

Polymer-tech Solution™

PLASTIC BEARINGS TECHNOLOGY

工程塑料轴承



CSB®



- 成立于1995年，总注册资本7500万人民币；
- 2016年销售额超过4亿元人民币，员工800名；
- 拥有两个生产基地，占地130000m²；
- 国家级高新技术企业，51项专利；
- ISO9001:2008、IATF16949:2016质量认证。
- CSB was established in 1995 and its legal registered capital is 11.5 million US Dollars.
- CSB turnover in 2016 was more than USD 62 million. Currently there are 800 employees working at CSB.
- There are 2 facilities covering over 130000m² with extendable area for future enlargement.
- China National Hi-Tech Enterprise has been granted, 51 patents obtained till now.
- ISO9001: 2008 and IATF16949:2016 quality management system were certificated.

新型自润滑材料适应环境保护要求 Concern for Environment Requirement

CSB积极应对环境保护的要求，通过多年的努力在各个应用领域都已成功开发了满足RoHS要求的不同材料。

Concern for environmental requirement, CSB has developed various kinds of self-lubricating materials to conform to environment requirement.

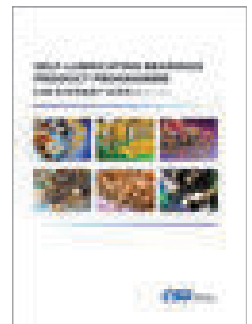
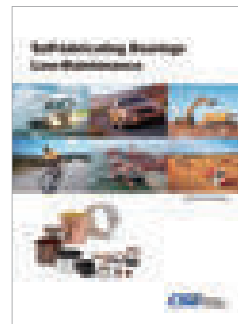
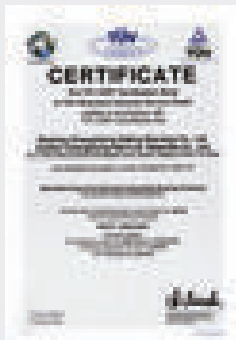
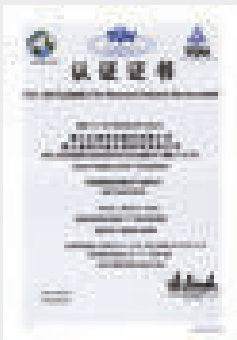
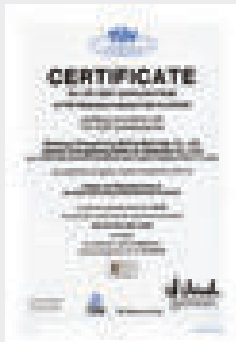
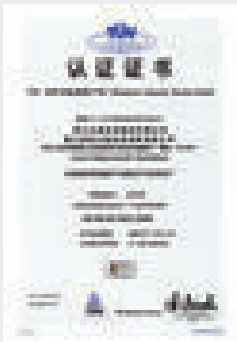
RoHS指令限制的六种有害物质 EC Directive 2011/65/EU (the RoHS Directive)

汞Hg、六价铬Cr⁶⁺、铅Pb、镉Cd、多溴联苯醚PBDE、多溴联苯PBB。

This directive restricts the use of hazardous substances. Listed below are CSB products which are all RoHS compliant.



"CSB", "Ploymer-tech Solution", "Dry Motion-tech", "Dry-idea", "CSB-EPB", "CSB-LIN", "CSB-FWB", "CSB-LMS", "CSB-BAL", "CSB-RPM", "CSB-PEC", "CSB-PCC", "CSB-PEW", "CSB-PPR", "CSB-FLB", "CSB-CPB", "CSB-PCB", "CSB-PYB", "CSB-SRB" and "CSB-PRB" are legally protected trademarks in China and in case also in foreign countries. 中国保护商标，同时在其它一些国家也受当地法律保护。



Your Partner for Self-lubricating Bearing Application

为所有工业提供各种自润滑轴承解决方案



CSB-EPB™工程塑料轴承 Plastic Plain Bearings

自润滑免维护、耐腐蚀、长服务寿命、轻量化；可选：极低摩擦系数、高载荷、抗静电、高温250℃、FDA食品安全等级。

Maintenance-free dry operation, Absolute corrosion resistance, Long service time and light; Multiple choices: Lowest friction coefficient, High load, Anti-static, High temperature 250℃, FDA food safety grade.

P12



CSB-BAL™塑料关节轴承 Plastic Spherical Bearings

自润滑免维护、耐腐蚀、抗污垢、轻量化；可选：多种结构设计满足不同安装需求。

Self-lubricating and maintenance-free, Corrosion-resistant, Anti-fouling, lightweight; Multiple structural design to meet different installation requirements.

P188



CSB-LIN™塑料直线轴承 Plastic Linear Bearings

干运行无需供油、抗粉尘、无噪音、耐腐蚀、长服务寿命、轻量化；可选：高温250℃、多种安装方式。

Dry operation without oil, Anti-dust, No noise, Corrosion resistance, Longer service time and light; Multiple Assemble types, Highest operation temperature 250℃.

P186



CSB-LMS™直线驱动系统 Linear Motion Systems

自润滑免维护直线驱动系统，直线滑动原件及丝杆螺母均采用高耐磨EPB13材料制成，实现永久性干摩擦，低噪音、长服务寿命，适合在粉尘或污水下运行。

Self-lubricating and maintenance-free linear motion system, Linear slider and screw nuts are made of high wear-resistant material EPB13, Dry operation for longer time, lower noise, longer service time and suitable for operation in dust or dirty water.

P223



CSB-SFP™耐磨半成品 Semi-finished Products

采用CSB-EPB高耐磨材料制成，可实现非标轴承的快速加工、小批量制作降低成本；可选：棒材、板材、片材。

The semi-finished products are made of anti-wear and high performance materials CSB-EPB, It can be machined non-standard bearings in short time, saving cost for small quantity; Multiple choices: Bar, sheet and tribo-tape.

P281



CSB-PRB™塑料滚动轴承 Plastic Rolling Bearings

自润滑免维护、耐腐蚀、轻量化；可选：内外圈、保持架、滚珠多种材料可选。

Maintenance-free, corrosion-resistant, lightweight; Multiple choices: inner and outer ring, cage and ball can be designed different materials freely.

P291

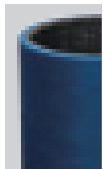


CSB-SRB™回转支承轴承 Slewing Ring Bearings

免维护干运行、低噪音、轻量化；滑动原件可选耐磨材料EPB13、高载荷金属与特氟龙复合材料CSB-11。

Maintenance-free and dry operation, lower noise, lightweight; The slider can be made of wearresistant material EPB13 or metal and teflon composite material CSB-11 for higher load.

P299



CSB-FWB™纤维缠绕轴承 Filament-wound Bearings

连续长纤维复合材料、干摩擦性能最优越、极高的承载能力、最高静载荷240MPa，特别适合用于高载低速下的摆动。

Long fiber composite material, The best performance for dry operation, High load capacity and max. static load 240MPa, Especially suitable for swing with high load and low speed.

P303

<http://www.csb-ep.com>

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CSB Product Family

CSB产品

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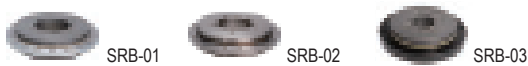
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产品特性 Product Features

- 工程塑料耐磨调整垫片。应用于轴向配合存在不可控间隙的调整。降低运动过程中的振动和噪音
- 补偿轴向间隙和加工公差
- 吸震和降低噪音
- 免维护，自润滑
- 耐腐蚀、质量轻
- Engineering plastic wear resistance washer. Suitable for a fitting to the uncontrollable axial space in order to reduce the vibration and noise during the operation
- Compensate the axial clearance and machining tolerance
- Shock absorbing and noise optimization
- Maintenance free and self-lubricated
- Corrosion resistance and light weight

结构设计 Structure Design

CSB-PEW™ 塑料板簧轴向平面被设计成了凹凸面，从而使得原先的平面垫片变成了既有垫片功能由能调整轴向配合间隙和加工误差，使得设备运行过程中更加平稳和安静。

CSB-PEW™ plastic flat spring is designed with a bump axial surface for the purpose of compensates the axial fitting and machining tolerance in addition to function as a normal washer. Therefore the operation mechanism could be more stable and with less noise.

材料设计 Material Design

CSB-PEW™ 塑料板簧标准设计采用了耐磨专家材料CSB-EPB13，使得塑料板簧在确保弹力的同时具有极好的耐磨性能。当然，CSB也可提供耐高温高达250℃度的CSB-EPB5以及符合FDA食品安全等级的CSB-EPB5A材料制成。

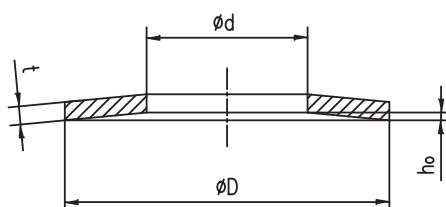
CSB-PEW™ plastic flat spring is made from the professional wear resistance material CSB-EPB13 which provides good wear resistance and excellent spring feature. At the same time, CSB could also provide the spring washer with high temperature (up to 250℃) material CSB-EPB5 and FDA approved material CSB-EPB5A.

安装设计 Assembly Design

一般为了调整配合间隙直接采用一片塑料板簧即可达到效果；当需要调整的间隙较大时，可将塑料板簧成组安装，即面对面或背靠背安装，此时整体板簧的弹力和一个板簧的弹力相同，但挠度和塑料成正比增加；如需要增加弹簧的弹力，可将塑料板簧平行叠装成弹簧组。

In order to adjust the fitting clearance, a single flat spring is usually inserted. For bigger clearance adjustment, a group of flat springs combined with back to back or face to face is also a good solution. If a higher elastic characteristic is needed, piling the flat springs parallel and assembles into the required position.

标准规格 Standard Specifications



订购编码 Order PN:

PEW13-05

内径 Inner diameter

 材料 Material EPB13
EPB5
EPB5A

订购编码 Order PN	板簧挠度和弹力 Spring deflections and spring forces											重量Weight [g]
	D [mm]	d [mm]	t [mm]	h_0 [mm]	$h_{0.25}$ [mm]	$F_{0.25}$ [N]	$h_{0.5}$ [mm]	$F_{0.5}$ [N]	$h_{0.75}$ [mm]	$F_{0.75}$ [N]	F_{max} [N]	
PEW13-05	10	5.2	0.5	0.25	0.06	1	0.13	2.4	0.19	3.6	5	0.04
PEW13-06	12.5	6.2	0.7	0.3	0.08	3	0.15	5.1	0.23	8	12	0.11
PEW13-08	16	8.2	0.9	0.35	0.09	4	0.18	8	0.28	11	15	0.2
PEW13-10	20	10.2	1.1	0.45	0.11	5	0.22	10	0.33	15	18	0.33
PEW13-12	25	12.2	1.5	0.55	0.14	9	0.28	18	0.42	27	40	0.85
PEW13-16	31.5	16.3	1.75	0.7	0.18	15	0.35	32	0.53	51	70	1.44
PEW13-20	40	20.4	2.25	0.9	0.23	35	0.45	70	0.68	110	130	3.1

D: 外径 Outer diameter

d: 内径 Inner diameter

t: 厚度 Thickness

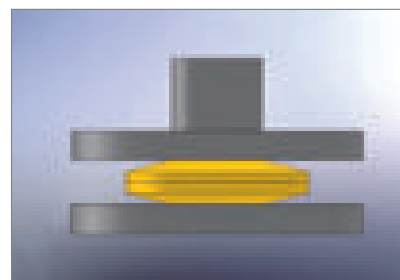
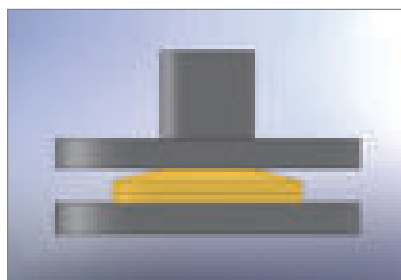
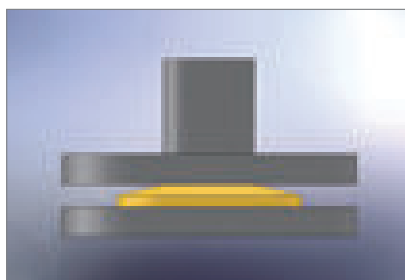
 h_0 : 板簧自由状态下可变形量 Maximum downward deflection of spring

 $h_{0.25}$, $h_{0.5}$, $h_{0.75}$: 分别是板簧变形25%, 50%, 75% The maximum downward deflection: 25%, 50%, 75%

 $F_{0.25}$, $F_{0.5}$, $F_{0.75}$: 分别是板簧变形25%, 50%, 75%时平均弹力 Spring force with 25% 50% 75% downward deflection

 F_{max} : 板簧最大弹力平均值 The maximum spring force

PEW塑料板簧安装方式 Plastic Flat Springs Installation Method



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