



产品特性 Product features

- 80度下较好的耐磨材料。被应用于对轴硬度要求不高的场合。白色也是较多清洁设备和包装机械的考虑因素
- 连续使用温度: -40℃/+80℃
- 对轴表面粗糙度要求低
- 较低的摩擦系数
- 适用于软轴
- It is a wear resistance material for working temperature lower than 80℃. The application is for the condition where the shaft hardness is not critical. The white color of the material is also commonly used for most of the clearing and packing machineries
- Continuous working temperature: -40℃/+80℃
- No special requirement on the surface roughness
- Low friction coefficient
- Applicable for soft shaft

● 标准产品规格表 Standard specifications: P124

材料数据表 Material properties data table

材料性能 Material properties	测试标准 Standard	单位 Unit	CSB-EPB6
颜色 Color	-	-	白色 White
密度 Density	ISO1183	g/cm ³	1.45
最大吸湿率 Max. moisture absorption, 50%RH	ISO62	%	0.3
最大吸水率 Max. water absorption	ISO62	%	1.2
对钢动摩擦系数 Coefficient of sliding friction(steel)	ITS025	μ	0.05-0.18
极限PV值 Max. PV value	ITS026	N/mm ² × m/s	0.30
弯曲模量 Flexural modulus	ISO178	MPa	2300
弯曲强度 Flexural strength	ISO178	MPa	60
最大静载荷 Max. static load	ITS027	MPa	35
最大动载荷 Max. dynamic load	ITS028	MPa	14
邵氏硬度 Shore hardness	ISO868	D	74
连续运行温度 Long-term application temperature	ITS029	℃	+80
短时运行温度 Short-term application temperature	ITS029	℃	+120
最低运行温度 Lowest application temperature	ITS029	℃	-40
导热性 Thermal conductivity	ISO22007	W/m/K	0.20
线性热膨胀系数 Coefficient of thermal expansion	ISO11359	K ⁻¹ × 10 ⁻⁵	10
阻燃等级 Flammability	UL94	Class	HB
体电阻率 Volume resistance	IEC60093	Ω·cm	>10 ¹³
面电阻率 Surface resistance	IEC60093	Ω	>10 ¹²

*ITS: CSB内部测试标准 CSB company's internal test standards.

**除非特殊说明测试温度为23℃ Test temperatures are 23℃ unless otherwise stated.

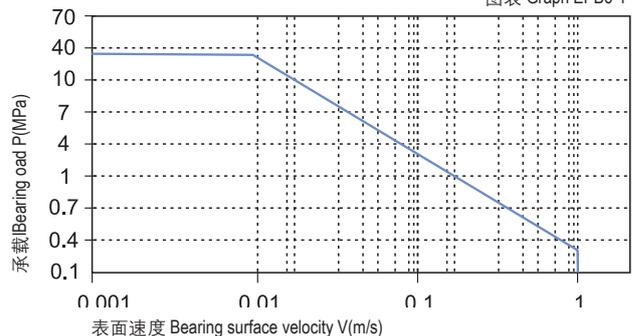
轴承PV值 PV value

CSB-EPB6塑料轴承最大运行PV值为0.3N/mm² × m/s; 由此决定轴承所承受的载荷与速度成反比, 详细查阅图表EPB6-1。

The max PV value of the CSB-EPB6 plastic bearings is 0.3N/mm² × m/s which determines the load capacity of bearing is inversely proportional to the speed. Please refer to the chart for more detailed information (Graph EPB6-1).

■ PV图表 Permissible PV value for CSB-EPB6

图表 Graph EPB6-1



轴承的载荷、速度、温度 Load, speed and temperature

CSB-EPB6塑料轴承可承受最大静载荷为35Mpa, 在此载荷下轴承的最大压缩变形量参考图表EPB6-2, 轴承实际工作载荷略小于35Mpa, 载荷还受到运行速度以及温度的影响, 速度越快 (Vmax: 1.0m/s) 会导致摩擦温度上升, 而温度上升 (Tmax: 80℃) 会导致轴承的承载能力逐渐减弱, 载荷随轴承工作温度变化情况参考图表EPB6-3。

CSB-EPB6 allows the Max static load of 35Mpa, The max compressive deformation rate under the max load is listed in Graph EPB6-2, The actual load capacity of bearing is slightly less than 35Mpa, The bearing load is variable against the speed and temperature, Fast speed (Vmax: 1.0m/s) results into higher temperature (Tmax: 80℃) which decreases the load capacity of the bearing. Please refer to the Graph EPB6-3 for such variation.

轴承的摩擦系数、磨损、轴材料 Friction factor, wear and shaft material

摩擦系数 Friction factor

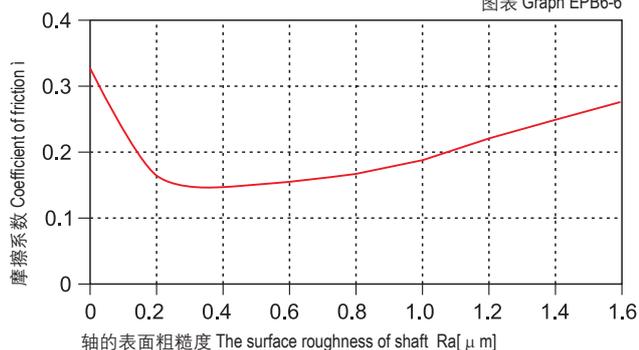
图表EPB6-4表明CSB-EPB6塑料轴承在载荷保持不变的情况下摩擦系数随着运行速度的增加而略有小幅度的升高; 图表EPB6-5表明CSB-EPB6塑料轴承在保持速度不变时摩擦系数随着载荷的增加而逐步减低。根据图表EPB6-6表明CSB-EPB6塑料轴承的摩擦系数会随着轴表面粗糙度的变化而不同, 我们推荐使用轴粗糙度为Ra0.3 ~ 0.6μm;

Graph EPB6-4 shows the CSB-EPB6 friction factor is slightly increased as long as the operation speed increasing when the loading is relatively stable. Graph EPB6-5 shows the friction factor of CSB-EPB6 is continuing decreasing along with the loading increasing when the operation speed is relatively stable. From Graph EPB6-6, it is found that the friction factor is also variable against the shaft surface roughness. The recommended shaft surface roughness is Ra0.3-0.6.

摩擦系数与轴表面粗糙度关系图表

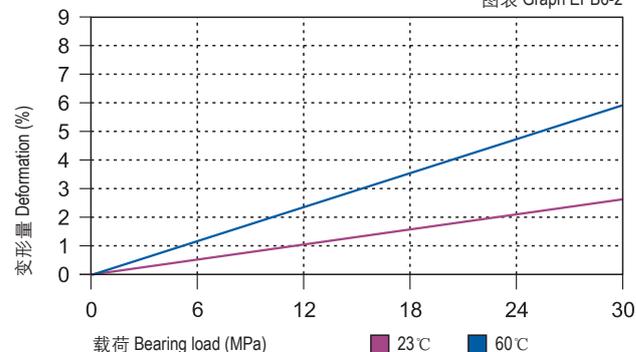
Coefficient of friction & the surface roughness of shaft

图表 Graph EPB6-6



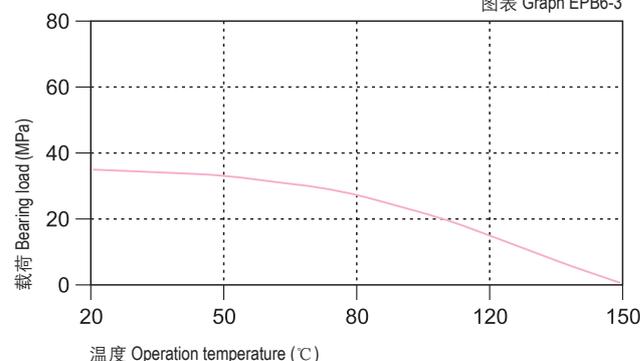
载荷-温度-变形量图表 Load-Temperature deformation

图表 Graph EPB6-2



载荷-温度图表 Load-Temperature diagrams

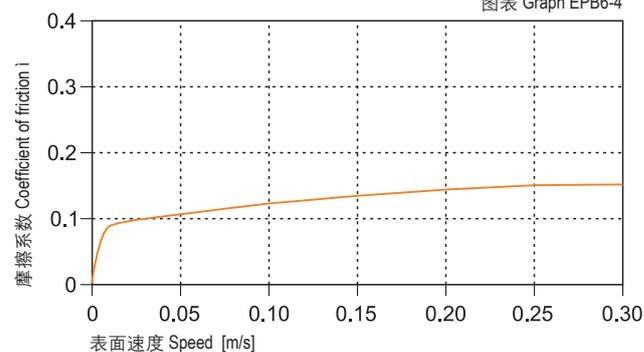
图表 Graph EPB6-3



摩擦系数与速度变化关系图表 P=2MPa

Coefficient of friction & the speed of bearing, p = 2 MPa

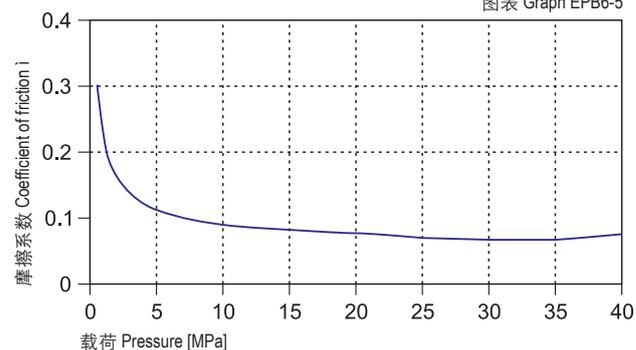
图表 Graph EPB6-4



摩擦系数与载荷变化关系图表 v=0.2m/s

Coefficient of friction & the pressure of bearing, v = 0.2 m/s

图表 Graph EPB6-5



CSB-EPB6	干运行 Dry	油脂 Grease	油 Oil	水 Water
摩擦系数 μ Friction coef.	0.05~0.18	0.09	0.04	0.04

磨损与轴材料 Wearing and shaft material

图表EPB6-7与图表EPB6-8表明硬化钢轴或硬铬钢轴比较适合用于CSB-EPB6塑料轴承。CSB-EPB6塑料轴承在用于旋转运动或摆动运动时的磨损性能基本相同，这就决定了此轴承可以用于多种场合。

Graph EPB6-7 and Graph EPB6-8 describes CSB-EPB6 bearing is suitable for hardened steel and hardened chrome steel shaft. CSB-EPB6 is very similar during its rotation operation and oscillation operation so that this material is suitable for most of the applications.

化学抗性 Chemical resistance

CSB-EPB6塑料轴承能抵抗弱碱、弱酸以及各类润滑油的腐蚀。CSB-EPB6 is good at chemical resistance against mild base, weak acidic medium and various kinds of lubricants.

吸水性 Water absorption

CSB-EPB6塑料轴承在标准大气中的吸湿率为0.3%。浸泡在水中最高吸水率为1.2%。较低的吸水率只有在极端应用中才需要更改轴承设计。

The moisture absorption of CSB-EPB6 plastic bearings is 0.3% in standard atmosphere. The max. water absorption is 1.2% in water. These values are so low that design changes due to absorption are only necessary in extreme applications.

抗UV性能 UV resistance

CSB-EPB6塑料轴承长久暴露在紫外线下颜色基本不会改变。材料的硬度、抗压强度和耐磨性都不会改变。

CSB-EPB6 can maintain its color unchanged when it is exposed into the UV ray. The hardness, Compressive strength and wear resistance of the material is also stable under such condition.

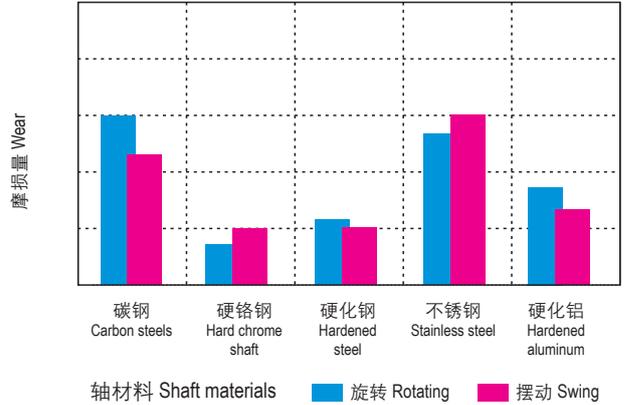
安装公差 Installation tolerances

CSB-EPB6塑料轴承压装后公差 Tolerances after pressfit

直径 Di. [mm]	CSB-EPB6 E10 [mm]	座孔 Housing H7 [mm]	轴 Shaft h9 [mm]
>0 ~ 3	+0.014 ~ +0.054	0 ~ +0.010	0 ~ -0.025
>3 ~ 6	+0.020 ~ +0.068	0 ~ +0.012	0 ~ -0.030
>6 ~ 10	+0.025 ~ +0.083	0 ~ +0.015	0 ~ -0.036
>10 ~ 18	+0.032 ~ +0.102	0 ~ +0.018	0 ~ -0.043
>18 ~ 30	+0.040 ~ +0.124	0 ~ +0.021	0 ~ -0.052
>30 ~ 50	+0.050 ~ +0.150	0 ~ +0.025	0 ~ -0.062
>50 ~ 80	+0.060 ~ +0.180	0 ~ +0.030	0 ~ -0.074
>80 ~ 120	+0.072 ~ +0.212	0 ~ +0.035	0 ~ -0.087
>120 ~ 180	+0.085 ~ +0.245	0 ~ +0.040	0 ~ -0.100

在不同轴材料上旋转时的磨损量 $p=2\text{MPa}$, $v=0.2\text{m/s}$ Wear under rotating with different shaft materials, $p = 2 \text{ MPa}$, $v = 0.2 \text{ m/s}$

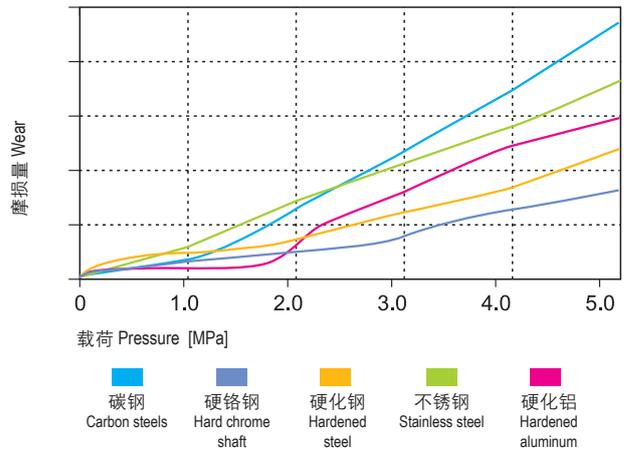
图表 Graph EPB6-7



旋转磨损随轴材料与压力变化关系 $v=0.2\text{m/s}$ Wear & pressure under rotating with different shaft materials, $v = 0.2 \text{ m/s}$

Wear & pressure under rotating with different shaft materials, $v = 0.2 \text{ m/s}$

图表 Graph EPB6-8



吸水性的影响 Effect of moisture absorption on EPB6 bearings

Effect of moisture absorption on EPB6 bearings

图表 Graph EPB6-9

