



High pressure Diaphragm Pump

Patent No. : M-607878 / U.S. Patent No. : 11542934



Main Structure of MPD Diaphragm pump

MPD Diaphragm pump applied three different structures of pumps

a. Hydraulic plunger pump

The main function is to transfer the horsepower of the electric motor through plungers to drive diaphragms. And diaphragms are then used to push the fluid (water or cutting fluid) to achieve a power-saving effect.

The working medium of the plungers is hydraulic oil, it lubricate metal parts keep plungers functional. The temperature generated by these processes will be sent out of the body by the built-in circulation pump.

The hydraulic oil will be filtered and cooling and then send back to the plunger pump chamber.

This design allows the pump temperature to be controlled at a slightly higher than room temperature. It is not only protects the pump but also extends its service life.

c. Build-in Circulation pump

Patented build-in circulation pump, which reduce the of oil temperature of the plungers and extends service life of diaphragms.



b. Diaphragm pump

This part is the main structure of the MPD pump, which is using the movement of the diaphragm to push the fluid and transmit it to the circuit of system.

The main mechanism of this part are diaphragms and control valves. During the rapid opening and closing of valves, the liquid is sucked in and push out of the pump for circulation. The diaphragm structure design has almost no friction during operation, and only very little or no heat is generated. This is the most important for the central coolant system.

The extra radiator system that was originally required can be eliminated or relatively reduced after using the MPD pump.

By combining three different pump structures into a MPD pump, a high-performance, multi-purpose pump with high pressure, energy saving and environmental freindly is created. It is the ultimate choice for high-pressure central coolant system for metal working machines and other equipments too!

Advantages of MPD diaphragm pump:



1. Built-in patented circulation pump, it makes a low working temperature, and extending the service life of pump.
2. Special design, it can prevent the pump from the damage of operation without liquid.
3. High pressure, high efficiency diaphragm pump, which can be used for high viscosity liquids (160 cSt).
4. Minimum 300 rpm , 1200rpm.
This character make MPD pump can be combined with electric servo motor as energy saving system.
5. Maximum working pressure: 100 bar.
6. MPD pump can be use in pure water systems. It can reduce the using of coolant in cutting system, which will be friendly of environment.
7. Tolerate higher particles, as a non-contact pump, MPD pump can take maximum particles is 500 micron.

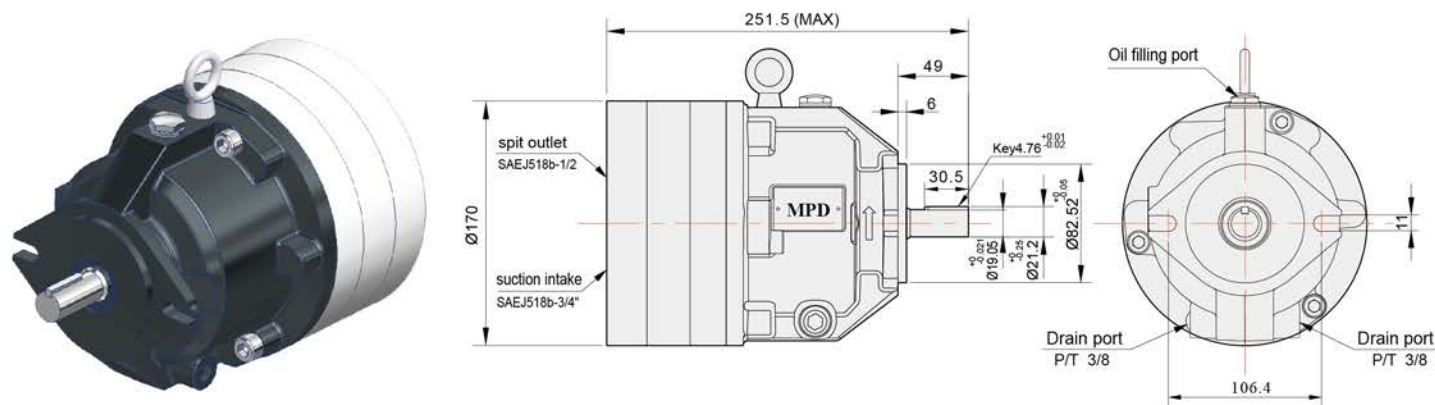
HOW TO ORDER

ORDERING CODE : MPD-5M2-C-28-F-A-10

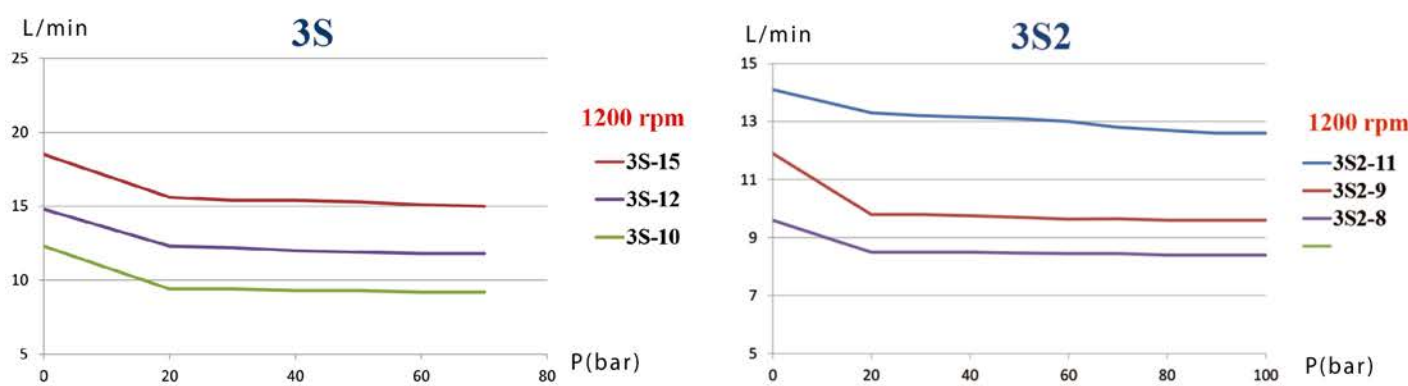
1 2 3 4 5 6 7

1	MPD diaphragm pump
2	Series: 3S , 3M , 5M / 3S2 , 3M2 , 5M2
3	Pressure Code : A: 40, B:70, C:100, D:140 bar
4	Displacement (c.c. /rev.): 3S : 10、12、15 / 3S2 : 08、09、11 3M : 20、23、29 / 3M2 : 17、21、19 5M : 34、41 / 5M2 : 28、33
5	Mounting type : F : SAE flange, L : Foot type (Option)
6	Material of Main pump : A : Aluminum(Standard) S : Stainless(option), B : Brass(option)
7	Series code

MPD 3S.3S2 series High pressure Diaphragm pump



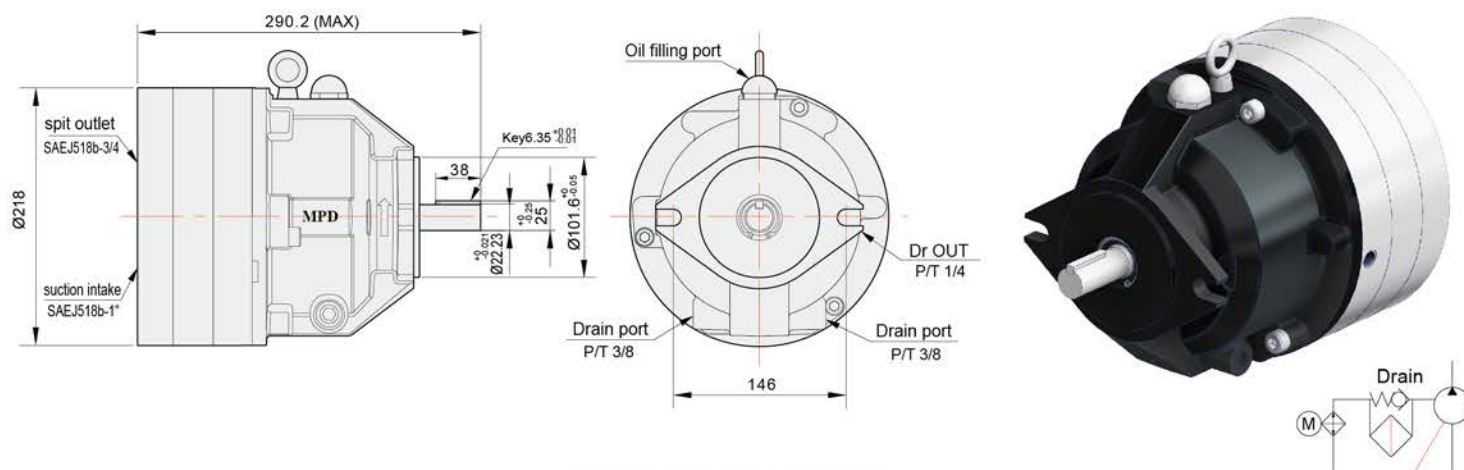
PERFORMANCE CURVE



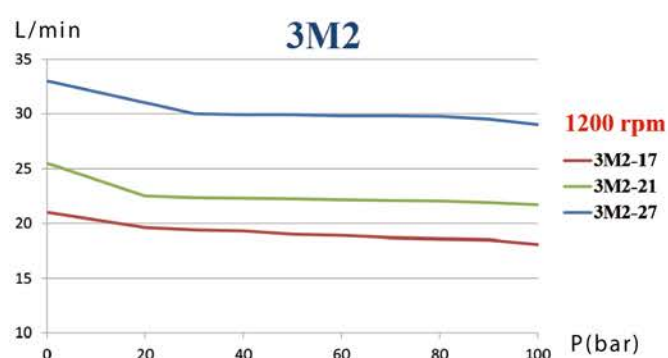
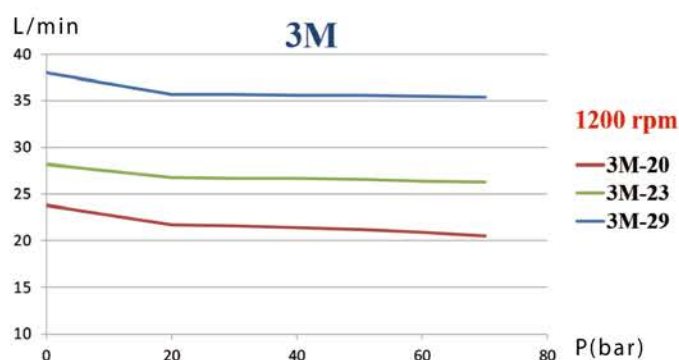
Model	Code(※)	Volume (c.c./rev)	Volume (L/min)	Max pressure bar	Pressure Code
			1200 rpm		
MPD-3S-※-F-A	10	10.2	12.3	70	A. B
	12	12.3	14.8	70	A. B
	15	15.4	18.5	70	A. B

Model	Code(※)	Volume (c.c./rev)	Volume (L/min)	Max pressure bar	Pressure Code
			1200 rpm		
MPD-3S2-※-F-A	8	8.0	9.6	100	A. B. C
	9	9.9	11.9	100	A. B. C
	11	11.75	14.1	100	A. B. C

MPD 3M、3M2 series High pressure Diaphragm pump



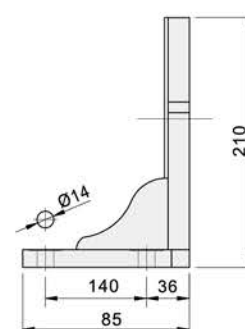
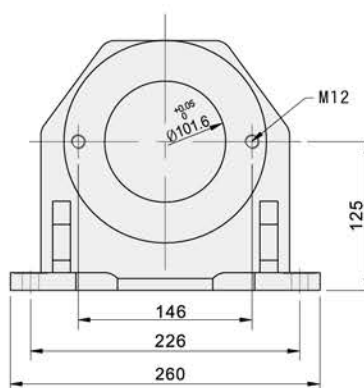
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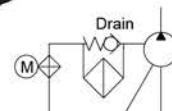
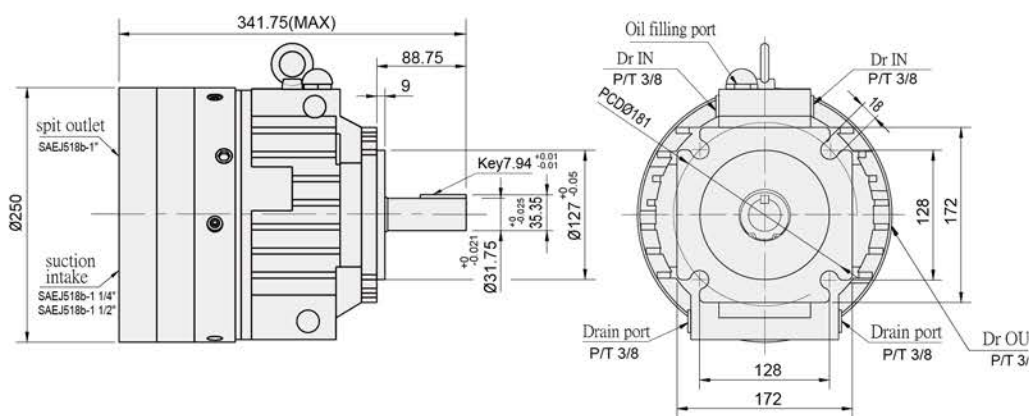
Model	Code(※)	Volume (c.c./rev)	Volume (L/min)	Max pressure	Pressure Code
			1200 rpm	bar	
MPD-3M-※-F-A	20	19.8	23.8	70	A. B
	23	23.5	28.2	70	A. B
	29	29.6	35.6	70	A. B

Model	Code(※)	Volume (c.c./rev)	Volume (L/min)	Max pressure	Pressure Code
			1200 rpm	bar	
MPD-3M2-※-F-A	17	17.5	21.0	100	B. C
	21	21.2	25.5	100	B. C
	27	27.5	33.0	100	B. C

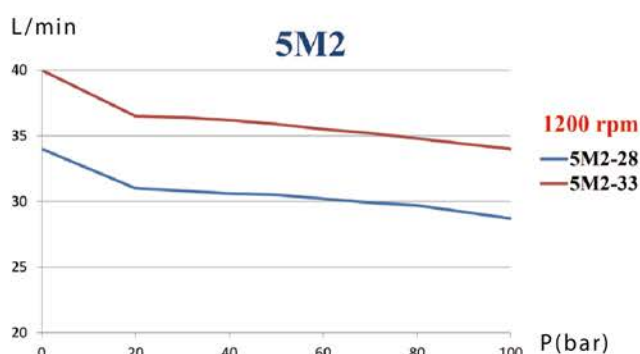
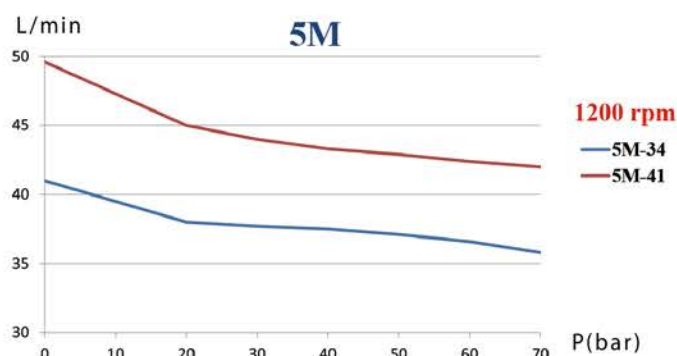
Option : 3M.3M2 Foot



MPD 5M、5M2 series High pressure Diaphragm pump



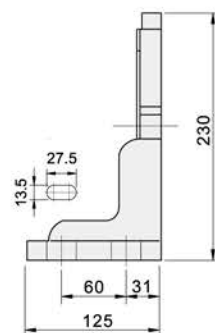
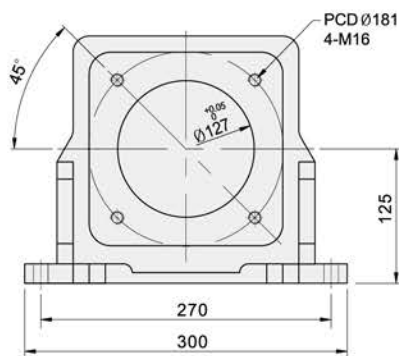
PERFORMANCE CURVE



Model	Code(※)	Volume (c.c./rev)	Volume (L/min) 1200 rpm	Max pressure bar	Pressure Code
MPD-5M-※-F-A	34	34.1	41.0	70	A. B
	41	41.3	49.6	70	A. B

Model	Code(※)	Volume (c.c./rev)	Volume (L/min) 1200 rpm	Max pressure bar	Pressure Code
MPD-5M2-※-F-A	28	28.3	34.0	100	B. C
	33	33.3	40.0	100	B. C

Option : 5M.5M2 Foot



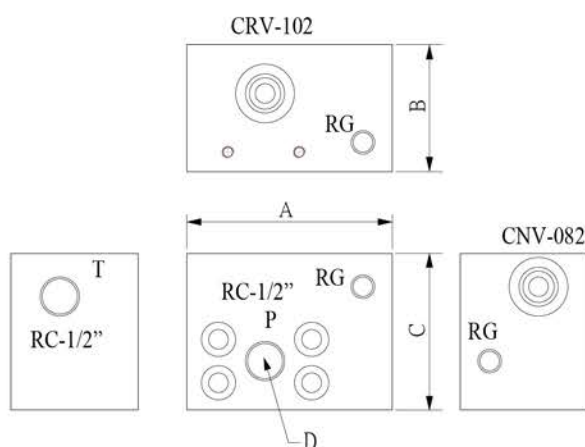
Outlet Port Control Assembly



manifold J3-3477

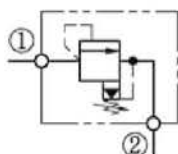


Directly mounted on the MPD pump outlet, it incorporates a relief valve, throttle valve, pressure switch, pressure transducer and pressure gauge. Saves space, reduces installation time, and piping costs. Made of rust-resistant aluminum alloy!

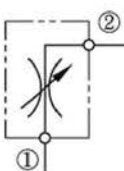


Model code	Pump Model	A	B	C	D
J3-3477-2	3S. 3S2	100	65	70	1/2"
J3-3477	3M. 3M2	105	65	80	1/2
J3-3251	5M. 5M2	110	70	95	3/4

- 1** Relief Valves
VRDA-03-10
VRDA-03-21



- 2** Needle Valves
CNV082-K30N
CNV102-K60N



- 3** Pressure Transmitter
100bar, 210bar
0-10VDC 1/4PT



- 4** Pressure Switch
DNP-08K-21B



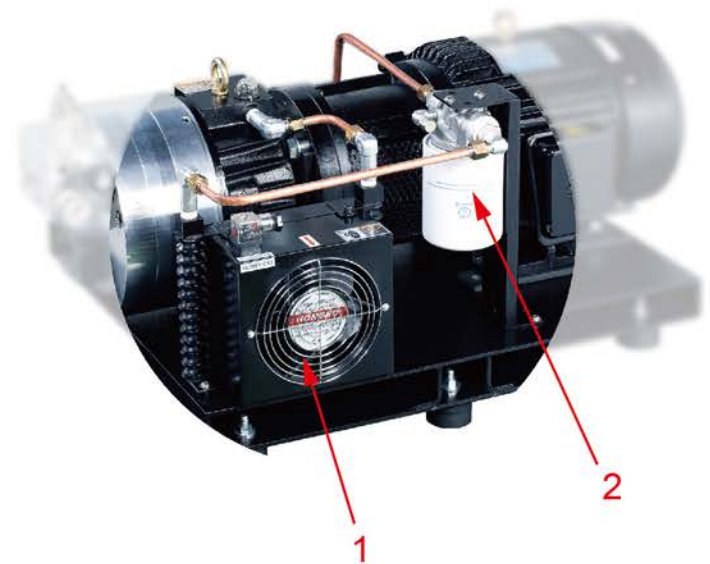
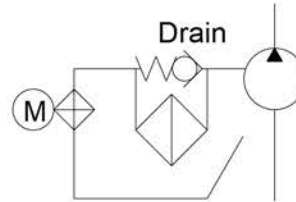
- 5** Pressure Gauge
1/4"PT



MPD Pump Oil Circulation Cooling System

Most MPD pumps have a built-in oil circulation pump. This design , it circulating the lubrication oil and allowing the pump to operate at a low oil temperature. It extending the service life time of pump and prevent to generating heat to the fluid of the main system. It is particularly important for central coolant systems on metalworking machines and other systems that require maintaining low temperatures and high pressures.

Oil Cooling Circuit Diagram



Related Accessories

- 1** Air Cooler
AL-608



- 2** Return line Filter
RF-06



Advantages:

1. Cost savings, no foot or couplings required.
2. Space-saving and easier for installation.
3. Various motor sizes to meet pressure and flow requirements.
4. Available in vertical or horizontal installation configurations. Please contact us for detailed specifications.

Example:

Vertical mounting / 3S. 3S2 Series



Horizontal mounting / 3S.3S2 Series



Vertical mounting / 3M. 3M2 Series



Horizontal mounting / 3M.3M2 Series



MPD High-Pressure Diaphragm Pump @ Central Coolant System



Built-in Central Coolant System

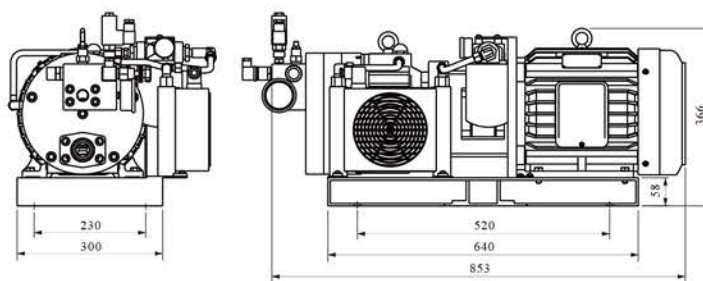
Integrating a high-pressure diaphragm pump into the water tank of a metalworking machine is the trend for central coolant systems! The MPD pump's unique contamination resistance, high pressure, high efficiency, compact and energy-saving features make it becomes the best choice for central coolant systems!

Advantages:

1. Space-saving, eliminating the need for an additional water tank.
2. Reduces installation and piping costs.
3. Energy-saving: The MPD pump is a high efficiency pump and it can be combined with a inverter or servo motor to create an energy-saving central coolant system.
4. High efficiency and lower noise levels.

Specification

Model number	MPD-5M-34
Working Pressure	70 bar (1000 psi)
Theoretical discharge capacity	41 L/min @1200 rpm
Motor form	7.5HPX6P
Number of ports	1 port
Voltage	220V 3phase 60Hz



Add-On Central Coolant System

For various needs, Add-on central coolant systems are still needed! The MPD pump's unique contamination resistance, high pressure, high efficiency, and energy-saving features remain the only choice for Add-on central coolant systems!

Advantages:

1. High efficiency, contamination resistance, and compatibility with a variety of cutting fluids even pure water.
2. Energy savings: The MPD pump can be combined with an inverter or servo motor to create an energy-saving central coolant system.
3. The new generation of MPD pumps it has compact, higher efficiency, lower noise and more suitable for market demands!

Specification

Model number	MPD-3M-23
Working Pressure	70 bar (1000 psi)
Theoretical discharge capacity	28 L/min@1200 rpm
Motor form	Servo motor
Tank capacity	210 L
Filtration	10μ Twin disposable filter bags, Filter the system
Number of ports	3 port
Voltage	220V 3phase 60Hz



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