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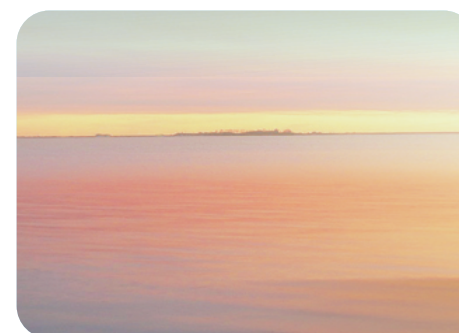


# 无泄漏磁力驱动泵

NON-LEAKAGE MAGNETIC-DRIVEN PUMP

## 产品手册

PRODUCT GUIDE



兰州海兰德泵业有限公司

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# 海兰德

中国磁力驱动泵技术领域的 **领导者**

At the leading dege in field of  
**magnetic driven pump**

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## 公司简介

兰州海兰德泵业有限公司是科技型股份制企业，专业研发生产各类磁力泵和磁性器件，已在兰州新区投资18000万元新建磁力泵高新技术产业园，占地面积72000 m<sup>2</sup>。

多年来公司专注于石油化工、精细化工、煤化工、冶金、电力、医药、制冷等领域，围绕易燃、易爆、有毒、有害、强腐蚀介质和贵重液体输送中的泄漏问题，开展应用磁学、磁驱动技术、流体力学、材料腐蚀特性等方面的研究，在理论和应用上都取得了重要成果。科研成果五项通过省、部级鉴定，四项获部级科技进步三等奖、一项获部级二等奖。一九九一年至二00六年共获得国家专利十三项，曾获国家发明三等奖，并多次获省、部级科技进步奖；二00七年以来，又获得国家发明专利二项，实用新型专利六项，创立了具有自主知识产权的磁力驱动全密封泵专利技术。

公司同兰州理工大学成立的工业泵技术研究中心，使大型磁力驱动泵技术达到了国际领先水平，磁悬浮技术的应用研究，也为磁传动部件高速化和大型化发展奠定了技术基础。

本公司注重科研成果的转化，解决了化工工艺流程中危及操作人员健康、生产安全和环境污染的流体输送问题。目前公司可生产25个系列、300多个品种、1000多个规格的无泄漏磁力驱动泵产品，主导产品有CQA型磁力驱动石油化工流程泵、CQE型磁力驱动石油化工流程泵、CQZ型磁力驱动化工流程泵、CQB型磁力驱动离心泵、CAO型卧式泥浆型磁力泵、CQL型汽液固混输磁力泵、CQF型氟塑料磁力驱动离心泵、DGC型磁力驱动多级离心泵、CW型磁力驱动旋涡泵、MZ型磁力驱动自吸泵、FMZ型氟塑料磁力驱动自吸泵、DR型磁力驱动导热油泵、KCB型磁力驱动齿轮泵、CFY型液下式磁力驱动离心泵、FYO型汽液固混输液下磁力泵、MFY型双壳体液氯磁力泵、MDW型低温磁力泵、CYQ型磁力驱动液化石油气泵、超临界流体输送泵和磁力搅拌釜及釜用磁力搅拌器等。已开发的磁力驱动泵的功率达280kW，流量800m<sup>3</sup>/h，扬程600m，特种泵已在入口压力35MPa的工况下运行，釜用磁力传动器的搅拌功率已达700kW，产品在石油化工行业工况苛刻的特殊流程中使用多年，经过与用户不间断的沟通与交流，日趋完善，可提供高温、低温、高压、耐腐蚀型的各种工艺流程用金属及非金属泵，产品代表着中国磁力驱动泵的最先进水平，承担了国家磁力驱动全密封系列泵高新技术产业化示范工程项目。

经过二十多年的发展，公司拥有了一支高素质的专业磁力泵研发、生产和服务团队，建立了完善的质量管理与质量保证体系，通过了ISO9001、ISO14001、ISO45001质量、环境、职业健康安全管理体系认证，是甘肃省高新技术企业，是全国泵标准化无轴封回转动力泵标准工作组技术委员之一，中石油能源一号网的甲级供应商，是中石化、中国化工集团、中核集团、神华集团的网内供应商，在全国建立了办事处和服务网络，并取得出口许可证，产品远销到欧洲、非洲和东南亚等地，以优异的品质、完美的性能，细致的服务，赢得了良好的声誉和用户信赖。

“海兰德”泵业坚持“运用专有技术，开发特色产品，靠智慧寻求增长；贯彻国际标准，强化内部管理，靠品质做大做强”的企业方针，始终贯彻“创造使顾客忠诚和信赖的品质，追求行业领先地位”的质量方针，与时俱进，开创未来。

## About Us

Lanzhou Highland Pump Co., Ltd. is a science oriented stock enterprise. The Company conducted researches on magnetic science, magnetic driving technology, fluid mechanics and material corrosion characteristics with respect to the demands in petroleum, chemical, metallurgical, power, paper-making, foodstuff, pharmaceutical, refrigerating and military fields with processes endangering the operators' health, production safety and environmental pollution, and the problem of leakage in conveying inflammable and explosive, toxic and harmful, highly corrosive media and valuable liquid, and have obtained important results both theoretically and in application. Five of our scientific research results passed the certification at the provincial and ministry level, with four awarded with third prize of scientific and technological progress at the ministry level, and one with second prize at the ministry level. From 1991 to 2006, thirteen national patents were awarded to the Company, and the Company also got third prize of state award for inventions, and several scientific and technological progress prizes of the province and ministry. It created the patented technology of magnetic driven fully enclosed pump with its own proprietary intellectual property rights.

The industrial pump technology research center set up by the Company with Lanzhou University of Technology has developed the large scale magnetic driven pump technology to the leading international level, and the application and research of magnetic levitation has also laid technological foundation for the development of magnetic driving parts for high speed and large size applications.

The Company attaches importance to the conversion of scientific research results, and today it can produce leakage-free magnetic driven pumps in 15 series with over 300 products and over 1000 sizes. The leading products include Model CQB magnetic driven centrifugal pump, Model CQF fluoroplastic magnetic driven centrifugal pump, Model DGC magnetic driven multi-stage centrifugal pump, Model CW magnetic driven vortex pump, Model MZ magnetic driven self-priming pump, Model FMZ fluoroplastic magnetic driven self-priming pump, Model CAY magnetic driven centrifugal oil pump, Model DR magnetic driven heat transfer oil pump, Model KCB magnetic driven gear pump, Model MCN magnetic driven internal gear pump, Model CFY submerged magnetic driven centrifugal pump, Model MFY magnetic driven submerged pump for liquid chlorine, Model CYQ magnetic driven LPG pump, Model CYQ magnetic driven sliding pump, Model CRH magnetic driven HP emulsification pump and magnetic agitating tank and magnetic drivers for tanks. Magnetic driven pumps already developed by us have power up to 280kW, with a flow of 800m<sup>3</sup>/h and a head of 600m; our large pumps can operate normally at a suction pressure of 15MPa and special pumps can operate at a suction pressure of 30MPa. The agitating power of our magnetic driver for tanks has reached 700kW. Our products have been operated for years under severe and special process conditions in oil fields, refineries, and in chemical, chemical products, metallurgical, power and pharmaceutical industries; we have kept on improving our measurement with continual exchanges with users, and can provide metal and non-metal pumps for various process flows with high and low temperature, high pressure and of corrosion resisting types. We are undertaking a national demonstration project for industrialization of high-tech technology of fully enclosed series magnetic driven pumps, and these products represent the most advanced level of magnetic driven pumps in China.

After development for over two decades, the Company has a high-quality team and has established sound quality management and quality assurance system, Passed the ISO9001 quality management system, ISO14001 environmental management system, ISO45001 occupational health and safety system certification, it is a technical member of the working committee for standard of rotary power pumps without shaft seal of the national pump standardization committee. The brand "Highland" is a famous trademark of Gansu Province, and the Company has become a grade A supplier among the level I suppliers of CNPC, and the supplier of China Chemical Group, Shenhua Group and a number of design institutes of SINOPEC; it has established offices and service network all over the country and is exporting its products, winning good reputation and trust from users with excellent quality, perfect performance, and timely and thoughtful services.

"Highland" Pump adheres to the enterprise policy of "applying proprietary technologies, developing features products and seeking growth with wisdom; carrying out international standards, strengthening internal management and growing more powerful with high quality", and carries out the quality policy "making quality for customer fidelity and trust and pursuing for leading position in the industry", advancing with the times for a better future.



企业荣誉 Enterprise Honor



企业发展 Enterprise Development

航天510所是早期磁力驱动技术应用的先导。  
1981年在兰州生产出了中国第一台磁力驱动泵。  
2003年4月承接国家磁力泵产业化示范工程项目。  
2007年入驻兰州市安宁区高新技术产业园，初具生产规模。  
2019年入驻兰州新区投资18000万元，新建磁力泵高新技术产业园。  
目前已开发并投入使用磁力驱动泵功率已达280KW，流量800m<sup>3</sup>/h，扬程600m，转速2900r/min，代表了中国磁力驱动泵的最先进水平。

采用了获国家发明奖的推拉磁路设计技术，将泵的入口压力提高到35MPa的高压下仍可正常工作，达到了国际先进水平。  
解决了国内复杂的工业系统中易散性物料的泵送问题，已广泛应用于油田、炼油、石油化工、化学制品、冶金、电力、食品、纺织、医药、制冷和核工业等行业。

产品有磁力驱动的单级离心泵、多级离心泵、自吸泵、旋涡泵、液下泵、泥浆泵、低温泵、齿轮泵、滑片泵和乳化泵等多种系列。产品性能参数可满足多类工艺过程要求，符合ISO2858、API610和API685标准。

与国内的竞争对手相比，可以提供优质的产品 & 强有力的服务；与国外竞争对手相比，拥有备配件的及时供应及良好的性价比。

可提供卧式、立式、低温、高温和高压型的多种金属及非金属泵。

510 Institute of Ministry of Aviation & Aerospace is an early front-runner in the application of magnetic drive technology. Making the first magnetic driven pump of China in Lanzhou in 1981.  
In April 2003, the company accepted the national magnetic pump industrialization demonstration project  
In April 2007, the company moved to the High-tech Industrial Park in Anning District, Lanzhou, and the production scale was expanded.

In 2019, the company settled in Lanzhou New District and invested 180 million to build magnetic pump high-tech industrial park.

Magnetic driven pumps already developed and put into service have power up to 280kW, with a flow of 800m<sup>3</sup>/h, a lift of 600m, and speed of 2900r/min, representing the most advanced level of magnetic driven pumps in China.

The push-and-pull magnetic path design technology winningstateaward for inventions is adopted, increasing the pump suction pressure to 35MPa for normal operation, reaching the international advanced level.

The products have solved the pumping problem of bulk materials in complicated industrial systems, and have been extensively used in oil fields, refineries, petrochemical, chemical products, metallurgical, power, foodstuff, textile, medicine, refrigerating and nuclear industrial sectors.

Products are available in a number of series of magnetic driven single-stage centrifugal pump, multi-stage centrifugal pump, self-priming pump, vortex pump, submerged pump, gear pump, sliding pump and emulsification pump. Product performance parameters can meet requirements in various processes, complying with ISO2858, API610 and API685 standards.

We can provide high quality products and powerful service in comparison with domestic competitors, and we can ensure timely supply of spare parts and good performance to price ratio in comparison with overseas competitors.

A large varieties of horizontal and vertical metal and non-metal pumps for low and high temperature and high pressure applications can be supplied.



高压旋涡泵生产现场



泥浆型磁力泵生产现场



160KW大型磁力泵生产现场



## “海兰德”解决了磁力驱动技术在工业应用方面的技术难题：

“Highland”has solved difficult technical issues in industrial application of magnetic driving technology:

- 大磁间隙的磁路设计与工业运用
- 强腐蚀性介质输送过程中过流部件的选材问题
- 高温下非金属材料 and 金属材料的复合问题
- 特种塑料的压塑技术问题
- 滑动轴承在特种介质下的磨擦与润滑问题
- 高温下永磁材料的退磁问题
- 液态烃、丙烷、液氨、液氯等易汽化液体的输送问题
- 含固体介质的输送问题
- 高入口压力下隔离套的承压技术问题
- 大功率磁力驱动技术问题

Magnetic path design and industrial application of big magnetic clearance  
Selection of materials for flow passage components in the conveying of highly corrosive and high viscosity media  
Composition of non-metal and metal materials at high temperature  
Compression molding of special plastics and metal materials  
Friction and lubrication of sliding bearings with special media  
Demagnetization of permanent magnet materials at high temperature  
Problems in conveying liquid likely to vaporize such as liquid hydrocarbon, propane, liquid ammonia and liquid chlorine  
Conveying of media containing solids  
Pressure withstanding of spacer at high suction pressure  
High power magnetic driving technology



4.2米液下磁力泵生产现场



小型磁力泵生产现场



CQL型磁力泵生产现场

## “海兰德” 质量保证体系

Quality assurance system of “Highland”

“海兰德” 已通过ISO9001质量管理体系认证，一流的品质是海兰德泵业永远的追求。

“创造使顾客忠诚和信赖的品质，追求行业领先地位” 是“海兰德” 的质量目标。

“海兰德” 泵主要运行在油田、炼油、石油化工、化学制品、电力、冶金、食品、制药等行业工况苛刻的特殊流程中，就象流程的心脏，安全可靠无泄漏地运行是必须的。

经过二十多年的工艺装置用磁力泵的配套和与客户不间断的沟通与交流，“海兰德” 泵日益完善，成为国内磁驱动泵技术领域的领导者。

每一台泵都经过性能及水压测试，组装泵的每个零件、部件、组件等均经详细的检测及评价，确保“海兰德” 产品的质量。

合理的选型至关重要，要对所涉及的工艺过程有充分的了解，包括流体的腐蚀特性、比重、粘度、温度、饱和蒸汽压、溶解性气体含量和固体含量等，“海兰德” 富有经验的工程师会提供高水准的技术咨询和售后服务。

我们一贯提供专业高效的售后服务，若有需要，“海兰德” 的资深工程师会及时到达使用现场。

"Highland" has passed the ISO9001 quality management system certification, and first-rate quality is the forever pursuit of Highland Pump.

"Making quality for customer fidelity and trust and pursuing for leading position in the industry" is the quality objective of "Highland".

"Highland" pumps mainly operate in special processes with severe conditions in oilfields, refineries, petrochemical, chemical products, power, metallurgical, foodstuff and pharmaceutical sectors, like the heart in the process, and therefore safe and reliable operation without leakage is the primary requirement.

With the operation of magnetic pumps in process plants and continued exchanges with customers for more than two decades, "Highland" pumps are becoming daily perfectas the leader in the field of magnetic driven pumps in China.

Every pump is subjected to performance and hydrotest, and every part, component and assembly of the pump is tested and examined in detail, to ensure the quality of "Highland" products.

Reasonable type selection is of vital importance; the related processes should be fully understood, including the corrosive characteristics of the fluid: the specific gravity, viscosity, temperature, saturated vapor pressure, content of dissolved gas and solid content. The "Highland" engineers with rich experience will provide high standard technical consultancy and after-sale services.

We provide professional and highly effective after-sale services at all times; when in need, senior engineers of "Highland" will come to the site in good time.



生产现场



泵试验台



用户考察



磁力驱动泵工作原理

Working principle of magnetic driven pumps

运用磁性联轴器来传递转矩，外磁转子的永磁场穿过密封隔离套感应内磁转子，使叶轮的驱动轴与电机轴之间在无刚性联接的情况下，通过磁性联轴器将驱动机的轴功率传递给泵的叶轮。隔离套将内磁转子和输送的介质与外磁转子完全隔离。

磁力驱动泵有别于其他机械密封泵，无动密封，只有静密封，从根本上解决了流程中机械密封泵的跑、冒、滴、漏问题，做到了完全无泄漏。

采用独特的润滑及冷却回路，一部分工艺液体自润滑和冷却传动部件，省去了机械密封泵所需的密封隔离液、冷却、冲洗等繁杂的管路系统。解决了高入口压力下泵的密封难题，实际应用到的泵的入口压力已达35MPa，机械密封泵很难做到这一点。

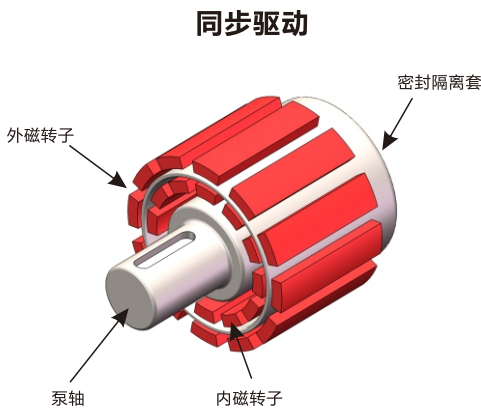
磁力驱动泵运行安全可靠，噪音低，无泄漏，工艺现场清洁安全，是真正意义上的工业环保型产品。

Magnetic coupling is used to transfer torque; the permanent magnetic field of outer magnetic rotor penetrates the sealed spacer to induce the inner magnetic rotor, so that the shaft power of the driving machine is transferred to the pump impeller via the magnetic coupling without rigid connection between the impeller driven shaft and the motor shaft. The spacer sleeve completely isolates the inner magnetic rotor and conveyed media from the outer magnetic rotor.

Magnetic driven pumps are different from other mechanically sealed pumps in that they have no moving seal and only static seal is used, fundamentally preventing the leakage and dripping problem with mechanical seal pumps, and realizing complete leakage free.

Unique lubrication and cooling circuits are used, with part of process liquid lubricating and cooling the driving parts, saving the complicated piping systems for sealing spacer liquid, cooling and flushing with mechanical sealed pumps. This has solved a difficult issue of pump sealing at high suction pressure; in actual application, the pump suction pressure has reached 30MPa, which is quite difficult for pumps with mechanical sealing.

Magnetic driven pumps feature safe and reliable operation, low noise and no leakage, and clean and safe process site, being true environmental-friendly industrial products.



磁力泵的保护及状态监测

Protection and status monitoring of magnetic pumps

磁力泵解决了工业系统中易散性物料的输送问题，然而泵在工作时均可能因工艺条件的不稳定而有所影响，因而推荐采用保护装置。

“海兰德”提供了多种类型的监测保护装置：

**欠流保护器：**当泵的流量大幅度下降时，电流会大大降低，当工作电流连续低于设定的电流限值时，保护器可自动实施防护报警和切断主电源，动作时间≤10秒。可防止泵吸入口无液、液流不足和介质汽化、汽蚀等造成泵的空载或轻载故障。该保护器同时具有欠载、过载、三相电流不平衡、断相保护等功能。

**温度监控装置：**用温度探头来监测隔离套的温度，以反映泵在操作中状态的变化，可对磁传动器内部摩擦、轴承失效和内部润滑不畅实施监控。可防止泵的干运转、内外轴承磨损、严重汽蚀、泵卡死、以及系统过热等。

**压力监控装置：**适用于双层隔离套结构，通过对隔离套之间的压力检测实施监控，确保工艺系统运行安全。

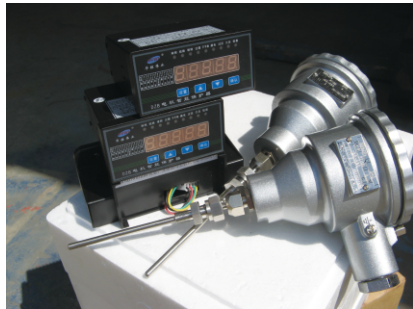
Magnetic pumps have solved the problem of conveying dispersing materials in industrial systems; however, the operation can be affected by unstable process conditions, and therefore protection devices are recommended.

“Highland” provides monitoring and protection devices in a number of types:

**Undercurrent protector:** when the pump flow drops substantially, the current will reduce greatly; when the working current remains below the set current limit, the protector can perform automatic protection alarm and cut off the main power supply, with an operation time ≤10s. This can prevent no liquid or insufficient liquid flow at the pump suction, and pump no load or light load resulting from vaporization or cavitation of media. This protector can simultaneously provide functions of underload, overload, unbalanced three-phase current and open phase protection.

**Temperature monitoring device:** the temperature of the spacer sleeve is monitored with a temperature probe, to reflect the change of operation status of the pump; it can monitor internal friction of magnetic driver, bearing failure and unsmooth internal lubrication. It can prevent pump dry operation, wearing of internal and external bearings, serious cavitation, pump seizure and system overheating.

**Pressure monitoring device:** it is applicable to double-layer spacer sleeve structure, to perform monitoring by testing the pressure between the spacer sleeves, so as to ensure operation safety of the process system.



监测防护装置



生产现场实施监控



双壳体磁力泵



## 磁力泵可以抽送的典型流体

Typical fluids that can be pumped by magnetic driven pumps

酸类、碱类、烃类、醇类、溶剂类、热媒体类、卤化物类、氮及硫化合物类、盐类、石油化学品类、核污染类。

Acids,alkalis,hydrocarbons,alcohols, solvents, thermal media, halides, nitrogen and sulfur compounds, salts, petrochemical products and nuclear contaminated materials.

## 磁力驱动泵的应用领域

Application fields of magnetic driven pumps

随着环境保护愈来愈受到全球的重视及相应环保法规的颁布实施，磁力驱动泵因无泄漏、全密封和低噪音，解决了工业系统中易散性物料的泵输送问题，从而被誉为环保型的高科技产品。

近几年来，磁力泵发展势头强劲，由于其使用现场的可维修性优势，正逐步取代相同性能的机械密封泵和屏蔽泵，已被广泛应用于油田、炼油、石油化工、化学制品、化肥、核电、冶金、食品、纺织、医药和制冷等领域工业系统中，输送易燃易爆、有毒有害、腐蚀性介质及不允许密封污染的介质。

With the increasing global attention to environmental protection and implementation of relevant environmental protection regulations, magnetic driven pumps became known as environmental-friendly high-tech products for their leakage-free, fully enclosed and low noise operation, having solved the problem of pumping dispersing materials in industrial systems.

In recent years, magnetic driven pumps have been developing with a power momentum, with their advantages of site maintainability; they are replacing mechanical sealed pumps and shielded pumps step by step, being extensively used in industrial systems of oilfields, refinery, petrochemical, chemical products, chemical fertilizer, nuclear power, foodstuff, textile, pharmaceutical and refrigerating fields, to convey inflammable and explosive, toxic and harmful corrosive media containing no solid particles and media not allowing contamination by sealing.

## 用户现场

User Field



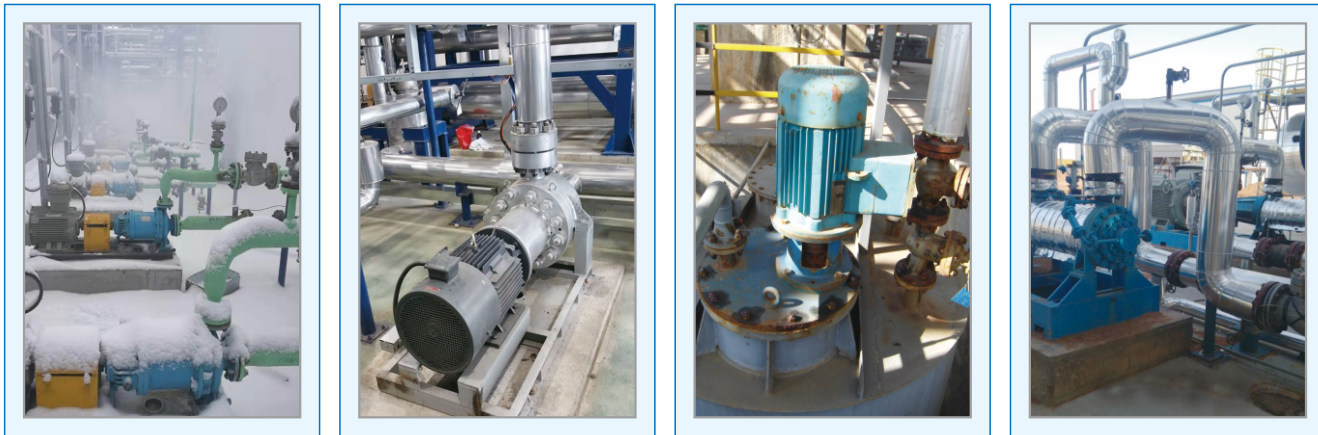
DGC型磁力驱动多级泵



MDW型低温磁力驱动泵



DR型磁力驱动导热油泵





## CQB型磁力驱动离心泵

### CQB Magnetic Driven Centrifugal Pump

CQB型泵是磁力驱动单级单吸离心泵，是新型的磁力驱动化工流程泵，产品设计采用ISO2858标准。该产品旨在解决石油化工流程中易燃易爆、有毒有害及稀有贵重流体的输送问题。具有全密封、无泄漏、无污染、振动小及噪音低的显著特点，是石油化工、精细化工、冶金、电力、造纸、制药、食品等行业理想的环保型产品。

本产品适宜输送不含固体颗粒的易燃、易爆、有毒、有害及贵重介质和其他要求无泄漏及介质不允许密封材料污染的场所。

除非能有效排除铁磁性微粒，否则本产品应避免输送含有铁磁性物料的液体。

CQB Magnetic Driven Centrifugal Pump is a magnetic driven single-stage single-suction centrifugal pump, a new type magnetic driven chemical process pump, designed to ISO2858 standard. This product is designed to convey inflammable and explosive, toxic, harmful and rare valuable fluids in the petrochemical process. It has the distinctive features of full-enclosure, leakage free, contamination free, low vibration and noise, an ideal environmental-friendly product in petrochemical, fine chemical, metallurgical, power, paper-making, pharmaceutical and foodstuff industries.

This product is suitable for conveying inflammable and explosive, toxic, harmful and valuable media containing no solid particles and in other applications requiring no leakage, and no contamination of sealing materials by media.

Unless ferrous magnetic particles can be effectively removed, conveying liquid containing ferrous magnetic material with this product should be avoided.

### 结构说明 Description of structure

1. 该型泵为单级、单吸、卧式、径向剖分，轴向吸入、径向排出。全密封，无泄漏。
2. 采用ISO2858标准，方便替代IH型、ZA型和CZ型化工流程泵。
3. 工艺液体自冷却润滑传动部件，不需要额外管路系统。
4. 整台泵只需1~2个密封圈，确保了运行安全。
5. 优化的刚性轴结构设计，具有更佳的挠度指数，使泵的振动值进一步降低。
6. 泵的轴向力主要靠叶轮上的副叶片或者平衡孔进行水力平衡，残余轴向力由推力轴承承受。
7. 采用大厚度、重载、强推力陶瓷轴承，选用高纯度、高耐磨性的碳化硅材料，使用寿命长。
8. 内外磁转子均为全密封式结构，防止泵在腐蚀环境下磁体腐蚀和磁性能的衰退。



9. 泵体具有底脚支撑和中心支撑（CQBH）两种形式，供不同温度介质时选用，基本型采用底脚支撑、低温与高温型采用中心支撑。

10. 新型的诱导轮技术，可使泵的必需汽蚀余量更低。

11. 多种循环方式将泵内产生的涡流热和摩擦热带走，以满足不同介质的输送。典型的循环系统有：内循环式。通过泵内液体压力差形成自循环。外循环式。当不宜使用泵送介质进行自润滑冷却时，可引入外来液体，但外来液体必须高于泵腔内的压力0.07~0.1MPa。

12. 一般无需额外的冷却循环系统。

13. 因结晶、汽化等工况需要时，可带冷却或保温夹套。

14. 可选择电机直连或通过联轴器连接的形式。

15. 从驱动端看，泵为顺时针方向旋转。

16. 法兰标准可提供ANSI、HG/T20615、HG/T20592等多种选择。

17. 可配带普通Y系列电机、YB系列防爆型电机、直流电机和永磁电机等。

1. This pump is of horizontal single stage and single suction type with radial split, axial suction and radial discharge. It is fully enclosed and leakage free.

2. It is based on ISO2858 standard, and can be conveniently used in place of type IH, ZA and CZ chemical process pumps.

3. The driving parts are cooled and lubricated by process liquid, without additional piping system.

4. In the whole pump, only 1~2 sealing rings are used, ensuring operation safety.

5. Optimized rigid shaft structure design with better deflection index has further reduced the vibration of the pump.

6. The axial load on the pump is mainly balanced hydraulically by the back blades or balance holes on the impeller, and the residual axial force is on the thrust bearing.

7. Ceramic bearings of big thickness, heavy duty and high thrust are used, and they are made with high purity and high wear resisting carborundum material, with a long service life.

8. Both internal and external magnetic rotors are in fully enclosed structure, to prevent corrosion of magnetic mass and attenuation of magnetic property with the pump in corrosive environments.

9. Pump body is available in two types: foot support and center support, for use with media of different temperature; the basic model is provided with foot support and low and high temperature types with center support.

10. New type inducer technology is adopted, to further reduce the necessary NPSH of the pump.

11. The heat produced by eddy current and friction in the pump is carried away with a number of circulation forms, to allow conveying different media. Typical circulation systems include: Internal circulation. Self-circulation is formed by the liquid differential pressure within the pump. External circulation. When self-lubrication and cooling with pumped media is not suitable, external liquid can be connected, provided that the incoming liquid pressure must be 0.07~0.1MPa above the pressure within the pump cavity.

12. Normally additional cooling circulation system is not required.

13. Cooling or insulation jacket can be provided when required in conditions such as crystallization and gasification.

14. Either direct driving by motor or via coupling can be used.

15. The pump rotates in a clockwise direction when viewed from the driving end.

16. A number of options for flanges to standards ANSI, HG/T20615 and HG/T20592.

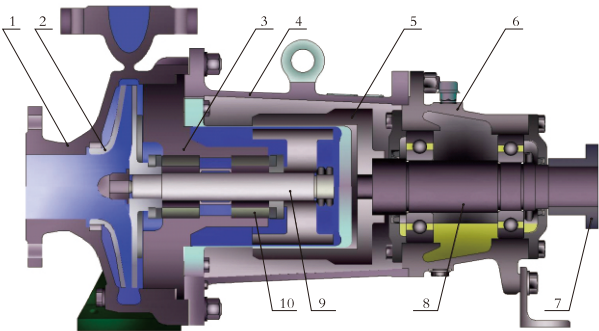
17. It can be provided with general-purpose Y series motor, YB series explosion-proof motor, DC motor and permanent magnetic motor.ia, halides, nitrogen and sulfur compounds, salts, petrochemical products and nuclear contaminated materials.



性能范围 The main specifications

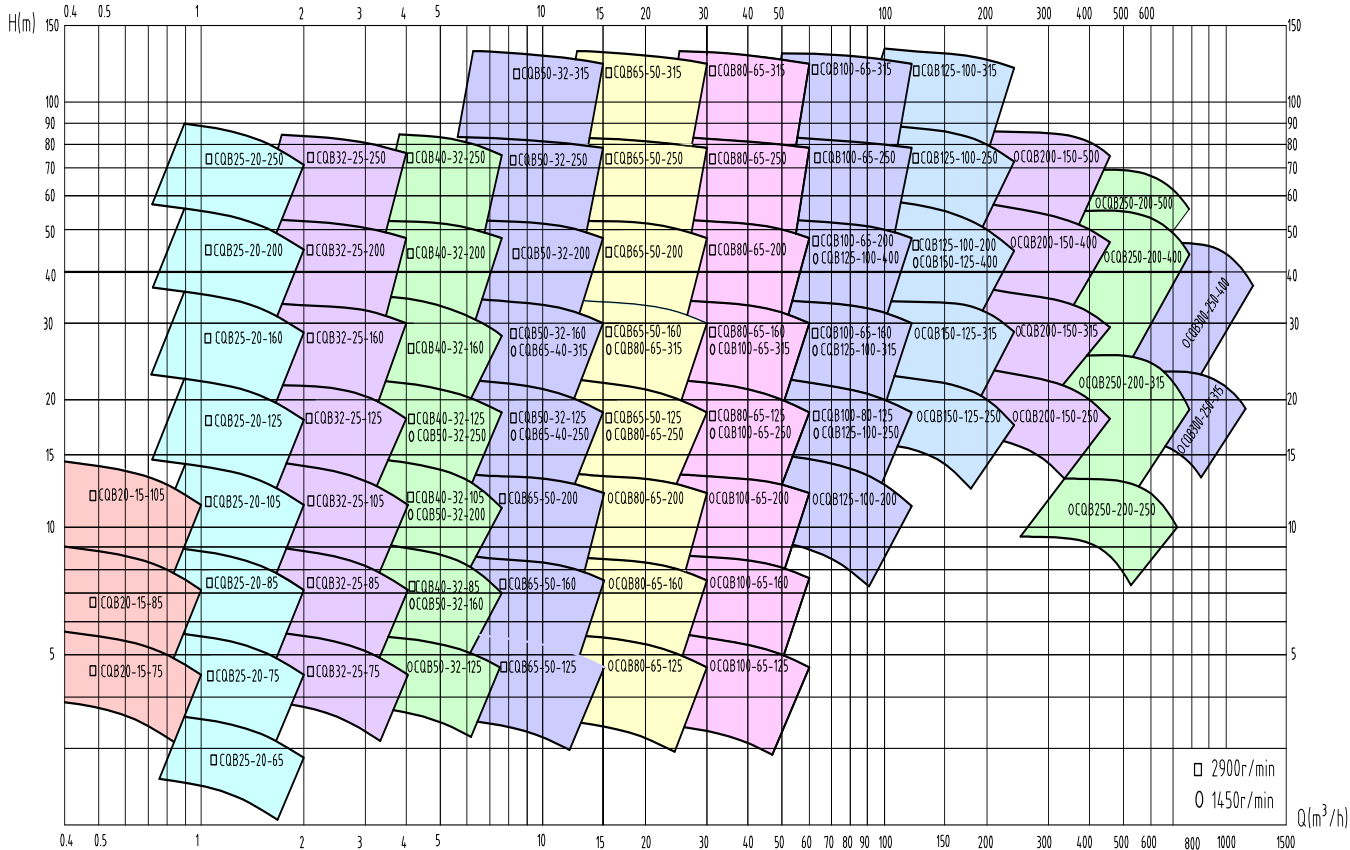
|        |                          |              |
|--------|--------------------------|--------------|
| 流量     | Flow                     | 0.8~1000m³/h |
| 扬程     | Head                     | 3.2~125m     |
| 介质温度   | Temperature              | -45℃~+450℃   |
| 进口直径   | Import diameter          | 20~300mm     |
| 额定工作压力 | The max working pressure | 1.6MPa       |

CQB型磁力驱动泵结构图 Structure of CQB



- 1. 泵体 pump body
- 2. 叶轮 impeller
- 3. 泵盖 disk support
- 4. 支架 support
- 5. 磁传动部件 magnetic driving part
- 6. 轴承体 Bearing body
- 7. 联轴器 coupling
- 8. 托架轴 bracket shaft
- 9. 泵轴 shaft
- 10. 滑动轴承组件 Sliding bearing components

CQB型谱图 Spectrum of Model CQB



CQA型磁力驱动石油化工流程泵  
CQA Magnetic Driven Petrochemical Process Pump

CQA型泵为单级单吸卧式磁力驱动石油化工流程泵，该型泵参照美国石油学会API685及其相关标准设计制造，具有全密封、无泄漏、无污染，效率高，汽蚀性能好、零部件通用性、互换性好，结构安全可靠，运转稳定等特点，可广泛应用于石油化工、精细化工、冶金、电力等行业。

CQA型泵通过内外磁转子进行耦合传动，隔离套将内磁转子密封在泵腔内，运用磁力驱动技术，解决了石油化工流程中易燃易爆、有毒有害及稀有贵重流体的输送问题。

本产品适宜输送不含固体颗粒的介质和不允许密封材料污染的场所。

除非能有效排除铁磁性微粒，否则本产品应避免输送含有铁磁性物料的液体。

CQA pump is a single stage, single suction horizontal magnetic drive petrochemical process pump. It has been designed and manufactured by referencing API685 and other relevant standards. It features full sealing, no leakage, no pollution, high reliability, good cavitation performance, good versatility and interchangeability of parts, high structural safety and reliability, and stable operation etc. It can be widely used for petrochemical industry, fine chemical industry, metallurgy, and electric power industry etc.

CQA pump is driven by coupled internal and external magnetic rotors. An isolation sleeve seals the internal magnetic rotor inside the pump cavity. Magnetic drive technology has been used, solving the difficult problem of conveying inflammable, explosive, toxic, harmful, rare, and noble fluids in petrochemical flow path.

This product is applicable to conveying media not containing solid particles and occasions where contamination of sealing material is not permitted.

Unless ferrous magnetic particles can be effectively removed, conveying liquid containing ferrous magnetic material with this product should be avoided.

结构说明 Description of structure

- 1. 该系列泵均为单级、单吸、卧式悬臂离心泵；
- 2. 泵为轴向水平吸入，径向垂直排出，也可制成左侧或右侧排出；
- 3. 泵体为蜗壳式、径向剖分，具有底脚支撑（CQA型）和中心支撑（CQAH型）两种形式；
- 4. 叶轮为整体铸造，带有后密封环和平衡孔，以平衡轴向力；
- 5. 通过泵送工艺液体自循环和外接液体强制循环等多种循环方式将泵内产生的涡流热和摩擦热带走，以满足不同工况介质的输送。
- 6. 因结晶、汽化等工况需要时，可带冷却或保温夹套。
- 7. 优化的刚性轴结构设计，具有更佳的挠度指数，使泵的振动值进一步降低。
- 8. 内置滑动轴承采用了大厚度、重载、强推力陶瓷轴承，选用高





纯度、高耐磨性的碳化硅材料，使用寿命长。

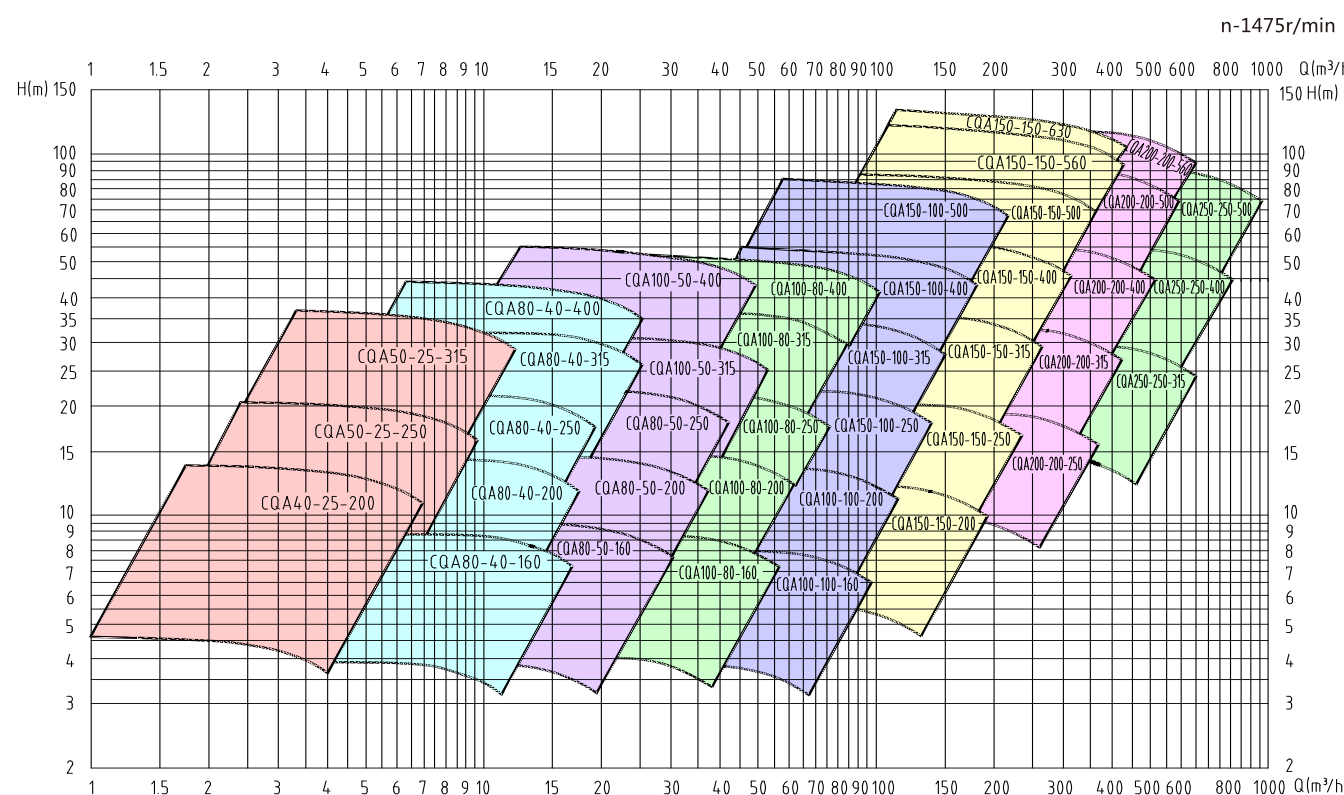
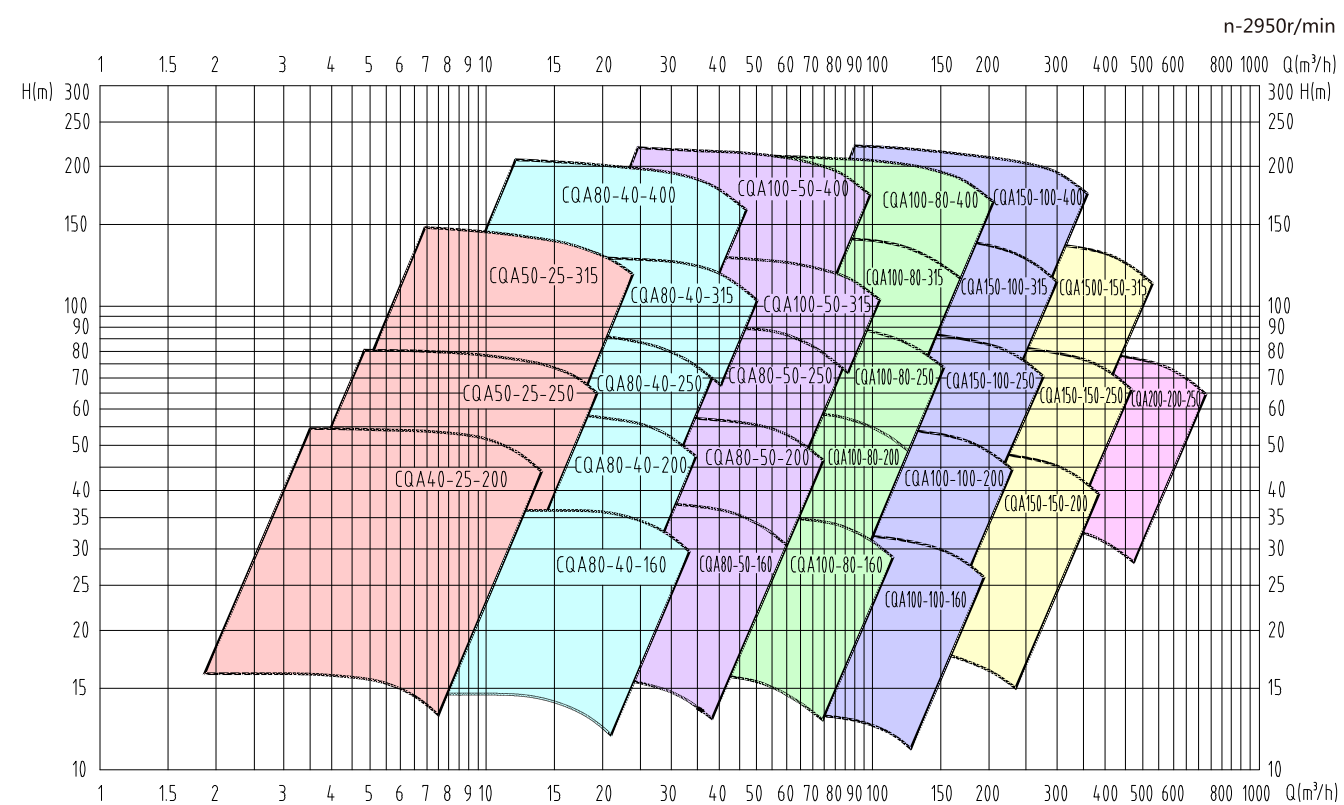
9. 内外磁转子均为全密封式结构，防止泵在腐蚀环境下磁体腐蚀和磁性能的衰退。
10. 滚动轴承采用稀油润滑，其油位由油标和油杯同时控制，油杯能自动补偿油位；
11. 采用了加长挠性膜片式联轴器部件，检修时不必拆卸吸入和吐出管路就能拆出叶轮、轴等零部件；
12. 泵和电机安装在同一个公用底座上。
13. 法兰标准可提供ANSI、HG/T20615、HG/T20592等多种选择。
14. 可配带普通电机、防爆电机、直流电机和永磁电机等。

1. This series pumps are all single stage, single suction, horizontal cantilever centrifugal pumps.
2. These pumps adopt axial horizontal suction and radial vertical discharge (or left or right discharge).
3. Pump body adopts volute type, radial splitting, and bottom feet support (model CQA) or central support (model CQAH).
4. The impeller is an integral casting, complete with rear seal ring and balance hole to balance axial force.
5. Eddy flow heat and friction heat generated in the pump is taken away by various circulation modes, e.g. pumped process liquid self-circulation and forced circulation of externally connected liquid, to satisfy conveying of media under different operating conditions.
6. Cooling or thermal insulation jacket can be provided if required by operating condition such as crystallization or evaporation.
7. Optimized rigid shaft structural design provides better deflection index, further reducing pump vibration.
8. Internal sliding bearing adopts thick, heavy duty, strong thrust ceramic bearing, and high purity, high wear resistance silicon carbide material, thus allowing long service life.
9. Both internal and external magnetic rotors adopt fully sealed structure, thus preventing pump magnet corrosion in corrosive environment and deterioration of magnetism.
10. Roller bearing is lubricated by oil, with the oil level controlled by both oil gauge and oil cup. This oil cup can automatically compensate the oil level.
11. Lengthened flexible membrane type coupling is adopted. For maintenance, parts such as impeller and shaft etc. can be removed without dismantling the suction pipeline or discharge pipeline.
12. The pump and the motor are installed on the same pedestal.
13. A number of options for flanges to standards ANSI, HG/T20615 and HG/T20592.
14. Ordinary motor, explosionproof motor, DC motor, or permanent magnet motor etc. can be used.

## 性能范围 The main specifications

|        |                         |                            |
|--------|-------------------------|----------------------------|
| 流量     | Flowrate                | 5.5 ~ 800m <sup>3</sup> /h |
| 扬程     | Head                    | 4.5 ~ 200m                 |
| 工作温度   | Operating temperature   | -45℃ ~ +400℃               |
| 标准转速   | Standard rotation speed | 2950r/min , 1475r/min      |
| 法兰压力等级 | Flange pressure rating  | 2.5MPa                     |

CQA型谱图      Spectrum of Model CQA





## CQE型磁力驱动石油化工流程泵

### CQE Magnetic Drive Petrochemical process Pump

CQE型泵为单级单吸卧式磁力驱动石油化工流程泵，该型泵参照美国石油学会API685及其相关标准设计制造，具有全密封、无泄漏、无污染，效率高，汽蚀性能好、零部件通用性、互换性好，结构安全可靠，运转稳定等特点，可广泛应用于石油化工、精细化工、冶金、电力等行业。

CQE型泵通过内外磁转子进行耦合传动，隔离套将内磁转子密封在泵腔内，运用磁力驱动技术，解决了石油化工流程中易燃易爆、有毒有害及稀有贵重流体的输送问题。

本产品适宜输送清洁或稍有污染且不含固体颗粒的介质。

除非能有效排除铁磁性微粒，否则本产品应避免输送含有铁磁性物料的液体。

CQE pump is a single stage, single suction horizontal magnetic drive petrochemical process pump. It has been designed and manufactured by referencing API685 and other relevant standards. It features full sealing, no leakage, no pollution, high reliability, good cavitation performance, good versatility and interchangeability of parts, high structural safety and reliability, and stable operation etc. It can be widely used for petrochemical industry, fine chemical industry, metallurgy, and electric power industry etc.

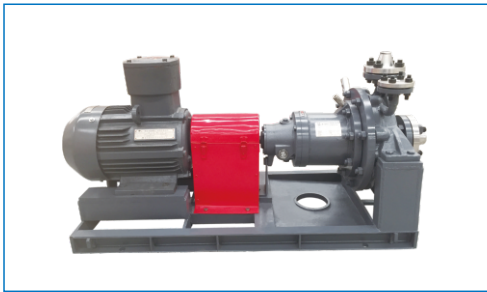
CQE pump is driven by coupled internal and external magnetic rotors. An isolation sleeve seals the internal magnetic rotor inside the pump cavity. Magnetic drive technology has been used, solving the difficult problem of conveying inflammable, explosive, toxic, harmful, rare, and noble fluids in petrochemical flow path.

This product is applicable to conveying clean or slightly contaminated media not containing solid particles.

Unless ferrous magnetic particles can be effectively removed, conveying liquid containing ferrous magnetic material with this product should be avoided.

### 结构说明 Description of structure

1. 该系列泵均为单级、单吸、卧式悬臂离心泵；
2. 泵为轴向水平吸入，径向垂直排出；
3. 泵体为蜗壳式、径向剖分，水平中心支撑；
4. 叶轮为整体铸造，带有后密封环和平衡孔，以平衡轴向力；
5. 通过泵送工艺液体自循环和外接液体强制循环等多种循环方式将泵内产生的涡流热和摩擦热带走，以满足不同工况介质的输送。
6. 因结晶、汽化等工况需要时，可带冷却或保温夹套。
7. 优化的刚性轴结构设计，具有更佳的挠度指数，使泵的振动值进一步降低。



8. 内置滑动轴承采用了大厚度、重载、强推力陶瓷轴承，选用高纯度、高耐磨性的碳化硅材料，使用寿命长。
9. 内外磁转子均为全密封式结构，防止泵在腐蚀环境下磁体腐蚀和磁性能的衰退。
10. 滚动轴承采用稀油润滑，其油位由油标和油杯同时控制，油杯能自动补偿油位；
11. 采用了加长挠性膜片式联轴器部件，检修时不必拆卸吸入和吐出管路就能拆出叶轮、轴等零部件；
12. 对轴承、泵支架，根据工况条件进行冷却，冷却水的管路布置符合API682规范。
13. 泵和电机安装在同一个公用底座上。
14. 法兰标准可提供ANSI、HG/T20615、HG/T20592等多种选择。
15. 可配带普通电机、防爆电机、直流电机和永磁电机等。

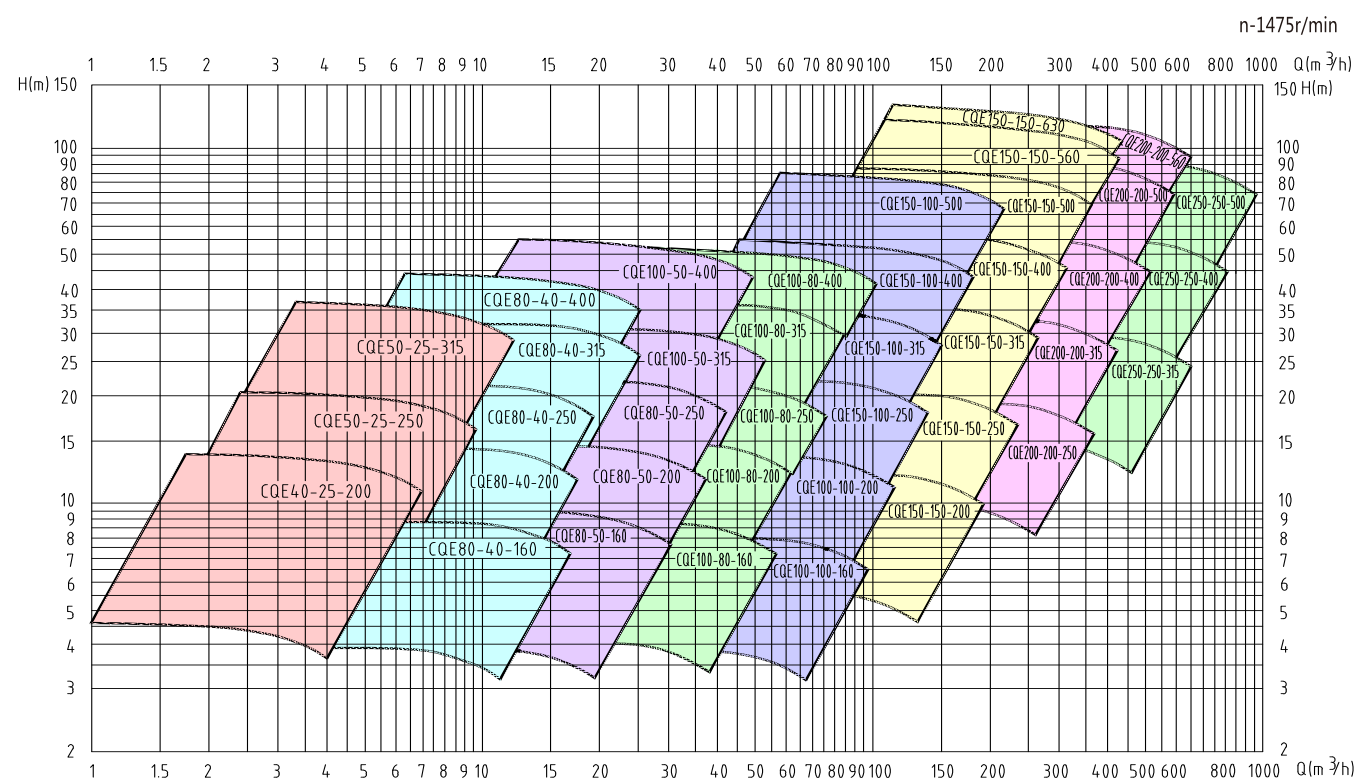
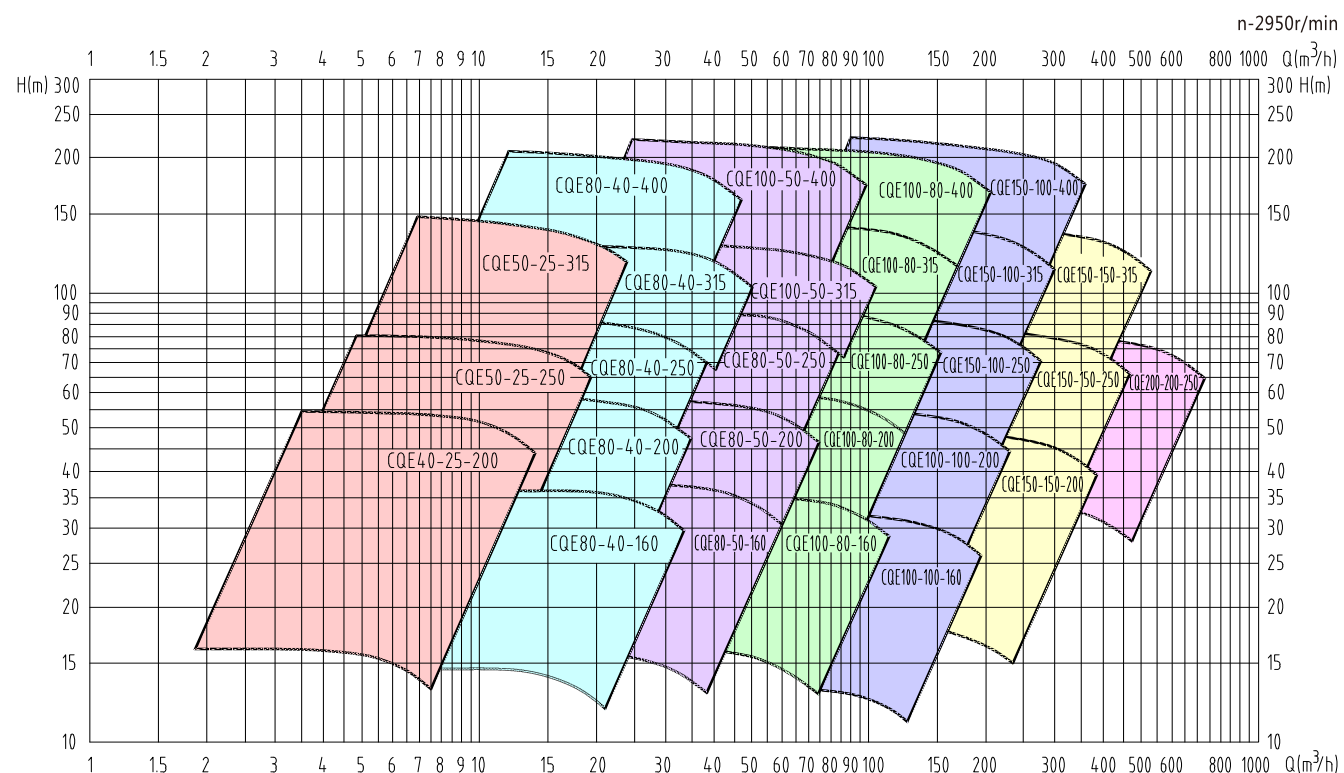
1. This series pumps are all single stage, single suction, horizontal cantilever centrifugal pumps.
2. These pumps adopt axial horizontal suction and radial vertical discharge.
3. Pump body adopts volute type, radial splitting, and horizontal central support.
4. The impeller is an integral casting, complete with rear seal ring and balance hole to balance axial force.
5. Eddy flow heat and friction heat generated in the pump is taken away by various circulation modes, e.g. pumped process liquid self-circulation and forced circulation of externally connected liquid, to satisfy conveying of media under different operating conditions.
6. Cooling or thermal insulation jacket can be provided if required by operating condition such as crystallization or evaporation.
7. Optimized rigid shaft structural design provides better deflection index, further reducing pump vibration.
8. Internal sliding bearing adopts thick, heavy duty, strong thrust ceramic bearing, and high purity, high wear resistance silicon carbide material, thus allowing long service life.
9. Both internal and external magnetic rotors adopt fully sealed structure, thus preventing pump magnet corrosion in corrosive environment and deterioration of magnetism.
10. Roller bearing is lubricated by oil, with the oil level controlled by both oil gauge and oil cup. This oil cup can automatically compensate the oil level.
11. Lengthened flexible membrane type coupling is adopted. For maintenance, parts such as impeller and shaft etc. can be removed without dismantling the suction pipeline or discharge pipeline.
12. Bearing and pump supports are cooled according to operating condition, with cooling water pipeline layout meeting API682 code.
13. The pump and the motor are installed on the same pedestal.
14. A number of options for flanges to standards ANSI, HG/T20615 and HG/T20592.
15. Ordinary motor, explosionproof motor, DC motor, or permanent magnet motor etc. can be used.

### 性能范围 The main specifications

|        |                         |                          |
|--------|-------------------------|--------------------------|
| 流量     | Flow                    | 5.5~800m <sup>3</sup> /h |
| 扬程     | Head                    | 4.5~200m                 |
| 工作温度   | Operating temperature   | -45℃~+400℃               |
| 标准转速   | Standard rotation speed | 2950r/min, 1475r/min     |
| 法兰压力等级 | Flange pressure rating  | 4.0~5.0MPa               |



## CQE型谱图 Spectrum of Model CQE



## CQZ型磁力驱动化工流程泵 CQZ Magnetic Driven Chemical Process Pump

CQZ型泵为单级单吸卧式磁力驱动化工流程泵，其尺寸和性能符合ISO2858,是替代IH、CZ系列化工泵的理想产品。该型泵吸收国内外同类产品先进技术，结合实际情况，依照ISO15783国际标准和GB/T25140国家标准，参照美国石油学会API685及其相关标准设计制造，具有全密封、无泄漏、无污染，效率高，结构安全可靠，运转稳定等特点，可广泛应用于石油化工、煤化工、氯碱、冶金、电力、造纸、环保等行业。

CQZ型泵通过内外磁转子进行耦合传动，隔离套将内磁转子密封在泵腔内，运用磁力驱动技术，解决了化工流程中易散性物料的输送问题。

本产品适宜输送不含固体颗粒的介质和不允许密封材料污染的场所。

除非能有效排除铁磁性微粒，否则本产品应避免输送含有铁磁性物料的液体。

CQZ pump is a single stage, single suction horizontal magnetic driven chemical process pump, the dimensions and performance of which meet ISO2858, being an ideal product that can replace IH and CZ series chemical engineering pumps. This pump model adopts advanced technology of similar products home and abroad, is combined with actual applications, and has been designed and manufactured according to international standard ISO15783 and Chinese national standard GB/T25140, by referencing API685 standard and other relevant standards. It features full sealing, no leakage, no pollution, high efficiency, high structural safety and reliability, and stable operation etc. It can be widely used for petrochemical engineering, coal chemical engineering, chlorine alkali industry, metallurgy, electric power, paper making, and environmental protection industry etc.

CQZ pump is driven by coupled internal and external magnetic rotors. An isolation sleeve seals the internal magnetic rotor inside the pump cavity. Magnetic drive technology has been used, solving the problem of conveying easily scattered material in chemical engineering flow path.

This product is applicable to conveying media not containing solid particles and occasions where contamination of sealing material is not permitted.

Except ferromagnetic particles can be effectively removed, use of this product to convey liquid containing ferromagnetic material shall be avoided.





### 结构说明 Description of structure

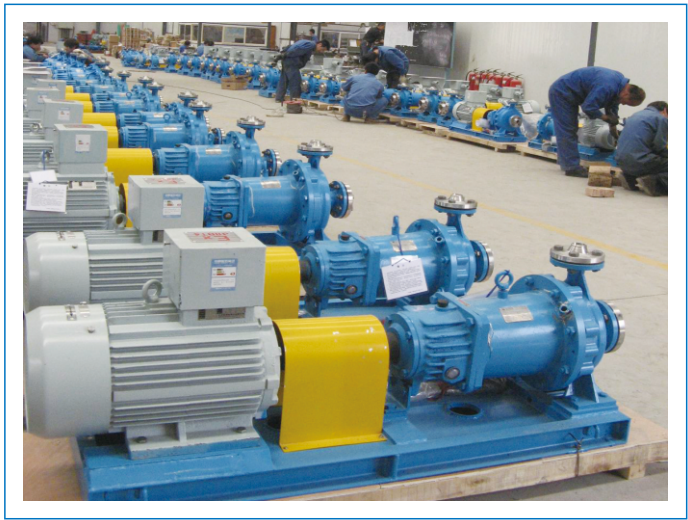
1. 该系列泵均为单级、单吸、卧式悬臂式（OH1型）离心泵；
2. 泵为轴向水平吸入，径向垂直排出；
3. 泵的型谱范围宽，可供选择的产品性能参数广泛。
4. 优化的水力模型设计，具有较高的水力效率，叶轮抗汽蚀设计，汽蚀余量低、设备运行可靠。
5. 泵体为蜗壳式、径向剖分，具有底脚支撑（CQZ型）和中心支撑（CQZH型）两种形式；
6. 叶轮为整体铸造闭式结构，采用背叶片或密封环与平衡孔组合结构平衡轴向力；
7. 通过泵送工艺液体自循环和外接液体强制循环等多种循环方式将泵内产生的涡流热和摩擦热带走，以满足不同工况介质的输送。
8. 因结晶、汽化等工况需要时，可带冷却或保温夹套。
9. 优化的刚性轴结构设计，具有更佳的挠度指数，使泵的振动值进一步降低。
10. 内置滑动轴承采用了大厚度、重载、强推力陶瓷轴承，选用高纯度、高耐磨性的碳化硅材料，使用寿命长。
11. 内外磁转子均为全密封式结构，防止泵在腐蚀环境下磁体腐蚀和磁性能的衰退。
12. 滚动轴承采用稀油润滑，其油位由油标和油杯同时控制，油杯能自动补偿油位；
13. 采用了加长挠性膜片式联轴器部件，检修时不必拆卸吸入和吐出管路就能拆出叶轮、轴等零部件；
14. 泵和电机安装在同一个公用底座上。
15. 法兰标准可提供ANSI、HG/T20615、HG/T20592等多种选择。
16. 可配带普通电机、防爆电机、直流电机和永磁电机等。

1. This series pumps are all single stage, single suction, horizontal cantilever (OH1) centrifugal pumps.
2. These pumps adopt axial horizontal suction and radial vertical discharge.
3. These pumps have wide model spectrum range and many product performance parameters that can be selected.
4. Optimized hydraulic model design and anti-cavitation design of impeller with relatively high hydraulic efficiency allow low cavitation margin and reliable equipment reliability.
5. Pump body adopts volute type, radial splitting, and bottom feet support (CQZ) or central support (CQZH).
6. The impeller adopts a closed structure of integral casting, and a structure combining rear blade or seal ring with balance hole to balance axial force.
7. Eddy flow heat and friction heat generated in the pump is taken away by various circulation modes, e.g. pumped process liquid self-circulation and forced circulation of externally connected liquid, to satisfy conveying of media under different operating conditions.
8. Cooling or thermal insulation jacket can be provided if required by operating condition such as crystallization or evaporation.

9. Optimized rigid shaft structural design provides better deflection index, further reducing pump vibration.
10. Internal sliding bearing adopts thick, heavy duty, strong thrust ceramic bearing, and high purity, high wear resistance silicon carbide material, thus allowing long service life.
11. Both internal and external magnetic rotors adopt fully sealed structure, thus preventing pump magnet corrosion in corrosive environment and deterioration of magnetism.
12. Roller bearing is lubricated by oil, with the oil level controlled by both oil gauge and oil cup. This oil cup can automatically compensate the oil level.
13. Lengthened flexible membrane type coupling is adopted. For maintenance, parts such as impeller and shaft etc. can be removed without dismantling the suction pipeline or discharge pipeline.
14. The pump and the motor are installed on the same pedestal.
15. A number of options for flanges to standards ANSI, HG/T20615 and HG/T20592.
16. Ordinary motor, explosionproof motor, DC motor, or permanent magnet motor etc. can be used.

### 性能范围 The main specifications

|        |                         |                      |
|--------|-------------------------|----------------------|
| 流量     | Flow                    | 1.5~800m³/h          |
| 扬程     | Head                    | 6~160m               |
| 工作温度   | Operating temperature   | -45℃~+300℃           |
| 标准转速   | Standard rotation speed | 2900r/min, 1450r/min |
| 法兰压力等级 | Flange pressure rating  | 2.5MPa               |





## CQF型氟塑料磁力驱动离心泵

### CQF Fluoroplastic Magnetic Driven Centrifugal Pump

CQF氟塑料磁力驱动离心泵，是新型磁力驱动氟塑料衬里离心泵，采用国际标准ISO2858设计，过流部件采用氟塑料衬里，全密封无泄漏，适用于石油、化工、冶金、电力、造纸等工业部门。

本产品适宜输送强腐蚀性介质。除熔融碱金属，发烟硝酸等少数介质外，选用不同的氟塑料材料，几乎能抵抗所有化学介质的腐蚀，包括浓硝酸和王水的腐蚀。

CQF fluoroplastic magnetic driven centrifugal pump is a new type magnetic driven fluoroplastic lined centrifugal pump, designed to international standard ISO2858. The flow passage components are lined with fluoroplastic, and the pump is fully enclosed and leakage free, suitable in industrial sectors such as petroleum, chemicals, metallurgy, power and paper-making.

This product is suitable for conveying highly corrosive media. Except for a small number of media such as molten alkali metal and fuming nitric acid, with different fluoroplastics, it can resist the corrosion of all chemical media, including concentrated nitric acid and aqua regia.

### 结构说明 Description of structure

1. 该型泵为单级、单吸、卧式、径向剖分，轴向吸入、径向排出。
2. 泵的轴向力主要靠叶轮上的副叶片进行水力平衡，残余轴向力由推力轴承承受。
3. 采用ISO2858标准，方便替代IHF化工泵。
4. 工艺液体自冷却润滑传动部件。
5. 整台泵只需要1-2个密封圈，全密封，无泄漏，确保了最佳安全性。
6. 过流部件采用氟塑料内衬，尤其是PFA，其析出的污染物最少，非常适用于输送高纯度的化学药液。
7. 泵轴由高强度的耐腐材料制成，滑动轴承由高密度碳型碳化硅材料制成。



8. 一般采用叶轮与内磁转子分体式结构，优于普遍的叶轮与内磁转子一体式结构，降低了意外情况下的故障损失，减少了备件损耗。

9. 选用不锈钢、碳钢、球墨铸铁等不同材质的外壳体，增加了泵在各种介质温度的强度及耐腐蚀性能。

10. 选用纤维增强罩保护的隔离套，既消除了涡流损失，又获得了足够的强度，提高了隔离套的承压能力。

11. 可选择电机直连或通过联轴器连接的形式，电机直连式节省了成本和空间，传动效率高，安装方便，不需要同心度较准。

12. 从驱动端看，泵为顺时针方向旋转。

13. 该型号泵可以采用立式结构，型号标记为CQFL。

1. This pump is of horizontal single stage and single suction type with radial split, axial suction and radial discharge.

2. The axial load on the pump is mainly balanced hydraulically by the back blades or balance holes on the impeller, and the residual axial force is taken by the thrust bearing.

3. ISO2858 standard is adopted in place of IHF chemical pumps conveniently.

4. The driving components are cooled and lubricated by process liquid.

5. In the whole pump, only 1~2 sealing rings are used, ensuring best safety performance with total enclosing and free of leakage.

6. Flow passage parts are lined with fluoroplastics, especially PFA, with minimum pollutant separated out, highly suitable for conveying high purity chemical liquid.

7. The pump shaft is made with high strength pressureless sintered carborundum, and sliding bearings are made with high density carbon type carborundum.

8. The impeller and inner magnetic rotor are normally in split structure, which is better than the ordinary integrated structure for impeller and inner rotor, reducing the failure loss in case of accident and lowering spare parts consumption.

9. External volute is available in different materials such as stainless steel, carbon steel and modular cast iron, increasing the strength and corrosion resistance of the pump at all media temperature.

10. Spacers protected by fiber-reinforced hood are used, eliminating eddy current loss and obtaining sufficient strength, with increased pressure bearing capacity of spacer.

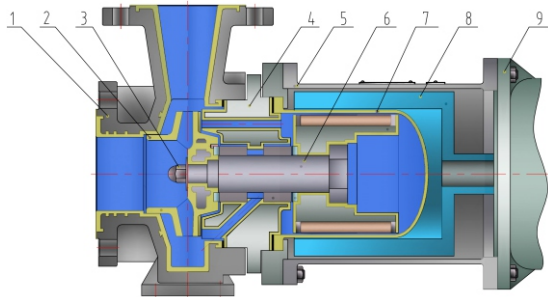
11. Either direct connection or via coupling can be selected for motor, and direct connection of motor saves cost and space, featuring high driving efficiency and convenient installation, without the need of concentricity alignment.

12. The pump rotates in a clockwise direction when viewed from the driving end.

13. Pumps of this model can adopt vertical structure. The model marking is CQFL.



CQF型结构图 Structure of CQF

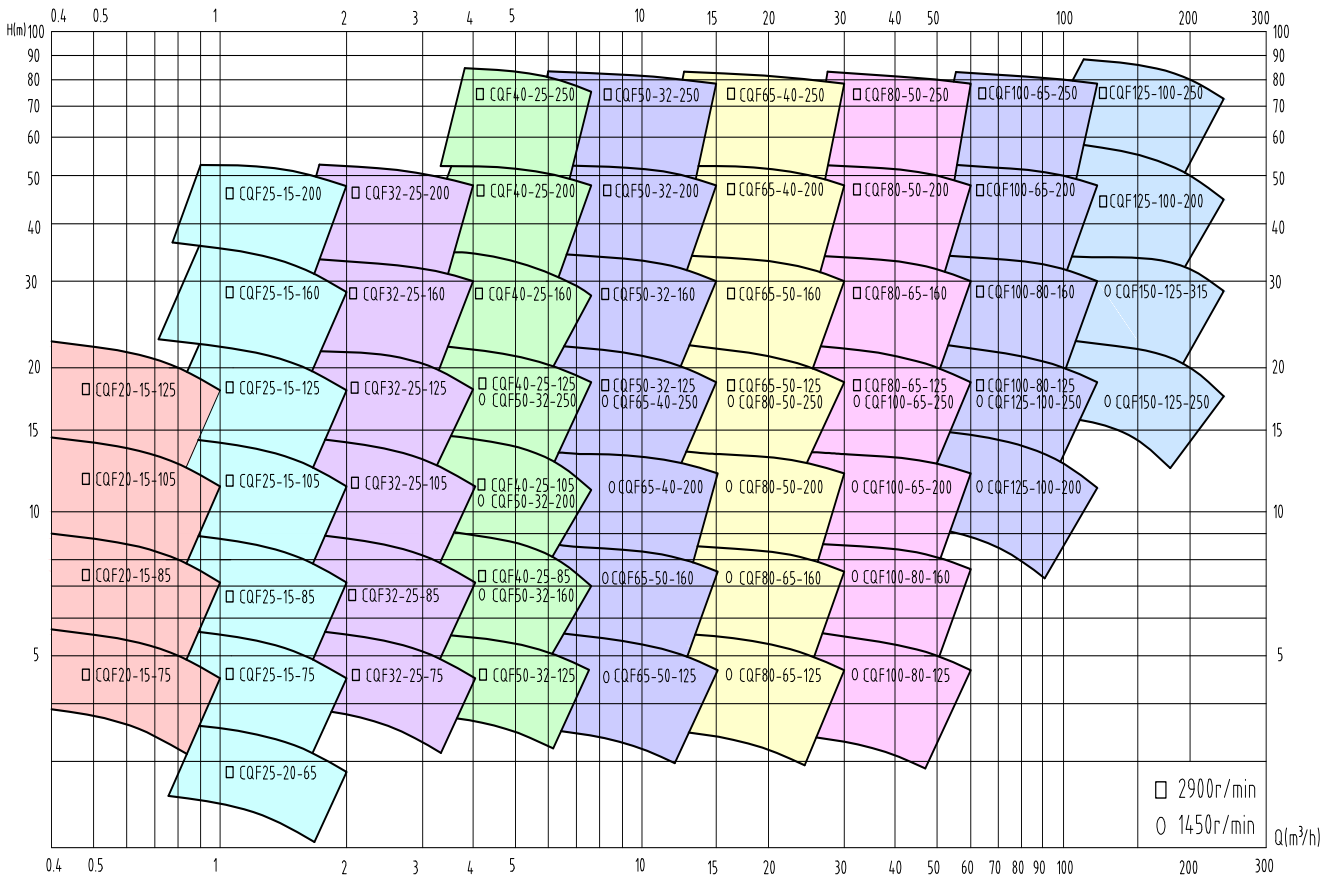


- 1. 泵体 pump body
- 2. 叶轮 impeller
- 3. 叶轮螺母 impeller nut
- 4. 泵盖 disk support
- 5. 支架 support
- 6. 泵轴 shaft
- 7. 隔离套 spacer
- 8. 磁传动部件 magnetic driving part
- 9. 电机 Motor

性能范围 The main specifications

|        |                          |              |
|--------|--------------------------|--------------|
| 流量     | Flow                     | 0.8~200m³/h  |
| 扬程     | Head                     | 5~80m        |
| 介质温度   | Temperature              | -20℃ ~ +150℃ |
| 进口直径   | Import diameter          | 20~150mm     |
| 最大工作压力 | The max working pressure | 1.6MPa       |

CQF型谱图 Spectrum of Model CQF



DGC型磁力驱动多级离心泵

DGC Magnetic Driven Multi-Stage Centrifugal Pump

DGC型泵是双层壳体磁力驱动多级离心泵。该产品旨在解决高扬程的流体输送问题。该产品结构设计、水力设计及磁路设计先进新颖，技术达到国内领先水平。首家成功地将磁力驱动技术应用于多级离心泵，解决了大功率、大间隙磁路设计问题，居国内领先地位。同时解决了高工作压力下多级泵的轴向力平衡及静密封问题，磁力驱动联轴器与轴承失效监控装置的配合，更保障了泵长期安全可靠运行。

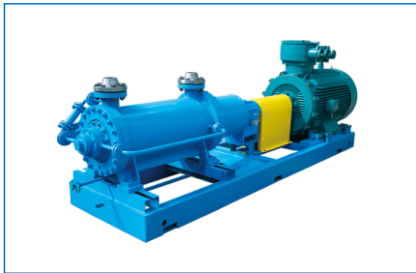
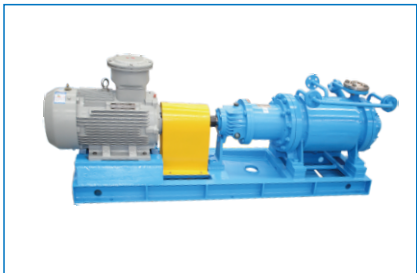
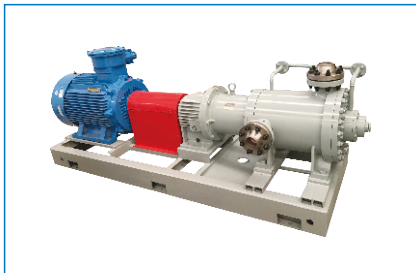
本产品适宜输送不含固体颗粒的易燃、易爆、有毒、有害的介质和其他要求无泄漏及不允许密封隔离液等污染的介质。广泛地应用于炼油行业液态烃泵，化工行业甲醇、乙二醇、乙醇胺泵，天然气行业胺循环泵，电厂疏水泵，油田增压注水泵等。

DGC pump is a magnetic driven multi-stage centrifugal pump with double-layer volute. This product is designed to convey fluid at low flow with high head. This product features advanced and novel structure design, hydraulic design and magnetic path design, with technology at the leading level in China. Highland is the first to successfully apply the magnetic driving technology in multi-stage centrifugal pumps, solving the question of high power and large gap magnetic path design, at the leading level in China. It also solved issues of axial force balance of multi-stage pumps at high working pressure and static sealing, and the matching of magnetic driving coupling and bearing failure monitoring device, further ensuring the long-term safe and reliable operation of pumps.

This product is suitable for conveying inflammable and explosive, toxic, harmful media containing no solid particles and other media requiring no leakage, and allowing no contamination by sealing isolating liquid. It is extensively used as liquid hydrocarbon pump in oil refineries, methanol, ethyl glycol and ethanol amine pump in chemical sector, amine circulating pump in natural gas sector, drain pump in power plants and boosting water injection pump in oil fields.

结构说明 Description of structure

- 1. 卧式径向剖分式多级泵，双层壳体，BB5结构。
- 2. 大功率磁力驱动、全密封、无泄漏，无污染。
- 3. 双层壳体保护，较好地解决了泵在高温工况下的热冲击和高压时的翘曲变形，绝对安全无泄漏。
- 4. 根据介质温度选用底脚支承（基本型）和中心支承（高温型）。
- 5. 轴向力由平衡鼓、平衡盘、滑动止推轴承和磁传动器藕合力协调平衡。
- 6. 泵的入口可水平端进、垂直或侧向任意角度布置，泵的出口可垂直或侧向任意角度布置。
- 7. 可选用与电机直连或带膜片联轴器两种结构。
- 8. 过流部件的材质可根据所输送物料的特性，做出相应的选择。



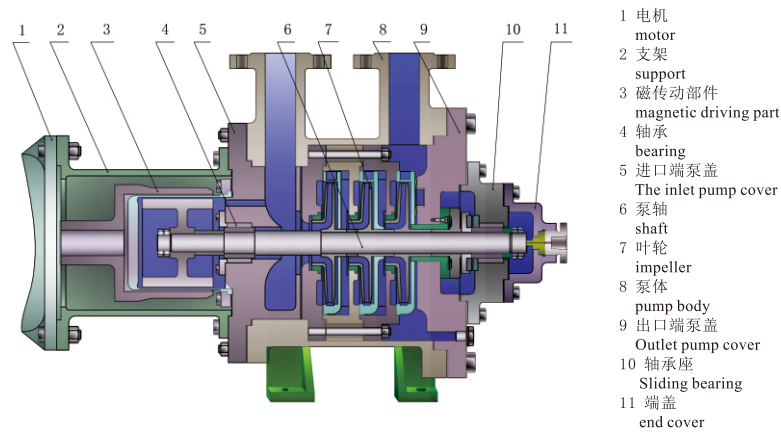


1. Horizontal radial split multistage pump, double shell, BB5 structure.
2. High power magnetic driving, fully enclosed, no leakage and no contamination.
3. Double layer volute protection, well solving the problem of buckling deformation of pump under heat impact and high pressure, and ensuring absolute safety and freedom of leakage.
4. Foot support (basic type) and central support (high temperature type) can be selected according to medium temperature.
5. The axial load is coordinated and balanced by the balance drum, balance disc, sliding thrust bearing and magnetic drive coupling force.
6. The pump inlet can be arranged horizontally, vertically or at any angle on lateral side, and the pump discharge can be arranged vertically or at any angle on lateral side.
7. Two structures are available: direct connection with motor or connection via diaphragm coupling.
8. The materials of the flow passage components can be selected accordingly according to the properties of the materials conveyed.

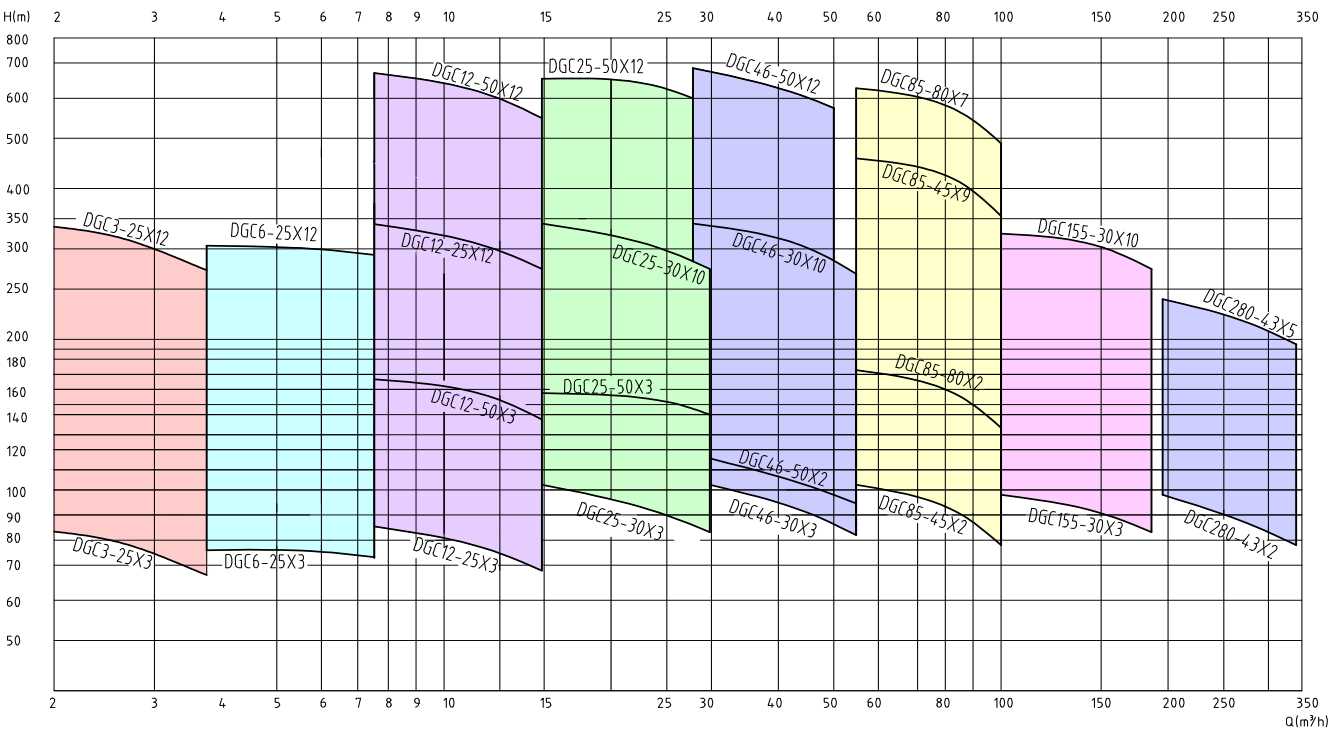
性能范围 The main specifications

|        |                          |                |
|--------|--------------------------|----------------|
| 流量     | Flow                     | 3~280m³/h      |
| 扬程     | Head                     | 75~600m        |
| 介质温度   | Temperature              | -45°C ~ +450°C |
| 进口直径   | Import diameter          | 32~250mm       |
| 最大工作压力 | The max working pressure | 10MPa          |

DGC型结构图 Structure of DGC



DGC型谱图 Spectrum of Model DGC



CG 型磁力驱动管道泵  
CG Magnetic Driven Piping Pump

CG 型磁力驱动管道泵是在立式管道离心泵的基础上，应用磁力驱动技术组合设计而成，适用于石油、化工、冶金、电力、造纸、食品、船舶等行业输送不含固体颗粒、粘度类似于水的易燃、易爆、有毒、有害、具有腐蚀性的介质和贵重的液体。

该系列产品具有噪音低、性能可靠、占地面积小等优点。

CG magnetic driven piping pump is designed with combination of magnetic driving technology on the basis of vertical piping centrifugal pump, suitable for conveying inflammable and explosive, toxic, harmful, corrosive medium and valuable liquid containing no solid particle with viscosity similar to water in petroleum, chemical, metallurgical, power, paper-making, foodstuff and ship-building industries.

This series of products feature advantages of low noise, reliable performance and small footprint.

结构说明 Description of structure

1. 立式、单级单吸、泵与电机直联。
2. 磁力驱动全密封，无泄漏。
3. 泵吸入、排出口直径相同，其中心线在同一水平线上，与立轴正交。
4. 背叶片结构使泵的轴向力有效平衡。

1. Vertical single-stage single-suction pump, directly driven by motor.
2. Magnetic driven, fully enclosed and leakage free.
3. The suction and discharge of the pump have the identical diameter; their centerlines are on the same horizontal line, orthogonal with the vertical shaft.
4. The back vane structure helps effective balance of the axial force of the pump.

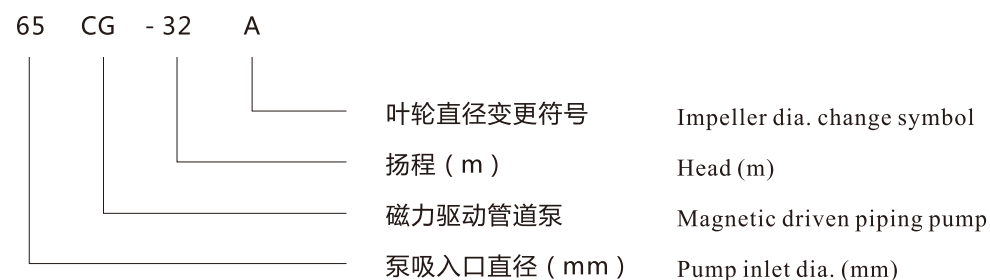


性能范围 The main specifications

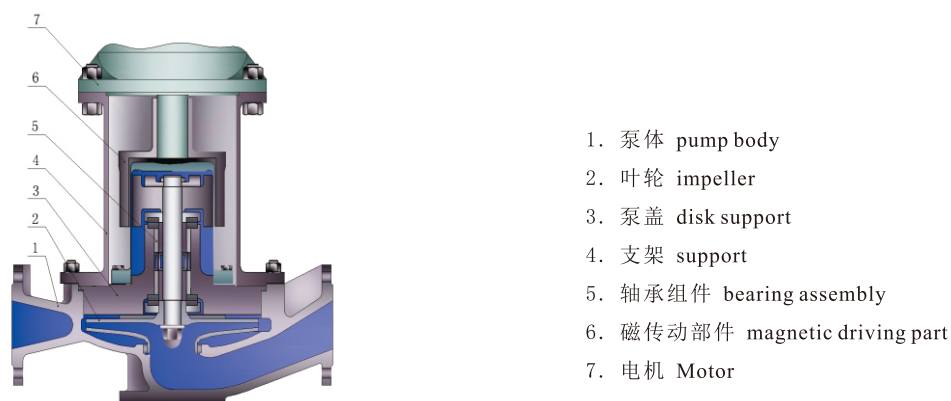
|        |                          |                |
|--------|--------------------------|----------------|
| 流量     | Flow                     | 1.6~400m³/h    |
| 扬程     | Head                     | 3.2~125m       |
| 介质温度   | Temperature              | -20°C ~ +120°C |
| 进口直径   | Import diameter          | 25~200mm       |
| 最大工作压力 | The max working pressure | 1.6MPa         |



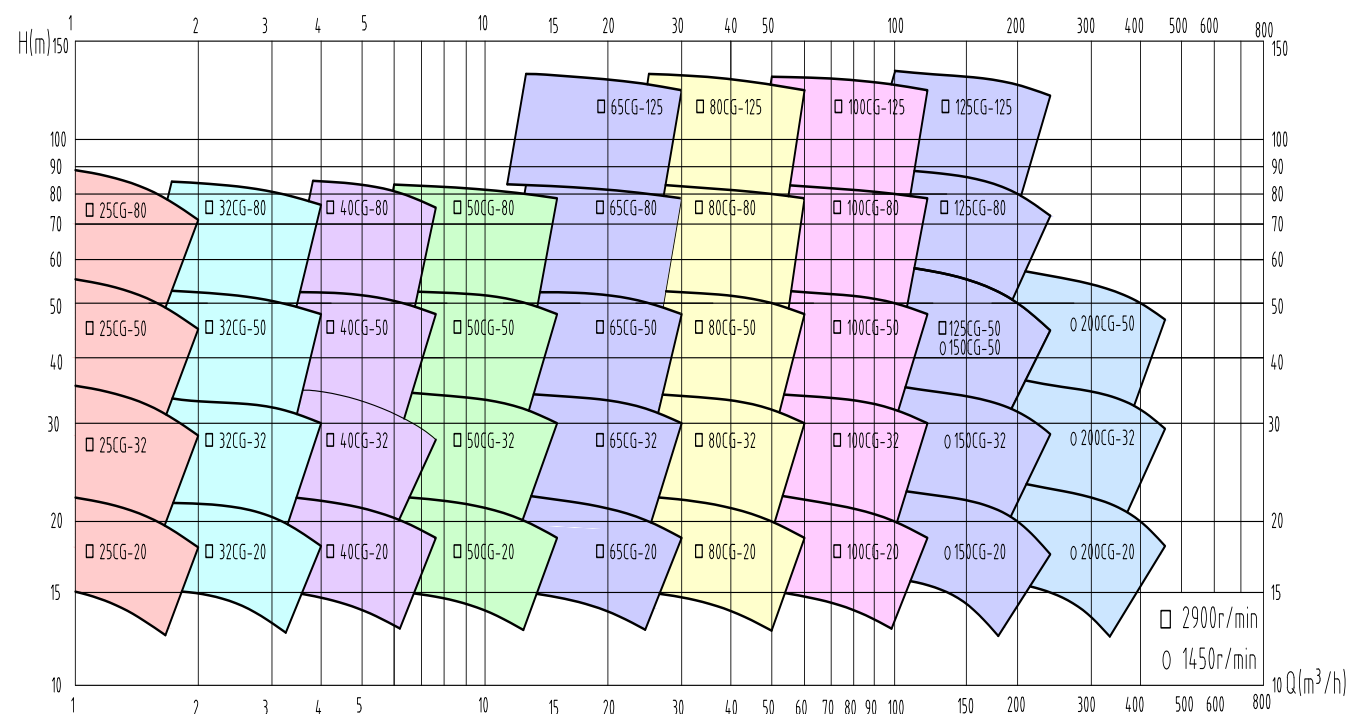
## 型号意义 Type denotation



## CG 型结构图 Structure of CG



## CG 型谱图 Spectrum of Model CG



## DR 型磁力驱动导热油泵 DR Magnetic Driven Heat Transfer Oil Pump

DR 型系列泵，专用于高温热油加热场合或类似的热媒环境，选用具有较高的磁能积和极低的温度系数，温度稳定性和化学稳定性高的磁性材料，可输送温度至400℃的热传递流体，是一种理想的高温热油循环泵。

该产品也可用于输送低温流体，应用于恒低温场合。

DR series pumps are specially designed for applications with high temperature hot oil heating or similar thermal media environment; they are made with magnetic materials with high magnetic energy product and extremely low temperature coefficient, and high temperature and chemical stability, to transfer heat transfer fluid with temperature up to 400℃, hence an ideal high temperature heat transfer oil circulating pump.

The product can also be used to transfer low temperature fluid, in applications of constant low temperature.

## 结构说明 Description of structure

- 1.单级单吸离心式结构。
- 2.安装支撑面在泵轴心线的水平面上。
- 3.独特的内部循环和冷却散热系统，保证了内置滑动轴承和磁传动部件的使用寿命。
- 4.根据热媒体温度，必要时对内部循环液和泵支架等进行冷却，冷却液量每只管路0.3 ~ 0.7 m<sup>3</sup>/h，压力0.2 ~ 0.3MPa。
- 5.当采用外部循环液时，压力应高于泵腔内的压力0.07 ~ 0.1MPa，如果输送易汽化介质时，应高于汽化压力0.175 ~ 0.2MPa。

1. Single-stage single suction centrifugal structure.
2. The mounting support surface is on the horizontal plane of the pump axial centerline.
- 3.Unique internal circulation and cooling and heat dissipating system, ensuring the service life of built-in sliding bearings and magnetic driving components.
- 4.The internal circulating liquid and pump supports are cooled when necessary according to the temperature of hot media, with cooling liquid flow of 0.3~0.7m<sup>3</sup>/h per pipe, at a pressure of 0.2~0.3MPa.
5. When external circulating liquid is used, the pressure should be 0.07~0.1MPa higher than that within the pump cavity, or 0.175~0.2MPa higher than the vaporizing pressure if media likely to vaporize is conveyed.

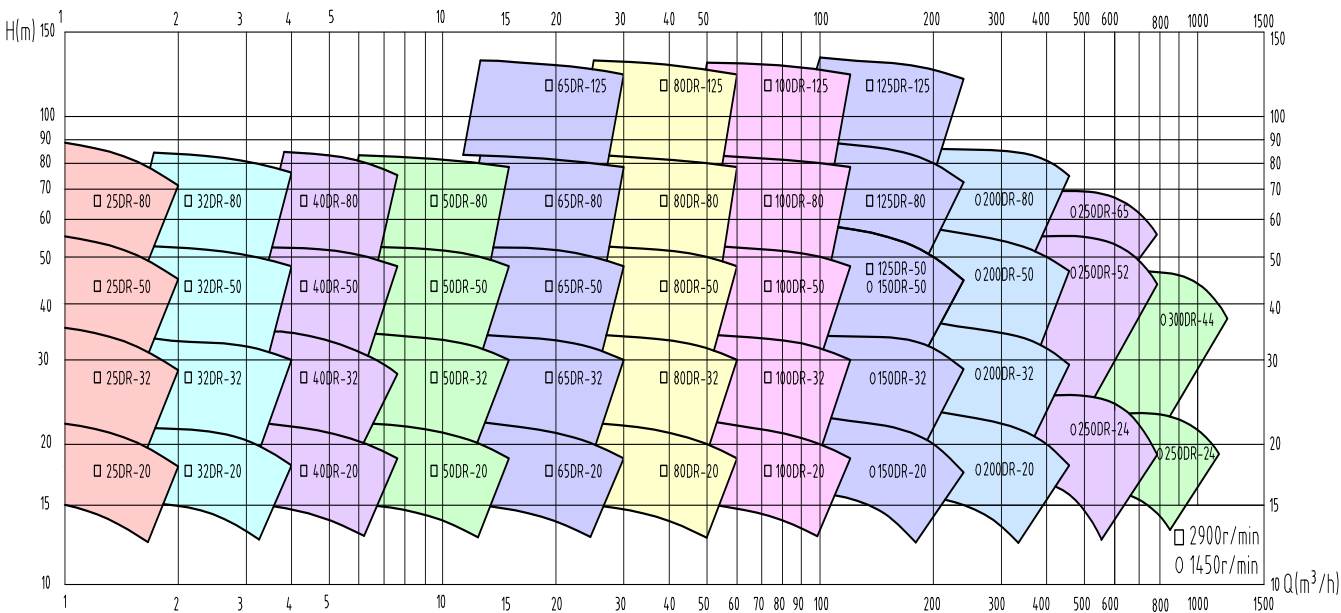




性能范围 The main specifications

|        |                          |                          |
|--------|--------------------------|--------------------------|
| 流量     | Flow                     | 1.6~400m <sup>3</sup> /h |
| 扬程     | Head                     | 20~125m                  |
| 介质温度   | Temperature              | -45℃~+450℃               |
| 进口直径   | Import diameter          | 25~200mm                 |
| 最大工作压力 | The max working pressure | 1.6MPa                   |

DR型谱图 Spectrum of Model DR



DRE型磁力驱动导热油泵  
DRE Magnetic Driven Heat Transfer Oil Pump

DRE型系列泵，参照美国石油学会API685及其相关标准设计制造，全密封、无泄漏。专用于高温热油加热场合或类似的热媒环境，选用具有较高的磁能积和极低的温度系数，温度稳定性和化学稳定性高的磁性材料，可输送温度至400℃的热传送流体，是一种理想的高温热油循环泵。

该产品也可用于输送低温流体，应用于恒低温场合。

DREseries pumps are specially designed for applications with high temperature hot oil heating or similar thermal media environment; they are made with magnetic materials with high magnetic energy product and extremely low temperature coefficient, and high temperature and chemical stability, to transfer heat transfer fluid with temperature up to 400℃, hence an ideal high temperature heat transfer oil circulating pump.

The product can also be used to transfer low temperature fluid, in applications of constant low temperature.

结构说明 Description of structure

- 1.该系列泵均为单级、单吸、卧式悬臂离心泵；
- 2.泵为轴向水平吸入，径向垂直排出；
- 3.泵体为蜗壳式、径向剖分，水平中心支撑；
- 4.叶轮为整体铸造，带有后密封环和平衡孔，以平衡轴向力；
- 5.通过泵送工艺液体自循环或经冷却后再循环的方式将泵内产生的涡流热和摩擦热带走，以满足不同工况要求。
- 6.设置有冷却或保温夹套。
- 7.优化的刚性轴结构设计，具有更佳的挠度指数，使泵的振动值进一步降低。
- 8.内置滑动轴承采用了大厚度、重载、强推力陶瓷轴承，选用高纯度、高耐磨性的碳化硅材料，使用寿命长。
- 9.内外磁转子均为全密封式结构，防止泵在腐蚀环境下磁体腐蚀和磁性能的衰退。
- 10.滚动轴承采用稀油润滑，其油位由油标和油杯同时控制，油杯能自动补偿油位；
- 11.采用了加长挠性膜片式联轴器部件，检修时不必拆卸吸入和吐出管路就能拆出叶轮、轴等零部件；
- 12.对轴承、泵支架，根据工况条件进行冷却，冷却水的管路布置符合API682规范。
- 13.泵和电机安装在同一个公用底座上。
- 14.法兰标准可提供ANSI、HG/T20615、HG/T20592等多种选择。
- 15.可配带普通电机、防爆电机、直流电机和永磁电机等。





1. This series pumps are all single stage, single suction, horizontal cantilever centrifugal pumps.
2. These pumps adopt axial horizontal suction and radial vertical discharge.
3. Pump body adopts volute type, radial splitting, and horizontal central support.
4. The impeller is an integral casting, complete with rear seal ring and balance hole to balance axial force.
5. Eddy flow heat and friction heat generated in the pump is taken away by various circulation modes, e.g. pumped process liquid self-circulation and after cooling and recycling to satisfy conveying of media under different operating conditions.
6. Cooling or thermal insulation jacket can be provided.
7. Optimized rigid shaft structural design provides better deflection index, further reducing pump vibration.
8. Internal sliding bearing adopts thick, heavy duty, strong thrust ceramic bearing, and high purity, high wear resistance silicon carbide material, thus allowing long service life.
9. Both internal and external magnetic rotors adopt fully sealed structure, thus preventing pump magnet corrosion in corrosive environment and deterioration of magnetism.
10. Roller bearing is lubricated by oil, with the oil level controlled by both oil gauge and oil cup. This oil cup can automatically compensate the oil level.
11. Lengthened flexible membrane type coupling is adopted. For maintenance, parts such as impeller and shaft etc. can be removed without dismantling the suction pipeline or discharge pipeline.
12. Bearing and pump supports are cooled according to operating condition, with cooling water pipeline layout meeting API682 code.
13. The pump and the motor are installed on the same pedestal.
14. Flange standard may be ANSI, HG/T20615, or HG/T20592.
15. Ordinary motor, explosionproof motor, DC motor, or permanent magnet motor etc. can be used.

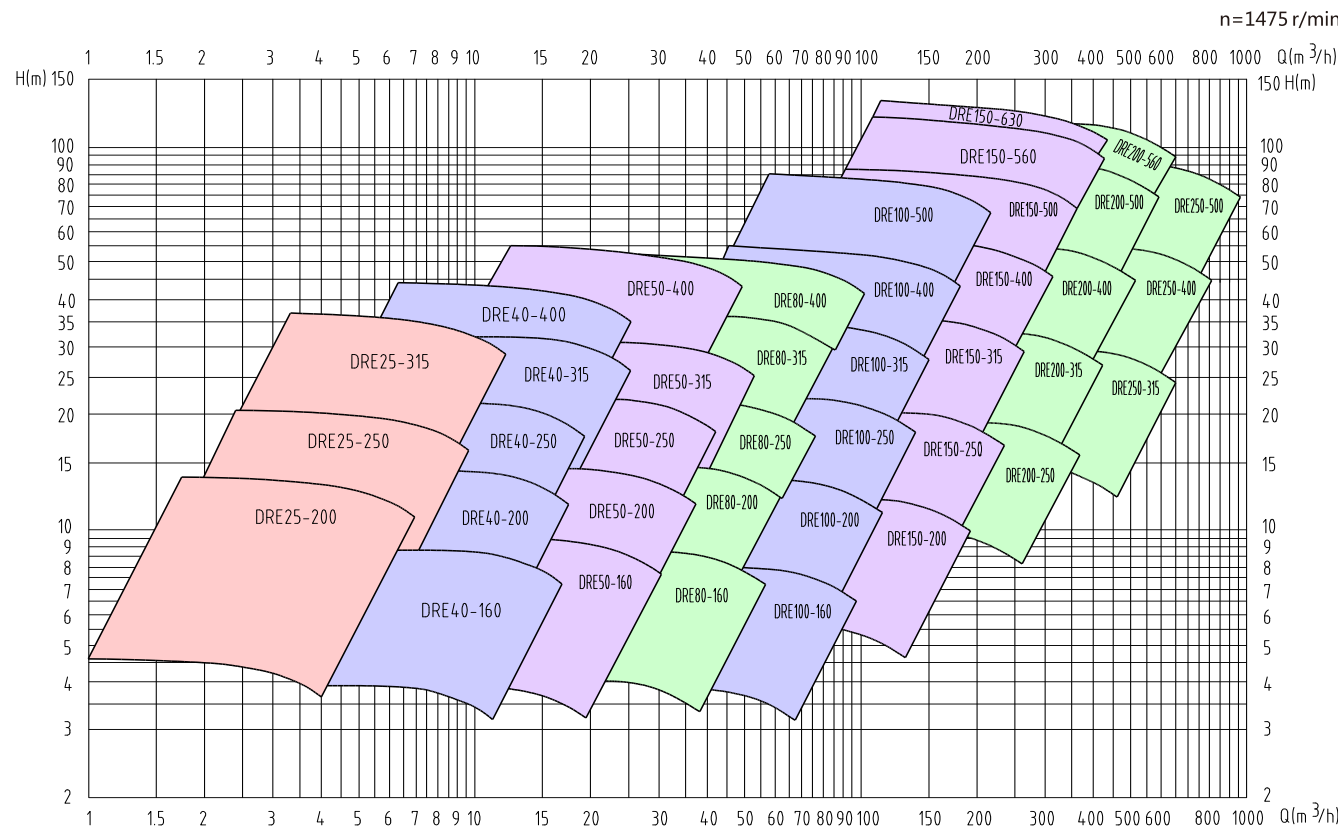
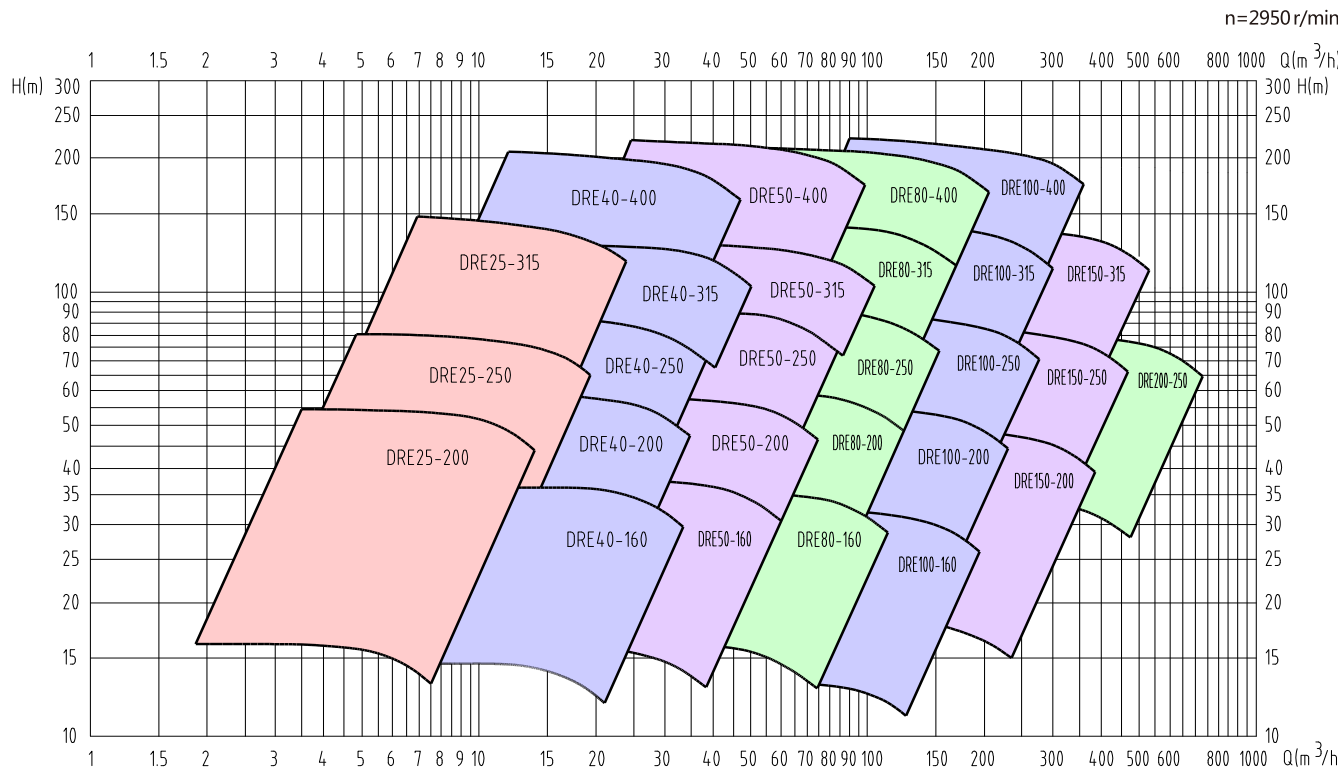
性能范围 The main specifications

|        |                             |                     |
|--------|-----------------------------|---------------------|
| 流量     | Flow                        | 5.5~800m³/h         |
| 扬程     | Head                        | 4.5~200m            |
| 工作温度   | Temperature                 | -45℃~+430℃          |
| 标准转速   | Standard rotation speed (n) | 2950r/min和1475r/min |
| 法兰压力等级 | Flange pressure rating      | 4.0~5.0MPa          |

型号意义 Type denotation

|     |    |   |     |   |             |
|-----|----|---|-----|---|-------------|
| DRE | 80 | - | 200 | A |             |
|     |    |   |     |   | 叶轮直径变更符号    |
|     |    |   |     |   | 叶轮名义直径 (mm) |
|     |    |   |     |   | 泵排出口直径 (mm) |
|     |    |   |     |   | 磁力驱动导热油泵    |

DRE型谱图 Spectrum of Model DRE





## MZ 型磁力驱动自吸泵

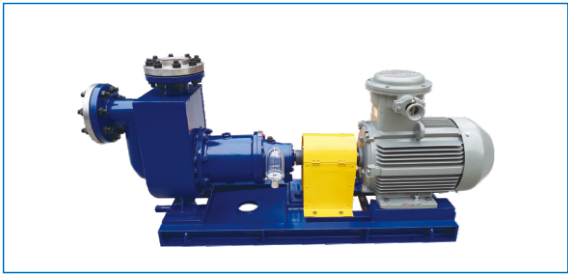
### MZ Magnetic Driven Self-Priming Pump

MZ型磁力驱动自吸泵，主要是为容器和槽车卸载而设计的，用于液槽抽排、罐车卸货，确保排出口管路中的空气迅速引液，可供输送液态烃、汽油、煤油、柴油等石油产品和化工、制药等行业易燃易爆、有毒有害的液体，尤其适用于船用油泵和陆地油库、油罐车的装卸用泵。

Model MZ magnetic driven self-priming pump is designed mainly for unloading vessels and tanker cars, to ensure quick priming by removing the air in the inlet and discharge piping; it can convey petrochemical products such as liquid hydrocarbon, gasoline, kerosene and diesel oil and inflammable and explosive, toxic and harmful liquid in chemical and pharmaceutical industries, and is especially suitable as vessel oil pump and handling pumps for onshore oil depot and oil tankers.

### 结构说明 Description of structure

1. 卧式、外混式、自吸性能好。
  2. 磁力驱动、全密封、无泄漏。
  3. 泵体采用底脚支撑，轴向吸入、径向排出。
  4. 叶轮为闭式叶轮，轴向力主要采用背叶片平衡，残余轴向力由滑动轴承承受。
  5. 当液体在泵内循环时间较长时，为防止内部循环液的温度升高，可设置温控保护装置。
  6. 管路中不需安装底阀，工作前只需保留泵体内储有定量引液即可。
  7. 后拉出式设计，可以不动进出口管路，即可维修，使用方便。
  8. 可采用与电机直连或膜片式联轴器连接的形式。
1. Horizontal and external mixing type, with good self-priming performance.
  2. Magnetic driven, fully enclosed and leakage free.
  2. The body is supported with feet, with axial suction and radial discharge.
  3. The impeller is enclosed type; the axial load is balanced mainly with back vane, and the residual axial load is taken by sliding bearings.
  4. When liquid circulates within the pump for a long time, to prevent heating up of such circulating liquid, temperature control protection device can be provided.

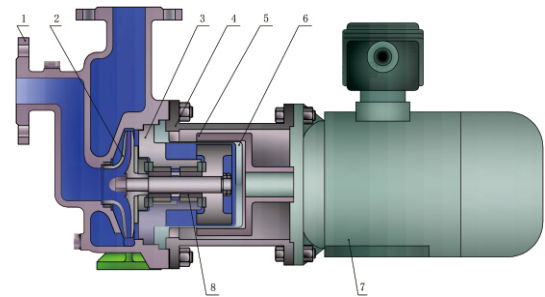


5. It is not necessary to install a bottom valve in the piping, and before operation, it is only required to have given amount of priming liquid within the pump body.
6. It is in rear pull-out design, so maintenance can be done without involving the inlet and discharge piping, convenient in use.
7. Either direct driving by motor or connection via diaphragm coupling can be used.

### 性能范围 The main specifications

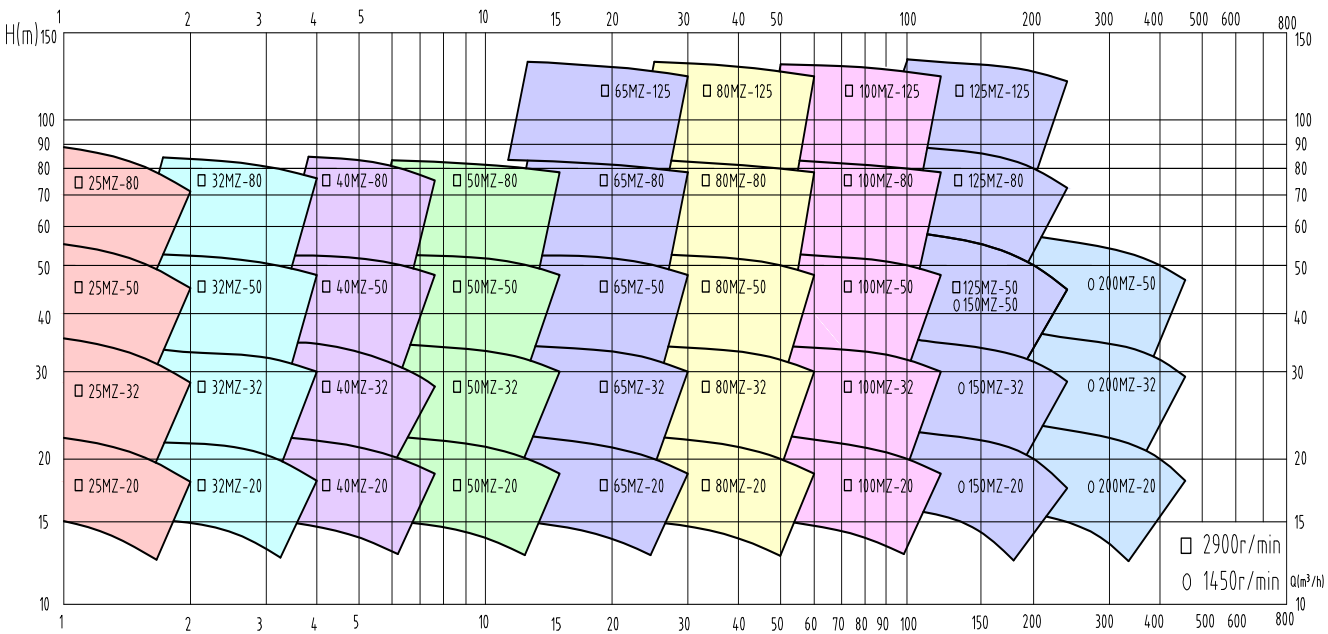
|        |                          |              |
|--------|--------------------------|--------------|
| 流量     | Flow                     | 1.6~400m³/h  |
| 扬程     | Head                     | 20~125m      |
| 介质温度   | Temperature              | -20℃ ~ +120℃ |
| 进口直径   | Import diameter          | 25~200mm     |
| 最大工作压力 | The max working pressure | 1.6MPa       |

### MZ 型结构图 Structure of MZ



1. 泵体 pump body
2. 叶轮 impeller
3. 泵盖 disk support
4. 支架 support
5. 磁传动部件 magnetic driving part
6. 隔离套 spacer
7. 电机 motor
8. 滑动轴承组件 Sliding bearing components

### MZ 型谱图 Spectrum of Model MZ





## FMZ型氟塑料磁力驱动自吸泵

### FMZ Fluoroplastic Magnetic Driven Self-priming Pump

FMZ型氟塑料磁力驱动自吸泵，是按照水力学原理结合非金属泵的工艺特点设计制造的，该泵适宜于槽车、船舶装卸及各种化工流程中有自吸要求的场合，主要用于输送强酸、强碱、有毒、有害及纯净贵重的腐蚀性化学介质，确保自动排出进口管路中的空气迅速引液和满足流动岗位自吸抽送的要求。

Model FMZ fluoroplastic magnetic driven self-priming pump is designed and made to hydraulic principle in conjunction with the process features of non-metal pumps; it is suitable in applications for tanker and vessel loading and unloading and various chemical processes requiring self-priming, mainly used to convey strong acid, strong alkali, toxic, harmful and pure valuable and corrosive chemical media. It can ensure quick priming by automatically venting air in the suction piping and meet the requirement of self-priming and pumping at mobile locations.

### 结构说明 Description of structure

- 1.该泵主要由储液室、涡室、回流孔、叶轮、泵盖组成，储液室在开机前注满液体，在叶轮的高速运转下将气液混合物带进涡室加压后进入气液分离室，在气液分离室内空气自然进入管网，液体则自动从回流孔回流，与储液室内的空气再次混合，循环往复，直至吸入管路中的空气被排尽。
- 2.该型泵为卧式、外混式自吸泵、磁力驱动全密封、无泄漏。
- 3.泵体采用金属外壳内衬氟塑料，过流部件全部采用氟塑料合金制造，泵盖、叶轮等均用金属嵌件外包氟塑料整体压制而成。
- 4.泵轴由耐强腐蚀材料制成，滑动轴承由高密度碳型碳化硅材料制成。
- 5.整台泵只需要1-2个密封圈，确保了最佳安全性。
- 6.选用纤维增强罩保护的隔离套，既消除了涡流损失，又获得了足够的强度，提高了隔离套的承压能力。
- 7.不需要安装底阀，在吸程范围内，可替代液下泵。

1. This pump mainly consists of the fluid reservoir, volute chamber, reflowing valve, impeller and cover; the fluid reservoir is full of liquid before startup, with the high speed rotation of impeller, and the air and liquid mixture is carried into the volute chamber and pressurized before entering the air and liquid separation chamber, where air flows naturally into pipe and liquid flows back automatically via the reflowing valve, to mix with the air in the reservoir again. This process is repeated until all air in the suction piping is removed.

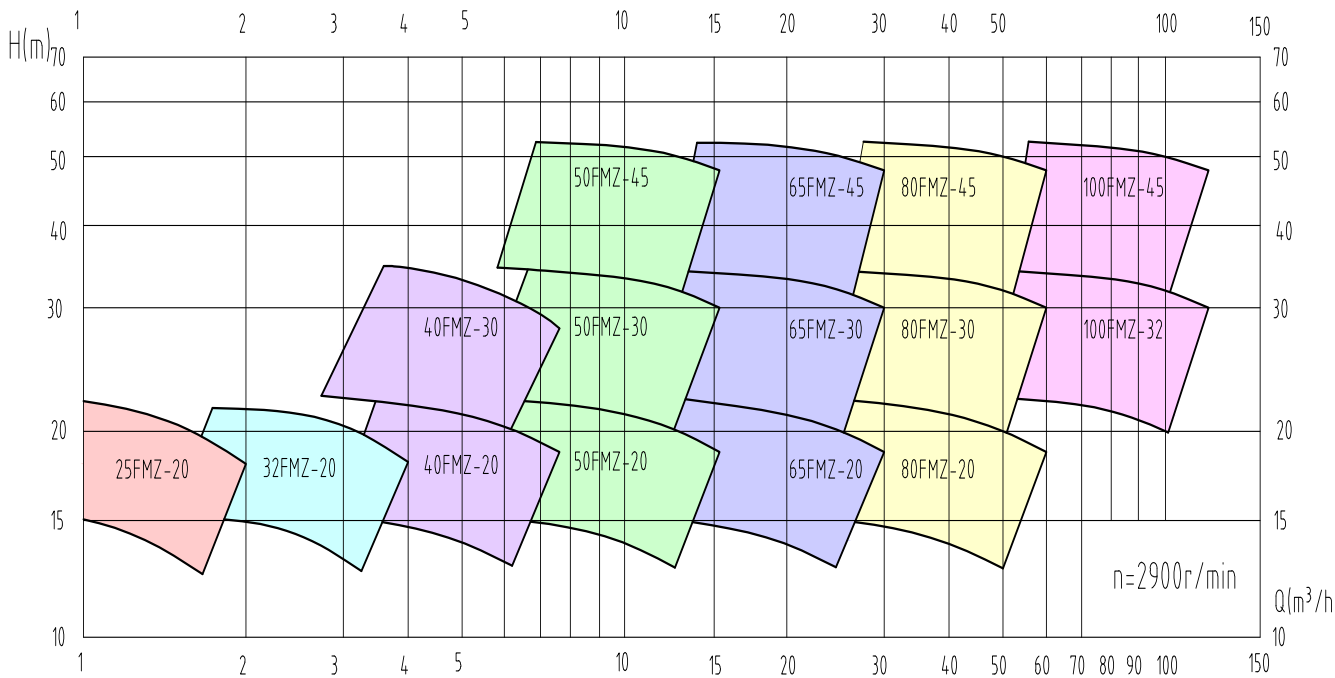


2. This pump is of horizontal external mixing self-priming type, magnetic driven, totally enclosed, and free of leakage.
3. The metal pump casing is lined with fluoroplastics; all flow passage parts are made with fluoroplastic alloy, and pump cover and impeller are made by integral pressing of metal wrapped with fluoroplastics.
4. The pump shaft is made with corrosion-resistant material, and sliding bearings are made with high density carbon type carborundum.
5. The whole pump requires only 1~2 sealing rings, ensuring best operation safety.
6. Spacers protected by fiber-reinforced hood are used, eliminating eddy current loss and obtaining sufficient strength, with increased pressure bearing capacity of spacer.
7. No bottom valve is required, and it can be used in place of submerged pump within the range of suction head.

### 性能范围 The main specifications

|        |                          |             |
|--------|--------------------------|-------------|
| 流量     | Flow                     | 1.6~100m³/h |
| 扬程     | Head                     | 20~45m      |
| 介质温度   | Temperature              | -20~150℃    |
| 进口直径   | Import diameter          | 25~100mm    |
| 最大工作压力 | The max working pressure | 1.6MPa      |

### FMZ型谱图 Spectrum of Model FMZ





## CW 型磁力驱动旋涡泵

### CW Magnetic Driven Vortex Pump

CW型磁力驱动旋涡泵，是小流量高扬程应用最理想的选择，以小流量、高扬程为特征，在许多复杂工况中发挥着其他泵类产品难以替代的作用，是本公司独具特色的产品，填补了国内小流量泵的空白。

该型泵适用于易燃、易爆、易气化介质的输送，可输送含20%气体的介质，特种结构可应用于汽蚀余量较低的场合。

该型泵具备优良的气液混合功能、液液混合搅拌功能，可以将高分子化合物与难于混合的其他液体均匀混合，解决搅拌机不能胜任的问题。

在石油精炼、精细化工、制药、电力成套设备制造等行业，磁力驱动旋涡泵被广泛应用在液体输送、循环、小流量增压、高压冲洗、高压乳化、高压喷雾等工艺流程中。

CW magnetic driven vortex pump is the ideal choice for low flow and high head applications, with the features of low flow and high head; it can play a role difficult to be replaced by other pump products in many complicated conditions; it is a unique featured product of our company, making up a blank in the low flow pumps in China.

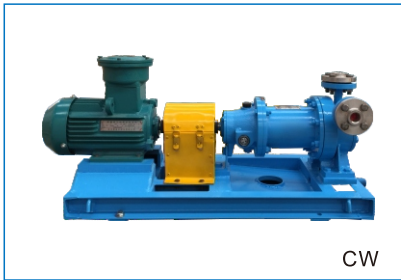
This type of pump is suitable for conveying inflammable and explosive media that can be easily vaporized, and medium containing 20% gas; the special structure can be used in application with fairly low NPSH.

This type of pump has excellent gas-liquid mixing function and liquid-liquid mixing and agitating function, and can homogeneously mix high molecular compounds with other liquid difficult to mix, solving problems that cannot be solved by mixers.

In petroleum refining, fine chemical, pharmaceutical and complete set power equipment manufacturing sectors, magnetic driven vortex pumps are extensively used in process flows such as liquid conveying, circulation, mini-flow boosting, high pressure flushing and emulsifying, and high pressure atomizing.

### 结构说明 Description of structure

1. 有单级旋涡泵、多级旋涡泵、离心旋涡泵、自吸旋涡泵等多种结构。
2. 体积小巧、结构简单、占地面积小、易操作易维护性、低能耗。
3. 适于小流量高压用途，在离心泵难以发挥作用的小流量范围可以保持稳定的性能，与柱塞泵、隔膜泵等容积



泵相比运转噪音低，无脉动，振动小，供液性能稳定。

4. 自平衡叶轮，无轴向载荷，叶轮与泵体泵盖之间依靠合理的间隙控制，确保长期稳定的性能和可靠性。

5. 适于输送不含固体颗粒，粘度不大于37.4cst的液体。

6. 可输送易挥发的液体，如汽油、酒精、甲醇等。

7. CWF型非金属磁力驱动旋涡泵可输送强腐蚀性液体。

8. 适于低汽蚀余量工况、气液混输的工况，加压混合乳化搅拌的工况。

9. 可用于正反转兼用的泵。

10. 可选择电机直连式或通过联轴器连接的形式。

1. A number of structures are available: single-stage vortex pump, multi-stage vortex pump, centrifugal vortex pump and self-suction vortex pump.

2. Compact volume, simple structure, small footprint, easy operation and maintenance, and low energy consumption.

3. It is suitable to applications of low flow and high pressure, able to maintain stable performance in the low flow range difficult for centrifugal pump to function, and compared with volumetric pumps such as plunger pump and diaphragm pump, it features no pulsation, small vibration and stable liquid supply performance.

4. With self-balancing impeller, it has no axial load; rational clearance control between the impeller and pump body and cover can ensure long-term stable performance and reliability.

5. It is suitable to convey liquid free of solid particle, with viscosity not exceeding 37.4cst.

6. It can convey volatile liquid, such as gasoline, alcohol and methanol.

7. CWF non-metallic magnetic drive vortex pump can be used for the transfer of strongly corrosive liquids.

8. It is suitable to conditions of low NPSH, conveying gas-liquid mixture and pressurized mixing, emulsifying and agitating.

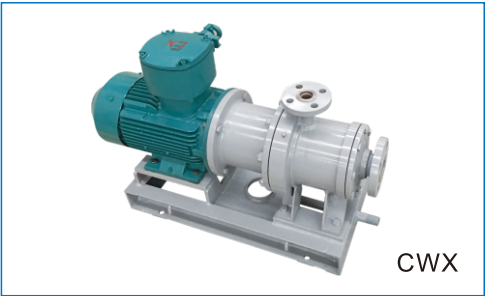
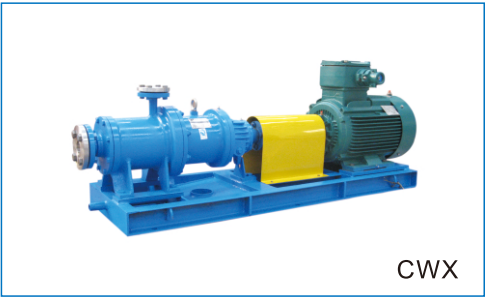
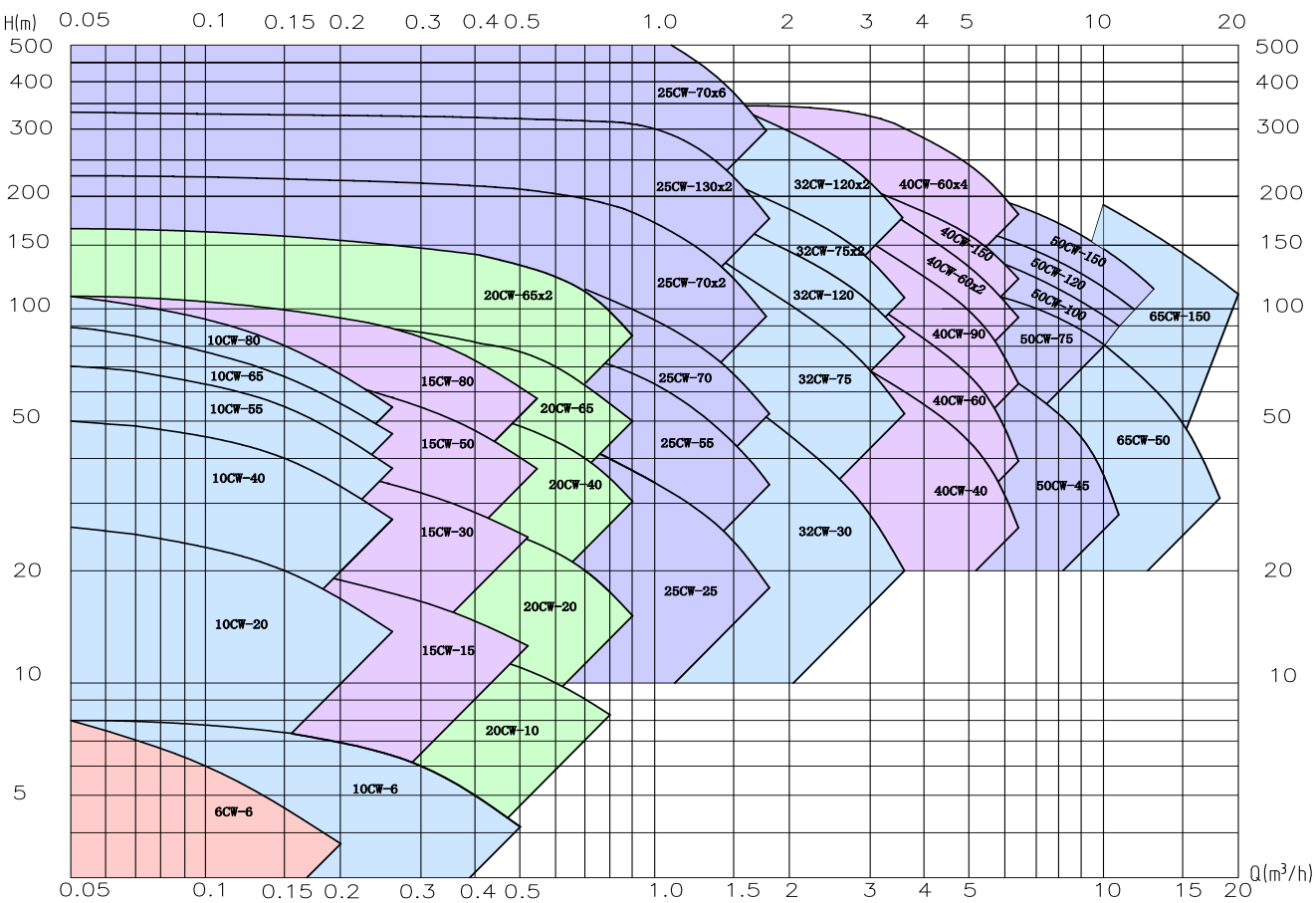
9. It can be used as pump for both forward and reverse rotation.

10. Either direct driving by motor or connection via coupling can be used.

### 性能范围 The main specifications

|        |                          |                           |
|--------|--------------------------|---------------------------|
| 流量     | Flow                     | 0.1~16.9m <sup>3</sup> /h |
| 扬程     | Head                     | 6~380m                    |
| 介质温度   | Temperature              | -20℃~+250℃                |
| 进口直径   | Import diameter          | 10~65mm                   |
| 最大工作压力 | The max working pressure | 4MPa                      |

CW型谱图 Spectrum of Model CW



## CTD型深井筒袋磁力泵 CTD Borehole Barrel Magnetic Driven Pump

CTD型深井筒袋磁力泵是我公司针对安装空间受限和低汽蚀余量工况研制开发的一种立式悬吊式双层壳体磁力驱动泵，是一种深井罐装式化工工艺用泵，该型泵参照美国石油学会API685标准设计，具有全密封、无泄漏、无污染、效率高、安全可靠、使用寿命长等特点，适用于输送各种易燃易爆的、污染的、易气化的、高温、低温、腐蚀性的液体，主要用于炼厂、石油化工、低温工程、管线调压或海上平台、能源工业冷凝液抽取等。

CTD型泵通过内外磁转子进行耦合传动，外磁转子与电机直联，隔离套将内磁转子密封在泵腔内，运用磁力驱动技术实现全密封，从根本上解决了易燃易爆、有毒有害物料的输送难题。

该型泵筒袋式的耐高压外壳及隔离套，满足泵的入口压力较高的要求，可做到全密封、无泄漏，占地面积小。

CTD borehole barrel magnetic driven pump is a vertical suspended 2-layer housing magnetic drive pump developed by our company for limited installation space and low net positive suction head operating conditions. It is a type of deep well grouted installation chemical engineering process pump, designed by referencing API685 standards. It features full sealing, no leakage, no pollution, high efficiency, high safety and reliability, and long service life, etc. It is suitable for the transfer of various types of inflammable, explosive, contaminating, easily gasifying, high temperature, low temperature, and corrosive liquids. It is mainly applied in refinery, petrochemical engineering, low temperature engineering, pipeline pressure regulation, and suction of condensate for offshore platform and energy industry.

CTD pump applies inner and outer magnetic rotors to provide coupled drive. The outer magnetic rotor is directly connected to the motor, the isolation sleeve seals the inner magnetic rotor inside the pump cavity, and the magnetic drive technology is used to realize full sealing, which essentially resolves the challenging situation with pumping the feed containing inflammable, explosive, toxic, and harmful substances.

The cylinder-bag type HP resistant housing and isolation sleeve meet the relatively high requirements on pump inlet pressure and achieve full sealing, no leakage, and small land area occupied.

### 结构说明 Description of structure

1. CTD型泵为立式筒袋泵，多级径向剖分式结构。
2. 轴向力利用水力学原理平衡，或由推力轴承及磁悬浮机构承受。
3. 外壳承受入口压力，外壳的长度及泵的深度取决于泵的扬程和装置汽蚀余量的要求。
4. 该泵也可以作为多级液下泵和槽罐泵以及多级管道泵使用。泵可以直接安装在介质池中或容器上。
5. 内置滑动轴承为流体动力轴承，运行平稳、易维护更换。
6. 泵的吸入口和排出口的位置在安装底座的上部，吸入口和排





出口一般互成180°布置。

- 7. 泵上设有方便维修的外壳排液置换管和气相平衡接口。
- 8. 驱动机可以采用与泵直联或通过联轴器联接的形式。

- 1. Model CTD pump is a vertical cylinder-bag pump with multistage radial split type structure.
- 2. The axial force is balanced by the principle of hydraulics by thrust bearing and magnetic suspension mechanism.
- 3. The inlet pressure is retained by the housing. The housing length and pump depth depend on the requirements of the pump head and the net positive suction head of the equipment.
- 4. This pump can also be used as multistage submerged pump, tank pump, and multistage pipeline pump. This pump can be directly installed in the media pool or on the vessel.
- 5. The built-in sliding bearing is a hydrodynamic bearing of smooth and stable operation and easy maintenance and replacement.
- 6. Pump suction port and discharge port are on the upper part of the installation pedestal. Generally, they are at arranged at 180° between each other.
- 7. The housing liquid discharge replacing tube and gas phase equilibrium interface on this pump are provided to facilitate maintenance.
- 8. The drive can be connected to the pump directly or via a coupling.

性能范围 The main specifications

|      |             |             |
|------|-------------|-------------|
| 流量   | Flow        | 0.6~240m³/h |
| 扬程   | Head        | 4~1023 m    |
| 介质温度 | Temperature | -196℃~+300℃ |
| 压力   | Ipressure   | 35MPa       |



CAY 型磁力驱动离心油泵  
CAY Magnetic Driven Centrifugal Oil Pump

CAY型磁力驱动离心油泵，旨在输送不含固体颗粒的石油、液化气等要求无泄漏或不允许密封污染的介质，特别是输送高温、高压、易燃、易爆或有毒的液体。适合于石油精制、石油化工和化学工业等工业系统中。

CAY型泵是在AY型油泵基础上改造设计的无泄漏全密封磁力泵，其结构形式、安装尺寸和性能参数范围与AY油泵相同。

CAY magnetic driven centrifugal oil pump is designed to convey media such as petroleum solid particle free and LPG requiring freedom of leakage or no contamination by sealing, especially high temperature, high pressure, inflammable and explosive or toxic liquid. It is suitable for service in petroleum refining, petrochemical and chemical industrial systems.

CAY pump is a leakage free and fully enclosed magnetic pump renovated and designed on the basis of Model AY oil pump, and its structural form, installation dimensions and performance parameter ranges are identical to those of AY oil pumps.

结构说明 Description of structure

- 1. CAY型泵为单级/两级单吸悬臂式离心油泵，磁力驱动全密封，无泄漏。
- 2. 壳体径向剖分，泵安装的支撑面在轴心线的水平面上，泵的进出口均垂直向上。
- 3. 泵的轴向力由叶轮上的平衡孔或叶轮对称布置达到平衡，残余轴向力由推力轴承来承受。
- 4. 内置滑动轴承的润滑方式为工艺液体自润滑。
- 5. 外部轴承体外表面铸成有散热片，输送介质温度小于120℃时，可采用空气冷却，温度在120~260℃之间，可选用风扇冷却，温度大于260℃时应采用水冷却。
- 6. 采用膜片式加长联轴器部件，以便于检修。
- 7. 从原动机端看，泵为逆时针方向旋转。

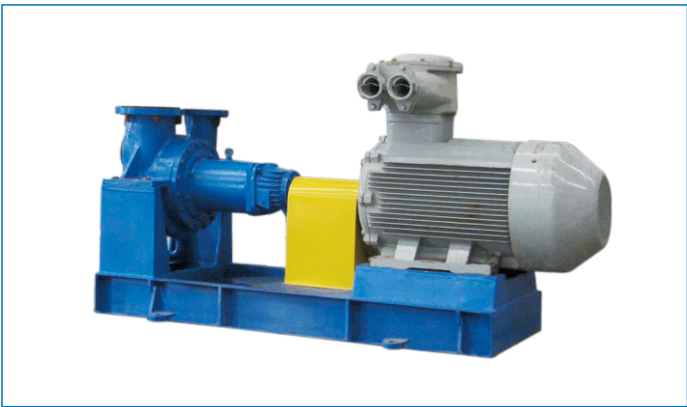
1. CAY pump is single/two-stage single suction cantilever centrifugal oil pump, driven by magnetic force, fully enclosed and free of leakage.

2. The casing is split radially; the pump mounting support surface is on the horizontal plane of the axial line, and both inlet and outlet of the pump face vertically upwards.

3. The axial force of the pump is balanced by the balance holes on the impellor or symmetric arrangement of impellor, and the residual thrust is taken by the thrust bearing.

4. The built-in sliding bearings are self-lubricated by process liquid.

5. The outer surface of external bearings is cast with radiating fins, and it can be cooled by air when



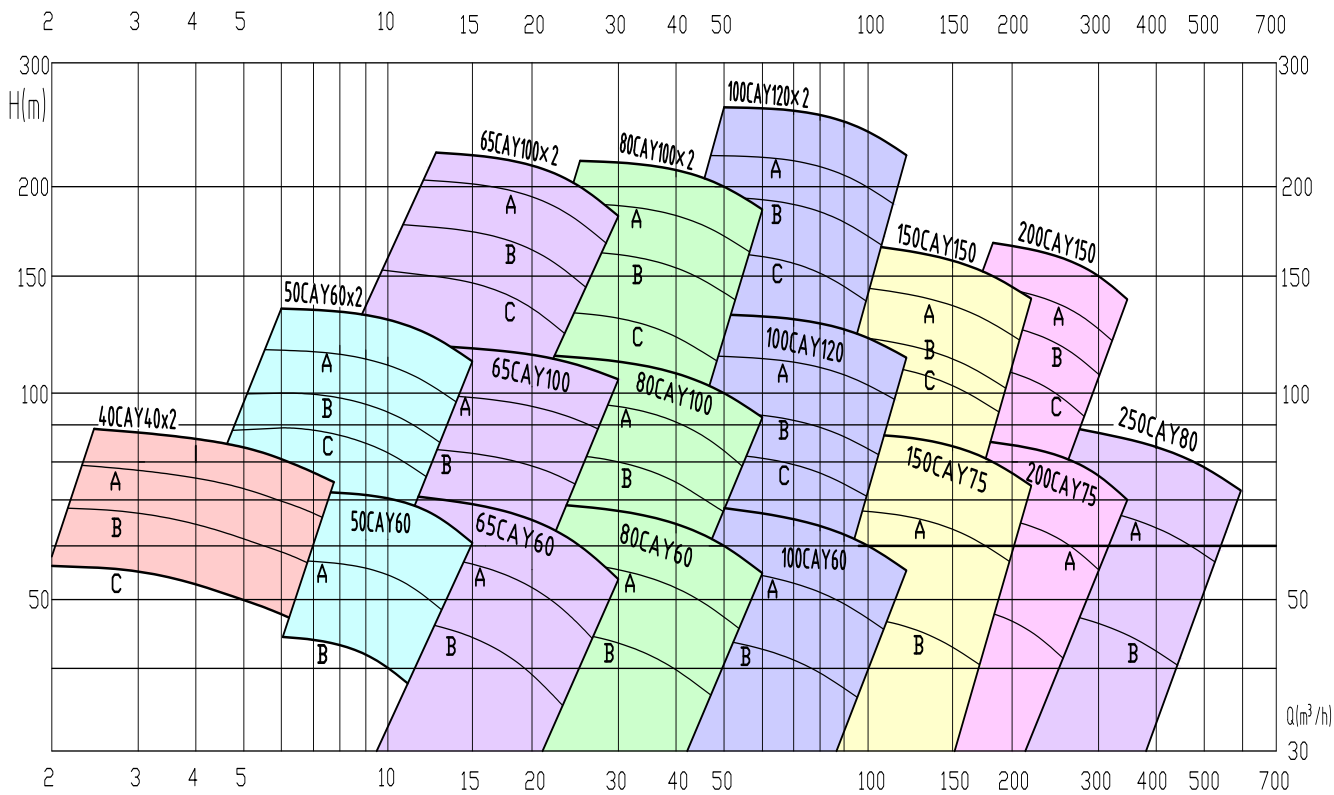
the temperature of conveying liquid is below 120℃, by fan when the temperature is between 120~260℃, and should be cooled with water when the temperature is over 260℃.

- 6. Diaphragm extended coupling is used to facilitate maintenance.
- 7.The pump rotates in anti-clockwise direction when viewed from the primer side.

性能范围 The main specifications

|        |                          |               |
|--------|--------------------------|---------------|
| 流量     | Flow                     | 2.5 ~ 500m³/h |
| 扬程     | Head                     | 38 ~ 240m     |
| 介质温度   | Temperature              | -45℃ ~ +450℃  |
| 进口直径   | Import diameter          | 40 ~ 250mm    |
| 最大工作压力 | The max working pressure | 4MPa          |

CAY型谱图 Spectrum of Model CAY



CFY 型液下式磁力驱动离心泵

CFY Submerged Magnetic Driven Centrifugal Pump

CFY型泵是一种单级单吸长轴液下式磁力驱动离心泵，适合于石油、化工行业输送不含固体颗粒的各类易于挥发的有毒有害液体。

广泛应用于氟化工行业氢氟酸液下泵和LNG行业的胺收集液下泵等。

CFY is a single stage single suction long shaft submerged magnetic driven centrifugal pump, suitable for conveying all types of volatile toxic and harmful liquids free of solid particles in petroleum and chemical sectors.

It is used extensively as submerged pump for hydrofluoric acid in fluorine chemical sector and for amine collecting liquid in LNG operations.

结构说明 Description of structure

1. 单级、单吸、立式。
2. 滑动轴承采用输送介质自润滑；材质为碳化硅陶瓷、石墨、碳化钨等耐磨材料。
3. 较高扬程的泵采用双蜗壳结构，使转子部件受径向力小，轴挠度小。
4. 泵的吸入口顺着轴线方向，排出口与轴线平行引出。
5. 驱动端的泵轴由轴承盒内的滚动轴承支承，滚动轴承采用脂润滑。
6. 泵的内置滑动轴承用所输送的液体润滑。
7. 泵工作时液面必须高于叶轮中心线，叶轮浸没在介质中，不存在排空问题。
8. 泵主要由泵体、泵盖、叶轮、轴、联轴器、中间接管、出液管、轴承架、底板等零件组成。
9. 泵的立式电机通过弹性联轴器与泵直接传动，泵的整体通过底板安装在容器上。

1. Single-stage, single-suction vertical pump.
2. The sliding bearings are self-lubricated by conveying medium, in wearing-resisting materials such as silicon carbide ceramics, graphite and tungsten carbide.
3. Double-volute structure is used for pumps with high head, so that rotor components are subjected to low radial force and small shaft deflection.
4. The pump suction is along the axial line, and the discharge is in parallel with the axial line.
5. The shaft at the driving end is supported by a rolling bearing in the bearing housing, and the rolling bearing is grease lubricated.
6. The built-in sliding bearings in the pump are lubricated by the liquid conveyed.
7. During operation, the liquid level must be above the impeller centerline, and the impeller is immersed in the medium, without emptying.
8. The pump is comprised of body, cover, impeller, shaft, coupling, intermediate connection pipe, discharge pipe, bearing support and base plate.





9. The vertical motor of the pump drives the pump directly via an elastic coupling, and the whole pump is mounted on the vessel via a base plate.

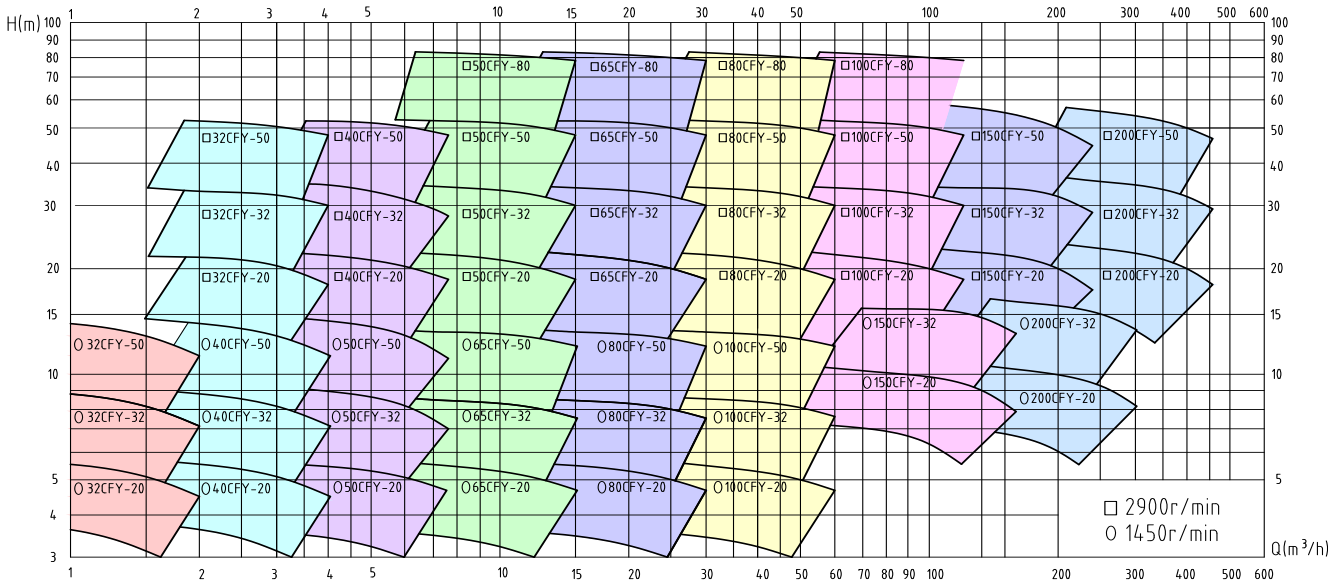
性能范围 The main specifications

|        |                          |             |
|--------|--------------------------|-------------|
| 流量     | Flow                     | 1.6~400m³/h |
| 扬程     | Head                     | 5~80m       |
| 介质温度   | Temperature              | -20℃~+120℃  |
| 进口直径   | Import diameter          | 20~200mm    |
| 最大工作压力 | The max working pressure | 1.6MPa      |

CFY 型结构图 Structure of CFY



CFY 型谱图 Spectrum of Model CFY



MFY型双壳体液氯磁力泵  
MFY Magnetic Driven Submerged Liquid Chlorine Pump

MFY型双壳体液氯磁力泵是一种液下式磁力驱动筒袋泵，广泛应用于氯碱行业对液氯的加压输送、包装及处理。采用双层隔离套保护，不需要氮气隔离密封，无氮气和氯气损耗，不会产生混合尾气，内部可实现自动排气，弥补了普通液氯液下泵在生产中存在的安全隐患，完全满足液氯连续、高压输送和灌装的需要。

MFY is a submerged magnetic driven barrel pump, extensively used in pressurizing, conveying, packaging and disposing of liquid chlorine in chlor-alkali industry. Double-layer spacer sleeve protection is adopted, without the need of nitrogen isolation and sealing, no nitrogen and chlorine loss, and it produces no mixed tail gas; automatic vent can be realized within the pump, avoiding the safety hidden perils in the production with ordinary submerged pump for liquid chlorine, and fully meeting the needs in continuous conveying and filling of liquid chlorine under high pressure.



性能范围 The main specifications

|        |                          |            |
|--------|--------------------------|------------|
| 流量     | Flow                     | 0~60m³/h   |
| 扬程     | Head                     | 30~150m    |
| 介质温度   | Temperature              | -45℃~+20℃  |
| 进口直径   | Import diameter          | 100~250mm  |
| 最大工作压力 | The max working pressure | 2.5~4.0MPa |

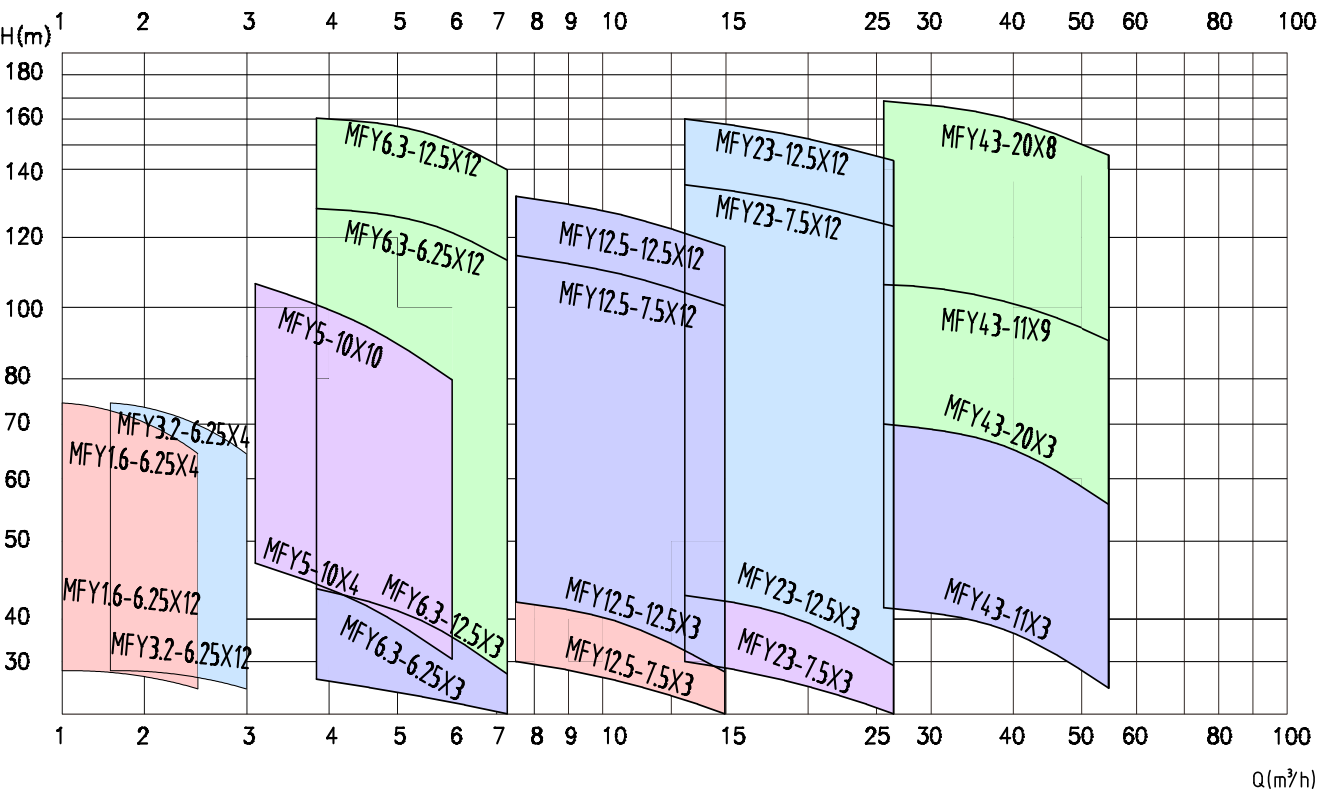
结构说明 Description of structure

- 立式筒袋式双层壳体结构，内层为节段式，泵的外壳承受入口压力，外壳按压力容器标准设计，外壳的长度以及泵的插入深度取决于装置汽蚀余量要求，也可以直接安装在液氯储罐上，此时不需要安装外壳，储罐即成为泵的外壳。
- 特殊的首级叶轮设计技术，优秀的诱导轮技术，低转速、低汽蚀余量、高抗汽蚀性能，泵的汽蚀余量NPSHr=0.5~0.8m。
- 轴向力利用流体力学的平衡鼓技术自动平衡，充分保证了泵的正常启停和滑动轴承的使用寿命。
- 通过磁性联轴器驱动，所有密封点均由密封垫实现静密封，无须干气作为密封阻隔气，没有氮气和氯气损耗，完全做到无泄漏。

5. 隔离套材料选用高强度、高阻抗的材料，在旋转磁场中极大的降低了磁涡流的产生，磁涡流损失小，磁传动效率高，对介质的温升影响小。
6. 采用双层隔离套结构，双重静密封，实现双重保护，并配置液体泄漏检测仪表，可实现远程监控报警，更加安全可靠。
7. 独特的泵的内部循环回流系统，可避免打“闷泵”，辅以泵与储罐之间的气相平衡系统，让整个泵组件在边界条件下都是安全的。
8. 一般安装于系统的最低位，排除泵内污物、杂质时也比较方便和迅速，防止了液氯中 $\text{NCl}_3$ 聚集的安全风险。
9. 泵的内置滑动轴承选用高纯度的碳化硅复合材料，具有较高的强度、韧性及耐磨性和良好的自润滑性能，可适应液氯在气液混合态下近似于干运转的工况。
10. 配置变频调速电机对泵的流量及出口压力进行调节，以给定的压力为基点进行调整，压力波动小，控制可靠稳定。不必安装卸压管及安全阀，不必配用氮气中间罐及相应管路。

1. It is in vertical barrel double-volute structure, the inner layer is sectional, and the outer shell withstands the suction pressure, its length and pump insertion depth depend on the NPSH requirement of the unit, it can also be directly mounted on the vessel storing the media, in this case, outer shell is not required, and the vessel can serve as the outer shell of the pump.
2. Special first-stage impeller design technique and excellent inducing wheel technique, low speed, low NPSH and high resistance to cavitation. The NPSHr of the pump is 0.5~0.8m.
3. The axial force is automatically balanced with the balance drum technology in hydrodynamics, fully ensuring the normal start and stop of the pump and the service life of sliding bearings.
4. It is driven via magnetic coupling, static sealing is realized with sealing packs at all points, no need for dry gas as sealing gas, therefore there is no nitrogen or chlorine loss, completely avoiding leakage.
5. Spacer is made of materials with high strength and high impedance, greatly reducing the magnetic vortex in the rotating magnetic field, therefore low magnetic vortex loss, high magnetic driving efficiency and small impact to the temperature rise of media.
6. Double layer spacer structure is used with dual static sealing, realizing dual protection, and liquid leakage detection instrument is provided, to realize leakage alarm, for increased safety and reliability.
7. Unique internal circulating system of the pump and the gas-phase balance system between the pump and tank, so that the whole pump is safe under boundary conditions.
8. Normally it is installed at the lowest position of the system, and when it is necessary to remove liquid chlorine, it can be done conveniently and quickly, which prevents the safety risk of  $\text{NCl}_3$  accumulation in liquid chlorine.
9. The built-in sliding bearings in the pump are made of high-purity silicon carbide ceramics composite material, featuring high strength, tenacity, wearing resistance and good self-lubrication performance, able to meet the nearly dry operation condition for liquid chlorine in the mixed status of gas and liquid.
10. The flow and outlet pressure of the pump are regulated by the variable frequency speed regulating motor. Adjust based on the given pressure, the pressure fluctuation is small and the control is reliable and stable. It is not necessary to provide pressure relief pump and relief valve, or intermediate nitrogen tank and associated piping.

MFY型谱图 Spectrum of Model MFY





## CQL 型汽液固混输磁力泵

### CQL Gas-liquid-solid mixed transmission Magnetic Drivien Pump

CQL型泵是我公司针对含有一定固体颗粒和易汽化介质而研制开发的一种新型立式泥浆型磁力驱动泵，该型泵参照美国石油学会API685标准设计，具有全密封、无泄漏、无污染、抗磨损、耐腐蚀能力强、安全可靠、使用寿命长等特点，适用于含有杂质颗粒、易汽化、具有腐蚀性、易燃易爆及有毒介质的输送，可广泛应用于石油化工、精细化工、冶金、电力等行业。

CQL型泵通过内外磁转子进行耦合传动，外磁转子与电机直联，隔离套将内磁转子密封在泵腔内，运用磁力驱动组合密封技术，从根本上解决了含固体颗粒、易汽化介质的输送难题。

适于输送低固相、分散的固体颗粒悬浮液，是一种典型的可输送含固体颗粒物的磁力泵。

CQL pump is a new type vertical slurry type magnetic drive pump developed for media containing certain amount of solid particles and subject to easy gasification. It has been designed by referencing API685 standard. It features full sealing, no leakage, no pollution, wear resistance, strong resistance to corrosion, high safety, high reliability, and long service life etc. It is applicable to conveying media containing impurity particles, media subject to easy gasification, corrosive media, inflammable media, explosive media, and toxic media. It can be widely used for petrochemical industry, fine chemical industry, metallurgy, and electric power industry etc.

CQL pump is driven by coupled internal and external magnetic rotors. The external magnetic rotor is directly connected to the motor. An isolation sleeve seals the internal magnetic rotor inside the pump cavity. Magnetic sealing is used to solve the transportation problem of the medium containing solid particles and easy to vaporize.

These pumps are applicable to conveying low solid phase, distributed solid particles suspension liquid, being a typical magnetic drive pumps capable of conveying media containing solid particles.

CQL pump is an integral machine mainly comprising a pump head, a magnetic drive, a motor, and an underframe. It adopts a vertical structure. Structure of this pump model features the following:

1. Vertical structure, magnetic drive, axial suction, radial discharge, and small land area occupied
2. Driven by magnetic coupling; magnetic drive combined seal structure; fully sealed; no leakage
3. Automatic balance of axial force using fluid mechanics principle
4. Optimized impeller hydraulic design suitable for conveying materials containing impurities and solid particles
5. Impeller hydraulic design plus operation of matching dynamic seal prevents cavitation effect and allows safety under all boundary conditions.
6. The pump structure fully realizes long dry operation and long service life of magnetic drive and bearings.
7. Pump inlet is at lowest part of the system, allowing easy and quick discharge of accumulated liquid in the pump.
8. After assembling of pump and motor, they are fixed on the underframe as an integral machine, hence the installation is easy.

### 性能范围 The main specifications

|        |                        |              |
|--------|------------------------|--------------|
| 流量     | Flow                   | 5.5~1100m³/h |
| 扬程     | Head                   | 4.5~130m     |
| 介质温度   | Temperature            | -45℃~+250℃   |
| 进口直径   | Outlet dia             | 40~300mm     |
| 法兰压力等级 | Flange pressure rating | 2.5MPa       |

### 结构说明 Description of structure

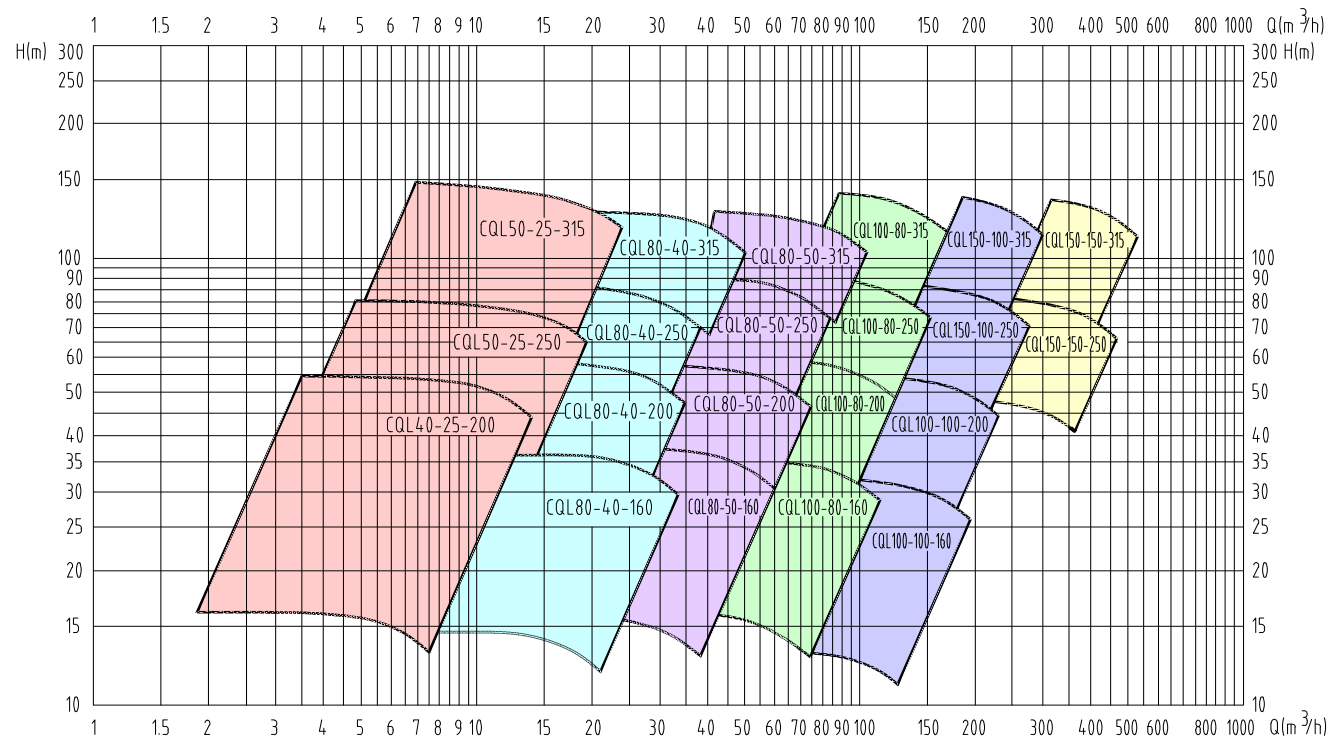
CQL型泵有以下特点：

1. 立式、磁力驱动、轴向吸人、径向排出，占地面积小。
2. 通过磁性联轴器驱动，磁力驱动组合密封结构，全密封、无泄漏。
3. 轴向力利用流体力学原理自动平衡。
4. 优化的叶轮水力设计，适宜含杂质、含固体颗粒的物料输送。
5. 叶轮水力设计配套动力密封运行，防止了汽蚀破坏，在边界条件下都是安全的。
6. 泵的结构完全可以实现长时间干运转，磁传动及轴承部件寿命长。
7. 泵入口处于系统的最低位，排除泵内积液比较方便和迅速。
8. 泵及电机装配好之后整体被固定在底架上，安装方便。

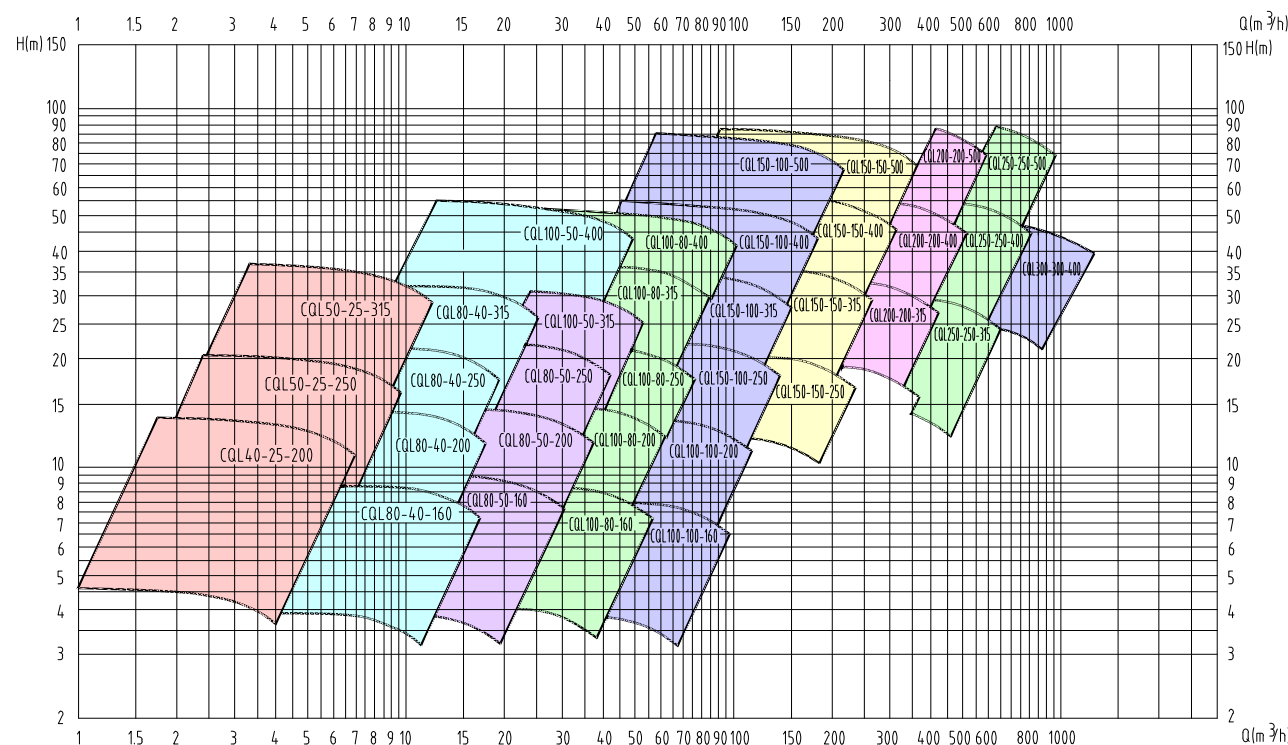


CQL 型谱图 Spectrum of Model CQL

(n=2950 r/min)



(n=1475 r/min)



## FYO 型汽液固混输液下磁力泵

### FYO Submerged Gas-liquid-solid mixed transmission Magnetic Driven Pump

FYO型泵是我公司针对含有一定固体颗粒介质而研制开发的一种新型液下式磁力驱动泵，该型泵参照美国石油学会API685标准设计，具有全密封、无泄漏、无污染、抗磨损、耐腐蚀能力强、安全可靠、使用寿命长等特点，适用于含有杂质颗粒、具有腐蚀性、易燃易爆及有毒介质的输送，可广泛应用于石油化工、精细化工、冶金、电力等行业。

FYO型泵通过内外磁转子进行耦合传动，隔离套将内磁转子密封在泵腔内，运用磁力驱动组合密封，从根本上解决了含固体颗粒介质的输送难题。

适于输送低固相、分散的固体颗粒悬浮液，是一种典型的可输送含固体颗粒物的液下式磁力泵。

FYO pump is a new vertical sludge type magnetic drive pump developed by our company for media containing a certain number of solid particles. It has been designed by referencing API685 standards. It features full sealing, no leakage, no contamination, resistance to wear, strong resistance to corrosion, high safety and reliability, and long service life. It is suitable for pumping corrosive, inflammable, explosive, and toxic media, containing impurity particles. It can be widely applied in petrochemical engineering, fine chemical engineering, metallurgy, and electric power, among other industries.

FYO pump applies inner and outer magnetic rotors to provide coupled drive. An isolation sleeve seals the inner magnetic rotor inside the pump cavity. The magnetic driving combined seal is applied to solve the transportation problem of the medium containing solid particles.

This pump is suitable for the transfer of low-solid and disperse suspension liquid with solid particles. It is a typical submerged magnetic pump capable of transferring liquid containing solid particles.

### 结构说明 Description of structure

FYO型泵为立式液下式悬吊结构。该型泵的结构有以下特点：

- 1、立式、液下式、磁力驱动、轴向吸入、轴向排出，占地面积小。
- 2、通过磁性联轴器驱动，磁力驱动组合密封，做到全密封、无泄漏。
- 3、磁力驱动部件位于泵的上端，与输送的含固相液体不接触，不会被磨损破坏，寿命长，安全可靠。
- 4、轴向力利用流体力学原理自动平衡。
- 5、优化的叶轮水力设计，适宜含杂质、含固体颗粒的物料输送。
- 6、叶轮水力设计配套动力密封运行，防止了汽蚀破坏，在边界条件下都是安全的。
- 7、泵的结构完全可以实现长时间干运转，磁传动及轴承部件寿命长。
- 8、泵入口处于系统的最低位，排除泵内积液比较方便和迅速。
- 9、泵及电机装配好之后整体被悬挂固定在底板上，安装方便。





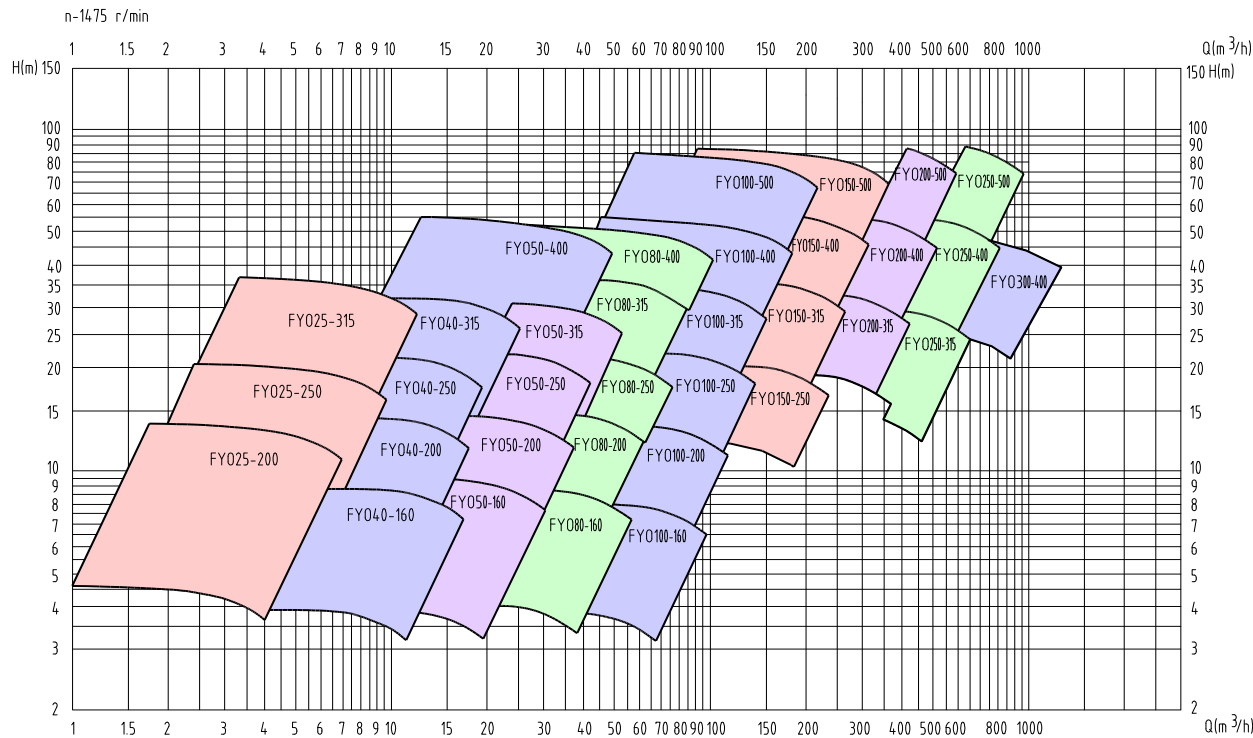
FYO pump is mainly comprised of a pump head, a magnetic drive, a motor, and a base plate. It adopts an integrated vertical submerged suspension structure, which features the following:

1. Vertical submerged type, magnetic drive, axial suction, axial discharge, and small land area occupied;
2. It is driven by magnetic coupling. drive combined seal structure, realizing full sealing and no leakage;
3. The magnetic drive is located at the upper end of the pump, not in contact with the conveyed liquid containing solid phase, hence it is not subject to wear. It provides long service life and high safety and reliability;
4. The axial force applies the principle of fluid mechanics to achieve automatic balance;
5. The optimized impeller hydraulic design is suitable for transferring materials containing impurities and solid parties;
6. The hydraulic design of the impeller operates with the matching dynamic seals, preventing cavitation pitting; hence it is safe under boundary conditions;
7. The structure of the pump is fully capable of dry operation for long periods and the magnetic drive and bearings have long service life;
8. Pump inlet is on the lowest part of the system, allowing quick and convenient discharge of liquid accumulated in the pump;
9. Assembled pump and motor will be hung and fixed on the base plate as a whole, allowing easy installation.

性能范围 The main specifications

|        |                        |              |
|--------|------------------------|--------------|
| 流量     | Flow                   | 5.5~1100m³/h |
| 扬程     | Head                   | 4.5~130m     |
| 介质温度   | Temperature            | -45℃~+250℃   |
| 法兰压力等级 | Flange pressure rating | 2.5MPa       |

FYO 型谱图 Spectrum of Model FYO



CAO 型卧式泥浆型磁力泵  
CAO Horizontal Slurry Magnetic Driven Pump

CAO型泵为单级单吸卧式磁力驱动离心泵，针对含有一定固体颗粒介质而研发的一种新型泥浆型磁力泵，该型泵参照美国石油学会API685及其相关标准设计制造，具有全密封、无泄漏、无污染、抗磨损、耐腐蚀能力强、安全可靠、使用寿命长等特点，可广泛应用于石油化工、精细化工、冶金、电力等行业。

CAO型泵通过内外磁转子耦合传动，隔离套将内磁转子密封在泵腔内，运用磁力驱动技术与流体动力密封结合，解决了含固体颗粒介质的输送难题。

本系列泵较适用于易结晶、易沉淀、有悬浮物的介质；浓度 < 10%的小的软固体颗粒介质；纸浆、有短纤维状无磨损性、易堵塞的介质和气液混输（气体 < 10%）。

本系列泵不适用于有磨蚀性的固体硬颗粒，如砂浆、灰渣、矿渣；容易产生缠绕的长纤维物。

CAO horizontal slurry magnetic driven pump is a new type slurry type magnetic driven pump (single stage, single suction horizontal magnetic drive centrifugal pump) developed for media containing certain amount of solid particles. It has been designed and manufactured by referencing API685 and other relevant standards. It features full sealing, no leakage, no pollution, wear resistance, strong resistance to corrosion, high safety, high reliability, and long service life etc. It can be widely used for petrochemical industry, fine chemical industry, metallurgy, and electric power industry etc.

CAO pump is driven by coupled internal and external magnetic rotors. An isolation sleeve seals the internal magnetic rotor inside the pump cavity. Magnetic drive technology has been combined with fluid dynamic seal, solving the difficult problem of conveying media containing solid particles.

This series pumps are better applicable to media subject to crystallization, precipitation, or suspended matter; soft solid particle media of concentration <10%; paper pulp; media containing short fibers (without abrasion) and subject to easy clogging; and mixed gas-liquid media (gas <10%).

This series pumps are not applicable to media containing abrasive hard solid particles, e.g. mortar, clinker, slag, and long fibers subject to easy winding.

结构说明 Description of structure

1. 该系列泵均为单级、单吸、卧式、悬臂离心泵；
2. 泵为轴向水平吸入，径向垂直排出，也可制成左侧或右侧排出；
3. 泵体为蜗壳式、径向剖分，具有底脚支撑和中心支撑两种形式；
4. 叶轮为开式或半开式；
5. 泵体上设置了耐磨板，便于磨损后更换。
6. 泵体、耐磨板材料可以选用特种材料或喷涂耐磨耐腐蚀材料等；
7. 采用外冲洗结构，不让颗粒进入密封腔，确保运行安全。
8. 优化的刚性轴结构设计，具有最佳的挠度指数，使泵的振动值进一步降低。
9. 内置滑动轴承采用了大厚度、重载、强推力陶瓷轴承，选用高纯度、高耐磨性的碳化硅材料，使用寿命长。



10. 内外磁转子均为全密封式结构，防止泵在腐蚀环境下磁体腐蚀和磁性能的衰退。

11. 滚动轴承采用稀油润滑，其油位由油标和油杯同时控制，油杯能自动补偿油位；

12. 采用了加长挠性膜片式联轴器部件，检修时不必拆卸吸入和吐出管路就能拆出叶轮、轴等零部件；

13. 泵和电机安装在同一个公用底座上。

14. 法兰标准可提供ANSI、HG/T20615、HG/T20592等多种选择。

15. 可配带普通Y系列电机、YB系列防爆型电机、直流电机和永磁电机等。

16. 泵的效率 高，汽蚀性能好、零部件的通用性、互换性好，运转稳定。
1. This series pumps are all single stage, single suction, horizontal, unshrouded impeller cantilever centrifugal pumps.

2. These pumps adopt axial horizontal suction and radial vertical discharge (or left or right discharge).

3. Pump body adopts volute type, radial splitting, and bottom feet support or central support.

4. Unshrouded impeller or semishrouded impeller is adopted.

5. Wear plates are provided to allow replacement after wear .

6. Material of pump body and wear plates may be special material or wear and corrosion resistant coated material subject to nitriding.

7. External flushing structure is adopted to prevent particles from entering the sealed cavity, ensuring operational safety.

8. Optimized rigid shaft structural design provides better deflection index, further reducing pump vibration.

9. Internal sliding bearing adopts thick, heavy duty, strong thrust ceramic bearing, and high purity, high wear resistance silicon carbide material, thus allowing long service life.

10.Both internal and external magnetic rotors adopt fully sealed structure, thus preventing pump magnet corrosion in corrosive environment and deterioration of magnetism.

11.Roller bearing is lubricated by oil, with the oil level controlled by both oil gauge and oil cup. This oil cup can automatically compensate the oil level.

12.Lengthened flexible membrane type coupling is adopted. For maintenance, parts such as impeller and shaft etc. can be removed without dismantling the suction pipeline or discharge pipeline.

13.The pump and the motor are installed on the same pedestal.

14.Flange standard may be ANSI, HG/T20615, or HG/T20592.

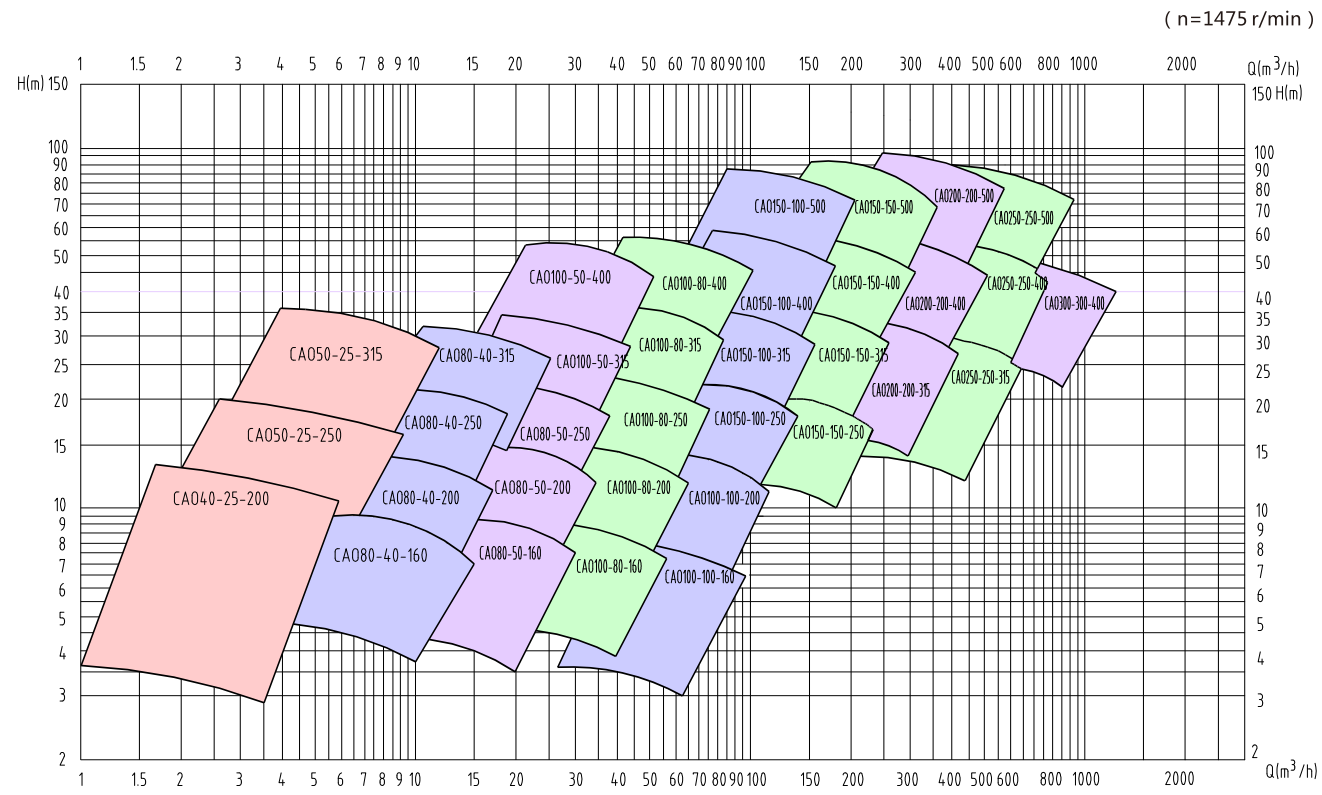
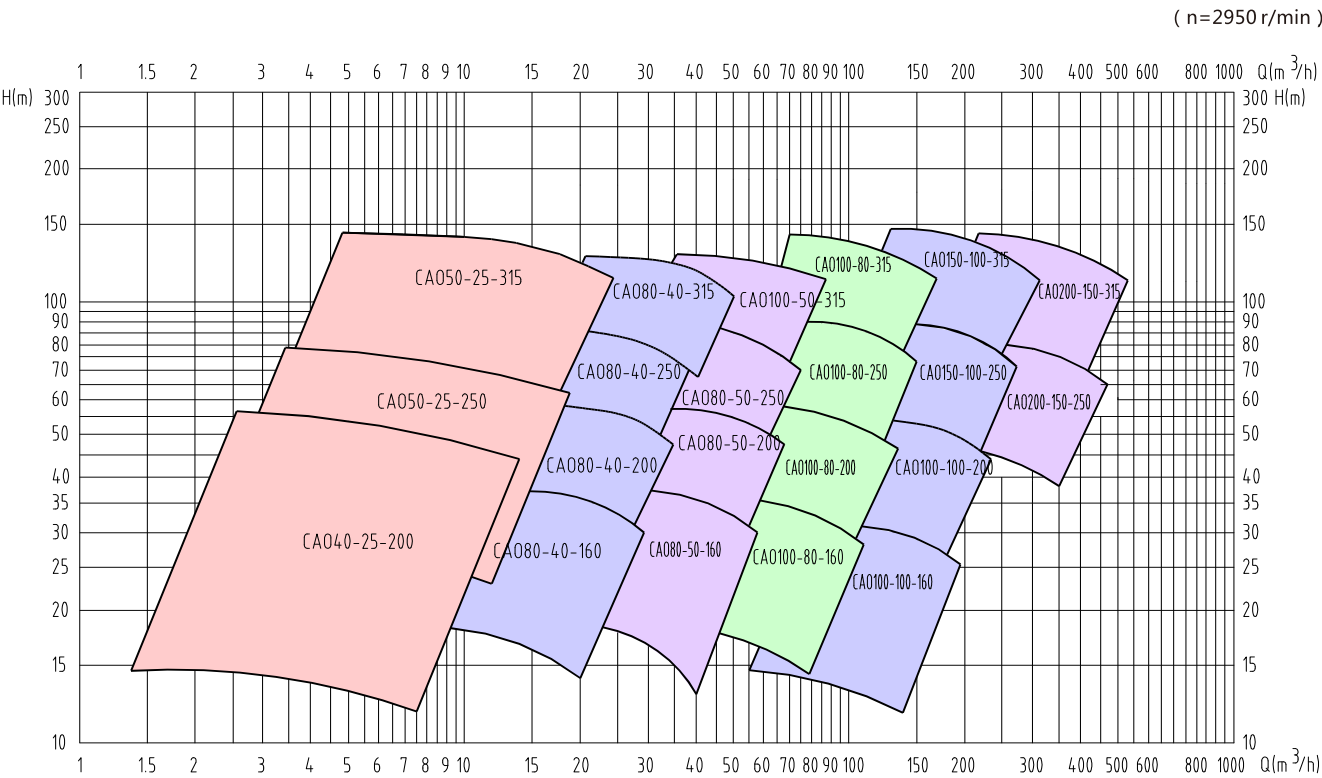
15.Ordinary Y series motor, YB series explosionproof motor, DC motor, or permanent magnet motor etc. can be used.

16.These pumps feature high efficiency, good cavitation performance, good versatility and interchangeability of parts, and stable operation.

性能范围 The main specifications

|        |                         |                      |
|--------|-------------------------|----------------------|
| 流量     | Flow                    | 5.5 ~ 100m³/h        |
| 扬程     | Head                    | 4.5 ~ 135m           |
| 工作温度   | Operating temperature   | -45℃ ~ +250℃         |
| 标准转速   | Standard rotation speed | 2950r/min/ 1475r/min |
| 法兰压力等级 | Flange pressure rating  | 2.5MPa               |

CAO型谱图 Spectrum of Model CQAO





## KCB 型磁力驱动齿轮泵

### KCB Magnetic Driven Gear Pump

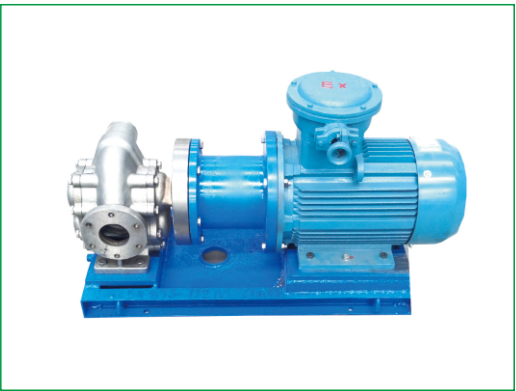
KCB型磁力驱动泵适用于石油化工、涂料、造纸、树脂工业等工艺流程中不含固体颗粒和长纤维，粘度为5~1500cst的流体输送。适宜于有毒有害、易燃易爆、有污染、易挥发介质和重油、机械油、燃油等的输送。

KCB magnetic driven pump is suitable for conveying fluid containing no solid particle or long fiber, with a viscosity of 5~1500cst in petrochemical, coating, paper-making and resin making processes. It is suitable to convey toxic and harmful, inflammable and explosive, contaminating and volatile media, and heavy oil, machine oil and fuel oil.

#### 结构说明 Description of structure

1. 外啮合式低压齿轮泵，全密封，无泄漏。
2. 主要由泵体、齿轮、轴、磁力驱动部件、安全阀等组成。
3. 泵内所有运转部件利用输送的介质自润滑。
4. 齿轮经热处理有较高的强度、硬度和耐磨性能。
5. 泵内有设计合理的泄压回路，保证齿轮在工作中不存在“困油”问题。
6. 滑动轴承选用适宜的材料，足以承受齿轮的不平衡径向液压力，抗污染力强，满足无润滑性的化工介质的要求，使用寿命长。
7. 设置有安全阀超载保护，安全阀的全回流压力为泵额定压力的1.5倍，可在允许的排出压力范围内根据实际需要进行调整，当排出压力超过泵的额定压力时，安全阀自动开启，保证泵及电机不会因压力过高而损坏。
8. 不锈钢结构的泵不配带内置安全阀，用户应在泵的出口设置旁通回流管线，并加装安全阀。
9. 从驱动端看，泵为顺时针旋转。

1. Externally engaged low-pressure gear pump, fully enclosed and leakage free.
2. It is mainly comprised of body, gear, shaft, magnetic driving parts and relief valve.
3. All running parts in the pump are self-lubricated by the media conveyed.
4. Gears are heat treated to have high strength, hardness and wearing resisting performance.
5. The pump is designed with rational pressure relief circuit, to ensure that there is no problem of“oil trap” during the operation of gears.
6. Sliding bearings are made with suitable materials, able to withstand the unbalanced radial hydraulic load of gears, with strong resistance to contamination, meeting the requirements of chemical media without lubricating property, and featuring long service life.
7. It is provided with relief valve overload protection; the full reflow pressure of the relief valve is 1.5 times the rated pump pressure, and can be adjusted according to actual need within the permissible discharge pressure range. When the discharge pressure exceeds the rated pressure of the pump, the relief valve opens automatically to protect the pump and motor from damage due to excessive high pressure.
8. Pumps in stainless steel structure have no built-in relief valve, so users should set up a bypass reflow circuit between the pump inlet and discharge, and mount a relief valve on it.
9. The pump rotates in a clockwise direction when viewed from the driving end.



#### 性能范围 The main specifications

|      |                      |              |
|------|----------------------|--------------|
| 流量   | Flow                 | 1.1~576m³/h  |
| 工作压力 | The working pressure | 0.33~1.45MPa |
| 介质温度 | Temperature          | -30℃~+120℃   |

## MCN 型磁力驱动内啮合齿轮泵

### MCN Magnetic Driven Internal Gear Pump

MCN系列磁力驱动内啮合齿轮泵是根据石油、化工、涂料、染料、油脂、医药、食品等行业的需求，研制开发的新型容积式泵，广泛应用于不同性质、不同粘度的介质输送，特别适用于高粘稠度介质的输送。

MCN series magnetic driven internal gear pump is a new type positive displacement pump developed to meet the needs in petroleum, chemical, coating and dyestuff materials, grease, medicine and foodstuff industries, and is extensively used to convey media with different properties and different viscosity, especially suitable for media with high viscosity.

#### 结构说明 Description of structure

1. 具有内齿的主动轮带动有外齿的从动轮，在全封闭的泵腔内作同方向转动，泵体和前盖的月牙板将泵的吸入口和排出口隔开，齿轮转动时在泵的吸入口形成负压，液体被吸入，在泵的出口齿轮啮合挤压液体被排出，完成了液体的输送。
2. 磁力驱动、全密封、无泄漏。
3. 输送液体平稳、脉动小、振动小、噪音低。
4. 泵的转速与流量呈线性函数关系，可适当改变转速来改变泵的流量。
5. 泵内所有转动部件均利用输送介质润滑。
6. 输送易结晶物料时，可在泵体和前盖上设置保温夹套。
7. 用户应在泵的出口设置旁通回流管线，并加装安全阀，当泵或管路系统超压时，安全阀自动打开，形成回流，保证系统安全。

The driving gear with inner teeth drives the driven gear with outer teeth, rotating in the same direction in the fully enclosed cavity. The swing link of the pump body and front cover separate the pump suction from the discharge. When the gears rotate, negative pressure is produced at the pump suction and liquid is sucked in, and discharge gears of the pump engages to extrude and discharge the liquid, completing the liquid conveying.

Magnetic driven, fully enclosed and leakage free.

Liquid conveying is stable, free of pulsation, with low vibration and noise.

The pump speed and flow are in linear function relationship, and the pump flow can be changed by changing the speed.

All rotating parts in the pump are lubricated by the media conveyed.

Insulation jacket can be provided at the body and front cover when materials likely to crystallize are conveyed.

Users should set up a bypass reflow circuit at the pump discharge, and mount a relief valve on it, and when the pump or piping system is over pressurized, the relief valve can open automatically to allow flow back, ensuring them system safety.



#### 性能范围 The main specifications

|      |                       |             |
|------|-----------------------|-------------|
| 流量   | Flow                  | 0.3~230m³/h |
| 压差   | Differential Pressure | 0.4~1.0MPa  |
| 介质温度 | Temperature           | -20℃~+200℃  |
| 进口直径 | Import diameter       | 15~200mm    |
| 粘度   | Viscosity             | 5~10000cst  |

## CYQ 型磁力驱动液化石油气泵

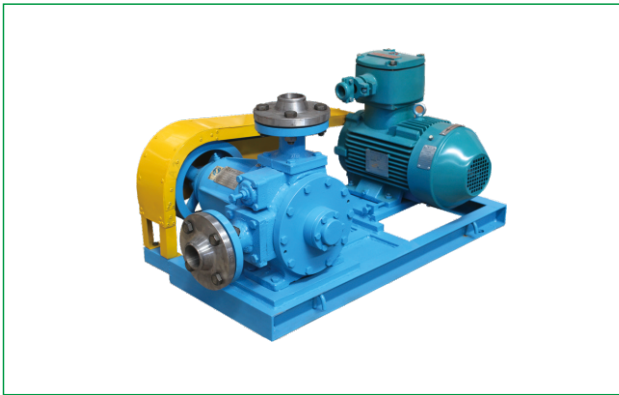
### CYQ Magnetic Driven LPG Pump

CYQ型磁力驱动液化石油气泵是在吸收国外同类产品先进技术的基础上，应用磁力驱动技术，针对石油液化气的特点，设计制造的一种新型专用滑片泵，主要用于输送液化石油气，乙烯、乙烷、丙烯、丙烷和丁烷等及异戊烷、重烃等挥发性较强的烃类产品，也可用于输送汽油、柴油、液氨、液氯、超临界二氧化碳等性质类似的其它挥发性液体。该泵最适合于液化石油气的罐装、倒罐、卸车及汽车燃料加气等，解决了气液混输的问题。

CYQ magnetic driven LPG pump is a new type dedicated sliding vane pump design with magnetic driven technology with respect to the features of LPG, on the basis of absorbing the advanced technologies of similar products overseas; it can be used mainly to convey LPG, and hydrocarbon products with strong volatility such as ethylene, ethane, propylene, propane and butane and isopentane and heavy hydrocarbon, as well as other volatile liquid with similar properties such as gasoline, diesel oil, liquid ammonia, liquid chlorine and supercritical carbon dioxide. This pump is most suitable to filling, dumping, unloading of LPG and vehicle fuel filling, and can be used in applications with low NPSH, solving the problem of conveying gas-liquid mixture. This pump is most suitable for loading into tank, tank transfer, and unloading from truck of LPG as well as filling up fuel gas for vehicles, which resolves the issue on gas-liquid mixed transfer.

### 结构说明 Description of structure

1. 全密封、无泄漏，完全避免了输送中的不安全因素。
2. 吸入口水平，出口垂直向上。
3. 当出口管路系统压力超出已设定的额定压力时，安全阀自动打开，液体在泵内循环，确保系统安全，安全阀的工作压力应在泵的额定压力范围内根据实际需要设定。
4. 该型泵能够适应气液混输。

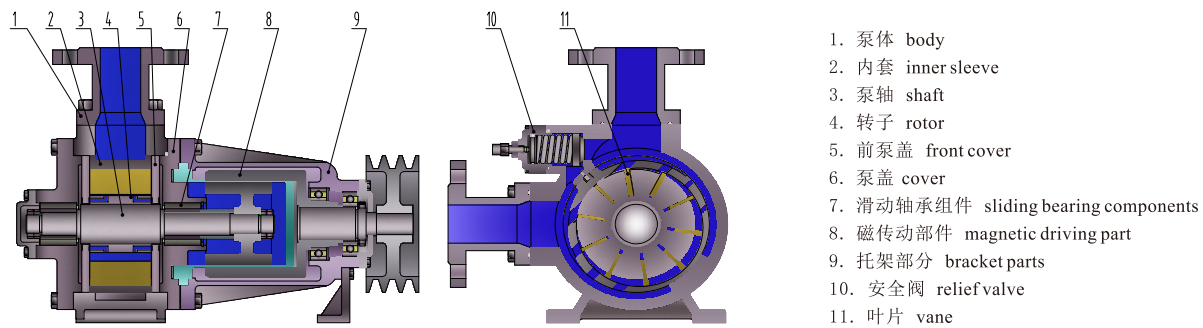


1. Fully enclosed and free of leakage, completely avoiding unsafe factors in conveying.
2. The suction is in horizontal position and the discharge is vertical upward.
3. When the outlet piping system pressure exceeds the set rated pressure, the relief valve will open automatically, to allow liquid to circulate inside the pump, to ensure system safety; the working pressure of the relief valve should be set according to actual need within the rated pressure range of the pump.
4. This type of pump can be used in applications gas-liquid mixture.

### 性能范围 The main specifications

|      |                      |                       |
|------|----------------------|-----------------------|
| 流量   | Flow                 | 5~60m <sup>3</sup> /h |
| 工作压力 | The working pressure | 0.36~0.74MPa          |
| 介质温度 | Temperature          | -40℃~+80℃             |
| 进口直径 | Import diameter      | 50~100mm              |

### CYQ 型结构图 Structure of CYQ





## 兰州海兰德特种磁力泵

