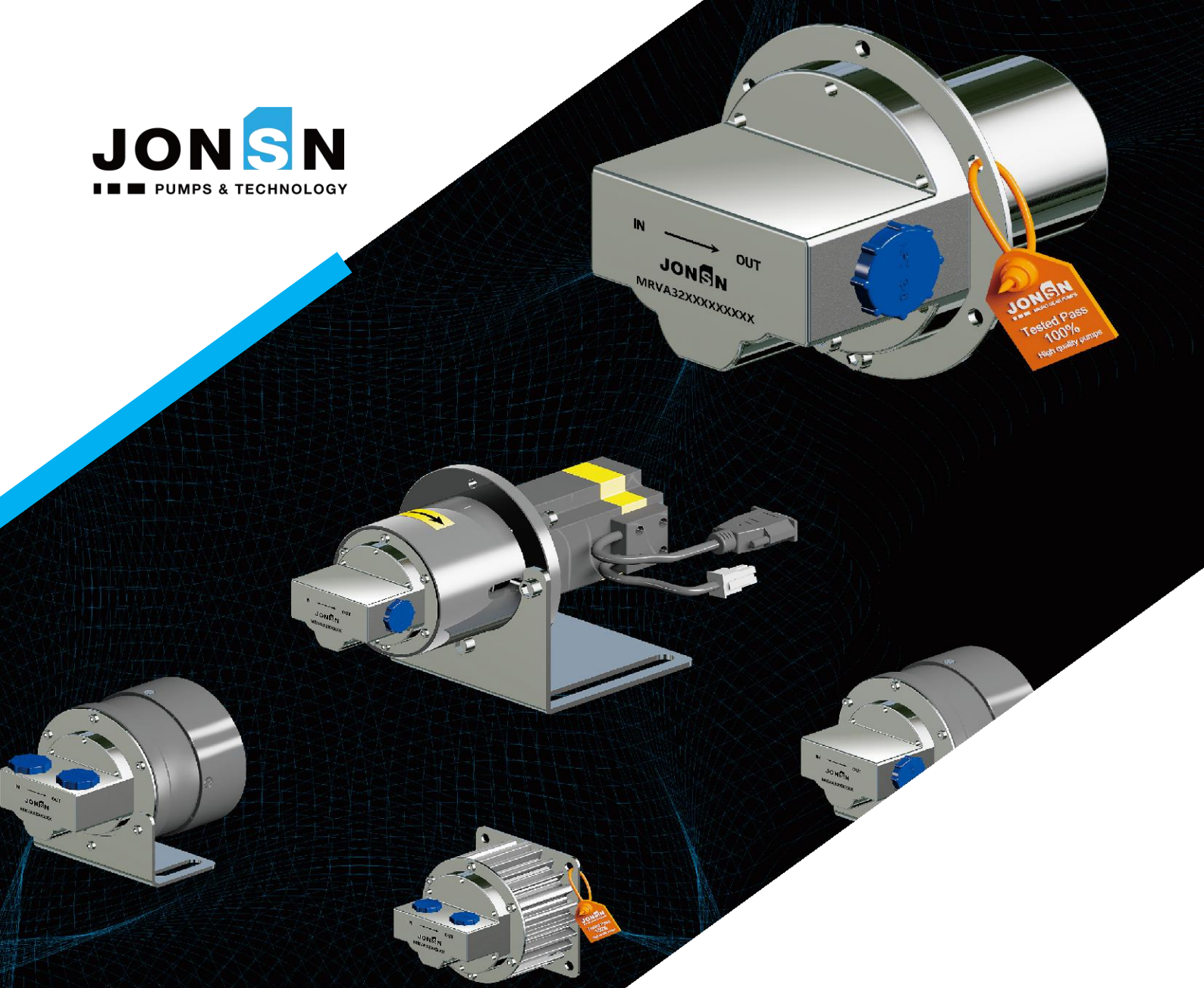
JONSN
PUMPS & TECHNOLOGY



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CE

MRV 系列精密级磁力齿轮泵操作手册

MRV Series Precision Magnetic Gear Pump Operation Manual

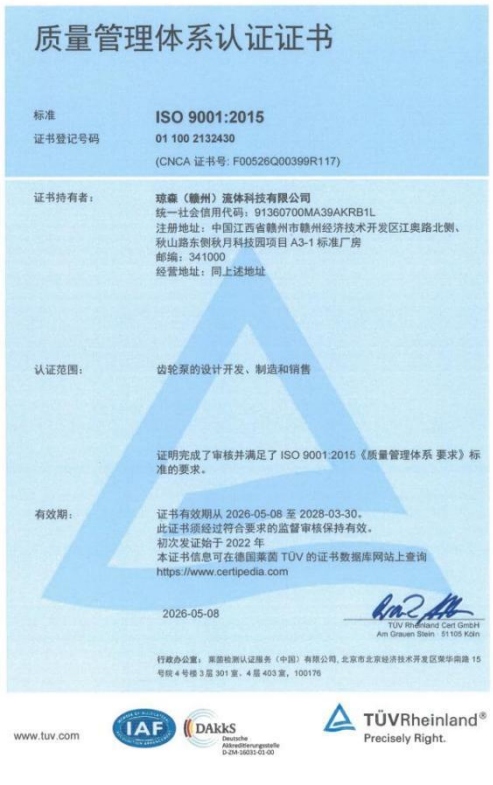
请妥善保管此手册。
Please keep this manual properly.
请确保先阅读此产品的使用说明，再按照其中的要求安装及使用此产品。
Be sure to read the instructions of this product first, and then follow the instructions to install and use this product.
本手册适用于：MRV 系列精密级微型磁力齿轮泵
This manual applies to: MRV Series Precision Magnetic Gear Pumps

琼森（赣州）流体科技成功取得 TÜV 莱茵 **ISO 9001:2015 质量管理体系认证证书**！ 经由德国莱茵权威严苛审核，公司齿轮泵的设计开发、制造及全流程销售服务，全面符合 ISO9001 国际质量管理标准。 此次认证是对我们生产管控、研发体系、品控流程的权威认可，未来我们将持续以标准化、精细化质量管理，严控每一台齿轮泵品质，为客户提供稳定可靠的流体输送解决方案。

Jonsn (Ganzhou) Fluid Technology Co., Ltd. has successfully obtained the ISO 9001:2015 Quality Management System Certificate issued by TÜV Rheinland!

After rigorous and authoritative audits conducted by TÜV Rheinland Germany, the company's design & development, manufacturing, and full-process sales services of gear pumps fully comply with the international quality management standard ISO 9001.

This certification serves as authoritative recognition of our production control, R&D system and quality control procedures. Moving forward, we will continue to implement standardized and refined quality management, strictly control the quality of every single gear pump, and deliver stable and reliable fluid transfer solutions for customers worldwide.



质量管理体系认证证书

标准 ISO 9001:2015
证书登记号码 01 100 2132430
(CNCA 证书号: F00526Q00399R117)

证书持有者：
琼森（赣州）流体科技有限公司
统一社会信用代码：91360700MA39AKRB1L
注册地址：中国江西省赣州市赣州经济技术开发区江奥路北侧、秋山路东侧秋月科技园项目 A3-1 标准厂房
邮编：341000
经营地址：同上述地址

认证范围：齿轮泵的设计开发、制造和销售

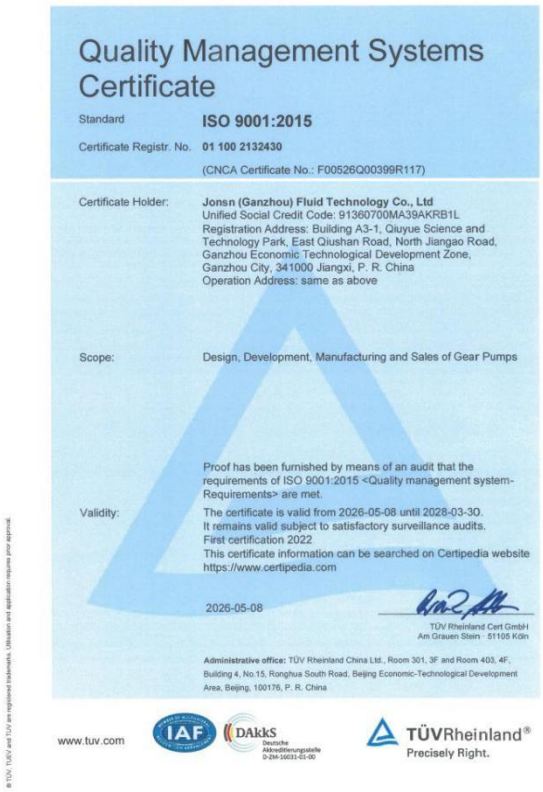
证明完成了审核并满足了 ISO 9001:2015《质量管理体系 要求》标准的要求。

有效期：证书有效期从 2026-05-08 至 2028-03-30。
此证书须经过符合要求的监督审核保持有效。
初次发证始于 2022 年
本证书信息可在德国莱茵 TÜV 的证书数据库网站上查询
https://www.certipedia.com

2026-05-08
TÜV Rheinland Cert GmbH
Am Grauen Stein 51105 Köln

行政办公室：莱茵检测认证服务（中国）有限公司, 北京市北京经济技术开发区荣华南路 15 号院 4 号楼 3 层 301 室、4 层 403 室, 100176

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Quality Management Systems Certificate

Standard ISO 9001:2015
Certificate Registr. No. 01 100 2132430
(CNCA Certificate No.: F00526Q00399R117)

Certificate Holder:
Jonsn (Ganzhou) Fluid Technology Co., Ltd
Unified Social Credit Code: 91360700MA39AKRB1L
Registration Address: Building A3-1, Qiuyue Science and Technology Park, East Qiushan Road, North Jiangao Road, Ganzhou Economic Technological Development Zone, Ganzhou City, 341000 Jiangxi, P. R. China
Operation Address: same as above

Scope: Design, Development, Manufacturing and Sales of Gear Pumps

Proof has been furnished by means of an audit that the requirements of ISO 9001:2015 <Quality management system-Requirements> are met.

Validity: The certificate is valid from 2026-05-08 until 2028-03-30.
It remains valid subject to satisfactory surveillance audits.
First certification 2022
This certificate information can be searched on Certipedia website https://www.certipedia.com

2026-05-08
TÜV Rheinland Cert GmbH
Am Grauen Stein 51105 Köln

Administrative office: TÜV Rheinland China Ltd., Room 301, 3F and Room 403, 4F, Building 4, No.15, Ronghua South Road, Beijing Economic-Technological Development Area, Beijing, 100176, P. R. China

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警告告诫注意

Warning and Note



警告：表示可能会引起人身伤害或设备损坏及其他安全事故。

Warning: indicates that could cause personal injury or damage to equipment and other accidents etc.

告诫：必须认真遵守，以免损坏设备。

Caution: must be observed to avoid damage to the device.

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1、责任声明 / Statement

所有安装、使用、检修、维护人员，必须完整通读本手册后方可作业。

All personnel responsible for installation, operation, maintenance and repair shall fully read this manual before work.

设备到货开箱后，先检查外包装完整性、泵体外观有无磕碰损伤，并对照装箱单清点配件；若配件缺失、泵体破损，禁止上机使用，由此产生的泄漏、设备损坏、人身伤害，制造商不承担相关责任。

After receiving the equipment, check the packaging integrity and pump appearance, and verify all spare parts against the packing list. Do not install damaged pumps or pumps with missing accessories. The manufacturer shall not be liable for equipment damage or personal injury caused by such issues.

使用方有义务遵守本手册全部安全规范，同时符合国家、行业相关安全生产法律法规；违规操作引发的故障与安全事故，责任由使用方自行承担。

Users shall comply with all safety requirements in this manual and relevant national industrial safety regulations. The user shall bear all liabilities for failures or accidents caused by non-compliant operation.

本泵仅适用于设备订货时约定的介质、温度、压力、粘度等相关工况；若需变更使用条件，必须提前取得制造商或官方授权代理商书面许可，未经许可不得投入使用。

This pump is suitable only for the operating conditions—such as the medium, temperature, pressure, and viscosity—specified at the time of the equipment order. Any change to the operating conditions requires prior written approval from the manufacturer or an officially authorized distributor; the pump must not be put into operation without such approval.

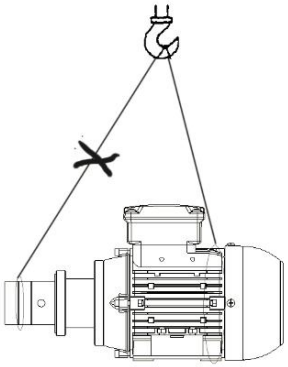
严禁超出手册规定工况、介质范围使用设备；超范围使用造成泵体腐蚀、卡死、泄漏、报废及人员受伤，制造商不予质保、不承担责任。

Do not operate the pump beyond the working scope specified in this manual. The manufacturer shall not provide warranty or take liability for pump damage or personal injury caused by out-of-spec operation.

2. 注意事项 / Attention

2.1 搬运

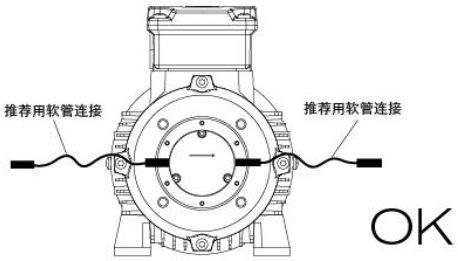
搬运泵和电机时，双手应抱紧电机主体整体搬运，不可以一手抱泵头，一手抱电机，这样容易把泵头压板拉变形，容易导致泵体泄漏。



2.2 安装

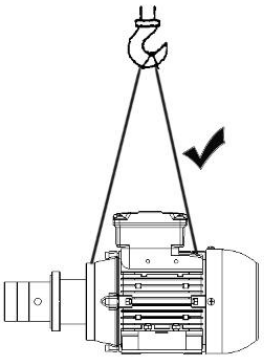
2.2.1 泵的安装 - 将泵的安装位置尽可能的靠近液体源，出入口管线尺寸不能小于泵接口尺寸， 并尽量缩短长度。如果入口管线必须很长，请加大管径。尽量减少泵入口的阀门，弯管的数量。

2.2.2 管道安装 - 使用螺纹密封胶或特氟龙密封带作为管道联结的密封，在安装过程中不要损坏泵头，不要影响泵的对中。在用扳手紧螺纹的时候，要用手握住泵头。 由于泵体体积较小，进出口管道优先使用软管连接，减少管道应力传递到泵体上，管道应力或拉力过大容易将泵体压板拉伸变形，容易导致泵体泄漏。当进出口管路是带法兰硬管连接时，管道上需装好支撑管架固定，中心对准，要确保配对法兰拧紧时不会把泵头侧的管路拉动，尽可能消除管道应力变形，以下为安装示意图：



2.1 TRANSPORT

When carrying the pump and motor assembly, hold the motor body firmly with both hands. Never hold the pump head with one hand and the motor with the other, as this may deform the pump head mounting plate and cause pump leakage.

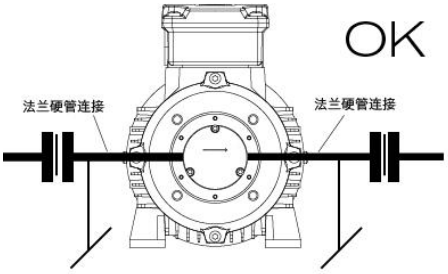


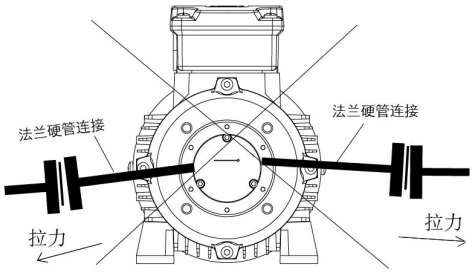
2.2 INSTALLATION

2.2.1 Pump Installation: Install the pump as close to the liquid source as possible. Inlet and outlet pipeline diameters shall not be smaller than the pump connection size, and the pipeline length shall be minimized. If a long inlet line is unavoidable, increase the pipe diameter. Minimize the number of valves and bends at the pump inlet.

2.2.2 Piping Installation: Use a suitable thread sealant or PTFE (Teflon) sealing tape to seal pipe connections. Do not damage the pump head during installation and do not affect pump alignment. When tightening threaded connections with a wrench, hold the pump head firmly by hand to counteract the torque. Due to the compact size of the pump, flexible hose connections are preferred for the inlet and outlet pipelines to minimize stress transfer to the pump body. Excessive pipe stress or tension may deform the pump head plate and cause pump leakage. When rigid flanged piping is used, the pipes must be securely supported by brackets with proper center alignment. Ensure that tightening the mating flange does not pull on the pump-side piping. Eliminate pipe stress deformation as far as practically possible. See the installation diagram below:







2. 3 过滤器 – 泵入口必须安装精度为 25μm 或更高的过滤器。

2.3 Filter: A filter with a rating of 25μm or finer shall be installed at the pump inlet.

3. 操作指南

3. 1 磁力驱动环 – 磁力驱动可以让泵达到零泄漏的要求，它也能够对系统的过压和颗粒的进入提供保护。当内外磁环在极端外力的作用下发生错位，就会发生脱转现象。

3. 2 泵堵转时，电机可能会继续运转，但泵将停止运行。要恢复运转，请将电机完全停止再启动。如果继续堵转，请检查系统是否超压。如果系统压力正常，必须拆开泵体检查是否有外部颗粒进入泵体，造成齿轮堵转。清理完内部部件后，重新组装泵组。在重新启动前，请转动电机风扇的叶片，此时泵和电机应该平稳无阻碍的旋转。

3. 3 操作压力 – 过大的进出口压力差会使磁力联轴器脱转，系统压力会有波动，并发出震动噪音。

3. 4 输送有粘度物料 – 粘度过大转速又很高会使磁力联轴器脱转，请按选型时提供的转速运行。

3. 5 输送高温物料 – 泵出厂前齿轮和滑动轴承留有安全膨胀间隙，因此输送时请将泵加热至需要的温度，否则泵在常温下会出现内泄漏过大、压力有波动。

3. 6 自吸 – 泵具有自吸功能，但在启动前确认齿轮被泵送的液体润湿过。

3. 7 干转 – 干转会导致泵的永久损坏，请确认泵在运转时泵腔内有液体。

3. 8 反转 – 泵应该顺时针旋转，短时间的反转是可以接受的，但长时间连续的反转会缩短泵的寿命。

3. 9 工程塑料齿轮泵 – 严禁用于含二氯甲烷、四氢呋喃、丁基锂、二甲基乙酰胺的溶剂及物料输送或清洗，输送以上物料会使我们的工程塑料齿轮和轴套发生溶胀卡死。

3.Operation Guide

3.1 Magnetic drive ring - The magnetic drive enables zero-leakage operation of the pump. It also provides protection against system overpressure and particle ingress. When the inner and outer magnetic rings become misaligned under extreme external force, decoupling will occur.

3.2 If the pump rotor locks, the motor may continue to run but the pump will stop operating.To resume operation, stop the motor completely before restarting. If stalling persists, check whether the system is over-pressurized. If system pressure is normal, the pump must be disassembled to check for foreign particles that may have entered the pump chamber and caused the gears to seize. After cleaning all internal components, reassemble the pump unit. Before restarting, manually rotate the motor fan blades to confirm that the pump and motor rotate smoothly without obstruction.

3.3 Operating pressure - An excessive pressure differential between inlet and outlet will cause the magnetic coupling to decouple. System pressure will fluctuate and vibration noise will be produced.

3.4 Deliver viscous materials - Excessively high viscosity combined with high speed may cause the magnetic coupling to decouple. Operate strictly within the speed range specified during pump selection.

3.5 Deliver high temperature materials - The pump gears and sliding bearings are assembled with specified thermal expansion clearance at the factory. Before delivering high-temperature fluids, preheat the pump to the required operating temperature. Failure to do so may result in excessive internal leakage and pressure fluctuations at ambient temperature.

3.6 Self-priming - The pump has self-priming capability. However, before starting, ensure the gears are wetted with the pumped liquid.

3.7 Dry-running – Dry running will cause permanent damage to the pump. Always ensure that the pump chamber is filled with liquid during operation.

3.8 Reverse - The pump should rotate clockwise. Brief reverse rotation is acceptable; however, prolonged continuous reverse rotation will shorten the service life of the pump.

3.9 Engineering plastic gear pump - is prohibited for use with solvents containing dichloromethane (DCM), tetrahydrofuran (THF), butyllithium, or dimethylacetamide (DMAC) for material delivery or cleaning. Contact with these solvents will cause the plastic gears and bearing sleeves to swell and seize.

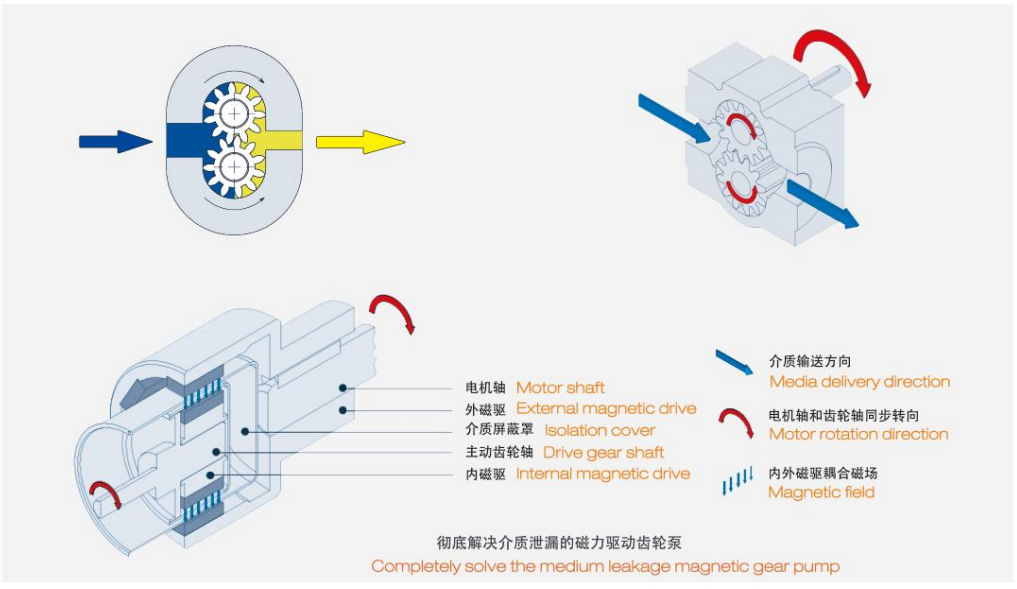
4. 技术参数 / Technical Parameters

参数名称 Parameter Name	技术参数 Technical Parameters
流量范围/Flow range	0.001 - 8L/min
入口压力/Inlet pressure	-0.98 - 25 bar
压差/Differential pressure	0.98-10 bar（取决于物料粘度 / Depends on material viscosity）
温度/Temperature	-60 -100℃（其它温度可定制 / Other temperatures can be customized）
粘度范围/Viscosity range	3000cps
最大密度/Maximum density	1.8 g/cm³
电机可配/Motor can be equipped	交流电机、无刷直流、伺服、变频防爆电机 AC motors, Brushless DC, Servo, Frequency conversion explosion-proof motor
进出口螺纹/Inlet & Outlet Thread	NPT1/8 .NPT1/4. NPT3/8
非标定制/Non-standard customization	OEM 机械设备配套、伺服系统定制 OEM mechanical equipment matching, servo system customization

5. 配置编码 / Configuration Code

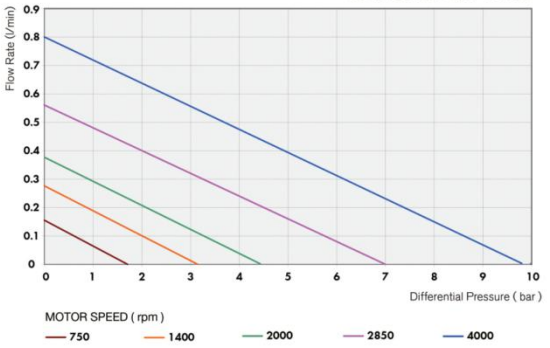
系列	排量	泵体材质	齿轮轴材质	轴套	密封圈	内磁驱材质	进出口朝向
MRV	32	S	Z	K	E	N	LR
	65	S:316L	Z:陶瓷轴+PEEK（国产）	PEEK（国产）	E:EPDM	N: 钕铁硼磁铁	LR:左右朝向
	80				M:FKM	Y: 铁氧体磁铁	TT:进出口同方向
	100				F:PTFE		
	125						
	175						
	220						

6. 工作原理图 / Working Principle

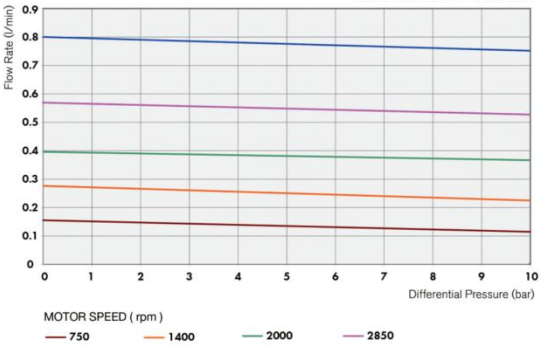


7. 性能曲线图 / Performance Curve

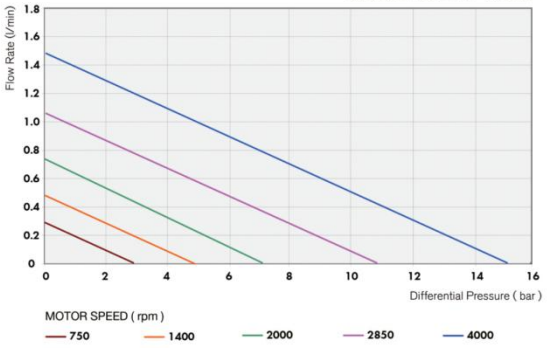
Pump Head MRA 5 / 13
measured with water 1 mPas



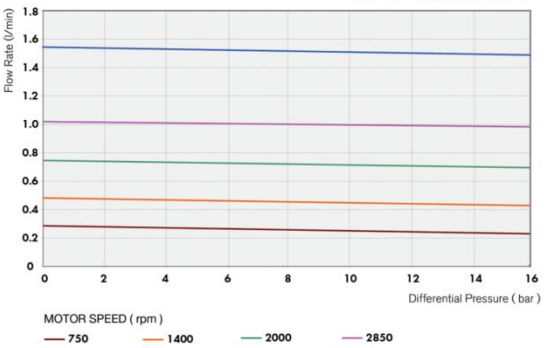
Pump Head MRA 5 / 13
measured with oil 100 mPas



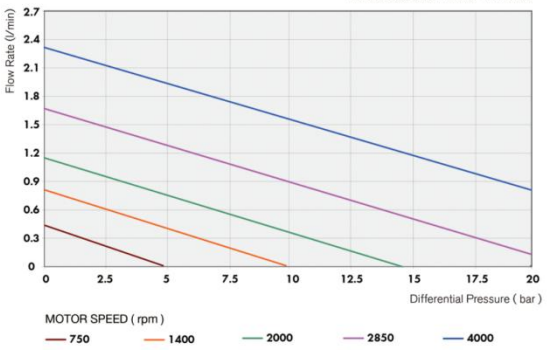
Pump Head MRA 7 / 13
measured with water 1 mPas



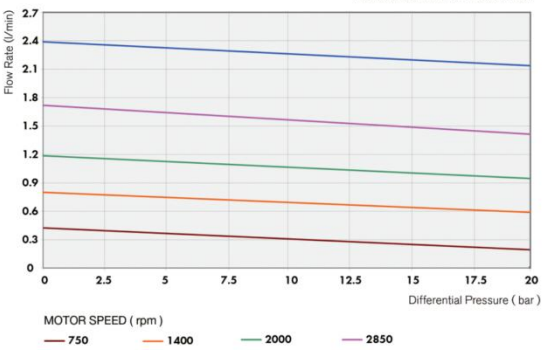
Pump Head MRA 7 / 13
measured with oil 100 mPas



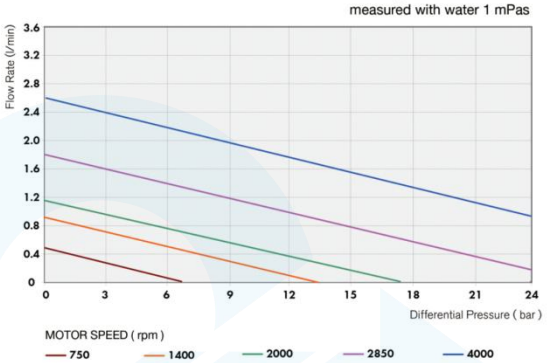
Pump Head MRA 10 / 13
measured with water 1 mPas



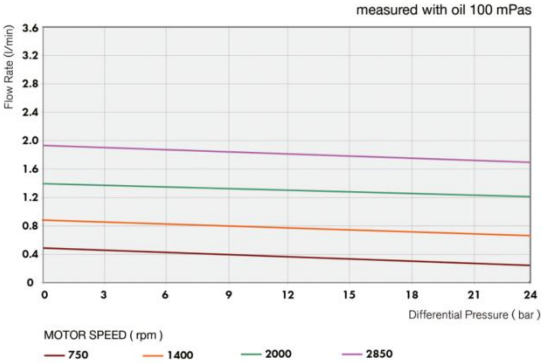
Pump Head MRA 10 / 13
measured with oil 100 mPas



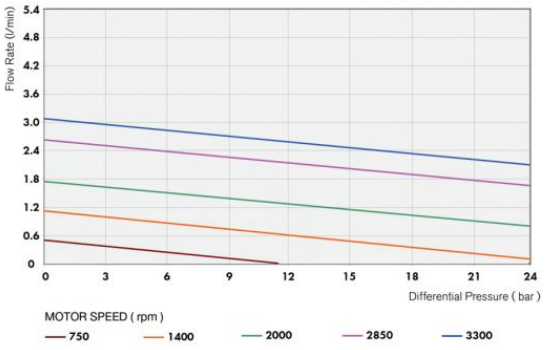
Pump Head MRA 12 / 13
measured with water 1 mPas



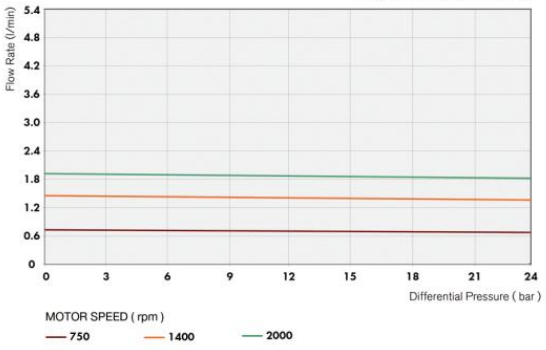
Pump Head MRA 12 / 13
measured with oil 100 mPas



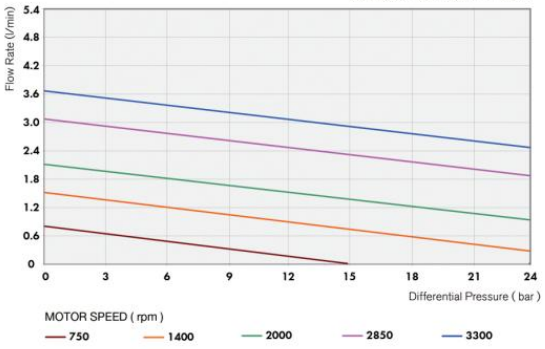
Pump Head MRB 10 / 16
measured with water 1 mPas



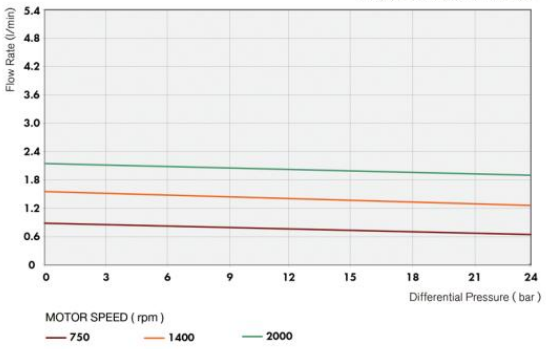
Pump Head MRB 10 / 16
measured with oil 100 mPas



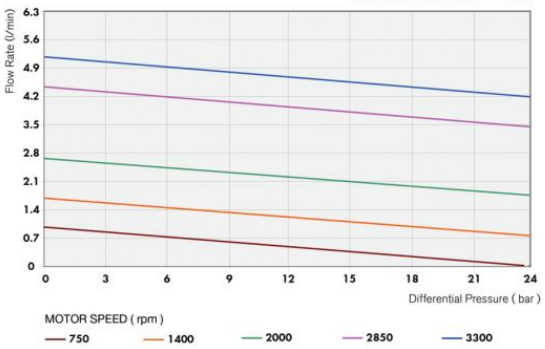
Pump Head MRB 12 / 16
measured with water 1 mPas



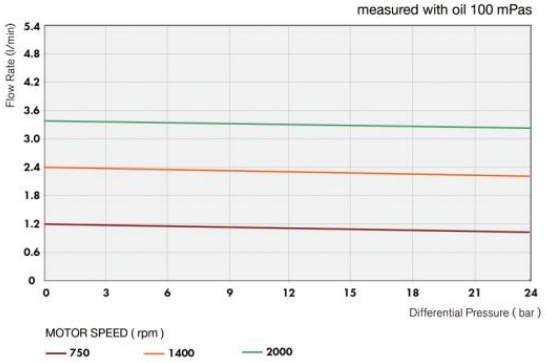
Pump Head MRB 12 / 16
measured with oil 100 mPas



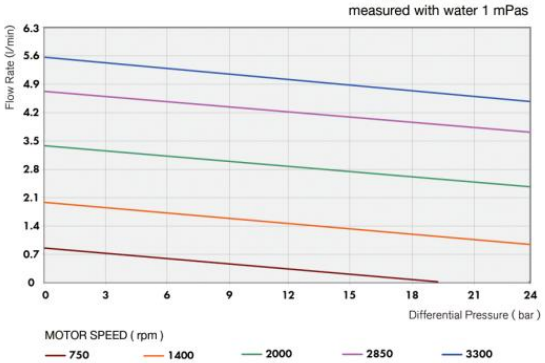
Pump Head MRB 17 / 16
measured with water 1 mPas



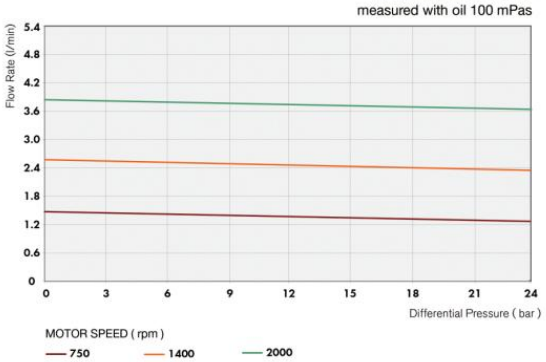
Pump Head MRB 17 / 16
measured with oil 100 mPas



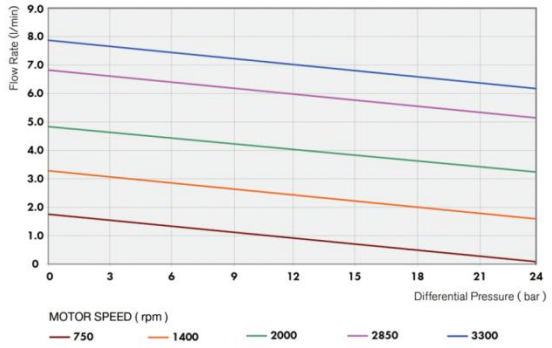
Pump Head MRB 19 / 16
measured with water 1 mPas



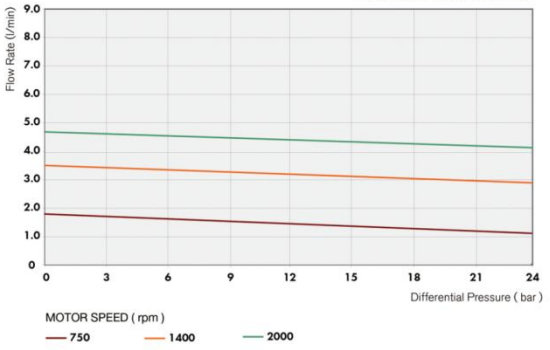
Pump Head MRB 19 / 16
measured with oil 100 mPas



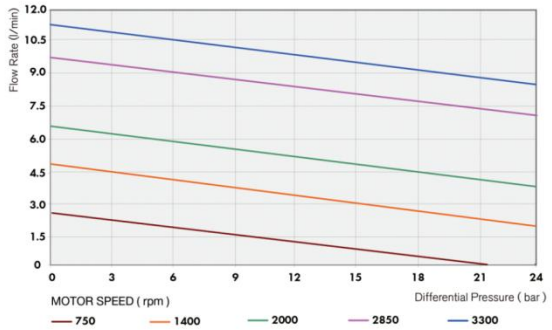
Pump Head MRC 15 / 22
measured with water 1 mPas



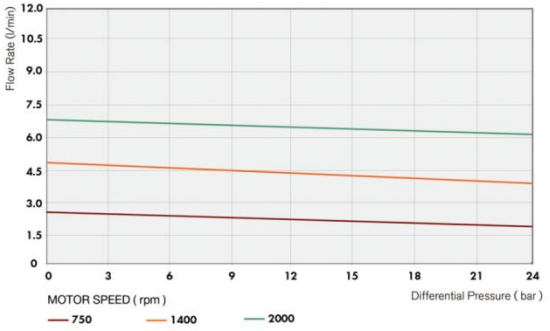
Pump Head MRC 15 / 22
measured with oil 100 mPas



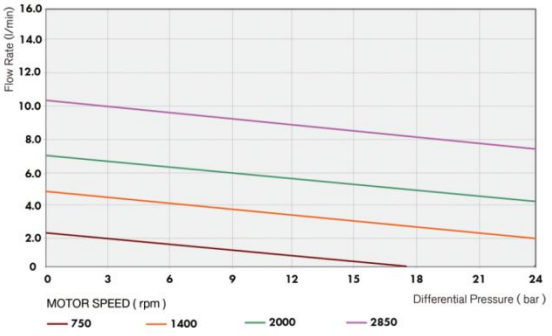
Pump Head MRC 20 / 22
measured with water 1 mPas



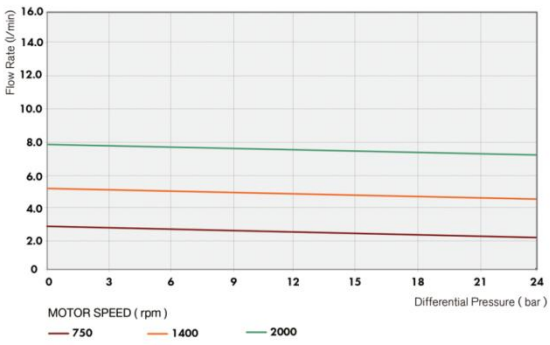
Pump Head MRC 20 / 22
measured with oil 100 mPas



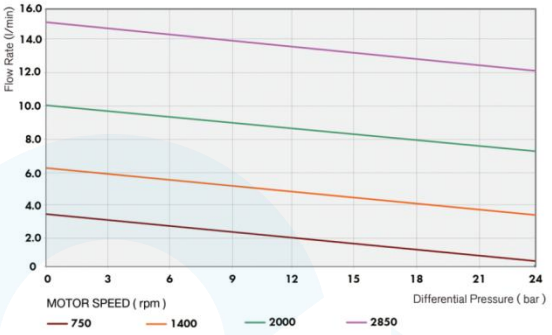
Pump Head MRC 8 / 37
measured with water 1 mPas



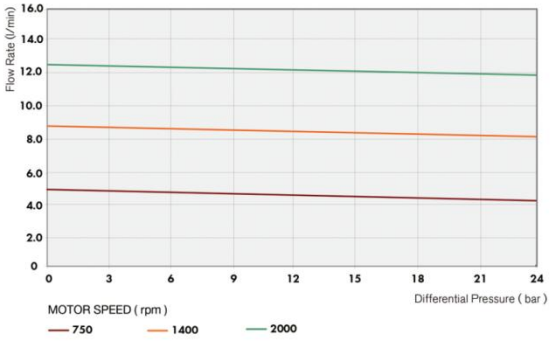
Pump Head MRC 8 / 37
measured with oil 100 mPas



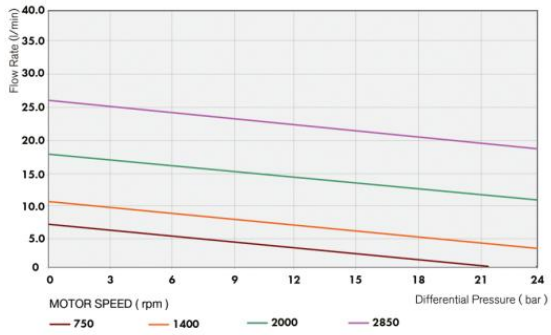
Pump Head MRC 12 / 37
measured with water 1 mPas



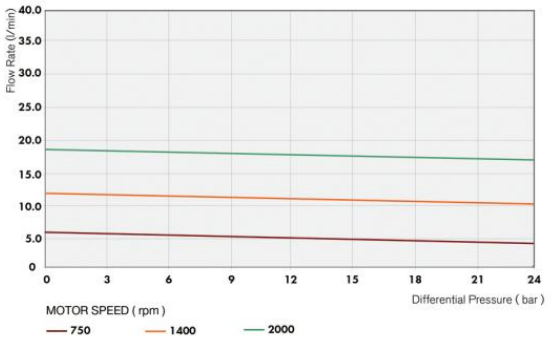
Pump Head MRC 12 / 37
measured with oil 100 mPas



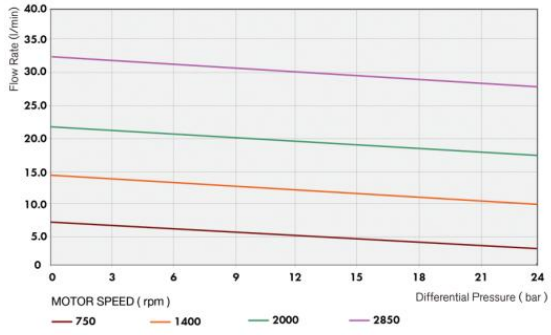
Pump Head MRE 18 / 37
measured with water 1 mPas



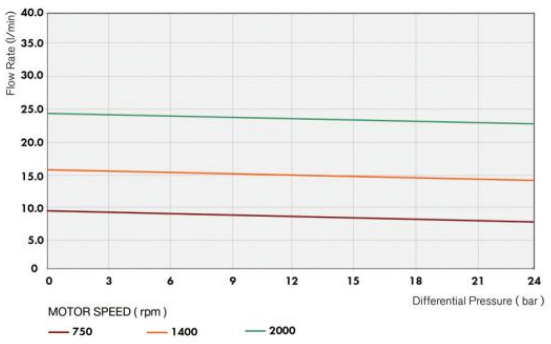
Pump Head MRE 18 / 37
measured with oil 100 mPas



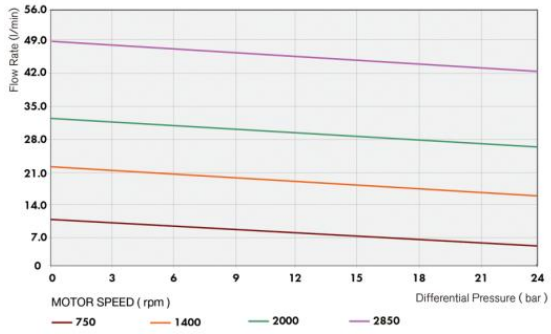
Pump Head MRE 24 / 37
measured with water 1 mPas



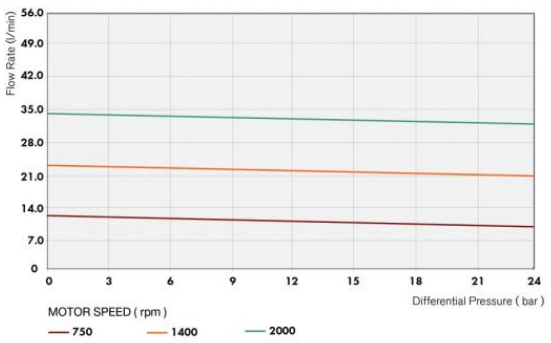
Pump Head MRE 24 / 37
measured with oil 100 mPas



Pump Head MRE 34 / 37
measured with water 1 mPas

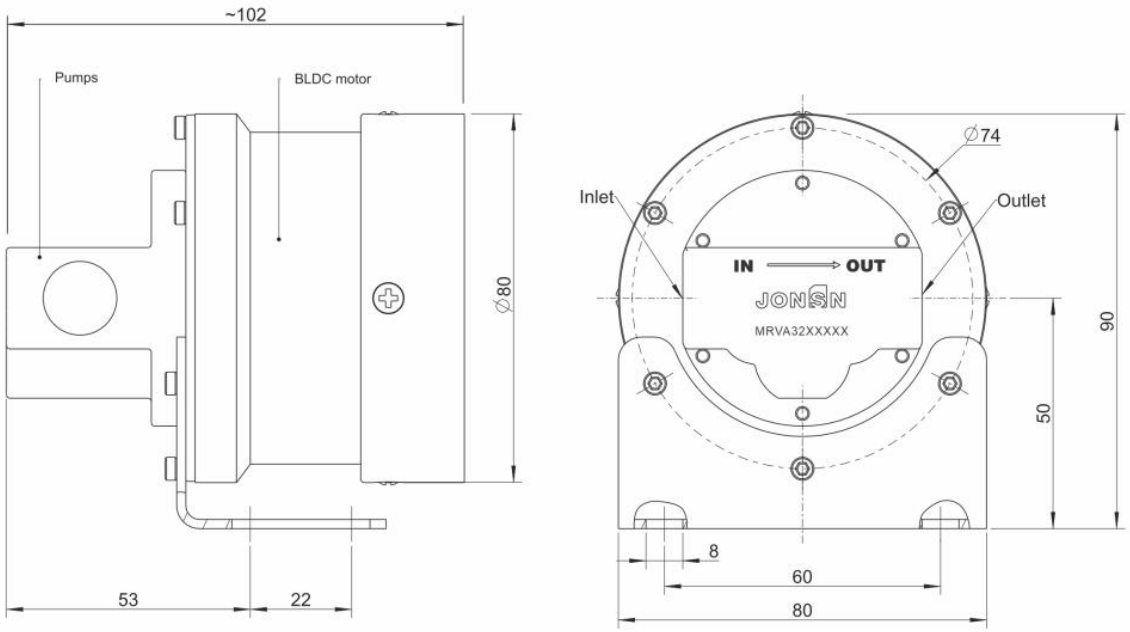


Pump Head MRE 34 / 37
measured with oil 100 mPas



8. 尺寸图/ Dimensional Drawing

MRV Pumps & BLDC Motor



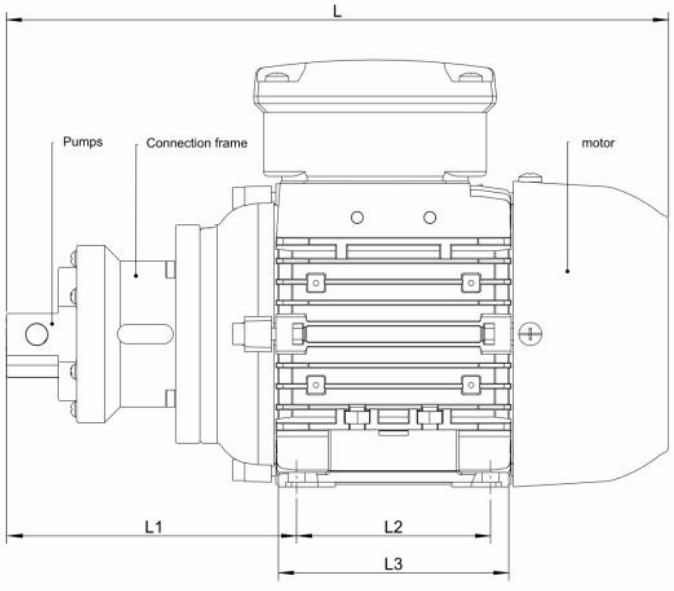
无刷电机参数（BLDC Motor Parameters）

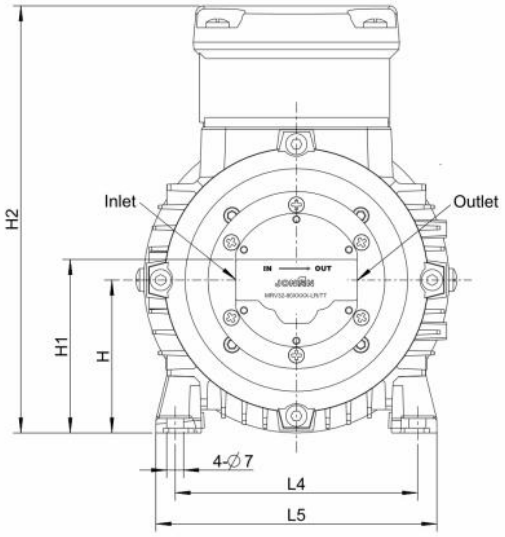
参数名称 Parameter Name	规格参数 Specifications
电压 Voltage	DC24V / DC24W / DC48V / DC48W（详见功率搭配表）
功率 Power	40W / 70W / 100W / 150W / 300W / 400W / 600W / 1000W / 1500W / 2000W
调速方式 Speed control mode	模拟量 0-5V / PWM（Analog 0-5V/PWM）
转速调节范围 Speed adjustment range	500~4000rpm（其他转速可定制 / other speeds can be customized）
启动电压 Start-up voltage	0.5V
绝缘等级 Insulation class	F 级（Class F）
环境温度 Ambient temperature	-40~60℃

接线说明（Wiring description）

线色 / 规格 Thread Color / Specification	功能定义 Functional Definition
红线 Red wire	Vcc+，电源 24V+ 输入，长期工作电压不得超过 10%（Power 24V+ input; long-term operating voltage shall not exceed 10%）
黑线 Black wire	GND V-，GND 公共端，24V-，调速电压 V-，速度反馈仪表 V-（GND common terminal, 24V-, speed control voltage V-, speed feedback meter V-）
绿线 Green wire	0-5V+ 或 PWM 转速调节信号输入（0-5V+ or PWM speed regulation signal input）
黄线 Yellow wire	转速脉冲信号输出，电机每转输出 2 个脉冲（Speed pulse signal output; 2 pulses per motor revolution）
白线 White wire	正反转控制线，默认断开正转，接通 GND 反转（Forward/reverse control wire; default open = forward, connect to GND = reverse）
红色细线 Thin red wire	5V 输出，用于电位器旋钮调速方式预留，不使用时应做好绝缘隔离（5V output, reserved for potentiometer speed control; insulate when not in use to avoid short circuits）
黑色细线 Thin black wire	GND 公共端，用于电位器旋钮调速方式预留，不使用时应做好绝缘隔离（GND common terminal, reserved for potentiometer speed control; insulate when not in use to avoid short circuits）

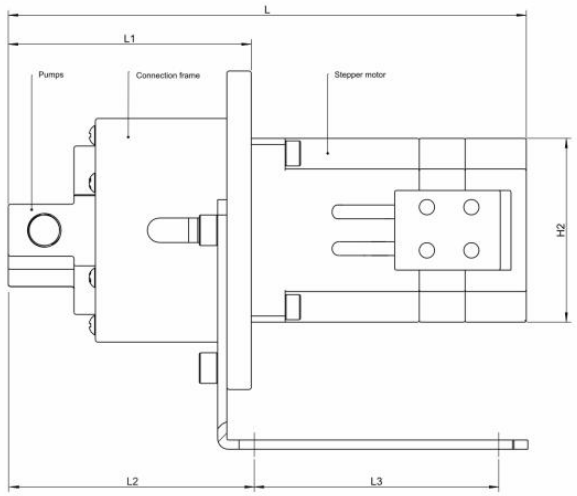
MRV Pumps & IEC Motor

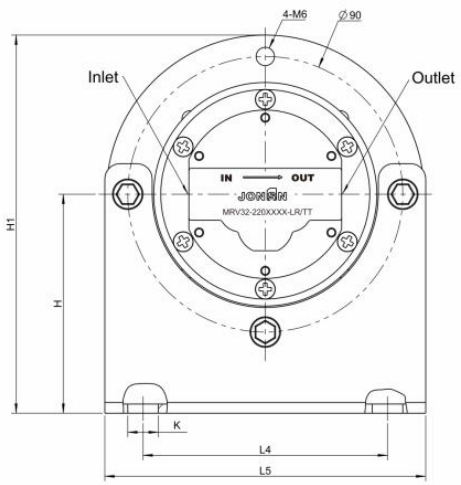




Pumps order NO.	L	L1	L2	L3	L4	L5	H	H1	H2
MRV32/65/80 & 63	~273	120	80	95	100	116	63	71.5	~176
MRV32/65/80 & 71	~299	133	90	108	112	135	63	71.5	~176
MRV125/175/220 & 63	~308	146	80	95	100	116	71	82	~190
MRV100/125/175/220 & 71	~334	159	90	108	112	135	71	82	~190

MRV Pumps & SERVO Motor

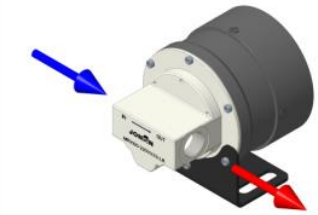




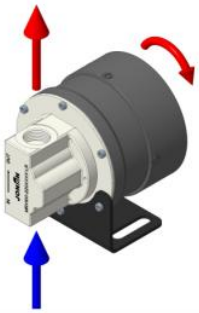
Pumps order NO.	L	L1	L2	L3	L4	L5	H	H1	H2	K
MRV32/65/80 & 42	~139	80	45	76	58	76	50	~86.5	40	6
MRV32/65/80 & 60	~170	80	80.5	80	80	105	71.5	~124	60	10
MRV100/125/175/220 & 40	~164.3	104.8	55	76	58	76	50	~86.5	40	6
MRV100/125/175/220 & 60	~194.8	104.8	105.8	80	80	105	71.5	~124	60	10

介质输送方向

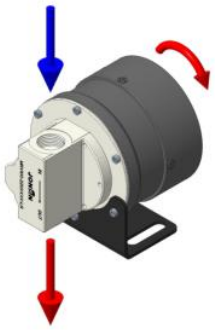
电机轴和齿轮泵
同步转向



安装方式一（默认）



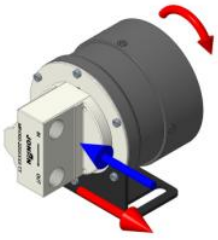
安装方式二



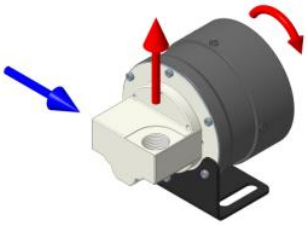
安装方式三



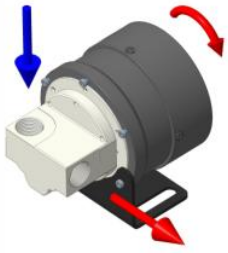
安装方式四（定制）



安装方式五（定制）

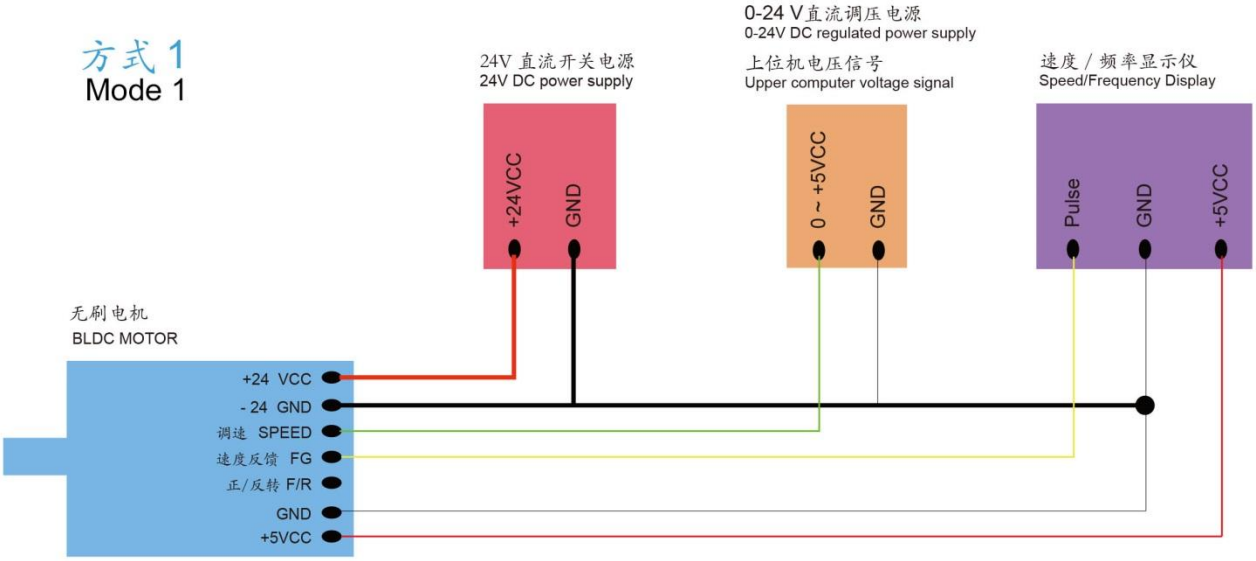


安装方式六（定制）

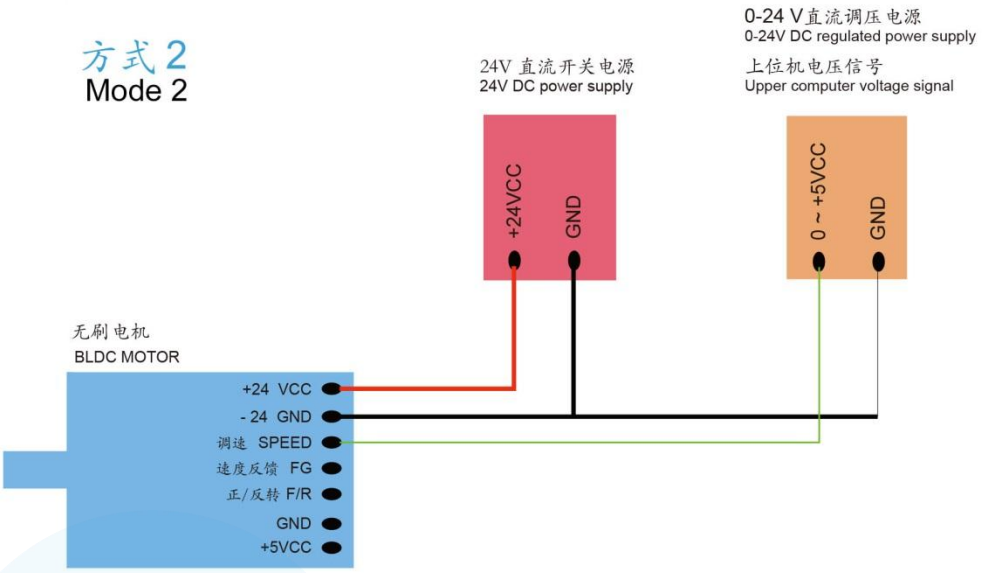


安装方式七（定制）

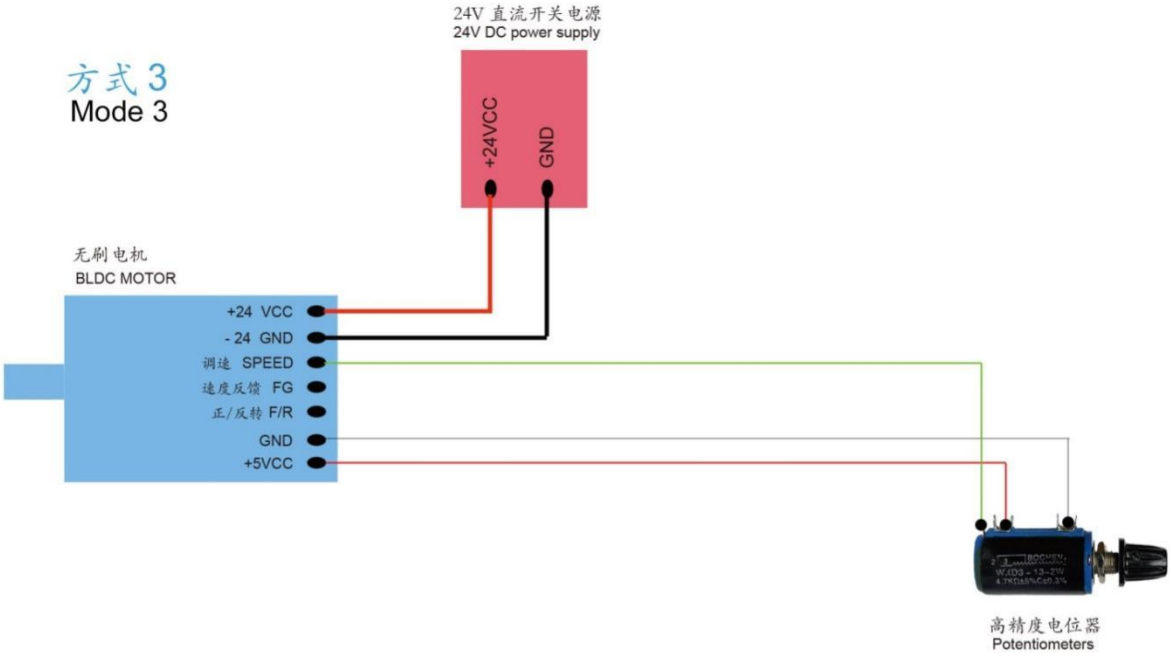
方式 1
Mode 1



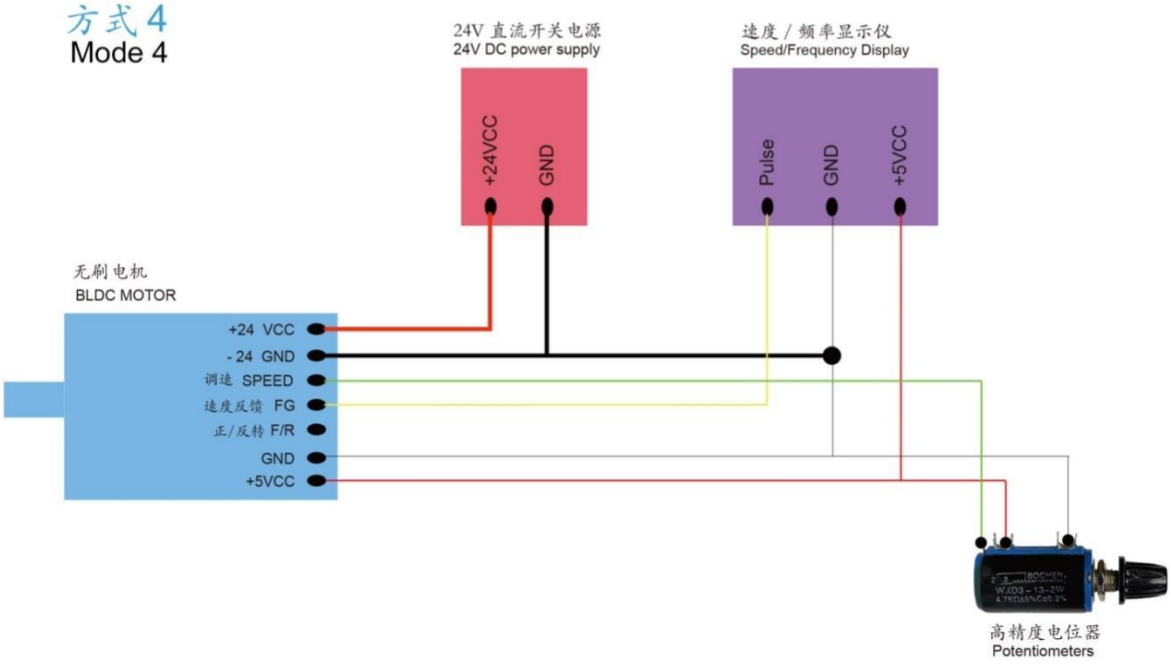
方式 2
Mode 2



方式 3
Mode 3

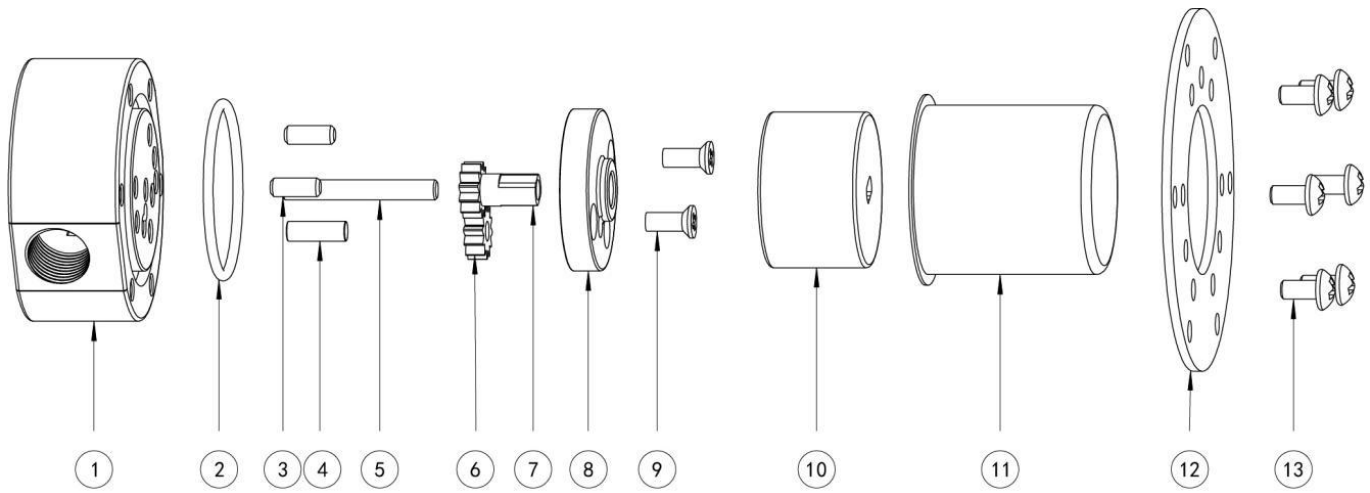


方式 4
Mode 4



9. 分解图/ Exploded View

MRV



序号 Item No.	零件名 Part Name	数量 Quantity
1	泵体 Pump case	1
2	密封圈 O-ring	1
3	定位销 Locating pin	2
4	从动陶瓷轴 Driven ceramic shaft	1
5	主动陶瓷轴 Drive ceramic shaft	1
6	从动齿轮 Driven gear	1
7	主动齿轮 Drive gear	1
8	齿轮腔板 Gear cavity plate	1
9	十字沉头螺丝 Cross countersunk screw	2
10	内磁驱 Internal magnetic drive	1
11	屏蔽罩 Shielding case	1
12	压板 Pressing plate	1
13	十字圆头螺丝 Cross round screw	6

10. 故障分析/ Malfunction Analysis

项目	故障	新泵故障排查项目	旧泵故障排查项目	解决方案
关于流量	电机正常工作，但没有流量	1. 接头密封不好 2. 新装管路未清洗，导致焊渣颗粒或密封带进入泵体内，导致齿轮卡死 3. 超压或粘度太大，导致内磁驱扁方磨损或主动轴断裂 4. 介质高或低温超过选型温度，导致齿轮抱死或齿轮间隙过大 5. 泵内部过流件材质被介质腐蚀。	1. 内磁驱塑料扁向磨损，导致内磁驱干转 2. 过滤器是否堵塞 3. 齿轮、泵腔、轴套磨损，内泄漏很大	1. 检测系统压力、温度、介质粘度 2. 清洗过滤器 3. 更换齿轮、内磁驱、轴套备件
	流量很小	1. 转速太低， 2. 管接头密封不好 3. 选型不对，选型粘度与实际工作粘度相差太大		1. 提高转速 2. 重新密封 3. 粘度大需要更换大泵头，降低转速
	流量变小	1. 入口管径太细 2. 电机转速不稳定 3. 齿轮运转不顺畅 4. 泵入口接头密封不好 5. 泵入口过滤器太脏 6. 出口压力不稳定 7. 工作温度不稳定	齿轮磨损	更换齿轮
	流量不稳定	1. 进油管尺寸过小。2. 电机转速不稳定。 3. 齿轮运转不平稳。4. 进油口接头密封不良。 5. 进油滤网脏污。6. 出油压力不稳定。 7. 工作温度不稳定。	检查齿轮，看看有没有磨损	1. 检查管件各处密封性 2. 检查齿轮、泵腔、管径 3. 清洗过滤器 4. 更换齿轮
关于压力	有流量，但没有压力	出口压力太小	齿轮、泵腔、滑动轴承磨损，内泄漏很大	1. 检测系统压力 2. 旧泵更换相关易损件
	压力跳动很厉害	出口压力太高或管径与流速不匹配	齿轮、泵腔磨损	检查齿轮、泵腔、管径
关于气泡	出口有气泡	1. 接头密封不好 2. 入口管太小，流速与管径不匹配 3. 入口管路过滤器堵塞		1. 重新密封 2. 检查齿轮、泵腔、管径 3. 清洗过滤器
关于电机	电机有震动	1. 安装管路时用力过大或管道应力过大，导致外磁驱与屏蔽罩不对中，外磁驱摩擦屏蔽罩的声音 2. 阀门没开，压力太大 3. 电机轴承损坏		1. 管道重新安装，同时管路安装固定支架，减少施加应力 2. 开机前，前后阀门打开 3. 更换电机轴承
	电机不转	接线不对		检查线路
	直流电机不转	直流电源开关打开瞬间电流过大，烧坏驱动器元器件	电机驱动器烧坏	更换电机
	直流电机忽然停止	泵过载，电机温升过高，触发驱动器温控开关	泵内有异物、齿轮卡死	1. 更换大功率电机 2. 清洗泵内齿轮
关于异响	压力太高，过载	出口管路堵住		清洗出口管路
	齿轮卡死，脱磁	异物进入		前端加过滤器
	电机功率不够	电机超载，电流过大		换大功率电机
	齿轮间隙过大		齿轮磨损	更换新齿轮

Items	Malfunction	New Pump Troubleshooting Items	Old Pump Troubleshooting Items	Solutions
About flowrate	Motor normal working but without flowrate	1.Joint sealing not good. 2.New pipelines not cleaned,welding slag particle or sealant entering pump body,causing the gear to jam. 3.Overpressure or high viscosity,cause internal magnetic drive flat abrasion or driving shaft breakage. 4.Medium high or low temperature exceed selected temperature,cause gear damaged or large gear gap. 5.Inside wetted parts corroded by medium.	1.Internal magnetic drive plastic flat abrasion, causing the magnetic drive to run dry. 2.Filter jammed or not. 3.Gear,pump body,shaft sleeve abrasion, internal leakage heavy.	1.Detecting system pressure, temperature, medium viscosity. 2.Clean filter. 3.Replace gear,internal magnetic driving, shaft sleeve.
	Small flowrate	1.Low rotating speed. 2.Pipeline joint sealing not good. 3.Model selection not right, big difference between selection viscosity with actual working viscosity.		1.Improve rotating speed. 2.Redo sealing. 3.Change big pump head and reduce rotating speed.
	Flow decreases	1.Inlet pipe size too small. 2.Unstable motor rotating speed. 3.Gear running not smoothly. 4.Inlet joint sealing not good. 5.Inlet filter dirty. 6.Unstable outlet pressure. 7.Unstable working temperature.	Gear abrasion	Replace gear
	Unstable flowrate	1.Inlet pipe size too small. 2.Unstable motor rotating speed. 3.Gear running not smoothly. 4.Inlet joint sealing not good. 5.Inlet filter dirty. 6.Unstable outlet pressure. 7.Unstable working temperature.	Inspect if gear worn or not.	1.Inspect pipes sealing. 2.Inspect gear,pump body,pipe diameter. 3.Clean filter. 4.Replace gear.
About pressure	Have flowrate but without pressure	Outlet pressure is too small.	Gear,pump body,sliding shaft bearing abrasion, heavy internal leakage.	1.Detecting system pressure 2.Change vulnerable parts.
	Pressure jumps severely	Outlet pressure too high or mismatch between pipe diameter and flow speed.	Gear,pump body abrasion	Inspect gear,pump body,pipe diameter.

Items	Malfunction	New Pump Troubleshooting Items	Old Pump Troubleshooting Items	Solutions
About bubbles	Outlet has bubbles	1.Joint sealing not good. 2.Inlet pipe too small, mismatch between pipe diameter and flow speed. 3.Inlet pipe filter jammed.		1.Redo sealing. 2.Inspect gear,pump body,pipe diameter. 3.Clean filter.
About motor	Motor vibration	1.When assemble pipes over stress,cause external magnetic drive not centering with shielding case,then have friction sound. 2.Valves not open,overpressure. 3.Motor shaft bearing damaged.		1.Reassemble pipes and fixed bracket to reduce the stress. 2.Front & back valves open before start. 3.Change motor shaft bearing
	Motor doesn't run	Wrong connection.		Inspect circuit.
	DC motor doesn't run	DC motor open overcurrent,driver components burn out.	Motor driver burn out.	Change motor.
	DC motor stops suddenly	Pump overloading,motor temperature rise too high,trigger driver temperature control switch.	Have foreign matters,gear jammed.	1.Change high power motor. 2.Clean internal gear.
About abnormal sound	Overpressure	Outlet pipe jammed.		Clean outlet pipe.
	Gear jammed,trip magnet	Foreign matters entering.		Add filter at pump front.
	Power shortage	Motor overload, overcurrent.		Change high power motor.
	Large gear gap		Gear abrasion	Replace gear.

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