◉ 标准产品规格表 Standard specifications: P136

产品特性 Product Features

- 中低载荷应用的低成本解决方案，同时此材料具有低吸水率的特性
- 连续使用温度：-50℃/+100℃
- 适用于中低载荷
- 适合干运行免维护
- 潮湿环境应用
- 大批量、低成本

- The solution of middle to low load application and economic effective requirement. It is also one of the low water absorbing materials
- Continuous working temperature: -50℃/+100℃
- Suitable for medium load operation
- Maintenance-free dry operation
- For wet conditions
- Low cost material for high quantities

技术数据表 Technical data tabel

材料性能 Material Properties	试验方法 Testing Method	单位 Unit	CSB-EPB2
密度 Density	ISO1183	g/cm^3	1.29
颜色 Color			橄榄绿Olive
对钢的动摩擦系数 Dynamic friction /steel(dry)			0.07-0.20
最大P.V值 Max. PV (dry)		$N/mm^2 \times m/s$	0.5
最大旋转速度值 Max. roatating 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	70
弹性模量 E-module	ISO527	MPa	2400
允许最大表面静压力(20℃)Max. static pressure of the surface, 20℃		MPa	60
邵氏硬度 Shore hardness	ISO 868	D	75
连续工作温度 Continuous work temperature		℃	-50/+100
短时运行温度 Short-time work temperature		℃	-50/+150
导热性 Thermal conductivity	ASTME1461	W / m × k	0.25
线性热膨胀系数 Linear coef. of thermal expansion	ASTMD696	$K^{-1} \times 10^{-5}$	10
RH50/23℃时的吸湿性 Moisture absorption RH50/23℃	ASTMD570	%	0.2
最大吸水率23℃ Max. water absorption, 23℃		%	0.4
燃烧性能 Flammability	UL94		HB
体电阻率 Volume resistivity	IEC60093	Ω cm	$>10^{14}$
面电阻率 Surface resistivity	IEC60093	Ω	$>10^{15}$

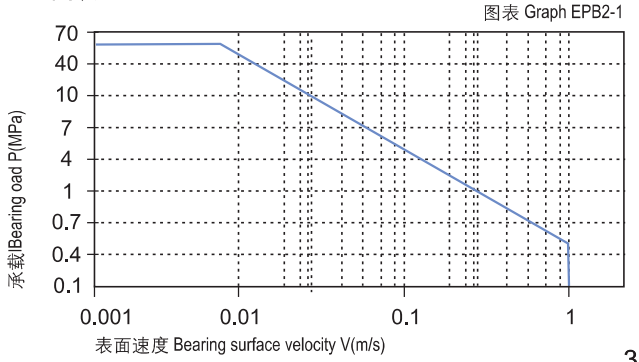
轴承PV值 PV Value

CSB-EPB2塑料轴承最大运行PV值为0.5N/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EPB2-1。

The max PV value of the CSB-EPB2 plastic bearings is 0.5N/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 EPB2-1).

PV图表 Permissible PV value for CSB-EPB2

图表 Graph EPB2-1



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轴承的载荷、速度、温度
Load, Speed and Temperature

CSB-EPB2塑料轴承可承受最大静载荷为60Mpa，在此载荷下轴承的最大压缩变形量参考图表EPB2-2，轴承实际工作载荷略小于60Mpa，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：100℃）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EPB2-3。

CSB-EPB2 allows the Max static load of 60Mpa, The max compressive deformation rate under the max load is listed in Graph EPB2-2, The actual load capacity of bearing is slightly less than 60Mpa, The bearing load is variable against the speed and temperature, Fast speed (Vmax: 1.0m/s) results into higher temperature (Tmax: 100℃) which decreases the load capacity of the bearing. Please refer to the Graph EPB2-3 for such variation.

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

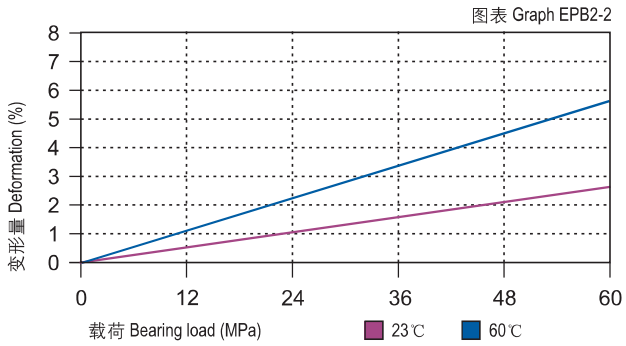
摩擦系数 Friction Factor

与其它塑料轴承基本一样，图EPB2-4表明CSB-EPB2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升高；图EPB2-5表明CSB-EPB2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EPB2-6表明CSB-EPB2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 ~ 0.6um;

Similar with most of the plastic bearings, the friction factor of CSB-EPB2 is increased along with the operation speed when the loading is stable (see Graph EPB2-4) and is decreased along with the loading increasing when the operation speed is stable (see Graph EPB2-5). From Graph EPB2-6, it shows the friction factor of CSB-EPB2 is variable against different shaft surface roughness. The recommended shaft surface roughness is Ra0.3~0.6.

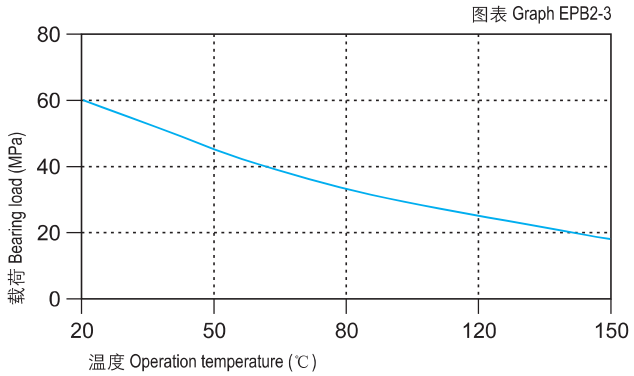
■ 载荷-温度-变形量图表 Load-Temperature deformation

图表 Graph EPB2-2



■ 载荷-温度图表 Load-Temperature diagrams

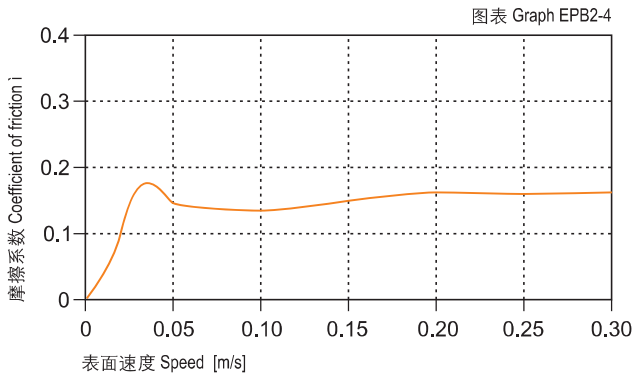
图表 Graph EPB2-3



■ 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

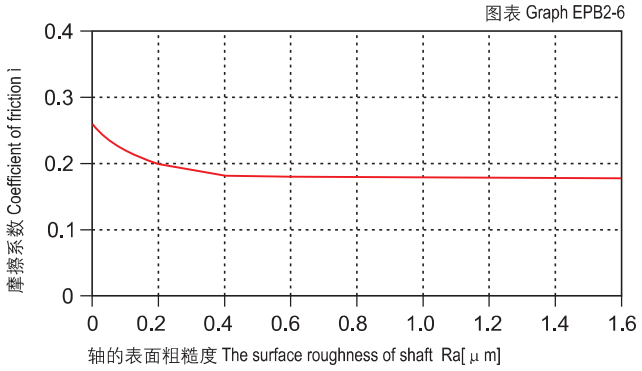
图表 Graph EPB2-4



■ 摩擦系数与轴表面粗糙度关系图表

Coefficient of friction & the surface roughness of shaft

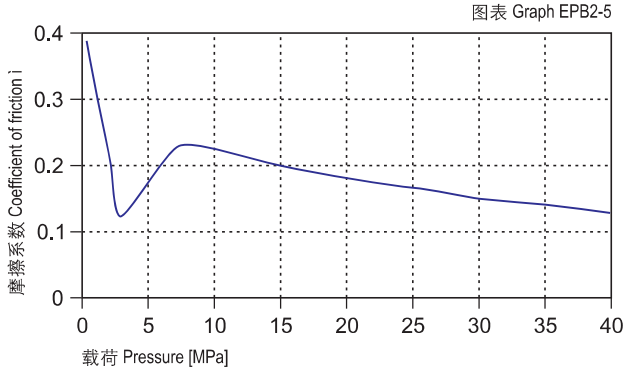
图表 Graph EPB2-6



■ 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 EPB2-5



CSB-EPB2	干运行 Dry	油脂 Grease	油 Oil	水 Water
摩擦系数 μ Friction coef.	0.07~0.20	0.09	0.04	0.04

磨损与轴材料 Wearing and shaft material

图EPB2-7表明低载时硬化钢轴与硬铬钢轴比较适合用于CSB-EPB2轴承。CSB-EPB2在用于摆动运动时磨损值明显要优越于用于旋转运动。

Graph EPB2-7 shows that CSB-EPB2 is rather suitable for hardened steel shaft and hardened chrome steel shaft under lower loading andGraph EPB2-7 shows that CSB-EPB2 wearing feature is better for oscillation operation than of rotation operation.

化学抗性 Chemical Resistance

CSB-EPB2塑料轴承能抵抗部分弱酸以及各类润滑油的腐蚀。

CSB-EPB2 is good at chemical resistance against weak acidic medium and various kinds of lubricants.

吸水性 Water Absorbability

在标准大气压中，CSB-EPB2塑料轴承的吸水率为0.2%，浸泡水中最大平衡吸水率为0.4%；由于此吸水率的特性，此轴承可以应用于一般潮湿环境。

The water absorb rate of CSB-EPB2 is 0.2% under the atmospheric pressure while it is 0.4% when the material is immerged into water. With its low water absorbability, the material is suitable for humid environment applications.

抗UV性能 UV Resistance

CSB-EPB2长久暴露在紫外线下颜色会发生褪变。材料性能会有所下降。

Disintegration could be possible for the material CSB-EPB2 after long period of exposing under the UV ray and therefore the performance of the material will be reduced.

安装公差 Installation Tolerances

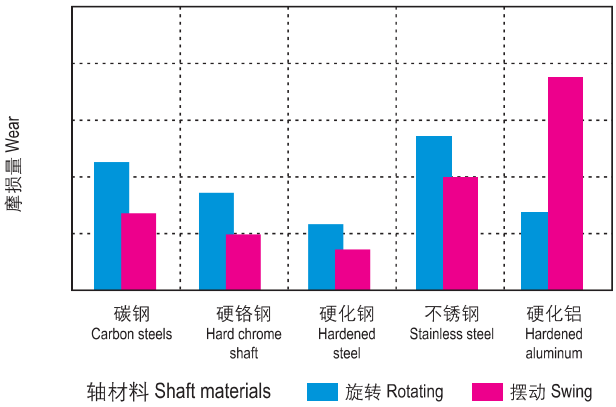
CSB-EPB2塑料轴承压装后公差 Tolerances after pressfit

直径 Di. [mm]	CSB-EPB2 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=2MPa, v=0.2m/s

Wear under rotating with different shaft materials, p = 2 MPa, v = 0.2 m/s

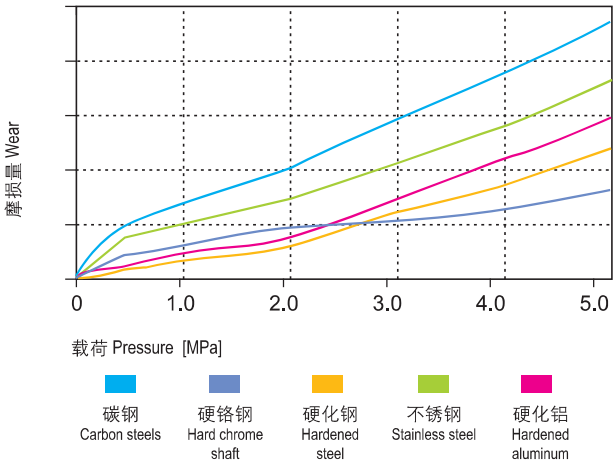
图表 Graph EPB2-7



旋转磨损随轴材料与压力变化关系 v=0.2m/s

Wear & pressure under rotating with different shaft materials, v = 0.2 m/s

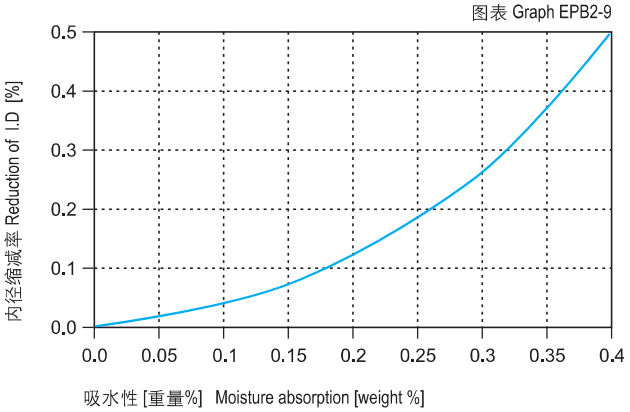
图表 Graph EPB2-8



吸水性的影响

Effect of moisture absorption on EPB2 bearings

图表 Graph EPB2-9



标准产品规格表 Standard specifications: P136

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