

INSTRUCTION MANUAL

DOUBLE DIAPHRAGM PUMPS

- L-DDP13 (1/2") Nitrile
- L-DDP19 (3/4") Nitrile
- L-DDP19NA (3/4") Nitrile (Aluminium Body)
- L-DDP19V (3/4") Viton
- L-DDP25 (1") Nitrile



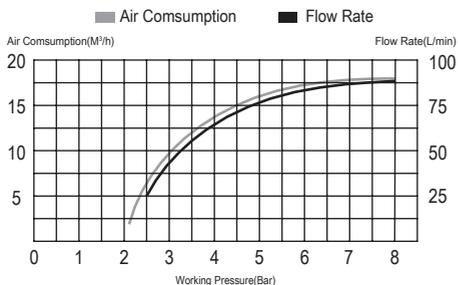
DOUBLE DIAPHRAGM PUMPS

L-DDP13 / L-DDP19 / L-DDP19NA / L-DDP19V / L-DDP25

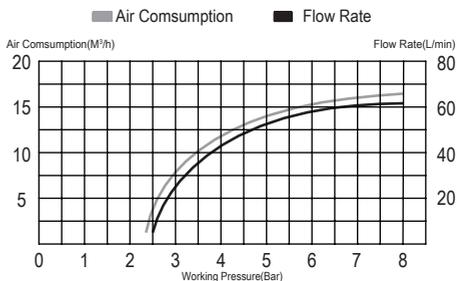
TECHNICAL SPECIFICATIONS

SPECIFICATION	MODEL	MODEL	MODEL	MODEL	MODEL
	L-DDP13	L-DDP19	L-DDP19NA	L-DDP19V	L-DDP25
Inlet / Outlet	1/2"BSP	3/4"BSP	3/4"BSP	3/4"BSP	1"BSP
Air inlet	1/4"BSP	1/4"BSP	1/4"BSP	1/4"BSP	1/4"BSP
Flow rate	45LPM	60LPM	60LPM	60LPM	90LPM
Maximum air pressure	116PSI (8BAR)	116PSI (8BAR)	116PSI (8BAR)	116PSI (8BAR)	116PSI (8BAR)
Maximum outlet pressure	116PSI (8BAR)	116PSI (8BAR)	116PSI (8BAR)	116PSI (8BAR)	116PSI (8BAR)
Maximum allowable particle size	1/8"	1/8"	1/8"	1/8"	1/8"
Diaphragm material	NITRILE	NITRILE	NITRILE	VITON	NITRILE

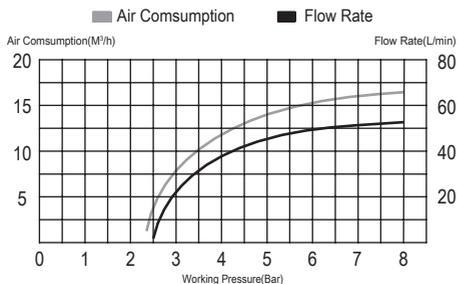
Air consumption chart for L-DDP25



Air consumption chart for L-DDP13 / L-DDP19 / L-DDP19V



Air consumption chart for L-DDP19NA



GENERAL DESCRIPTION

Diaphragm pumps offer high volume fluid delivery at low air pressures, utilizing pressure differential in the air chamber to alternately create suction and positive fluid pressures. The ball check valves ensure a positive flow of fluid.

When air pressure is applied the pump will operate until maximum line pressure is reached (dispensing device closed) and will resume pumping when line pressure is reduced (dispensing valve open).



IMPORTANT

POLYPROPYLENE DIAPHRAGM PUMPS ARE COMPATIBLE WITH A WIDE RANGE OF CHEMICALS, ENGINE COOLANTS AND WATER ONLY.

DOUBLE DIAPHRAGM PUMPS

L-DDP13 / L-DDP19 / L-DDP19NA / L-DDP19V / L-DDP25



WARNING

Do not exceed the maximum inlet air pressure as stated on the pump model plate.

Be sure material hoses and other components are able to withstand fluid pressures developed by this pump.



WARNING

1. The system should be grounded when being used with flammable materials such as paints, solvents, lacquers etc. or used in location where surrounding atmosphere is conducive to spontaneous combustion. Ground the dispensing valve or device, containers, hoses and any object to which material is being pumped.
2. Use the pump grounding screw terminal provided. Connect a suitable ground wire to a good earth ground source.
3. Secure pump, connections and all contact points to avoid vibration and generation of contact or static spark.
4. Consult local building codes and electrical codes for specific grounding requirements.
5. After grounding, periodically verify continuity of electrical path to ground.
6. Keep flammables away from heat, open flames and sparks.
7. Use proper ventilation

WARNING! Pump exhaust may contain contaminants. Can cause severe injury. Pipe exhaust away from work area and personnel.
Parts and the substance being pumped, flushed or recirculated.

8. In the event of a diaphragm rupture material can be forced out of the air exhaust muffler.
9. Pipe the exhaust to a safe remote location when pumping hazardous or inflammable materials.

WARNING! HAZARDOUS PRESSURE. Can result in serious injury or property damage. Do not service or clean pump, hoses or dispensing valve while the system is pressurized.

CAUTION! Do not use the pump for the structural support of the piping system. Be certain the system components are properly supported to prevent stress on the pump parts.

CAUTION! Prevent unnecessary damage to the pump. Do not allow pump to operate when out of material for long periods of time.

CAUTION! Verify the chemical compatibility of the pump wetted parts and the substances being pumped, flushed or recirculated.

CAUTION! Do not allow pump to operate when out of material for long periods of time.
Disconnect air line from pump when system sits idle for long periods of time.



WARNING

Static spark can cause an explosion resulting in severe injury or death. Ground the pump and pumping system.

AIR AND LUBE REQUIREMENTS



WARNING

- Excessive air pressure can cause pump damage, personal injury or property damage.
- The air delivery pipe should be big enough to ensure adequate air supply.
- Air pressure must not exceed 116 PSI (8 BAR).
- A filter capable of filtering out particles larger than 50 microns should be used on the air supply.
- No lubrication is required other than the o-ring lubricant which is applied during assembly or repair.
- If lubricated air is present, make sure that is compatible with the o-rings in the air motor section of the pump.

OPERATING INSTRUCTIONS

1. Always flush the pump with a solvent compatible with the material being pumped.
2. Disconnect the air supply from the pump if it is to be inactive for a few hours.
3. Disconnect the air supply from the pump if it is not in use.
4. The material supply hose must not be too small or restrictive.
Note: Be sure to use non-collapsing type hose.
5. When the diaphragm pump is used in a forced-feed (flooded inlet) situation, it is recommended that a "Check Valve" be installed at the air inlet.
6. Secure the diaphragm pump legs to a suitable surface to insure against damage by vibration.

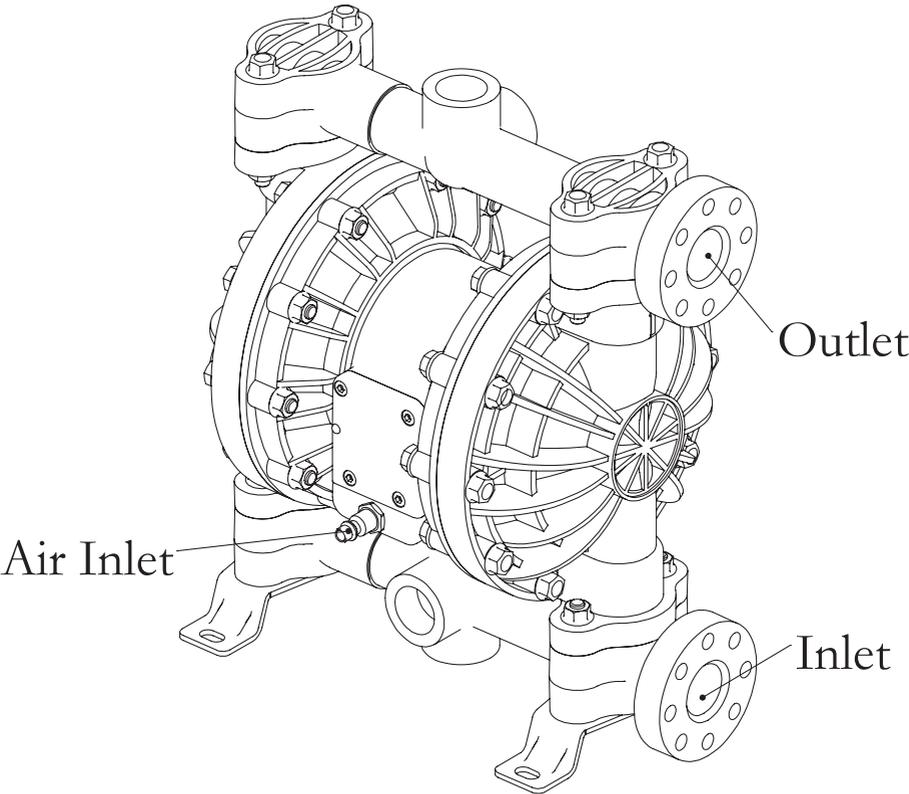
MAINTENANCE

1. Provide a clean work surface to keep parts free from possible contamination from dirt and foreign matter during service disassembly and reassembly.
2. Keep good records of service activity and include pump in preventive maintenance program.
3. Before disassembling, empty captured material in the outlet manifold by turning the pump upside down to drain material from the pump.

DOUBLE DIAPHRAGM PUMPS

L-DDP13 / L-DDP19 / L-DDP19NA / L-DDP19V / L-DDP25

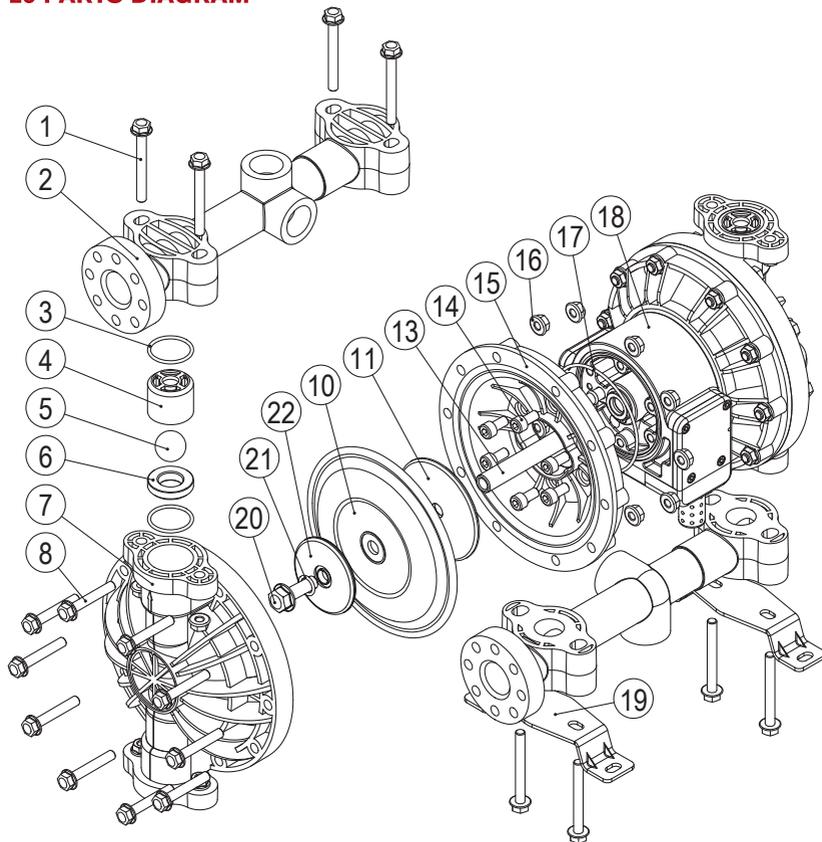
CONNECTIONS



DOUBLE DIAPHRAGM PUMPS

L-DDP13 / L-DDP19 / L-DDP19NA / L-DDP19V / L-DDP25

L-DDP25 PARTS DIAGRAM



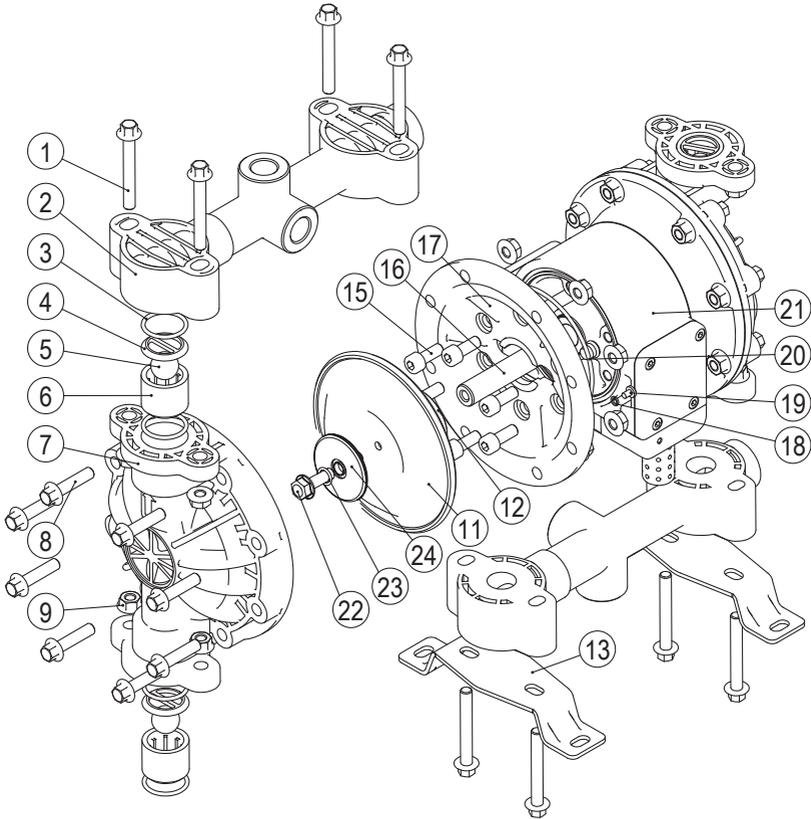
No	Description	Qty	No	Description	Qty
1	Hex-bolt M8×70	8	13	Connecting Shaft	1
2	Discharge Manifold	2	14	Screw	12
*3	O-ring	8	15	Air Chamber	2
*4	Valve Cover	4	16	Screw	28
*5	Valve Ball	4	*17	O-ring	2
*6	Valve Seat	4	18	Air Motor Assembly	1
7	Liquid Chamber	2	19	Bracket	2
8	Hex-bolt M8X50	20	20	Hex-bolt M12x25	2
*10	Diaphragm	2	21	O-ring (17.17*1.78)	2
11	Air Chamber Plate	2	22	Liquid Chamber Plate	2

Note: The Part No. with "*" are the wearing parts.

DOUBLE DIAPHRAGM PUMPS

L-DDP13 / L-DDP19 / L-DDP19NA / L-DDP19V / L-DDP25

L-DDP13 / L-DDP19 / L-DDP19V PARTS DIAGRAM



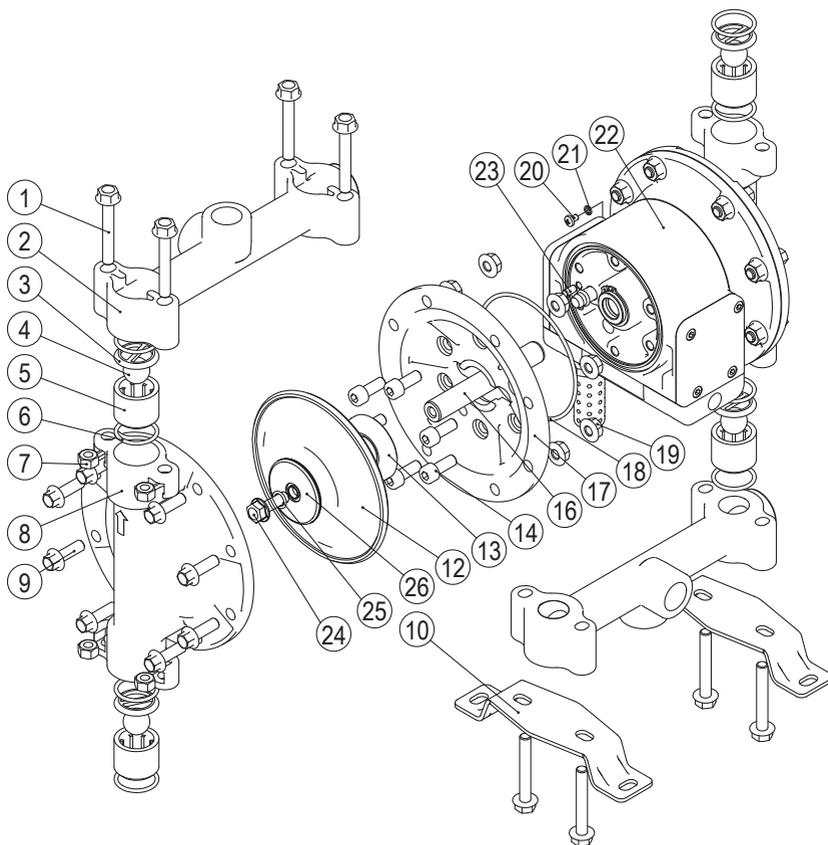
No	Description	Qty	No	Description	Qty
1	Hex-bolt M8×60	8	13	Bracket	2
2	Discharge Manifold	2	15	Screw M8X16	12
*3	O-ring 28.24x2.62	8	16	Connecting Shaft	1
*4	Valve Cover	4	17	Air Chamber	2
*5	Valve Ball	4	18	Washer	1
*6	Valve Seat	4	19	Screw M5X8	1
7	Liquid Chamber	2	*20	O-ring 94.92X2.62	2
8	Hex-bolt M8X35	16	21	Air Motor Assembly	1
9	Nut M8	24	22	Hex-bolt M8x25	2
*11	Diaphragm	2	23	O-ring (9.75x1.78)	2
12	Air Chamber Plate	2	24	Liquid Chamber Plate	2

Note: The Part No. with "*"are the wearing parts.

DOUBLE DIAPHRAGM PUMPS

L-DDP13 / L-DDP19 / L-DDP19NA / L-DDP19V / L-DDP25

L-DDP19NA PARTS DIAGRAM



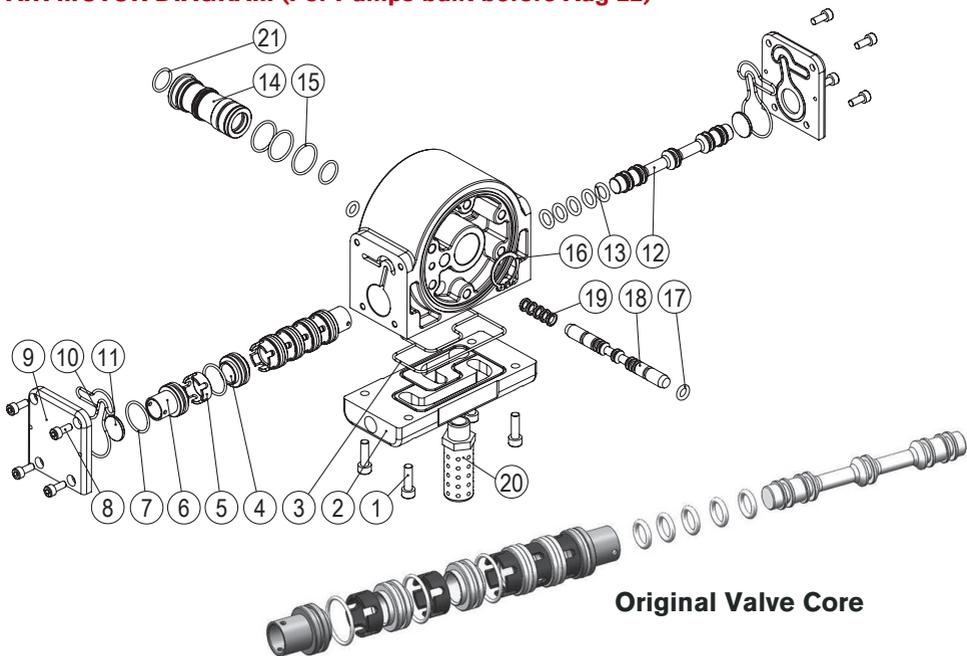
No	Description	Qty	No	Description	Qty	No	Description	Qty
1	Hex-bolt M8×55	8	9	Hex-bolt M8X25	16	19	Hex-bolt M8	16
2	Discharge Manifold	2	10	Bracket	2	20	Screw M5X8	1
*3	Valve cover	4	*12	Diaphragm	2	21	Washer	1
*4	Valve Ball	4	13	Air Chamber Plate	2	22	Air Motor Assembly	1
*5	Valve Seat	4	14	Screw M8X16	12	23	Straight pin	2
*6	O-ring 28.24x2.62	8	16	Connecting Shaft	1	24	Hex-bolt M8x25	2
7	Nut M8	8	17	Air Chamber	2	25	O-ring (9.75x1.78)	2
8	Liquid Chamber	2	*18	O-ring 94.92X2.62	2	26	Liquid Chamber Plate	2

Note: The Part No. with "*"are the wearing parts.

DOUBLE DIAPHRAGM PUMPS

L-DDP13 / L-DDP19 / L-DDP19NA / L-DDP19V / L-DDP25

AIR MOTOR DIAGRAM (For Pumps built before Aug 22)



Original Valve Core

No	Description	Qty
1	Hex bolt m6x20	4
2	Press board	1
3	Seal for press board	1
4	Spacer	4
5	Spacer	5
6	Spacer	2
7	O-ring (20.35 x 1.78)	6

No	Description	Qty
8	Hex bolt M5x12	8
9	Gasket	2
10	Seal for gasket	2
11	Washer	2
12	Major valve	1
13	O-ring (9.93 x 2.62)	5
14	Sleeve	1

No	Description	Qty
15	O-ring (20.35x1.78)	3
16	Retaining ring 25	1
17	O-ring (7.1x2.65)	2
18	Pilot valve	1
19	O-ring (6.86x1.78)	5
20	Muffler 3/8	1
21	O-ring 15.60X1.78	2

AVAILABLE SERVICE KITS

Kit Part Number L-DDPMK
Air Motor Kit for all models before Aug 22

Part No.	Description	Qty
4	Spacer	4
5	Spacer	5
6	Spacer	2
11	Washer	2
13	O-RING 9.93x2.62	5
17	O-RING 7.1x2.65	2
19	O-RING 6.86x1.78	5
21	O-RING	2

Kit Part Number L-DDPSK19V
Service kit for L-DDP19V

Part No.	Description	Qty
4	Valve Cover	4
5	Valve Ball	4
6	Valve Seat	4
3	O Ring 28.24 x 2.62	8
11	Diaphragm	2
20	O Ring 94.92 x 2.62	2

Kit Part Number L-DDPSK25
Service kit for L-DDP25.

Part No.	Description	Qty
3	O Ring	8
4	Valve Cover	4
5	Valve Ball	4
6	Valve Seat	4
10	Diaphragm	2
17	O Ring	2

Kit Part Number L-DDPSK1319
Service kit for L-DDP13, L-DDP19, L-DDP19NA

Part No.	Description	Qty
4	Valve Cover	4
5	Valve Ball	4
6	Valve Seat	4
3	O Ring 28.24 x 2.62	8
11	Diaphragm	2
20	O Ring 94.92 x 2.62	2

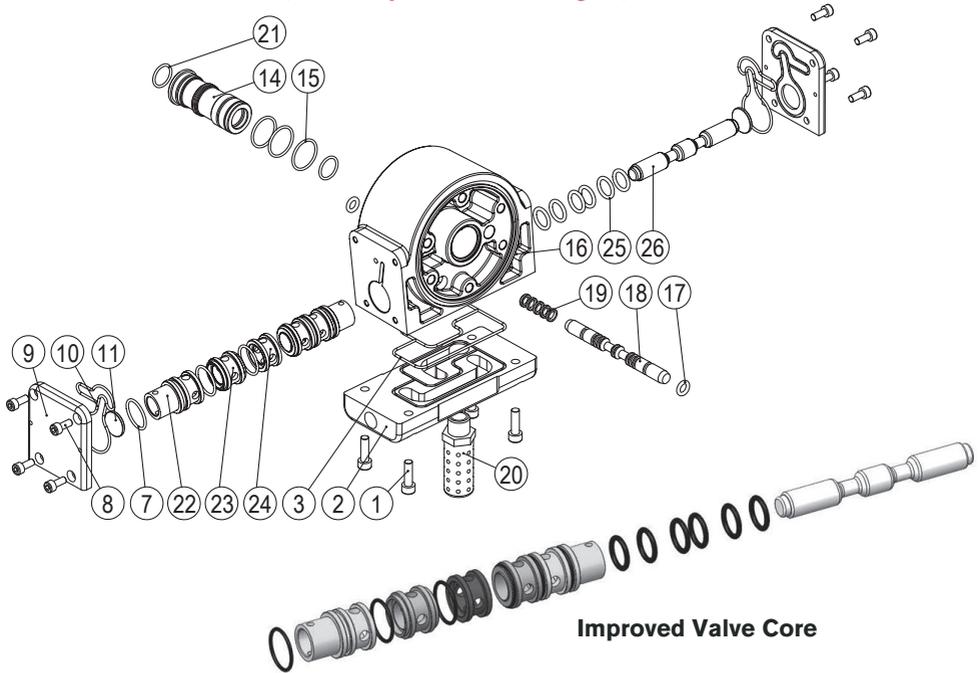
Diaphragm Pumps Identification Table

Pump built before August 2022 | Batch Number on pump with manufactured date, without any suffix or prefix

DOUBLE DIAPHRAGM PUMPS

L-DDP13 / L-DDP19 / L-DDP19NA / L-DDP19V / L-DDP25

AIR MOTOR DIAGRAM (For Pumps built after Aug 22)



No	Description	Qty	No	Description	Qty	No	Description	Qty
1	Hex-bolt M6X20	4	*11	Washe	2	20	Muffler 3/8"	1
2	Press board	1	14	Sleeve	1	*21	O-ring 15.60X1.78	2
3	Seal for press board	1	*15	O-ring 20.35X1.78	3	22	Spacer	2
*7	O-ring 13.94x2.62	6	16	Retaining Ring 25	1	23	Spacer	2
8	Hex bolt M5X12	8	*17	O-ring 7.1X2.65	2	24	Spacer	1
9	Gasket	2	18	Pilot Valve	1	25	O-ring 13.94X2.62	6
*10	Seal for gasket	2	*19	O-ring 6.86X1.78	5	26	Major Valve	1

Note: The Part No. with "*" are the wearing parts.

Kit Part Number L-DDPMK-N

Air Motor Kit for all models built after Aug 22

Part No.	Description	Qty
7	O-RING 13.94 x 2.62	4
10	Seal for gasket	5
11	Washer	2
15	O-RING 20.35 x1.78	2
17	O-RING 7.1x2.65	2
19	Sealing ring 10x5.1x2.2	5
21	O-RING	2

Kit Part Number L-DDPSK25

Service kit for L-DDP25.

Part No.	Description	Qty
3	O Ring	8
4	Valve Cover	4
5	Valve Ball	4
6	Valve Seat	4
10	Diaphragm	2
17	O Ring	2

Kit Part Number L-DDPSK19V

Service kit for L-DDP19V

Part No.	Description	Qty
4	Valve Cover	4
5	Valve Ball	4
6	Valve Seat	4
3	O Ring 28.24 x 2.62	8
11	Diaphragm	2
20	O Ring 94.92 x 2.62	2

Kit Part Number L-DDPSK1319

Service kit for L-DDP13, L-DDP19, L-DDP19NA

Part No.	Description	Qty
4	Valve Cover	4
5	Valve Ball	4
6	Valve Seat	4
3	O Ring 28.24 x 2.62	8
11	Diaphragm	2
20	O Ring 94.92 x 2.62	2

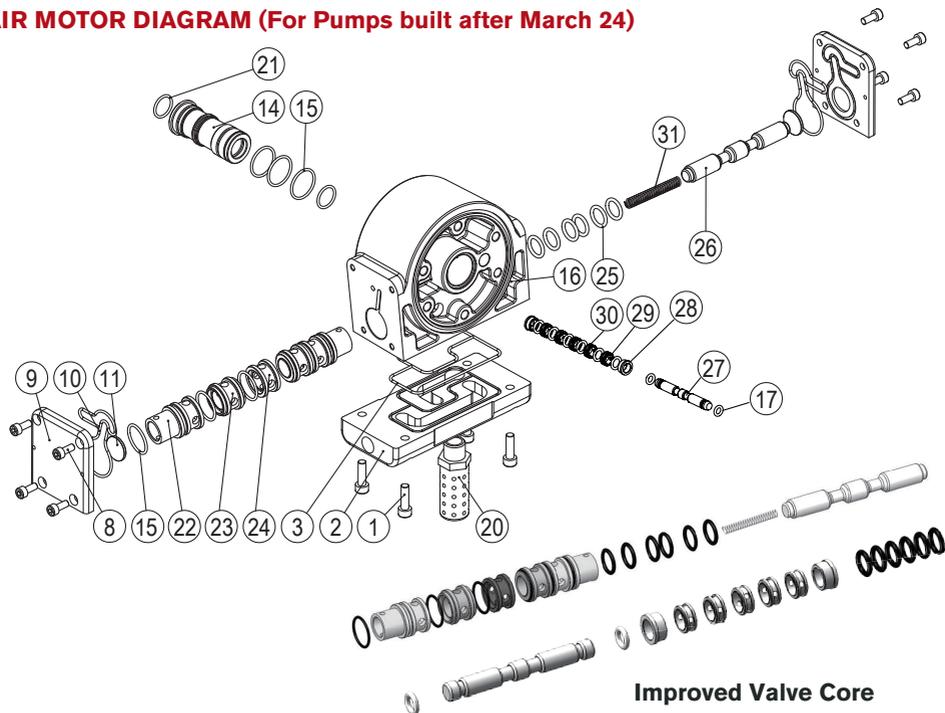
Diaphragm Pumps Identification Table

Pumps built after August 2022	Batch Number on pump with manufactured date suffixed by "M"
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DOUBLE DIAPHRAGM PUMPS

L-DDP13 / L-DDP19 / L-DDP19NA / L-DDP19V / L-DDP25

AIR MOTOR DIAGRAM (For Pumps built after March 24)



No	Description	Qty
1	Hex-bolt M6X20	4
2	Press board	1
3	Seal for press board	1
8	Hex bolt M5X12	8
9	Gasket	2
*10	Seal for gasket	2
*11	Washe	2
14	Sleeve	1

No	Description	Qty
*15	O-ring 20.35X1.78	9
16	Retaining Ring 25	1
*17	O-ring 7.1X2.65	2
20	Muffler 3/8"	1
*21	O-ring 15.60X1.78	2
22	Spacer	2
23	Spacer	2
24	Spacer	1

No	Description	Qty
*25	O-ring 13.94X2.62	6
26	Major Valve	1
27	Pilot Valve	1
28	Spacer	2
29	Spacer	5
*30	O-ring 9.93X2.62	6
*31	Spring	1

Note: The Part No. with "*" are the wearing parts.

Kit Part Number L-DDPMK-A

Air Motor Kit for all models built after March 24

Part No.	Description	Qty
10	Seal for gasket	2
11	Washe	2
15	O-ring 20.35X1.78	9
17	O-ring 7.1X2.65	2
21	O-ring 15.60X1.78	2
25	O-ring 13.94X2.62	6
30	O-ring 9.93X2.62	6
31	Spring	1

Kit Part Number L-DDPSK25

Service kit for L-DDP25.

Part No.	Description	Qty
3	O Ring	8
4	Valve Cover	4
5	Valve Ball	4
6	Valve Seat	4
10	Diaphragm	2
17	O Ring	2

Kit Part Number L-DDPSK19V

Service kit for L-DDP19V

Part No.	Description	Qty
4	Valve Cover	4
5	Valve Ball	4
6	Valve Seat	4
3	O Ring 28.24 x 2.62	8
11	Diaphragm	2
20	O Ring 94.92 x 2.62	2

Kit Part Number L-DDPSK1319

Service kit for L-DDP13, L-DDP19, L-DDP19NA

Part No.	Description	Qty
4	Valve Cover	4
5	Valve Ball	4
6	Valve Seat	4
3	O Ring 28.24 x 2.62	8
11	Diaphragm	2
20	O Ring 94.92 x 2.62	2

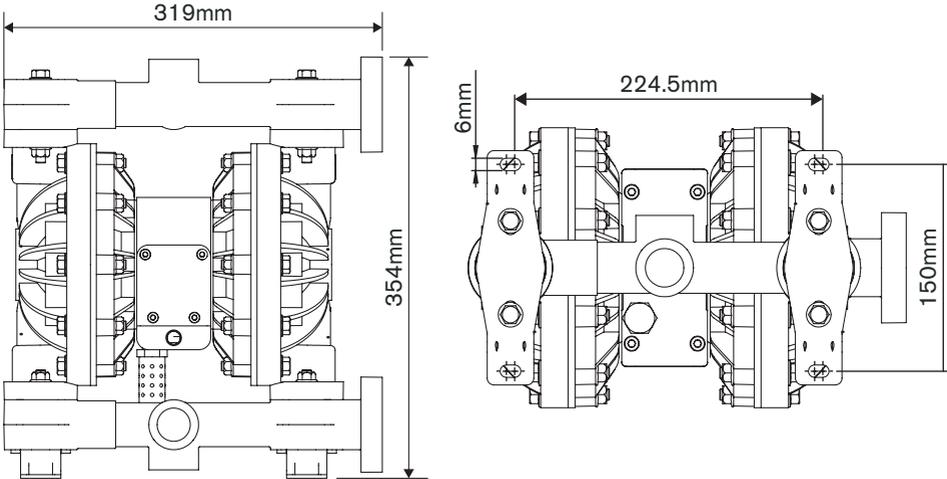
Diaphragm Pumps Identification Table

Pumps built after March 2024	Batch Number on pump with manufactured date prefixed by "A".
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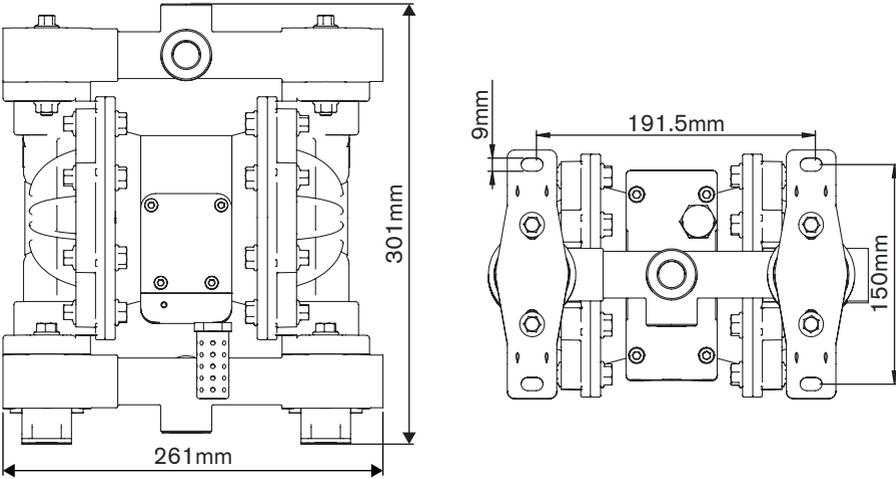
DOUBLE DIAPHRAGM PUMPS

L-DDP13 / L-DDP19 / L-DDP19NA / L-DDP19V / L-DDP25

DIMENSIONAL DATA FOR L-DDP25



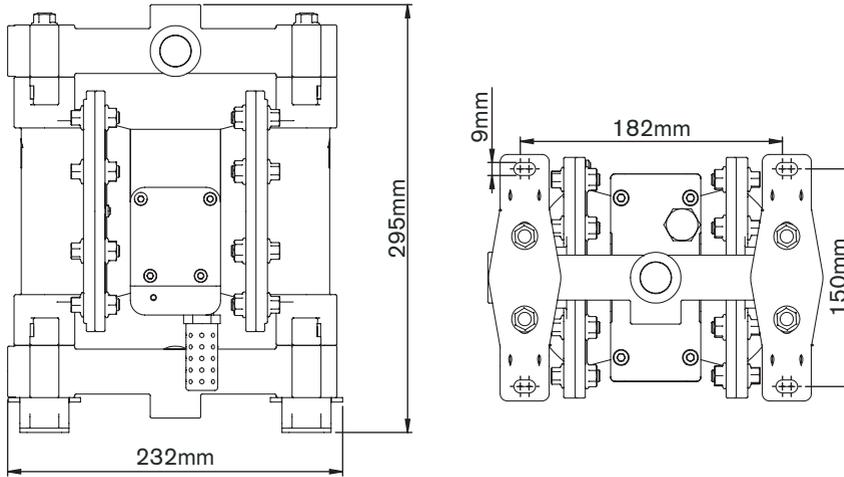
DIMENSIONAL DATA FOR L-DDP13 / L-DDP19 / L-DDP19V



DOUBLE DIAPHRAGM PUMPS

L-DDP13 / L-DDP19 / L-DDP19NA / L-DDP19V / L-DDP25

DIMENSIONAL DATA FOR L-DDP19NA



DOUBLE DIAPHRAGM PUMPS

L-DDP13 / L-DDP19 / L-DDP19NA / L-DDP19V / L-DDP25

TROUBLESHOOTING GUIDE

PROBLEM	SOLUTION
Product discharging from air exhaust	Check for diaphragm rupture
	Check tightness of the diaphragm
Air bubbles in product discharge	Reseal suction hose connections
	Check the O-rings between the intake manifold and the fluid caps.
	Check the diaphragm nut is tight.
Low output volume, erratic flow or no flow	Check air supply is correct
	Check for blockage in the outlet hose
	Checked for kinked (restricted) or collapsed inlet hose.
	Check all connections for leaks. NOTE: All connections must be air tight
	Inspect the pump for solid objects clogged in the diaphragm chamber or check valves.