



### 产品特性 Product features

- 适用于软轴
- 耐磨性高
- 最高使用温度+200℃
- 高化学抗性
- 高弹性
- For soft shafts
- Excellent wear resistance
- Operation temperatures up to +200 °C
- Good resistance to chemicals
- High elasticity

● 标准产品规格表 Standard specifications: P128

### 材料数据表 Material properties data table

| 材料性能 Material properties                       | 测试标准 Standard | 单位 Unit                            | CSB-EPB26         |
|--|---------------|------------------------------------|-------------------|
| 颜色 Color                                       | -             | -                                  | 米色 Beige          |
| 密度 Density                                     | ISO1183       | g/cm <sup>3</sup>                  | 1.51              |
| 最大吸湿率 Max. moisture absorption, 50%RH          | ISO62         | %                                  | 0.1               |
| 最大吸水率 Max. water absorption                    | ISO62         | %                                  | 0.2               |
| 对钢动摩擦系数 Coefficient of sliding friction(steel) | ITS025        | μ                                  | 0.15-0.20         |
| 极限PV值 Max. PV value                            | ITS026        | N/mm <sup>2</sup> × m/s            | 0.50              |
| 弯曲模量 Flexural modulus                          | ISO178        | MPa                                | 4500              |
| 弯曲强度 Flexural strength                         | ISO178        | MPa                                | 95                |
| 最大静载荷 Max. static load                         | ITS027        | MPa                                | 55                |
| 最大动载荷 Max. dynamic load                        | ITS028        | MPa                                | 22                |
| 邵氏硬度 Shore hardness                            | ISO868        | D                                  | 74                |
| 连续运行温度 Long-term application temperature       | ITS029        | °C                                 | +200              |
| 短时运行温度 Short-term application temperature      | ITS029        | °C                                 | +240              |
| 最低运行温度 Lowest application temperature          | ITS029        | °C                                 | -40               |
| 导热性 Thermal conductivity                       | ISO22007      | W/m/K                              | 0.24              |
| 线性热膨胀系数 Coefficient of thermal expansion       | ISO11359      | K <sup>-1</sup> × 10 <sup>-5</sup> | 3                 |
| 阻燃等级 Flammability                              | UL94          | Class                              | V0                |
| 体电阻率 Volume resistance                         | IEC60093      | Ω · cm                             | >10 <sup>12</sup> |
| 面电阻率 Surface resistance                        | IEC60093      | Ω                                  | >10 <sup>12</sup> |

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

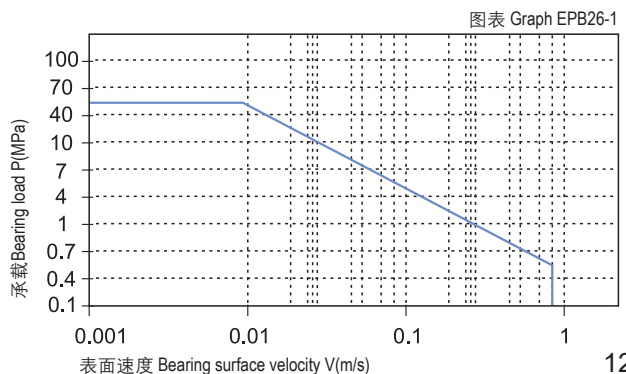
\*\*除非特殊说明测试温度为23℃ Test temperatures are 23℃ unless otherwise stated.

### 轴承PV值 PV value

CSB-EPB26塑料轴承最大运行PV值0.5N/mm<sup>2</sup> × 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EPB26-1。

The max PV value of the CSB-EPB26 plastic bearings is 0.5N/mm<sup>2</sup> × 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 EPB26-1).

### ■ PV图表 Permissible PV value for CSB-EPB26



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

CSB-EPB26塑料轴承可承受最大静载荷为55Mpa，在此载荷下轴承的最大压缩变形量参考图表EPB26-2，轴承实际工作载荷略小于55Mpa，载荷还受到运行速度以及温度的影响，速度越快 (Vmax: 0.9m/s) 会导致摩擦温度上升，而温度上升 (Tmax: 200℃) 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EPB26-3。

CSB-EPB26 allows the Max static load of 55Mpa, The max compressive deformation rate under the max load is listed in Graph EPB26-1, The actual load capacity of bearing is slightly less than 55Mpa, The bearing load is variable against the speed and temperature, Fast speed (Vmax: 0.9m/s) results into higher temperature (Tmax: 200℃) which decreases the load capacity of the bearing. Please refer to the Graph EPB26-3 for such variation.

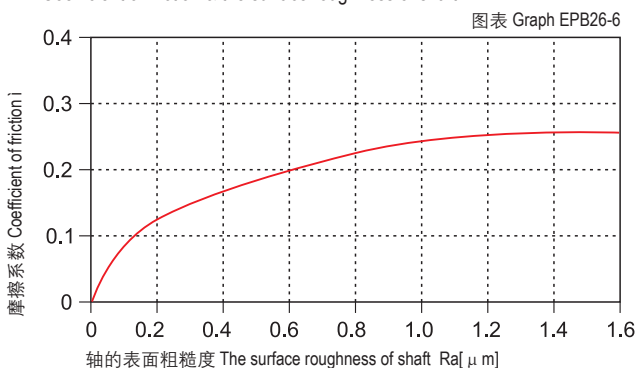
### 轴承的摩擦系数、磨损、轴材料 Friction factor, wear and shaft material

#### 摩擦系数 Friction factor

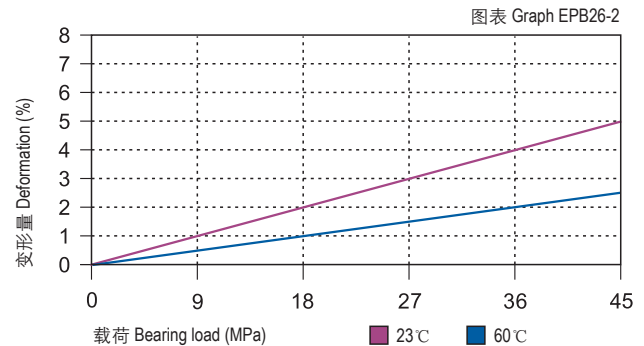
图表EPB26-4表明CSB-EPB26塑料轴承的摩擦系数在载荷保持不变的情况下受运行速度的增加影响相对较小；图表EPB26-5表明CSB-EPB26塑料轴承在保持速度不变的情况下，载荷从0增加到45Mpa过程中摩擦系数会逐步降低。图表EPB26-6表明CSB-EPB26塑料轴承的摩擦系数会随着轴表面粗糙度的增大而逐渐升高，我们推荐合适的轴粗糙度为Ra0.1 ~ 0.6um。

Graph EPB26-4 shows the friction factor of CSB-EPB26 is not obviously effected by the operation speed when the loading is stable and Graph EPB26-5 shows it will be decreasing along with the loading is increased from 0 to 45 Mpa when the operation speed is unchanged. The friction factor of CSB-EPB26 is increased along with the increasing of the shaft roughness. The recommended shaft roughness is Ra0.1 to Ra0.6.

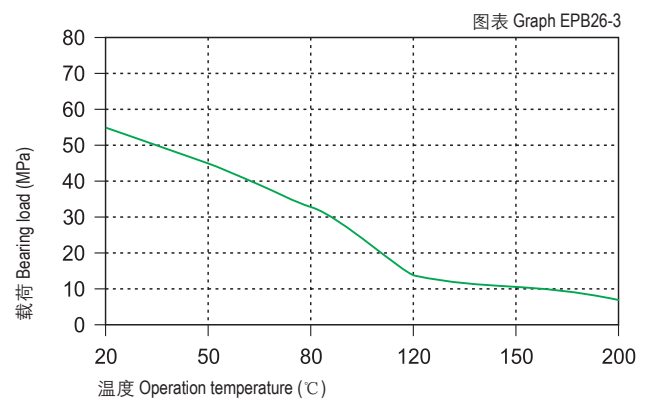
#### 摩擦系数与轴表面粗糙度关系图表 Coefficient of friction & the surface roughness of shaft



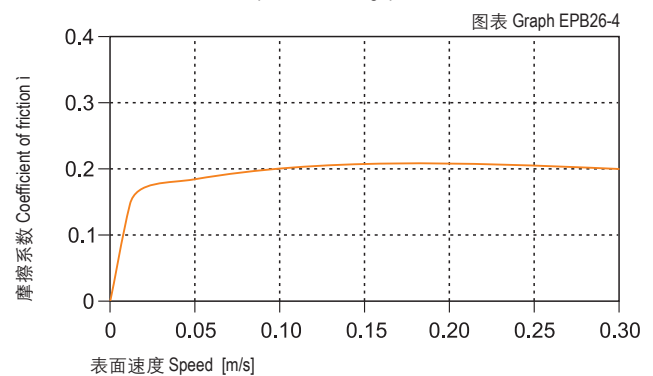
#### 载荷-温度-变形量图表 Load-Temperature deformation



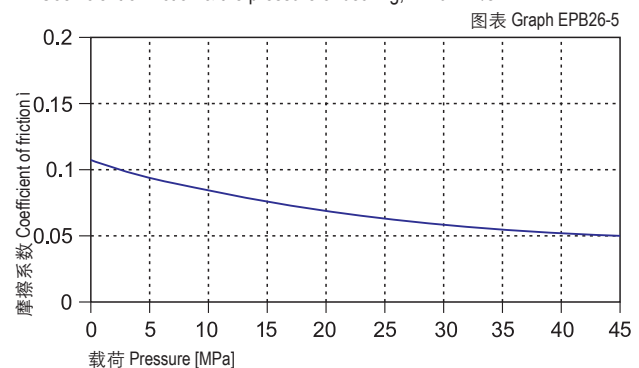
#### 载荷-温度图表 Load-Temperature diagrams



#### 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



#### 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



|                              |            |              |          |            |
|------------------------------|------------|--------------|----------|------------|
| CSB-EPB26                    | 干运行<br>Dry | 油脂<br>Grease | 油<br>Oil | 水<br>Water |
| 摩擦系数 $\mu$<br>Friction coef. | 0.15~0.20  | 0.09         | 0.04     | 0.04       |

### 磨损与轴材料 Wearing and shaft material

图表EPB26-7与图表EPB26-8表明CSB-EPB26塑料轴承同时适用于硬质轴或软轴，在硬化钢轴和不锈钢轴上运行同样出色；但是硬化铝轴不适合用于CSB-EPB26塑料轴承。CSB-EPB26塑料轴承在做旋转运动下的磨损要略好于摆动运动下的磨损。

Graph EPB26-7 and Graph EPB26-8 tells that the CSB-EPB26 is very good for Hardened shaft and soft shaft and it features excellent both on hardened steel shaft and stainless steel shaft but the hardened aluminum shaft is not good for CSB-EPB26 bearings. The wear of CSB-EPB26 is better on rotation operation than on oscillation operation.

### 化学抗性 Chemical resistance

CSB-EPB26塑料轴承具有很好的化学抗性，能抵抗绝大多数酸碱。  
The Chemical Resistance of CSB-EPB26 is fairly good against most of Acid and Alkalis.

### 吸水性 Water absorption

CSB-EPB26塑料轴承在标准大气中的吸湿率为0.1%。浸泡在水中的最高吸水率为0.2%。极低吸水率不会导致轴承发生性能变化和尺寸变化，非常适合用于潮湿环境。

The moisture absorption of CSB-EPB26 plastic plain bearings is 0.1% in standard atmosphere. The max. water absorption is 0.2% in water. These values are very low, CSB-EPB26 plastic plain bearings is very well suited for used in wet applications.

### 抗UV性能 UV resistance

CSB-EPB26塑料轴承长久暴露在紫外线下材料表面会发生蜕变，抗压强度会下降。

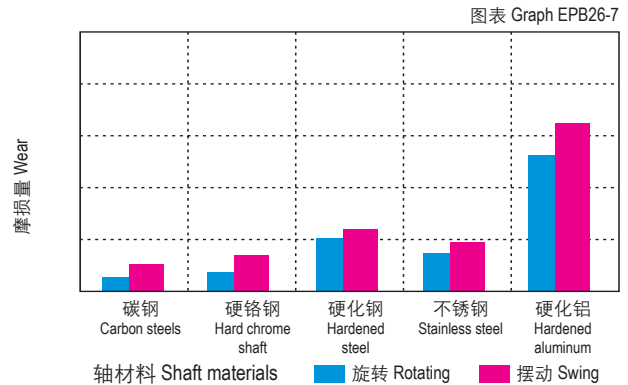
Disintegration could be possible for the material CSB-EPB26 after long period of exposing under the UV ray and therefore the compressive strength will be reduced.

### 安装公差 Installation tolerances

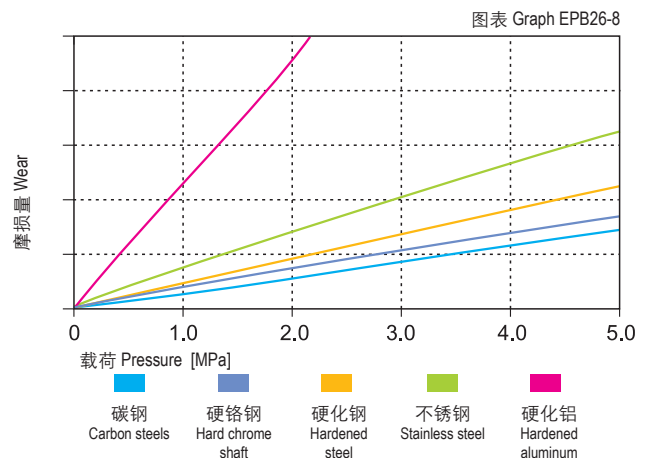
CSB-EPB26塑料轴承压装后公差 Tolerances after pressfit

| 直径 Di.<br>[mm] | CSB-EPB26<br>E10 [mm] | 座孔 Housing<br>H7 [mm] | 轴 Shaft<br>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         |

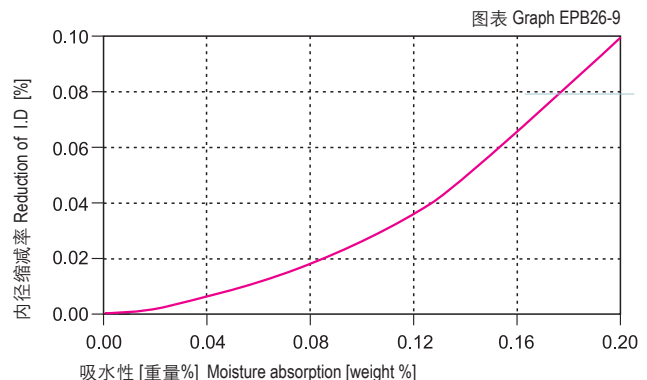
### 在不同轴材料上旋转时的磨损量 $p=2\text{MPa}$ , $v=0.2\text{m/s}$ Wear under rotating with different shaft materials, $p = 2 \text{ MPa}$ , $v = 0.2 \text{ m/s}$



### 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, $v = 0.2 \text{ m/s}$



### 吸水性的影响 Effect of moisture absorption on EPB26 bearings



| 直径 Di.<br>[mm] | CSB-EPB26<br>E10 [mm] | 座孔 Housing<br>H7 [mm] | 轴 Shaft<br>h9 [mm] |
|----------------|-----------------------|-----------------------|--------------------|
| >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         |