.021	23 +0.075 +0.035	20.071 19.990	0.112 0.010	1.505 1.475			2010	2012	2015	2020	2025	2030		
22 -0.020 -0.041	25 +0.021	25 +0.075 +0.035	22.071 21.990					2210	2212	2215	2220	2225	2230		
24 -0.020 -0.041	27 +0.021	27 +0.075 +0.035	24.071 23.990					2410	2412	2415	2420	2425	2430		
25 -0.020 -0.041	28 +0.021	28 +0.075 +0.035	25.071 24.990					2510	2512	2515	2520	2525	2530	2540	2550
28 -0.020 -0.041	32 +0.025	32 +0.085 +0.045	28.085 27.990	0.126 0.010	2.005 1.970				2812	2815	2820	2825	2830	2840	2850
30 -0.020 -0.041	34 +0.025	34 +0.085 +0.045	30.085 29.990						3012	3015	3020	3025	3030	3040	3050
32 -0.025 -0.050	36 +0.025	36 +0.085 +0.045	32.085 31.990	0.135 0.015					3212	3215	3220	3225	3230	3240	3250
35 -0.025 -0.050	39 +0.025	39 +0.085 +0.045	35.085 34.990						3512	3515	3520	3525	3530	3540	3550
38 -0.025 -0.050	42 +0.025	42 +0.085 +0.045	38.085 37.990						3812	3815	3820	3825	3830	3840	3850
40 -0.025 -0.050	44 +0.025	44 +0.085 +0.045	40.085 39.990						4012	4015	4020	4025	4030	4040	4050

GANGPING MECHANICAL 港平机械

GPB-1 轴套规格及公差
GPB-1 Sleeve Bushing Speci□cation & Tolerance

轴径(f7) Shaft D_s	座孔(H7) Housing D_H	(OD) 外径公差 Tolerance D_O	(ID)压装后 内孔公差 After □xed $D_{i,a}$	配合间隙 Clearance D_D	壁厚 Wall thick-ness S_3	长度 L 0 -0.40									
						20	25	30	40	50	60	70	80	100	115
45 -0.050 -0.025	50 +0.025	50 +0.085 +0.045	45.105 44.990	0.155 0.015	2.505 2.460	4520	4525	4530	4540	4550					
50 -0.050 -0.025	55 +0.030	55 +0.100 +0.055	50.110 49.990	0.160 0.015		5020	5025	5030	5040	5050	5060				
55 -0.060 -0.030	60 +0.030	60 +0.100 +0.055	55.110 54.990	0.170 0.020				5530	5540	5550	5560				
60 -0.060 -0.030	65 +0.030	65 +0.100 +0.055	60.110 59.990					6030	6040	6050	6060	6070			
65 -0.060 -0.030	70 +0.030	70 +0.100 +0.055	65.110 64.990					6530	6540	6550	6560	6570			
70 -0.060 -0.030	75 +0.030	75 +0.100 +0.055	70.110 69.990					7030	7040	7050	7060	7070	7080		
75 -0.060 -0.030	80 +0.030	80 +0.100 +0.055	75.110 74.990					7530	7540	7550	7560	7570	7580		
80 -0.045	85 +0.035	85 +0.120 +0.070	80.155 80.020	0.201 0.020					8040	8050	8060	8070	8080	80100	
85 -0.054	90 +0.035	90 +0.120 +0.070	85.155 85.020	0.209 0.020	2.490 2.440				8540	8550	8560	8570	8580	85100	
90 -0.054	95 +0.035	95 +0.120 +0.070	90.155 90.020						9040	9050	9060	9070	9080	90100	
95 -0.054	100 +0.035	100 +0.120 +0.070	95.155 95.020							9550	9560	9570	9580	95100	
100 -0.054	105 +0.035	105 +0.120 +0.070	100.155 100.020							10050	10060	10070	10080	100100	100115
105 -0.054	110 +0.035	110 +0.120 +0.070	105.155 105.020								10560	10570	10580	105100	105115
110 -0.054	115 +0.035	115 +0.120 +0.070	110.115 110.020								11060	11070	11080	110100	110115
120 -0.054	125 +0.040	125 +0.170 +0.100	120.210 120.070	0.264 0.070	2.465 2.415						12060	12070	12080	120100	120115
125 -0.063	130 +0.040	130 +0.170 +0.100	125.210 125.070	0.273 0.070							12560	12570	12580	125100	125115
130 -0.063	135 +0.040	135 +0.170 +0.100	130.210 130.070								13060	13070	13080	130100	130115
140 -0.063	145 +0.040	145 +0.170 +0.100	140.210 140.070								14060	14070	14080	140100	140115
150 -0.063	155 +0.040	155 +0.170 +0.100	150.210 150.070								15060	15070	15080	150100	150115
160 -0.063	165 +0.040	165 +0.170 +0.100	160.210 160.070								16060	16070	16080	160100	160115
180 -0.063	185 +0.046	185 +0.210 +0.130	180.216 180.070	0.279 0.070	2.465 2.415						18060	18070	18080	180100	
190 -0.072	195 +0.046	195 +0.210 +0.130	190.216 190.070	0.288 0.070							19060	19070	19080	190100	
200 -0.072	205 +0.046	205 +0.210 +0.130	200.016 200.070								20060	20070	20080	200100	
220 -0.072	225 +0.046	225 +0.210 +0.130	220.216 220.070								22060	22070	22080	220100	
250 -0.072	255 +0.052	255 +0.260 +0.170	250.222 250.070	0.294 0.070	2.465 2.415								25080	250100	
260 -0.081	265 +0.052	265 +0.260 +0.170	260.222 260.070	0.303 0.070									26080	260100	
280 -0.081	285 +0.052	285 +0.260 +0.170	280.222 280.070										28080	280100	
300 -0.081	305 +0.052	305 +0.260 +0.170	300.222 300.070										30080	300100	

GPB-1F 翻边轴套规格及公差
GPB-1F Flange Bushing Speci□ction & Tolerance

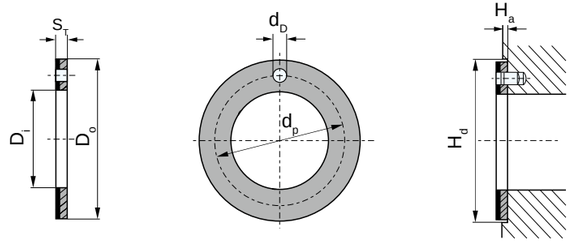


S_3	1.0	1.5	2.0	2.5
r	$1^{-0.5}$	1±0.5	1.5±0.5	2±0.5

单位Unit: mm

轴径(f7) Shaft D_s	座孔(H7) Housing D_H	(OD) 外径公差 Tolerance D_O	(ID)压装后 内孔公差 After □xed $D_{i,a}$	配合间隙 Clearance C_O	Designation 型号规格	Wall thickness 壁厚 S_3	尺寸 Dimension D_i	D_o	$D_□$±0.5	L±0.25	$S_□$-0.2
6 -0.013 -0.028	8 +0.015	8 +0.055 +0.025	6.055 5.990	0.077 0.000	GPB-1F06040	1.005 0.980	6	8	12	4	1
					GPB-1F06070					7	
8 -0.013 -0.028	10 +0.015	10 +0.055 +0.025	8.055 7.990	0.083 0.003	GPB-1F08055		8	10	15	5.5	
					GPB-1F08075					7.5	
10 -0.016 -0.034	12 +0.018	12 +0.055 +0.025	10.058 9.990	0.086 0.003	GPB-1F10070		10	12	18	7	
					GPB-1F10090					9	
					GPB-1F10120					12	
12 -0.016 -0.034	14 +0.018	14 +0.065 +0.030	12.058 11.990	0.092 0.006	GPB-1F12070		12	14	20	7	
					GPB-1F12090					9	
					GPB-1F12120					12	
14 -0.016 -0.034	16 +0.018	16 +0.065 +0.030	14.058 13.990		GPB-1F14120		14	16	22	12	
					GPB-1F14170					17	
15 -0.016 -0.034	17 +0.018	17 +0.065 +0.030	15.058 14.990		GPB-1F15090		15	17	23	9	
					GPB-1F15120					12	
					GPB-1F15170					17	
16 -0.016 -0.034	18 +0.018	18 +0.065 +0.030	16.058 15.990		GPB-1F16120		16	18	24	12	
					GPB-1F16170					17	
18 -0.016 -0.034	20 +0.021	20 +0.075 +0.035	18.061 17.990	0.095 0.006	GPB-1F18120		18	20	26	12	
					GPB-1F18170					17	
					GPB-1F18200					20	
20 -0.020 -0.041	23 +0.021	23 +0.075 +0.035	20.071 19.990	0.112 0.010	GPB-1F20115	1.505 1.475	20	23	30	11.5	1.5
					GPB-1F20165					16.5	
					GPB-1F20215					21.5	
22 -0.020 -0.041	25 +0.021	25 +0.075 +0.035	22.071 21.990		GPB-1F22150		22	25	32	15	
					GPB-1F22200					20	
25 -0.020 -0.041	28 +0.021	28 +0.075 +0.035	25.071 24.990		GPB-1F25115		25	28	35	11.5	
					GPB-1F25165					16.5	
					GPB-1F25215					21.5	
30 -0.025 -0.050	34 +0.025	34 +0.075 +0.035	30.085 29.990	0.126 0.010	GPB-1F30160	2.005 1.970	30	34	42	16	2
					GPB-1F30260					26	
35 -0.025 -0.050	39 +0.025	39 +0.085 +0.045	35.085 34.990	0.135 0.015	GPB-1F35160		35	39	47	16	
					GPB-1F35260					26	
40 -0.025 -0.050	44 +0.025	44 +0.085 +0.045	40.085 39.990		GPB-1F40260		40	44	53	26	
					GPB-1F40400					40	

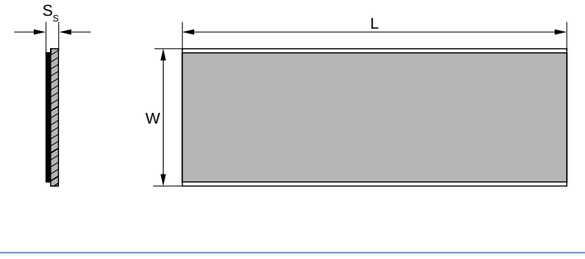
GPB-1WC 垫片规格及公差
GPB-1WC Thrust Washer Speci□cation & Tolerance



单位Unit: mm

轴径 Shaft D_s	型号规格 Standard No.	垫片尺寸 Washer size D_i+0.25	D_o-0.25	S_T-0.05	d_p±0.125	安装尺寸 Assemble size d_D +0.4 +0.1	H_a±0.2	H_d+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	2		26
14	WC 16	16	30		23			30
16	WC 18	18	32		25			32
18	WC 20	20	36		28	3		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	4		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	2	61	1.5		74
50	WC 52	52	78		65			78
60	WC 62	62	90		76			90

GPB-1SP 板材规格及公差
GPB-1SP Strip Speci□cation & Tolerance



单位Unit: mm

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

GPB-2Y 边界无铅自润滑轴套
GPB-2Y Marginal Pb-free Self-lubricating Bushes

该产品与GPB-2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。

GPB-2Y has the same structure and functional performance with GPB-2. It can work for certain long time without oil in the condition of prelubricated with lubrication indents. Widely applied in metallurgy machinery, Mining machinery, water conservancy machinery, automobile, building machinery, agriculture machinery, rolling steel industry etc.

材料组织 Material Structure

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

1.POM with □ber 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

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。

Standard Size：
Stright Bearing P11, Thrust washer P13, Strip P13.

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

应用特点 Application Feature

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。

1.Good load capacity and anti-wear. 2.It is used in high load capacities and low speed with rotational, oscillating or frequent stop-start motion. 3.It can work for a long time without oil in the condition of boundary lubrication, under oil or grease lubrication interval, the working-life will be longer. 4.It is machinable for the thicker of POM. 5.The bushes can be applied in auto chassis, forging machine, metallurgical, civil engineering, power station, strip rolling industries etc. 6.GPB-2Y is widely used in the machine where Lead is unacceptable.

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	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℃~+110℃
摩擦系数 Friction coe□cient		0.05~0.20 μ
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)$^{-1}$
线胀系数 Coe□cient 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		

GPB-2S 边界无铅自润滑轴套
GPB-2S Marginal Pb-free Self-lubricating Bushes

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。

GPB-2S Marginal Pb-free self-lubricating bearing based on low carbon steel backing, sintered porous bronze as its interlayer, surface rolled by acetal resin and polymer material containing oleophylicity □ber 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, punch, winch truck, traveling crane etc.

材料组织 Material Structure

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

1.POM with □ber 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

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。

Standard Size：
Stright Bearing P11, Thrust washer P13, Strip P13.

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

应用特点 Application Feature

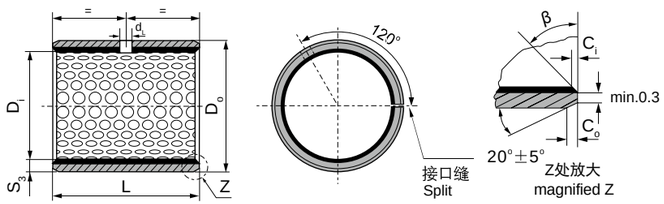
1.承载好，耐磨性能良好。 2.适用于高载低速下的旋转运动、摇摆运动及经常在载荷下启闭频繁而不易形成流体动力润滑的场合。 3.在边界润滑条件下可长期不加油保养，而在过层中加油使轴承使用寿命更长。 4.表面塑料层在加工成型时可留一定的余量，装配压入座孔后可自行加工，以达到更好的装配尺寸。 5.产品主要应用于汽车底盘、冶金机械、矿山机械、水利机械、建筑机械、农用机械、轧钢设备等。 6.因其不含铅，故可广泛应用于无铅领域。

1.Good load capacity and anti-wear. 2.It is used in high load capacities and low speed with rotational,oscillating or frequent stop-start motion. 3.It can work long time without oil in the condition of boundary lubrication,under oil or grease lubrication interval, the work is longer. 4.It is machinable for the thicker of POM. 5.The bushes can be applied in auto chassis,forging machine, metallurgical, civil engineering, power station, strip rolling industries etc. 6.GPB-2S is widely used in the machine where Lead is unacceptable.

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	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℃~+110℃
摩擦系数 Friction coe□cient		0.05~0.20 μ
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)$^{-1}$
线胀系数 Coe□cient 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		

GPB-2 轴承规格及公差
GPB-2 Sleeve Bushing Speci□cation & Tolerance



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° ± 5°
1.5	0.7 ± 0.3	0.50 ± 0.2	30° ± 5°

S_3	C_o	C_i	β
2.00	1.2 ± 0.4	0.50 ± 0.3	30° ± 5°
2.50	1.8 ± 0.6	0.80 ± 0.3	45° ± 5°

单位Unit: mm

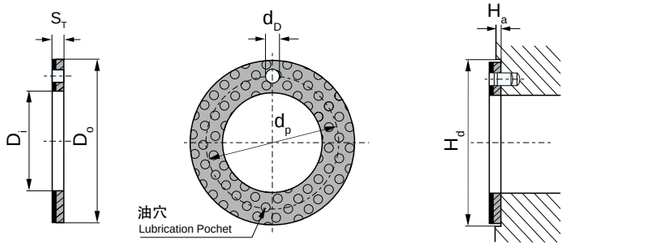
轴径 Shaft D_s h8	座孔 Housing H7 D_H	(OD) 外径公差 Tolerance D_O	(ID)压装后内孔公差 After □xed $D_{i,a}$	配合间隙 Clearance D_D	壁厚 Wall thick-ness S_3	油孔 Oil hole d_L	长度 L $^{0}_{-0.40}$ 10	15	20	25	30	35	40	45	50	60
10 -0.022	12 +0.018	12 +0.065 +0.030	10.108 10.040	0.130 0.040	0.980 0.955	4	1010	1015	1020							
12 -0.027	14 +0.018	14 +0.065 +0.030	12.108 12.040	0.135 0.040			1210	1215	1220							
14 -0.027	16 +0.018	16 +0.065 +0.030	14.108 14.040					1415	1420							
15 -0.027	17 +0.018	17 +0.065 +0.030	15.108 15.040					1515	1520	1525						
16 -0.027	18 +0.018	18 +0.065 +0.030	16.108 16.040					1615	1620	1625						
18 -0.027	20 +0.021	20 +0.075 +0.035	18.111 18.040	0.138 0.040				1815	1820	1825						
20 -0.033	23 +0.021	23 +0.075 +0.035	20.131 20.050	0.164 0.050	1.475 1.445			2015	2020	2025	2030					
22 -0.033	25 +0.021	25 +0.075 +0.035	22.131 22.050					2215	2220	2225	2230					
25 -0.033	28 +0.021	28 +0.075 +0.035	25.131 25.050			6		2515	2520	2525	2530					
28 -0.033	32 +0.025	32 +0.085 +0.045	28.155 28.060	0.188 0.060	1.970 1.935				2820	2825	2830					
30 -0.033	34 +0.025	34 +0.085 +0.045	30.155 30.060						3020	3025	3030	3035	3040			
35 -0.039	39 +0.025	39 +0.085 +0.045	35.155 35.060	0.194 0.060					3520	3525	3530	3535	3540			
40 -0.039	44 +0.025	44 +0.085 +0.045	40.155 40.060			8			4020	4025	4030	4035	4040	4045	4050	
45 -0.039	50 +0.025	50 +0.085 +0.045	45.195 45.080	0.234 0.080	2.460 2.415				4520	4525	4530	4535	4540	4545	4550	
50 -0.039	55 +0.030	55 +0.100 +0.055	50.200 50.080	0.239 0.080							5030	5035	5040	5045	5050	5060
55 -0.046	60 +0.030	60 +0.100 +0.055	55.200 55.080	0.246 0.080							5530	5535	5540	5545	5550	5560
60 -0.046	65 +0.030	65 +0.100 +0.055	60.200 60.080								6030	6035	6040	6045	6050	6060

GANGPING MECHANICAL 港平机械

GPB-2 轴承规格及公差
GPB-2 Sleeve Bushing Speci□cation & Tolerance

轴径 Shaft D_s h8	座孔 Housing H7 D_H	(OD) 外径公差 Tolerance D_O	(ID)压装后内孔公差 After □xed $D_{i,a}$	配合间隙 Clearance D_D	壁厚 Wall thick-ness S_3	油孔 Oil hole d_L	长度 L $^{0}_{-0.40}$ 40	50	60	80	90	95	100	110	120
65 -0.046	70 +0.030	70 +0.100 +0.055	65.200 65.080	0.246 0.080	2.460 2.415	8	6540	6550	6560						
70 -0.046	75 +0.030	75 +0.100 +0.055	70.200 70.080				7040	7050	7060	7080					
75 -0.046	80 +0.030	80 +0.100 +0.055	75.200 75.080				7540	7550	7560	7580					
80 -0.046	85 +0.035	85 +0.120 +0.070	80.265 80.100	0.313 0.100	2.450 2.385	9.5	8040	8050	8060	8080					
85 -0.054	90 +0.035	90 +0.120 +0.070	85.265 85.100	0.321 0.100			8540	8550	8560	8580					
90 -0.054	95 +0.035	95 +0.120 +0.070	90.265 90.100				9040	9050	9060	9080	9090				
100 -0.054	105 +0.035	105 +0.120 +0.070	100.265 100.100					10050	10060	10080	10090	10095			
105 -0.054	110 +0.035	110 +0.120 +0.070	105.265 105.100					10550	10560	10580	10590	10595	105100	105110	
110 -0.054	115 +0.035	115 +0.120 +0.070	110.265 110.110					11050	11060	11080	11090	11095	110100	110110	
120 -0.054	125 +0.040	125 +0.170 +0.100	120.270 120.110	0.324 0.100				12050	12060	12080	12090	12095	120100	120110	
125 -0.063	130 +0.040	130 +0.170 +0.100	125.270 125.110					12550	12560	12580	12590	12595	125100	125110	
130 -0.063	135 +0.040	135 +0.170 +0.100	130.270 130.110					13050	13060	13080	13090	13095	130100	130110	
140 -0.063	145 +0.040	145 +0.170 +0.100	140.270 140.110					14050	14060	14080	14090	14095	140100	140110	
150 -0.063	155 +0.040	155 +0.170 +0.100	150.270 150.110					15050	15060	15080	15090	15095	150100	150110	
160 -0.063	165 +0.040	165 +0.170 +0.100	160.270 160.110			9.5		16050	16060	16080	16090	16095	160100	160110	
170 -0.063	175 +0.040	175 +0.170 +0.100	170.270 170.110					17050	17060	17080	17090	17095	170100	170110	
180 -0.063	185 +0.046	185 +0.210 +0.130	180.276 180.110	0.339 0.110				18050	18060	18080	18090	18095	180100	180110	
190 -0.072	195 +0.046	195 +0.210 +0.130	190.276 190.110					19050	19060	19080	19090	19095	190100	190110	190120
200 -0.072	205 +0.046	205 +0.210 +0.130	200.276 200.110					20050	20060	20080	20090	20095	200100	200110	200120
220 -0.072	225 +0.046	225 +0.210 +0.130	220.276 220.110			9.5		22050	22060	22080	22090	22095	220100	220110	220120
240 -0.072	245 +0.046	245 +0.210 +0.130	240.276 240.110					24050	24060	24080	24090	24095	240100	240110	240120
250 -0.072	255 +0.052	255 +0.260 +0.170	250.282 250.110	0.354 0.110				25050	25060	25080	25090	25095	250100	250110	250120
260 -0.081	265 +0.052	265 +0.260 +0.170	260.282 260.110					26050	26060	26080	26090	26095	260100	260110	260120
280 -0.081	285 +0.052	285 +0.260 +0.170	280.282 280.110					28050	28060	28080	28090	28095	280100	280110	280120
300 -0.081	305 +0.052	305 +0.260 +0.170	300.282 300.110					30050	30060	30080	30090	30095	300100	300110	300120

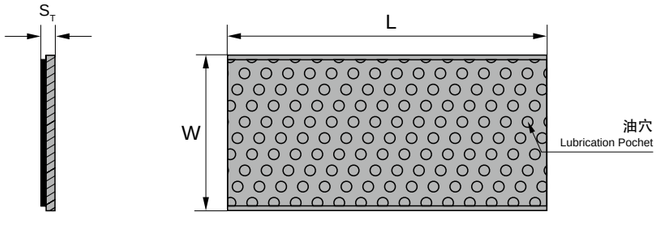
GPB-2WC 垫片规格及公差
GPB-2WC Thrust Washer Speci□cation & Tolerance



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_D $^{+0.4}_{+0.1}$	H_a ± 0.2	H_d+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	2		26
14	WC 16	16	30		23			30
16	WC 18	18	32		25			32
18	WC 20	20	36		28	3		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	4		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	2	61		1.5	74
50	WC 52	52	78		65			78
60	WC 62	62	90		76			90

GPB-2SP 板材标准公制尺寸
GPB-2SP Strip Standard Metric Size



单位Unit: mm

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

GANGPING MECHANICAL 港平机械

GPB-090 系列青铜卷制轴套
GPB-090 Bronze-Wrapped Bushes

GPB-090系列青铜卷制轴承套是我公司在钢-铜铅双金属轴套产品基础上开发设计的新一代轴套。该产品在国外应用十分普遍，随着我国引进机械的设备新机种的日益增多，设计师们寻找新型摩擦材料、轴套的要求也日益需要，因此该产品在我们机械制造中有着宽广应用领域和实用价值。

GPB-090系列轴套最大特点是薄壁结构，不占据很大的装配空间。轴套材料采用特殊配方高密度铜合金带材。它与传统的铺型铜套相比，具有密度高，无气缩孔、承载能力大，又有耐磨耐疲劳等优点。轴套制造采用先进的工装模具，可在带材摩擦面上加工出适用各种工程条件的油穴、油坑、油槽，从而使轴套在使用可储存大量润滑油脂，延长加油间隔时间，有效的提高了使用寿命。

GPB-090系列轴承广泛应用于农业机械、建筑机械、工程机械、汽车行业等。

GPB-090 serie bronze rolled bushing is our new generation bushing based upon steel-bronze lead double metal bushings. This product is widely applied overseas. With the increase of our country's bring-in of foreign machineries, designers requirement on new abrasive materials and bushings are accordingly increasing. Therefore, our products have a wide application scope and practical value in machinery production.

The major feature of GPB-090 serie bushing is their thin-wall structure, which doesn't take up too large assembly space. Specially formulated high-density bronze alloy bands are used for the building of the bushing, which compared with traditional bushings, is featured in the high density, no shrinkage blowholes, high load sustainability and anti-wearing and anti-fatigue. The production of the bushing is by means of advanced □xture and molds, able to make oil holes, hole dents and grooves on the frication surfaces of the bands to suit various engineering applications, making it possible for the bushing to store large amount of lubricating grease when working. Therefore, the lubrication interval is prolonged and the service hours are e□ectively lengthened.

GPB-090 serie bearings are widely used in applications such as agricultural machineries, construction machineries, engineering machineries and automobile industry.

可供标准产品：
直套P19，翻边轴套P21。

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。

Standard Size：
Stright Bearing P19, Flange Bearing P21.

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

产品优点 Product Bene□ts

1. 节约大量铜材、节省车制铜套工时；
2. 与车制轴套、滚动轴承相比其重量轻、成本低；
3. 可在摩擦面加工出各种有穴、有坑、储存一定油脂，延长加油的时间是铜套的5倍；
4. 极高的承载能力，特别是适用于粗糙的摩擦面；

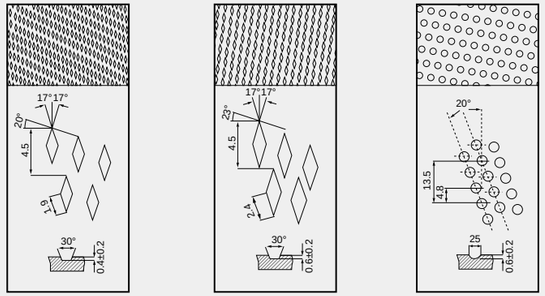
1. Saving large amount of bronze material and save the working hours normally spent for lathing the bronze bushing.
2. Compared with lathed bushings and roller bearings, it is light in weight and more cost-e□ective.
3. Various holes and dents can be made on the frication surface for grease storage, prolonging the lubrication interval to 5 times as long as required by the bronze bushing.
4. Extremely high load sustainability, especially suitable for coarse abrasion surfaces.

GPB-090 系列青铜卷制轴套
GPB-090 Bronze-Wrapped Bushes

材料结构 Material Structure

采用高密度青铜卷制成形或球形油袋、油穴特殊合成内部表面以减少磨损延长使用时间并且很好的做到防腐功能。

High-density bronze is rolled into shape or oil bags and oil holes specially integrated into the inner surface to reduce the wearing and prolong the service hours. Besides, it has excellent anti-corrosion functions.



轴衬套内
Inside the bush of the shaft
菱形油穴r≤φ22
Rhomb oil holes r≤φ22

轴衬套内
Inside the bush of the shaft
菱形油穴r>φ22
Rhomb oil holes r>φ22

形成圆形
Forming a circle

应用范围 Application scope

此系列轴承广泛应用于农用、建设机械以及工程机械等。

This serie of bearing is widely applied to agricultural, construction and engineering machineries, etc.

油穴类别(依据 DIW1494/ISO3457)。

Categories of oil holes (As per to DIW1494/ISO3457)。

化学成分 Chemical Composition

材料 Material: CuSn8P	铜 Cu	锡 Sn	磷 P

物理特性 Physical Property

型号 Type	密度 Density	散热热涨 Heat Emission and Expansion	热传导 Heat Conducting	硬度 Hardness	抗压强度 Compression strength	延伸率 Extensile
GPB-090	8.8g/cm^3	18.5 × 10^{-6} × K^{-1}	58W(m·k)	90~150HB	470N/mm^2	40%

标准衬套公差 (依据 DIW W91/1503547)
Standard tolerance for bushes (As per to DIW W91/1503547)

标准直径 Standard Dia.	衬套外径尺寸 O.D.Size	相配座孔 Housing Bore	衬套内径尺寸 I.D.Size	相配轴径 **Axle**
10~18	+0.065 +0.030	+0.018 0	+0.046 0	- 0.016 - 0.043
18~30	+0.075 +0.035	+0.021 0	+0.052 0	- 0.020 - 0.020
30~50	+0.085 +0.045	+0.025 0	+0.062 0	- 0.025 - 0.064
50~80	+0.100 +0.055	+0.030 0	+0.074 0	- 0.030 - 0.076
80~120	+0.120 +0.070	+0.035 0	+0.087 0	- 0.036 - 0.090
120~180	+0.170 +0.100	+0.400 0	+0.100 0	- 0.043 - 0.106
180~250	+0.210 +0.130	+0.046 0	+0.115 0	- 0.050 - 0.122
250~315	+0.260 +0.170	+0.052 0	+0.130 0	- 0.056 - 0.137

GANGPING MECHANICAL 港平机械

GPB-092 系列青铜卷制轴套
GPB-092 Bronze-Wrapped Bushes

GPB-092系列青铜卷制轴承是与GPB-090材料结构相同，我单位根据国外同类产品基础上开发出的新一代产品轴套，能改良产品设计、替代原有铜套,能降低采购成本，因此产品在我们机械制造中有着广泛实用价值和应用领域。

GPB-092系列轴套最大特点是薄壁结构，不占据很大的装配空间。轴套材料采用特殊配方高密度铜合金带材。它与传统的铺型铜套相比，可在带材摩擦面上加工出适用各种工程条件的油穴、油坑、油槽，排列润滑通孔，从而使轴套在使用可储存大量润滑油脂，延长加油间隔时间，有效的提高了使用寿命。

GPB-092系列轴承广泛应用于农业机械、建筑机械、工程机械、高载低速场合等。

GPB-092 serie bronze rolled bushing is our new generation bushing based upon steel-bronze lead double metal bushings. It has same structure with GPB-090. We based on the same type of overseas products and make further development to produce. The design has be improved and can make a replacement of original one and cut down the cost. Therefore, our products have a wide application scope and practical value in machinery production.

The major feature of GPB-092 serie bushing is their thin-wall structure, which doesn't take up too large assembly space. Specially formulated high-density bronze alloy bands are used for the building of the bushing, which compared with traditional bushings, is featured in the high density, no shrinkage blowholes, high load sustainability and anti-wearing and anti-fatigue. The production of the bushing is by means of advanced □xture and molds, able to make oil holes, hole dents and grooves on the frication surfaces of the bands to suit various engineering applications, making it possible for the bushing to store large amount of lubricating grease when working. Therefore, the lubrication interval is prolonged and the service hours are e□ectively lengthened.

GPB-092 serie bearings are widely used in applications, such as agricultural machineries, construction machineries, engineering machineries and automobile industry.

可供标准产品：
直套P19，翻边轴套P21。

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。

Standard Size：
Stright Bearing P19, Flange Bearing P21.

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

产品优点 Product Bene□ts

1. 节约大量铜材、节省车制铜套工时；
2. 与车制轴套、滚动轴承相比其重量轻、成本低；
3. 可在摩擦面加工出各种有穴、有坑、储存一定油脂，延长加油的时间是铜套的5倍；
4. 极高的承载能力，特别是适用于粗糙的摩擦面；

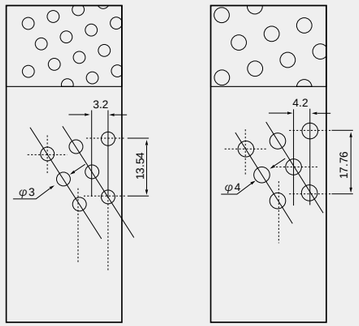
1. Saving large amount of bronze material and save the working hours normally spent for lathing the bronze bushing.
2. Compared with lathed bushings and roller bearings, it is lights and more cost-e□ective.
3. Various holes and dents can be made on the frication surface for grease storage, prolonging the lubrication interval to 5 times as long as required by the bronze bushing.
4. Extremely high load sustainability, especially suitable for coarse abrasion surfaces.

GPB-092 系列青铜卷制轴套
GPB-092 Bronze-Wrapped Bushes

材料结构 Material Structure

采用高密度青铜卷制成形或球形油袋、油穴特殊合成内部表面以减少磨损延长使用时间并且很好的做到防腐功能。

High-density bronze is rolled into shape or oil bags and oil holes, specially integrated into the inner surface to reduce the wearing and prolong the service hours. Besides, it has excellent anti-corrosion functions.



轴承内径r≤φ25
Inside Dia r≤φ25

轴承内径r＞φ25
Inside Dia r＞φ25

应用范围 Application scope

此系列轴承广泛应用于农用、建设机械以及工程机械等。

This series of bearing is widely applied to agricultural, construction and engineering machineries, etc.

化学成分 Chemical Composition

材料 Material: CuSn8P	铜 Cu	锡 Sn	磷 P

物理特性 Physical Property

型号 Type	密度 Density	散热热涨 Heat Emission and Expansion	热传导 Heat Conducting	硬度 Hardness	抗压强度 Compression strength	延伸率 Extensile
GPB-092	8.8g/cm^3	18.5 × 10^{-6} × K^{-1}	58W(m·k)	90~150HB	470N/mm^2	40%

标准衬套公差 (依据 DIW W91/1503547)
Standard tolerance for bushes (As per to DIW W91/1503547)

标准直径 Standard Dia.	衬套外径尺寸 O.D.Size	相配座孔 Housing Bore	衬套内径尺寸 I.D.Size	相配轴径 **Axle**
10~18	+0.065 +0.030	+0.018 0	+0.046 0	- 0.016 - 0.043
18~30	+0.075 +0.035	+0.021 0	+0.052 0	- 0.020 - 0.020
30~50	+0.085 +0.045	+0.025 0	+0.062 0	- 0.025 - 0.064
50~80	+0.100 +0.055	+0.030 0	+0.074 0	- 0.030 - 0.076
80~120	+0.120 +0.070	+0.035 0	+0.087 0	- 0.036 - 0.090
120~180	+0.170 +0.100	+0.400 0	+0.100 0	- 0.043 - 0.106
180~250	+0.210 +0.130	+0.046 0	+0.115 0	- 0.050 - 0.122
250~315	+0.260 +0.170	+0.052 0	+0.130 0	- 0.056 - 0.137

GANGPING MECHANICAL 港平机械

GPB-09G 系列青铜卷制轴套
GPB-09G Bronze-Wrapped Bushes

与GPB-090具有相同的生产工艺及使用场合，其基体为青铜基板，在其菱形油穴内填充了以石墨为主的固体润滑剂，使产品在起始运用阶段及过程中能有更低的摩擦系数，在短时间断油的情况下任能保持良好的工作状态。因此被广泛使用在工程机械、齿轮箱传动部件、汽机车离合器等高载中速部位、户外高空设备的转动部位。

The same produce process and application with GPB-090, except overlay the solid lubricants into the diamond shaped lubrication indents on the bearing surface, which will o□er good friction at the start and process works and keep good condition even no oil giving at short time. So it can be used in construction machines, gears, automotive clutch pads etc.

技术参数 Technical Data

最大承载 Max.load	静承载 Static	120N/mm^2
	动承载 Dynamic	40N/mm^2
最大PV值（干摩擦） Max. PV (dry running)		2.8N/mm^2·m/s
使用温度 Temp. limit		-100℃~+200℃
摩擦系数 Friction coe□cient		0.05~0.25 μ
最大线速度 Max. speed	脂润滑 Grease Lubrication	2.5m/s
导热系数 Thermal conductivity		58W(m·k)$^{-1}$
线胀系数 Coe□cient of thermal expansion		18.5 × 10^{-6}·K^{-1}
硬度 Hardness		HB＞110
抗拉强度 Tensile strength		450N/mm^2
伸长 Elongation		40%

公差 Tolerance

一般推荐座孔公差为H7，轴径公差为f7。

Recommend housing tolerance H7 and the shaft as f7.

可供标准产品：

直套P19，翻边轴套P21。

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。

Standard Size：

Stright Bearing P19, Flange Bearing P21.

Non-Standard Size：

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

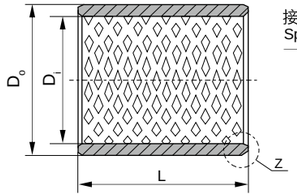
GPB-091 系列黄铜卷制轴承
GPB-091 Brass Bushing

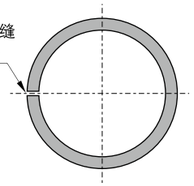
性能指标 Performance Index	有关数据 Data
密度 Y Density Y	8.4 g/cm^3
抗压强度 α_c Compression Strength	440N/mm^2
导热系数 Coefficient of Heat Conduction	71W/m・K
线膨胀系数 α_1 Coefficient of Linear Expansion	19.2 × 10^{-6}/K
硬度 Hardness	80~110HB
延伸率 Elongation	30%
材料名称 Alloy Material	CuZn31Si

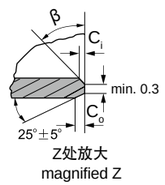
该产品是以特殊配方的黄铜材料为基体，表面可根据客户要求轧制油穴或油槽等，它有较高的承载压力，很好的耐磨性，产品运用于汽车、建筑机械、机床工业等。

It is based on high density bronze material of special formula. The alloy surface is rolled to oil grooves or hole according to customer require. It has good load capacity and wear-resistant. The product is applied to vehicle, construction machinery and machine tool etc.

GPB-090 青铜轴套规格及公差
GPB-090 Bronze Sleeve Bushing Speci□cation & Tolerance







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	35° ± 5°
1.00	0.6 ± 0.3	0.30 ± 0.2	35° ± 5°
1.50	0.7 ± 0.3	0.50 ± 0.3	35° ± 5°

S_3	C_o	C_i	β
2.00	1.2 ± 0.4	0.50 ± 0.3	35° ± 5°
2.50	1.8 ± 0.6	0.60 ± 0.3	45° ± 5°

单位Unit: mm

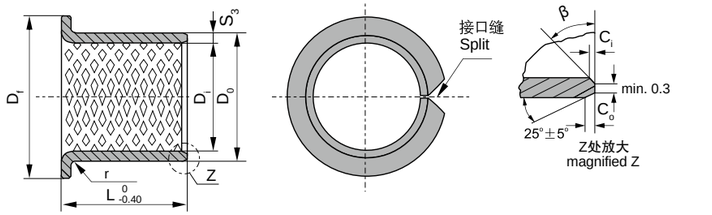
内径 D_i ϕ d	外径 D_o ϕ D	长度 L $^{0}_{-0.40}$												
		10	15	20	25	30	35	40	50	60	70	80	90	100
10	12	1010	1015	1020										
12	14	1210	1215	1220										
14	16	1410	1415	1420	1425									
15	17	1510	1515	1520	1525									
16	18	1610	1615	1620	1625									
18	20	1810	1815	1820	1825									
20	23	2010	2015	2020	2025									
22	25	2210	2215	2220	2225	2230								
24	27		2415	2420	2425	2430								
25	28		2515	2520	2525	2530								
28	31		2815	2820	2825	2830								
30	34		3015	3020	3025	3030	3035	3040						
32	36		3215	3220	3225	3230	3235	3240						
35	39		3515	3520	3525	3530	3535	3540						
40	44			4020	4025	4030	4035	4040	4050					
45	50			4520	4525	4530	4535	4540	4550					
50	55			5020	5025	5030	5035	5040	5050	5060				
55	60			5520	5525	5530	5535	5540	5550	5560				
60	65				6025	6030	6035	6040	6050	6060	6070			
65	70					6530	6535	6540	6550	6560	6570			
70	75					7030	7035	7040	7050	7060	7070	7080		
75	80					7530	7535	7540	7550	7560	7570	7580		
80	85					8030	8035	8040	8050	8060	8070	8080		
85	90					8530	8535	8540	8550	8560	8570	8580	8590	
90	95					9030	9035	9040	9050	9060	9070	9080	9090	
95	100							9540	9550	9560	9570	9580	9590	95100

GANGPING MECHANICAL 港平机械

GPB-090 青铜轴套规格及公差
GPB-090 Bronze Sleeve Bushing Speci□cation & Tolerance

内径 D_i ϕ d	外径 D_o ϕ D	长度 L $^{0}_{-0.40}$									
		25	30	35	40	50	60	70	80	90	100
100	105					10050	10060	10070	10080	10090	100100
105	110					10550	10560	10570	10580	10590	105100
110	115					11050	11060	11070	11080	11090	110100
115	120					11550	11560	11570	11580	11590	115100
120	125						12060	12070	12080	12090	120100
125	130						12560	12570	12580	12590	125100
130	135						13060	13070	13080	13090	130100
135	140						13560	13570	13580	13590	135100
140	145						14060	14070	14080	14090	140100
145	150						14560	14570	14580	14590	145100
150	155						15060	15070	15080	15090	150100
155	160						15560	15570	15580	15590	155100
160	165						16060	16070	16080	16090	160100
165	170						16560	16570	16580	16590	165100
170	175						17060	17070	17080	17090	170100
175	180						17560	17570	17580	17590	175100
180	185						18060	18070	18080	18090	180100
185	190						18560	18570	18580	18590	185100
190	195						19060	19070	19080	19090	190100
195	200						19560	19570	19580	19590	195100
200	205						20060	20070	20080	20090	200100
205	210						20560	20570	20580	20590	205100
215	220						21560	21570	21580	21590	215100
225	230						22560	22570	22580	22590	225100
230	235						23060	23070	23080	23090	230100
240	245						24060	24070	24080	24090	240100
250	255						25060	25070	25080	25090	250100
260	265						26060	26070	26080	26090	260100
270	275						27060	27070	27080	27090	270100
280	285						28060	28070	28080	28090	280100
290	295						29060	29070	29080	29090	290100
300	305						30060	30070	30080	30090	300100

GPB-090F 青铜翻边轴套规格及公差
GPB-090F Bronze Flange Bushing Speci□cation & Tolerance



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

内径 D_i φd	外径 D_0 φD	法兰外径 $D_□$	长度 $L_{-0.40}^{0}$									
			15	20	25	30	35	40	50	60	70	80	90
25	28	35	25150	25200	25250								
30	34	45		30200	30250	30300							
35	39	50		35200	35250	35300	35350						
40	44	55			40250	40300	40350	40400					
45	50	60				45300	45350	45400	45500				
50	55	65				50300	50350	50400	50500				
55	60	70				55300	55350	55400	55500				
60	65	75				60300	60350	60400	60500	60600			
65	70	80				65300	65350	65400	65500	65600			
70	75	85					70350	70400	70500	70600	70700		
75	80	90					75350	75400	75500	75600	75700		
80	85	100					80350	80400	80500	80600	80700	80800	
90	95	110							90500	90600	90700	90800	90900
100	105	120							100500	100600	100700	100800	100900
110	115	130							110500	110600	110700	110800	110900
120	125	140							120500	120600	120700	120800	120900
130	135	155								130600	130700	130800	130900
140	145	165								140600	140700	140800	140900
150	155	180								150600	150700	150800	150900
160	165	190								160600	160700	160800	160900
170	175	200								170600	170700	170800	170900
180	185	215								180600	180700	180800	180900
190	195	225								190600	190700	190800	190900
200	205	235								200600	200700	200800	200900
225	230	260								225600	225700	225800	225900
250	255	290								250600	250700	250800	250900
265	270	305								265600	265700	265800	265900
285	290	325								285600	285700	285800	285900
300	305	340								300600	300700	300800	300900

GANGPING MECHANICAL 港平机械

GPB-800 双金属自润滑轴套
GPB-800 Bimetallic Self-lubricating Bushes

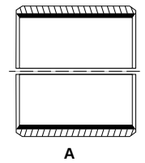
GPB-800系列双金属轴套、轴瓦、止推垫片，以优质低碳钢为基体，表面烧结青铜粉，适用于高载低速下的旋转，摇摆运动。具有摩擦系数低、耐磨性能好、使用寿命长、抗咬合性能好等特点，铜合金层可根据要求加工出各种类型的油穴、油槽。产品被广泛应用于矿山机械、汽机车、建筑机械、农用机械、轧钢机械等。

GPB-800 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
GPB-800	CuPb10Sn10	70～100HB	SAE-797. DIN CuPb10Sn. JIS-LBC3. UNS C93700. Clevite F100. Daido L10. D. A. B. D57. Federal Mogul HF2. Glacier SY. Glyco66. Miba2. 1010.Taiho HF2. Kar I Schmiat KS940SSAE-797. DIN CuPb10Sn. JIS-LBC3. UNS C93700. Clevite F100. Daido L10. D. A. B D57. Federal Mogul HF2 Glacier SY. Glyco66. Miba2. 1010. Taiho HF2. Karl Schmiat Ks940s
GPB-720	CuPb24Sn4	45～70HB	SAE=799. GLYCO 68. JIS-LBC6. DAIDO L23. Claciersx. ACLF250
GPB-700	CuPb30	30～45HB	SAE-783. GLYCO74. JIS-AJL
GPB-20	AlSn20Cu	30～40HB	SAE-48. JIS-KJ3
GPB-930	CuPb6.5P0.1	69～90HB	

卷制轴承搭口形式 Material Characterisitc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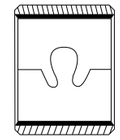
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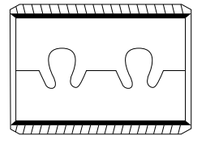
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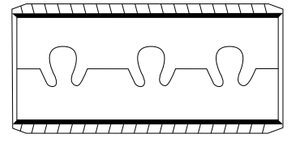
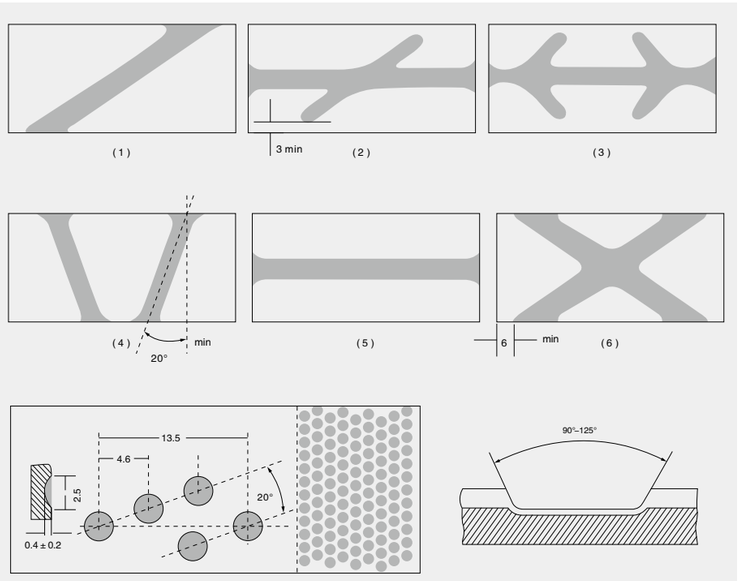

D

GPB-800 双金属自润滑轴套
GPB-800 Bimetallic Self-lubricating Bushes

双金属自润滑轴承的油槽形状
Bi-metal self lubricating bearings tank shape



可供标准产品：
直套P26。

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。

Standard Size：
Stright Bearing P26.

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

双金属轴套表面粗糙度
Surface Roughness of Bimetal Bushes:

项目 List	精密轴套(尺寸到位) Bronze Surface	轴套钢合金面 Bronze Surface
轴套钢合金面 Bronze Surface	R20.8	R26.3
钢背面 Steel Backing	R21.6	R210
其它表面 Other Surfaces	R22.5	R2100

根据DIN4768第一部分 According to DIN4768, Part1

GANGPING MECHANICAL 港平机械

GPB-800 双金属自润滑轴套
GPB-800 Bimetallic Self-lubricating Bushes

技术参数 Technical Data

性能指标 Performance index / 型号 Type		GPB-800	GPB-720	GPB-700	GPB-20	GPB-930
最大承载 P (N/mm^2) Max Load Capacity		150	130	120	100	150
拉伸强度（N/mm^2） Tensile Strength		185	150	200	200	185
最大线速度（油润滑）V(m/s) Max Sliding Speed (Oil Lubrication)		5	10	15	25	5
摩擦系数 μ Friction coe□cient		0.05 ~ 0.20	0.06 ~ 0.16	0.08 ~ 0.16	0.08 ~ 0.17	0.06 ~ 0.16
最高PV值 $N/mm^2 \cdot m/s$ Max PV Value Limit	脂润滑 Grease lubrication	2.8	2.8	2.5	–	2.8
	油润滑 Oil lubrication	10	10	8	6	-

应用特性 Application Characteristics

材料牌号 Material Trademark	适用条件 Using Conditions	适用场合 Use Occasions
GPB-800	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 High resistance to fatigue strenth and load capacity, with high shock resistance good wearing and good corrosion resisitance.	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 shock bushing.
GPB-720	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 by lubricationg oil.	中载中速、高速内燃机主轴套和连杆轴套 middle load middle speed, principle axis of internal combustion engine.
GPB-700	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.	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.
GPB-20	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
GPB-930	中等的耐疲劳强度和承载能力，良好的抗腐蚀性能，较好轴承滑动性能。 Moderate fatigue strength, and load capacity, good wrrosion resistance good performance of bearing sliding.	高速低载的内燃机轴瓦、气压机、制冷机轴套 High speed, low load, internal combustion engine half bearing, bushing used in compressing and refrigerating machine.

GPB-08G 固体润滑轴套
GPB-08G Solid-lubricant Bushes

GPB-08G固体润滑轴承是以GPB-800双金属材料为基体，再埋入特殊固体润滑剂制作成的新型滑动轴承。由于高强度承载的合金材料作基体，并经过严格选择的高分子填充材料为耐磨剂，合理的螺旋角度菱形块状均布的润滑面，润滑面积达25%，因此，能发挥超群的低摩擦，良好的润滑性和抗磨耗性免除加油。该产品已广泛应用于起重起、微型电机、升降机、吊车及冶金机械等行业。

GPB-08G is a kind of steel-lead bronze alloys based bearing, which is embedded with particular formulation of solid lubricants. Owing to the high strength, high load capacity and the spirally distributed diamond type of the embedded solid lubricant, the high temperature resistant action as extraordinary exploited. The lubrication area of the bearing surface is being about 25%. This type of bearing is particularly applied in starting motor for automobiles, generators cranes and those machines inmetallurgical industry.

可供标准产品：
直套P26。

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。

Standard Size：
Stright Bearing P26.

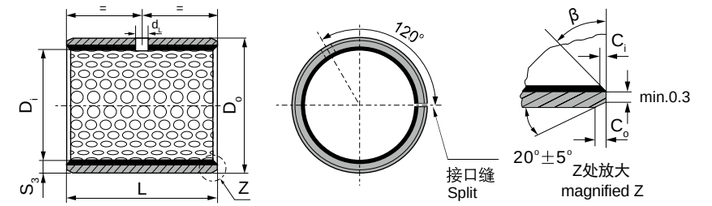
Non-Standard Size：
Stright Bearing, Flange Bearing, Thrust washer, Strip, Bearing bushing, Wear strips, Steel combine units.

技术参数 Technical Data

最大承载 Max.load	静承载 Static	150N/mm^2
	动承载 Dynamic	40N/mm^2
最大PV值（干摩擦） Max. PV (dry running)		2.8N/mm^2·m/s
使用温度 Temp. limit		-100℃~+200℃
摩擦系数 Friction coe□cient		0.06~0.25 μ
最大线速度 Max. speed	脂润滑 Grease Lubrication	1.5m/s
导热系数 Thermal conductivity		58W(m·k)$^{-1}$
线胀系数 Coe□cient of thermal expansion		18 × 10^{-6}·K^{-1}
硬度 Hardness		HB110-150
抗拉强度 Tensile strength		450N/mm^2
伸长 Elongation		40%

GANGPING MECHANICAL 港平机械

GPB-800 双金属轴承规格及公差
GPB-800 Bimetal Sleeve Bushing Speci□cation & Tolerance



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	35° ± 5°
1.00	0.6 ± 0.3	0.30 ± 0.2	35° ± 5°
1.50	0.7 ± 0.3	0.50 ± 0.3	35° ± 5°

S_3	C_o	C_i	β
2.00	1.2 ± 0.4	0.50 ± 0.3	35° ± 5°
2.50	1.8 ± 0.6	0.60 ± 0.3	45° ± 5°

单位Unit: mm

内径 D_i φ d	外径 D_O φ D	轴径(h8) Shaft D_s	座孔(H7) Housing D_H	压装后内孔公差 Arter □xed $D_{i,a}$	配合间隙 Clearance C_D	壁厚 Wall thickness S_3	油孔 Oil hole d_L	长度 L $^{0}_{-0.40}$ 10	15	20	25	30	40	50
10	12	10 $^{}_{-0.022}$	12 $^{+0.018}$		0.170 0.010			1010	1015	1020				
12	14	12 $^{}_{-0.027}$	14 $^{+0.018}$					1210	1215	1220				
14	16	14 $^{}_{-0.027}$	16 $^{+0.018}$	+0.148 +0.010	0.175 0.010	0.995 0.935		1410	1415	1420				
15	17	15 $^{}_{-0.027}$	17 $^{+0.018}$					1510	1515	1520				
16	18	16 $^{}_{-0.027}$	18 $^{+0.018}$				4	1610	1615	1620				
18	20	18 $^{}_{-0.027}$	20 $^{+0.021}$	+0.151 +0.010	0.178 0.010			1810	1815	1820	1825			
20	23	20 $^{}_{-0.033}$	23 $^{+0.021}$					2010	2015	2020	2025			
22	25	22 $^{}_{-0.033}$	25 $^{+0.021}$	+0.161 +0.020	0.194 0.020	1.490 1.430		2210	2215	2220	2225			
24	27	24 $^{}_{-0.033}$	27 $^{+0.021}$					2410	2415	2420	2425	2430		
25	28	25 $^{}_{-0.033}$	28 $^{+0.021}$						2515	2520	2525	2530		
26	30	26 $^{}_{-0.033}$	30 $^{+0.021}$	+0.181 +0.040	0.214 0.040		6		2615	2620	2625	2630		
28	32	28 $^{}_{-0.033}$	32 $^{+0.025}$		0.218 0.040				2815	2820	2825	2830	2840	
30	34	30 $^{}_{-0.033}$	34 $^{+0.025}$						3015	3020	3025	3030	3040	
32	36	32 $^{}_{-0.039}$	36 $^{+0.025}$	+0.185 +0.040		1.980 1.920			3215	3220	3225	3230	3240	
35	39	35 $^{}_{-0.039}$	39 $^{+0.025}$		0.224 0.040					3520	3525	3530	3540	3550
38	42	38 $^{}_{-0.039}$	42 $^{+0.025}$				8			3820	3825	3830	3840	3850
40	44	40 $^{}_{-0.039}$	44 $^{+0.025}$							4020	4025	4030	4040	4050

GPB-800 双金属轴承规格及公差
GPB-800 Bimetal Sleeve Bushing Speci□cation & Tolerance

内径 D_i ϕ d	外径 D_O ϕ D	轴径(h8) Shaft D_s	座孔(H7) Housing D_H	压装后内孔公差 Arter □xed $D_{i,a}$	配合间隙 Clearance C_D	壁厚 Wall thickness S_3	油孔 Oil hole d_L	长度 L $^{0}_{-0.40}$ 25	30	40	50	60	80	90	100
45	50	45 $^{-0.039}$	50 $^{+0.025}$	+0.225 +0.080	0.264 0.080			4525	4530	4540	4550				
50	55	50 $^{-0.039}$	55 $^{+0.030}$		0.269 0.080				5030	5040	5050	5060			
55	60	55 $^{-0.046}$	60 $^{+0.030}$						5530	5540	5550	5560			
60	65	60 $^{-0.046}$	65 $^{+0.030}$						6030	6040	6050	6060			
65	70	65 $^{-0.046}$	70 $^{+0.030}$	+0.230 +0.080	0.276 0.080		8		6530	6540	6550	6560			
70	75	70 $^{-0.046}$	75 $^{+0.030}$						7030	7040	7050	7060	7080		
75	80	75 $^{-0.046}$	80 $^{+0.030}$						7530	7540	7550	7560	7580		
80	85	80 $^{-0.046}$	85 $^{+0.035}$		0.281 0.080				8030	8040	8050	8060	8080	8090	
85	90	85 $^{-0.054}$	90 $^{+0.035}$		0.289 0.080	2.460 2.400			8530	8540	8550	8560	8580	8590	85100
90	95	90 $^{-0.054}$	95 $^{+0.035}$							9040	9050	9060	9080	9090	90100
95	100	95 $^{-0.054}$	100 $^{+0.035}$	+0.235 +0.080							9550	9560	9580	9590	95100
100	105	100 $^{-0.054}$	105 $^{+0.035}$								10050	10060	10080	10090	100100
105	110	105 $^{-0.054}$	110 $^{+0.035}$								10550	10560	10580	10590	105100
110	115	110 $^{-0.054}$	115 $^{+0.035}$				9.5				11050	11060	11080	11090	110100
115	120	115 $^{-0.054}$	120 $^{+0.035}$								11550	11560	11580	11590	115100
120	125	120 $^{-0.054}$	125 $^{+0.040}$	+0.240 +0.080	0.303 0.080						12050	12060	12080	12090	120100
125	130	125 $^{-0.063}$	130 $^{+0.040}$									12560	12580	12590	125100
130	135	130 $^{-0.063}$	135 $^{+0.040}$									13060	13080	13090	130100
135	140	135 $^{-0.063}$	140 $^{+0.040}$									13560	13580	13590	135100
140	145	140 $^{-0.063}$	145 $^{+0.040}$									14060	14080	14090	140100
150	155	150 $^{-0.063}$	155 $^{+0.040}$									15060	15080	15090	150100

GANGPING MECHANICAL 港平机械

GPB-JDB 固体润滑轴承
GPB-JDB Solid-Lubricant Bearings

应用特点 Application

GPB-JDB-1是在以高力黄铜的基体上镶嵌固体润滑剂的一新产品，它突破了一般轴承依靠油膜润滑的界限。适用于高温，高载，耐腐蚀或无法加油等场合条件下使用。它的硬度比一般铜套高一倍，耐磨性能也高出一倍。目前广泛应用于冶金连铸机、轧钢设备、矿山机械、船舶、汽轮机、注塑机以及设备生产流水线中。

GPB-JDB-2主要适应低载高温中速的使用场合，例如壁炉门铰链。烘炉滚道、轻工机械、机床工业等。

GPB-JDB-3的内材与GPB-JDB-2同样，除了具有GPB-JDB-2的功能外，还体现了节省成本，提高抗压强度和可以端面与基体焊接安装的作用，适用于建筑机械、冶金机械和输送机械中的不加油润滑部位。

GPB-JDB-4是一种加强型的产品，它具有极高的抗压性能，在起重机械的支撑部位特别适应，例：挖土机支撑、卷扬机支撑、吊车支撑等。但由于基体为钢材，所以不宜在水中或酸、碱的场合使用。

GPB-JDB-5是一种典型的省材产品。在机械性能要求不是很高的地方，可作取GPB-JDB-1替代材料使用，能大大地降低成本，满足使用要求，例：模具导柱、注塑机模架等。

GPB-JDB-1 solid lubricant embedded bushing is a new type made from strong brass and homogeneously embedded with solid lubricant in its body. It breaks through the limit of general bearing whose lubrication depends on oil film. So it is suitable for high temperature, heavy load, anti-corrosion, or where oil is hard to be introduced. It is performance doubles both on hardness and wear-friction. It is now widely applied in successive casting machines, steel rollers in metallography, mineral machine, ships, steam turbine, and injection molding machines for plastics.

GPB-JDB-2 suitable for low load position, wear performance worsens greatly when under middle or high load, it can be applied in furnace door linage, furnace, conveyor, tool machines, light industries, etc.

GPB-JDB-3 suitable for low load position, wear performance worsens when under middle or high load. The mating layer is same as GPB-JDB-2 so that more cost-saving than GPB-JDB-2 whereas compression strength increases and weldable. Most suitable for dry position in construction machinery, metallurgical machines, conveyor machines etc.

GPB-JDB-4 can be used under low speed rotation, middle and high load. Due to its super high hardness, when under high load, it over performs than other JDB type. Not suitable for water. Acid, alkali circumstances. Most suitable for the supporting position of hoisting machine,e,g. Bulldozer supporter, hoister supporter, Crane supporter etc.

GPB-JDB-5 is a typical material product. It can instead of material of GPB-JDB-10 when the machanical preformance requirement not very high. It can reduct the cost and meet the operation requiremert. Such as dieguider, plastrc in jection machines ect.

GPB-JDB 固体润滑轴承
GPB-JDB Solid-Lubricant Bearings

合金材料 Alloy Material

型号 Type / 对应牌号 Corresponding Brands	GPB-JDB-1	GPB-JDB-2	GPB-JDB-3	GPB-JDB-4	GPB-JDB-5
国际牌号 GB1776-87 China Brands GB1776-87	ZCuZn25 Al6Fe3Mn3	ZCuSn6 Zn6Pb3	钢 (steel)+ ZCuSn6 Zn6Pb3	GCr15	HT250
国际 ISO1338 International ISO1338	GCuZn25 Al6Fe3Mn3	GCuSn6 Zn6Pb3	钢 (steel)+ CuSn6Zn6Pb3 Fe3Ni5	B1	-
德国 DIN Germany DIN	G-CuZn25 Al5	GB-CuSn5 Zn5Pb5	钢 (steel)+ CuSn6Zn6 Pb3Ni	100Cr6	-
日本JIS Japan JIS	HBsC4	BC6	BC6	SUJ2	FC250
美国 ASTM/UNS America ASTM/UNS	C86300	C83600	C83600	52100	Class40
英国标准（BS） England Standard	HTB2	LG2	LG2	-	-

技术参数 Technical Data

型号 Type / 性能指标 Performance index	GPB-JDB-1	GPB-JDB-2	GPB-JDB-3	GPB-JDB-4	GPB-JDB-5
最大动承载 P (N/mm^2) Max Move Load Capacity	100	60	70	250	60
最大滑动速度 V (m/s) Max Sliding Speed	干(dry) 0.4 油(oil) 0.5	2	2	0.1	0.5
最高PV值 (N/mm^2·m/s) Max PV Value Limit	3.8	0.5	0.6	2.5	0.8
密度 ρ (g/cm^3) Density	8.0	8.0	7.6	7.8	7.3
抗拉强度 (N/mm^2) Tensile Strength	＞600	＞250	＞500	＞1500	＞250
延伸率 (%) Elongation	＞10	＞4	＞10	-	-
硬度 (HB) Hardness	＞210	＞80	＞80	HRC＞55	＞160
最高使用温度℃ Max Working Temperature	300	350	300	350	400
摩擦系数 μ Friction coe□cient	油润滑：0.03 Oil Lubrication:0.03			干摩擦：0.16 Dry Friction:0.16	

GANGPING MECHANICAL 港平机械

GPB-JDB 固体润滑轴承
GPB-JDB Solid-Lubricant Bearings

材料合金化学成份 Alloy Chemical Compositions

化学元素 Chemical elements	GPB-JDB-1	GPB-JDB-2	GPB-JDB-3	GPB-JDB-4	GPB-JDB-5
Cu (%)	Rest	Rest	Rest	-	-
Sn (%)	-	6	6	-	-
Zn (%)	25	6	6	-	-
Ni (%)	-	-	-	-	-
Al (%)	6	-	-	-	-
Fe (%)	3	-	-	Rest	Rest
Mn (%)	3	-	-	0.20～0.40	0.905～1.3
Cr (%)	-	-	-	1.30～1.65	-
C (%)	-	-	-	0.95～1.05	2.5～4
Si (%)	-	-	-	0.15～0.35	1.0～1.3
Pb (%)	-	3	3	-	-

固体润滑剂 Solid Lubricants

固体润滑剂 Lubricant	高纯石墨+添加剂 SL1 Graphite	$SL4+MoS_2$ $PTFE+MoS_2+CF$
特性 Features	很好的耐磨性和化学稳定性，使用温度＜400℃ Good wear performance and chemical stability, temperature limit 400℃	极低的摩擦系数和很好的水润滑性，使用温度＜300℃ Lowest friction coefficient and good water lubrication, temperature limit 300℃
典型用途 Typical application	应用于一般机械，在大气中使用 Suit for general machines and under atmosphere	应用于水、海水润滑、如船舶 Suit for water and seawater lubricant, such as ship

镶嵌式固体润滑轴承的优点
The Advantages of the Solid-lubricant-Embedded Bearings

1、无给油可使用
Dry operation.

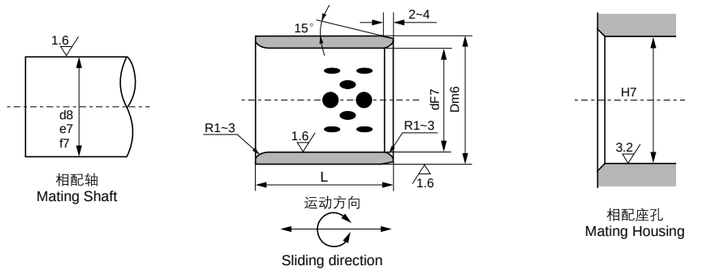
2、高载荷、低转速的情况，仍可发挥优越的性能
Can be Performed well with high load and low speed.

3、往返运动、摇摆运动、起动停止频繁等油膜形成困难的场所，仍可发挥优越的耐磨性
Rreciprocating motion, wagging motion, start and stop frequently are di□culty for keeping oil □lm. It still may play advantageous of wear-resistance.

4、优越的耐药品性及耐蚀性
Excellent chemical resistance and anti-corrosion.

5、设计灵活、简单、方便，丰富的标准品，可配标准轴心使用
Flexible, simple, convenient and abundant designing of standard, can be choosed by standard axes.

GPB-JDB 自润滑直套轴承标准公制尺寸
GPB-JDB Self-lubricating Straight Bearings Standard Metric Size



单位Unit: mm

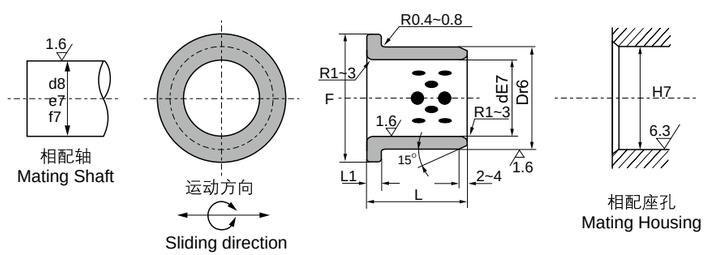
d	D	d F7		D m6		L $^{-0.10}_{-0.30}$												
						8	10	12	15	16	20	25	30	35	40	50	60	70	80
8	12	8	+0.028 +0.013	12	+0.018 +0.007	081208	081210	081212	081215										
10	14	10		14		101408	101410	101412	101415	101416	101420								
12	18	12	+0.034 +0.016	18			121810	121812	121815	121816	121820	121825	121830						
13	19	13		19	+0.021 +0.008		131910	131912	131915	131916	131920	131925	131930						
14	20	14		20			142010	142012	142015	142016	142020	142025	142030						
15	21	15		21			152110	152112	152115	152116	152120	152125	152130	152135					
16	22	16		22			162210	162212	162215	162216	162220	162225	162230	162235	162240				
18	24	18		24			182410	182412	182415	182416	182420	182425	182430	182435	182440				
20	28	20	+0.041 +0.020	28			202810	202812	202815	202816	202820	202825	202830	202835	202840	202850			
22	32	22		32				223212	223215	223216	223220	223225	223230	223235	223240	223250			
25	33	25		33	+0.025 +0.009			253312	253315	253316	253320	253325	253330	253335	253340	253350	253360		
30	38	30		38				303812	303815	303816	303820	303825	303830	303835	303840	303850	303860		
35	45	35	+0.050 +0.025	45							354520	354525	354530	354535	354540	354550	354560	354570	
40	50	40		50							405020	405025	405030	405035	405040	405050	405060	405070	405080
45	55	45		55									455530	455535	455540	455550	455560	455570	455580
50	60	50		60									506030	506035	506040	506050	506060	506070	506080

GANGPING MECHANICAL 港平机械

GPB-JDB 自润滑直套轴承标准公制尺寸
GPB-JDB Self-lubricating Straight Bearings Standard Metric Size

d	D	dF7		Dm6		L $^{-0.10}_{-0.30}$										
						30	35	40	50	60	70	80	100	120	130	140	150
50	62	50	+0.050 +0.025	62	+0.030 +0.011	506230	506235	506240	506250	506260	506270						
50	65	50		65		506530	506535	506540	506550	506560	506570	506580	5065100				
55	70	55		70		557030	557035	557040	557050	557060	557070	557080	5570100				
60	74	60		75		607430	607435	607440	607450	607460	607470	607480	6074100				
60	75	60		75		607530	607535	607540	607550	607560	607570	607580	6075100				
63	75	63		75			637535	637540	637550	637560	637570	637580	6375100				
65	80	65		80			658035	658040	658050	658060	658070	658080	6580100				
70	85	70	+0.060 +0.030	85	+0.035 +0.013		708535	708540	708550	708560	708570	708580	7085100				
70	90	70		90			709035	709040	709050	709060	709070	709080	7090100				
75	90	75		90				759040	759050	759060	759070	759080	7590100				
75	95	75		95				759540	759550	759560	759570	759580	7595100	7595120			
80	96	80		96				809640	809650	809660	809670	809680	8096100	8096120	8096130		
80	100	80		100				8010040	8010050	8010060	8010070	8010080	80100100	80100120	80100130	80100140	
90	110	90	+0.071 +0.036	110					9011050	9011060	9011070	9011080	90110100	90110120	90110130	90110140	
100	120	100		120						10012060	10012070	10012080	100120100	100120120	100120130	100120140	
110	130	110		130	+0.040 +0.015							11013080	110130100	110130120	110130130	110130140	
120	140	120		140								12014080	120140100	120140120	120140130	120140140	
125	145	125	+0.083 +0.043	145									125145100	125145120	125145130	125145140	
130	150	130		150									130150100	130150120	130150130	130150140	130150150
140	160	140		160									140160100	140160120	140160130	140160140	140160150
150	170	150		170									150170100	150170120	150170130	150170140	150170150
160	180	160		180									160180100	160180120	160180130	160180140	160180150

GPB-JFB 自润滑翻边轴承标准公制尺寸
GPB-JFB Self-lubricating Flange Bearings Standard Metric Size



单位Unit: mm

d	D	d E7		D r6		F	L_1	L $^{-0.10}_{-0.30}$									
								15	20	25	30	35	40	50	60	80	100
10	14	10	+0.040 +0.025	14	+0.034 +0.023	22	2	1015	1020								
12	18	12		18		25		1215	1220								
13	19	13		19		26		1315	1320								
14	20	14	+0.050 +0.032	20		27	3	1415	1420	1425							
15	21	15		21	+0.041 +0.028	28		1515	1520	1525	1530						
16	22	16		22		29		1615	1620	1625	1630						
20	30	20		30		40	5		2020	2025	2030	2035					
25	35	25	+0.061 +0.040	35		45			2520	2525	2530	2535	2540				
30	40	30		40	+0.050 +0.034	50			3020	3025	3030	3035	3040	3050			
35	45	35		45		60				3525	3530	3535	3540	3550			
40	50	40	+0.075 +0.050	50		65					4030	4035	4040	4050			
45	55	45		55		70					4530	4535	4540	4550	4560		
50	60	50		60	+0.060 +0.041	75						5035	5040	5050	5060		
55	65	55		65		80							5540	5550	5560		
60	75	60		75	+0.062 +0.043	90	7.5						6040	6050	6060	6080	
70	85	70	+0.090 +0.060	85		105								7050	7060	7080	
75	90	75		90	+0.073 +0.051	110								7550	7560	7580	75100
80	100	80		100		120	10								8060	8080	80100
90	110	90	+0.107 +0.072	110	+0.076 +0.054	130									9060	9080	90100
100	120	100		120		150									10060	10080	100100
120	140	120		140	+0.088 +0.063	170									12060	12080	120100

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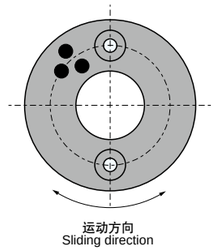
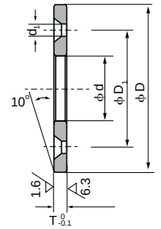
GPB-JTW 自润滑止推垫片标准公制尺寸
GPB-JTW Self-lubricating Thrust Washer Standard Metric Size

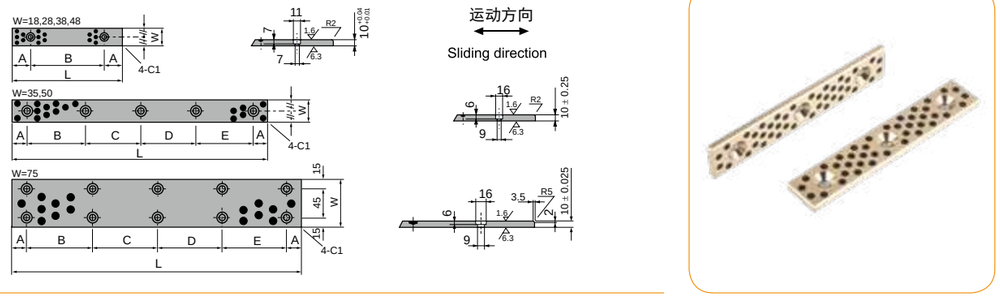




单位Unit: mm

型号规格 Standard No.	ϕ d	ϕ D	T $^{0}_{-0.10}$	螺孔 Bolt Hole			
				ϕ D_1	平头螺钉 Crop Bolt	ϕ d_1	孔数 Bore Number
GPB-JTW-10	10.2	30	3	20	M3	3.5	2
GPB-JTW-12	12.2	40		28			
GPB-JTW-13	13.2						
GPB-JTW-14	14.2						
GPB-JTW-15	15.2	50		35			
GPB-JTW-16	16.2						
GPB-JTW-18	18.2						
GPB-JTW-20	20.2		5		M5	6	
GPB-JTW-25	25.2	55		40			
GPB-JTW-30	30.2	60		45			
GPB-JTW-35	35.2	70		50	M6	7	
GPB-JTW-40	40.2	80	7	60			
GPB-JTW-45	45.3	90		70			
GPB-JTW-50	50.3	100	8	75			4
GPB-JTW-55	55.3	110		85			
GPB-JTW-60	60.3	120		90	M8	9	
GPB-JTW-65	65.3	125		95			
GPB-JTW-70	70.3	130	10	100			
GPB-JTW-75	75.3	140		110			
GPB-JTW-80	80.3	150		120			
GPB-JTW-90	90.5	170		140	M10	11	
GPB-JTW-100	100.5	190		160			
GPB-JTW-120	120.5	200		175			

GPB-JSP 滑板标准公制尺寸
GPB-JSP Wear Plates Standard Metric Size



单位Unit: mm

型号规格 Standard No.	W	L	A	B	C	D	E	平头螺钉尺寸 Flat Head Screw Size	孔数 Q'ty of holes
GPB-JSP-1875	18	75	15	45				M6	2
GPB-JSP-18100		100	25	50					
GPB-JSP-18125		125		75					
GPB-JSP-18150		150		100					
GPB-JSP-2875	28	75	15	45					
GPB-JSP-28100		100		50					
GPB-JSP-28125		125	25	75					
GPB-JSP-28150		150		100					
GPB-JSP-35100	35	100	20	60				M8	
GPB-JSP-35150		150		55	55				3
GPB-JSP-35200		200		55	50	55			4
GPB-JSP-35250		250		70	70	70			4
GPB-JSP-35300		300		65	65	65	65		5
GPB-JSP-35350		350		80	75	75	80		5
GPB-JSP-3875	38	75	15	45				M6	2
GPB-JSP-38100		100	25	50					
GPB-JSP-38125		125		75					
GPB-JSP-38150		150		100					
GPB-JSP-4875	48	75	15	45					
GPB-JSP-48100		100	25	50					
GPB-JSP-48125		125		75					
GPB-JSP-48150		150		100					
GPB-JSP-50100	50	100	20	60				M8	
GPB-JSP-50150		150		55	55				3
GPB-JSP-50200		200		55	50	55			4
GPB-JSP-50250		250		70	70	70			4
GPB-JSP-50300		300		65	65	65	65		5
GPB-JSP-50400		400		90	90	90	90		5
GPB-JSP-75150	75	150		110					4
GPB-JSP-75200		200		80	80				6
GPB-JSP-75250		250		105	105				6
GPB-JSP-75300		300		85	90	85			8
GPB-JSP-75400		400		120	120	120			8
GPB-JSP-75500		500		115	115	115	115		10

GANGPING MECHANICAL 港平机械

卷制类轴承尺寸公差检测方法
Wrapped Bushing Dimensional Inspection

卷制类产品的制造工艺决定了开口缝的存在，使得产品在自由状态下没有很好的圈整度，同时轴套外径和座孔之间为过盈配合，轴套要最大限度地适应座孔的形状，因此不能在自由状态下直接测量产品的内外经而必须使用特殊的测量仪和设备才能检测；ISO3547标准第2部分中对卷制类产品的公差检验作了明确的规定，包括：

检验方法A：哈夫规检验外径；

检验方法B：止通规检验外径；

检验方法C：止通规检验内径；

检验方法D：测量尺检验大规格产品外径

以及替代检验方法C的壁厚检验方法，壁厚检验方法和检验方法C不能同时使用。

Rolled products in the manufacturing process determine the existence of open joints, making products in the free state not habe a good whole circle shape, while sleeve diameter and the seat for the interference □t between the holes, sleeve adapted to maximize Block hole shape can not be directly measured in the free state the inner/outside diameter of the product only can be by a special measuring instrument; In ISO3547 standards measured Part 2 of the rolled products made clear tolerance test requirements, including :

Test Method A: Hu□ regulatory test outside diameter;

Test method B: use stop-pass gauge to test the outside diameter;

Test method C: use stop-pass gauge to test the inside diameter;

Test method D: Measure the outer diameter of large scale product and use wall-thickness test to replace test method C. (Wall-thickness test and test method C can not be used at the same time.)

外径检验方法 External diameter test methods

检验方法A (ISO3547-2: Test A)

采用如右视图的上下两哈夫规对外径进行检验，检验时产品的开口缝朝上哈夫规相向施加检验载荷Fch，该载荷使卷制轴套能够按符合要求的方式就位于检验模。检验中，由于弹性变形卷制轴套外径会变小但不会产生永久变形。产品的外径可以通过检验模之间的距离Z的变化量△Z来计算。

Test A of ISO 3547 Part 2

Check the outside diameter of a wrapped bush using measuring equipment as shown to the right, with a checking block consisting of upper and lower halves and setting plugs, at a determined checking load of Fch, during the test the outside diameter of the bush is made smaller by the elastic reduction, however it is not a permanent deformation. The bushes outside diameter can be calculated from the di□erence in the value of z (⊿Z)

检验方法B (ISO3547-2: Test B)

检验采用两个环规即通规和止规，用手以最大力250N可将轴套推入并通过通规；在相同情况下无法进入和通过止规。在某些情况下检验精度可能受到影响，比如轴套不圆或闭合开口缝的力本身已超过250N，此时建议采用检验方法A或测压入力或壁厚相结合的检验方法。

Test B of ISO 3547 Part 2

The test is carried out with two ring gauggs, a Go gauge and a No Go gauge whose diameter Shall be chosen empirically from with Table 6 of ISO3547-1:1999 and agreed upon. It shall be possible to press the bushes into the GO gauge and then push them through with hand pressure (maximum force 250N). On the other hand with the same force, it shall not be possible for them to go into and through the NO GO gauge (See ISO 12307-1)

检验方法D (ISO3547-2: Test D)

采用精确的测量尺来测量外径，一般针对大规格的轴套外径检测。

Test D (ISO 3547-2)

The test is carried out by means of a precision measuring tape.

检验方法A Test A of ISO

哈夫规和芯棒 Checking block and setting mandrel d_{ch}=____mm

检验压力 Torce test F_{ch}=____N

极限值 Limiting value $\triangle_Z$=___and___mm

外径公差 OD tolerance D_o=___to___mm

检验方法B Test B of ISO