MACXI
麦 凯 西

Suzhou MACXI One-Stop Fluid Solutions

MACXI customizes products for customers, accurately matches actual working conditions, and provides full process technical support services from design to installation and after-sales.

.COM https://www.macxi-fluid.com/

CORPORATE CULTURE

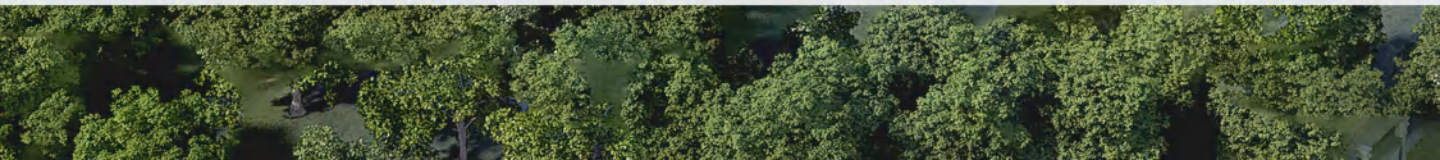
To serve every customer with the highest quality, the highest quality service, and the best quality service.
Exquisite craftsmanship, forging brilliance.
Efficient work, sincere service, selfless dedication, and continuous improvement.

Our philosophy: Pursuing excellence, united as one
Our team: professional, dedicated, and focused
Our tenet: Integrity first, wholehearted service We believe that as long as we work hard, we will reap rewards

COMPANY PROFILE

Suzhou Macxi Fluid Technology Co., Ltd. was established in 2014. Since its inception, we have adhered to the concept of innovation and enterprising spirit.
Our main business is magnetic driven micro gear pumps, with an annual production capacity of 100000 gear pumps. Since 2020, the company has entered overseas markets and its products have been successfully exported to 43 countries including the United States, Canada, Russia, Germany, France, Czech Republic, and South Korea. The products are distributed in markets such as the Americas, Europe, Asia, Middle East, and India.
The company has been committed to optimizing product structure, improving service life, and customizing according to customer requirements, in order to enhance the competitiveness of supporting manufacturers' products. We look forward to providing better products and services to more domestic and foreign users.
The product is mainly used in industries such as chemical industry, food processing, pharmaceuticals, printing, coatings, aviation, automobile manufacturing, sewage treatment, etc.

Clients



CERTIFICATE

Company Certifications

Passed ISO9001 quality management system certification

Passed CE certification

01
AAA level contract abiding and trustworthy enterprise

02
Invention Patent

03
quality management system certification

04
CE certification

05
Utility Model Patent Certificate

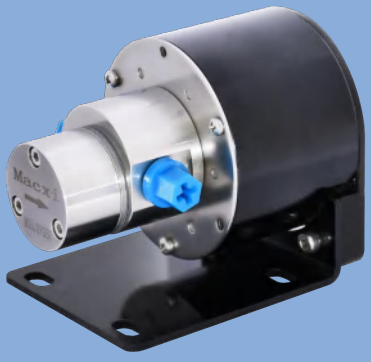
06
High and new technology enterprises

CATALOGUE

MICRO MAGNETIC GEAR PUMP

IG Magnetic gear pump

IGR Wear resistant magnetic gear pump



IG gear pump 0.07cc-1.80cc

Pump model	pump body	gear	sealing	shaft seelve	temperature	system pressure(bar)	Inlet&outlet pressure@water(bar)
IG0.07S40W	316L	PEEK	FKM	PEEK	-40℃ ~ 70℃	10	5
IG0.15S40W	316L	PEEK	FKM	PEEK	-40℃ ~ 70℃	10	10
IG0.30S40W	316L	PEEK	FKM	PEEK	-40℃ ~ 70℃	10	10
IG0.60S70W	316L	PEEK	FKM	PEEK	-40℃ ~ 70℃	10	8
IG0.90S70W	316L	PEEK	FKM	PEEK	-40℃ ~ 70℃	10	4
IG1.80S170W	316L	PEEK	FKM	PEEK	-40℃ ~ 100℃	20	7

Sealing materials: FKM, PFA, EPDM, FFKM, etc. are optional. The pump body material can be customized with Hastelloy, titanium alloy, etc. The gear pump should not exceed the limit current of the motor during operation, otherwise the motor will stop for protection.

Pump description

The pump body material is made of food grade 316L, and the gear and shaft sleeve materials are modified high-strength PEEK, which can provide unparalleled pumping performance for any high-precision application. By using precise gears to provide smooth and pulsation free fluid delivery, the high torque electromagnetic drive can still achieve fast response at low speeds. The optimized cavity design of the pump operates in a large range of inlet and outlet conditions, with excellent performance. Using materials with wide chemical compatibility, it can withstand most corrosive liquids.。

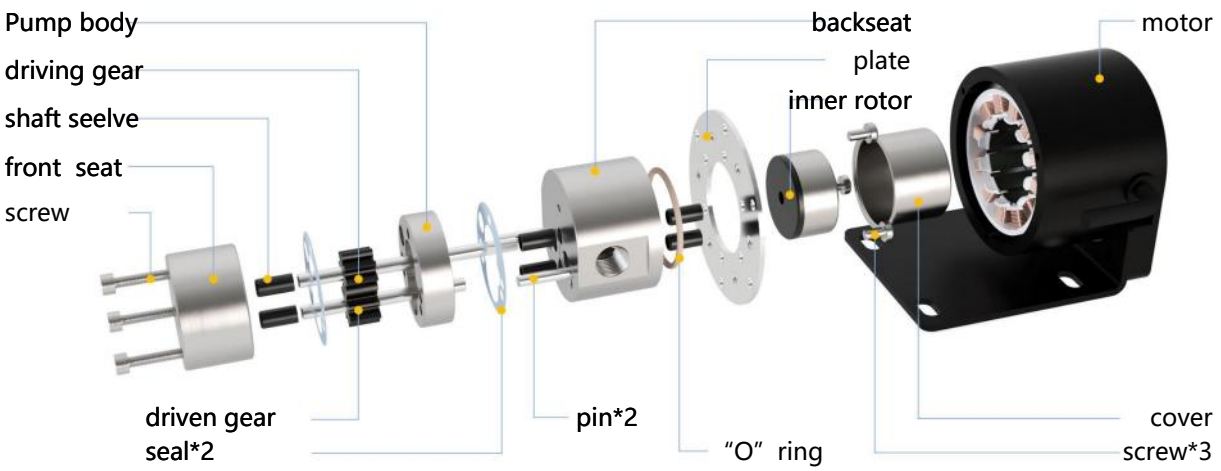
Pump advantage

No leakage; Low noise; Long service life; Corrosion resistance; Stable export pressure; No pulsation; Simple structure; Easy maintenance; The pump head and motor adopt an integrated design, with a small volume, suitable for installation in a limited space box.

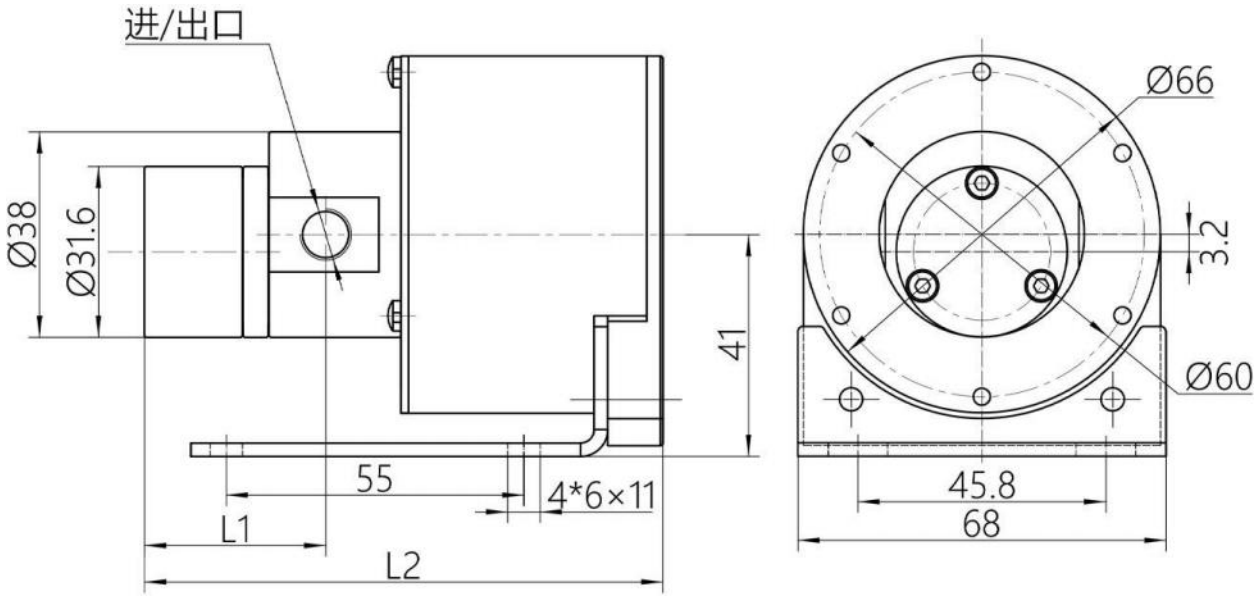
Application

Micro cooling devices for aerospace vehicles, chemical and chemical industries (such as reagents, pharmaceuticals, film manufacturing, pharmaceutical equipment, etc.), various laser equipment and instruments, printing and coding machine manufacturing, coffee machine extraction, high-performance color printing equipment, charging pile liquid cooling systems, molecular distillation equipment, methanol hydrogen production equipment, exhaust gas treatment systems, etc.

Structure



IG Gear pump 0.07cc-0.30cc



Volume (ml/r)	model no.	L1 (mm)	L2 (mm)	port size	speed (rpm)	flowrate (ml/min)	weight (kg)
0.07	IG0.07S40W	31.2	93.6	G1/8	300-4000	21-280	0.77
0.15	IG0.15S40W	33.2	95.6	G1/8	300-4000	45-600	0.77
0.30	IG0.30S40W	33.2	95.6	G1/8	300-4000	90-1200	0.77

motor（with wiring defination）

Rated voltage/current	DC24V/2.2A	red	+24V
spee rate	500-4500rpm	black	0
viscosity range	0.2-1500cps	brown	Speed control signal 0-5V input
adjust voltage	0-5（0.35V/0N/0.3V/0FF）	blue	5V level, square wave, 2 pulses per revolution

Pump image

45 degree angle

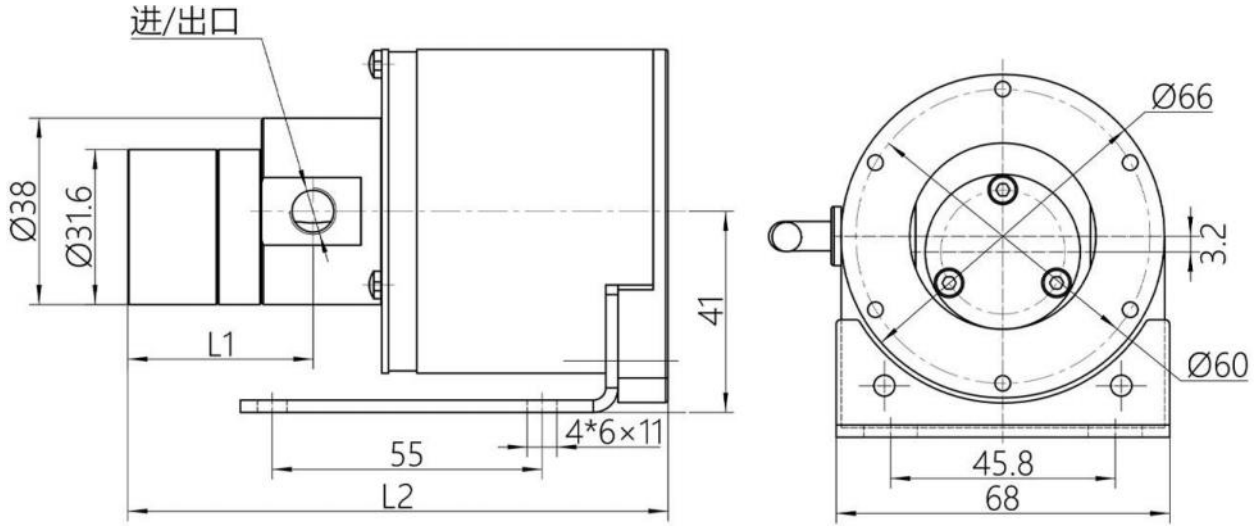
front view

side view

vertical view

For detailed dimensions, please consult Suzhou Macxi Fluid Technology Co., Ltd

IG gear pump 0.60cc-0.90cc



Volume (ml/r)	model no.	L1 (mm)	L2 (mm)	port size	speed (rpm)	flowrate (ml/min)	weight (kg)
0.60	IG0.60S70W	37.6	110	G1/8	300-4000	180-2400	0.93
0.90	IG0.90S70W	41.8	114.2	G1/8	300-4000	270-3600	0.94

motor（with wiring defination）

Rated voltage/current	DC24V/2.2A	red	+24V
speed rate	500-4500rpm	black	0
viscosity range	0.2-1500cps	brown	Speed control signal 0-5V input
adjust voltage	0-5（0.35V/0N/0.3V/0FF）	blue	5V level, square wave, 2 pulses per revolution

Pump image

45 degree angle

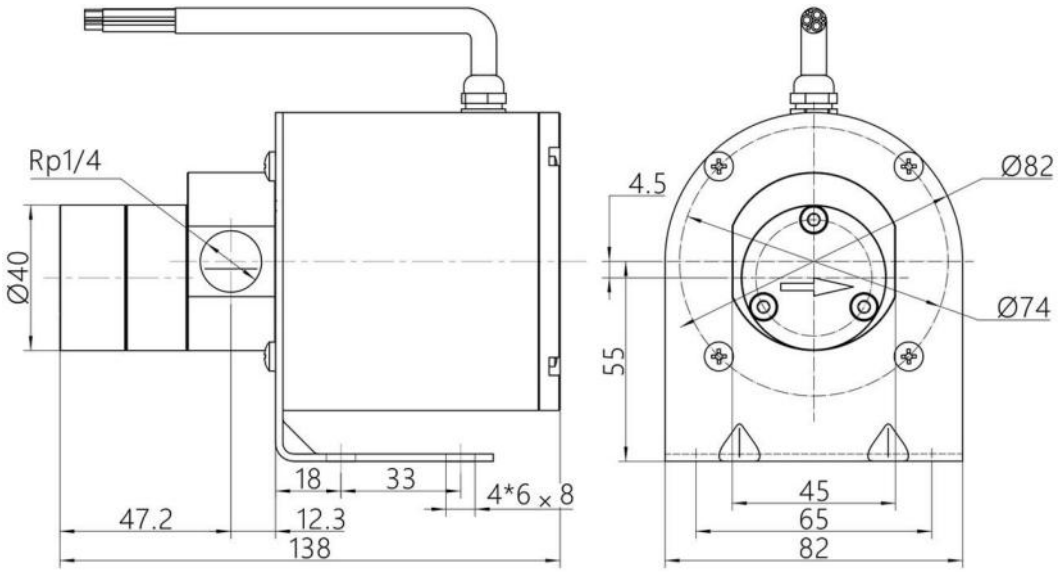
front view

side view

vertical view

For detailed dimensions, please consult Suzhou Macxi Fluid Technology Co., Ltd

IG Gear pump 1.80cc



Volume (ml/r)	model no.	L1 (mm)	L2 (mm)	port size	speed (rpm)	flowrate (ml/min)	weight (kg)
1.80	IG1.80S170W	47.2	138	G1/4	500-4000	0.9-7.2	1.74

Motor spec

voltage/current	DC24V/7A	Viscosity	0.2-3000cps
Speed rate	500-2800rpm	adjust voltage	0-5V

Wiring defination

Red(thick)	DC24V	balck(thick)	DC0V
red(thin)	5V internal power supply	brown(thin)	5V level, square wave, 4 pulses per revolution
green(thin)	Simulated speed control signal input , 0-5V	blue(thin)	RS485 differential signal A
black(thin)	GND	white(thin)	RS485 differential signal B

When using a potentiometer for speed regulation, it is recommended to connect a 5V internal power supply and GND

Pump Image

45 degree angle

front view

side view

vertical view

For detailed dimensions, please consult Suzhou Macxi Fluid Technology Co., Ltd

IGR magnetic gear pump 0.07cc-1.80cc

Pump model	pump body	gear	sealing	shaft seelve	temperature	systempressure(bar)	Inlet&outlet pressure@water(bar)
IGR0.15D40W	316L	Tungsten steel	FKM	PEEK	-40℃~70℃	10	10
IGR0.30D40W	316L	Tungsten steel	FKM	PEEK	-40℃~70℃	10	10
IGR0.60D70W	316L	Tungsten steel	FKM	PEEK	-40℃~70℃	10	8
IGR0.90D70W	316L	Tungsten steel	FKM	PEEK	-40℃~70℃	10	4
IGR1.80D170W	316L	Tungsten steel	FKM	PEEK	-40℃~100℃	20	7

Pump description

The pump body material adopts food grade 316L coated DLC, the gear material is tungsten steel, and the shaft sleeve material is modified high-strength PEEK. The wear-resistant micro gear pump can provide excellent pumping performance and longer service life in the application of abrasive liquids (such as inkjet white ink, inkjet ceramic ink or liquids containing nanoscale hard particles).

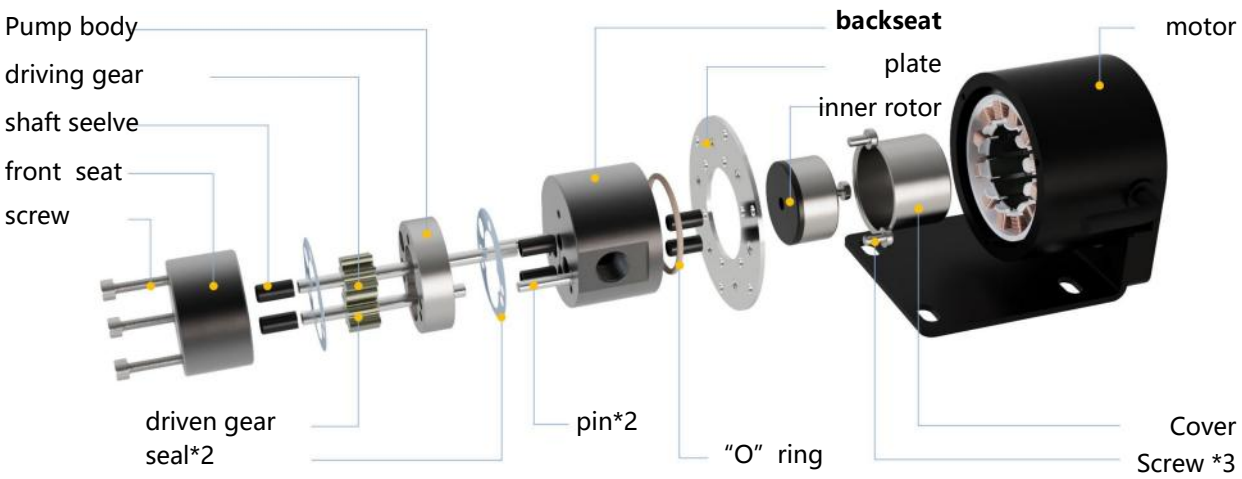
Pump Advantage

No leakage; Low noise; Long service life; Corrosion resistance; Stable export pressure; No pulsation; Simple structure; Easy maintenance; The pump head and motor adopt an integrated design, with a small volume, suitable for installation in a limited space box.。

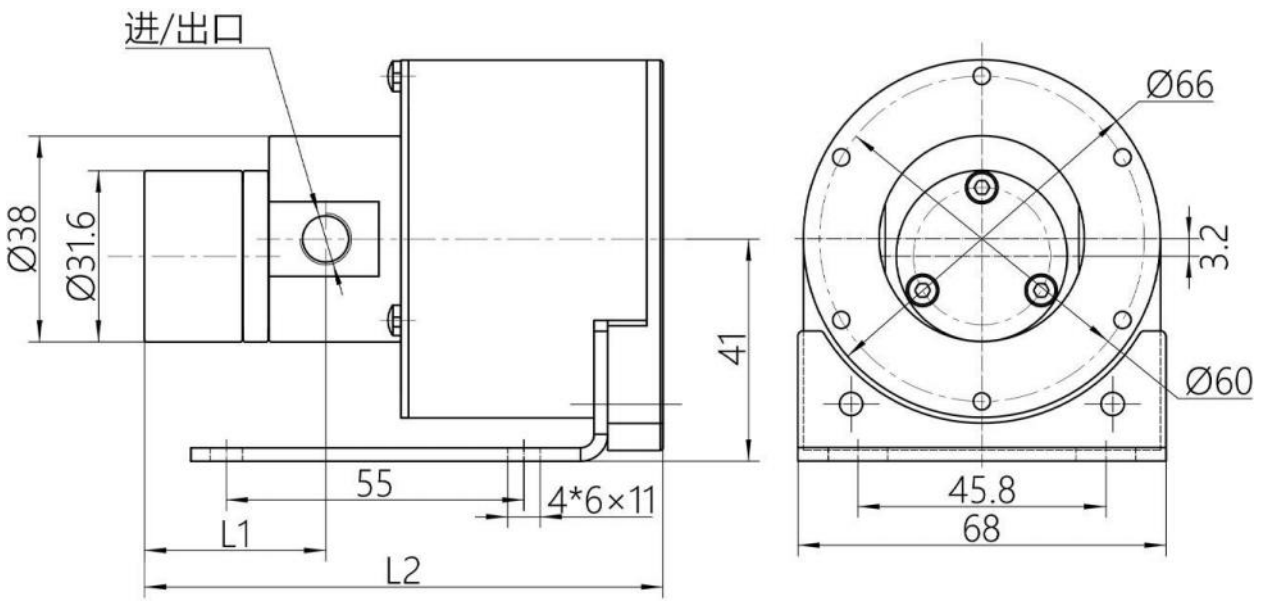
Application

Micro cooling devices for aerospace vehicles, chemical and chemical industries (such as reagents, pharmaceuticals, film manufacturing, pharmaceutical equipment, etc.), various laser equipment and instruments, printing and coding machine manufacturing, high-performance color printing equipment, etc。

Structure



IGR magnetic gear pump 0.07cc-0.30cc

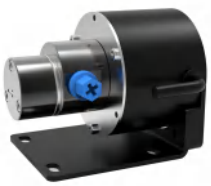


Volume (ml/r)	model no.	L1 (mm)	L2 (mm)	port size	speed (rpm)	flowrate (ml/min)	weight (kg)
0.07	IGR0.07D40W	31.2	93.6	G1/8	300-3000	21-210	0.77
0.15	IGR0.15D40W	33.2	95.6	G1/8	300-3000	45-450	0.77
0.30	IGR0.30D40W	33.2	95.6	G1/8	300-3000	90-900	0.77

Motor (with wiring defination)

Rated voltage/current	DC24V/2.2A	red	+24V
spee rate	500-4500rpm	black	0
viscosity range	0.2-1500cps	brown	Speed control signal 0-5V input
adjust voltage	0-5 (0.35V/0N/0.3V/0FF)	blue	5V level, square wave, 2 pulses per revolution

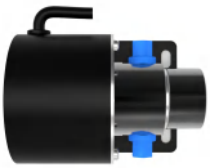
Pump image



45 degree angle

front view

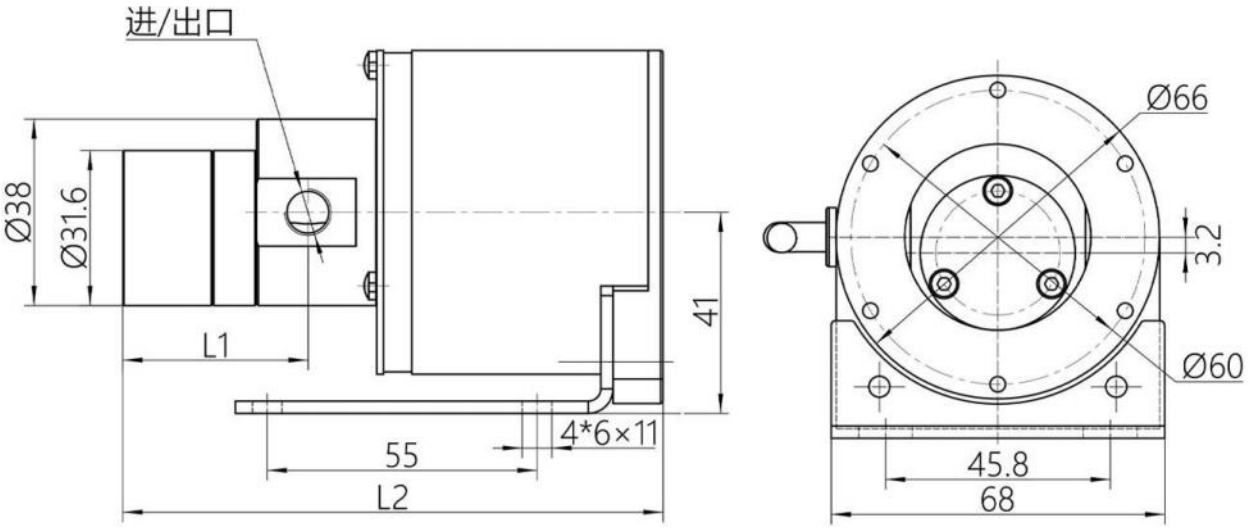
side view



vertical view

For detailed dimensions, please consult Suzhou Macxi Fluid Technology Co., Ltd

IGR magnetic gear pump 0.60CC-0.90CC

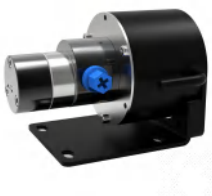


排量 (ml/r)	泵头型号	L1 (mm)	L2 (mm)	进出口尺寸	转速 (rpm)	流量范围 (ml/min)	重量 (kg)
0.60	IGR0.60D70W	37.6	110	G1/8	300-3000	180-1800	0.93
0.90	IGR0.90D70W	41.8	114.2	G1/8	300-3000	270-2700	0.94

Motor (with wiring defination)

Rated voltage/current	DC24V/2.2A	red	+24V
spee rate	500-4500rpm	black	0
viscosity range	0.2-1500cps	brown	Speed control signal 0-5V input
adjust voltage	0-5（0.35V/0N/0.3V/0FF)	blue	5V level, square wave, 2 pulses per revolution

Pump Imgae



45 degree angle

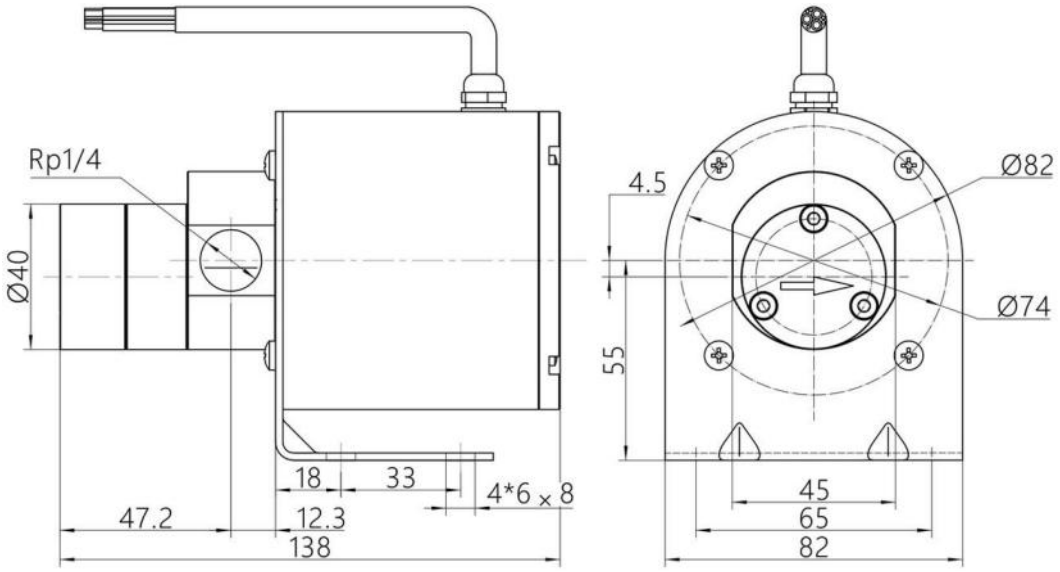
front view

side view

vertical view

For detailed dimensions, please consult Suzhou Macxi Fluid Technology Co., Ltd

IGR magnetic gear pump 1.80CC



Volume (ml/r)	model no.	L1 (mm)	L2 (mm)	port size	speed (rpm)	flowrate (ml/min)	weight (kg)
1.80	IG1.80S170W	47.2	138	G1/4	500-4000	0.9-7.2	1.74

Motor spec

voltage/current	DC24V/7A	Viscosity	0.2-3000cps
Speed rate	500-2800rpm	adjust voltage	0-5V

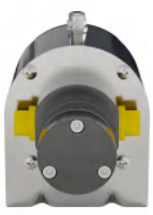
Wiring defination

Red(thick)	DC24V	balck(thick)	DC0V
red(thin)	5V internal power supply	brown(thin)	5V level, square wave, 4 pulses per revolution
green(thin)	Simulated speed control signal input , 0-5V	blue(thin)	RS485 differential signal A
black(thin)	GND	white(thin)	RS485 differential signal B

When using a potentiometer for speed regulation, it is recommended to connect a 5V internal power supply and GND

Pump Image

45 degree angle



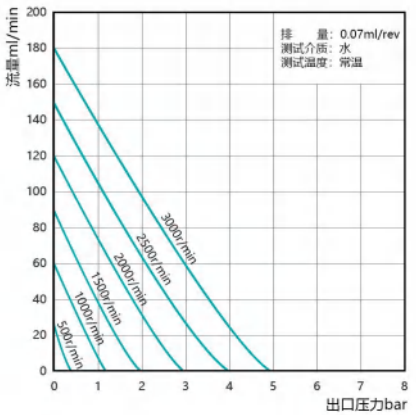
front view

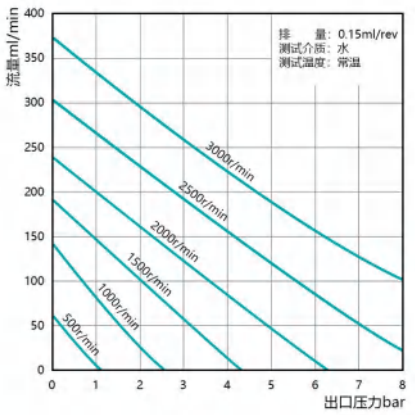
side view

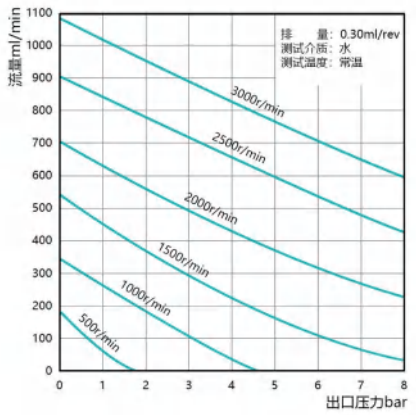
vertical view

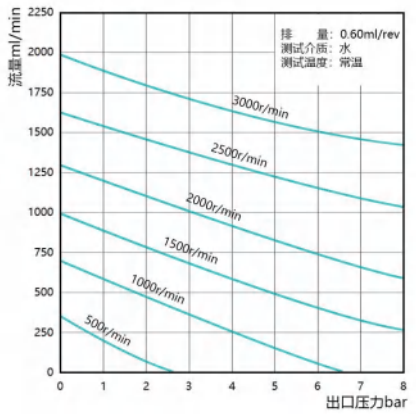
For detailed dimensions, please consult Suzhou Macxi Fluid Technology Co., Ltd

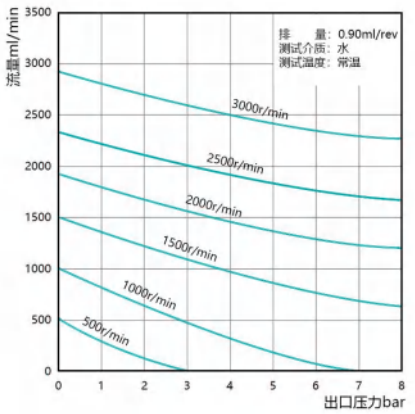
TEST medium: water
Test temperature: room temperature

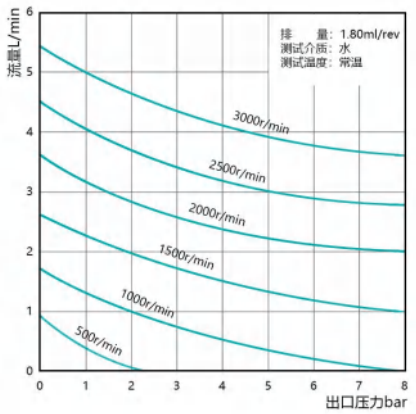












MAGNETIC GEAR PUMP

MG Standard magnetic gear pump

MGH Pressure-resistant magnetic gear pump

MGS High-pressure magnetic gear pump

MGR Wear-resistant magnetic gear pump

MGT High and low temperature magnetic gear pump

MGP Plastic magnetic gear pump

Pump spec 0.07cc-3.0cc

Pump model	pump body	gear	sealing	shaft seelve	temperature	system pressure(bar)	Inlet&outlet pressure@water(bar)
MG0.07S57	316L	PEEK	FKM	PEEK	-40℃~80℃	10	5
MG0.15S57	316L	PEEK	FKM	PEEK	-40℃~80℃	10	8
MG0.30S57	316L	PEEK	FKM	PEEK	-40℃~80℃	10	8
MG0.60S57	316L	PEEK	FKM	PEEK	-40℃~70℃	10	8
MG0.90S57	316L	PEEK	FKM	PEEK	-40℃~70℃	10	8
MG1.20S57	316L	PEEK	FKM	PEEK	-40℃~50℃	10	8
MG1.50S57	316L	PEEK	FKM	PEEK	-40℃~50℃	10	8
MG1.8S72	316L	PEEK	FKM	PEEK	-40℃~70℃	10	8
MG3.0S72	316L	PEEK	FKM	PEEK	-40℃~50℃	10	8

Sealing materials: FKM, PFA, EPDM, FFKM, etc. are optional; The temperature can be customized to -40 ℃ -120 ℃. If the temperature exceeds 120 ℃, please choose MGT high and low temperature gear pump. The pump body material can be customized with Hastelloy, titanium alloy, etc.

Pump descirption

The pump body material is selected as food grade 316L, and the gear and shaft sleeve materials are modified high-strength PEEK. FKM (PFA, EPDM, FFKM, etc. are optional) is standard for sealing. The gear pump has an overall pressure resistance of 1MPA and is suitable for most solvents, acids and bases, organic halides, hydrocarbons, organic nitrides, inorganic reagents, etc.

Pump Advantage

No leakage; Low noise; Long service life; Corrosion resistance; Stable export pressure; No pulsation; Simple structure; maintainable。

Application

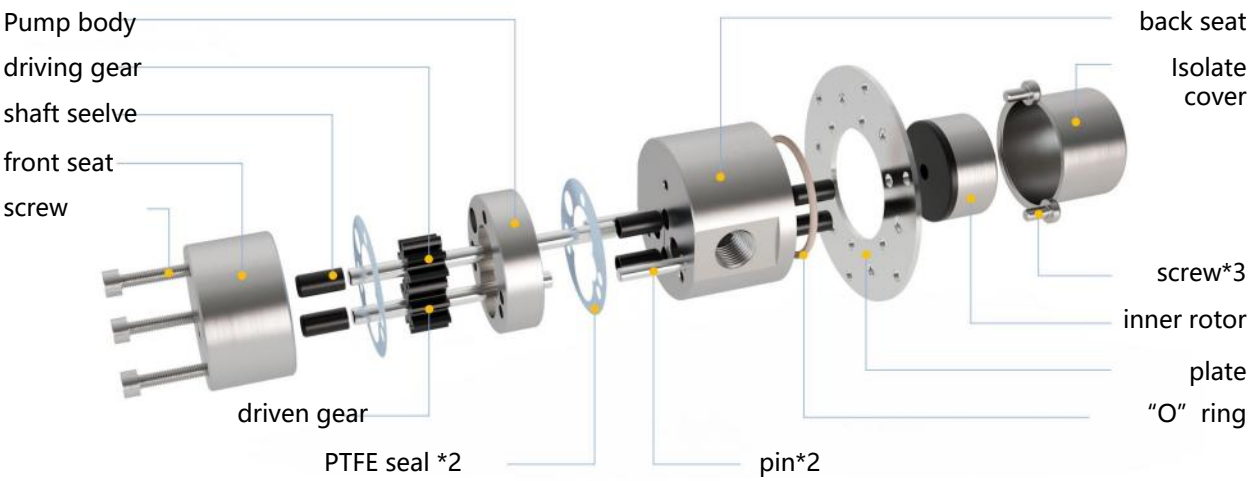
Micro cooling devices for aerospace vehicles, chemical and chemical industries (such as reagents, pharmaceuticals, film manufacturing, pharmaceutical equipment, etc.), various laser equipment and instruments, printing and coding machine manufacturing, high-performance color printing equipment, charging pile liquid cooling systems, molecular distillation equipment, methanol to hydrogen equipment, exhaust gas treatment systems, etc.

Can be equipped with a motor

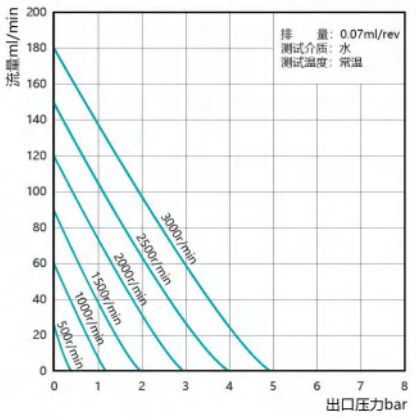
(please consult our company for the size of the pump head and motor combination)

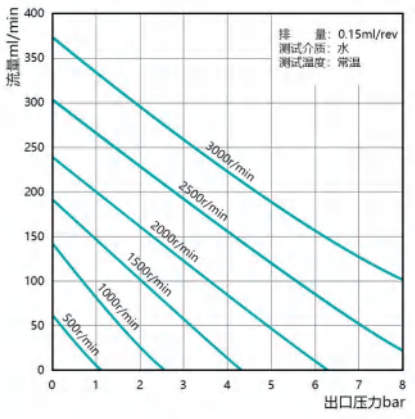
DC brushless motor, DC brushed motor, asynchronous motor, servo motor, etc.

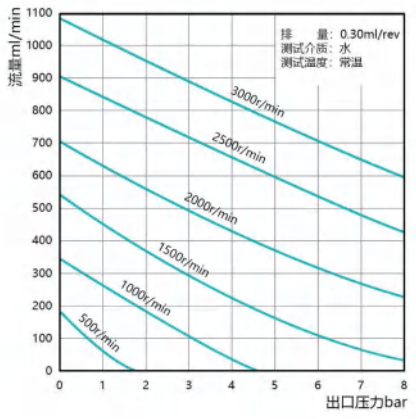
Structure

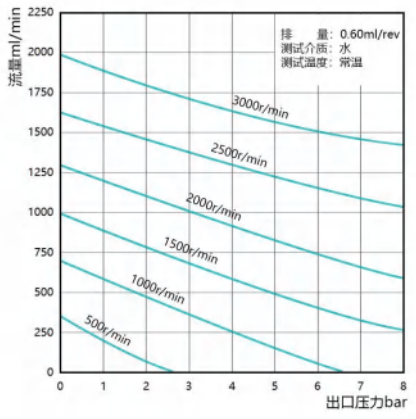


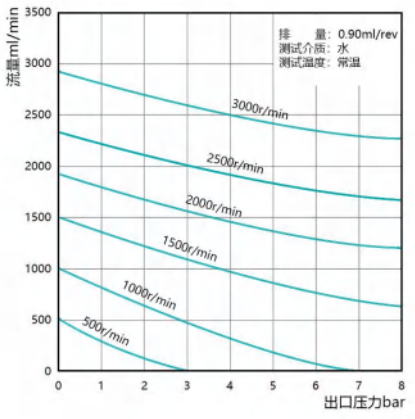
Test medium: water
Test temperature: room temperature

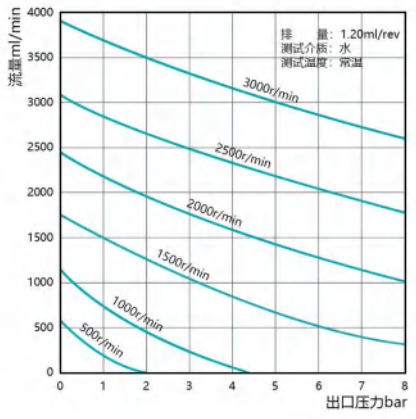


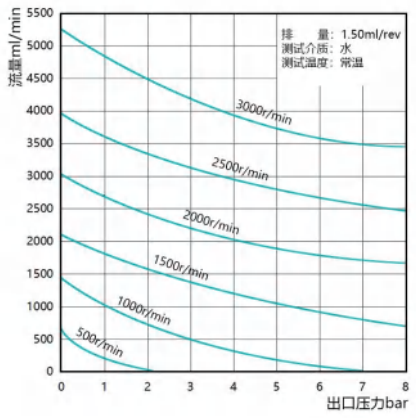


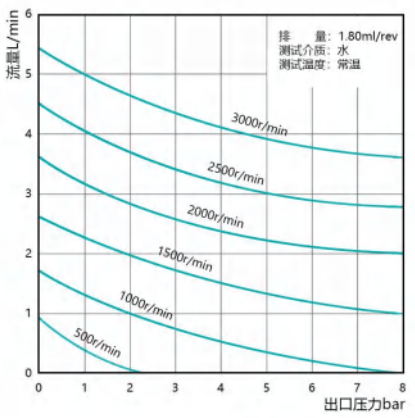


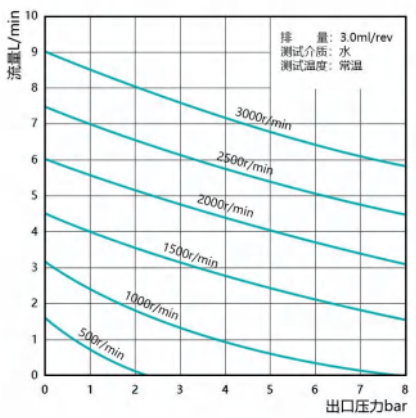












Pump spec 0.15cc-50.0cc

Pump model	pump body	gear	sealing	shaft seelve	temperature	system pressure(bar)	Inlet&outlet pressure@water(bar)
MGH0.15S57	316L	PEEK	FKM	PEEK	-40℃ ~ 80℃	40	11
MGH0.30S57	316L	PEEK	FKM	PEEK	-40℃ ~ 80℃	40	20
MGH0.60S57	316L	PEEK	FKM	PEEK	-40℃ ~ 70℃	40	20
MGH0.90S57	316L	PEEK	FKM	PEEK	-40℃ ~ 70℃	40	15
MGH1.8S72	316L	PEEK	FKM	PEEK	-40℃ ~ 70℃	40	20
MGH3.2S88	316L	PEEK	PFA	PEEK	-40℃ ~ 85℃	30	18
MGH6.0S88	316L	PEEK	PFA	PEEK	-40℃ ~ 70℃	30	15
MGH12.0S88	316L	PEEK	PFA	PEEK	-40℃ ~ 70℃	30	7
MGH18.0S128	316L	PEEK	FKM	PEEK	-40℃ ~ 70℃	40	14
MGH20.0S145	316L	PEEK	FKM	PEEK	-40℃ ~ 100℃	40	16
MGH30.0S145	316L	PEEK	FKM	PEEK	-40℃ ~ 100℃	40	10
MGH40.0S145	316L	PEEK	FKM	PEEK	-40℃ ~ 100℃	40	8
MGH50.0S145	316L	PEEK	FKM	PEEK	-40℃ ~ 100℃	40	6

Pump description

The pump body material is made of food grade 316L, and the gear and shaft sleeve materials are modified high-strength PEEK. The gear pump is sealed with an "O" ring as a whole, with an overall pressure resistance of over 3MPA, suitable for most solvents, acids and bases, organic halides, hydrocarbons, organic nitrides, inorganic reagents, etc.

Pump Advantage

Micro cooling devices for aerospace vehicles, chemical and chemical industries (such as reagents, pharmaceuticals, film manufacturing, pharmaceutical equipment, etc.), various laser equipment and instruments, printing and coding machine manufacturing, high-performance color printing equipment, charging pile liquid cooling systems, molecular distillation equipment, methanol to hydrogen equipment, exhaust gas treatment systems, etc.

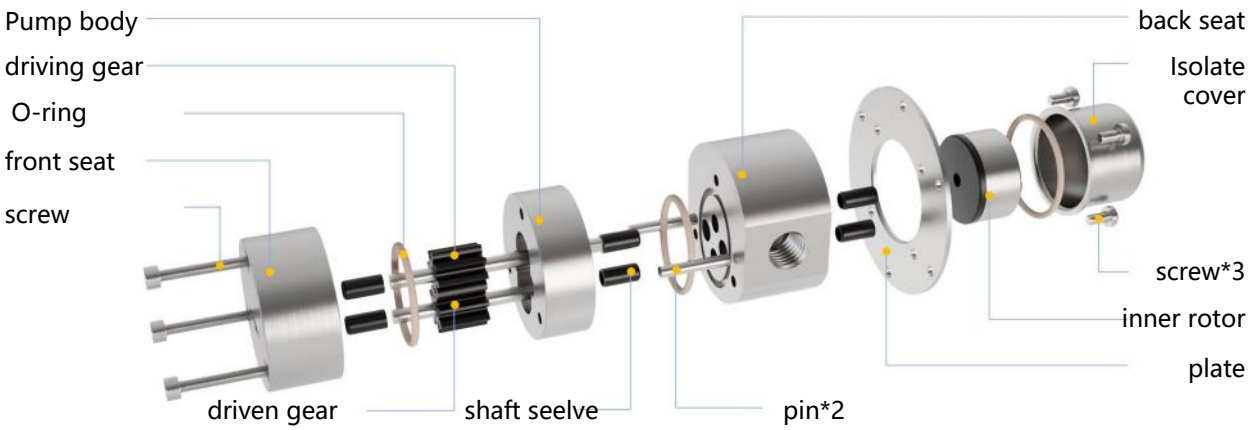
Application

No leakage; Low noise; Long service life; Corrosion resistance; Stable export pressure; No pulsation; Simple structure; maintainable。

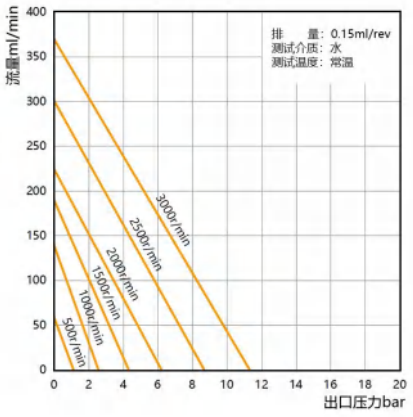
Suitable motors

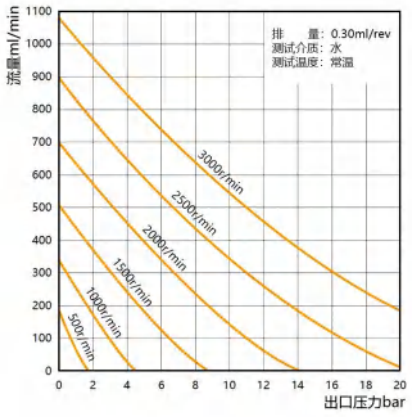
DC brushless motor, DC brushed motor, asynchronous motor, servo motor, etc.

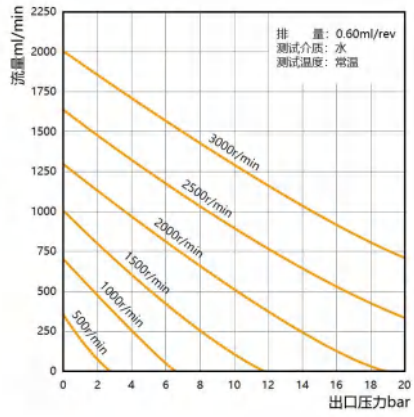
Structure

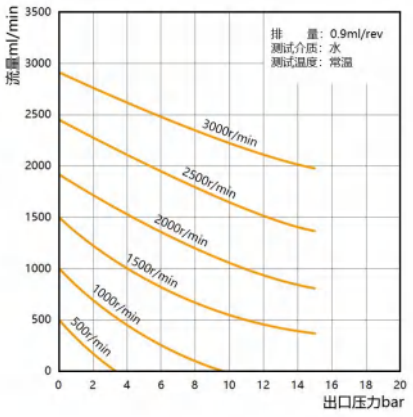


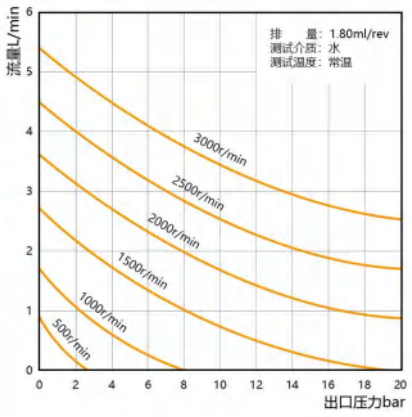
Test medium: water
Test temperature: room temperature

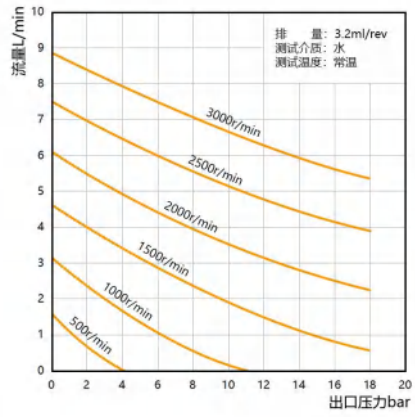


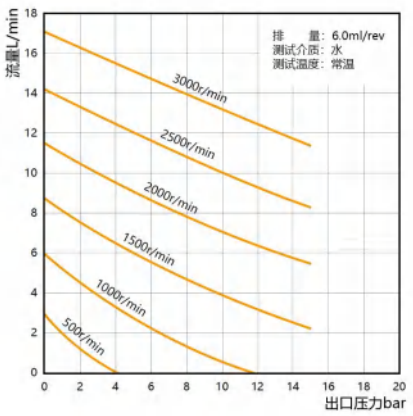


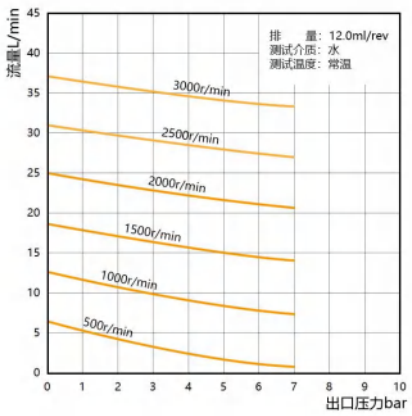


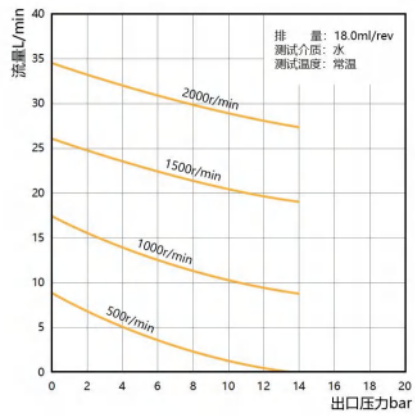




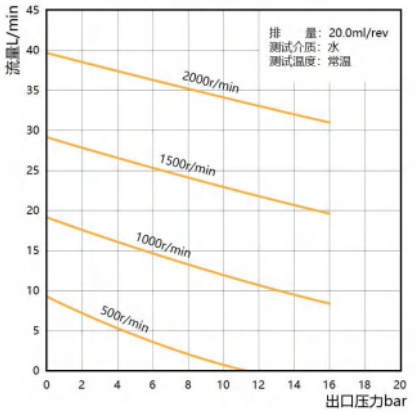


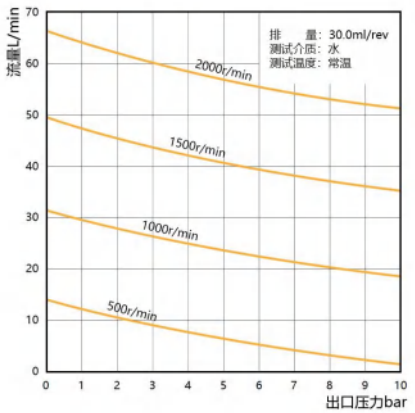


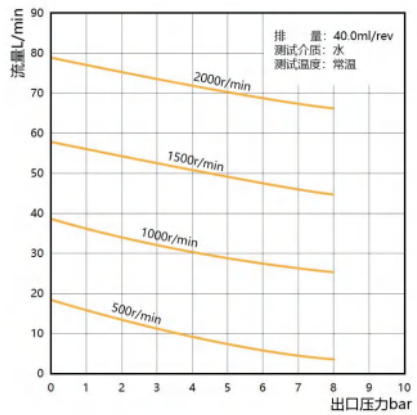


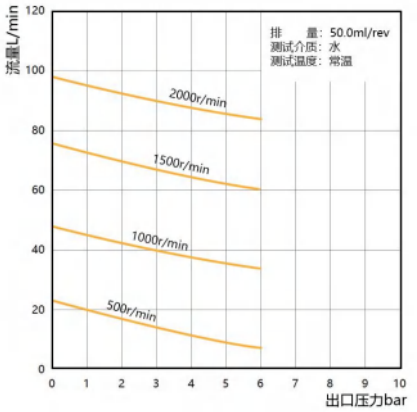


Test medium: water
Test temperature: room temperature









Pump Spec 3.2cc-50.0cc

Pump model	pump body	gear	sealing	shaft seelve	temperature	system pressure(bar)	Inlet&outlet pressure@water(bar)
MGS3.2S88	316L	PEEK	PFA	PEEK	-40℃~85℃	30	30
MGS6.0S88	316L	PEEK	PFA	PEEK	-40℃~70℃	30	30
MGS12.0S88	316L	PEEK	PFA	PEEK	-40℃~70℃	30	13
MGS18.0S128	316L	PEEK	FKM	PEEK	-40℃~70℃	40	27
MGS20.0S145	316L	PEEK	FKM	PEEK	-40℃~100℃	40	30
MGS30.0S145	316L	PEEK	FKM	PEEK	-40℃~100℃	40	20
MGS40.0S145	316L	PEEK	FKM	PEEK	-40℃~100℃	40	16
MGS50.0S145	316L	PEEK	FKM	PEEK	-40℃~100℃	40	12

Pump description

The pump body is made of food grade 316L, and the gear and shaft sleeve are made of modified high-strength PEEK. The gear pump adopts an "O" ring seal as a whole, with an overall pressure resistance of over 3MPA. The internal and external magnets adopt a dual magnetic tile design, greatly increasing the magnetic torque of the magnetic coupling. Some products can have a pressure difference of over 4MPa (it is recommended to use below 2MPa, as working with a pressure difference of over 2MPa will reduce the service life of the pump). It is suitable for most solvents, acids and bases, organic halides, hydrocarbons, organic nitrides, inorganic reagents, etc.

Pump Advantage

No leakage; Low noise; Long service life; Corrosion resistance; Stable export pressure; No pulsation; Simple structure; maintainable。

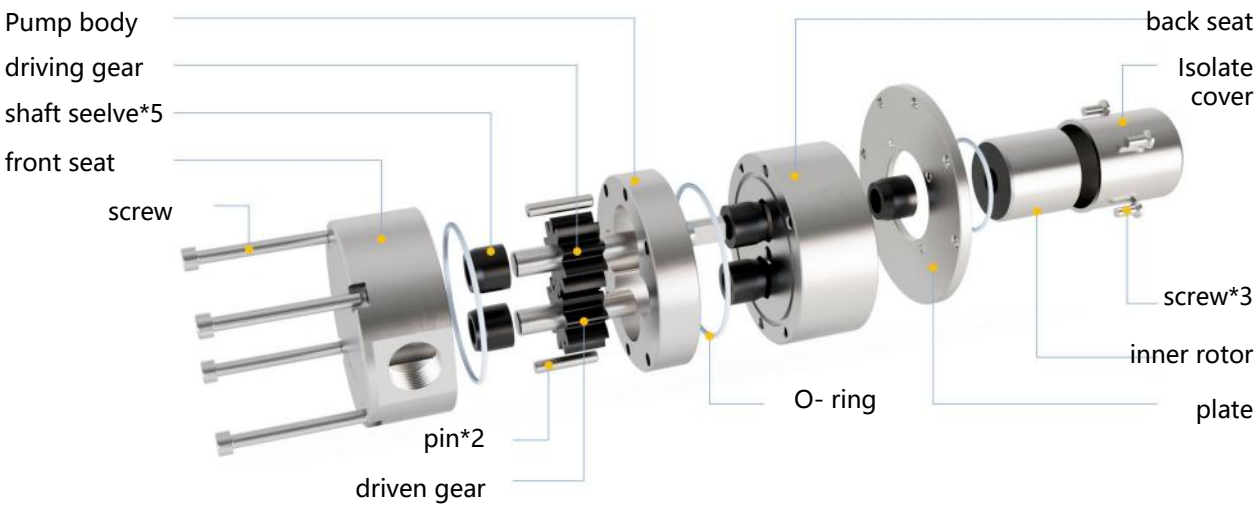
Application

Micro cooling devices for aerospace vehicles, chemical and chemical industries (such as reagents, pharmaceuticals, film manufacturing, pharmaceutical equipment, etc.), various laser equipment and instruments, printing and coding machine manufacturing, high-performance color printing equipment, charging pile liquid cooling systems, molecular distillation equipment, methanol to hydrogen equipment, exhaust gas treatment systems, etc.

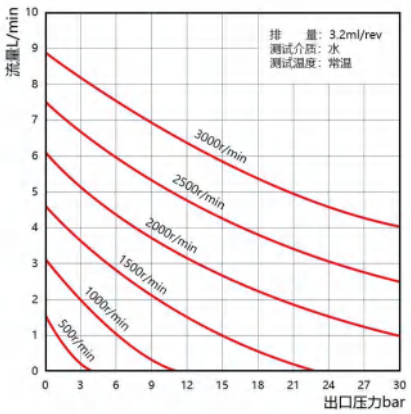
Suitable motors

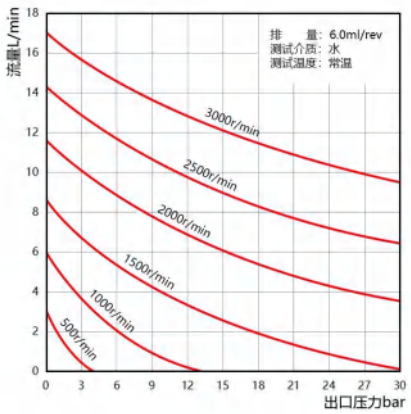
Asynchronous motor, servo motor, etc.

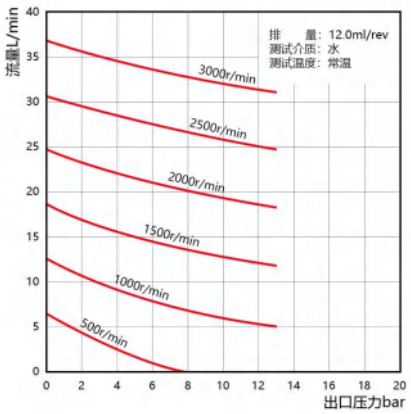
Structure

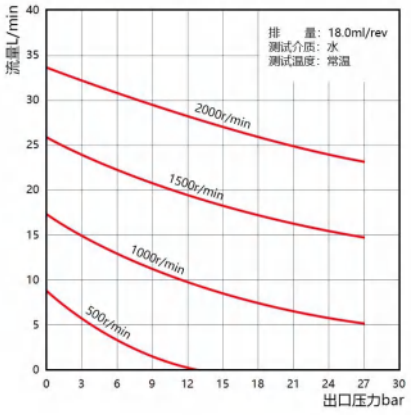


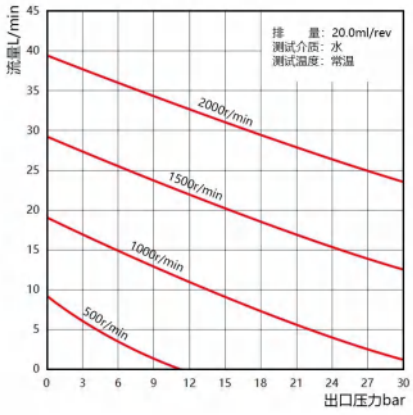
Test medium: water
Test temperature: room temperature

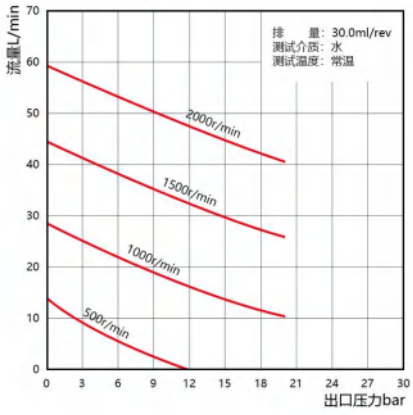


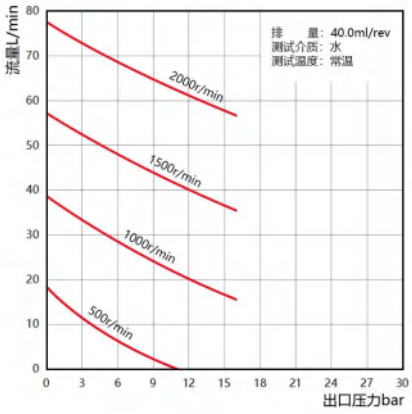


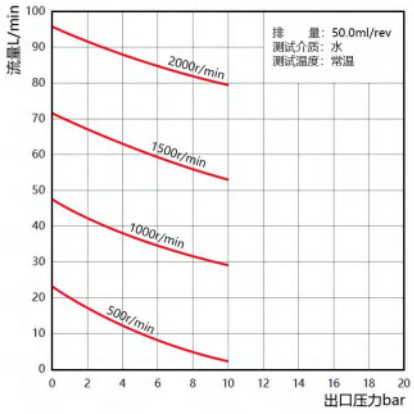












Pump spec 0.15cc-12.0cc

Pump model	pump body	gear	sealing	shaft seelve	tempe rature	system pressure (bar)	Inlet&outlet pressure@water(bar)
MGR0.15S57	316L/DLC	-40℃ ~ 120℃	Tungsten steel	FKM	PEEK	40	10
MGR0.30S57	316L/DLC	-40℃ ~ 120℃	Tungsten steel	FKM	PEEK	40	10
MGR0.60S57	316L/DLC	-40℃ ~ 120℃	Tungsten steel	FKM	PEEK	40	10
MGR0.90S57	316L/DLC	-40℃ ~ 120℃	Tungsten steel	FKM	PEEK	40	10
MGR1.80S72	316L/DLC	-40℃ ~ 120℃	Tungsten steel	FKM	PEEK	40	10
MGR3.2S88	316L/DLC	-40℃ ~ 120℃	Tungsten steel	PFA	PEEK	30	20
MGR6.0S88	316L/DLC	-40℃ ~ 120℃	Tungsten steel	PFA	PEEK	30	15
MGR12.0S88	316L/DLC	-40℃ ~ 120℃	Tungsten steel	PFA	PEEK	30	7

Pump description

The pump body material adopts food grade 316Tungsten steel coating, the gear material is tungsten steel, and the shaft sleeve material is modified high-strength PEEK. The gear pump adopts an "O" ring seal, with an overall pressure resistance of over 3MPA, suitable for conveying pigment ink, paint, and liquids containing nanoscale hard particles (excluding magnetism).

Pump Advantage

No leakage; Low noise; Long service life; Corrosion resistance; Stable export pressure; No pulsation; Simple structure; Easy maintenance; Super wear-resistant.

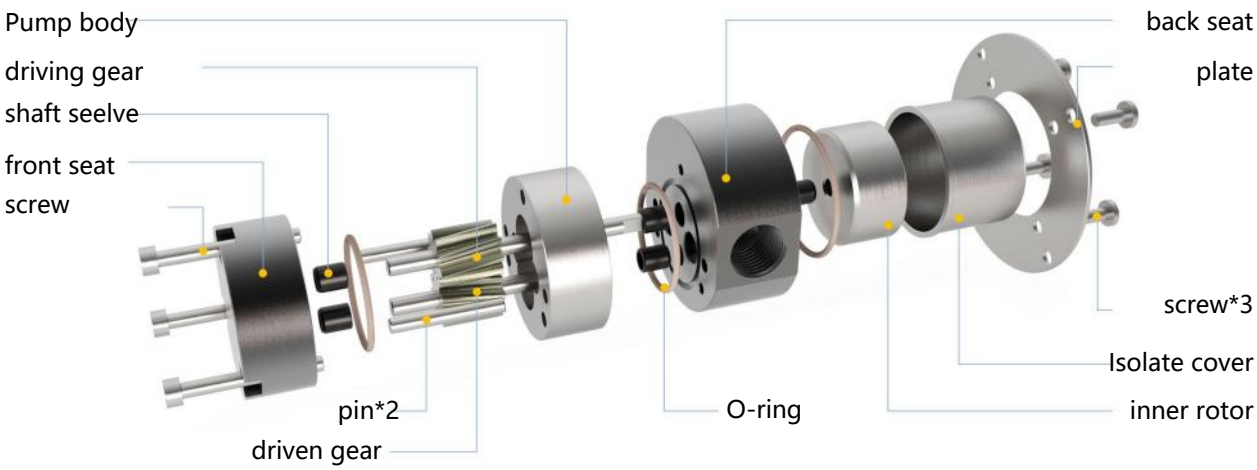
Application

Micro cooling devices for aerospace vehicles, chemical and chemical industries (such as reagents, pharmaceuticals, film manufacturing, pharmaceutical equipment, etc.), various laser equipment and instruments, printing and coding machine manufacturing, high-performance color printing equipment, charging pile liquid cooling systems, molecular distillation equipment, methanol to hydrogen equipment, exhaust gas treatment systems, etc.

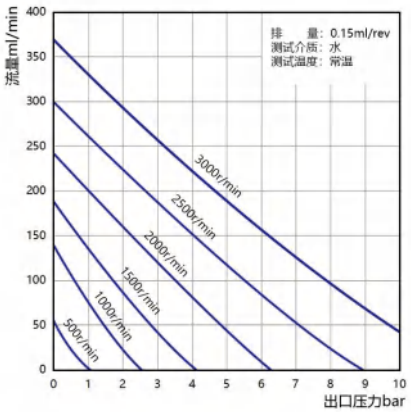
Suitable motors

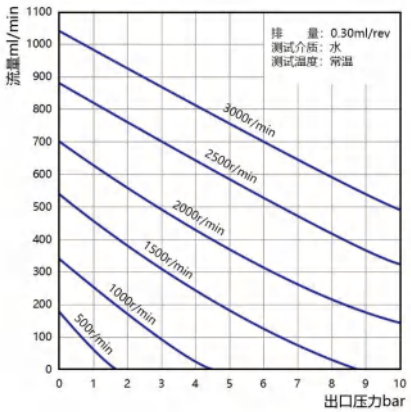
DC brushless motor, DC brushed motor, asynchronous motor, servo motor, etc.

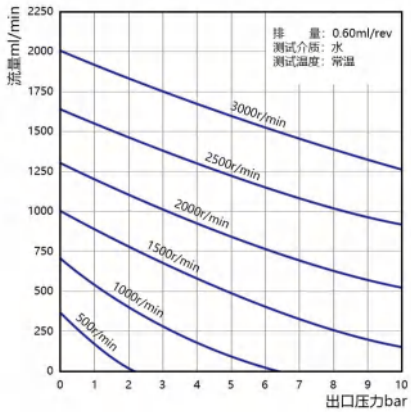
Structure

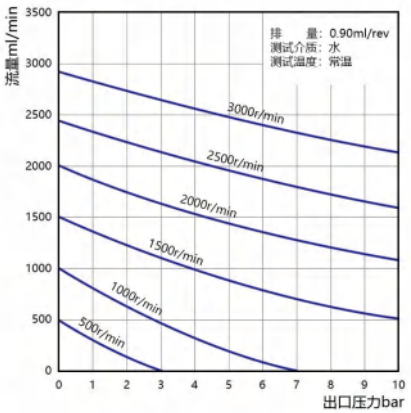


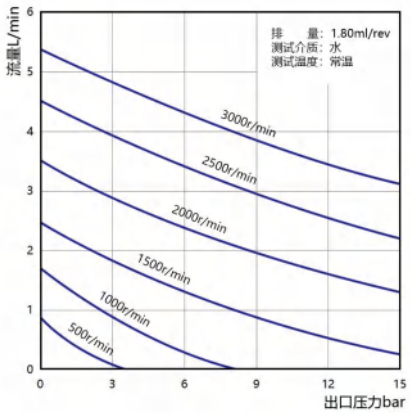
Test medium: water
Test temperature: room temperature

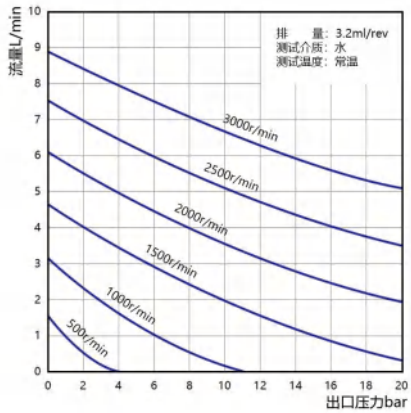


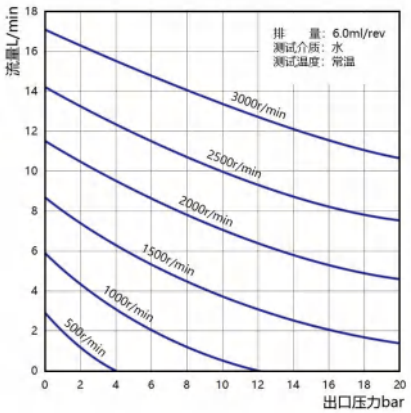


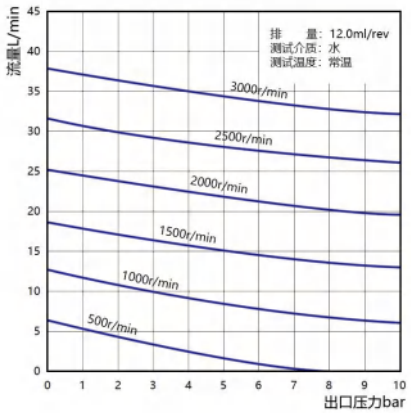












Pump Spec 0.60cc-6.0cc

Pump model	pump body	gear	sealing	shaft seelve	temperature	system pressure (bar)	Inlet&outlet pressure@water(bar)
MGT0.60S57	316L	Tungsten steel	FKM	Zirconia	-40℃ ~ 200℃	40	10
MGT1.80S72	316L	Tungsten steel	FKM	Zirconia	-40℃ ~ 200℃	40	10
MGT3.2S88	316L	Tungsten steel	FKM	Zirconia	-40℃ ~ 200℃	40	10
MGT6.0S88	316L	Tungsten steel	FKM	Zirconia	-40℃ ~ 200℃	40	10
MGT12.0S88	316L	Tungsten steel	FKM	Zirconia	-40℃ ~ 200℃	40	7

Sealing materials: FKM, PFA, EPDM, FFKM, etc. are optional. Customizable from -100 ℃ to 300 ℃.

Pump description

The pump body material is food grade 316L, the gear and shaft material is tungsten steel, the bearing material is ceramic, and the sealing standard is FKM (PFA, EPDM, FFKM, etc. are optional). The gear pump has an overall pressure resistance of 4MPA and a maximum temperature resistance of 300 ℃. Suitable for transporting liquids such as high-temperature oils and solvents.

Pump Advantage

No leakage; Low noise; Long service life; Corrosion resistance; Stable export pressure; No pulsation; Simple structure; Easy maintenance; High temperature resistance; The difference in efficiency between high and low temperature usage is small.

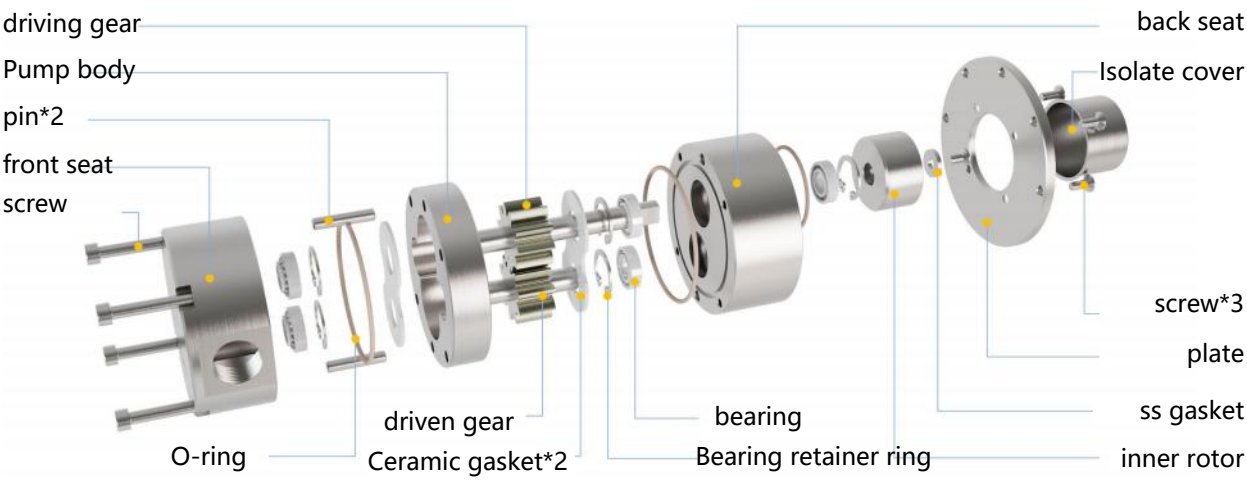
Application

Micro cooling devices for aerospace vehicles, chemical and chemical industries (such as reagents, pharmaceuticals, film manufacturing, pharmaceutical equipment, etc.), various laser equipment and instruments, printing and coding machine manufacturing, high-performance color printing equipment, charging pile liquid cooling systems, molecular distillation equipment, methanol to hydrogen equipment, exhaust gas treatment systems, etc.

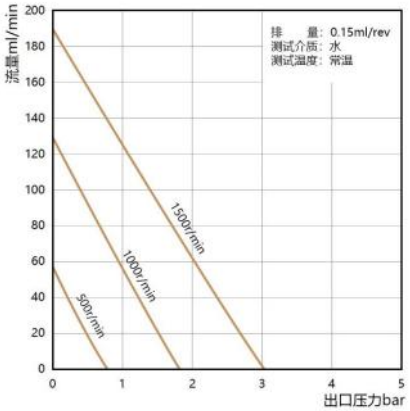
Suitable motors

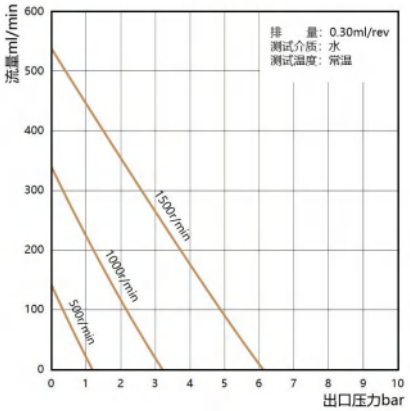
AC asynchronous motor

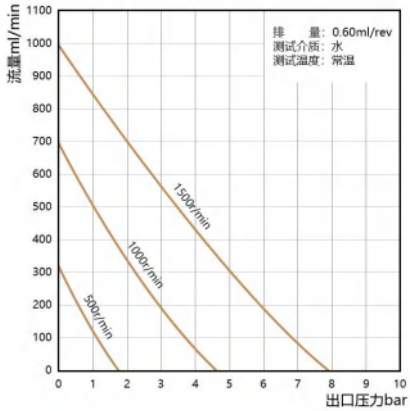
Structure

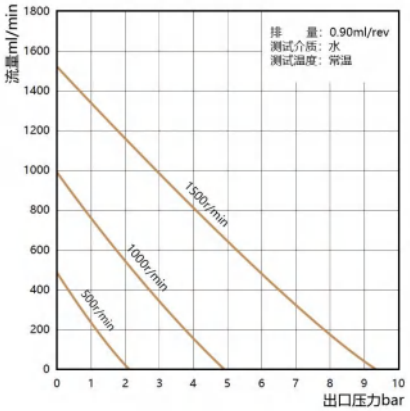


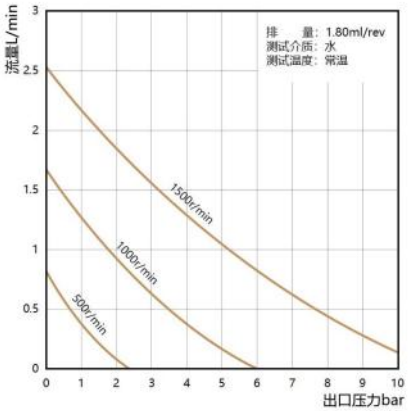
Test medium: water
Test temperature: room temperature

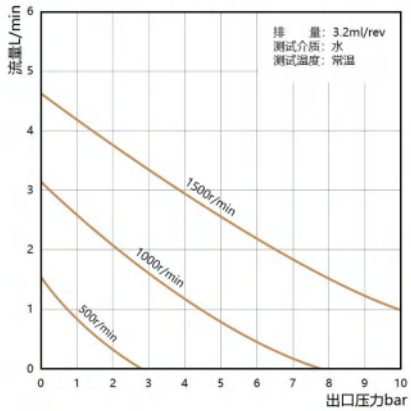


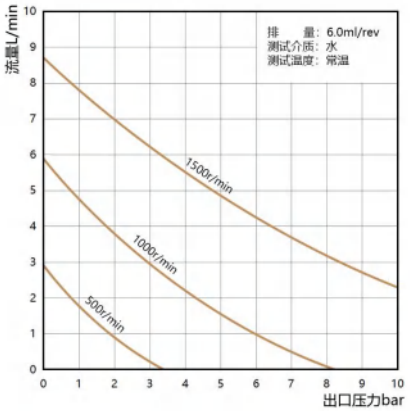


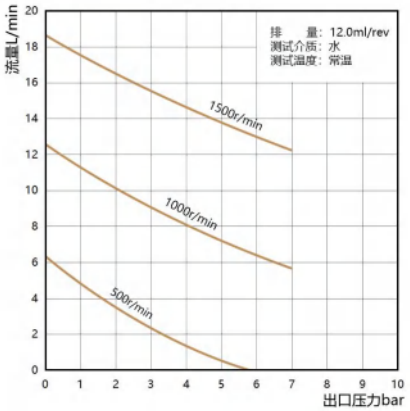












Pump Spec 0.6cc-6.0cc

Pump model	pump body	gear	sealing	shaft seelve	temperature	system pressure(bar)	Inlet&outlet pressure@water(bar)
MGP0.60K72	PEEK	PEEK	FFKM	PEEK	-40℃ ~ 50℃	6	6
MGP0.90K72	PEEK	PEEK	FFKM	PEEK	-40℃ ~ 50℃	6	6
MGP1.50K72	PEEK	PEEK	FFKM	PEEK	-40℃ ~ 50℃	6	6
MGP3.0K115	PEEK	PEEK	FFKM	PEEK	-40℃ ~ 50℃	6	6
MGP6.0K115	PEEK	PEEK	FFKM	PEEK	-40℃ ~ 50℃	6	6

he pump body and gear material can be customized with PTFE. The system pressure and pressure difference during operation should not exceed 0.6MPA, otherwise it will cause the pump to deform and leak.

Pump description

The pump body material is made of high-strength modified PEEK, the gear material is high-strength modified PEEK, the gear shaft is made of nano ceramic, the sealing standard is FFKM, and the overcurrent material is metal free, suitable for most solvents, acids and bases, organic halides, hydrocarbons, organic nitrides, inorganic reagents, and liquids that cannot come into contact with metals.
If the pump body material is customized with PTFE, the gear material is high-strength modified PTFE, the gear shaft is nano ceramic, the sealing material comes standard with FFKM, and the overcurrent material is metal free, suitable for strong acids such as concentrated sulfuric acid, concentrated nitric acid, concentrated hydrochloric acid, and benzenesulfonic acid.

Pump Advantage

No leakage; Low noise; Long service life; Corrosion resistance; Stable export pressure; No pulsation; Simple structure; Easy maintenance; Lightweight; Overcurrent material without metal。

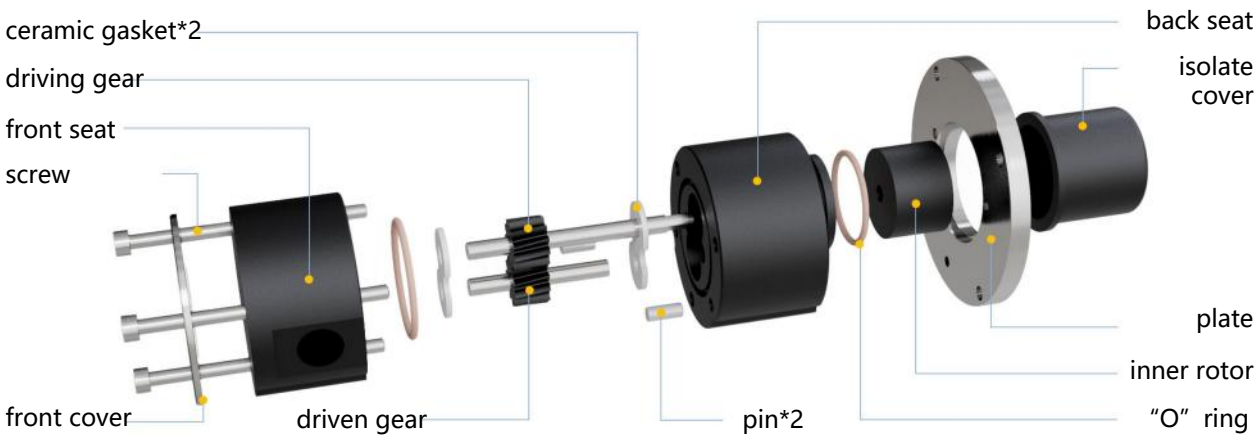
Application

Micro cooling devices for aerospace vehicles, chemical and chemical industries (such as reagents, pharmaceuticals, film manufacturing, pharmaceutical equipment, etc.), various laser equipment and instruments, printing and coding machine manufacturing, high-performance color printing equipment, charging pile liquid cooling systems, molecular distillation equipment, methanol to hydrogen equipment, exhaust gas treatment systems, etc.

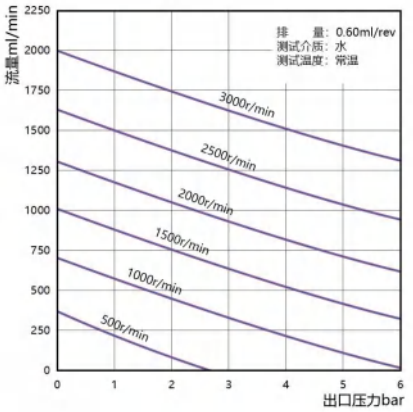
Suitable motors

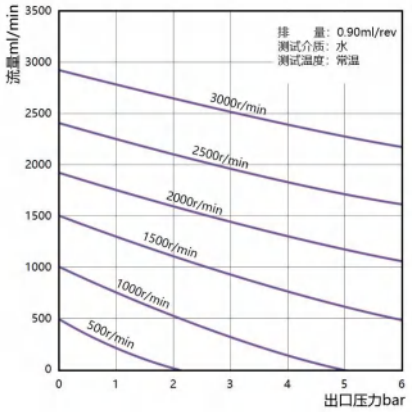
DC brushless motor, DC brushed motor, asynchronous motor, servo motor, etc.

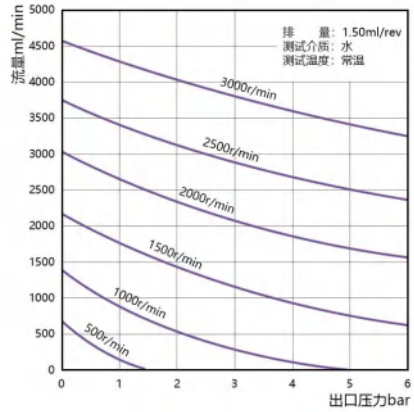
Structure

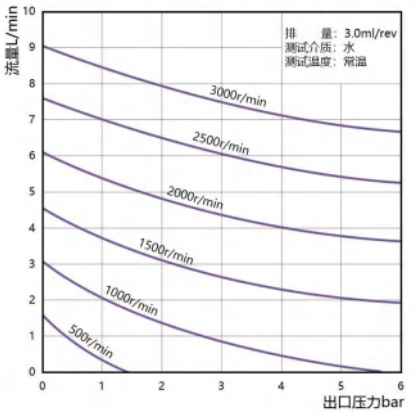


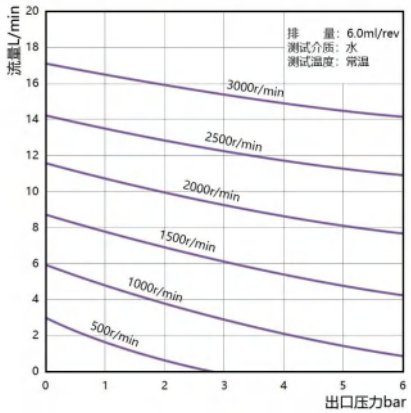
Test medium: water
Test temperature: room temperature











Precautions

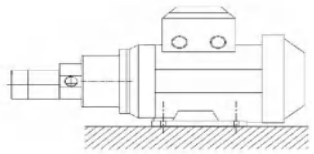
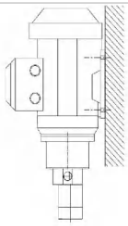
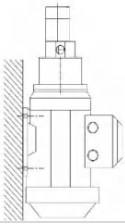
Installation method

The installation position of the pump should be as close as possible to the medium source container. The diameter of the inlet and outlet pipelines should not be smaller than the size of the pump interface, and the length should be shortened as much as possible. If the inlet pipeline needs to be lengthened due to layout and installation site space limitations, the inlet diameter should be increased and the number of valves and bends at the pump inlet should be minimized as much as possible.

Pipe installation

During pipeline installation: 1. Align with the inlet and outlet of the pump body as much as possible, and if possible, add pipeline support at appropriate positions; 2. Avoid the eccentric torque and weight of the pipeline directly acting on the pump, otherwise it may affect the sealing of the pump body, and long-term external forces can easily cause damage to the pump body and leakage.

installation diagram

horizontal installation	vertical downward	Vertical up
		

Filter

The inlet of the pump should be equipped with a 25um or higher precision filter (preferably 400 mesh or higher precision). If the pump operates in a closed-loop system, the filter can also be installed at the outlet of the pump. It is recommended that the nominal flow rate of the filter be 1.5 times greater than the maximum flow rate of the pump to ensure the flow area of the medium and reduce the impact of the filter on the flow resistance of the pipeline.

Pressure

It is recommended to use within the pressure range that the pump can withstand. 1. Excessive system pressure can affect the sealing effect of the pump body; 2. Excessive pressure difference between imports and exports can cause magnetic slippage inside and outside the magnetic coupling. Excessive pressure fluctuations during use can also easily cause slippage in magnetic couplings.

self-priming

Gear pumps have strong self-priming function, but before starting, confirm that the gears have been wetted by the pumped medium.

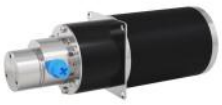
Dry/Reverse

Long term over speed drying can cause permanent damage to the pump. Please confirm that there is medium in the pump chamber or at least it has been wetted during operation. The pump should rotate clockwise. Short term reversal is acceptable, but prolonged continuous reversal will shorten the lifespan of the pump.

Common Fault Analysis

Fault phenomenon	Possible causes	Solutions
The gear pump works but cannot absorb the medium	Motor speed too low	Increase motor speed
	Gear pump wear	Replace worn parts
	Medium viscosity too high	Reduce the medium viscosity and increase the inlet pipe diameter
	Outlet ball valve not open	Open the outlet ball valve
Gear pump not working	The gear pump is stuck by foreign matters	Disassemble and remove foreign things
	Motor wiring error	Rewire as required
Loud noise	High inlet vacuum	The diameter of inlet pipe is increased
Small flow	Motor speed too low	Increase motor speed
	Gear wear	Replace worn parts
	Outlet pressure too high	Reduce outlet pressure
	Small inlet pipe diameter	Increase the diameter of inlet pipe

Suitable motors



DC brush motor

DC brushless motor

stepper motor

servo motor

Common asynchronous motor

General asynchronous frequency conversion

Explosion proof asynchronous motor

Explosion proof asynchronous frequency conversion

Motor usiage instruction

Installation of motors and drive components

- ay attention to protection when using, and do not touch the surface of the equipment unless necessary. Excessive temperature rise of the motor may burn the skin.
- When installing, the ventilation effect of the environment should be considered, and the ventilation holes of the motor should not be blocked. It should be ensured that the heat generated by the motor during use is released in a timely manner. If the ambient temperature is too high, it will increase the temperature rise of the motor and reduce its performance.
- Pay attention to the protection of the motor and do not allow foreign objects to enter the motor.
- Choose the appropriate protection level motor according to the working conditions, and do not let the motor work in an environment that exceeds the protection level.
- Once an abnormal condition occurs in the motor, please immediately cut off the power supply to the motor.

AC Motor

- The input voltage and frequency of the AC motor must be consistent with the markings on the motor nameplate.
- For dual voltage motors, please refer to the wiring diagram on the motor nameplate for wiring requirements.
- Pay attention to grounding protection for the motor.
- Motors with overheating protection (see nameplate) will automatically stop working when overheating occurs. When the temperature of the coil is lower than the protection set value, the motor will start automatically without warning. This mechanism, as a safety protection measure for motors, cannot be used as a conventional means of controlling motors.

DC brushless motor（BLDC）

- BLDC controls the motor speed by controlling the input voltage. The voltage should not exceed the allowable value. The speed control voltage is generally 0-5V.
- Regardless of the input voltage, the motor current is not allowed to exceed the rated current under any circumstances.
- If the voltage fluctuation exceeds 10% of the rated voltage of the motor, please add a voltage regulator to the circuit.
- A motor with a speed adjustment potentiometer can be started by first turning the potentiometer to the stop position, and then slowly rotating it to adjust to the desired working speed.
- A motor with a speed signal output can be connected to a pulse receiver through the motor speed signal output line. The motor outputs 2 pulses per transfer, and the actual speed of the motor can be calculated from this

DC motors with brushes (PMDC) (including AC/DC series motors)

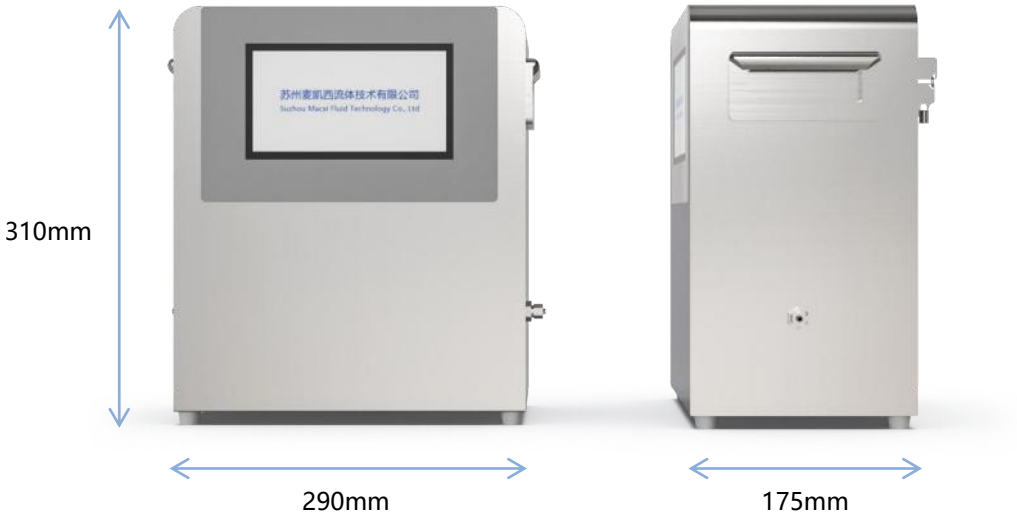
- PMDC controls the motor speed by controlling the input voltage. Unless otherwise specified, the parameters for controlling voltage can be found on the nameplate.
- PMDC does not have over temperature protection function, and excessive current will cause the motor to overheat, resulting in reduced performance. Therefore, regardless of the input voltage, the motor current can only exceed the rated current for a short period of time.

PUMP CONTROLLED CONVEYING SYSTEM

CFCS Flow meter combination constant flow pump

Customer customization

Flow meter combination constant flow pump



Gear pump spec

Volume (ml/rev)	0.15/0.30	Inlet/outlet pressure	12Bar
sealing	FKM	system pressure	20Bar
pump body	Stainless steel 316L	suitable liquids	he vast majority of solvents, weak acids, and weak bases
temperature	-30℃-70℃（Customized 70℃-200℃）		

BLDC Motor spec

Power	40W	precision	0.01V voltage adjustment
speed	0~5500rev/min（0-5V adjust）		

Flow meter spec

flowrate (ml/min)	40-400/100-1000	function	Cumulative flow, instantaneous flow

Pump image

45 degree angle

front view

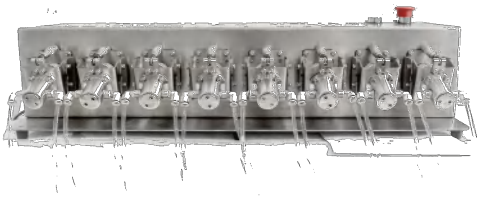
rear view

For detailed dimensions, please consult Suzhou Macxi Fluid Technology Co., Ltd

Customized pumps

Fluid control gear pump system with small cart type

Large high viscosity pump controlled conveying station



Plunger pump control system

skid-mounted Twelve head pump control system

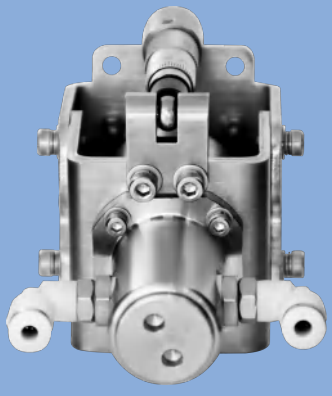
skid-mounted Electrical cabinet

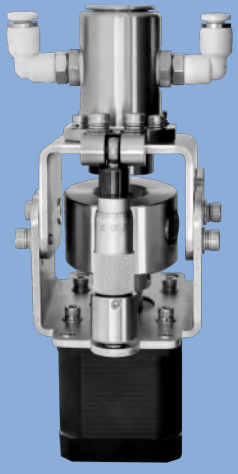
More customized

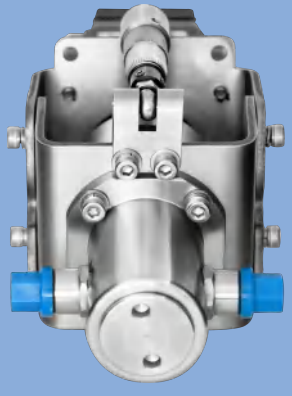
CERAMIC PLUNGER PUMP

MP 42 specifications Ceramic plunger pump

MP 57 specifications Ceramic plunger pump





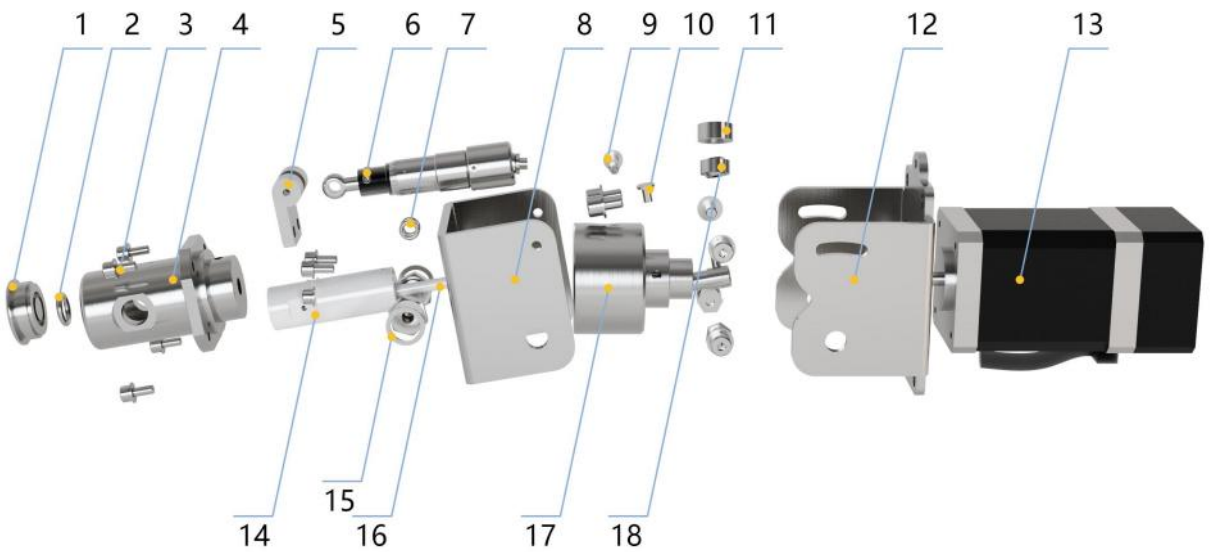


Selection instruction Eg: MP 0.05 Z 04 HS 42

MP	→	Plunger pump (pressure resistance 0.2MPa)	
0.05	→	Pump displacement, unit: ml/rev	
Z	→	The valve core material of the pump is zirconia ceramic	
04	→	Valve core diameter, unit: mm	
HS	→	Types of motors, HS: Stepper motor SM: servo motor	
42	→	Motor power or specifications	42 specifications correspond to displacement: 0.05/0.08 ml/rev 57 specifications correspond to displacement: 0.15/0.25/0.35 ml/rev

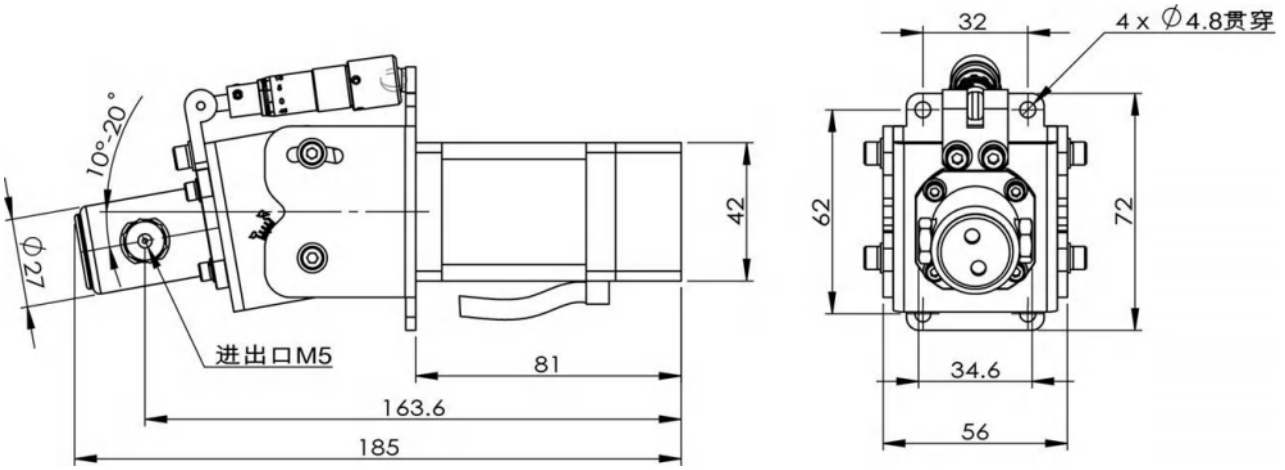
• The product temperature can be customized. • The product can be customized with special material pump bodies, such as Hastelloy alloy.
• Product updates and upgrades, table values are for reference only.

Parts drawing



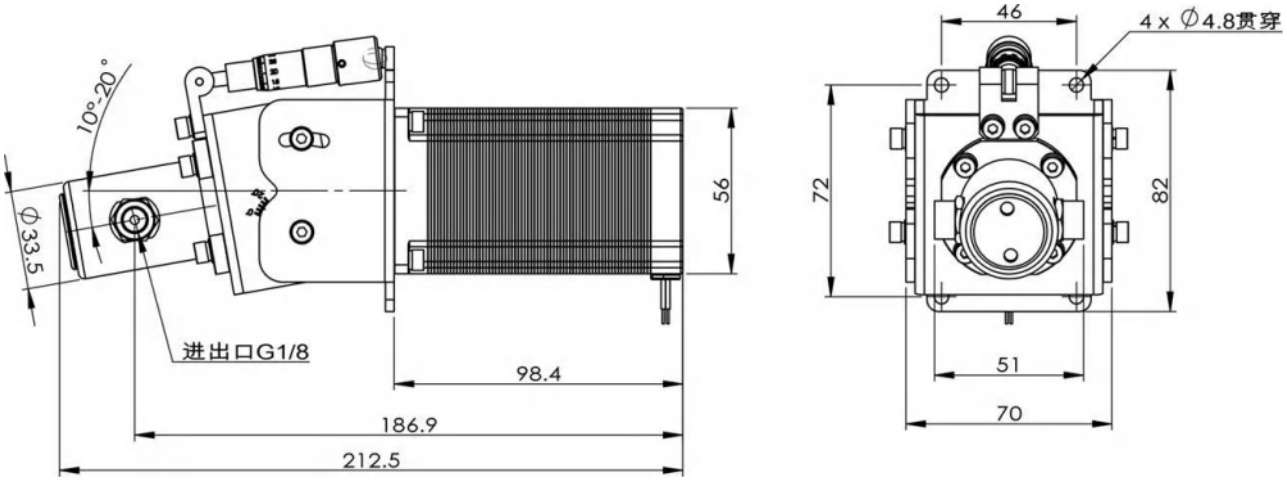
1.Valve sleeve nut	6.Adjusting rod	11.Bearing nut	16..Import and export adapter
2. Valve sleeve sealing ring	7. Import and export sealing rings	12.Motor installation seat	17.Coupling
3.Locking screw	8.Valve sleeve installation seat	13.Motor	18.Ball head bearings
4.Valve sleeve seat	9.Adjustment Nut	14.Ceramic valve sleeve	
5..Hinge	10.Jackscrew	15.Ceramic cartridge	

42 series



Pump model	adjust	port size	pump valve core	valve sleeve	sealing	displacement (ml/rev)	temperature
MP0.05Z04HS42	10-20degree	M5	Zirconia	Zirconia	FKM	0.05	-20℃~80℃

57 series



Pump model	adjust	port size	pump valve core	valve sleeve	sealing	displacement(ml/rev)	temperature
MP0.35Z10HS57	10-20度	G1/8	Zirconia	Zirconia	FKM	0.35	-20℃~80℃

For detailed dimensions, please consult Suzhou Macxi Fluid Technology Co., Ltd

Instructions

Cleaning program

After cleaning with purified water, rinse thoroughly with injection water;

Sterilization procedure

Dry heat sterilization or high-pressure moist heat steam can be used for sterilization: however, since the sealing ring can only withstand a temperature of 160 ° C, it should be removed before dry heat and sterilized with high-pressure moist heat steam. (It is recommended to use high-pressure moist heat steam for sterilization, with a sterilization temperature of 121 ° C, a pressure of 0.1MPa, and a time of 30 minutes

Precautions for Cleaning and Sterilization

1. Do not use chlorine containing chemical solutions in contact with stainless steel to prevent corrosion of stainless steel parts.
2. Do not pull ceramic measuring components in hot water exceeding 120 ° C during cleaning. The ceramic plunger and ceramic seelves should be cleaned separately.
3. During sterilization, the rotary valve, ceramic sleeve, and measuring rod should be opened separately in a dedicated sterilization box, and the ceramic rod and ceramic sleeve should be placed vertically for wet heat sterilization to prevent deformation and bending due to heat; After sterilization, the temperature of each component should naturally drop to room temperature before installation. Before the temperature of the pump body drops to room temperature, sudden cooling should be avoided to prevent damage to each component.
4. Due to the higher hardness of ceramics compared to metals, contact between ceramics and metals can cause the ceramic surface to become dirty, and a small amount of concentrated hydrochloric acid can be used for cleaning; If there is yellow dirt on the pump body, soak it in 10% oxalic acid for 5-10 minutes and then rinse it off with injection water.
5. Due to the higher hardness of ceramics compared to stainless steel, contact between ceramics and stainless steel can cause the ceramic surface to adhere to the stainless steel, which cannot be removed and may result in the filling pump not running smoothly or unable to move. Causing damage. It is recommended to use non-metallic materials as storage containers for cleaning and
6. sterilization

Common fault analysis

stuck pump	
Material viscosity	Increase the fit gap (Change the encryption seal)
Material dryness and crystallization	Disassemble and clean the pump(Add cleaning tank)
Top cover of valve core	Adjust the position of the motor connection shaft
Valve core top motor shaft	Adjust the position of the motor connection shaft
The corner support bearing is too tight	Loosen the bearing cover and replace the bearing
The speed is too fast	Reduce the speed
The outlet pipe is too small	Replace the large liquid outlet pipe
The motor is not powerful	Increase the current
Traffic is not accurate	
Liquid nozzle hanging liquid	Replace the hard tube, small liquid nozzle, and increase the speed
Screw loose	Tighten the screws
With bubbles	① There are issues with the size and sealing of the inlet and outlet nozzles and end caps ② Bubbles are generated during material mixing ③ Machine vibration enters bubbles from the outlet nozzle
Poor material extraction (Vacuum pumping)	Slow down the speed, there is a blockage at the inlet end
The feed drop is too large	Reduce the drop between the pump head and the material bucket
There is a phenomenon of suction back	The origin is incorrect, and the angle between the valve core and the steel sleeve is incorrect
Pump head leakage	① The size of the inlet and outlet nozzles and end caps is incorrect ② There is a problem with the sealing ③ The internal pressure of the pump is too high

MACXI
麦 凯 西

Address: Building 1, Changsheng Venture Park, Zhitang Town, Changshu City, Jiangsu, China

Email:bruce.tang@macxi-fluid.com

Website:www.macxi-fluid.com

Tel:15716205153 Mr. Chen (Technical Support)

18934579257 Mr. Tang (Sales)

Scan to follow
us on WeChat