DHP Series Axial Piston Pumps

DHP 0.6 ～ 1.0/ DHP 1.7 ～ 3.0/ DHP 3.5 ～ 4.0 /

DHP 4.5 ～ 8.2/ DHP 11 ～ 15/ DHP 16 ～ 22/ DHP 24 ～ 46

DHP -H Series Axial Piston Pumps

DHP -H15 / DHP -H21 / DHP -H24/ DHP -H30

FG Water Technologies

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https://www.fgwater.com

Content

1. Company Introduction

FENIGAL works with his OEM partner Shenzhen CW Environment Technology to provide axial piston high pressure pumps. In 1990, the company started to develop high-pressure plunger pumps, becoming the first domestic company to do so. Axial high pressure piston pump manufacturer, after nearly15 Years of focus and innovation, dedicated to the research and development of high-pressure plunger pumps Production, completed the localization of axial high-pressure plunger pumps, the technical level and product quality have reached the world's advanced level, production The production scale has ranked among the top in the domestic industry, solving the bottleneck problem of related products.

Axial high-pressure plunger pumps are mainly used in three major fields:

(1) Desalination of seawater, sub-seawater, brackish water, wastewater salt concentration, and wastewater resource recovery
(2) Separation membrane concentration of chemical, food, and pharmaceutical raw material liquids
(3) Cleaning of semiconductors, LCD panels, PCB boards, food, medical and other high-hygienic environment requirements

We always adhere to the tenet of "quality first, integrity-based, customer satisfaction", and will continue to enhance our core competitive advantages, deepen Made in China 2025, actively respond to the industrial base strengthening strategy, and reshape Made in China through technological innovation. We will also improve and perfect the supply chain system and sales service system, and be committed to providing customers with efficient core fluid equipment and technical solutions.

In the future, we will continue to pay attention to customer needs, focus on the research and development and innovation of core fluid equipment, and create more Multi-value.

2. Introduction to High Pressure Plunger Pump

Axial high pressure piston pump is a new type of axial piston pump made of new materials based on the principle of axial piston pump. The pump uses the flowing liquid as the lubricating medium, eliminating the lubricating oil tank of the traditional plunger pump and avoiding the It can prevent leakage pollution of the body and is suitable for conveying low viscosity liquid.

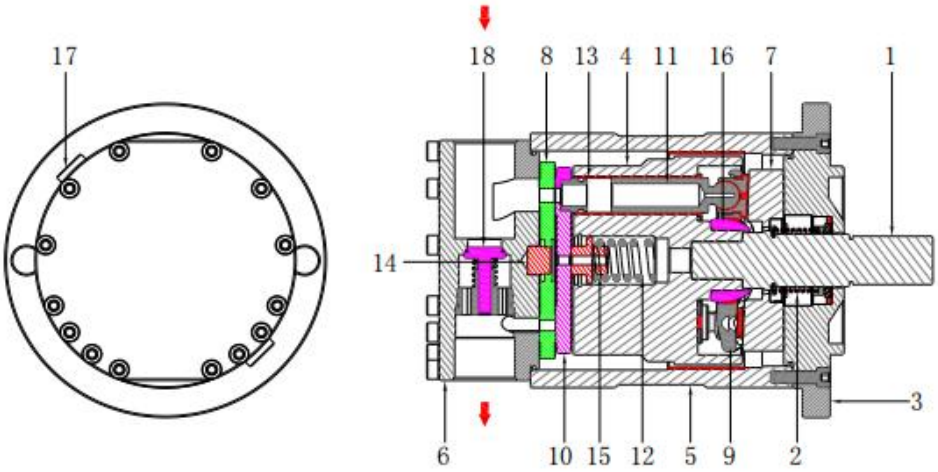
2.1 Overview

DHP and DHP-H Series high pressure pumps are designed to transport high pressure, low viscosity corrosive fluids such as sea High pressure brackish water (seawater) in water reverse osmosis.

DHP and DHP-H Series high-pressure pumps are based on the axial piston pump principle, using a plunger parallel to the drive shaft to The reciprocating motion of the plunger hole produces a change in volume to work, and the fluid itself is used to pump the moving parts of the pump. This series of pumps has an integrated check valve, which allows the fluid to flow from the inlet to the outlet through the check valve when the pump stops .

DHP and DHP-H Series high pressure pumps are fixed displacement pumps, and the flow rate is proportional to the input shaft speed and the pump displacement. Proportional.

The following is a DHP Cross-sectional view of the pump. For special pump specifications, please refer to the corresponding pump instructions.



1. Spindle	2. Shaft seal	3. Mounting flange	4. Plunger cylinder	5. Pump casing with bearings
6. Connecting flange	7. Swash plate	8. Distribution plate	9. Return Disk	10. Sealing plate
11. Plunger sleeve	12. Spring	13. Plunger	14. Distribution core	15. Spring pin
16. Universal joint	17. Exhaust valve	18. Flush valve		

2.2 Advantage

1) Compact structure and high efficiency: Compared with other pumps of the same flow and pressure , it is smaller in size and lighter in weight; High efficiency, energy saving, low operating cost, green and environmentally friendly;

2) Easy installation: It can be directly installed on the motor or internal combustion engine, especially suitable for installations that are sensitive to site space requirements. installation place;

3) High pressure: DHP Continuous working pressure 8MPa , DHP-H Continuous working pressure12MPa ;

4) Small pulse and low noise: The pulse during operation is much smaller than other types of pumps. The more plungers there are, the smaller the pulse is, and the faster the operation is. Continuity, less vibration, less noise;

5) Long service life: All pump parts are made of corrosion-resistant materials such as duplex (SAF 2205 / EN 1.4462 / UNS 31803) and Super Duplex (SAF 2507 / EN 1.4410 / UNS 32507) stainless steel, and carbon fiber Made of fiber-reinforced polyetheretherketone (PEEK), the product has a service life of up to80 00 More than hours;

6) Easy to use: integrated backwash valve simplifies the design of reverse osmosis membrane system, saving space and cost;

7) Maintenance-free: It uses water as the medium for lubrication, and does not require the use of lubricating oil, eliminating the need for daily maintenance and the risk of oil leakage pollution. Environmentally friendly color.

2.3 Application Scenario

DHP Series and DHP-H Series of high-pressure pumps are widely used in high-pressure reverse osmosis desalination systems in various places:

- ✓ Used for desalination of seawater, sub-seawater and brackish water in islands and coastal areas.
- ✓ Used for industrial wastewater desalination and resource utilization, and concentration of wastewater zero discharge salt.
- ✓ Used for leachate treatment in urban landfills and environmental protection power plants.
- ✓ Used for flue gas desalination wastewater treatment in coal-fired power plants and environmental protection power plants.
- ✓ Used for coal mining and coal coking processing wastewater treatment.
- ✓ Used for concentration of food, pharmaceutical and chemical raw materials.

3. Pump technical parameters

3.1 DHP0.6 ～ 1.0

Product Model	DHP 0.6	DHP 0.8	DHP 1.0
Geometric displacement, cm^3/ rev	3.62	4.82	6.06
3000 rpm Rated flow rate, m^3 /h	0.6	0.81	0.92
Minimum outlet pressure[1], Bar	10	10	10
Maximum continuous outlet pressure 1), Bar	80	80	80
Minimum inlet pressure, Bar	1	1	1
Maximum continuous inlet pressure, Bar	5	5	5
Maximum continuous speed, rpm	3450	3450	3450
Minimum continuous speed, rpm	700	700	700
noise[2], dB (A)	≤74	≤74	≤74
3000 rpm and pressure 80 Bar Power at 100 kW	2.2	3.0	3.0
Medium temperature[3],℃	2～50	2～50	2～50
Ambient temperature,℃	0～50	0～50	0～50
Weight, kg	3.7	3.7	3.7
Integrated flushing check valve	have	have	have

1) If you need to work at higher or lower pressure, please contact FENIGAL sales representative.

2) Measurement basis EN ISO 3744-2010/ dB (A) is calculated and measured at maximum pressure and speed for the entire pump unit.

3) It depends on the NaCl concentration.

3.2 DHP1.7 ～ 3.0

Product Model	DHP 1.7	DHP 2.1	DHP 2.7	DHP 3.0
Geometric displacement, cm^3 / rev	9.6	11.8	15	17.7
3000 rpm Rated flow rate, m^3 /h	1.7	2.1	2.7	3
Minimum outlet pressure[1], Bar	20	20	20	20
Maximum continuous outlet pressure[1], Bar	80	80	80	80
Minimum inlet pressure, Bar	1	1	1	1
Maximum continuous inlet pressure, Bar	5	5	5	5
Maximum continuous speed, rpm	3450	3450	3450	3450
Minimum continuous speed, rpm	700	700	700	700
noise[2], dB (A)	≤77	≤77	≤77	≤77
3000 rpmand pressure80 BarThe power when kW	5.5	7.5	11	11
Medium temperature[3],℃	2～50	2～50	2～50	2～50
Ambient temperature,℃	0～50	0～50	0～50	0～50
Weight, kg	7.8	7.8	7.8	7.8
Integrated flushing check valve	have	have	have	have

1) If you need to work at higher or lower pressure, please contact FENIGAL sales representative.

2) Measurement basisEN ISO 3744-2010/ dB (A) is calculated and measured at maximum pressure and speed for the entire pump unit.

3) It depends on the NaCl concentration.

3.3 DHP3.5 ～ 4.0

Product Model	DHP 3.5	DHP 4.0
Geometric displacement, cm^3 / rev	25	32
1650/1800 rpmRated flow rate, m^3 /h	3.5	4.0
Minimum outlet pressure[1], Bar	20	20
Maximum continuous outlet pressure[1], Bar	80	80
Minimum inlet pressure, Bar	2	2
Maximum continuous inlet pressure, Bar	5	5
Maximum continuous speed, rpm	1650	1800
Minimum continuous speed, rpm	700	700
noise[2], dB (A)	≤77	≤77
1650/1800 rpmand pressure80 BarPower at 1 hour, KW	11.0	15.0
Medium temperature[3],℃	2～50	2～50
Ambient temperature,℃	0～50	0～50
Weight, kg	18	18
Integrated flushing check valve	have	have

1) If you need to work at higher or lower pressure, please contact FENIGAL sales representative.

2) Measurement basisEN ISO 3744-2010/ dB (A) is calculated and measured at maximum pressure and speed for the entire pump unit.

3) It depends on the NaCl concentration.

3.4 DHP4.5 ～ 8.2

Product Model	DHP 4.5	DHP 5.3	DHP 6.3	DHP 7.2	DHP 8.2
Geometric displacement, cm^3 / rev	50	63	70	80	100
1500 rpmRated flow rate, m^3 /h	4.5	5.3	6.3	7.2	8.2
Minimum outlet pressure[1], Bar	10	10	10	10	10
Maximum continuous outlet pressure[1], Bar	80	80	80	80	80
Minimum inlet pressure, Bar	2	2	2	2	2
Maximum continuous inlet pressure, Bar	5	5	5	5	5
Maximum continuous speed, rpm	1800	1800	1800	1800	1800
Minimum continuous speed, rpm	700	700	700	700	700
noise[2], dB (A)	≤78	≤78	≤78	≤78	≤78
1500 rpmand pressure80 Bar Time Rate, kW	15	15	18.5	22	30
Medium temperature[3],℃	2～50	2～50	2～50	2～50	2～50
Ambient temperature,℃	0～50	0～50	0～50	0～50	0～50
Weight, kg	34.5	34.5	34.5	34.5	34.5
Integrated flushing check valve	have	have	have	have	have

1) If you need to work at higher or lower pressure, please contact FENIGAL sales representative.

2) Measurement basisEN ISO 3744-2010/ dB (A) is calculated and measured at maximum pressure and speed for the entire pump unit.

3) It depends on the NaCl concentration.

3.5 DHP11～15

Product Model	DHP 11	DHP 13.5	DHP 15
Geometric displacement, cm^3 / rev	133	163	181
1500 rpmRated flow rate, m^3 /h	11	13.5	15
Minimum outlet pressure[1], Bar	10	10	10
Maximum continuous outlet pressure[1], Bar	80	80	80
Minimum inlet pressure, Bar	2	2	2
Maximum continuous inlet pressure, Bar	5	5	5
Maximum continuous speed, rpm	1500	1500	1500
Minimum continuous speed, rpm	700	700	700
noise[2], dB (A)	≤85	≤85	≤85
1500 rpmand pressure80 BarPower at 100 kW	30	37	45
Medium temperature[3],℃	2～50	2～50	2～50
Ambient temperature,℃	0～50	0～50	0～50
Weight, kg	52	52	52
Integrated flushing check valve	have	have	have

1) If you need to work at higher or lower pressure, please contact FENIGAL sales representative.

2) Measurement basisEN ISO 3744-2010/ dB (A) is calculated and measured at maximum pressure and speed for the entire pump unit.

3) It depends on the NaCl concentration.

3.6 DHP16～22

Product Model	DHP 16	DHP 17	DHP 19	DHP 22
Geometric displacement, cm^3 / rev	188	197	219	253
1500 rpmRated flow rate, m^3 /h	15.8	16.9	18.8	21.8
Minimum outlet pressure[1)], Bar	20	20	20	20
Maximum continuous outlet pressure[1)], Bar	80	80	80	80
Minimum inlet pressure, Bar	2	2	2	2
Maximum continuous inlet pressure, Bar	5	5	5	5
Maximum continuous speed, rpm	1500	1500	1500	1500
Minimum continuous speed, rpm	700	700	700	700
noise[2)], dB (A)	≤85	≤85	≤85	≤85
1500rpmand pressure80BarPower at 1 hour, kW	45	55	55	75
Medium temperature[3)],℃	2～50	2～50	2～50	2～50
Ambient temperature,℃	0～50	0～50	0～50	0～50
Weight, kg	78	78	78	78
Integrated flushing check valve	have	have	have	have

1) If you need to work at higher or lower pressure, please contact FENIGAL sales representative.

2) Measurement basisEN ISO 3744-2010/ dB (A) is calculated and measured at maximum pressure and speed for the entire pump unit.

3) It depends on the NaCl concentration.

3.7 DHP24～46

Product Model	DHP 24	DHP 26	DHP 30	DHP 38	DHP 46
Geometric displacement, cm^3 / rev	282	309	362	444	444
1500 rpmRated flow rate, m^3 /h	24.5	26.7	31.6	39.3	39.4
Minimum outlet pressure[1], Bar	10	10	10	10	10
Maximum continuous outlet pressure[1], Bar	80	80	80	80	70
Minimum inlet pressure, Bar	2	2	2	2	3
Maximum continuous inlet pressure, Bar	5	5	5	5	5
Maximum continuous speed, rpm	1500	1500	1500	1500	1780
Minimum continuous speed, rpm	700	700	700	700	700
Noise level, dB (A)	≤85	≤85	≤85	≤85	≤85
1500 rpmand pressure80/70 Barof Power, kW	75	75	90	110	110
Medium temperature[3],℃	2～50	2～50	2～50	2～50	2～50
Ambient temperature,℃	0～50	0～50	0～50	0～50	0～50
Weight, kg	105	105	105	105	105
Integrated flushing check valve	have	have	have	have	have

1) If you need to work at higher or lower pressure, please contact FENIGAL sales representative.

2) Measurement basisEN ISO 3744-2010/ dB (A) is calculated and measured at maximum pressure and speed for the entire pump unit.

3) It depends on the NaCl concentration.

3.8 DHP-H15～30

Product Model	DHP -H15	DHP -H21	DHP -H24	DHP -H30
Geometric displacement, cm^3 / rev	362	362	362	444
Rated speed, rpm	750	1000	1200	1200
Flow rate at rated speed, m^3 /h	15	21	24	30
Minimum outlet pressure[1], Bar	30	30	30	30
Maximum continuous outlet pressure[1], Bar	120	120	120	110
Minimum inlet pressure, Bar	2	2	2	3
Maximum continuous inlet pressure, Bar	5	5	5	5
Maximum continuous speed, rpm	750	1000	1200	1200
Minimum continuous speed, rpm	500	500	500	500
Noise level, dB (A)	≤85	≤85	≤85	≤85
Rated speed and pressure 120/110 Barhour Power, kW	75	90	110	110
Medium temperature[3],℃	2～50	2～50	2～50	2～50
Ambient temperature,℃	0～50	0～50	0～50	0～50
Weight, kg	105	105	105	105
Integrated flushing check valve	have	have	have	have

1) If you need to work at higher or lower pressure, please contact FENIGAL sales representative.

2) Measurement basis EN ISO 3744-2010/ dB (A) is calculated and measured at maximum pressure and speed for the entire pump unit.

3) It depends on the NaCl concentration.

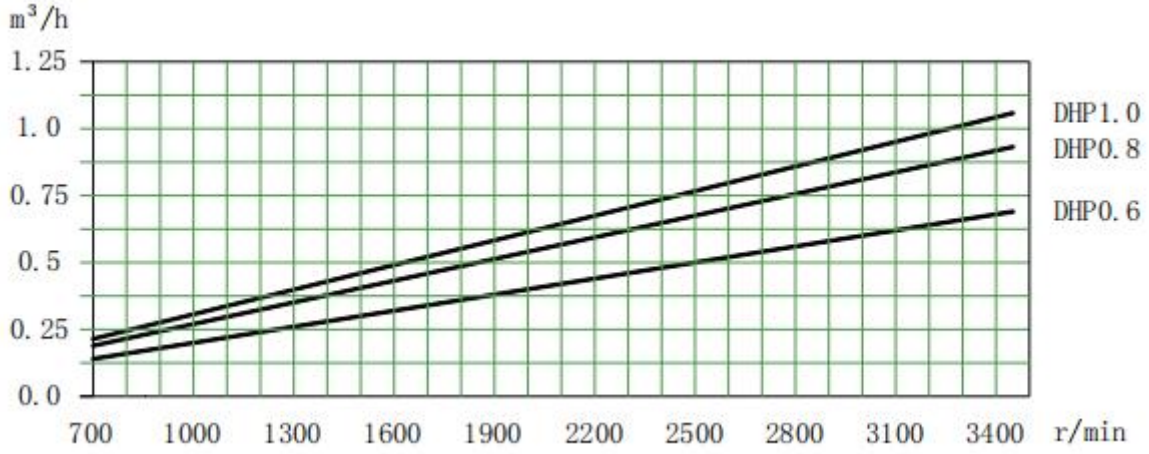
4. Pump flow at different speeds

If the required flow and speed (rpm) are known, the most appropriate pump can be easily selected using the following chart.

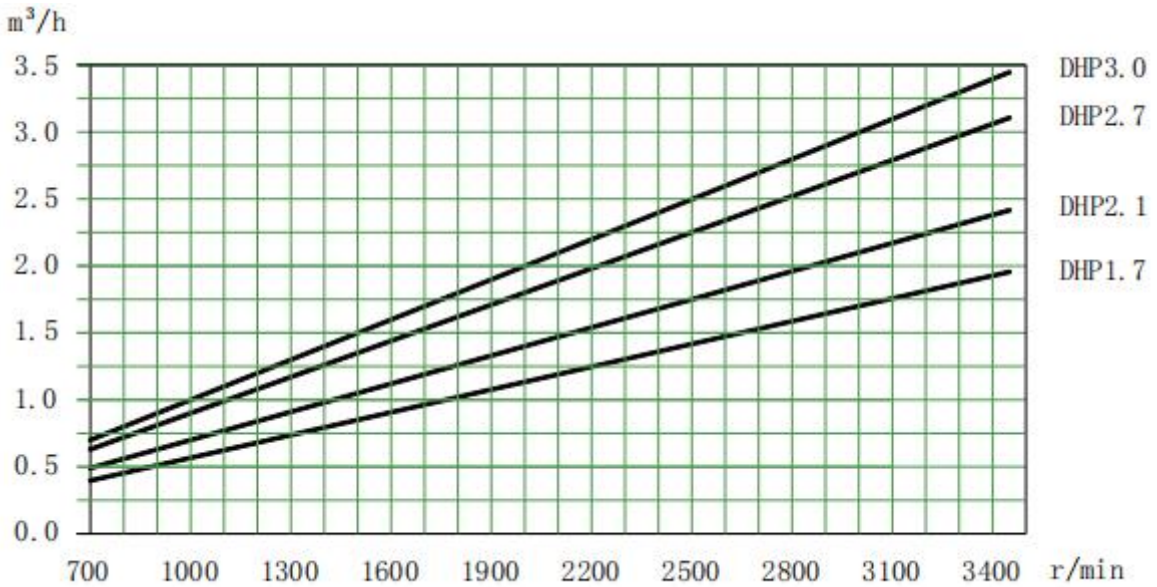
Furthermore, the graph shows that the flow rate can vary with the speed of the pump. The flow / speed ratio is fixed, and the required flow rate can be obtained by changing the speed to the corresponding value. Therefore, the required speed (rpm) can be determined by the following formula:

$$\text{Select motor speed (r/min)} = \frac{Required\ flow\ rate\ (m^3/h) \times Rated\ speed(\text{r/min})}{Rated\ flow((m^3/h)}$$

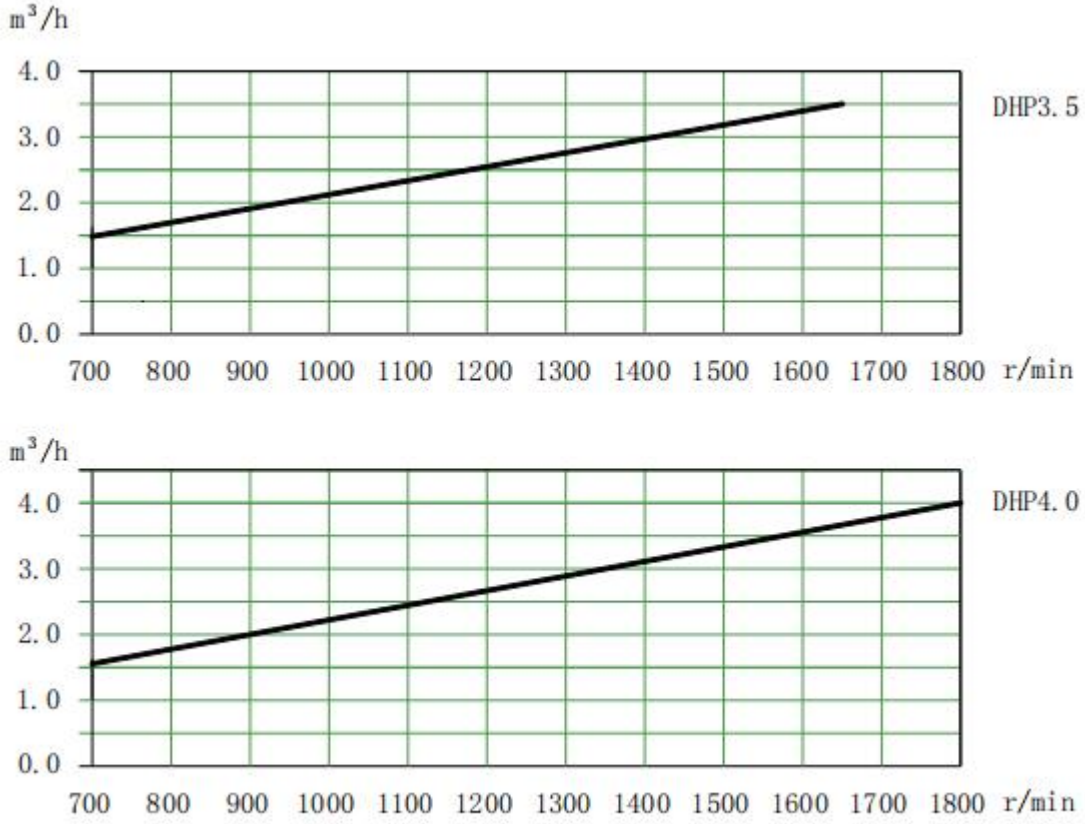
4.1 DHP0.6～1.0 flow curve at 80bar



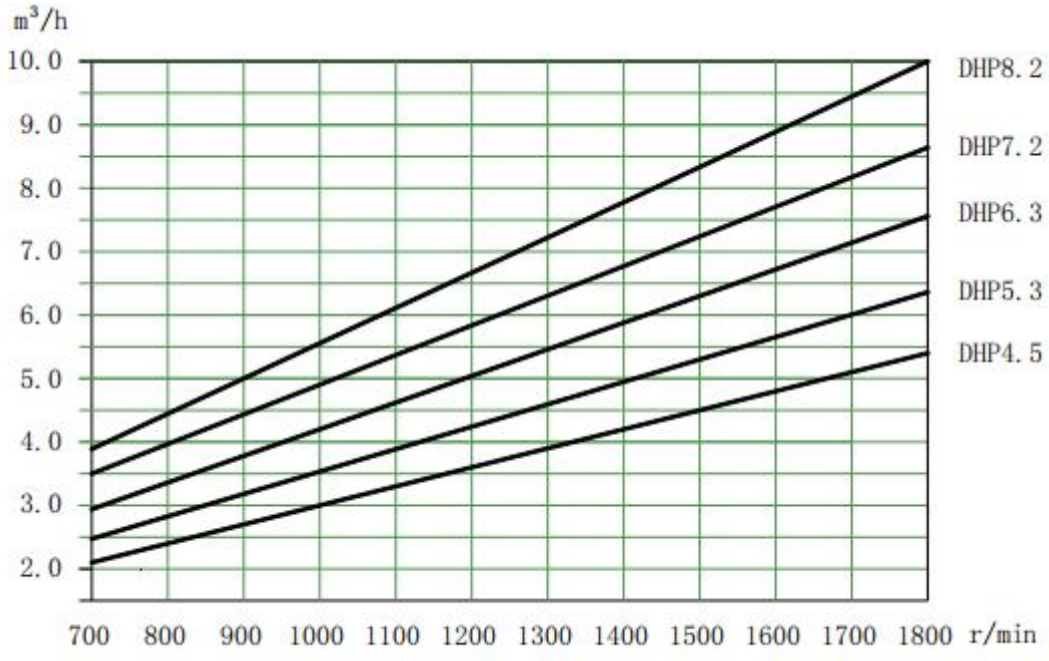
4.2 DHP1.7～3.0 flow curve at 80bar



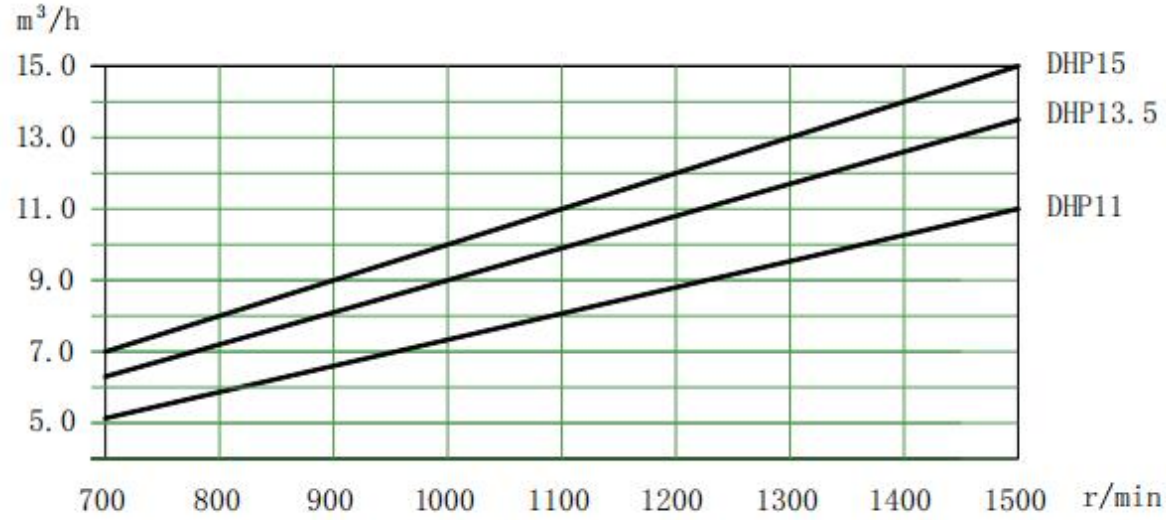
4.3 DHP3.5～4.0 flow curve at 80bar



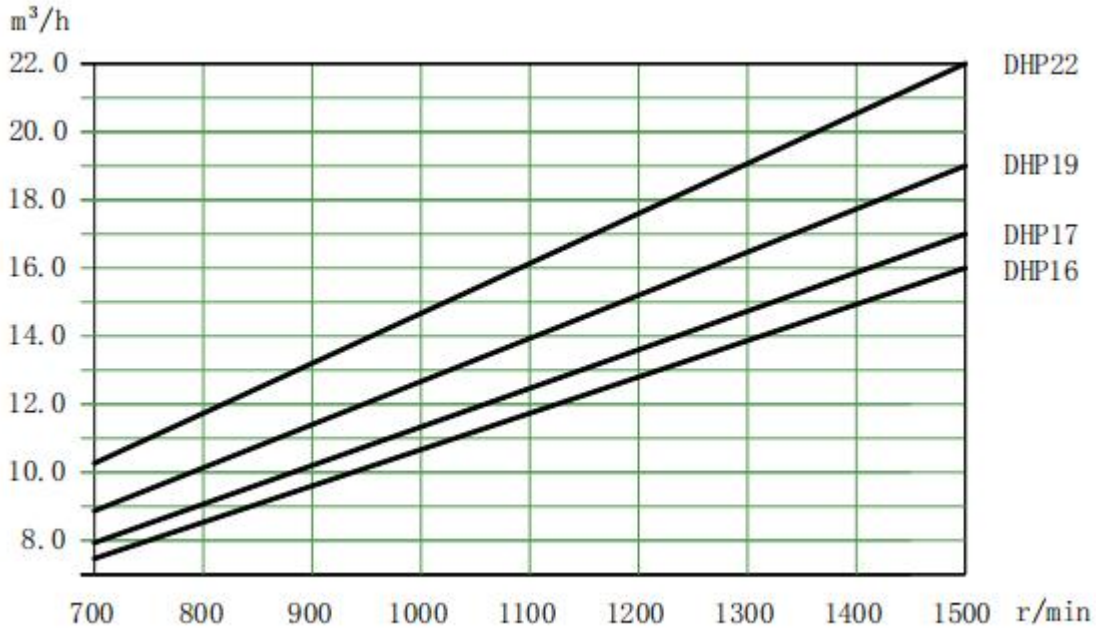
4.4 DHP4.5～8.2 flow curve at 80bar



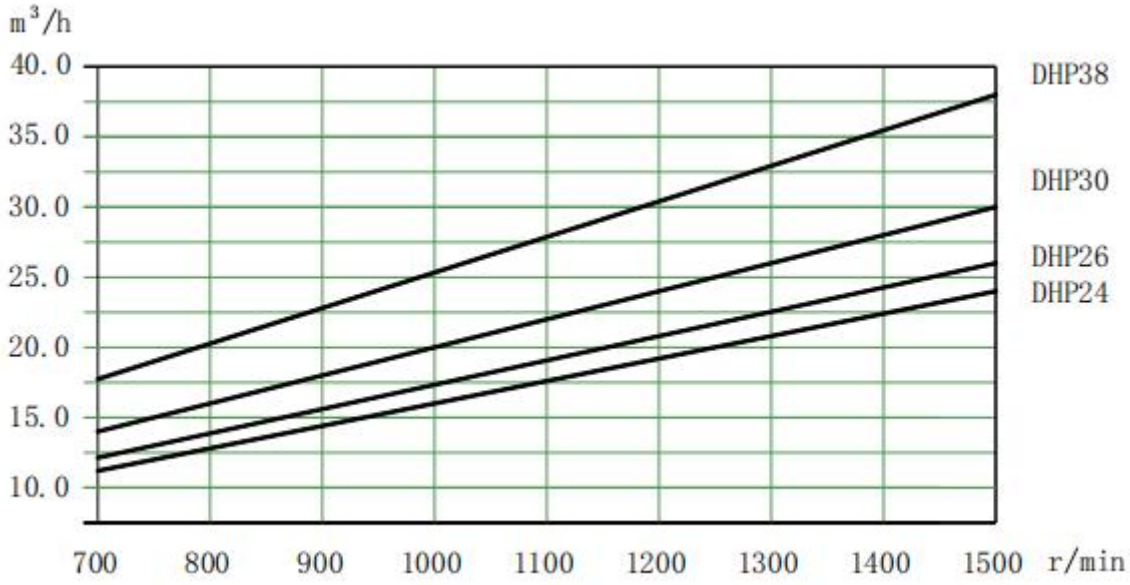
4.5 DHP11～15 flow curve at 80bar



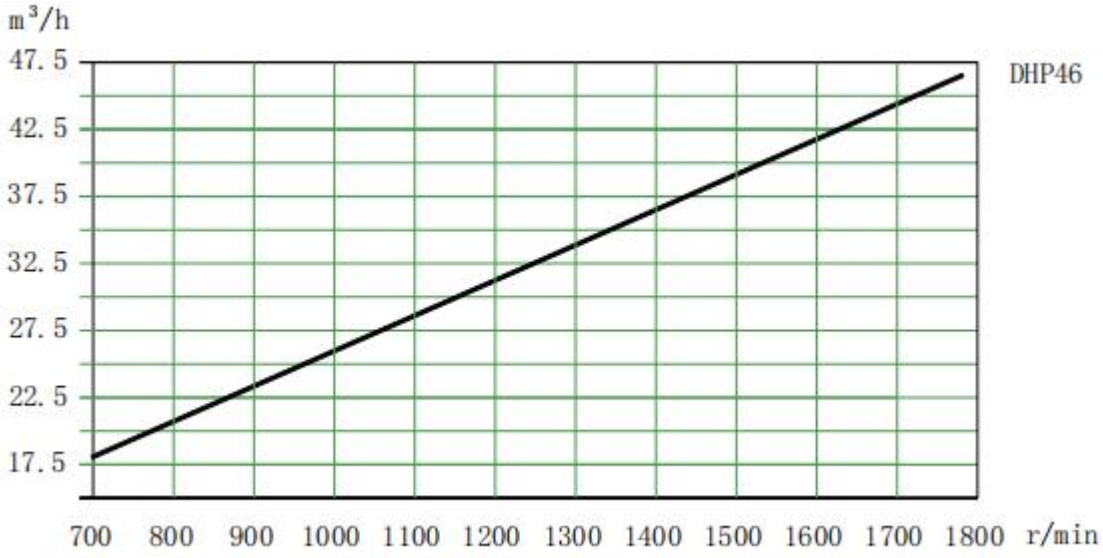
4.6 DHP16～22 flow curve at 80bar



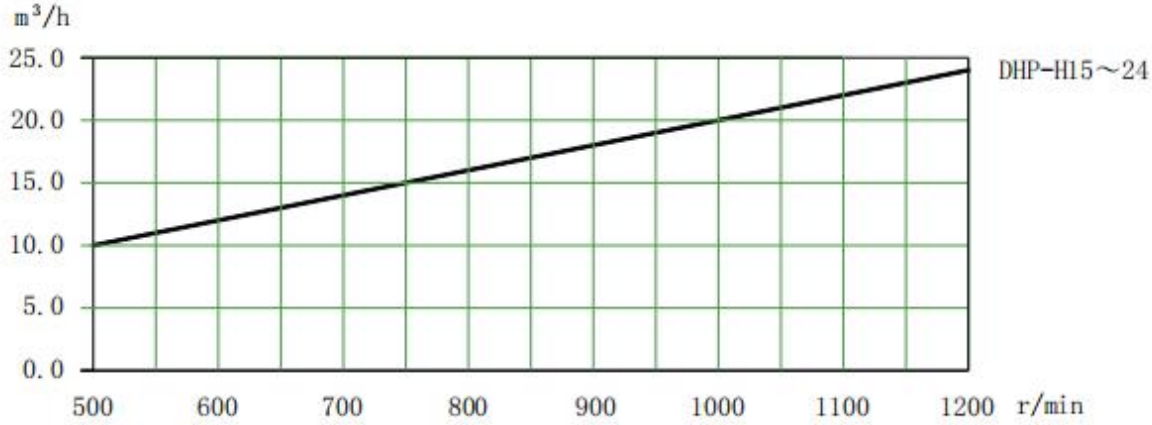
4.7 DHP24～38 flow curve at 80bar



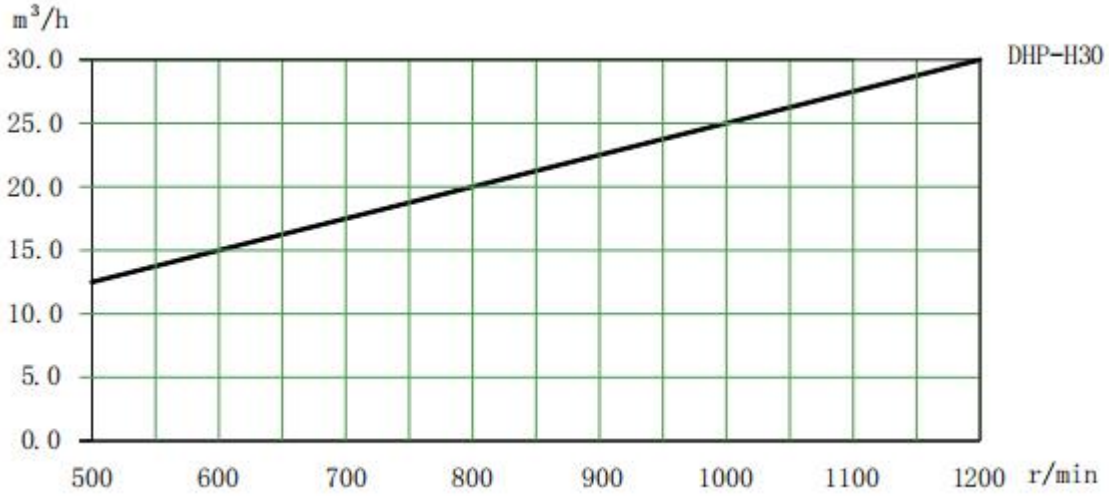
4.8 DHP46 flow curve at 70bar



4.9 DHP-H15～24 flow curve at 120bar



4.10 Flow curve of DHP-H30 at 110 bar



5. Temperature and corrosion

5.1 Operation

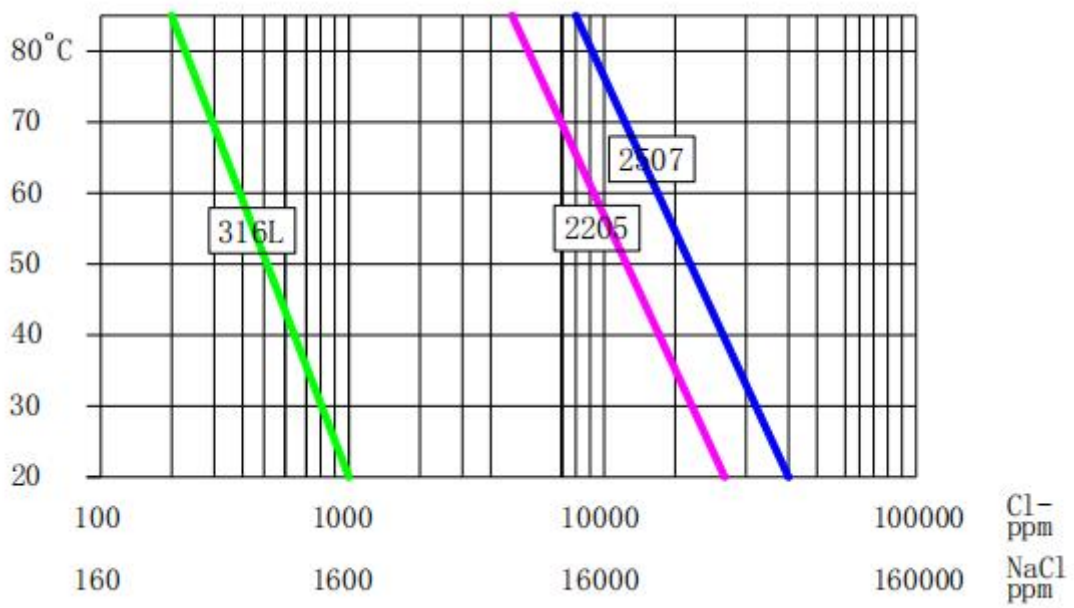
Fluid temperature: +2°C to +50°C depending on NaCl concentration

Ambient temperature: 0°C ~ +50°C

The figure below shows the corrosion resistance of different types of stainless steel as a function of NaCl concentration and temperature.

DHP series and DHP-H series high-pressure plunger pumps are made of 2205 duplex stainless steel/2507 super duplex stainless steel with excellent corrosion resistance.

If the high-pressure pump is operated under high salt content conditions, fresh water should be used to flush the high-pressure pump when it is shut down to reduce the risk of corrosion.



5.2 storage

Storage temperature: -40°C to +70°C (pump is drained and sealed for storage).

Antifreeze is required when the temperature is below 2°C. Chuangwei Environmental recommends using Dowcal N from DuPont Chemical Company or Chillsafe Propylene Glycol from Ackerman Chemical Company.

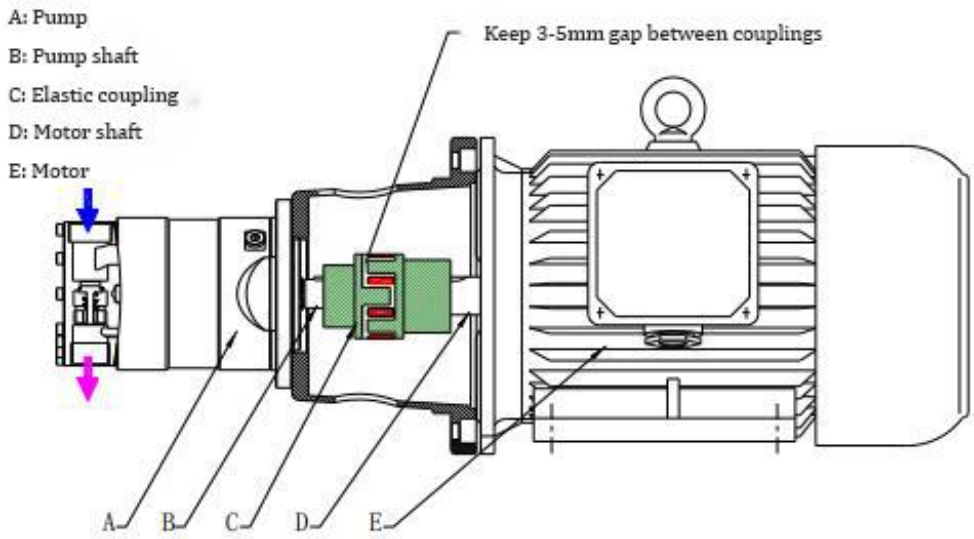
6. High-pressure plunger pump installation and use instructions

6.1 Install

I Represents the high pressure pump inlet, **O** Represents the high pressure pump outlet.

During installation, the coupling clearance between the high-pressure pump and the motor must be at least3-5mm. **Note: The pump shaft must not have any axial or radial load.**

The following figure shows how to connect the motor to the high-pressure pump:



6.2 Noise

Generally speaking, the noise will decrease as the speed decreases, and vice versa. Flexible hoses can be used to reduce vibration and noise. minimize.

Since the pump (set) is usually mounted on a bell housing or base, the noise level can only be determined by the entire system. Correctly mounting the pump unit to the base with vibration dampers is extremely important to reduce vibration and noise.

Noise levels are affected by:

- ✓ The speed of the pump. High speeds produce more noise than low speeds.
- ✓ A rigid pump mount will generate more noise than a flexible pump mount.
- ✓ Connecting the pipe directly to the pump will increase noise compared to connecting it via a hose.

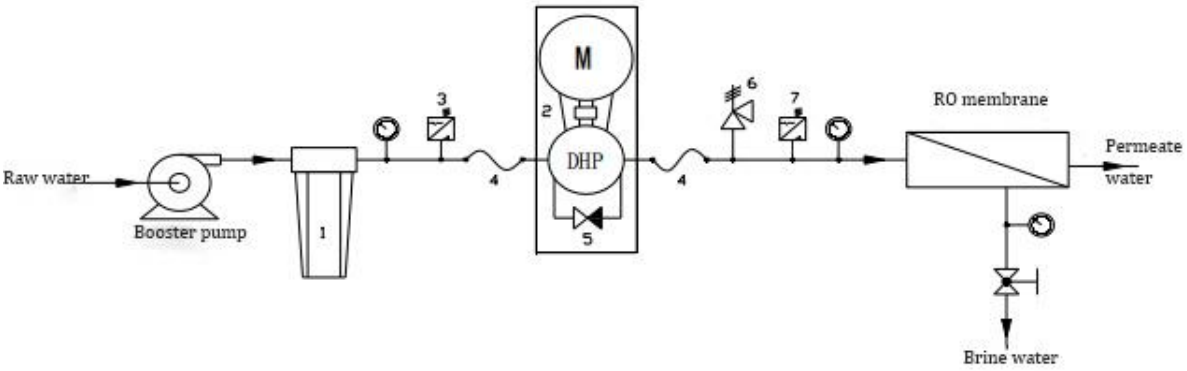
6.3 Filter

Since water has a very low viscosity, the clearances of DHP series and DHP-H series high pressure piston pumps are designed to be very small in order to control internal leakage rates and

improve component performance. Therefore, proper filtration of the inlet water is essential to minimize pump wear.

The primary filter must have a filtration efficiency of 99.98% for particles larger than 10 μm. It is recommended to use a precision depth filter element rated at 10μm (absolute accuracy) with a ß10>5000 (equivalent to a filtration efficiency of 99.98%). Bag filters and spiral wound filter elements are typically only 90% efficient, meaning that for every 100,000 particles that reach the filter, 10,000 pass through, compared to a filter with a 99.98% efficiency where only 20 pass through.

6.4 Reverse Osmosis Membrane System PID



① To facilitate flushing and draining of the system, the high-pressure pump has an integrated bypass check valve (5) inside the pump.

② Install the inlet filter (1) before the high-pressure pump (2). For instructions on how to choose the appropriate filter, refer to Section 6.3 - "Filtration". Thoroughly clean the pipes and flush the system before starting.

③ Install a low-pressure control switch (3) between the filter and the pump inlet and set 1 Bar (14.5 psi) as the control point. The low-pressure switch must be able to shut down the pump when the pressure is lower than 1 Bar (14.5 psi).

④ Install a high-pressure control switch (7) between the pump outlet and the reverse osmosis membrane inlet and set 70 Bar (1015 psi) as the control point. The high-pressure switch must be able to shut down the pump when the pressure is higher than 70 Bar (1015 psi).

⑤ Determine the size of the inlet pipe to minimize pressure loss (large flow area, short pipe length, minimum number of bends/joints, accessories with low pressure loss).

⑥ To eliminate the risk of damage and cavitation, the inlet should always be kept at a positive pressure: minimum 1.0 Bar (14.5psi), maximum 5 Bar (72.5 psi).

⑦ Use elastic hoses (4) to minimize vibration and noise.

⑧ Install a safety valve (6) to avoid system damage, because the DHP plunger pump will immediately generate pressure and flow after starting without being affected by any reverse pressure.

Unit conversion relationship: 1.0Mpa = 10Bar, 1.0Mpa = 145psi

6.5 Notes on startup debugging

Before starting the pump, it is recommended that you flush the pipes and system thoroughly to remove any debris or foreign matter that may be present.

Before starting the pump, it is strongly recommended that you bleed all the air from the pump and system.

Test whether the high-pressure piston pump is in the same direction as the arrow on the pump.

6.6 Application Notes

① In order to extend the service life of the pump and maintain its pumping stability, please make sure that the medium working conditions are consistent with the required working conditions. To avoid wear of the pump by particles, we strongly recommend that you install an appropriate filter in front of the pump (the main filter must have a filtration efficiency of 99.98% for particles larger than 10μm).

② To avoid cavitation and dry running, it is recommended that you install a low-pressure protection switch in front of the pump inlet. For the minimum inlet pressure of different types of pumps, please refer to the parameter table in the high-pressure pump technical specification; ensure that the water inlet pipe is not less than the pump inlet diameter.

③ Inverter requirements: If the pump is used with an inverter, the inverter is required to be heavy-load constant torque, and the starting method is constant torque start (the dedicated inverter for water pumps and fans is not constant torque and may not be able to drive a positive displacement water pump; for example, ABB's ACS510 series inverter may not be able to drive a DHP high-pressure pump. The same is true for dedicated inverters for water pumps and fans of other brands. Please pay attention to communicate with the inverter manufacturer for selection.).

④ Please pay attention to the continuous inlet pressure, maximum peak inlet pressure, maximum continuous outlet pressure, and minimum outlet pressure operating range of different pump models. For details, please refer to the parameter table in the technical specification of the high-pressure pump. Please ensure that the pressure during the operation of the pump does not exceed the range required by the specification.

⑤ For short-term shutdown of the pump for no more than 3 days, there is no need to flush the pump while keeping the pump full of flowing medium. If the pump is shut down for more than 3 days, it is recommended that you flush the pump with fresh water. If the pump is shut down for more than 15 days, it is recommended that you flush the pump with fresh water containing bactericide.

⑥ If the pump is running under high salt content conditions, it is recommended that you flush the pump with fresh water every time it stops. During the cleaning process, start the high-pressure pump to discharge the concentrated brine in the pump cavity to prevent the concentrated brine from crystallizing and damaging the pump.

⑦ If the pump is running and there is abnormal noise and vibration, please stop the plunger pump immediately and repair the plunger pump.

⑧ The plunger pump is prohibited from starting with the rear valve closed, otherwise it may cause the safety valve to work and even the pipeline to burst.

⑨ It is recommended that the inlet and outlet of the high-pressure plunger pump be connected by a flexible high-pressure hose.

7. High pressure plunger pump power

7.1 DHP Series High Pressure Piston Pump Power Table

Pump Model	Rated flow		Typical pressure			Rated speed
	L/ min	m3 / h	60 Bar	70 Bar	80 Bar	rpm
DHP 0.6	10	0.6	1.5kW	1.5kW	2.2 kW	3000
DHP 0.8	13.5	0.81	2.2 kW	2.2 kW	3kW	3000
DHP 1.0	15.33	0.92	2.2 kW	3 kW	3kW	3000
DHP1.7	26	1.7	4kW	5.5kW	5.5kW	3000
DHP2.1	35	2.1	5.5kW	5.5kW	7.5kW	3000
DHP2.7	45	2.7	7.5kW	7.5kW	11kW	3000
DHP3.0	50	3.0	7.5kW	7.5kW	11kW	3000
DHP3.5	58.3	3.5	7.5kW	11kW	11kW	1650
DHP4.0	73.3	4.0	11kW	11kW	15kW	1800
DHP4.5	75	4.5	11kW	15kW	15kW	1500
DHP5.3	88	5.3	11kW	15kW	15kW	1500
DHP6.3	105	6.3	15kW	15kW	18.5kW	1500
DHP7.2	120	7.2	15kW	18.5kW	22kW	1500
DHP8.2	136	8.2	18.5kW	22kW	30kW	1500
DHP11	183	11	22kW	30kW	30kW	1500
DHP13.5	224	13.5	30kW	37kW	37kW	1500
DHP15	250	15	37kW	37kW	45kW	1500
DHP16	263	15.8	37kW	45kW	45kW	1500
DHP17	281	16.9	37kW	45kW	55kW	1500
DHP19	313	18.8	45kW	45kW	55kW	1500
DHP22	366	21.8	45kW	55kW	75kW	1500
DHP24	408	24.5	55kW	75kW	75kW	1500
DHP26	445	26.7	55kW	75kW	75kW	1500
DHP30	526	31.6	75kW	75kW	90kW	1500
DHP38	655	39.3	90 kW	110kW	110kW	1500
DHP 46	773	46.4	110kW	110kW	---	1780

7.2 DHP-HSeries High Pressure Piston Pump Power Table

Pump Model	Rated speed rpm	Rated flow m^3 / h	Speed range rpm	Continuous export maximum pressureBar	Rated flow power@ kW
DHP -H15	1000	15	500～1000	120	75
DHP -H21	1000	21	500～1000	120	90
DHP -H24	1200	24	500～1200	120	110
DHP -H30	1200	30	500～1200	110	110

7.3 Application Areas

Zero discharge of wastewater, leachate, seawater desalination, material separation and resource recovery.


Mine wastewater


Zero wastewater discharge

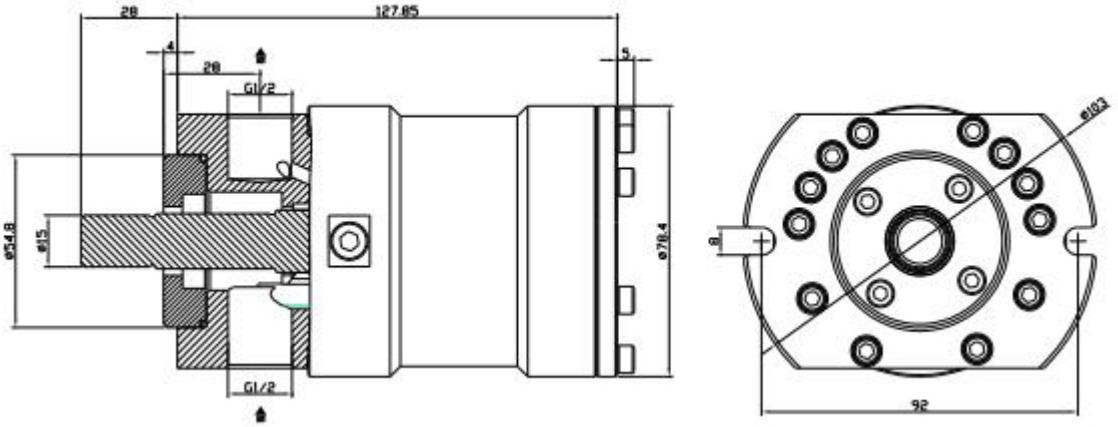

Garbage filtrate


Seawater desalination

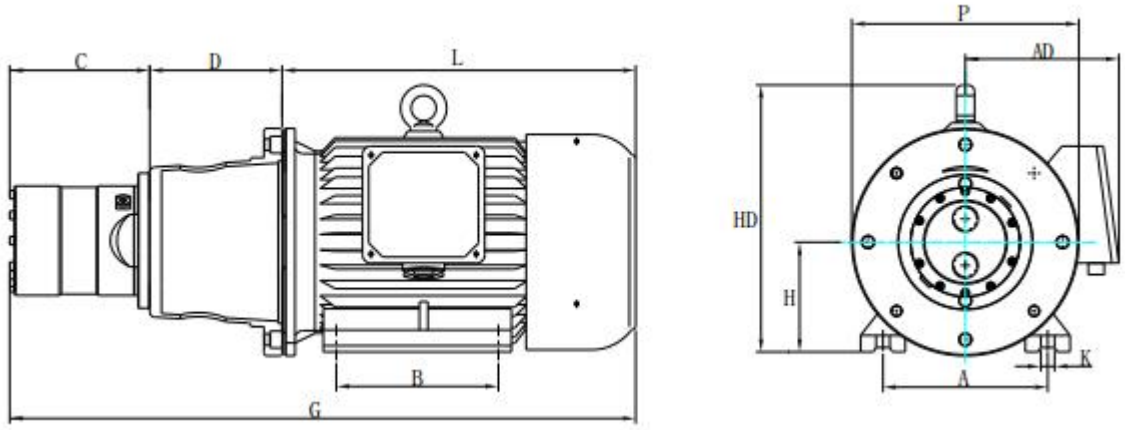

Material separation


Desulfurization wastewater

8 Pump head size and overall equipment



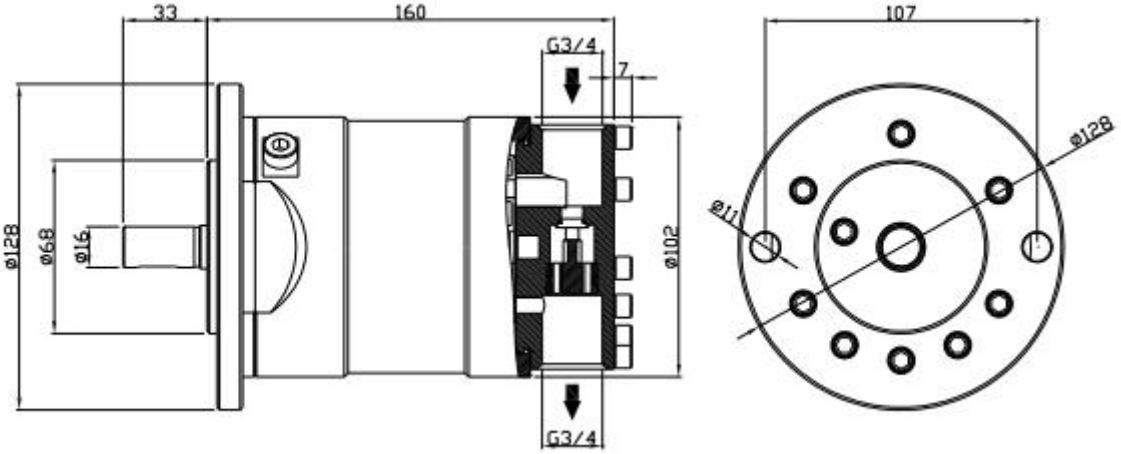
Piston pump model	DHP 0.6～1.0
Inlet size	G1/2″, deep 13 mm
Outlet size	G1/2″, deep 13 mm



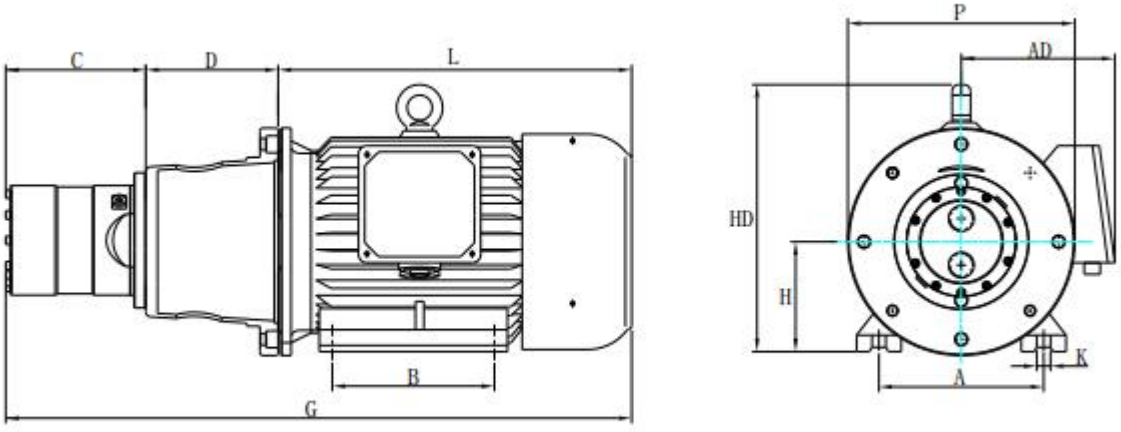
Complete equipment with independent fan motor (frequency conversion motor) Unit: mm

Plunger pump	A	B	H	K	P	AD	HD	C	D	L	G	IEC Motor
DHP0.6～1.0	125	100	80	10	200	145	225	133	100	325	558	1.1kW-2P
	140	100	90	10	200	165	255	133	100	340	573	1.5kW-2P
	140	125	90	10	200	165	255	133	100	365	598	2.2 kW -2P
	160	140	100	12	250	175	275	133	120	405	658	3.0 kW -2P

8.2 DHP1.7～3.0Pump dimensions



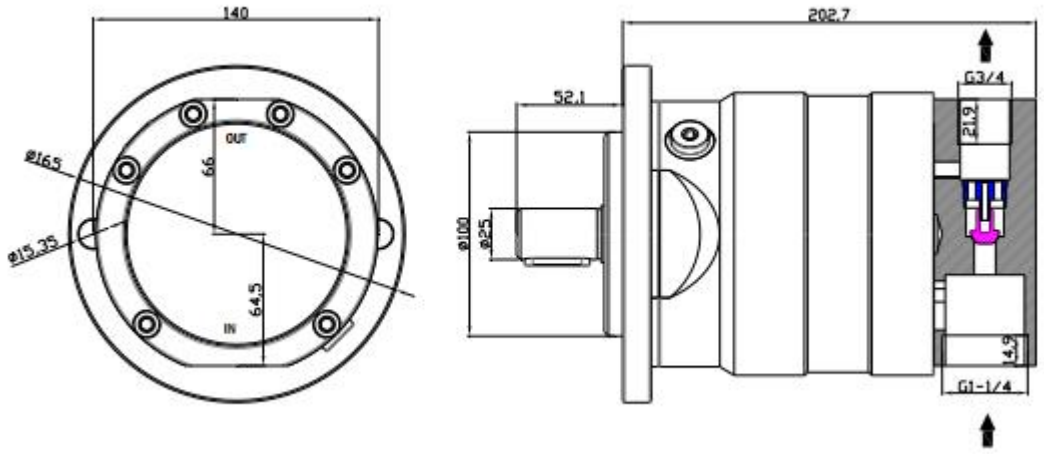
Piston pump model	DHP 1.7～3.0
Inlet size	G3/4″，deep 18 mm
Outlet size	G3/4″，deep 18 mm



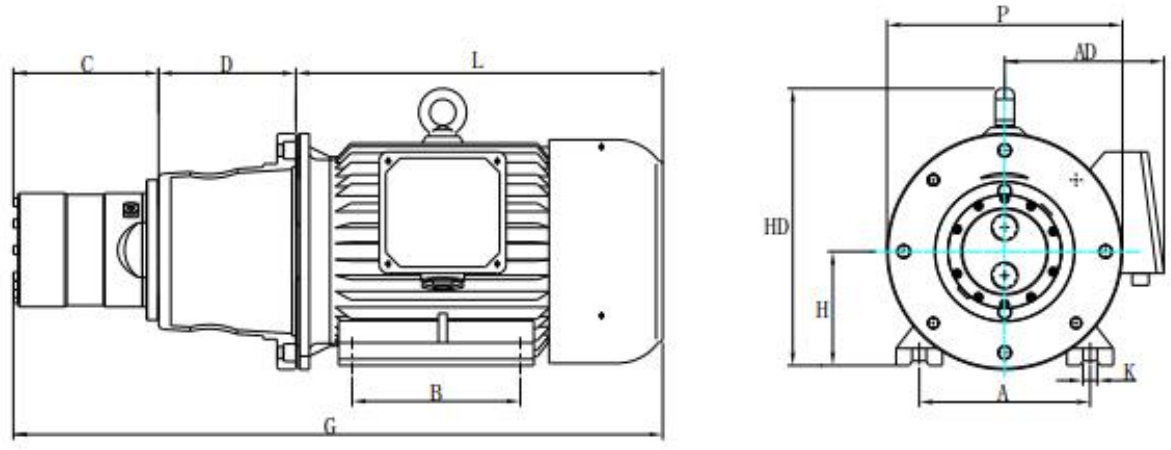
Complete equipment with independent fan motor (frequency conversion motor) Unit: mm

Plunger pump	A	B	H	K	P	AD	HD	C	D	L	G	IEC Motor
DHP 1.7～3.0	190	140	112	12	250	190	300	165	120	430	715	4.0 kW -2P
	216	140	132	12	300	220	350	165	155	520	840	5.5 kW -2P
	216	140	132	12	300	220	350	165	155	560	880	7.5 kW -2P
	254	210	160	12	350	260	420	165	204	605	974	11 kW -2P

8.3 DHP3.5～4.0Pump dimensions



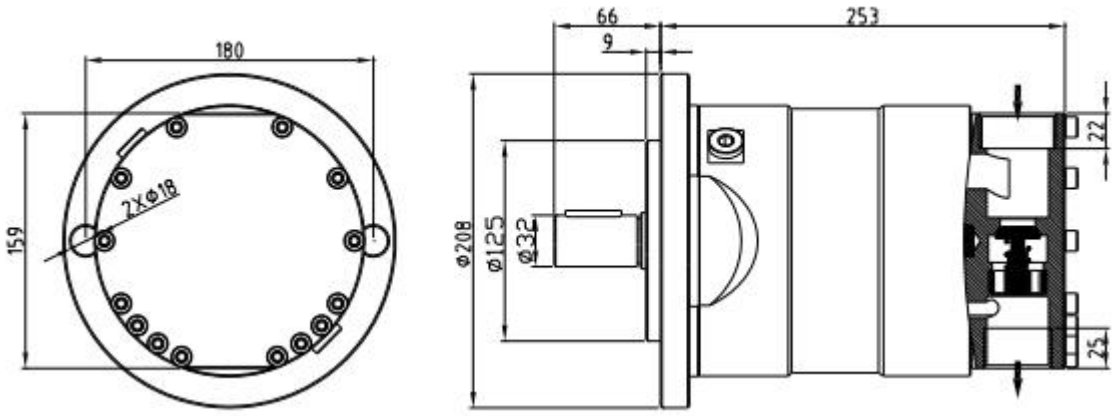
Piston pump model	DHP 3.5～4.0
Inlet size	G1-1/4 " , deep20 mm
Outlet size	G3/4 " , deep20 mm



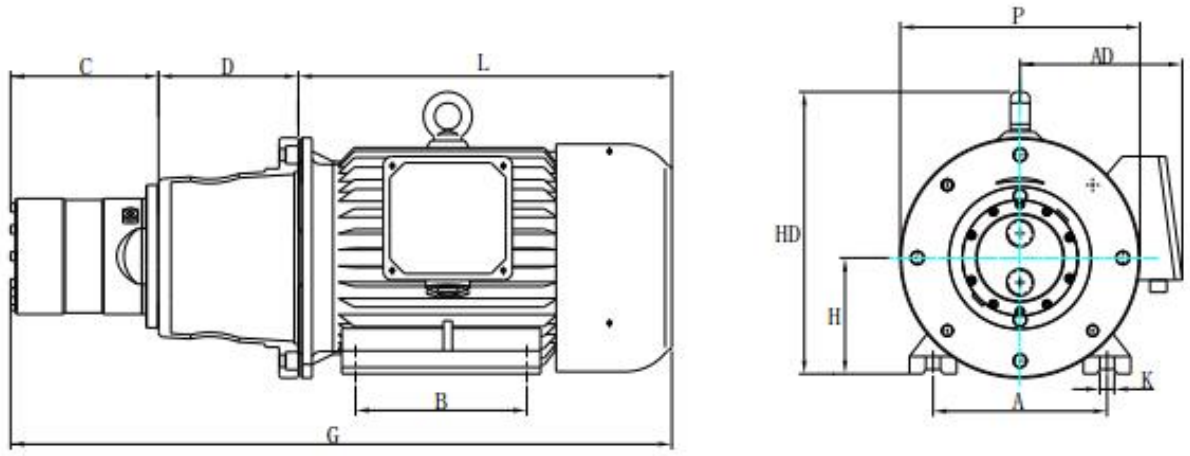
Complete equipment with independent fan motor (frequency conversion motor) Unit: mm

Plunger pump	A	B	H	K	P	AD	HD	C	D	L	G	IEC Motor
DHP 3.5 ～4.0	216	140	132	12	300	220	350	203	155	520	878	5.5 kW -4P
	216	178	132	12	300	220	350	203	204	560	967	7.5kW-4P
	254	210	160	15	350	260	420	203	204	605	1012	11kW-4P
	254	254	160	15	350	260	420	203	204	645	1052	15 kW -4P

8.4 DHP4.5～8.2 Pump dimensions



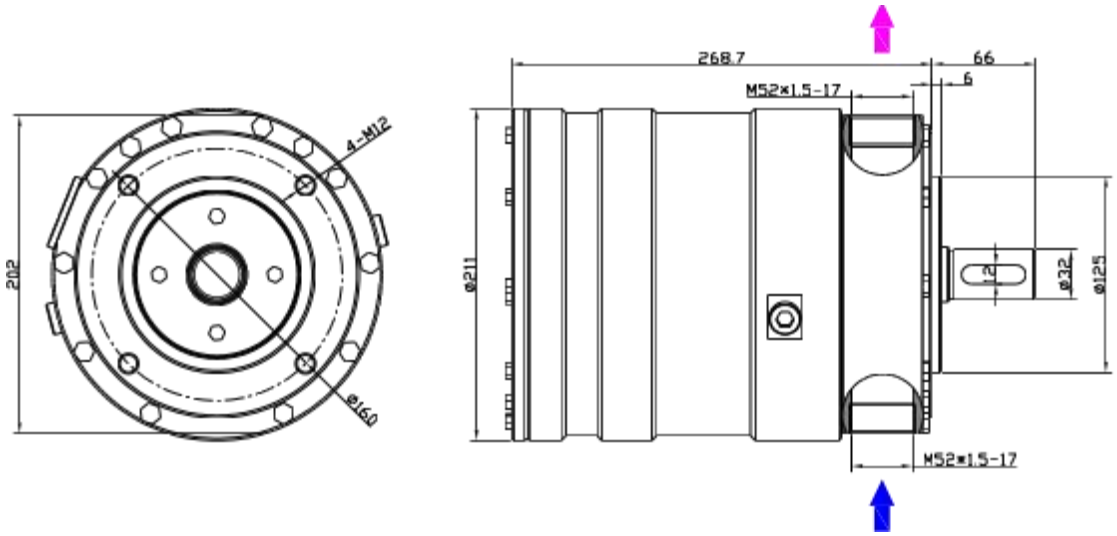
Piston pump model	DHP 4.5～8.2
Inlet size	M42×1.5, deep 22 mm
Outlet size	M42×1.5, deep 22 mm



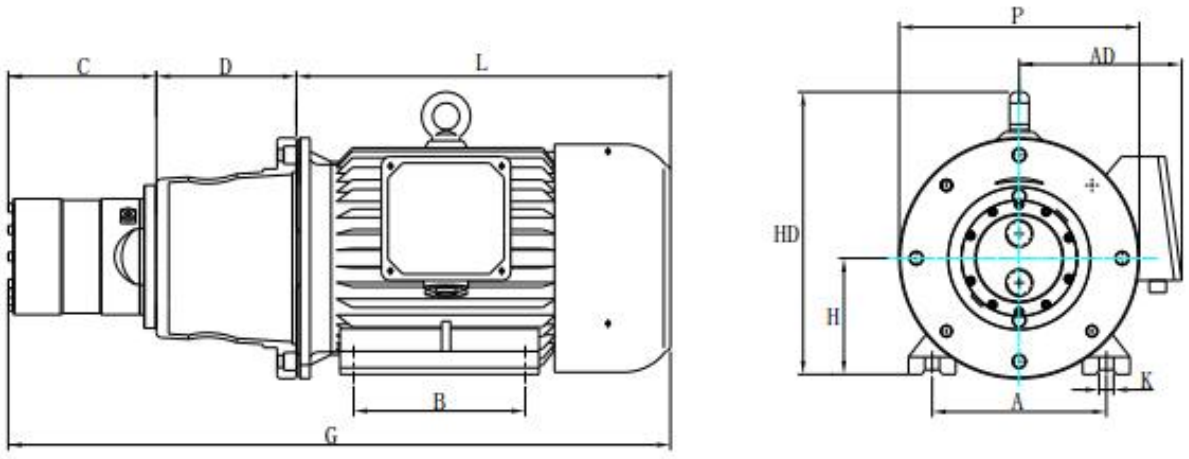
Complete equipment with independent fan motor (frequency conversion motor) Unit: mm

Plunger pump	A	B	H	K	P	AD	HD	C	D	L	G	IEC Motor
DHP 4.5 ～8.2	254	210	160	15	350	260	420	253	204	605	1069	11kW-4P
	254	254	160	15	350	265	420	253	204	645	1109	15kW-4P
	279	241	180	15	350	265	445	253	204	695	1159	18.5kW-4P
	279	279	180	15	350	265	445	253	204	735	1199	22 kW -4P
	318	305	200	19	350	305	505	253	204	765	1222	30 kW -4P

8.5 DHP11～15Pump dimensions



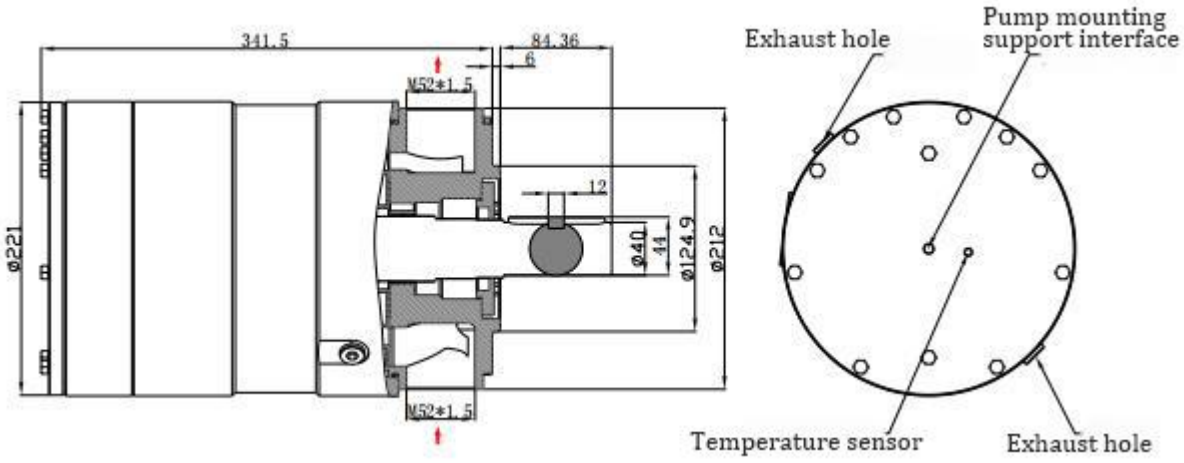
Piston pump model	DHP 11～15
Inlet size	M52×1.5, deep 17 mm
Outlet size	M52×1.5, deep 17 mm



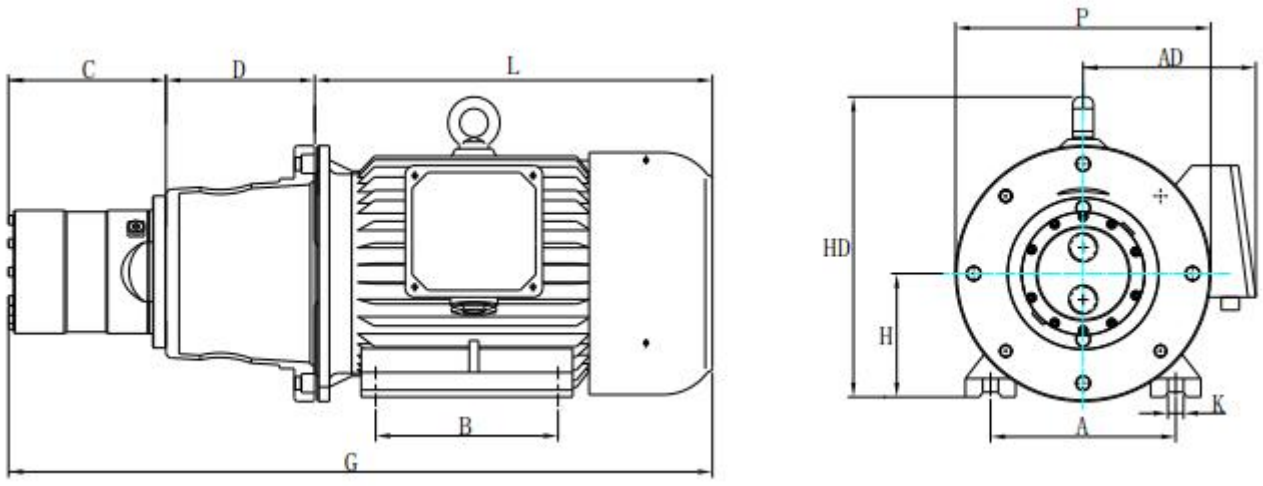
Complete equipment with independent fan motor (frequency conversion motor) Unit: mm

Plunger pump	A	B	H	K	P	AD	HD	C	D	L	G	IEC Motor
DHP 11～15	279	279	180	15	350	265	445	275	204	735	1214	22 kW -4P
	318	305	200	19	400	305	505	275	204	765	1244	30kW-4P
	356	286	225	19	450	325	550	275	234	760	1269	37kW-4P
	356	311	225	19	450	325	550	275	234	785	1294	45kW-4P

8.6 DHP16～22Pump dimensions



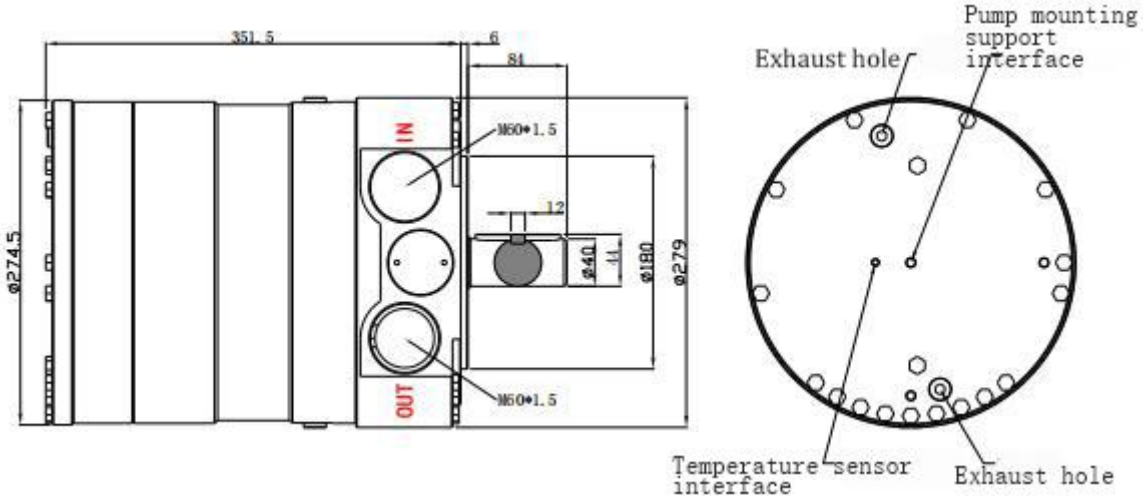
Piston pump model	DHP 16～22
Inlet size	M52×1.5, deep 21 mm
Outlet size	M52×1.5, deep 21 mm



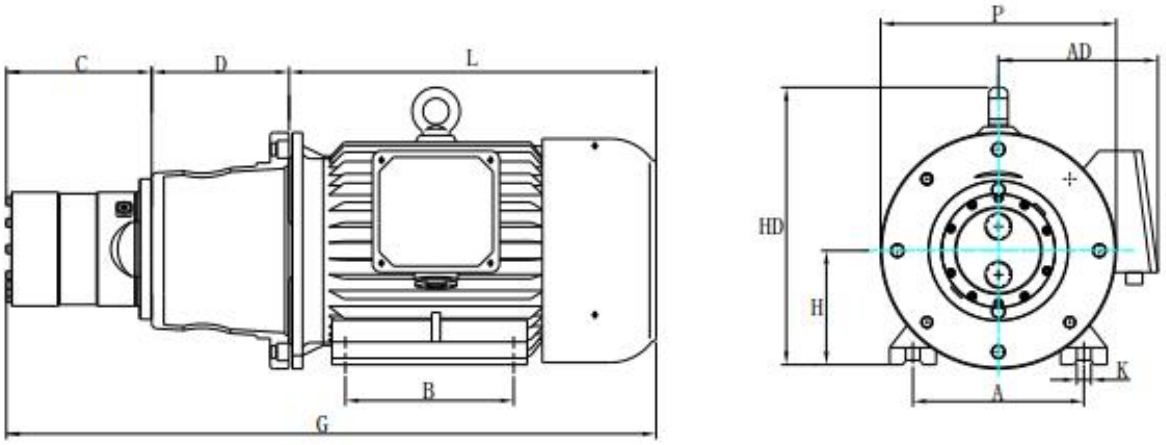
Complete equipment with independent fan motor (frequency conversion motor) Unit: mm

Plunger pump	A	B	H	K	P	AD	HD	C	D	L	G	IEC Motor
DHP 16～22	318	305	200	19	400	305	505	342	234	760	1336	37kW-4P
	356	286	225	19	450	325	550	342	234	785	1136	45kW-4P
	356	311	225	19	450	325	550	342	275	865	1482	55 kW -4P
	406	349	250	twenty four	550	380	630	342	275	945	1521	75 kW -4P

8.7 DHP24～46 Pump dimensions / DHP-H15～30 Pump dimensions



Piston pump model	DHP 24 ~ 46; DHP -H15 ~ H30
Inlet size	M60×1.5, deep 23 mm
Outlet size	M60×1.5, deep 23 mm



Complete equipment with independent fan motor (frequency conversion motor) Unit: mm

Plunger pump	A	B	H	K	P	AD	HD	C	D	L	G	IEC Motor
DHP 24～46 DHP -H15～30	406	349	250	24	550	380	630	352	275	865	1492	55 kW -4P
	457	368	280	24	550	395	675	352	275	945	1572	75kW-4P
	457	419	280	24	550	395	675	352	275	995	1622	90kW-4P
	508	406	315	28	660	540	855	352	310	1130	1792	110 kW -4P
	508	406	315	28	660	540	855	352	310	1130	1792	132 kW -4P

9. High pressure plunger pump check valve

A one-way valve is a valve that allows fluid to flow only along the valve inlet, but the medium at the outlet cannot flow back. It is commonly known as a one-way valve. A one-way valve is also called a check valve or a non-return valve. It is used in hydraulic systems to prevent liquid from flowing in reverse , or in pneumatic systems to prevent The gas flows in the reverse direction.

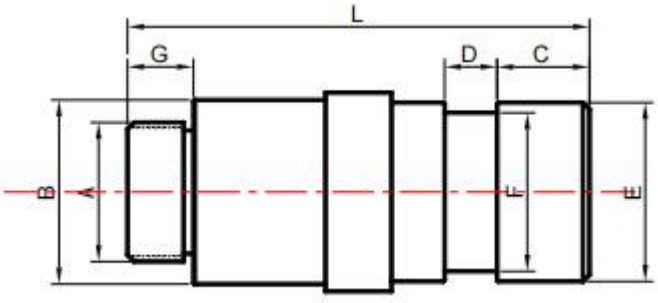
advantage:

1. Beautiful appearance and compact size
2. Easy to install and disassemble
3.Integrated installation with high pressure plunger pump.

Technical Parameters

Water inlet (thread)	G1/2", G3/4", M42, M52, M60 Other specifications
Water outlet (Cobelline interface)	DN 20, DN 40, DN 50, DN 65 Other specifications
Valve body material	2205 Duplex stainless steel (other materials need to be customized)
Applicable media	High-salinity wastewater, seawater and brackish water, etc.
Applicable temperature	2℃~80℃
pressure	12MPa

Note: Can be customized according to customer needs



Dimensions

model	A	B	C	D	G	∅ F	L	∅ E
SFZ -V20L-G1/2-8H	G1/2"	27.8	15.88	7.95	10	23.83	70	26.7
SFZ -V20-G3/4-8H	G3/4"	27.8	15.88	7.95	10	23.83	70	26.7
SFZ -V40-M42-8H	M42*1.5	50	15.88	7.95	13	45.09	80	48.3
SFZ-V40L-M52-8H	M52*1.5	60.3	15.88	7.95	16	45.09	120	48.3
SFZ-V50-M52-8H	M52*1.5	60.3	15.88	7.95	16	57.15	120	60.3
SFZ-V65-M60-8H	M60*1.5	76.1	15.88	7.95	21	72.04	136	76.1

10 High pressure plunger pump safety valve

A safety valve is an automatic pressure relief device used in pressurized equipment, containers or pipelines. When the medium pressure in the pipeline increases and exceeds the specified value, it will automatically open and discharge the medium outside the system to prevent the pipeline or The medium pressure in the equipment exceeds the specified value.

advantage:

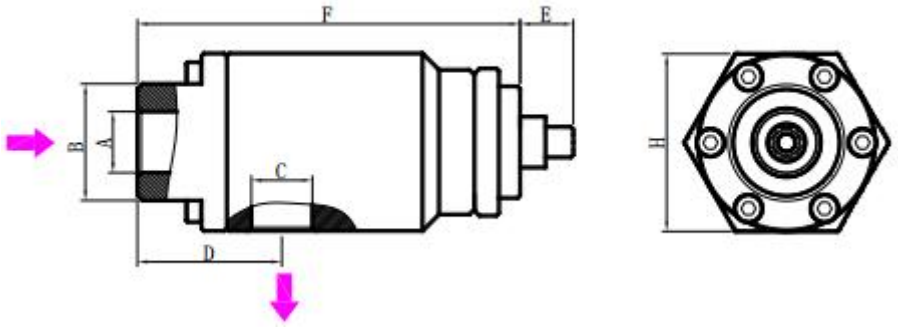
1. Beautiful appearance and compact size
2. Easy to install and disassemble
3. Pressure adjustment is simple and convenient
4.Stable pressure and flow output
5. Can be used as a safety valve or a pressure regulating valve

Technical Parameters

Inlet and outlet threads	G1/2", G3/4", G1-1/4"
Valve body material	2205 Duplex stainless steel
Applicable media	High-salinity wastewater, seawater and brackish water, etc.
Applicable temperature	2℃~80℃
Pressure adjustment range	5 Mpa ~ 9 Mpa (Please contact us if you need other pressure ranges)
Adjustment method	Manual Adjustment

Note: Can be customized according to customer needs.

Dimensions



model	A	B	C	D	E	F	H
V60	G ½"	46	G ½"	57	21	153	70
V120	G ¾"	46	G ¾"	57	21	153	70
V300	G 1¼"	51.2	G 1¼"	86.5	37.8	228	116

11. High pressure piston pump installation accessories

High-pressure hose connector and high-pressure hose

Technical Parameters

Kobeling interface	DN 20, DN 25, DN 32, DN 40, DN 50, DN 65
Material	2205 Duplex stainless steel
Applicable media	High-salinity wastewater, seawater and brackish water
Pressure	10MPa

Note: Other interfaces can be customized according to customer needs.

High pressure hose connector

High pressure hose

High pressure pump inlet connector

Technical Parameters

Water inlet interface (Cobelline)	DN 20, DN 25, DN 32, DN 40, DN 50, DN 65
Water pump interface	G1/2", G3/4", M42, M52, M60
Material	2205 Duplex stainless steel
Applicable media	High-salinity wastewater, seawater and brackish water
pressure	10Bar

Note: Can be customized according to customer needs.

High pressure connector

12. High-pressure piston pump maintenance and guarantee services

Our company's products are all entitled to one year of free maintenance service from the date of leaving the factory (except for damage caused by human damage and improper use). At the same time, we provide maintenance and guarantee services for similar international and domestic axial piston high-pressure pumps, with the customer-first concept, to solve problems for customers as soon as possible.

Service content includes:

- Axial piston high pressure pump fault inspection
- On-site maintenance of axial piston high pressure pumps
- Axial piston high pressure pump returned to factory for repair
- Axial Piston High Pressure Pump Spare Parts Service
- Customized axial piston high pressure pump parts

Suggestion DHP's careful design makes the DHP series and DHP-H series high-pressure piston pumps have long operating time, low maintenance requirements, and reduced life cycle costs.

If the DHP series and DHP-H series high-pressure piston pumps operate under the specified pre-filtration, pressure and speed conditions, FENIGAL sales representative. provides an 8,000-hour maintenance-free warranty, but the maximum period is no more than 18 months from the date of production.

To prevent complete pump failure, it is recommended that the pump be inspected after a maximum of 8,000 hours, at which time any worn parts must be replaced.

Although the DHP series and DHP-H series high pressure piston pumps are made of 2205 duplex stainless steel/2507 super duplex stainless steel with excellent corrosion resistance, it is recommended to always flush the pump with fresh water when the system is shut down under high salt conditions.

14.1 Maintenance

DHP series axial piston pumps use water as lubricant, so there is no oil in the pump.

If the pump is operated under the curve of SAF 2507 shown in Section

14.2 Repair

If the pump malfunctions, please contact FENIGAL sales representative.

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