

**C** 请联系我们  
**CONTACT US**

LET US KNOW IF YOU NEED



帕普生泵业有限公司  
PUMPSEEN PUMPS CO.,LTD

电话: 010-6240 5101  
官网: [www.pumpseen.com](http://www.pumpseen.com)  
邮箱: [pumpseen@163.com](mailto:pumpseen@163.com)

contact: 010-6240 5101  
website: [www.pumpseen.com](http://www.pumpseen.com)  
email: [pumpseen@163.com](mailto:pumpseen@163.com)

**PUMPSEEN**  
帕 普 生 泵 业

# 帕普生 电池行业应用手册

Pumping Technology in the Battery Industry

高效 · 稳定 · 安全

EFFICIENT · STABLE · SECURE

专注于提供全方位流体输送解决方案

Your Comprehensive Fluid Transfer Solutions Provider

帕普生泵业有限公司  
Pumpseen Pumps Co., Ltd



## 企业简介

# COMPANY PROFILE

帕普生，专注于提供全方位流体输送技术。

在北京设立营销中心，在上海设立研发中心，在安徽设立生产中心，并在全国各省会城市设立办事处，服务于全国各行业客户。

公司拥有完善的生产设施和研发体系，成套检测设备和泵测试平台，坚持以技术创新为动力，以前瞻性的战略眼光，对行业相关技术进行高投入的技术研发，以“创新”为使命，研发生产制造转子泵、螺杆泵、齿轮泵等系列产品。

21世纪初，帕普生团队将转子泵相关技术引入中国，助力了转子泵在中国工业行业应用的新时代。近10年来，帕普生基于庞大的客户应用基础和对转子泵相关技术的深刻理解和掌握，持续加大创新力度，通过严把研发质量关，严把物料采购关，严把生产过程关，严把产品放行关，严把售后服务关，确保产品合格且高品质出厂。在高粘度，高温，高磨损性介质输送的相关技术领域不断攻坚，特别是耐磨损技术和机械密封技术不断突破，产品使用寿命延长，性能大幅提升。

帕普生，专注为客户提供流体输送解决方案。我们在流体输送领域深耕细作，为客户提供定制化解决方案，为企业打造良好的合作体验，服务全球用户，助力客户成就未来。



Pumpseen: Your Comprehensive Fluid Transfer Solutions Provider.

We have established a marketing center in Beijing, a research and development center in Shanghai, and a production center in Anhui. Additionally, we have set up offices in the capital cities of each province to serve customers across various industries nationwide.

The company boasts complete production facilities, a robust R&D system, a full set of testing equipment, and a pump testing platform. Driven by technological innovation and a forward-looking strategic vision, we heavily invest in the research and development of industry-related technologies. Our mission is "innovation," and we specialize in the R&D, production, and manufacturing of rotor pumps, screw pumps, gear pumps, and other series of products.

In the early 21st century, the Pumpseen team introduced rotor pump technology to China, heralding a new era of industrial applications for rotor pumps in the country. Over the past decade, leveraging a vast customer application base and a profound understanding of rotor pump technology, Pumpseen has continuously intensified its innovation efforts. By rigorously controlling R&D quality, material procurement, production processes, product release, and after-sales service, we ensure that our products are qualified and of high quality upon leaving the factory. We persistently tackle challenges in the technical field of transferring high-viscosity, high-temperature, and high-abrasiveness media. Notably, we have made continuous breakthroughs in wear-resistant technology and mechanical seal technology, significantly extending product lifespan and enhancing performance.

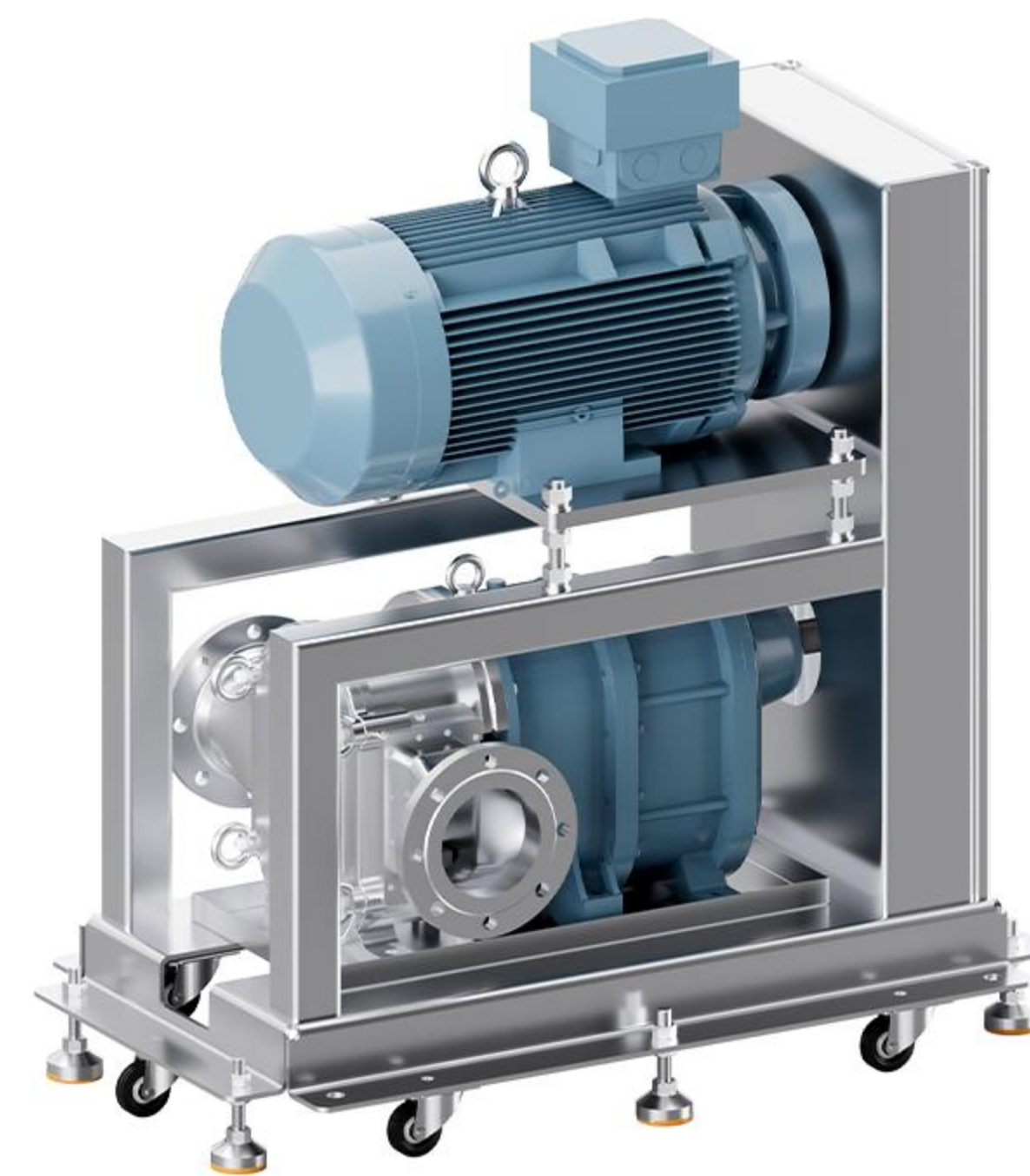
Pumpseen focuses on providing customers with fluid transportation solutions. We delve deep into the fluid transportation field to offer customized solutions, create excellent cooperation experiences for enterprises, serve global users, and help customers achieve future success.



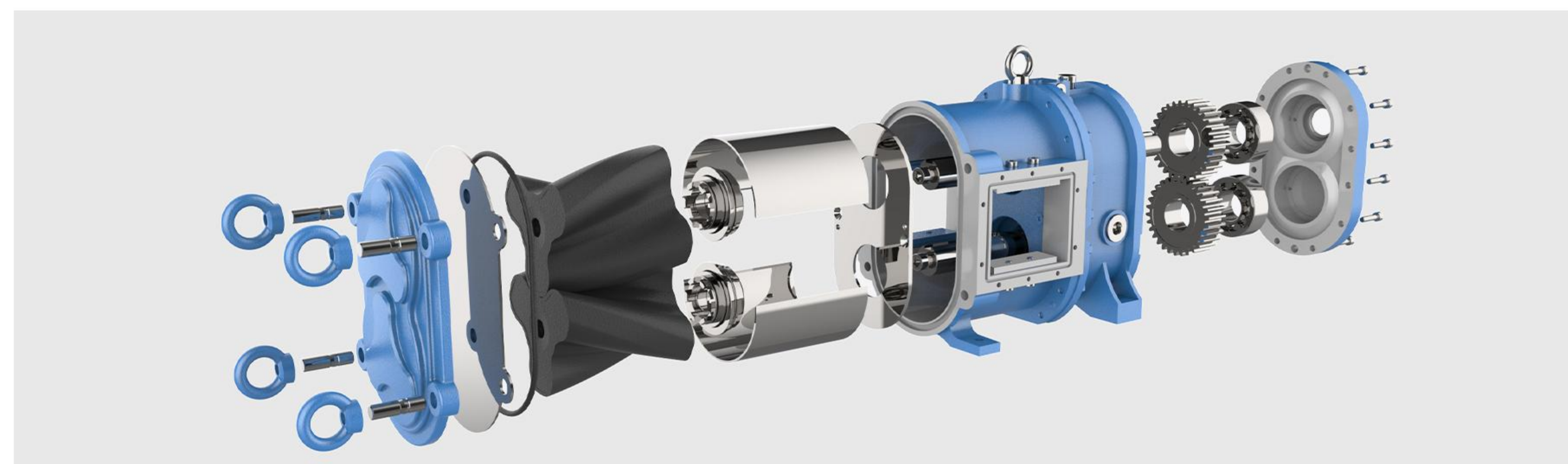


## 转子泵 ROTOR PUMP

帕普生转子泵，又称凸轮泵，是容积式泵家族里一个非常重要的角色。泵结构紧凑，占地面积小，广泛应用于多种行业工况，用于输送高含固率，高磨损，高粘度的介质，转子泵具有高自吸能力，正反可逆的输送特点，流量大小与转速成正比的线性特性，转子的材质类型及泵的安装形式非常多样化，能满足多种需求。



Pumpseen rotor pumps, also known as lobe pumps, are a significant member of the positive displacement pump family. They have a compact structure and small footprint and are widely used in various industries to transport media with high solid content, high wear resistance, and high viscosity. Rotary pumps offer high self-priming capability, reversible transport, and a flow rate proportional to speed, with diverse rotor materials and installation options to meet various needs.



### 技术优势

### TECHNICAL ADVANTAGES

- 可输送高含固率、高粘度的介质；
  - 具有强自吸能力，标准大气压下自吸高度可达8.5M以上，启动无需灌液；
  - 流量与转速成正比关系，几乎不随压力变化，通过改变驱动转速，即可实现流量任意调节；
  - 结构对称，具有正反可逆运行特性
- 具有低脉动，低剪切，低扰动的输送特性，可输送对剪切敏感的介质；
- 结构紧凑，安装方式灵活，占地空间小
  - 具有在线维护特性，维修不需拆动管线及驱动部分；

- Capable of transporting media with high solid content and high viscosity.
- Strong self-priming ability, with a self-priming height of over 8.5 meters under standard atmospheric pressure, eliminating the need for priming.
- Flow rate is proportional to speed, allowing for arbitrary flow adjustment by changing the drive speed.
- Symmetrical structure with reversible operation characteristics.
- Low pulsation, low shear, low disturbance transport, suitable for shear-sensitive media.
- Compact structure, flexible installation, small footprint.
- Online maintenance without dismantling pipelines or the drive part.



Wear resistance



Corrosion resistance



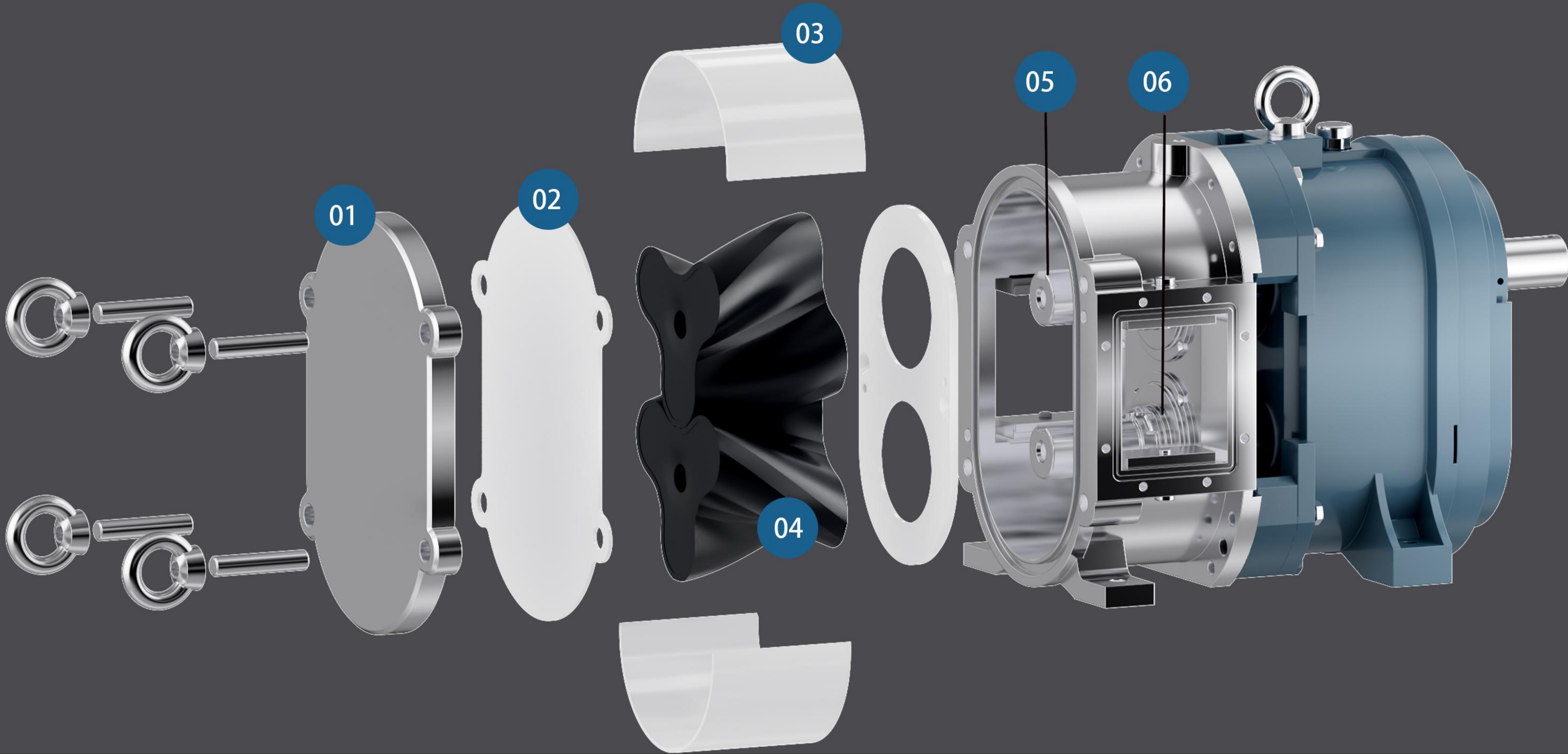
High viscosity



High solid content



产品结构  
PRODUCT STRUCTURE



01 快启式泵盖  
Pump cover

02 轴向衬板  
Axial lining plate

03 径向衬板  
Radial lining plate

04 转子  
Rotor

05 泵轴  
Pump shaft

06 机械密封  
Mechanical seal

泵壳：精密铸造不锈钢304和316L  
保护衬板：陶瓷  
泵盖：悬臂轴设计，泵盖上无轴承，快启设计  
转子：转子有包覆橡胶，全金属，PTFE等多种型式及材质可选  
密封：单机械密封、双端面机械密封，耐磨干运行机封等技术  
轴：粗壮的泵轴不与介质接触，免维护设计，合金钢42CrMo，不锈钢材质可选；  
同步齿轮：正时齿轮，高加工精度，材质合金钢42CrMo  
齿轮腔：整体铸造球磨铸铁，大承载力圆柱滚子轴承，油浴润滑

Pump casing: precision cast stainless steel 304 and 316L  
Protective lining plate: ceramic  
Pump cover: cantilever shaft design, no bearings on the pump cover, quick start design  
Rotors: The rotor is available in various types and materials such as wrapped rubber, all metal, PTFE, etc  
Sealing: single mechanical seal, double end face mechanical seal, wear-resistant dry running machine seal and other technologies  
Shaft: The sturdy pump shaft does not come into contact with the medium, with a maintenance free design. It is made of alloy steel 42CrMo and can be made of stainless steel;  
Synchronous gear: timing gear, high machining accuracy, material alloy steel 42CrMo  
Gear chamber: integral cast ball milled cast iron, high load-bearing cylindrical roller bearings, oil bath lubrication



锂电池生产工艺繁琐，锂离子电池的电极制造中，正极浆料主要由粘结剂、导电剂、正极材料等组成；负极浆料也类似，主要由增稠剂、粘结剂、碳粉或其它负极材料等组成。正、负极浆料的制备都包括了液体与液体、液体与固体物料、固体与固体颗粒之间的相互混合、溶解、摩擦、分散等一系列工艺过程，而且在这个过程中都伴随着温度、粘度、粒度等参数的变化。

在制浆阶段及涂布阶段都需要对成品、半成品正负极浆料、导电剂、胶黏剂、电解液等介质等进行平稳输送，输送过程中介质温度、粘度、含固率、粒度等都对输送技术要求极高，保持浆料原本的特性且杜绝一切铜锌元素。

The production process of lithium batteries is complex. In the electrode manufacturing of lithium-ion batteries, the cathode slurry mainly consists of binders, conductive agents, and cathode materials, while the anode slurry similarly comprises thickeners, binders, carbon powder, or other anode materials. The preparation of cathode and anode slurries involves a series of processes such as mixing, dissolving, friction, and dispersing between liquid and liquid, liquid and solid, and solid and solid particles. Throughout these processes, parameters like temperature, viscosity, and particle size change continuously.

During the slurry preparation and coating stages, it is essential to stably transport finished and semi-finished cathode and anode slurries, conductive agents, adhesives, electrolytes, and other media. The transport process demands high standards for handling the temperature, viscosity, solid content, and particle size of the media while maintaining the original characteristics of the slurry and avoiding any copper or zinc contamination.



## BATTERY INDUSTRY

### 行业应用

☆帕普生锂电行业专用陶瓷转子泵使用陶瓷材料，陶瓷材料硬度大、抗磨损、耐腐蚀，且不含铜、锌等元素，不与介质发生反应。

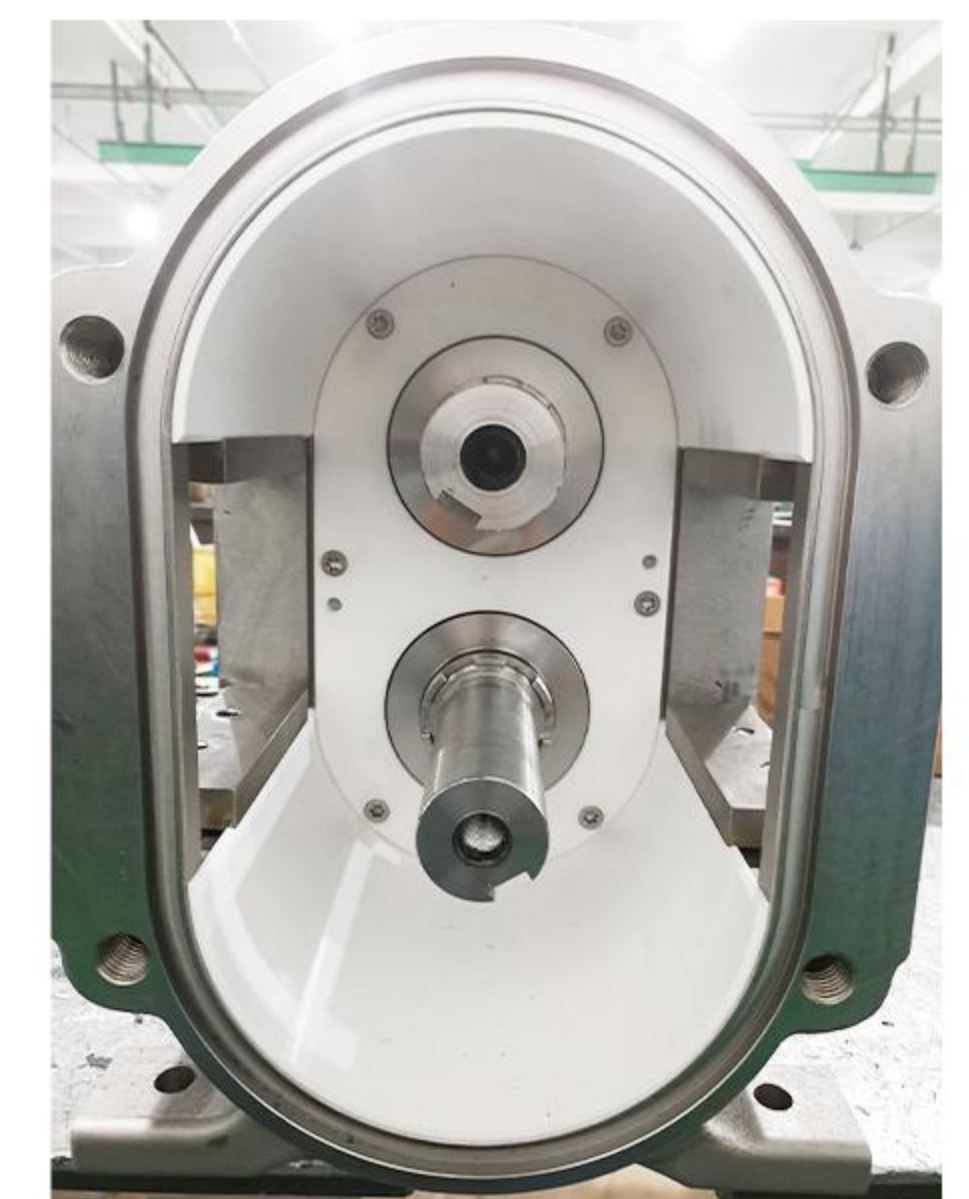
☆转子方面使用三叶螺旋橡胶转子，平稳无脉动输送，耐磨损，耐腐蚀，对介质无污染。泵的密封是非常关键的一个环节，电池浆料是高粘度和高含固率的状态，无法对机械密封形成润滑和冷却作用，导致机封易失效泄漏，寿命短。部分单螺杆泵采用的填料密封会存在跑冒滴漏的问题，对现场环境和正常的生产运行不利。

☆帕普生具有专利技术的耐干运行双重组合密封采用新材料，新结构，在实际应用中表现优秀，保证了生产工艺过程的安全流畅，稳定高效。

☆Pumpseen's ceramic rotor pumps for the lithium battery industry utilize ceramic materials known for their hardness, wear resistance, and corrosion resistance, containing no copper or zinc elements, thus ensuring no reaction with the media.

☆The rotor employs a three-lobe helical rubber design, providing smooth, pulsation-free transport, wear resistance, and corrosion resistance without contaminating the media. Sealing is a critical aspect; battery slurry is highly viscous and has a high solid content, which prevents mechanical seals from providing lubrication and cooling, leading to seal failure and short lifespan. Some single-screw pumps use packing seals that can leak, affecting the production environment and operations.

☆Pumpseen's patented dual-combination seals for dry running utilize new materials and structures, performing excellently in actual applications, ensuring a safe, smooth, stable, and efficient production process.





应用范围

# APPLICATION RANGE

► 锂电行业 • 材料    Lithium Battery Industry • Materials



► 锂电行业 • 浆料    Lithium Battery Industry • Slurries



► 锂电行业 • 回收    Lithium Battery Industry • Recycling



► 钠电行业    Sodium Battery Industry

