

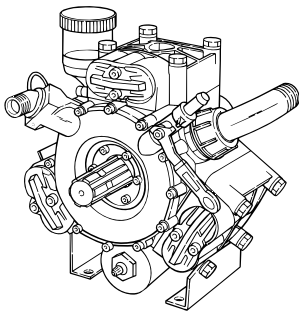
Installation, Operation, Repair and Parts Manual

Description

Hypro high pressure diaphragm pumps are recommended for spraying of herbicides, pesticides, liquid fertilizers and many other hard to handle fluids. Low cost maintenance and almost wear-free operation make these pumps ideal for a wide variety of spraying jobs. Pressure and output are

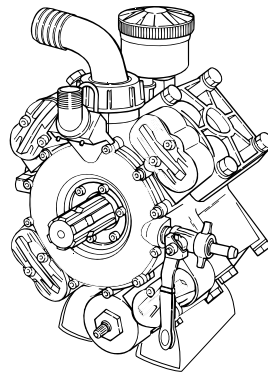
designed for optimum performance of medium to large sized sprayers.

Hypro high pressure diaphragm pumps are supplied with single or double splined thru-shafts. Pumps include pulsation dampeners.



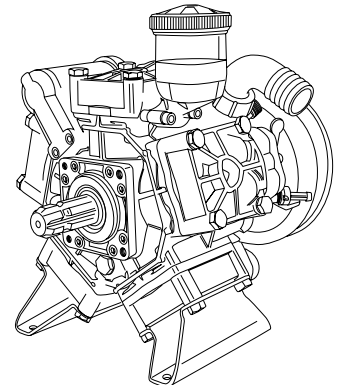
Model 9910-D813

Max flow: 21.4 gpm
Max pressure: 725 psi
Max speed: 550 rpm
3 Diaphragms



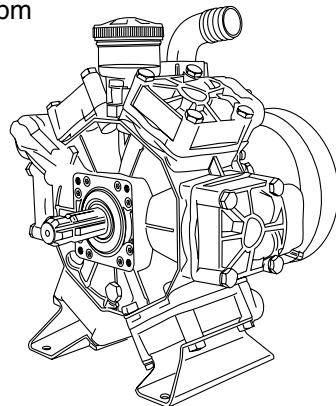
Model 9910-D1064

Max flow: 28 gpm
Max pressure: 725 psi
Max speed: 550 rpm
4 Diaphragms



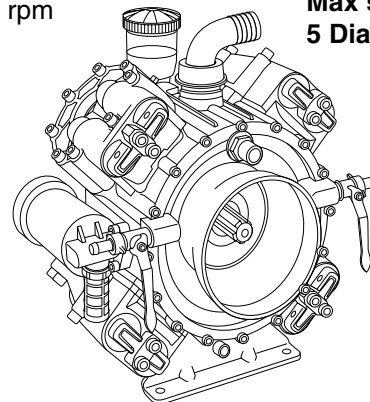
Model 9910-D1265

Max flow: 33.2 gpm
Max pressure: 725 psi
Max speed: 550 rpm
5 Diaphragms



Model 9910-D1516

Max flow: 40 gpm
Max pressure: 725 psi
Max speed: 550 rpm
6 Diaphragms



Model 9910-D1554

Max flow: 41 gpm
Max pressure: 725 psi
Max speed: 550 rpm
4 Diaphragms

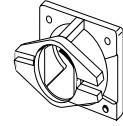
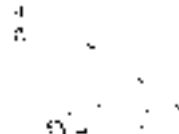
CONTROL UNITS 9910-GS50GI & 9910-VDR50

Control units are available for easy flow and pressure control of your sprayer system. These units include a pressure relief valve to control pressure, an oil-filled pressure gauge to monitor pressure, and outlet ball valves to control flow. Control Unit 9910-GS50GI can be remote mounted with Kit No. 9910-KIT1742. No additional kit is required for remote mounting Control Unit 9910-VDR50. Refer to the adjoining chart to select the proper control unit for your pump.

CONTROL UNIT MODEL	MAX GPM	MAX PSI	PUMP MODEL
9910-GS50GI	48	700	ALL MODELS
9910-VDR50	35	710	-D813, -D1064, and -D1265

Drive Options:

Order the appropriate shaft adapter kit or gear reduction unit for the drive option requirements. Refer to the adjoining chart for proper selection. For proper installation of the gear reducer, refer to the installation instructions.



Pump Model	1-3/8" Male Splined PTO Shaft	1" Solid Shaft W/Keyway	1 3/8" Female Shaft w/ Torque Arm Bracket for PTO Drive	Gear Reduction Units for Gas Engine Drive	Hydraulic Motor Mounting Flange Kit
9910-D813	9910-KIT2200	9910-KIT2203	9910-KIT2204	9910-KIT1642 for 8-18 hp	9910-HYD5312
9910-D1064	9910-KIT2200	9910-KIT2203	9910-KIT2204	9910-KIT1642 for 8-18 hp	9910-HYD5312
9910-D1265	9910-KIT2200	9910-KIT2203	9910-KIT2204	9910-KIT1642 for 8-18 hp	9910-HYD5312
9910-D1516	N/A	N/A	N/A	N/A	N/A
9910-D1554	N/A	N/A	N/A	N/A	N/A

General Safety Information

- Use of a pressure relief device on the discharge side of pump is required to prevent damage from pressure build up if the discharge is closed or blocked while the power source is still running.
- WARNING: DO NOT pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. DO NOT use in explosive atmospheres. The pump should be used only with liquids that are compatible with the pump component materials. DO NOT pump asphalt, asphalt sealer, roofing compounds, concrete sealers or any two-step curing products. Personal injury may result, and the warranty will be void. If there are any questions, call the Hypro Applications toll-free number: 800-445-8360.**
- Do not operate the pump above the recommended rpm.
- Do not pump at pressures higher than the maximum recommended pressures for the pump (see Specifications).
- Operate the pump between temperature ranges of 45° to 140° F.
- Make certain that the power source conforms to the requirements of your equipment.
- Provide adequate protection for guarding around the moving parts such as the shaft and pulleys.
- Disconnect the power before servicing.
- Release all pressure within the system before servicing any component.
- Drain all liquids from the system before servicing.
- Secure the discharge lines before starting the pump. An unsecured discharge line may whip, causing personal injury and/or property damage.
- Check the hoses for weak or worn condition before each use. Make certain that all connections are tight and secure.
- Periodically inspect the pump and the system components. Perform routine maintenance as required (see Maintenance section).**
- When wiring an electrically driven pump, follow all electrical and safety codes, as well as the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
- WARNING: Because of the risk of electrical shock, all wiring should be done by a qualified electrician. WARNING: DO NOT handle a pump or pump motor with wet hands or when standing on a wet or damp surface, or while standing in water.**
- Do not operate a gasoline engine in an enclosed area. Be sure the area is well ventilated.
- Use only pipe, hose and fittings rated for the maximum rated pressure of the pump or pressure that the pressure relief valve is set. Check with a local supplier for the proper pressure rating. Do not use *used* pipe!
- Do not use these pumps for pumping water or other liquids for human or animal consumption.



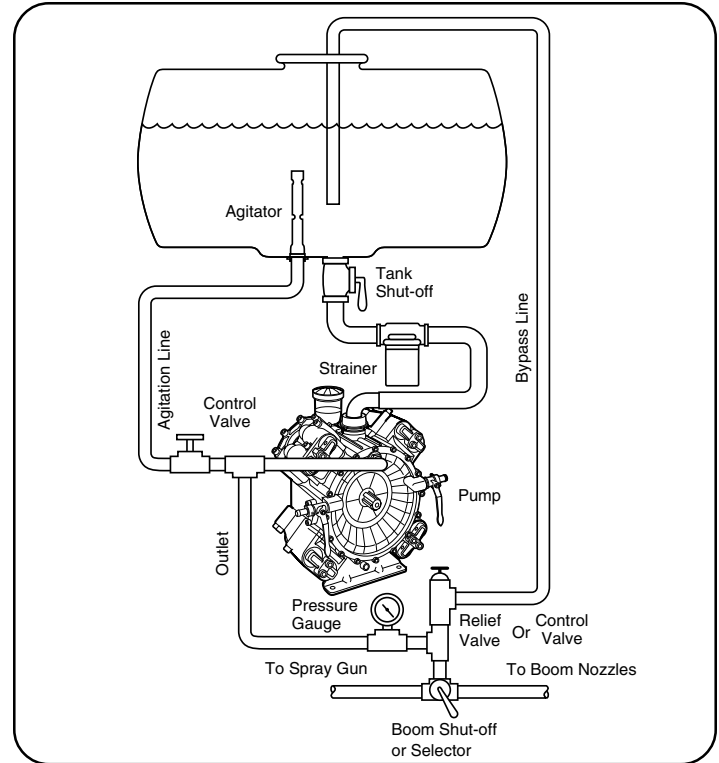
Hazardous Substance Alert

- Always drain and flush pump before servicing or disassembling for any reason (see instructions).
- Always drain and flush pumps prior to returning unit for repair.
- Never store pumps containing hazardous chemicals.
- Before returning pump for service/repair, drain out all liquids and flush unit with neutralizing liquid. Then, drain the pump. Attach tag or include written notice certifying that this has been done. Please note that it is illegal to ship or transport any hazardous chemicals without United States Environmental Protection Agency Licensing.

Installation

1. Always mount the pump with oil sight tube in the upright position.
 2. The correct type and size of hose is vital to good performance:
 - a. Use good quality inlet hose, compatible with fluids being pumped and with good elasticity to reduce inlet water hammer or pulsation. Be sure that the hose is not too rigid but capable of operating at low vacuums without collapsing. The diameter of the inlet hose should be at least that of the pump inlet port size and preferably one size larger if the inlet line is longer than approximately 6 feet.
 - b. Use only approved high pressure hose on the discharge side of the pump.
 3. Most ports are provided with hose barb connections. Use good quality hose clamps and tighten securely.
- NOTE: Use only pipe, fittings, accessories, hose, etc. rated for the maximum pressure rating of the pump.

4. See the figure for typical system hook-up. The diagram shows necessary components and accessories and their connections within the complete system.



Shaft Adapter Kit Installation

Order the appropriate shaft kit according to the chart on Page 2.

Female Splined Coupler Kit 9910-KIT2204 (see Fig. 1).

1. Install the splined shaft adapter (Ref. 6) onto the pump shaft and secure with three allen head bolts (Ref. 1) and three washers (Ref. 2).
2. Install the torque arm bracket over the shaft of the pump. Align the holes and secure with the four bolts (Ref. 5) and four washers (Ref. 2) placed in the top two holes in the bracket.
3. Position the clamp (Ref. 15) over the groove in the splined shaft adapter. Install the bolt (Ref. 13) into the clamp.
4. Slide the pump assembly onto the PTO shaft and secure by tightening the bolt (Ref. 13).
5. Attach chains to the bracket and secure to the tractor to prevent rotation of the pump during operation.

REF. NO.	PART NO.	DESCRIPTION	QNTY REQ'D.
1	9910-160671	Bolt	3
2	9910-200231	Washer	10
3	9910-620470	Bolt	3
4	9910-650380	Spring	1
5	9910-620340	Bolt	4
6	9910-620270	Shaft	1
7	9910-320630	Tie rod	1
8	9910-320620	Washer	1
9	9910-320610	Wing nut	1
10	9910-320131	Washer	1
11	9910-320130	Nut	1
12	9910-650350	Pump bracket	1
13	9910-320170	Bolt	1
14	9910-500171	Washer	1
15	9910-500160	Clamp	1
16	9910-320640	Chain	1
17	9910-650340	Chain hook	4
18	9910-320641	Chain	1

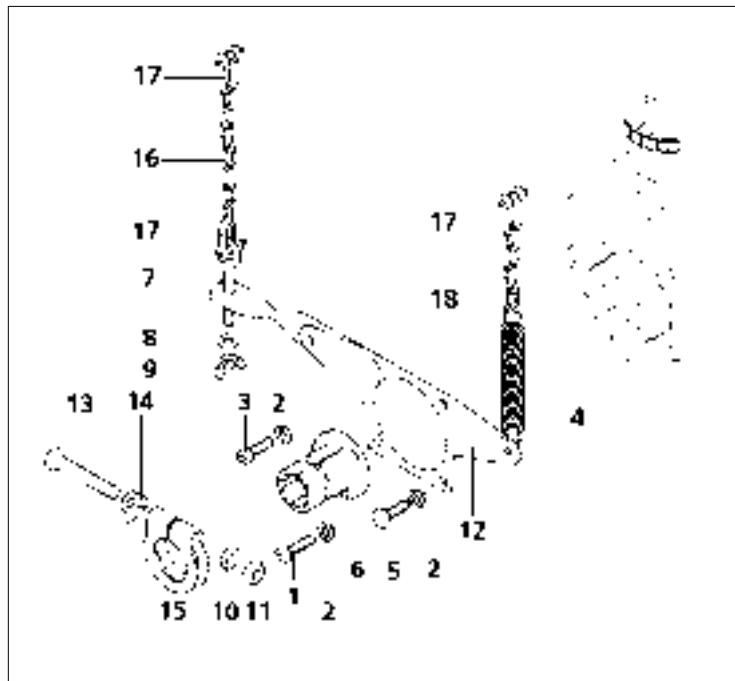


Figure 1

Shaft Adapter Kit Installation

Solid Shaft Kit 9910-KIT2203

Male Splined Shaft Kit 9910-KIT2200 (see Fig. 2).

Install shaft adaptor onto pump and secure with Allen bolts and washers.

REF. NO.	PART NO.	DESCRIPTION	QNTY REQ'D.
1	9910-160671	Bolt	3
2	9910-200231	Washer	6
3	9910-620240	Shaft	1
4	9910-621600	Shaft	1
5	9910-620470	Bolt	3
6	9910-540300	Bolt	3
7	9910-650330	Bolt	3

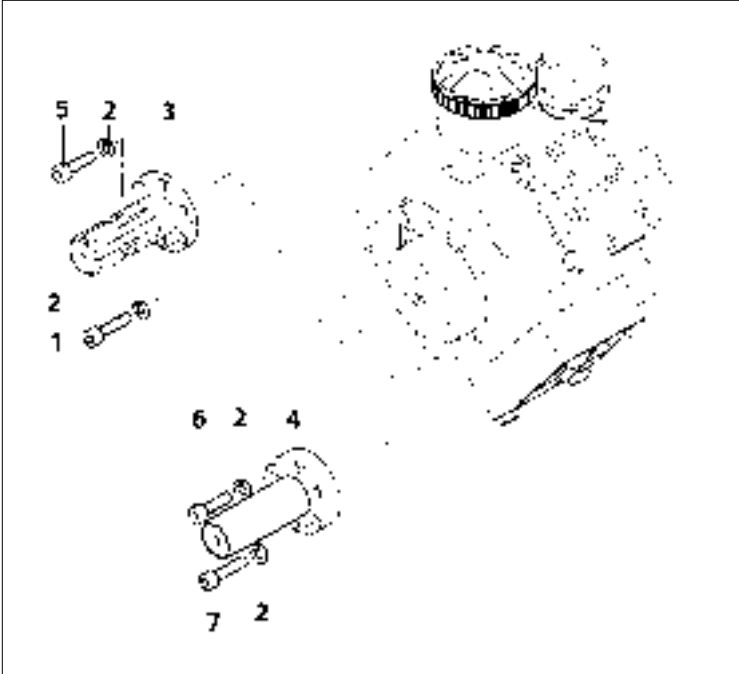
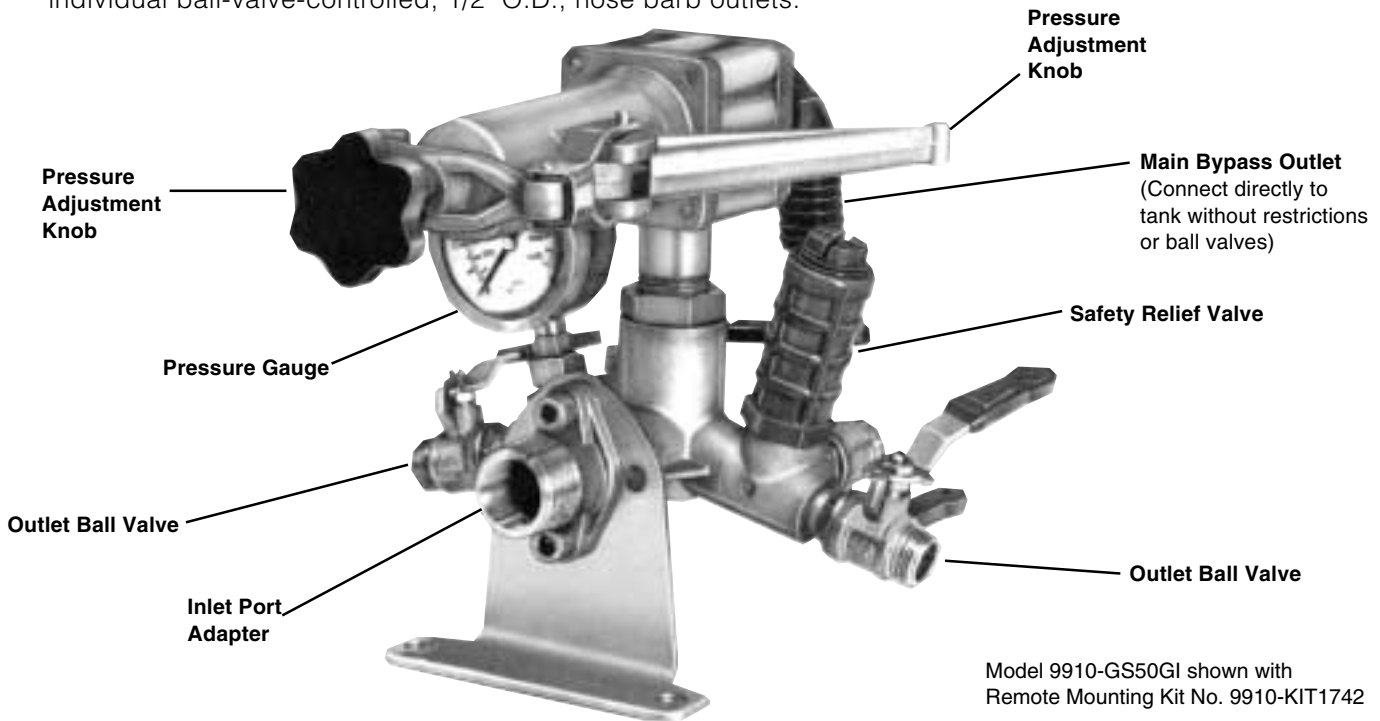


Figure 2

Installation/Operation Instructions for Model 9910-GS50GI Control Unit

The Model 9910-GS50GI Control Unit is designed for the control of pressures up to 700 psi and flows up to 48 gpm. It consists of an adjustable pressure relief valve, a manual pressure release lever, and three, individual ball-valve-controlled, 1/2" O.D., hose barb outlets.



Installation

Direct Mounting*

1. Locate the outlet port adapter (Ref. 37) on the discharge manifold of the pump. Remove the bolts holding the port flange and retain for later use. Remove the port adapter from the discharge manifold.
2. Remove the o-ring from the port adapter and install into the groove in the relief valve manifold (Ref. 31).
3. Mount the control unit onto the discharge manifold where the port adapter had been previously. Secure with the bolts previously retaining the port adapter.
4. Connect the bypass hose to the bypass port hose barb (Ref. 25) and run it unrestricted back to the tank.
5. Connect the desired amount of lines to the outlet port hose barbs (Ref. 30). Unused ports can be shut off with the ball valve, or they can be plugged.

NOTE: For all discharge connections, use hose rated equal to or greater than the maximum pressure rating of the pump.

*Refer to the parts list on Page 5, for part number references.

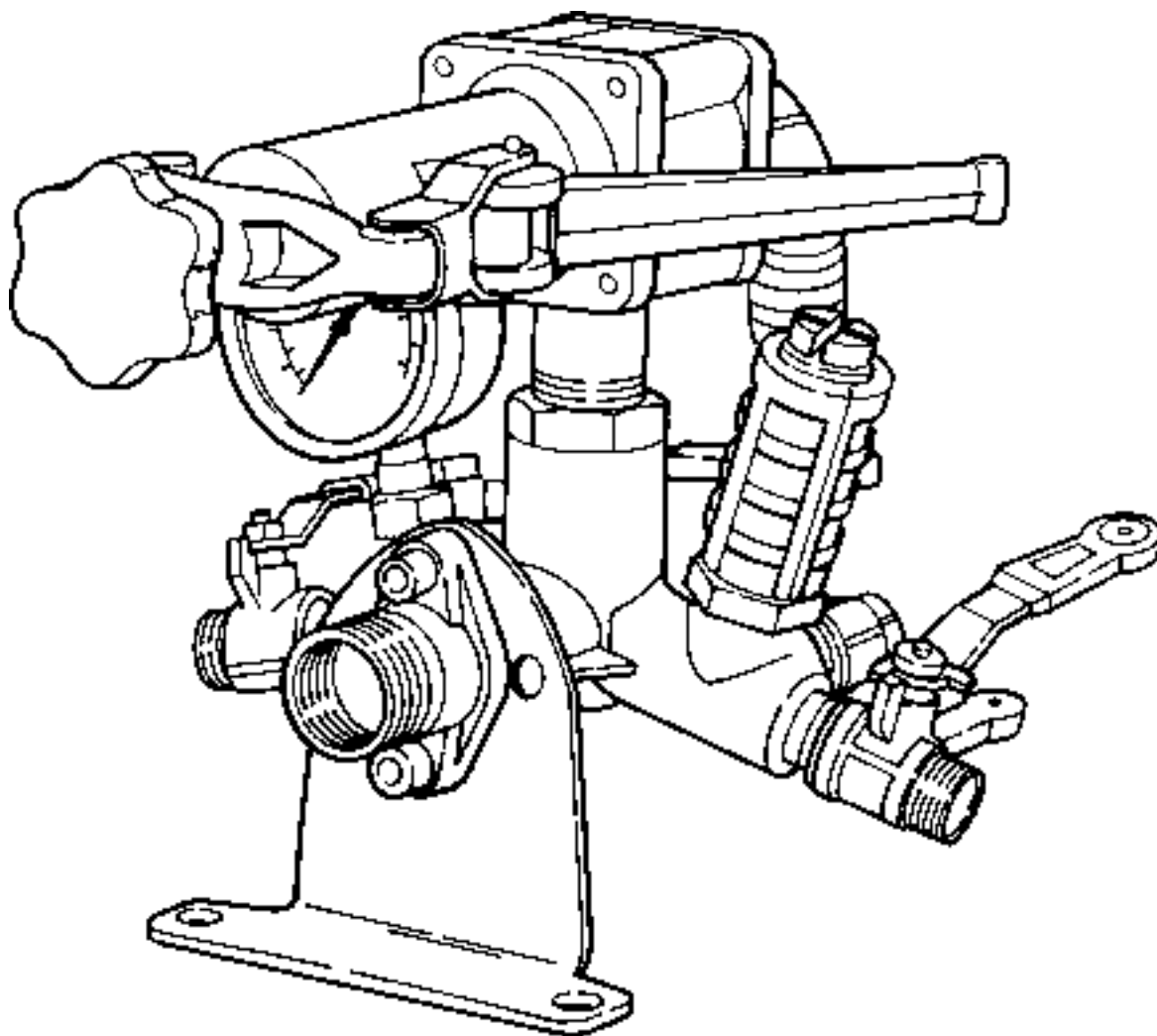
Remote Mounting * (Use kit no. 9910-KIT1742)

1. Remove the studs (Ref. 29) from the relief valve manifold (Ref. 31).
2. Insert the lubricated o-rings (Ref. 26) into the groove of the relief valve body and the NPT fitting (Ref. 37).
3. Install the mounting bracket (Ref. 38) in the desired position and secure.
4. Mount the control unit and the NPT fitting on opposite sides of the mounting bracket and secure with allen bolts (Ref. 39).
5. With a high pressure hose, connect the NPT fitting on the control unit to the NPT fitting on the discharge manifold of the pump.
6. Connect the bypass hose to the bypass port hose barb (Ref. 25) and run it unrestricted back to the tank.
7. Connect the desired amount of lines to the outlet port hose barbs (Ref. 30). Unused ports can be shut off with the ball valve, or they can be plugged.

Operation

1. Refer to the pump operation instructions for the proper operation of the pump.
2. The control unit can be put into full bypass mode by lifting the pressure adjustment lever into the up position.
3. With the pressure adjustment lever in the down (pressure) position, pressure can be controlled with the adjustment knob at the end of the relief valve. Turning it clockwise will increase the operating pressure and turning it counterclockwise will decrease the pressure.
4. Flow can be controlled with the ball valves on each of the outlet ports.

Model 9910-GS50GI Control Unit



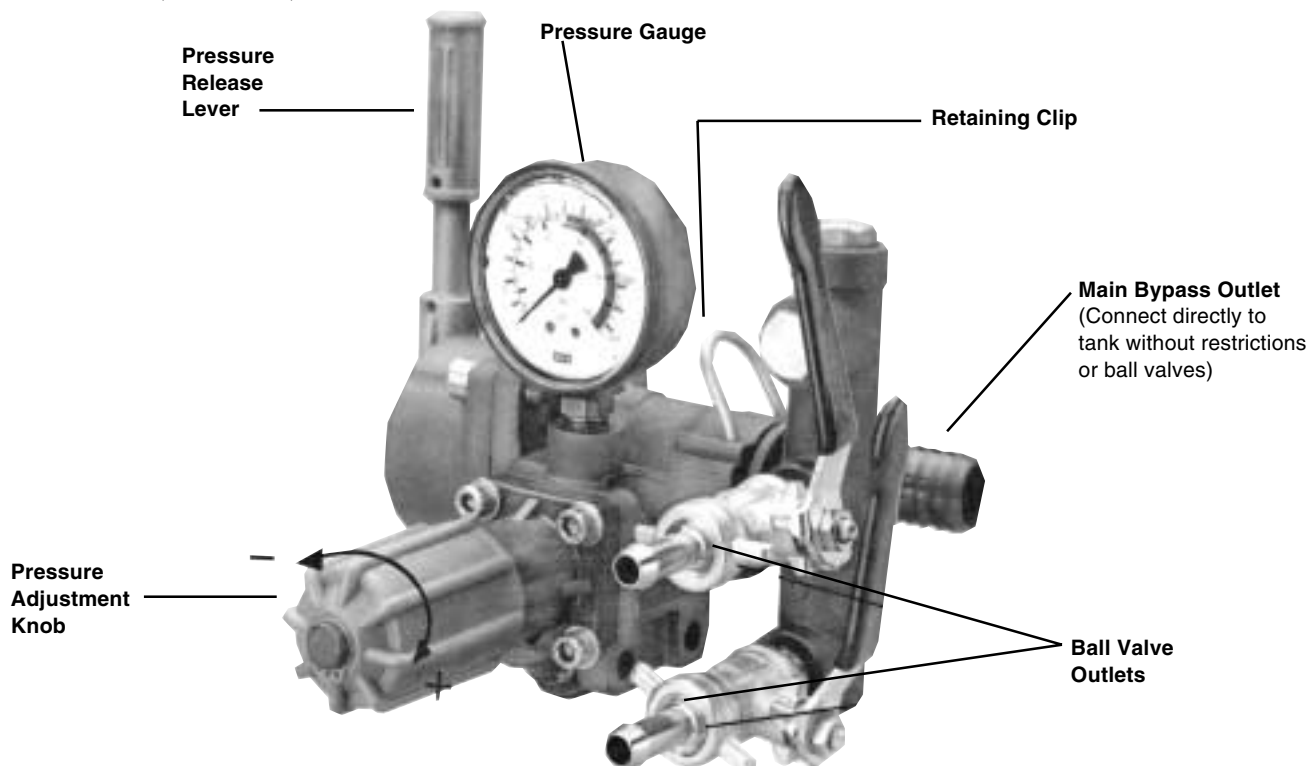
REF. NO.	PART NO.	DESCRIPTION	QNTY. REQ'D.
1	9910-660130	Adjustment Control Knob	1
2	9910-180150	Lock Nut	1
3	9910-680440	Tension Adjustment Support	1
4	9910-680540	Support Pin	1
5	9910-680420	Spring Housing	1
6	9910-680510	Tension Spring Guide	1
7	9910-680530	Lever Guide Pin	1
8	9910-680520	Lever Guide	1
9	9910-680550	Roll Pin	1
11	9910-680450	Relief Valve Lever Assembly	1
12	9910-680500	Tension Spring	1
13	9910-680490	Piston Valve Seat	1
14	9910-680480	Piston Valve	1
● 16	9910-680470	Relief Valve Seat	1
● 17	9910-320420	Spring	1
● 18	9910-680460	Relief Valve Seat Retainer	1
● 19	9910-680700	Bolt	1
20	9910-680410	Body	1
● 21	9910-280220	O-ring	1

REF. NO.	PART NO.	DESCRIPTION	QNTY. REQ'D.
22	9910-680430	Flange Fitting	1
23	9910-680570	Bolt	4
24	9910-550242	Barb Nut	1
25	9910-550370	90° Elbow Barb	1
● 26	9910-550350	O-ring	6
● 27	9910-390740	Diaphragm Poppet	1
28	9910-680580	Adjustment Nut	1
29	9910-720390	Stud	1
30	9910-30490	1/2" Barb Ball Valve	3
31	9910-680400	Relief Valve Manifold	1
32	9910-130171	3/8" Plug	2
33	2640-0002	Pressure Gauge	1
34	9910-30170	Pipe Reducer	1
35	9910-269050	Safety Relief Valve Assembly	1
37	9910-550391	NPT Fitting	1
38	9910-320406	Remote Mounting Bracket	1
39	9910-280080	Bolt	2
40	9910-380240	Nut	6
41	9910-689060	Relief Valve Assembly	1

- Repair Kit No. 9910-KIT1732 consists of:
 one Ref. 16, one Ref. 17, one Ref. 18, one Ref. 19, one Ref. 21,
 six Ref. 26, one Ref. 27.

Installation/Operation Instructions for Model 9910-VDR50 Control Unit

The Model 9910-VDR50 Control Unit is designed for the control of pressures up to 710 psi, and flows to 35 gpm. It consists of an adjustable pressure relief valve, a manual pressure release lever, and two, individual ball-valve-controlled, 1/2" O.D., hose barb outlets.



Installation

Direct Mounting*

1. Locate the discharge manifold (Ref. 55). With o-rings (Ref. 13), lubricated and in position on selector housing (Ref. 17), plug into the discharge manifold of the pump (Ref. 55). Lock into place with the retainer clip (Ref. 10) and cotter pin (Ref. 53).
2. Connect the bypass hose to the bypass port hose barb elbow (Ref. 1), and run unrestricted back to the supply tank.
3. Connect the desired number of high pressure outlet hoses to the outlet hose barbs, located by black arrows. The unused hose barb can be shut off with the ball valves provided.

NOTE: For all discharge hoses, use hose with an operating pressure rating that is equal or greater than the maximum pressure rating of the pump.

*Refer to parts list on Page 7, for part number references.

Remote Mounting*

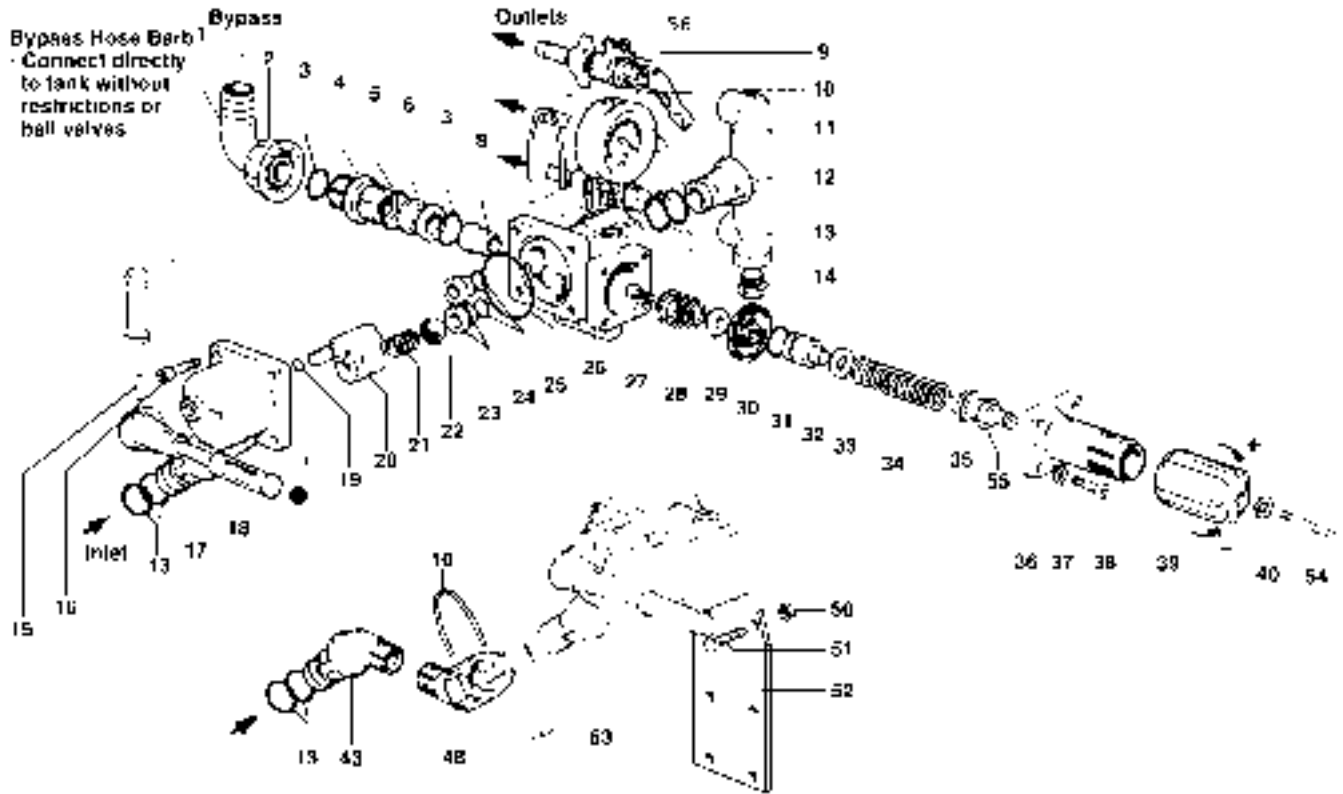
1. Install the mounting bracket (Ref. 52) in the desired position and secure.
2. With the o-rings (Ref. 13) lubricated and in position on the selector housing inlet (Ref. 17), assemble into the 3/4" (M) NPT female adapter (Ref. 48). Lock in place with the retainer clip (Ref. 10) and cotter pin (Ref. 53).
3. With o-rings (Ref. 13), lubricated and in position on the 3/4" (M) NPT male adapter (Ref. 43), slip into the discharge manifold (Ref. 55). Lock in place with the retainer clip (Ref. 10) and the cotter pin (Ref. 53).
4. With high pressure hose, connect the NPT fitting on the discharge manifold of the pump with the NPT fitting on the control unit.
5. Connect the bypass hose to the bypass hose barb (Ref. 1), on the control unit and run unrestricted to tank.
6. Connect the desired number of high pressure outlet hoses to the outlet hose barbs located by black arrows. Unused hose barbs can be shut off with the ball valves provided.

Operation

1. Refer to the pump operation instructions for the proper operation.
2. The control unit can be put into full bypass mode by turning the pressure release lever (Ref. 18) counterclockwise as far as it will go.
3. With the pressure release lever (Ref. 18) rotated clockwise to pressure position, pressure can be adjusted by rotating the pressure adjustment knob clockwise for more pressure or counterclockwise for less pressure.
4. Flow can be controlled by ball valves on each of the outlet ports.

Model 9910-VDR50 Diaphragm Pump Control Unit

NOTE: When ordering parts, give QUANTITY, PART NUMBER, DESCRIPTION, and COMPLETE MODEL NUMBER. Reference numbers are used ONLY to identify parts in the drawing and are NOT to be used as order numbers.



REF. NO.	PART NO.	DESCRIPTION	QNTY. REQ'D.
1	9910-550370	Hose Barb	1
2	9910-550242	Nut	1
3	9910-550350	O-ring	2
4	9910-1040780	Port Adapter	1
5	9910-550040	O-ring	1
6	9910-1040670	Spacer	1
8	9910-1040660	Valve Seat	1
9	9910-130491	Ball Va.	2 Std.; 3 Opt.
9	9910-130492	Ball Va. w/Hose Barb Assbly.	2 Std.; 3 Opt.
10	9910-1040690	Retainer Clip	2
11	9910-540543	Gauge	1
12	9910-1040680	Outlet Manifold	1
13	9910-390180	O-ring	8
14	9910-130171	Plug	2
15	9910-1040820	Pin	1
16	9910-180030	Bolt	4
17	9910-1040720	Selector Housing	1
18	9910-1040730	Pressure Release Lever	1
19	9910-1080200	O-ring	1
20	9910-1040700	Selector Body	1
21	9910-850680	Spring	1
22	9910-850660	Ball	1
23	9910-850650	Seat	2
24	9910-740290	O-ring	2

REF. NO.	PART NO.	DESCRIPTION	QNTY. REQ'D.
25	9910-1040710	O-ring	1
26	9910-1040600	Main Body	1
27	9910-680560	Bolt	1
28	9910-1040650	Spring	1
29	9910-1040640	Valve Cap	1
30	9910-1040630	Diaphragm	1
31	9910-880830	O-ring	1
32	9910-1040620	Piston	1
33	9910-850440	Spacer	1
34	9910-1040830	Spring	1
35	9910-394770	Spring Guide	1
36	9910-1040610	Spring Guide Body	1
37	9910-550331	Washer	4
38	9910-780330	Bolt	4
39	9910-394790	Knob	1
40	9910-480550	Snap Ring	4
43	9910-1040761	3/4" (M) NPT Male Adapter	1
48	9910-1040771	3/4" (M) NPT Female Adapter	1
49	9910-550210	1" Straight Hose Barb	1
50	9910-390270	Nut	2
51	9910-180370	Bolt	2
52	9910-850690	Mounting Bracket	1
53	9910-1040950	Cotter Pin	2
54	9910-1150650	Bolt	1
55	9910-770130	O-ring	1

Installation Instructions for Gear Reduction #9910-KIT1642

NOTE:

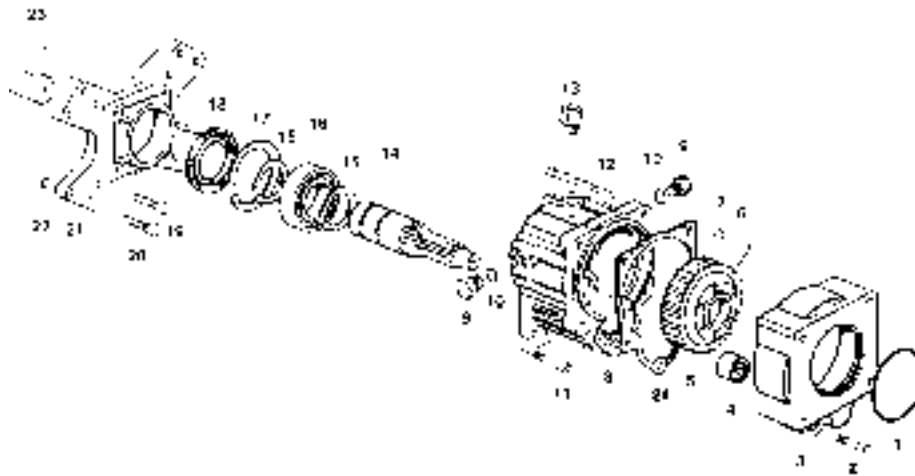
- Use support for all pumps that weigh 25 lbs. or more.
- Use Loctite 242 - Thread Locker, or equivalent, for complete assembly.
- The following reference numbers refer to the gearbox illustration below.

The 9910-KIT1642, gear reducer was designed for direct mounting the 9910-D813, -D1064 and -D1265 onto 8 - 18 hp gas engines with flange mount and 1" solid shafts.

1. On the 9910-D813, -D1064 and -D1265 the square metal plate (Ref. 34) must be removed from the shaft side of the pump. Lubricate the o-ring (Ref. 1) in the pump adapter flange (Ref. 3). Slip the flange over machined surface of casting of the brass spacer ring installed on the shaft of all the 9910-D813,-D1064 and -D1265 pumps.
2. Install the pump gear (Ref. 5) with pilot diameter of gear inserted into the inner-diameter of the pump shaft. Secure firmly onto the shaft using 10x25 mm allen head bolts (Ref. 7) and lock washers (Ref. 6).
3. Align holes in pump adapter flange (Ref. 3) with threaded holes in the pump body. Lubricate the gasket (Ref. 24) and place in position on gearbox body (Ref. 8). Install the gearbox body (Ref. 8) on the pump adapter flange (Ref. 3) and secure firmly with 10x75 mm Allen head

- bolts (Ref. 12). Install the 8 x 20 mm allen head bolt (Ref. 2) and securely tighten.
4. Install the engine flange adapter (Ref. 21) raised side out to engine boss, using 5/16"x1"x 24 N.F. allen head bolts (Ref. 19). Lock firmly into place.
5. Insert the long, key (Ref. 23) into engine shaft keyway. Align the keyway in the gear reducer input shaft (Ref. 14) and slide the pump and gear reducer onto the engine shaft.
6. Align the holes in gearbox body, (Ref. 8) with the threaded holes in the engine flange adapter (Ref. 21). Insert the 8x25 mm allen head bolts (Ref. 11) through the gearbox body (Ref. 8) and thread into the engine flange adapter (Ref. 21). Securely tighten with the allen wrench provided.
7. Vent plug (Ref. 13) must always be installed or re-installed in the uppermost threaded hole of the gearbox body (Ref. 8). Both the plugs (Ref. 9) and vent plug (Ref. 13) are all interchangeable for gear reduction mounting convenience.
8. Fill the gear case with 90W gear lube. To properly fill, first tighten the bottom drain plug (Ref. 9); second, remove the side level plug (Ref. 9) and the vent plug (Ref. 13). Fill until the gear lube is no higher than the mark on the dipstick.
9. Replace and tighten the side level plug and the top vent plug.

9910-KIT1642 Parts List



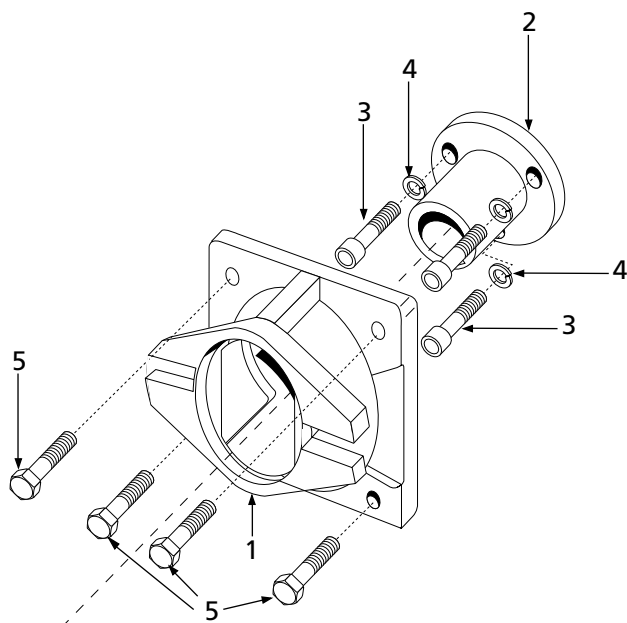
NOTE: When ordering parts, give QUANTITY, PART NUMBER, DESCRIPTION, and COMPLETE MODEL NUMBER. Reference numbers are used ONLY to identify parts in the drawing and are NOT to be used as order numbers.

REF. NO.	QNTY. REQ'D.	PART NO.	DESCRIPTION
1	1	9910-620561	O-Ring
2	1	9910-180030	Bolt
3	1	9910-621000	Pump Adapter Flange
4	1	9910-620990	Bearing
5	1	9910-620980	Gear
6	6	9910-200231	Lock Washer
7	3	9910-160671	Bolt
7	3	9910-620470	Bolt
8	1	9910-620960	Gearbox Body
9	2	9910-880530	Plug
10	2	9910-740290	O-Ring
11	4	9910-540290	Bolt

REF. NO.	QNTY. REQ'D.	PART NO.	DESCRIPTION
12	4	9910-621010	Bolt
13	1	9910-1260480	Vent Plug
14	1	9910-650400	Pinion Gear
15	2	9910-320240	Snap Ring
16	1	9910-961780	Bearing
17	1	9910-961790	Snap Ring
18	1	9910-961800	Seal
19	4	9910-651000	Bolt
20	4	9910-961900	Bolt
21	1	9910-1320940	Engine Adapter Flange
22	4	9910-961770	Spacer
23	1	9910-650990	Key
24	1	9910-620950	Gasket

9910-HYD5312 Flange Kit Parts List

NOTE: When ordering parts, give QUANTITY, PART NUMBER, DESCRIPTION, and COMPLETE MODEL NUMBER. Reference numbers are used ONLY to identify parts in the drawing and are NOT to be used as order numbers.



Hydraulic Motor Mounting Flange Kit

Ref. No.	Qty. Req'd.	Part Number	Description
1	1	9910-6211	Flange
2	1	9910-6682	Shaft Coupling, 1" hollow
3	3	9910-160671	Bolt
3	3	9910-620470	Bolt
4	3	9910-200231	Washer
5	4	9910-160670	Bolt

Pump Operation Instructions

1. Be sure the oil is halfway up the clear oil sight tube. If necessary, fill to the correct level with Hypro Oil (Part Number 2160-0038). Hypro Oil is a specially formulated, high-grade, nondetergent, SAE 30 weight oil designed to prolong pump life.
2. Make sure the suction hose barb is tightly screwed onto the suction union, and that there are no air leaks on the inlet side of the pump.
3. Check the charge pressure on the pulsation dampener before starting the pump. The pressure is checked with a standard automotive air gauge. The pressure should be at approximately 20% of your operating spray pressure.
4. The relief valve bypass port should be connected back to the liquid tank unrestricted. Do not hook the bypass line back to the inlet port or inlet hose.
5. Always allow the pump to start under low pressure by putting the pressure release lever in the pump position.
6. Start the pump and run for approximately one minute at low pressure. Stop the pump and check the oil level in sight glass. Oil should be halfway up the sight glass. Add Hypro Oil (Part Number 2160-0038) if necessary.
7. Return the pressure release lever to the pressure position and adjust the pump to the desired pressure by changing the relief valve setting on the control unit, relief valve, or unloader.

Troubleshooting

SYMPTOM	PROBABLE CAUSE(S)	CORRECTIVE ACTION
The pump does not draw water.	One or more valves are seating improperly. Suction line is plugged or collapsed. Clogged strainer.	Remove valve and check for debris. Examine suction line. Clean strainer.
The liquid flow is irregular.	The charge in the pulsation damper is incorrect. One or more valves are seating improperly.	Check pressure in pulsation damper (approximately 20% working pressure). Remove valve and check for debris. Examine the valve seatings and clean them.
Output drops and the pump is noisy.	Oil level is too low.	Add oil to correct level (halfway up the sight tube).
Oil comes out of the discharge port or oil is a milky color.	One or more diaphragms split.	Remove manifold and heads. Drain oil and clean crankcase of water. Replace diaphragms heads and manifold. Refill with Hypro Oil (Part No. 2160-0038) .

Maintenance Instructions For All Models

1. After usage, flush the pump with clean water.
2. Hypro diaphragm pumps come with oil in the crankcase.



Hypro recommends changing oil after 40 hours of break-in operation and every three months or 500 hours, whichever comes first. Use Hypro Oil (Part Number 2160-0038). Hypro Oil is a specially formulated, high-grade, nondetergent, SAE 30 weight oil designed to prolong pump life.

To drain oil from the pump, remove the cap from the oil sight tube, turn the pump upside down and rotate the shaft until oil stops flowing out. On D813 & D1064 (Ref.42), the drain plug can be removed and the shaft rotated until oil stops flowing out. To fill the pump with oil, slowly pour oil into sight tube while turning the pump shaft. Turning the pump shaft purges all the air out of the crankcase. Always change oil when replacing diaphragms.

3. For winter storage or if a freezing condition will be encountered, flush pump with a 50/50 mixture of water and antifreeze.

Diaphragm and Valve Replacement for All Models

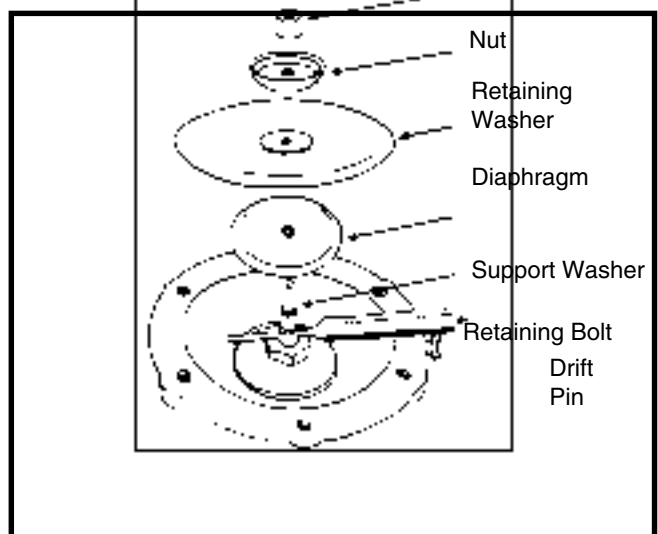
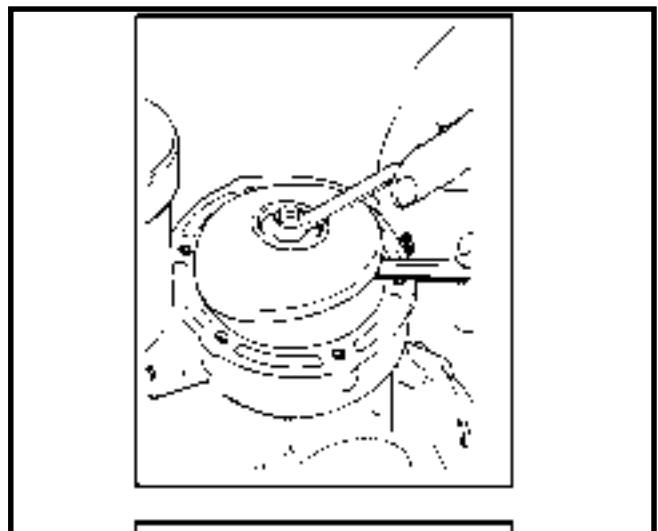
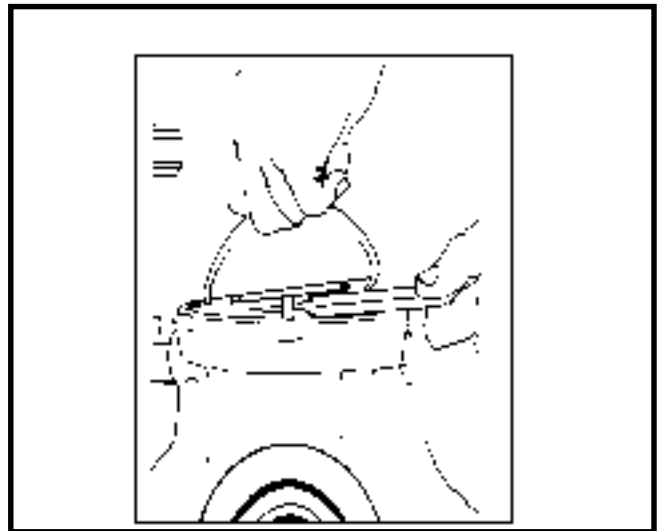
I. Valve and O-Ring Replacement

1. Occasionally debris can cause the valves to not seat properly or damage the o-rings. To check for this problem, follow these steps.
2. Remove valve retainers and valve holders. With holders removed, the valves can readily be removed and checked for debris or wear. Check o-rings as well. See the Parts List for appropriate valve and o-ring kits.
3. Replace the necessary parts and reassemble.

II. Diaphragm Replacement

Change diaphragms every 500 hours or three months, whichever comes first.

1. Drain the oil from the pump by removing the cap from oil sight tube and removing the oil drain plug. Rotate the shaft to remove excess oil.
2. Remove the head bolts and heads.
3. Turn the crankshaft to bring the retaining bolt as far out as possible.
4. Use a 13 mm box wrench to remove the diaphragm retaining bolt. Remove the bolt, retaining washer and diaphragm.
5. When reinstalling, turn the crankshaft to bring the piston to its downstroke and seat the new diaphragm into the sleeve groove. Install the retaining washer and tighten the bolt. Clean any excess oil from the area. Install the new port o-rings. Install the heads and tighten the bolts.
6. Replace the pulsation dampener diaphragm by first bleeding the air from the dampener. Remove the cover holding the dampener assembly together, then replace the diaphragm.
7. Refill the crankcase with **Hypro Oil (Part Number 2160-0038)**. Rotate the shaft to distribute the oil and fill to the proper level.



Performance Charts

Model 9910-D813

	350 RPM		400 RPM		450 RPM		500 RPM		550 RPM	
PSI	GPM	HP	GPM	HP	GPM	HP	GPM	HP	GPM	HP
0	14.7	2.2	17.0	2.5	18.2	2.9	19.7	3.5	20.8	3.6
435	13.5	4.1	15.5	4.6	17.3	5.3	19.0	5.9	19.6	6.3
580	13.4	5.3	15.2	6.0	17.1	6.8	18.3	7.6	19.2	8.1
725	13.3	6.4	14.9	7.4	16.9	8.4	17.8	9.3	18.7	9.9

	350 RPM		400 RPM		450 RPM		500 RPM		550 RPM	
BAR	L/min	HP	L/min	HP	L/min	HP	L/min	HP	L/min	HP
0	55.6	2.2	64.3	2.5	68.7	2.9	74.6	3.5	78.6	3.6
30	51.1	4.1	58.7	4.6	65.5	5.3	71.9	5.9	74.2	6.3
40	50.8	5.3	57.7	6.0	64.8	6.8	69.3	7.6	72.6	8.1
50	50.4	6.4	56.5	7.4	63.9	8.4	67.5	9.3	70.8	9.9

Model 9910-D1064

	350 RPM		400 RPM		450 RPM		500 RPM		550 RPM	
PSI	GPM	HP	GPM	HP	GPM	HP	GPM	HP	GPM	HP
0	18.9	2.8	21.5	3.1	24.2	3.9	25.4	4.4	27.9	5.0
435	18.6	4.4	20.7	5.4	23.5	6.7	25.2	7.1	27.6	7.5
580	18.1	5.5	18.7	6.2	21.0	7.8	24.8	8.3	27.2	9.1
725	17.5	8.5	16.3	9.9	18.3	11.1	24.3	12.2	26.7	13.1

	350 RPM		400 RPM		450 RPM		500 RPM		550 RPM	
BAR	L/min	HP	L/min	HP	L/min	HP	L/min	HP	L/min	HP
0	71.6	2.8	81.5	3.1	91.6	3.9	96.1	4.4	105.6	5.0
30	70.3	4.4	78.4	5.4	89.0	6.7	95.2	7.1	104.3	7.5
40	68.4	5.5	70.9	6.2	79.6	7.8	93.7	8.3	103.0	9.1
50	66.2	8.5	61.6	9.9	69.2	11.1	91.9	12.2	101.0	13.1

Model 9910-D1265

	350 RPM		400 RPM		450 RPM		500 RPM		550 RPM	
PSI	GPM	HP	GPM	HP	GPM	HP	GPM	HP	GPM	HP
0	23.8	3.8	26.8	4.5	29.7	5.1	31.9	5.5	33.3	5.8
435	22.4	7.0	25.5	8.0	28.7	9.1	31.4	9.7	32.7	10.2
580	22.2	9.1	25.3	10.4	28.4	11.8	31.1	12.5	32.6	12.8
725	22.1	11.2	25.0	12.3	28.2	14.6	30.8	15.5	31.4	15.6

	350 RPM		400 RPM		450 RPM		500 RPM		550 RPM	
BAR	L/min	HP	L/min	HP	L/min	HP	L/min	HP	L/min	HP
0	90.0	3.8	101.5	4.5	112.6	5.1	120.7	5.5	126.1	5.8
30	84.8	7.0	96.7	8.0	108.5	9.1	118.9	9.7	123.9	10.2
40	84.2	9.1	95.7	10.4	107.5	11.8	117.7	12.5	123.4	12.8
50	83.7	11.2	94.8	12.3	106.8	14.6	116.4	15.5	118.7	15.6

Model 9910-D1516

	350 RPM		400 RPM		450 RPM		500 RPM		550 RPM	
PSI	GPM	HP	GPM	HP	GPM	HP	GPM	HP	GPM	HP
0	27.7	4.5	31.6	5.4	34.9	6.1	36.3	6.7	39.8	7.1
435	26.4	8.2	30.4	9.6	33.9	10.8	35.9	11.5	39.5	12.0
580	26.2	10.5	30.2	12.3	33.7	13.9	35.8	14.7	39.3	15.3
725	26.0	12.9	29.9	15.1	33.5	16.9	35.7	17.9	38.4	18.6

	350 RPM		400 RPM		450 RPM		500 RPM		550 RPM	
BAR	L/min	HP	L/min	HP	L/min	HP	L/min	HP	L/min	HP
0	104.7	4.5	119.7	5.4	132.0	6.1	137.5	6.7	150.6	7.1
30	100.0	8.2	115.2	9.6	128.3	10.8	135.8	11.5	149.4	12.0
40	99.1	10.5	114.2	12.3	127.7	13.9	135.6	14.7	148.6	15.3
50	98.3	12.9	113.2	15.1	126.7	16.9	135.3	17.9	145.3	18.6

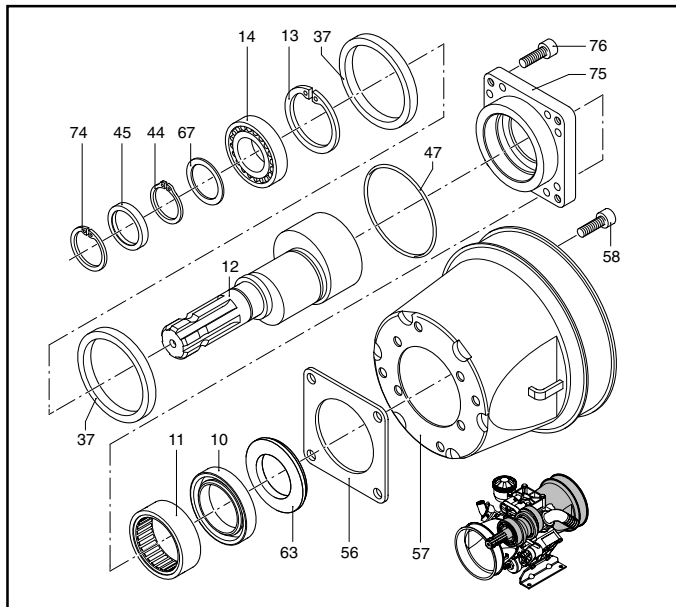
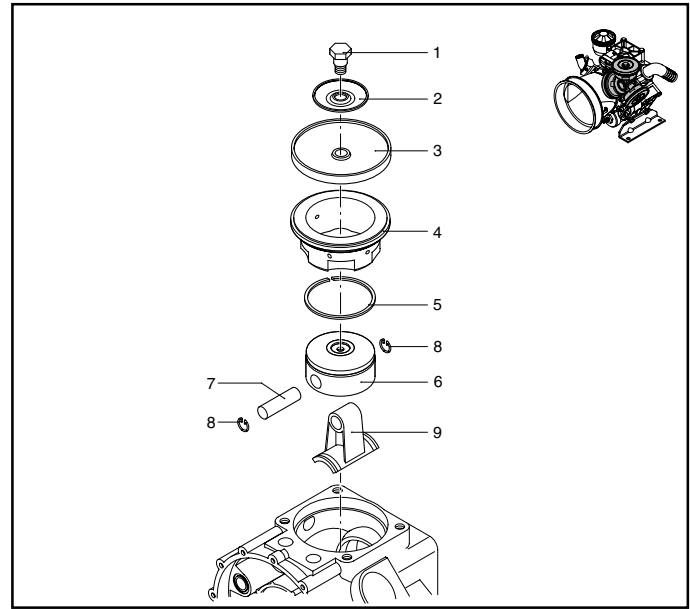
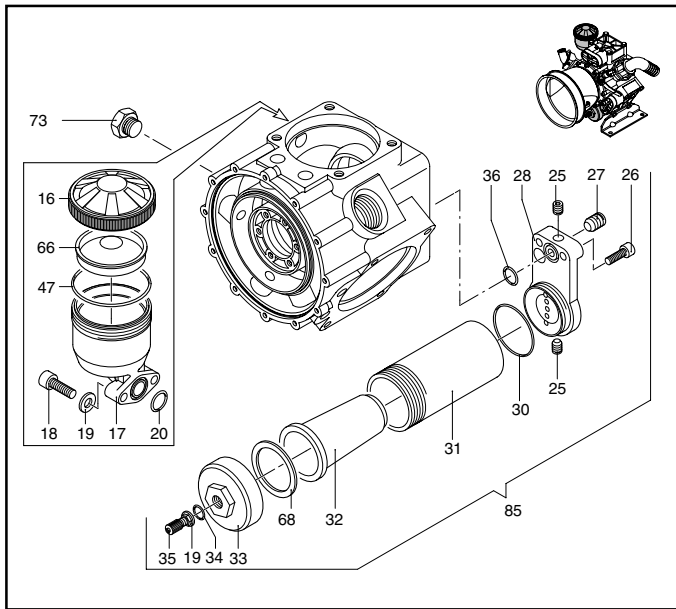
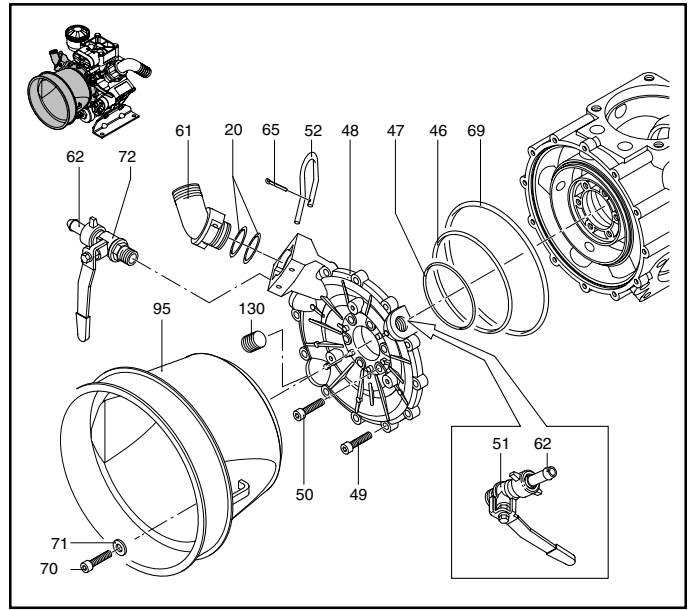
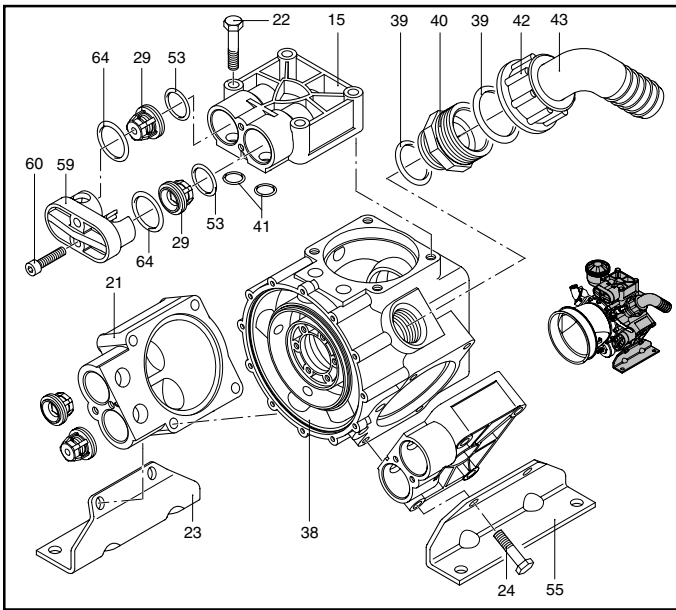
Model 9910-D1554

	450 RPM		550 RPM	
PSI	GPM	HP	GPM	HP
100	40.7	4.5	42.3	5.2
300	40	8.1	41.7	8.5
500	39	15.7	40.6	16.1
725	38.5	19.4	40.1	20.2

	450 RPM		550 RPM	
BAR	L/min	HP	L/min	HP
7	154	4.5	160	5.2
21	151.4	8.1	157.8	8.5
35	147.6	15.7	153.7	16.1
50	145.7	19.4	151.8	20.2

Note: The "HP" shown is electrical horsepower. Consult your gas engine supplier for the engine horsepower required.

Model 9910-D813

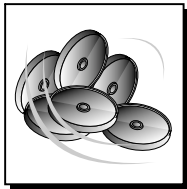


Model 9910-D813 Diaphragm Pump

REF. NO.	PART NUMBER	DESCRIPTION	QTY. REQ'D.
1	9910-580360	Retaining bolt	3
2	9910-1040180	Retaining bolt washer	3
3	9910-1040080	Diaphragm, Desmopan (std)	3
3A	9910-1040081	Diaphragm, Buna-N (opt)	3
4	9910-1500080	Piston sleeve	3
5	9910-650190	Piston ring	3
6	9910-1040120	Piston	3
7	9910-1040070	Connecting pin	3
8	9910-1040270	Snap ring	6
9	9910-1800050	Connecting rod	3
10	9910-1400150	Shaft seal	1
11	9910-650200	Roller bearing	1
12	9910-1800200	Crankshaft	1
13	9910-161050	Retainer ring	1
14	9910-161060	Bearing	1
15	9910-1040551	Head (right)	2
16	9910-1800060	Oil Cap	1
17	9910-680030	Oil reservoir	1
18	9910-680350	Bolt	2
19	9910-380241	Washer	3
20	9910-390180	O-Ring	3
21	9910-1040552	Head (left)	1
22	9910-1480040	Bolt	8
23	9910-1800010	Left base	1
24	9910-750060	Bolt	4
25	9910-1040470	Plug	2
26	9910-320360	Bolt	2
27	9910-1040260	Plug (oil drain)	1
28	9910-1040210	Pulsation damper flange	1
29	9910-1409050	Valve assembly	6
30	9910-540360	O-Ring	1
31	9910-1040220	Pulsation damper body	1
32	9910-1040240	Diaphragm	1
33	9910-1040230	Pulsation damper cap	1
34	9910-650542	O-ring	1
35	9910-550300	Air Valve	1
36	9910-640070	O-Ring	1
37	9910-1040340	Retaining ring	2
38	9910-1800140	Pump Body	1

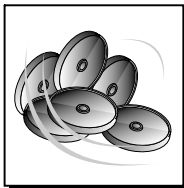
REF. NO.	PART NUMBER	DESCRIPTION	QTY. REQ'D.
39	9910-250310	O-ring	2
40	9910-540530	Threaded adapter	1
41	9910-770571	O-ring	6
42	9910-540540	Hose barb nut	1
43	9910-540550	Hose barb	1
44	9910-1040570	Retainer ring	1
45	9910-1040050	Oil seal	1
46	9910-1800160	O-ring	1
47	9910-1040060	O-ring	3
48	9910-1800150	Manifold	1
49	9910-1040370	Bolt	12
50	9910-780060	Bolt	6
51	9910-130491	Outlet ball valve w/o barb	1
52	9910-1040690	Retainer clip	1
53	9910-620030	O-Ring	6
54	9910-kit1524	Pulsation damper assy	1
55	9910-1800020	Right base	1
56	9910-1400140	Flange	1
57	9910-1500350	Shield	1
58	9910-820670	Bolt	4
59	9910-1300190	Valve retainer	3
60	9910-620610	Bolt	6
61	9910-1040760	Outlet adapter (3/4" NPT)	1
62	9910-110131	Hose barb	2
63	9910-1400110	Flange	1
64	9910-540361	O-ring	6
65	9910-1040950	Cotter pin	1
66	9910-680040	Oil breather cap	1
67	9910-1040850	Washer	1
68	9910-1041140	Dampener washer	1
69	9910-1400120	O-Ring	1
70	9910-1343510	Bolt	3
71	9910-881710	Washer	3
72	9910-130492	Outlet ball valve w/ barb	1
73	9910-1800240	Plug	2
74	9910-1460490	Snap ring	1
75	9910-1800210	Flange	1
76	9910-180030	Bolt	8

Replacement Parts Kits



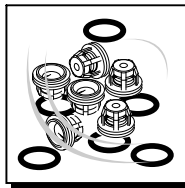
9910-Kit 1886

Desmopan diaphragms	
Ref. No.	Qty.
3	3



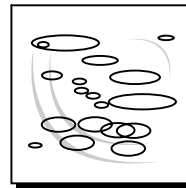
9910-Kit 1952

Buna diaphragms	
Ref. No.	Qty.
3A	3



9910-Kit 1963

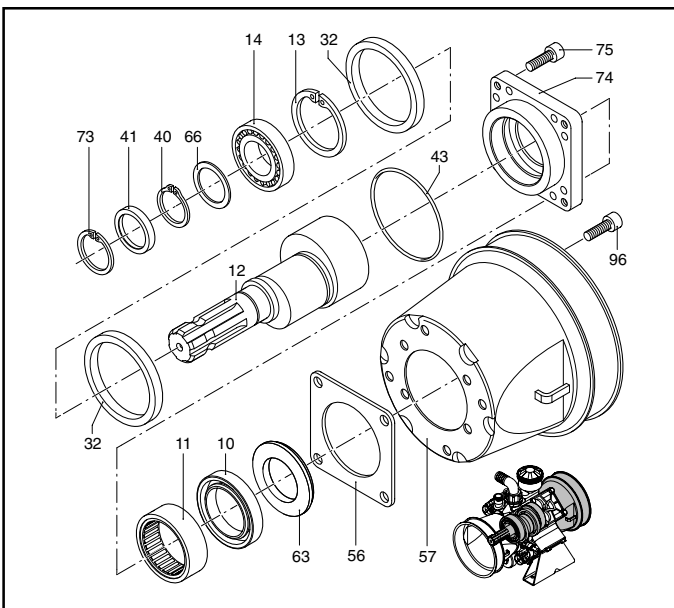
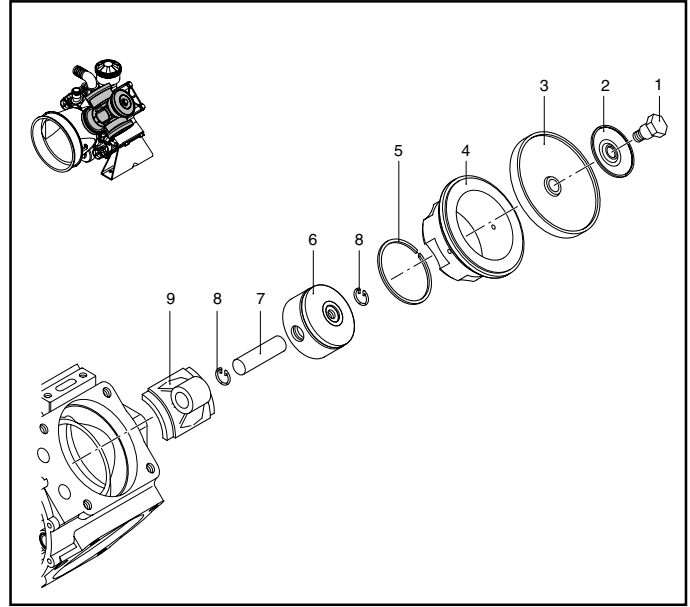
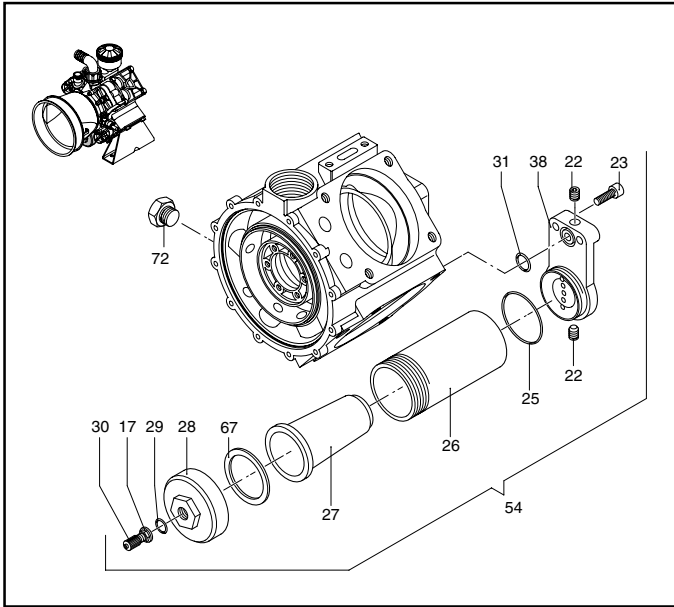
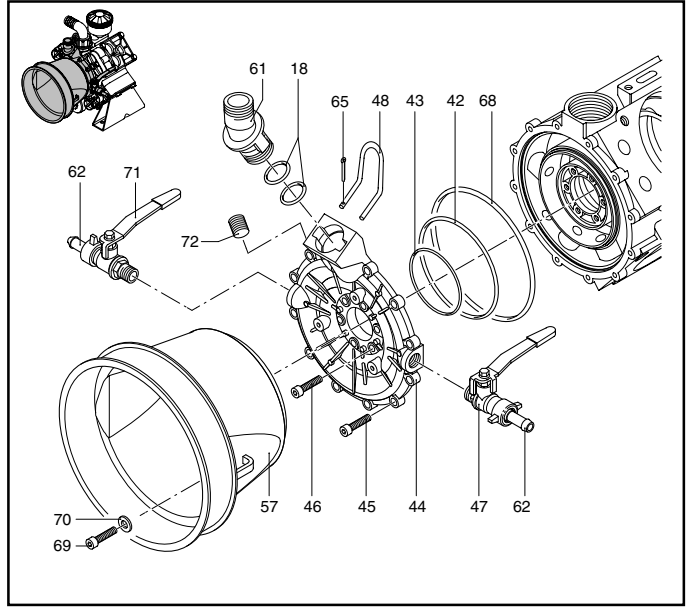
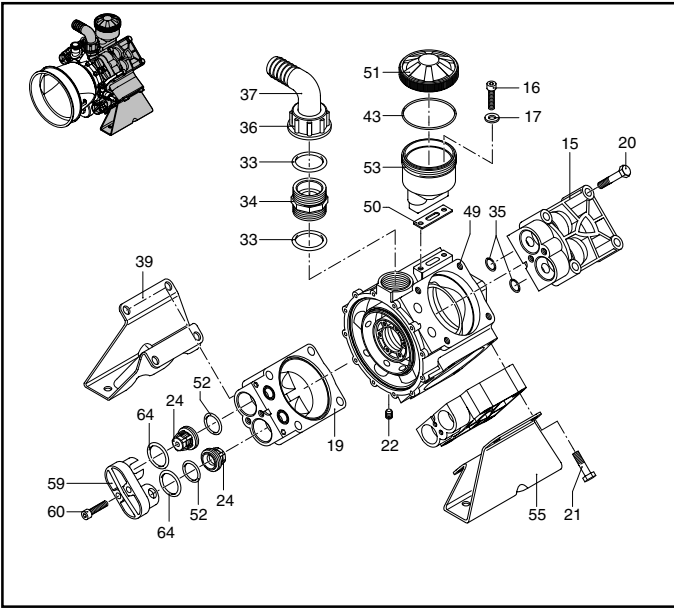
Valves	
Ref. No.	Qty.
29	1
64	6



9910-Kit 2376

O-Rings	
Ref. No.	Qty.
20	3
30	1
36	1
39	2
41	6
46	1
47	3
53	6
64	6
69	1

Model 9910-D1064

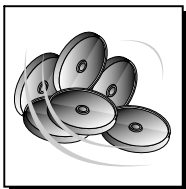


Model 9910-D1064 Diaphragm Pump

REF. NO.	PART NUMBER	DESCRIPTION	QTY. REQ'D.
1	9910-580360	Retaining bolt	4
2	9910-1040180	Retaining bolt washer	4
3	9910-1040080	Diaphragm, Desmopan (std)	4
3A	9910-1040081	Diaphragm, Buna-N (opt)	4
4	9910-1500080	Piston sleeve	4
5	9910-650190	Piston ring	4
6	9910-1040120	Piston	4
7	9910-1040070	Connecting pin	4
8	9910-1040270	Snap ring	8
9	9910-1800050	Connecting rod	4
10	9910-1400150	Shaft seal	1
11	9910-650200	Roller bearing	1
12	9910-1800200	Crankshaft	1
13	9910-161050	Retainer ring	1
14	9910-1800170	Bearing	2
15	9910-1040551	Head (Right)	2
16	9910-680350	Bolt	2
17	9910-380241	Washer	3
18	9910-390180	O-Ring	2
19	9910-1040552	Left head	2
20	9910-1480040	Bolt	8
21	9910-750060	Bolt	8
22	9910-1040470	Plug	3
23	9910-320360	Bolt	2
24	9910-1409050	Valve assembly	8
25	9910-540360	O-ring	1
26	9910-1040220	Pulsation damper body	1
27	9910-1040240	Diaphragm	1
28	9910-1040230	Pulsation damper cap	1
29	9910-650542	O-ring	1
30	9910-550300	Air Valve	1
31	9910-640070	O-Ring	1
32	9910-1040340	Retaining ring	2
33	9910-250310	O-Ring	2
34	9910-540530	Threaded Adapter	1
35	9910-770571	O-Ring	8
36	9910-540540	Hose barb nut	1
37	9910-540550	Hose barb	1
38	9910-1040420	Mount	1

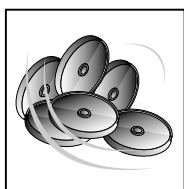
REF. NO.	PART NUMBER	DESCRIPTION	QTY. REQ'D.
39	9910-1040590	Left base	1
40	9910-1040570	Retaining ring	1
41	9910-1040050	Oil seal	1
42	9910-1800160	O-Ring	1
43	9910-1040060	O-Ring	3
44	9910-1800150	Manifold	1
45	9910-1040370	Bolt	12
46	9910-780060	Bolt	6
47	9910-130491	Outlet ball valve w/o barb	1
48	9910-1040690	Retainer clip	1
49	9910-1820040	Pump body	1
50	9910-750040	Gasket	1
51	9910-1800060	Black cap	1
52	9910-620030	O-Ring	8
53	9910-750030	Oil reservoir	1
54	9910-kit1525	Pulsation damper assy	1
55	9910-1040580	Right base	1
56	9910-1400140	Flange	1
57	9910-1500350	Shield	2
58	9910-820670	Bolt	4
59	9910-1300190	Valve retainer	4
60	9910-620610	Bolt	8
61	9910-1040760	Outlet adapter (3/4" NPT)	1
62	9910-110131	Hose barb	2
63	9910-1400110	Flange	1
64	9910-540361	O-Ring	8
65	9910-1040950	Cotter pin	1
66	9910-1040850	Washer	1
67	9910-1041140	Dampener washer	1
68	9910-1400120	O-Ring	1
69	9910-1343510	Bolt	3
70	9910-881710	Washer	3
71	9910-130492	Outlet ball valve w/ barb	1
72	9910-1800240	Plug	2
73	9910-1460490	Snap ring	1
74	9910-1800210	Flange	1
75	9910-180030	Bolt	8

Replacement Parts Kits



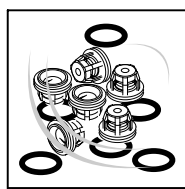
9910-Kit 1886

Desmopan diaphragms	
Ref. No.	Qty.
3	4



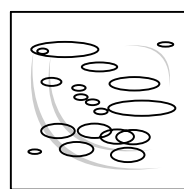
9910-Kit 1953

Buna diaphragms	
Ref. No.	Qty.
3A	4



9910-Kit 1964

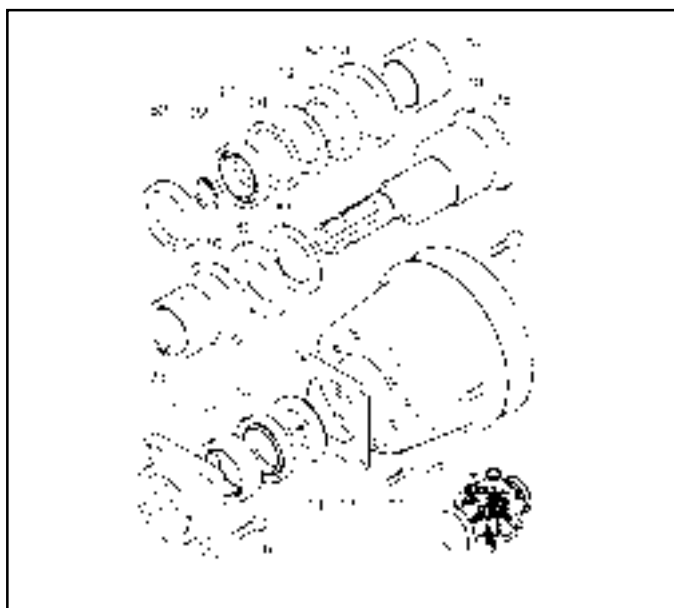
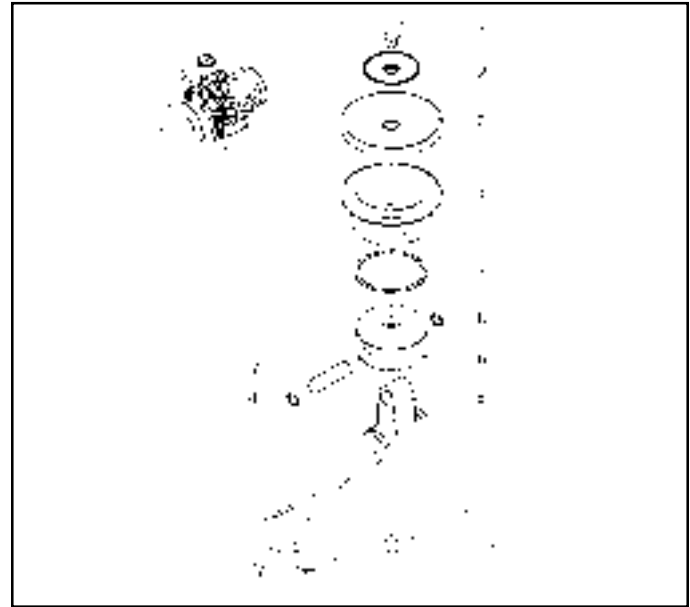
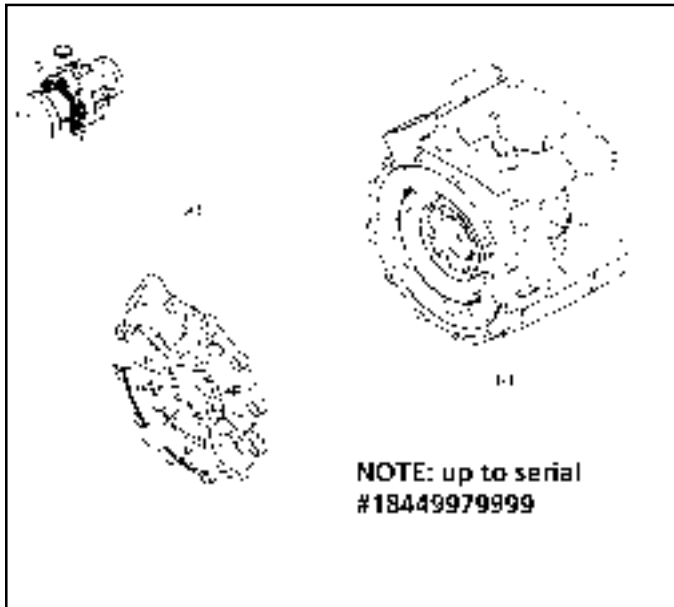
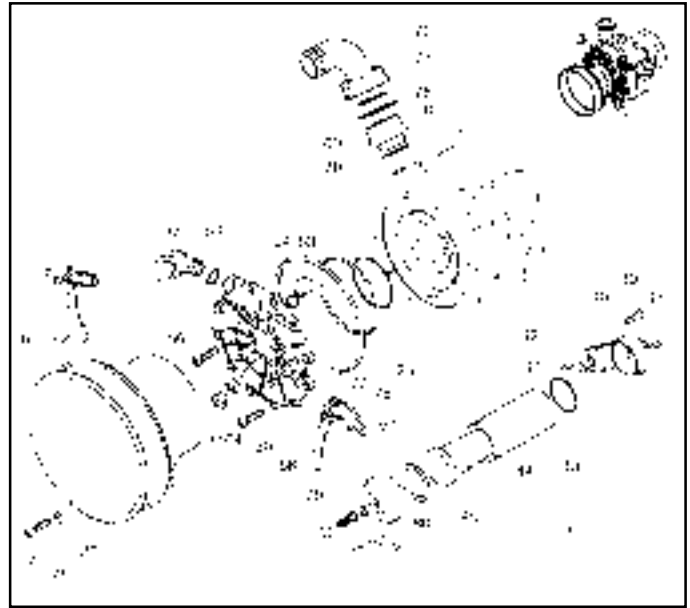
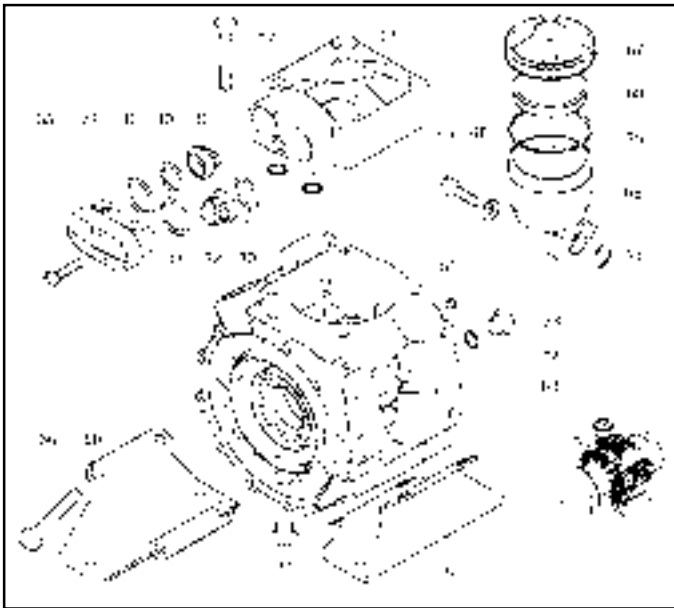
Valves	
Ref. No.	Qty.
24	8
64	8



9910-Kit 2378

O-Rings	
Ref. No.	Qty.
18	2
25	1
31	1
33	2
35	8
42	1
43	3
52	8
64	8
68	1

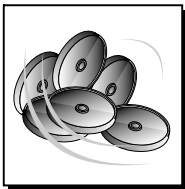
Model 9910-D1265



Model 9910-D1265

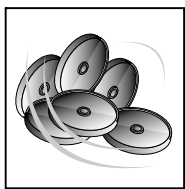
REF. NO.	PART NUMBER	DESCRIPTION	QTY. REQ'D.	REF. NO.	PART NUMBER	DESCRIPTION	QTY. REQ'D.
1	9910-580360	Retaining bolt	5	41	9910-1040470	Plug	2
2	9910-1040180	Diaphragm retainer washer	5	42	9910-640070	O-Ring	1
3	9910-1040080	Diaphragm-Desmopan (Std.)	5	43	9910-540360	O-Ring	1
3A	9910-1040081	Diaphragm-Buna-N (Opt.)	5	44	9910-1040220	Pulsation damper body	1
4	9910-1500080	Piston sleeve	5	45	9910-1040240	Diaphragm	1
5	9910-650190	Piston ring	5	46	9910-1040230	Pulsation damper cap	1
6	9910-1040120	Piston	5	47	9910-650542	O-ring	1
7	9910-1040070	Connecting pin	5	48	9910-380241	Washer	3
8	9910-1040270	Snap ring	10	49	9910-550300	Air valve	1
9	9910-1840110	Connecting rod	5	50	9910-kit1525	Pulsation damper assembly	1
10	9910-1500181	Retaining ring	2	51	9910-770070	Plug	1
11	9910-820670	Bolt	4	52	9910-1040050	Oil seal	1
12	9910-1400140	Flange	1	53	9910-880530	Plug	5
13	9910-1400110	Flange	1	54	9910-390180	O-Ring	2
14	9910-1400150	Seal	1	55	9910-850740	Threaded adapter (outlet)	1
15	9910-650200	Needle bearing	1	56	9910-540290	Bolt	18
16	9910-180030	Bolt	8	57	9910-1343510	Bolt	3
17	9910-1400040	Flange	1	58	9910-1840140	Manifold	1
18	9910-1400320	Crankshaft	1	59	9910-1400050	Right base	1
19	9910-1400090	Spacer	1	60	9910-1400060	Left base	1
20	9910-161050	Retainer ring	1	61	9910-110130	Hose barb 1/2"	2
21	9910-1409010	Bearing	1	62	9910-130491	Outlet ball valve w/o barb	1
22	9910-1040570	Retainer ring	1	63	9910-1840130	Pump body	1
23	9910-1500470	Shield	1	64	9910-740290	O-Ring	3
24	9910-1400030	Flange	1	65	9910-680350	Bolt	2
25	9910-1040060	O-ring	3	66	9910-680030	Oil reservoir	1
26	9910-160740	Seal ring	1	67	9910-1800060	Black cap	1
27	9910-1500290	Bearing	2	68	9910-680040	Oil breather cap	1
28	9910-1500310	Spacer	1	69	9910-540530	Threaded adapter	1
29	9910-1400310	Shaft	1	70	9910-250310	O-Ring	2
30	9910-620030	O-Ring	10	71	9910-540540	Hose barb nut	1
31	9910-1040551	Head-Right (D)	2	72	9910-540550	Hose barb	1
31	9910-1040552	Head-Left (S)	3	73	9910-1500320	Spacer	2
32	9910-1409050	Valve assembly	10	74	9910-1500170	Bearing	2
33	9910-540361	O-ring	10	75	9910-881710	Washer	3
34	9910-1300190	Valve retainer	5	76	9910-851360	O-ring	1
35	9910-620610	Bolt	10	77	9910-1400290	O-ring	1
36	9910-1400260	Bolt	16	78	9910-390210	O-ring	1
37	9910-1500240	Bolt	4	79	9910-130492	Outlet ball valve w/barb	1
38	9910-770571	O-ring	10	80	9910-1041140	Dampener washer	1
39	9910-320360	Bolt	2	81	9910-1500100	Spacer	1
40	9910-1040420	Mount	1	82	9910-1500150	Spacer	2
				83	9910-1400011	Pump body	1
				84	9910-1400280	Manifold	1

Replacement Parts Kits



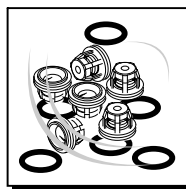
9910-Kit 2100

Desmopan diaphragms	
Ref. No.	Qty.
3	5



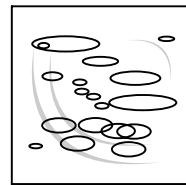
9910-Kit 1953

Buna diaphragms	
Ref. No.	Qty.
3A	5



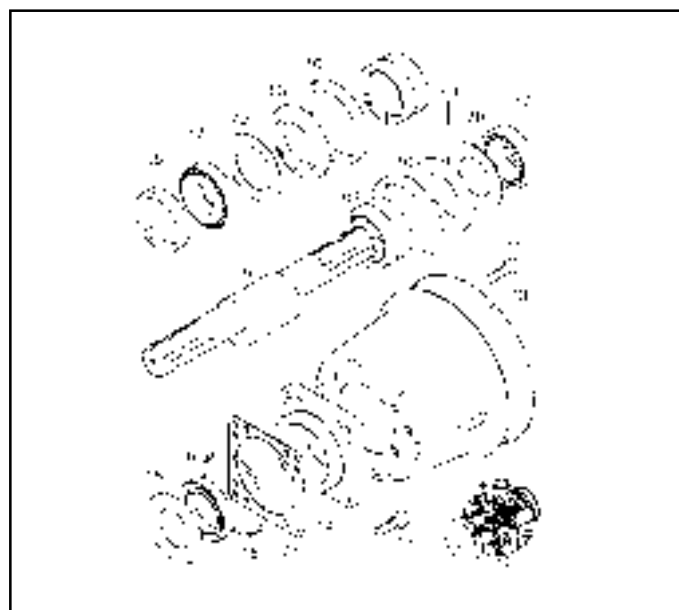
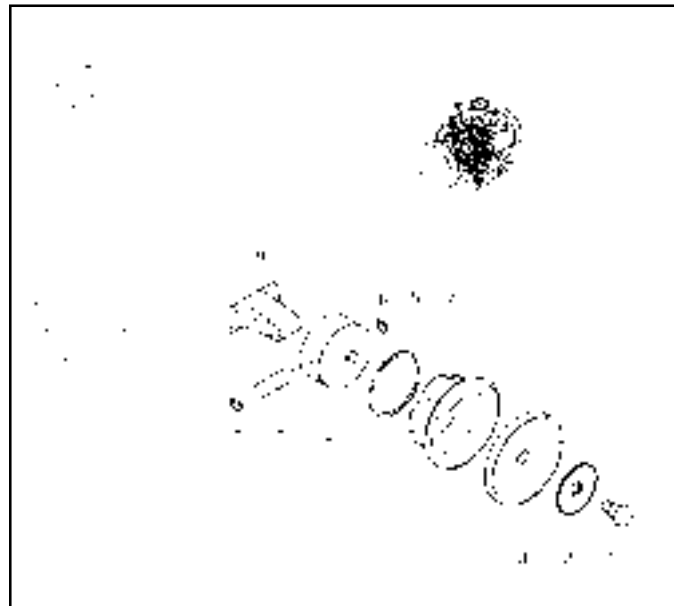
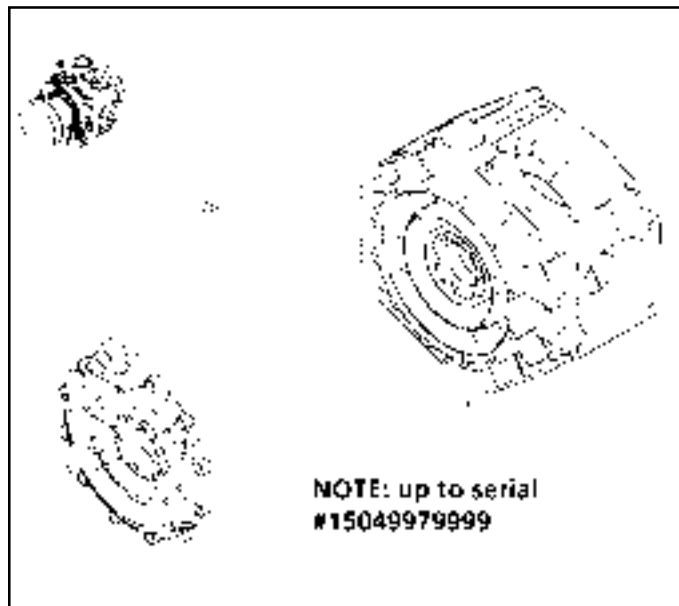
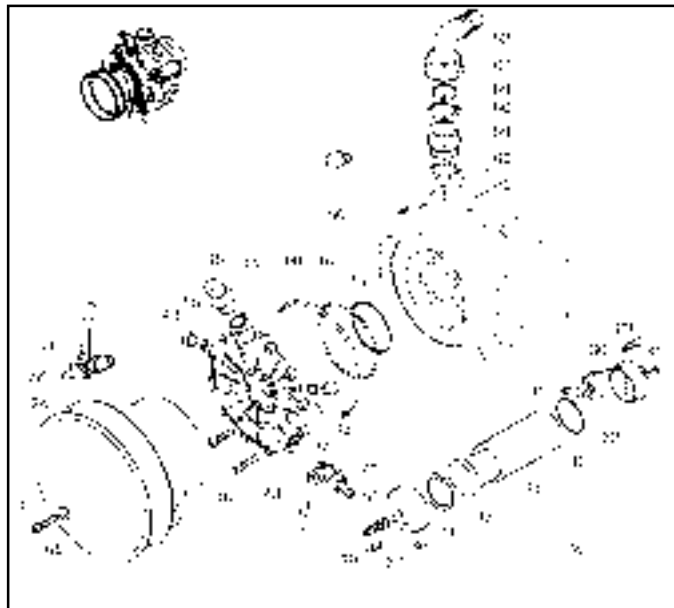
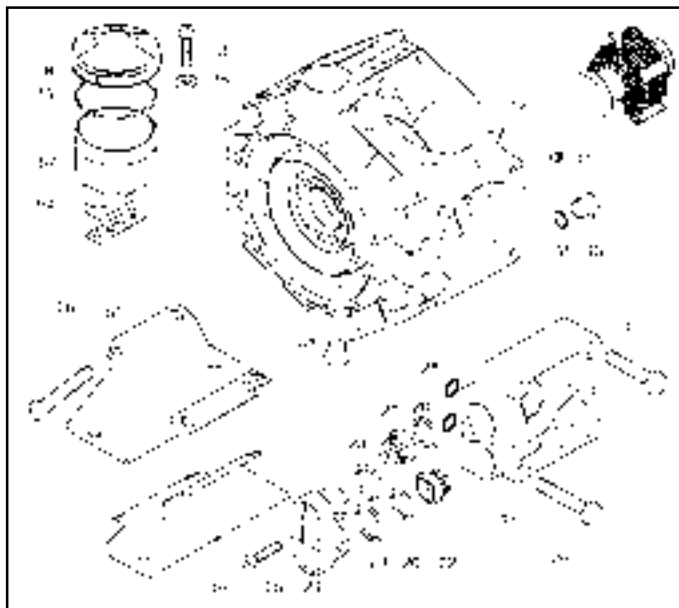
9910-Kit 1964

Valves	
Ref. No.	Qty.
30	10
32	10
33	10



9910-Kit 2378

O-Rings			
Ref. No.	Qty.	Ref.	Qty.
25	2	64	3
30	10	70	2
33	10	76	1
38	10	77	1
42	1	78	1
43	1		
54	3		

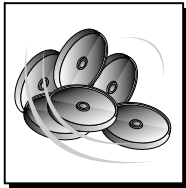


Model 9910-D1516

REF. NO.	PART NUMBER	DESCRIPTION	QTY. REQ'D.
1	9910-580360	Retaining bolt	6
2	9910-1040180	Diaphragm retainer washer	6
3	9910-1040080	Diaphragm, Desmopan (Std.)	6
3A	9910-1040081	Diaphragm, Buna-N (Opt.)	6
4	9910-1500080	Piston sleeve	6
5	9910-650190	Piston Ring	6
6	9910-1040120	Piston	6
7	9910-1040070	Connecting pin	6
8	9910-1040270	Snap ring	12
9	9910-1500160	Connecting Rod	6
10	9910-1500181	Retaining ring	2
11	9910-820670	Bolt	4
12	9910-180030	Bolt	8
13	9910-1500470	Shield	1
14	9910-1400030	Flange	1
15	9910-1040060	O-ring	3
16	9910-160740	Oil seal	1
17	9910-1500290	Bearing	2
18	9910-1500310	Spacer	1
19	9910-1400310	Crankshaft	1
20	9910-620030	O-ring	12
21	9910-1040551	Right Head	3
21	9910-1040552	Left Head	3
22	9910-1409050	Valve assembly	12
23	9910-540361	O-ring	12
24	9910-1300190	Valve retainer	6
25	9910-620610	Bolt	12
26	9910-1500230	Bolt	20
27	9910-1500240	Bolt	4
28	9910-770571	O-ring	12
29	9910-320360	Bolt	2
30	9910-1040420	Mount	1
31	9910-1040470	Plug	2
32	9910-640070	O-ring	1
33	9910-540360	O-ring	1
34	9910-1040220	Damper body	1
35	9910-1040240	Diaphragm	1
36	9910-1040230	Cap	1

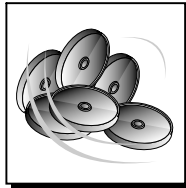
REF. NO.	PART NUMBER	DESCRIPTION	QTY. REQ'D
37	9910-650542	O-ring	1
38	9910-380241	Washer	3
39	9910-550300	Air valve	1
40	9910-kit1525	Pulsation damper assembly	1
41	9910-770070	Plug	1
42	9910-1040050	Oil seal	1
43	9910-880530	Plug	2
44	9910-390180	O-ring	1
45	9910-850740	Threaded adapter	1
46	9910-540290	Bolt	18
47	9910-1343510	Bolt	3
48	9910-1840140	Manifold	1
49	9910-1500040	Right base	1
50	2406-0023	Plug	1
51	9910-1500050	Left base	1
52	9910-110130	Hose barb 1/2"	2
53	9910-130491	Outlet ball valve w/o barb	1
54	9910-1500480	Pump body	1
55	9910-740290	O-ring	3
56	9910-680350	Bolt	2
57	9910-750030	Oil reservoir	1
58	9910-1800060	Black cap	1
59	9910-540530	Threaded adapter	1
60	9910-250310	O-ring	2
61	9910-540540	Hose barb nut	1
62	9910-540550	Hose barb	1
63	9910-1500320	O-ring	2
64	9910-1500170	Bearing	2
65	9910-750040	Gasket	1
66	9910-881710	Washer	3
67	9910-851360	O-ring	1
68	9910-1400290	O-ring	1
69	9910-390210	O-ring	1
70	9910-1400090	Spacer	2
71	9910-1500330	Spacer (0.1 mm)	1
71	9910-1500340	Spacer (0.2 mm)	1
72	9910-130492	Outlet ball valve w/barb	1
73	9910-1041140	Dampener washer	1
74	9910-1500011	Pump Body	1
75	9910-1400280	Manifold	1

Replacement Parts Kits



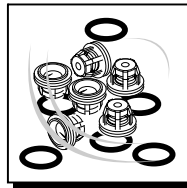
9910-Kit 2113

Desmopan diaphragms	
Ref. No.	Qty.
3	6



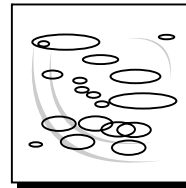
9910-Kit 2052

Buna diaphragms	
Ref. No.	Qty.
3A	6



9910-Kit 2053

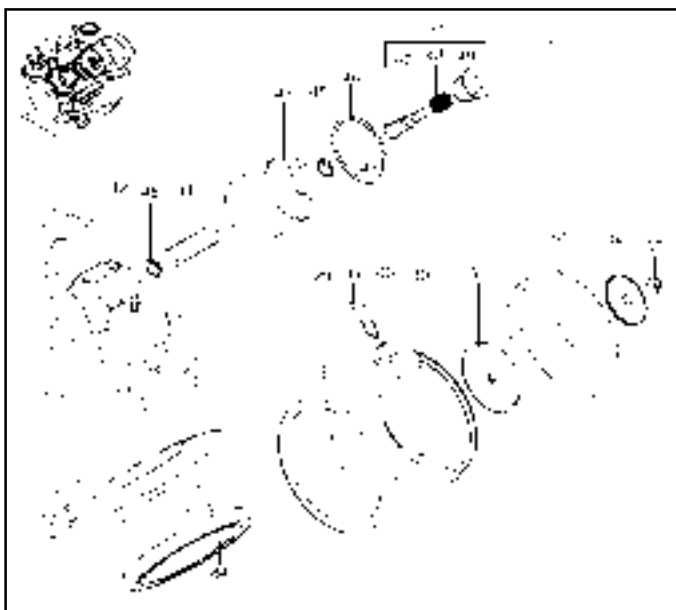
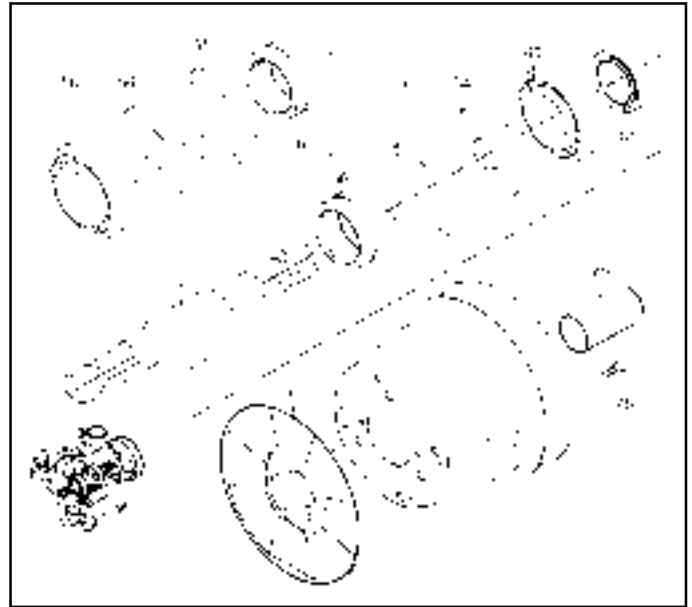
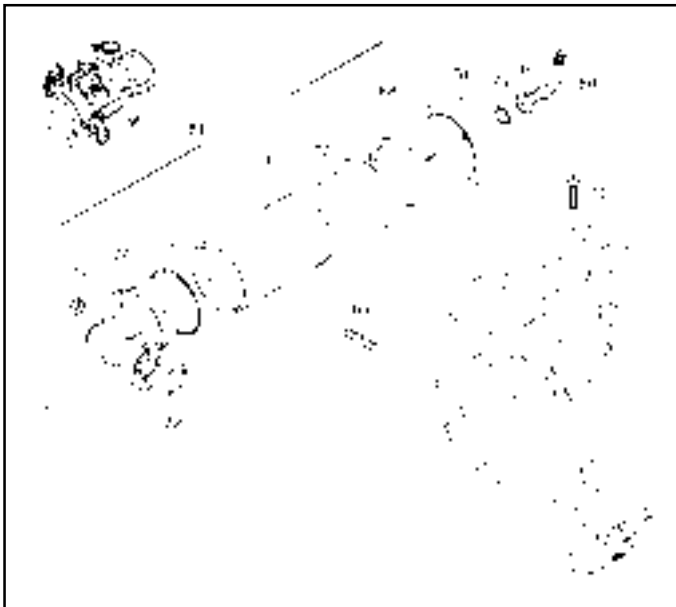
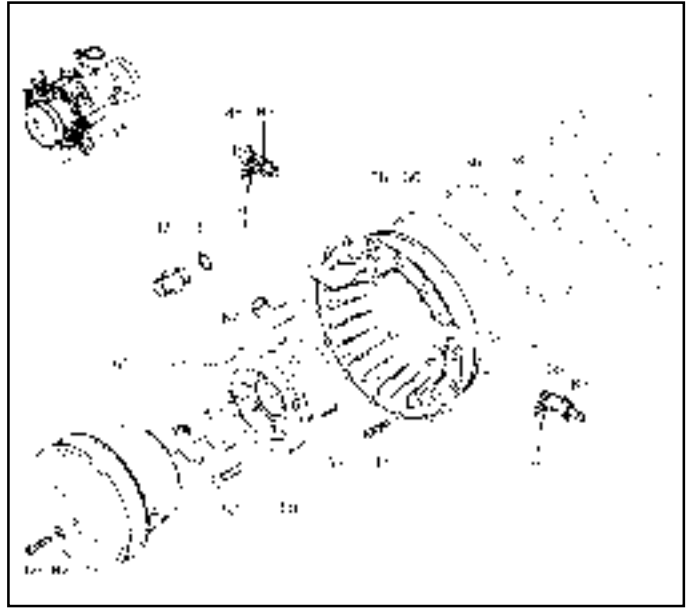
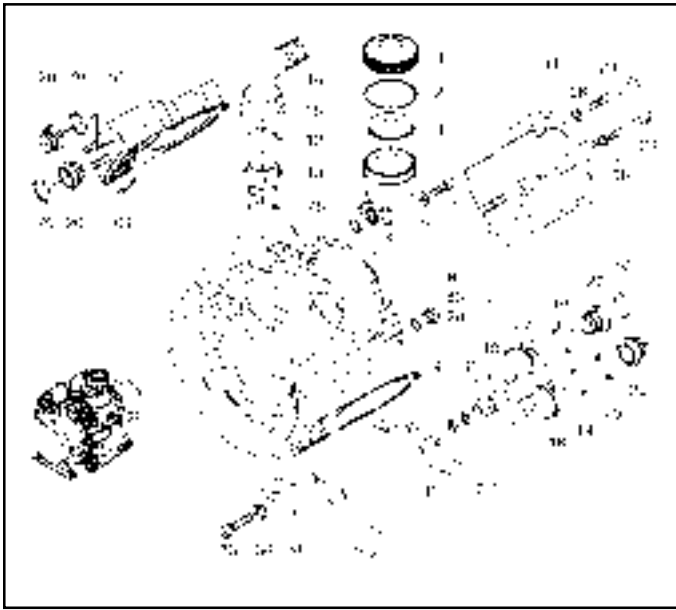
Valves	
Ref. No.	Qty.
20	12
22	12
23	12



9910-Kit 2349

O-Rings			
Ref. No.	Qty.	Ref.	Qty.
15	3	55	3
20	12	60	2
23	12	67	1
28	12	68	1
32	1	69	1
33	1		
44	1		

Model 9910-D1554

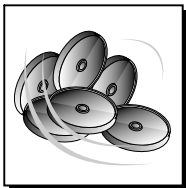


Model 9910-D1554

REF. NO.	PART NUMBER	DESCRIPTION	QTY. REQ'D.
1	9910-750050	Oil Cap	1
2	9910-1040060	O-Ring	1
3	9910-680040	Oil breather cap	1
4	9910-680030	Oil reservoir	1
5	9910-390180	O-Ring	2
6	9910-380241	Washer	3
7	9910-680350	Bolt	2
8	9910-850010	Pump Body	1
9	9910-180150	Nut	8
10	9910-850271	Valve retainer	4
11	9910-850103	Right head	2
12	9910-250310	O-Ring	1
13	9910-391920	Adapter nut	1
14	9910-540550	Hose barb	1
15	9910-540540	Hose barb nut	1
16	9910-850370	Bolt	1
17	9910-850190	Plug	2
18	9910-850161	Valve retainer, suction	4
19	9910-230060	O-Ring	8
20	9910-909050	Valve assembly	8
21	9910-540360	O-Ring	1
22	9910-850104	Left head	2
23	9910-850260	Bolt	12
24	9910-620870	Bolt	20
25	9910-850920	Shaft protector	1
26	9910-850930	Screw	3
27	9910-850910	Protector housing	1
28	9910-880530	Drain plug	1
29	9910-850280	Gasket	4
30	9910-850112	Piston sleeve w/bleed hole	2
31	9910-850200	Base	2
32	9910-250142	Washer	6
33	9910-850330	Bolt	6
34	9910-850300	O-Ring	1
35	9910-160141	Ball valve	1
36	9910-850310	O-Ring	2
37	9910-850740	Threaded adapter	1
38	9910-850150	Manifold	1
39	9910-160740	Oil seal	2
40	9910-230350	Bearing	1
41	9910-320360	Bolt	16
42	9910-850140	Connecting Rod	4
43	9910-850120	Piston	4
44	9910-650071	Connecting pin	4
45	9910-160691	Snap ring	8

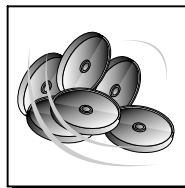
REF. NO.	PART NUMBER	DESCRIPTION	QTY. REQ'D
47	9910-850220	Retaining bolt	4
48	9910-850090	Spring	4
49	9910-850230	Lock nut	4
50	9910-650090	Support washer	4
51	9910-850085	Diaphragm, Desmopan (Std)	4
51	9910-850080	Diaphragm, Buna-N (Opt)	4
52	9910-650390	Diaphragm retainer washer	4
53	9910-160311	Lock nut	4
54	9910-540040	Spacer	2
55	9910-850130	Retaining Ring	2
56	9910-850320	Bearing	2
57	9910-850170	Crankshaft	1
58	9910-160750	Bearing	1
59	9910-850290	O-Ring	1
60	9910-850020	Seal retainer	1
61	9910-200390	Retainer ring	1
62	9910-540310	Bolt	6
63	9910-851280	O-ring	2
64	9910-850030	Gasket	8
65	9910-1500350	Shield	1
66	9910-850250	Bolt	3
67	9910-850181	Valve holder, discharge	4
68	9910-200231	Lock washer	40
69	9910-851250	Stud	2
70	9910-320030	O-Ring	8
71	9910-859080	Retaining bolt, spring, nut assy	4
72	9910-390290	O-Ring	1
73	9910-380240	Nut	2
74	9910-851210	Pulsation damper support	1
75	9910-851270	O-Ring	1
76	9910-851220	Pulsation damper cylinder	1
77	9910-851230	Pulsation damper diaphragm	1
78	9910-851240	Cap	1
79	9910-650542	O-ring	1
80	9910-380440	Air Valve	1
81	9910-kit1526	Pulsation damper body	1
82	9910-390311	Washer	3
83	9910-740290	O-ring	1
84	9910-850110	Piston sleeve w/o bleed hole	2
85	9910-110130	Hose barb 1/2"	2
86	9910-130492	Outlet ball valve w/barb	1
87	9910-851650	Elbow	1
88	9910-851610	Washer	1

Replacement Parts Kits



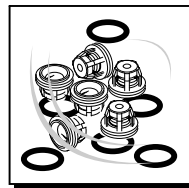
9910-Kit 1734

Desmopan diaphragms	
Ref. No.	Qty.
51	4



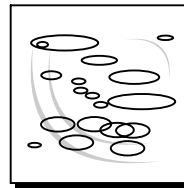
9910-Kit 1943

Buna diaphragms	
Ref. No.	Qty.
51	4



9910-Kit 1965

Valves	
Ref. No.	Qty.
19	8
70	8



9910-Kit 1972

O-Rings			
Ref. No.	Qty.	Ref.	Qty.
2	1	36	2
5	2	59	1
12	1	64	8
19	8	70	8
21	1	72	1
29	4	75	1
34	1	83	1

Limited Warranty on Hypro Diaphragm Pumps

Hypro Corporation ("Hypro") warrants to the original purchaser of its products (the "Purchaser") that such products will be free from defects in material and workmanship under normal use for the period of one (1) year for all products except: oil crankcase plunger pumps will be free from defects in material and workmanship under normal use for the period of five (5) years, and accessories will be free from defects in material and workmanship under normal use for the period of ninety (90) days. In addition, Hypro warrants to the purchaser all forged brass pump manifolds will be free from defects in material and workmanship under normal use and from damage resulting from environmental conditions for the life of the pump.

"Normal use" does not include use in excess of recommended maximum speeds, pressures, vacuums and temperatures, or use requiring handling of fluids not compatible with component materials, as noted in Hypro product catalogs, technical literature, and instructions. This warranty does not cover freight damage, freezing damage, normal wear and tear, or damage caused by misapplication, fault, negligence, alterations, or repair that affects the performance or reliability of the product.

THIS WARRANTY IS EXCLUSIVE. HYPRO MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Hypro's obligation under this warranty is, at Hypro's option, to either repair or replace the product upon return of the entire product to the Hypro factory in accordance with the return procedures set forth below. **THIS IS THE EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.**

IN NO EVENT SHALL HYPRO BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, WHETHER FOR BREACH OF ANY WARRANTY, FOR NEGLIGENCE, ON THE BASIS OF STRICT LIABILITY, OR OTHERWISE.

Return Procedures

All pumps or products **must be flushed of any chemical (ref. OSHA Section 0910.1200 (d)(e)(f)(g)(h)) and hazardous chemicals must be labeled before being shipped* to Hypro for service or warranty consideration.** Hypro reserves the right to request a Material Safety Data sheet from the Purchaser for any pump or product Hypro deems necessary. Hypro reserves the right to "disposition as scrap" pumps or products returned which contain unknown substances, or to charge for any and all costs incurred for chemical testing and proper disposal of components containing unknown substances. Hypro requests this in order to protect the environment and personnel from the hazards of handling unknown substances.

For technical or application assistance, call the **Hypro Technical/Application number: 1-800-445-8360.**

To obtain service or warranty assistance, call the Hypro Service and Warranty number: 1-800-468-3428; or call the Hypro Service and Warranty FAX: (651) 766-6618.

Be prepared to give Hypro full details of the problem, including the following information:

1. Model number and the date and from whom you purchased your pump.
2. A brief description of the pump problem, including the following:
 - Liquid pumped. State the pH and any non-soluble materials, and give the generic or trade name.
 - Temperature of the liquid and ambient environment.
 - Suction lift or vacuum (measured at the pump).
 - Discharge pressure.
 - Size, type, and mesh of the suction strainer.
 - Drive type (gas engine/electric motor; direct/belt drive; tractor PTO) and rpm of pump.
 - Viscosity (of oil, or other than water weight liquid).
 - Elevation from the pump to the discharge point.
 - Size and material of suction and discharge line.
 - Type of spray gun, orifice size, unloader/relief valve.

Hypro may request additional information, and may require a sketch to illustrate the problem.

Contact the factory to receive a return material authorization before sending the product. All pumps returned for warranty work should be sent shipping charges prepaid to:

HYPRO CORPORATION
Attention: Service Department
375 Fifth Avenue NW
New Brighton, Minnesota 55112-3288

*Carriers, including U.S.P.S., airlines, UPS, ground freight, etc., require specific identification of any hazardous materials being shipped. Failure to do so may result in a substantial fine and/or prison term. Check with your shipping company for specific instructions.