

Description

The DP70015 1/2" air operated diaphragm pump is the ideal device for the pumping, transfer and dispensing of chemical liquids, industrial sludge and liquids containing a relatively high amount of grit and solid content. Manufactured with an aluminium body, UPE diaphragm and teflon ball valve, the DP70015 being a positive displacement pump is efficient and extremely reliable. Requiring no ongoing precision adjustments after installation and with no close fittings to be monitored, the DP70015 1/2" air operated diaphragm pump with its very simple operating principle is easily and inexpensively maintained.

Specifications

Liquid input method	Atmospheric pressure or additional pressure
Temperature Range	+5°C ~ +60°C
Max Flow Rate	48 L/min
Air Pressure Range	0.5~8.3 kgf/cm ² (Bar); 120psi
Max. Solid Diameter	1.5~2 mm
Noise level	< 77dB

Disassembly of Pump

1. Check Ball Valves :

For best priming and most efficient pumping performance, it is important to maintain check valves and valve seats in good condition for proper sealing. The inspection of valves is usually reduced performance caused or cycling without pumping for inspection and replacement of valves, remove the eight hexagon nuts before fixing the device and then change ball valves and valve seats.

2. Rubber Diaphragm :

Do inspection and replacement of rubber diaphragm as long as air is discharged from liquid or through air exhaust port. Inspect to see whether the screws of manifold secure the chamber to the manifold assembly correctly or not. At disassembly, remove rubber diaphragm by turning a hexagon screw head fixed on transmission shaft with spanner then hold the transmission shaft in a clamping device from the other side, but make sure to protect the surface of transmission shaft so as not to scratch or mar it in any way.

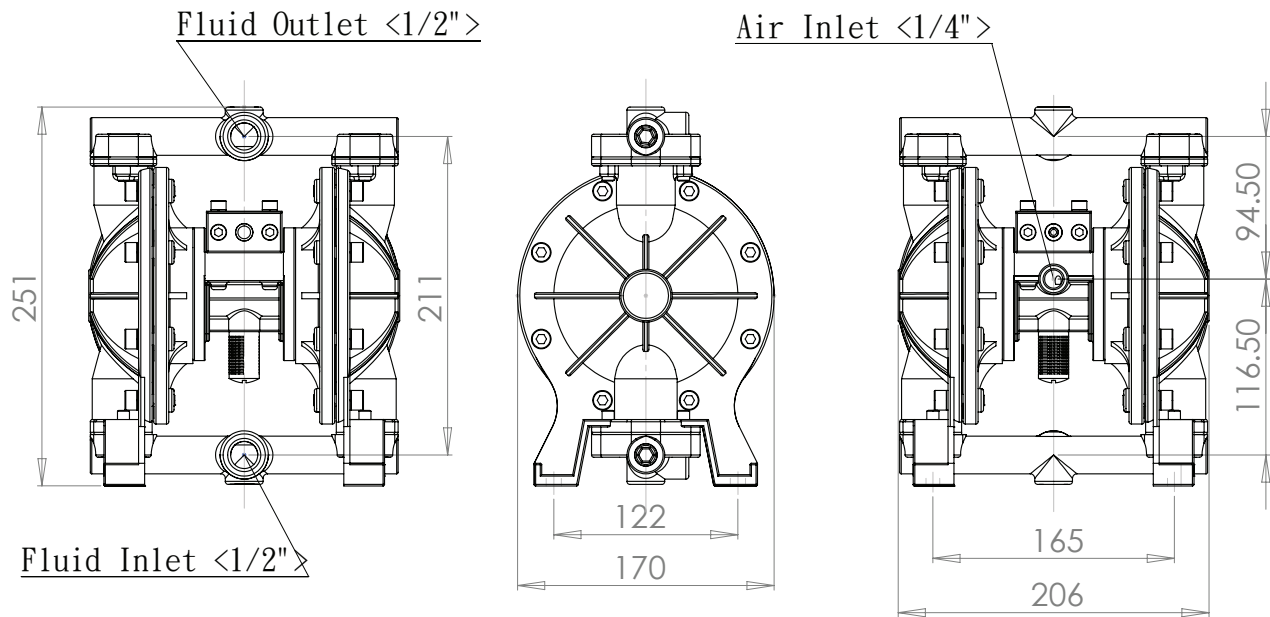
3. Axis Switch & Shaft Cover :

To inspect Axis Switch & Shaft Cover that it is frayed or not, do remove (P.4 – 3) 4 hexagons and use pliers to take it to inspect or change a new one.

4. Air valve:

The function of this valve is to lead the operation of air valve. And it can be disassembled after removing the air valves body from the pump.





Install Indication

Always connect the liquid outlet hose first, then connect the pump to air pressure source.

- The unit is pressurized internally with air pressure during operation. So always disconnect air pressure supply before disassembling.

Maintenance After Use

ATTENTION: before disassemble and maintain the pump, be sure that there isn't any pressure inside the machine body. This procedure is important to insure complete draining in freezing weather.

1. In order to prevent the materials from hardening during idle periods, these materials should be flushed from the pump. Always keep the pump interior and the pipe filter in clean status. Don't leave the liquid fuel in the pipe for a long time to avoid flow jam.
2. To change the liquid fuel, raise the inlet fuel pipe, open the fuel circulation switch and wait until the liquid fuel inside the machine body to come out fully. Put the pipe head into the cleanse solvent tank (solvent about 8L) to absorb solvent. Once the interior is fully cleaned, put the inlet fuel pipe head into the prepared liquid fuel tank to absorb the liquid fuel. Close the fuel circulation switch to continue operation.
3. To use with the outlet fuel adjuster, the inlet gas pressure must be higher than the outlet fuel pressure. The adjuster should be adjusted according to the fuel's concentration and outlet quantity.
4. Circulation fuel switch shall be open only when cleaning the pump or changing the fuel. It should not be open at normal operation.

Installation

1. Install and use it respectively as much possible.
2. Reduce the service capacity of piping accessories.
3. Keep the prescribed bore of suction pipe.
4. If fitting up a Rigid piping, it should be assembled with a short flexible hose.
5. While installation, note the packing piece to see whether there is leakage or not.
6. While installing pipe, be sure that suction pipe and air pipe should contain clearly.
7. Inlet pipe must install filter to prevent that big solid entering in to result breakdown.

Operation

1. The operation altitude for priming is below 20 feet (6.09 meters).
If deliver high viscosity liquid, the distance between suction inlet and liquid surface should be diminished.
2. The output flow can be controlled by air switch.
3. To star or stop the pump can be controlled by the discharge controller.

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Air Supply

1. Do not connect the unit to air supply in excess of 8.5 kgf/cm².
2. Do use the prescribed compressed air pressure.
3. The air inlet can't be smaller than the air inlet valve, otherwise, the air pressure might be insufficient and work volume will be influence.
4. It is better for air supply pipe to install air filter and surge suppressor.

Air Exhaust

1. This equipment can be submerged if the exhaust pipe is above the liquid level.
2. Piping used for the exhaust should not be smaller than the 1/2" (1.27 cm) pipe size. Reduced pipe size can restrict the exhaust air and cause reduced pump performance.
3. When the material being pumped is a hazardous or toxic material, the exhaust should be piped to an appropriate area for safe disposition.
4. When the material being pumped is at a level above the pump, the exhaust should be piped to a higher level than I/O equipments.

Importance

This unit is pressurised internally with air pressure during operation. So always disconnect air pressure supply before disassembling.

Trouble Shooting

Trouble	Possible Causes
Pump can run but not have suction or have improper suction	<ol style="list-style-type: none"> 1. Throttle or leak caused by rupture in piping before suction inlet of pump. 2. Front side of suction pipe not having strainer net and abstracting bigger solid to choke between valve and valve seat. 3. Diaphragm rupture. 4. Pipe throttled after outlet from pump. 5. Improper running of sequence valve. 6. Failure of check valve or valve seat. 7. Suction line of pump too long or too high from liquid level beyond of suction range of pump. 8. Outlet pipe too far or too high. Beyond and exceeding pump pressure. 9. Air pressure or air flow insufficient that can't generate normal suction. 10. Outlet liquid intermittent gravely due to diaphragm ruptured or check valve choked by solid. 11. Muffler spurting mortar due to diaphragm ruptured or anchor plate of diaphragm loosened. 12. Pump can't run or have improper. Suction caused by idle period too long or mortar inside hardening.
Pump can't drive	<ol style="list-style-type: none"> 1. Plugged in piping after outlet from pump. 2. Mortar precipitating and hardening. 3. Diaphragm ruptured. 4. Failure of Actuator. 5. Switch of pilot valve ruined. 6. Sequence Valve not moving due to improper lubrication. 7. Sequence not moving due to freeze caused by excessive low temperature. 8. Air pressure too small or air quantity insufficient. 9. It can't move due to the hard solid abstracted with top against diaphragm. 10. Air hold of pilot valve blocked or O-ring failed. 11. Muffler not exhausting air, caused by throttle. 12. Air supply polluted. If not cleaning it after piped, sequence valve will be polluted and can't move.

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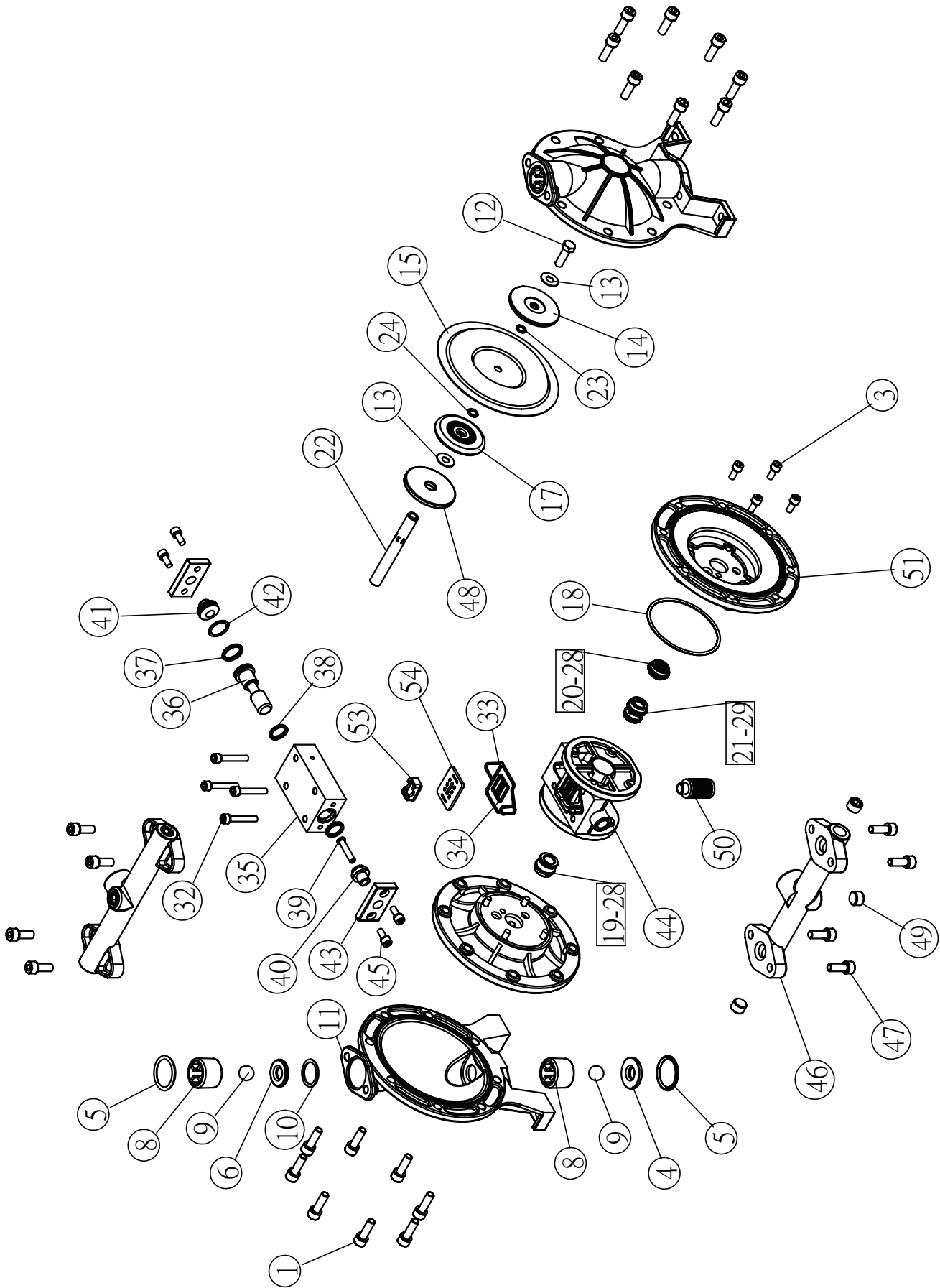
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Parts And Drawing Breakdown DP70015



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Parts And Drawing Breakdown DP70015

Ordering Spare Parts

Parts List – Part No. DP70015

Item	Description	Qty	Item	Description	Qty
DP70015-1	Hexagon Screw	16	DP70015-23	O Ring	2
DP70015-3	Hexagon Screw	8	DP70015-24	O Ring	2
DP70015-4	Down Ball Seat (SUS)	2	DP70015-32	Hexagon Screw	4
-	Down Ball Seat (PTFE)	2	DP70015-33	Abnormal O Ring	1
DP70015-5	Teflon O Ring	4	DP70015-34	Abnormal O Ring	1
DP70015-6	Up Ball Seat (SUS)	2	DP70015-35	Body Of Sequential	1
-	Up Ball Seat (PTFE)	2	DP70015-36	Piston Of Air Valve	1
DP70015-8	Ball Cover (collocate with Steel Ball)	4	DP70015-37	U-type O Ring	1
-	Ball Cover (collocate with Teflon Ball)	4	DP70015-38	U-type O Ring	2
-	Ball Cover (Aluminum Alloy)	4	DP70015-39	Starting Copper Latch	1
DP70015-9	Steel Ball	4	DP70015-40	Cover Of Sequential-A	1
-	Teflon Ball	4	DP70015-41	Cover Of Sequential-B	1
DP70015-10	Pad	2	DP70015-42	O Ring	1
DP70015-11	Housing Of Pump	2	DP70015-43	Housing Of Sequential	2
DP70015-12	Steel Hexagon Screw	2	DP70015-44	Body Of Cylinder Base	1
DP70015-13	Steel Washer	4	DP70015-45	Hexagon Screw	4
DP70015-14	Pad Of Diaphragm	2	DP70015-46	Pipe	2
DP70015-15	Diaphragm (PE)	2	DP70015-47	Hexagon Screw	8
-	Diaphragm (Teflon)	2	DP70015-48	Buffer Pad	2
DP70015-17	Pad Of Diaphragm	2	DP70015-49	Hexagon Bung	6
DP70015-18	O Ring	2	DP70015-50	Silencer	1
DP70015-19-28	Shaft Cover-A	1	DP70015-51	Air Pressure Room Of Pump	2
DP70015-20-28	Shaft Cover-B	1	DP70015-53	Silthery Mass Valve	1
DP70015-21-29	Axis Switch	1	DP70015-54	Include Ply	1
DP70015-22	Shaft Of Diaphragm	1			

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