

**Parts List &
Operating Instructions for:**

**PG1200M-4
PG1200M-4D**

GAS HYDRAULIC PUMP

Max. Capacity: 10,000 PSI

NOTE:

- Read and carefully follow these instructions. Most problems with new equipment are caused by improper operation or installation.

SAFETY PRECAUTIONS



WARNING: To help avoid personal injury,

Hydraulic Hose

- Before operating the pump, all hose connections must be tightened using the proper tools. Do not overtighten. Connections should only be tightened securely and leak-free. Overtightening can cause premature thread failure or high pressure fittings to split at pressures lower than their rated capacities.
- Always shut off the electric motor before breaking any connection in the system.
- Should a hydraulic hose ever rupture, burst, or need to be disconnected, immediately shut off the pump. Never attempt to grasp a leaking pressurized hose with your hands. The force of escaping hydraulic fluid could cause serious injury.
- Do not subject the hose to potential hazard such as fire, sharp surfaces, extreme heat or cold, or heavy impact. Do not let the hose kink, twist, curl or bend so tightly that oil flow within the hose is blocked or reduced. Periodically inspect the hose for wear, because any of these conditions can damage the hose.
- Do not use the hose to move attached equipment. Stress can damage the hose, causing personal injury.
- Hose material and coupler seals must be compatible with the hydraulic fluid used. Hoses also must not come in contact with corrosive materials such as creosote-impregnated objects and some paints. Consult the manufacturer before painting a hose. Never paint the couplers. Hose deterioration due to corrosive materials can result in personal injury.

Pump

- Do not exceed the PSI hydraulic pressure rating noted on the pump nameplate or tamper with the internal high pressure relief valve. Creating pressure beyond the rated capacity can result in personal injury.
- Before replenishing the oil level, retract the system to prevent overfilling the pump reservoir. An overfill can cause personal injury due to excess reservoir pressure created when cylinders are retracted.

Cylinders

- Do not exceed the rated capacities of the cylinders. Excess pressure can result in personal injury.
- Do not set poorly balanced or off-center loads on a cylinder. The load can tip and cause personal injury.

Power Supply (Gasoline Engine)

- Read the instruction manual for the gasoline engine before using.
- Do not allow fuel to splash on the engine when refueling.
- Do not add fuel when the engine is running or very hot.

SET-UP

Gasoline Engine

Refer to the instruction manual on the gasoline engine.

Hydraulic Connections

1. Clean all the areas around the oil ports of the pump and cylinders.
2. Inspect all threads and fittings for signs of wear or damage, and replace as needed.
3. Clean all hose ends, couplers or unions.
4. Remove the thread protectors from the hydraulic oil outlets. Connect the hose assembly to the hydraulic oil outlet, and couple the hose to the cylinder. Although a high-grade, non-hardening thread sealant is preferred, teflon tape can be used if only one layer of tape is used. Apply carefully to prevent the tape from being pinched by the coupler and broken off inside the pipe end. Any loose pieces of tape could travel through the system and obstruct the flow of oil.

Filling the Reservoir

NOTE: The pump has been shipped without oil in the reservoir. High-grade hydraulic oil has been shipped with the pump in a separate container. If additional oil is required, use Power Team hydraulic fluids only.

1. Clean the area around the filler cap to remove all dust and grit. Any dirt or dust in the oil can damage the polished surfaces and precision-fit components of this pump.
2. Retract all cylinders to the return position.
3. Remove the filler cap, and insert a clean funnel and filter. Fill with hydraulic oil to 1/2" from the top of the filler hole. Replace filler cap with the breather-hole in the filler cap open.
4. Cycle the pump (with cylinders attached) several times. Retract the cylinders, and check the oil level in the pump reservoir again.

OPERATION

Priming the Pump

When operating the pump for the first time:

1. Valve and hose connections must be tight, and the reservoir must be filled to the proper level. Start the motor.
2. Jog the pump several times to build pressure. If the pump doesn't build pressure, it may not be primed. Disconnect a hose from the system and route it back to the pump reservoir. Run the pump until a steady flow of oil is observed free of suspended air bubbles. Reconnect the hose to the system.
3. Run cylinder out to its full travel several times to eliminate air from the system. For more complete instructions, refer to the section titled "Bleeding Air from the System."
4. The pump is ready to be put into regular operation.

IMPORTANT: After eliminating trapped air from a large work-holding system, retract the cylinders and refill the pump reservoir to 1/2" from the top of the filler hole.

Adjusting the Pressure Regulating Valve

The pressure regulating valve can be adjusted to bypass oil at a given pressure setting while the pump continues to run.

NOTE: For easy adjustment of the pressure regulating valve, always adjust the pressure by *increasing* to the desired pressure setting.

1. Loosen the locknut on the pressure regulating valve (B), and back the adjusting screw (A) out a few turns with a screwdriver by turning in a counterclockwise direction. This will *decrease* the setting to a lower than desired pressure.
2. The pump must be completely connected. Set the motor control toggle switch to "Run" and push the "Start" button.
3. With the screwdriver, slowly turn the adjusting screw (A) in a clockwise direction. This gradually *increases* the pressure setting. When the desired pressure is reached, lock the adjusting screw in position by tightening the locknut.

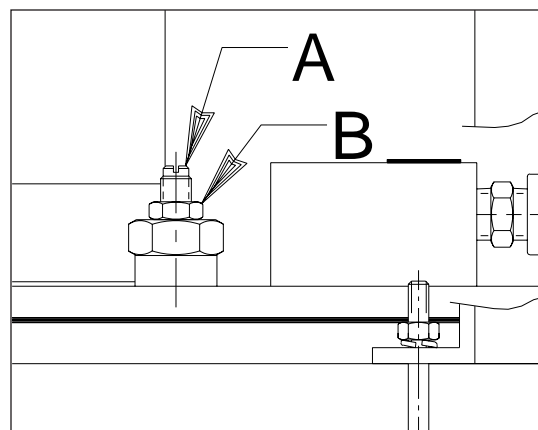


Figure 1

PREVENTIVE MAINTENANCE



WARNING: To help avoid personal injury,

- Repairs and maintenance are to be performed in a dust-free area by a qualified technician.

Bleeding Air from the System

Upon initial start up or after prolonged use, air can accumulate within the hydraulic system. This entrapped air can cause the system to respond slowly or behave in an unstable manner. To remove the air, loosen a fitting that is situated higher than the rest of the fittings in the system. Run the pump until a steady flow of oil free of suspended air bubbles is observed. Tighten the fitting.

Inspecting the Hydraulic Fluid Level

Check the oil level in the reservoir periodically. The oil level should be 1/2" from the top of the filler hole with all cylinders retracted. Drain, clean and replenish the reservoir with Power Team hydraulic fluid yearly or more often if necessary. The frequency of oil change will depend upon the general working conditions, severity of use and overall cleanliness and care given the pump.

Maintenance Cleaning

1. Keep the outer surface of the pump as free from dirt as possible.
2. Protect all unused couplers.
3. Keep all hose connections free of dirt and grime.
4. Keep the filler/vent cap clean and unobstructed at all times.
5. Equipment connected to the pump must be kept clean.
6. Use only Power Team hydraulic fluids in this pump. Change as recommended.

Draining and Cleaning the Reservoir

IMPORTANT: Clean the pump exterior before the pump interior is removed from the reservoir.

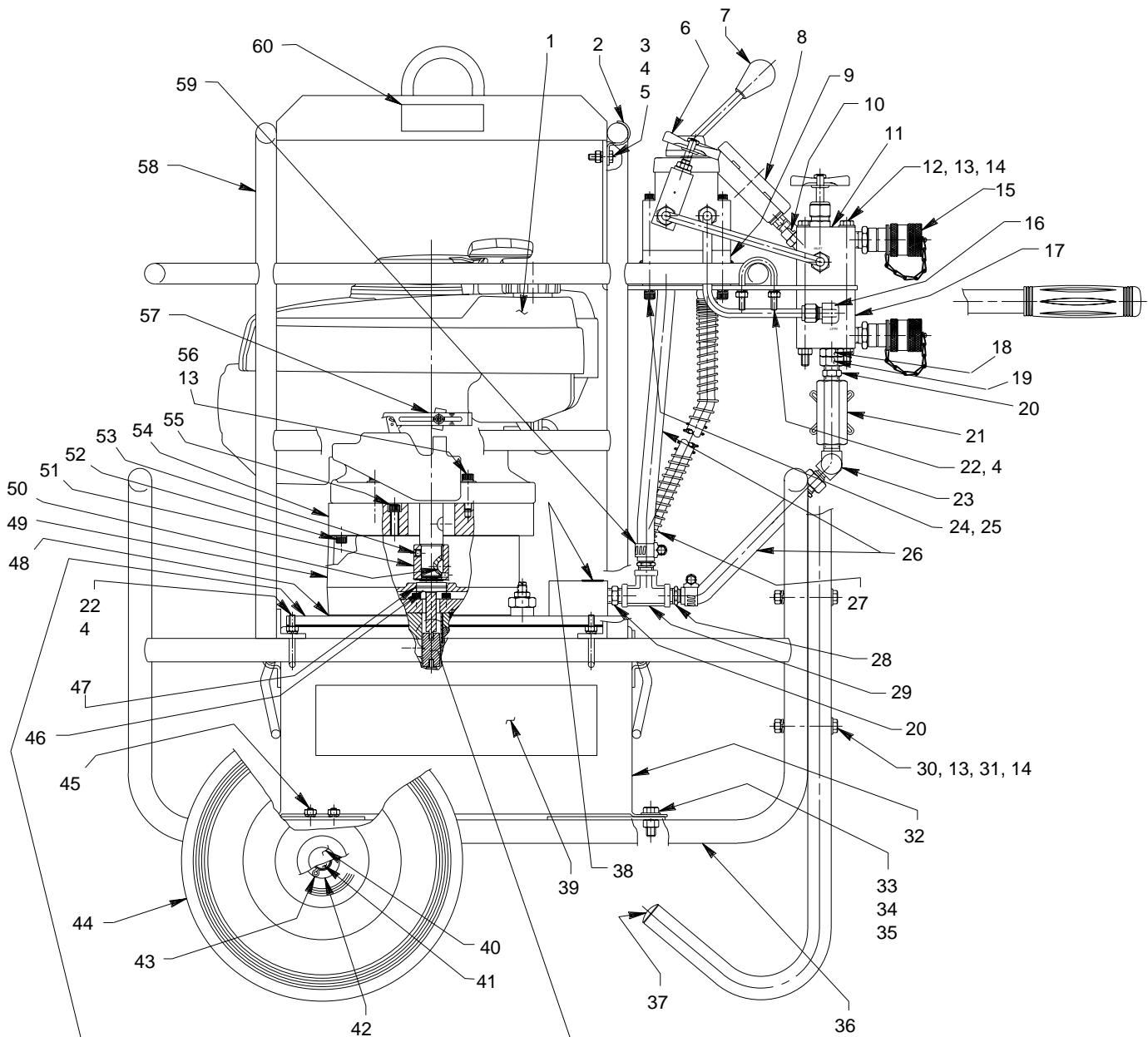
1. Remove the ten screws that fasten the motor and pump assembly to the reservoir. **IMPORTANT: Lift the pump and motor off the reservoir carefully to avoid damaging the gasket or any internal components.**
2. Clean the inside of the reservoir and fill half full with clean Power Team hydraulic fluid.
3. Place the pump and motor assembly back onto the reservoir and secure with two machine screws assembled on opposite corners of the housing. **IMPORTANT: Connect a hose to the pressure port on the valve. Place the other end of the hose into the oil filler plug hole.**
4. Run the pump for several minutes. Then disconnect the motor and pump assembly, and drain and clean the inside of the reservoir.
5. Fill the reservoir with Power Team hydraulic fluid. Place the pump and motor assembly (with gasket) on the reservoir and install all the screws. Tighten securely and evenly.

Adding Oil to the Reservoir

1. Cylinder(s) must be fully retracted and the gas engine off when adding oil to the reservoir.
2. Clean the entire area around the filler/vent cap before removing the filler/vent cap.
3. Use a clean funnel with filter when adding oil.
4. Use only Power Team hydraulic fluids.

To Parts
List

SIDE VIEW



Basic Pump Assembly
See back pg. 4 of 7

(Distance between bottom of
shaft adapter [Item #51] and
bottom of slot in nylon coupler
[Item #19 on sheet 6 of 7])

Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	420202	1	Gasoline Engine (Honda 5.5 H.P.)	27	307968	1	Hydraulic Hose (1/4 I.D. x 2 ft. lg.)
2	250369	2	Conduit Clamp (3/4)	28	250370	2	Barbed Hose Fitting (3/8 NPTF; for PG1200M-4)
3	10009	2	Hex Cap Screw (1/4-20 UNC x 3/4 Lg.)		250370	4	Barbed Hose Fitting (3/8 NPTF; for PG1200M-4D)
4	10245	18	Lockwasher (1/4 I.D.)	29	214488	1	Tee Fitting (for PG1200M-4D)
5	10199	2	Hex Nut (1/4-20 UNC)	30	10039	4	Hex Hd. Cap Screw (5/16-18 UNC x 2-1/2 Lg.)
6	46647	1	Restrictor Valve (See form #100666)	31	10246	4	Lockwasher (5/16 I.D.)
7	52515	1	Valve Assembly (3 position/3-way; for PG1200M-4; see forms #100627 & #102527)	32	40137OR9	1	Reservoir (5 gal.)
	52516	1	Valve Assembly (3 position/4-way; for PG1200M-4D; see forms #100628 & 102527)	33	10049	4	Hex Hd. Cap Screw (3/8-16 UNC x 1" Lg.)
8	9052	1	Pressure Gauge (Liquid filled - 10,000 PSI)	34	10258	4	Washer
9	46244	1	Subplate (See form #102529)	35	10204	4	Hex Nut (3/8-16 UNC)
10	12740	1	Straight Fitting	36	60855BK2	1	Frame
11	420076	1	Remote Metering Valve (See form #101206)	37	10432	6	Snap Plug
12	10041	4	Hex Hd. Cap Screw (5/16-18 UNC x 2-3/4 Lg.; for PG1200M-4)	38	211167	1	Decal (For manifold)
	250382	4	Hex Hd. Cap Screw (5/16-18 UNC x 6" Lg.; for PG1200M-4D)	39	309221	2	Trade Name Decal
13	10257	10	Flat Washer (5/16 I.D.)	40	206737	2	Hub Cap
14	10201	8	Hex Nut (5/16-18 UNC)	41	307004	1	Axle (3/4" dia.)
15	9796	4	Quick Disconnect Coupler (for PG1200M-4)	42	12330	6	Plain Washer (3/4 I.D.; NOTE: Use one washer on each side of wheel (both sides) & use remaining two washers to take up any excessive movement of wheels.)
	9796	8	Quick Disconnect Coupler (for PG1200M-4D)	43	10573	2	Cotter Pin (1/8 x 1-1/4 Lg.)
16	10666	1	90° Elbow Fitting (for PG1200M-4D)	44	212876	2	Wheel (12" dia.)
17	58055	1	Metering Valve Body (for PG1200M-4D)	45	206270	2	U-bolt with Nut (1/4)
18	11946	3	O-ring Boss Plug (3/4-16 UNF; for PG1200M-4D)	46	10439	1	Radial Ball Bearing
19	205956	1	Straight Fitting (for PG1200M-4D)	47	15124	1	O-ring (1-3/8 x 1-1/4 x 1/16, -026)
20	10673	2	Straight Hex Nipple Fitting (for PG1200M-4D)	48	40987	1	Gasket
21	9575	1	Manual Directional Control Valve (for PG1200M-4D)	49	*50384WH2	1	Motor Base
22	209355	6	U-bolt with Nut	50	10945	1	Woodruff Key (No. 6)
23	10648	1	45° Swivel Elbow Fitting (for PG1200M-4)	51	420052	1	Shaft Extension
	10648	2	45° Swivel Elbow Fitting (for PG1200M-4D)	52	*251566	1	Cap Screw (5/16-24 UNF x 2" Lg.)
24	10008	4	Soc. Hd. Cap Screw (1/4-20 UNC x 3/4 Lg.)	53	10556	1	Hex Soc. Hd. Set Screw (1/4-20 UNC x 1/4 Lg.)
25	12719	4	Plain Washer (1/4 I.D.)	54	*420200	1	Gas Engine Mounting Plate
26	250380	1	Hydraulic Hose (1/2 I.D. x 1-1/2 ft. lg.; for PG1200M-4)	55	250427	4	Soc. Hd. Cap Screw (5/16-18 UNC x 1/2 Lg.)
	250380	2	Hydraulic Hose (1/2 I.D. x 1-1/2 ft. lg.; for PG1200M-4D)	56	10948	2	Soc. Hd. Cap Screw (5/16-18 UNC x 1-1/2 Lg.)
				57	17596	1	Slide Control
				58	46456BK2	1	Roll Cage Frame
				60	202173	2	Decal
				59	12367	2	Hose Clamp
				PARTS INCLUDED BUT NOT SHOWN			
				10474	1	90° Elbow Fitting (for PG1200M-4)	

***Note: If replacing any of these parts on a pump manufactured before 7-1-94, order motor base replacement kit no. 251571.**

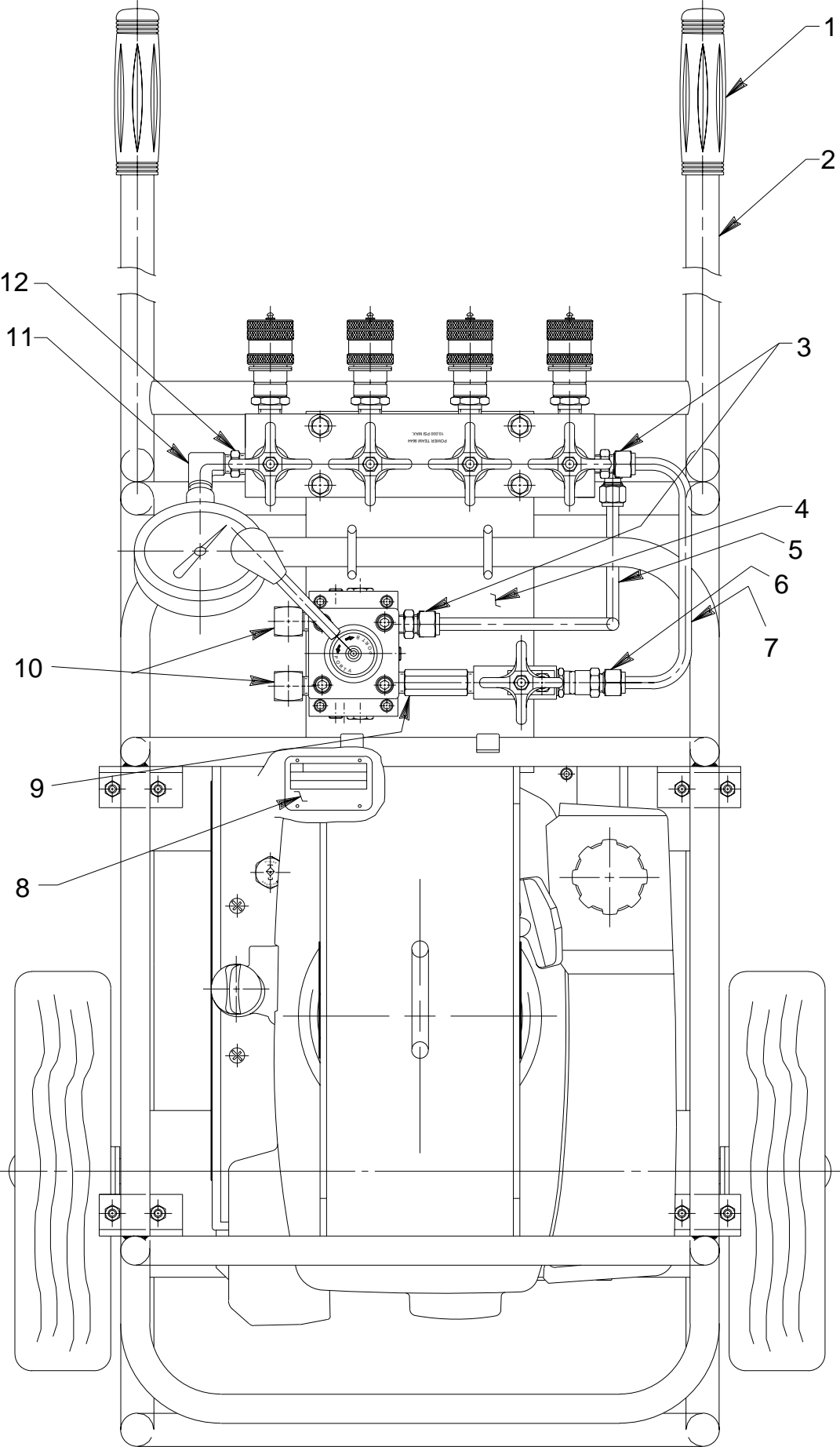


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TOP VIEW

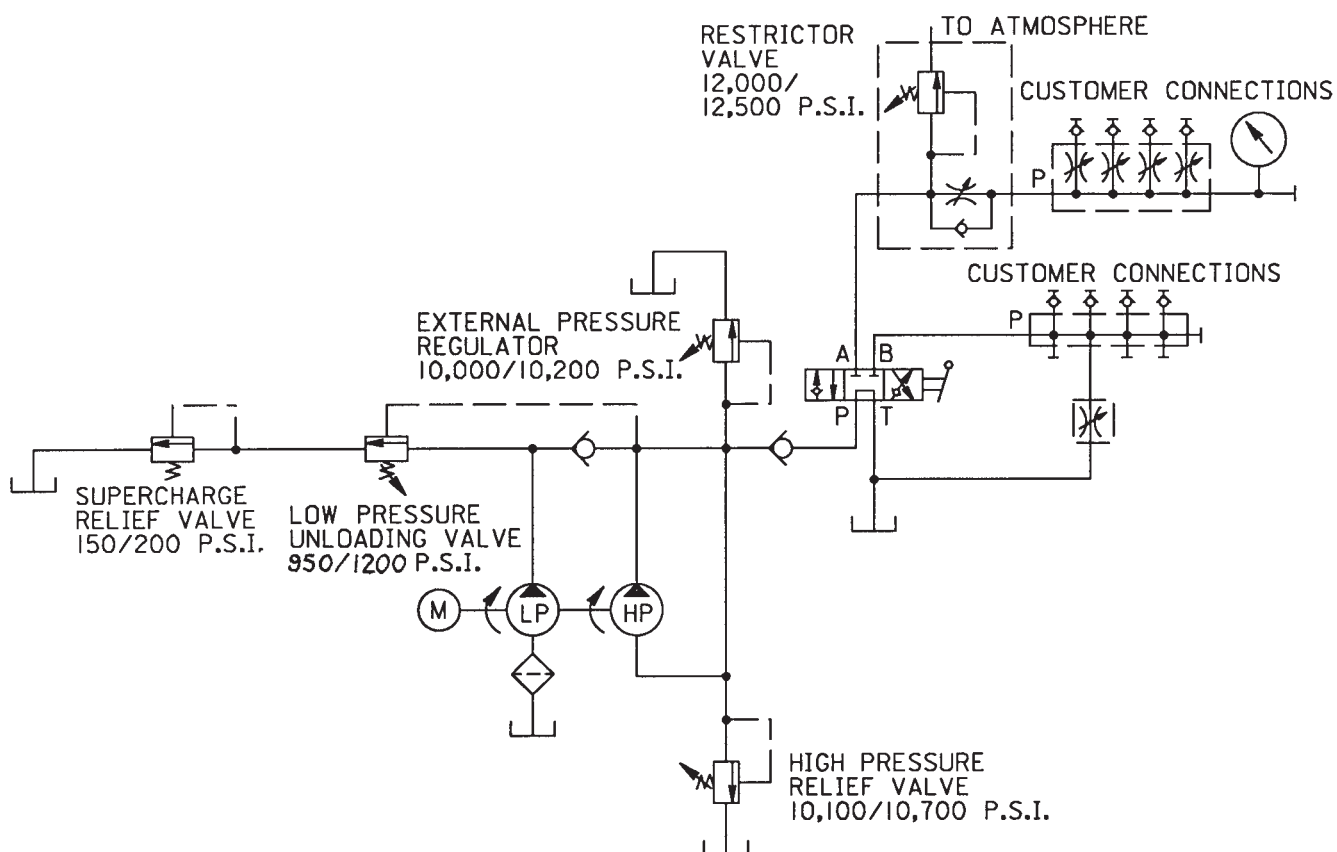
To Parts
List



Item No.	Part No.	No. Req'd	Description
1	206731	2	Rubber Grip
2	46455BK2	1	Handle
3	10662	1	Straight Fitting (For PG1200M-4)
	10662	2	Straight Fitting (For PG1200M-4D)
4	58122BK2	1	Mounting Bracket
5	350234	1	Oil Line Tube (For PG1200M-4D)
6	10660	1	Straight Fitting
7	350233	1	Oil Line Tube
8	202120	1	Name Plate
9	9683	1	Straight Hex Nipple Fitting
10	10474	2	90° Elbow Fitting
11	250381	1	90° Elbow Fitting
12	10676	1	Straight Fitting

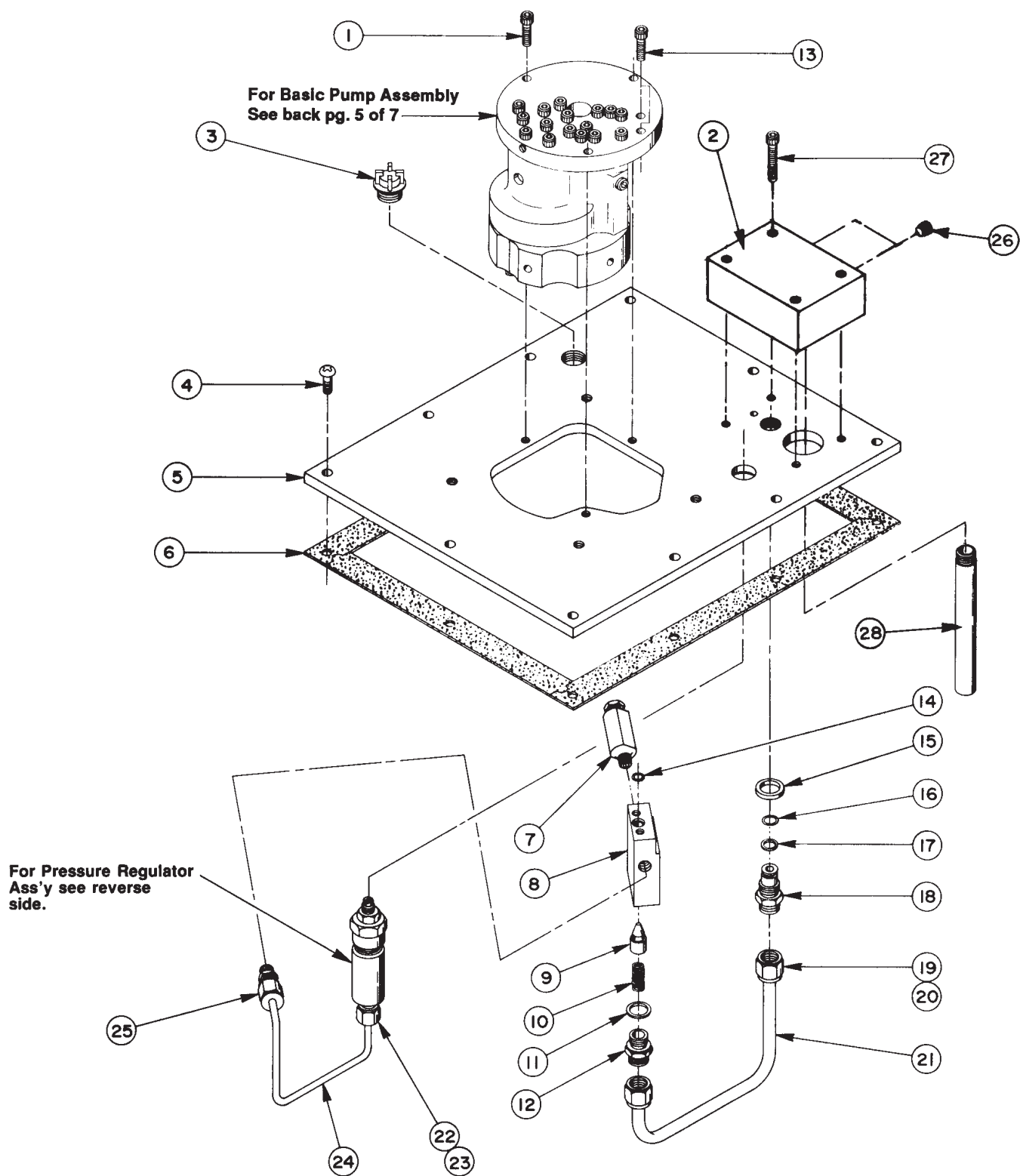
To
Drawing

HYDRAULIC SCHEMATIC



GENERAL PUMP ASSEMBLY

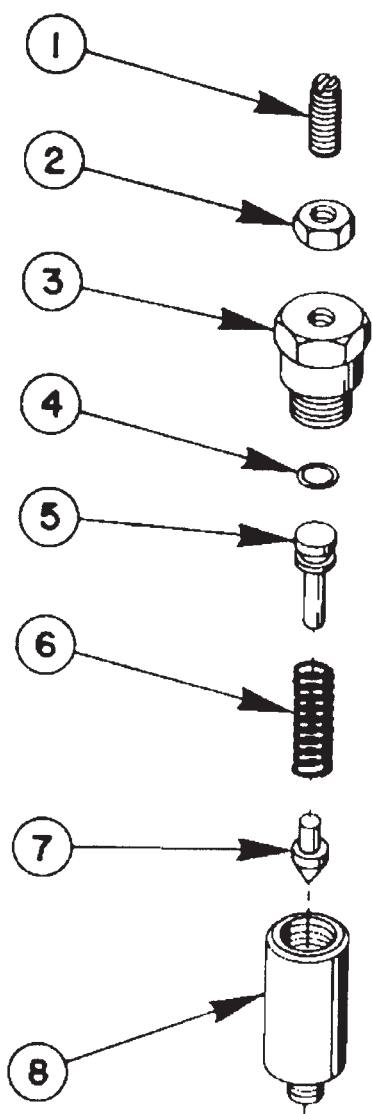
To Parts
List



Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	10016	3	Soc. Hd. Cap Screw (1/4-20 UNC x 1" Lg.)	14	10266	1	O-ring (1/4 x 3/8 x 1/16, -010)
2	45911	1	Manifold Body	15	21484	1	Spacer
3	20937	1	Filler Plug	16	10268	1	O-ring (-012)
4	10177	10	Machine Screw (1/4-20 UNC x 3/4 Lg.)	17	11863	1	Teflon Backup Washer (-012)
5	50058WH2	1	Cover	18	20787	1	Valve Connector
6	58506	1	Gasket	19	10430	2	Tube Sleeve
7	21278	1	Relief Valve Assembly (Set at 10,100/10,700 PSI)	20	10431	2	Tube Nut
8	20776	1	Valve Body	21	21495	1	Oil Line Tube
9	20771	1	Poppet	22	11342	1	Tube Nut
10	10425	1	Compression Spring (3/8 O.D. x 3/4 Lg.)	23	11174	1	Tube Sleeve
11	10261	1	Copper Washer	24	22399	1	External Pressure Regulator Tube
12	20770	1	Connector (Torque to 40/45 in. lbs.)	25	11173	1	Straight Fitting
13	10015	2	Soc. Hd. Cap Screw (1/4-28 UNF x 1" Lg.; Torque to 180 in. lbs.)	26	10479	2	Pipe Plug
				27	10022	4	Soc. Hd. Cap Screw (1/4-20 UNC x 1-1/2 Lg.)
				28	200609	1	Drain Tube



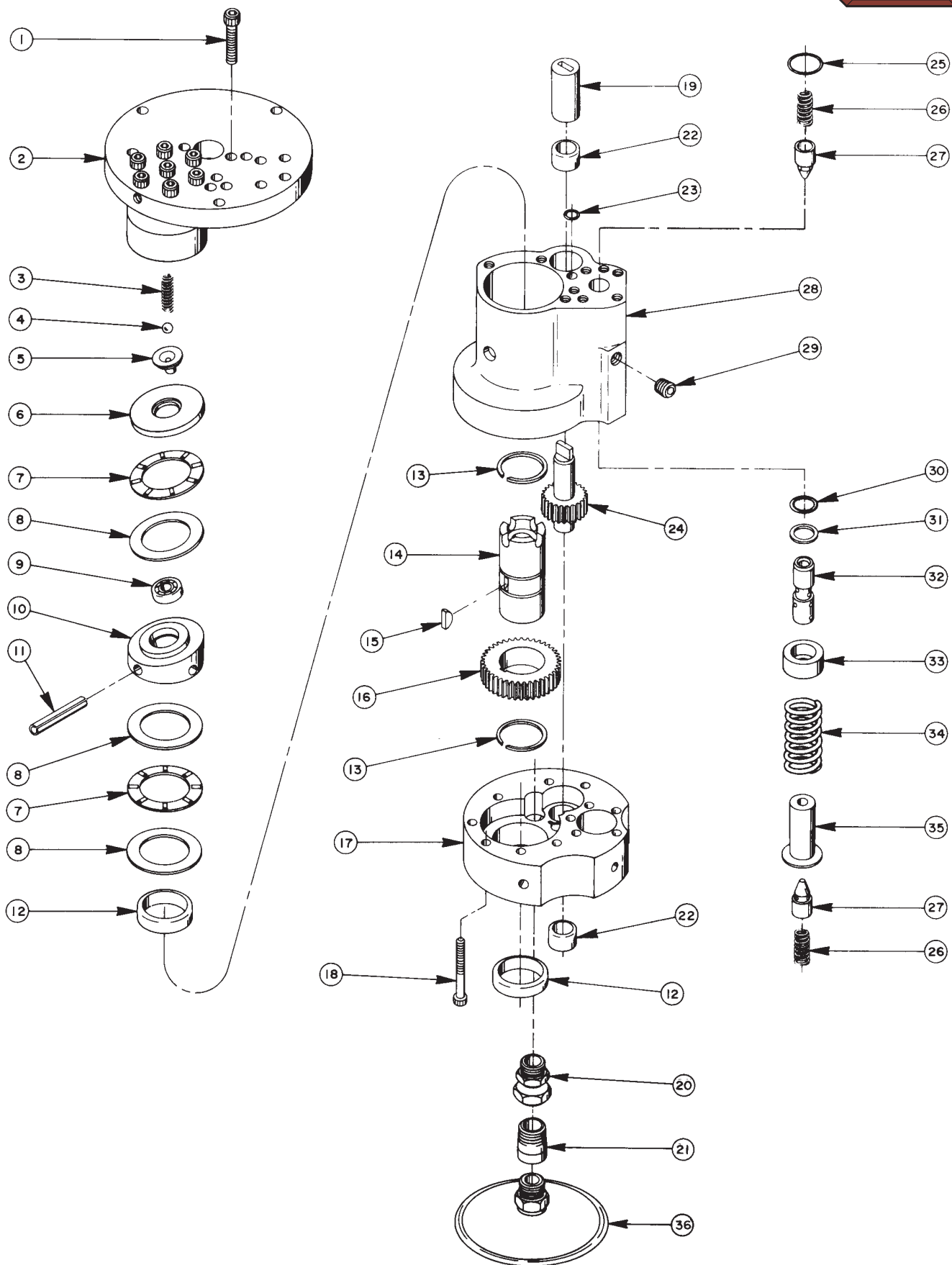
PRESSURE REGULATOR ASSEMBLY



Item No.	Part No.	No. Req'd	Description
1	22362	1	Adjusting Screw (Set at 10,000/10,200 PSI)
2	10386	1	Hex Nut (3/8-24 UNF)
3	21305	1	Valve Cap
4	10268	1	O-ring (-012)
5	21306	1	Spring Guide
6	10495	1	Compression Spring (.45 x 1-5/8 Lg.)
7	21046	1	Valve Stem
8	22361	1	Body

BASIC PUMP ASSEMBLY

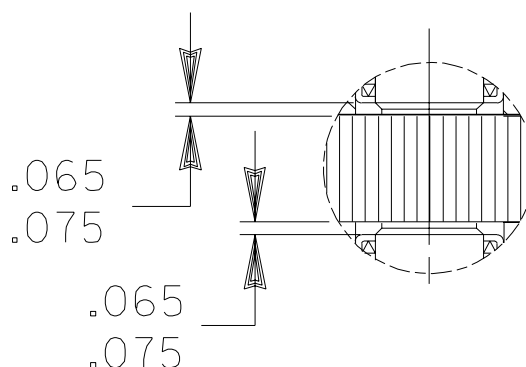
To Parts
List



Item No.	Part No.	No. Req'd	Description
1	10020	9	Soc. Hd. Cap Screw (1/4-20 UNC x 1-1/4 Lg.; Torque to 170/180 in. lbs.)
2	33114	1	High Pressure Pump Assembly (See pg. 6 of 8)
3	10361	1	Compression Spring (1/4 O.D. x 1" Lg.)
4	10375	1	Steel Ball (1/4 dia.)
5	23547	1	Bearing Top Plate
6	23548	1	Top Plate
7	11228	2	Thrust Needle Bearing
8	11813	3	Needle Thrust Race Bearing
9	11814	1	Ball Bearing
10	23549	1	Angle Plate
11	11955	1	Roll Pin (1/4 dia. x 3/4 Lg.)
12	11064	2	Needle Bearing
13	11261	2	Retaining Ring
14	23556	1	Shaft
15	11821	1	Woodruff Key (No. 3)
16	23557	1	Gear
17	30533	1	Pump End Plate
18	10001	12	Soc. Hd. Cap Screw (#10-32 UNF x 1-3/4 Lg.; Torque to 50/60 in. lbs.)
19	21091	1	Nylon Coupling
20	10528	1	Adapter Union
21	22033	1	Suction Line
22	11199	2	Needle Thrust Bearing (See note below)
23	10266	1	O-ring (1/4 x 3/8 x 1/16, -010)
24	21272	1	Drive Gear
25	10303	1	O-ring (3/4 x 7/8 x 1/16, -018)
26	10425	2	Compression Spring (3/8 O.D. x 3/4 Lg.)
27	20771	2	Poppet
28	40120	1	Pump Body
29	10427	1	Pipe Plug (1/8 NPTF)
30	10271	1	O-ring (11/16 x 1/2 x 3/32, -112)
31	12389	1	Teflon Backup Washer
32	20849	1	Spool
33	23255	1	Spring Guide
34	10426	1	Compression Spring (1" O.D. x 1-13/16 Lg.)
35	23256	1	Spring Guide
36	21345	1	Filter Assembly


 To Drawing

NEEDLE BEARING INSTALLATION SPECIFICATIONS



When replacing the needle bearings on the drive gear of the basic pump, the dimensions shown must be as specified.

Sheet No. 6 of 7

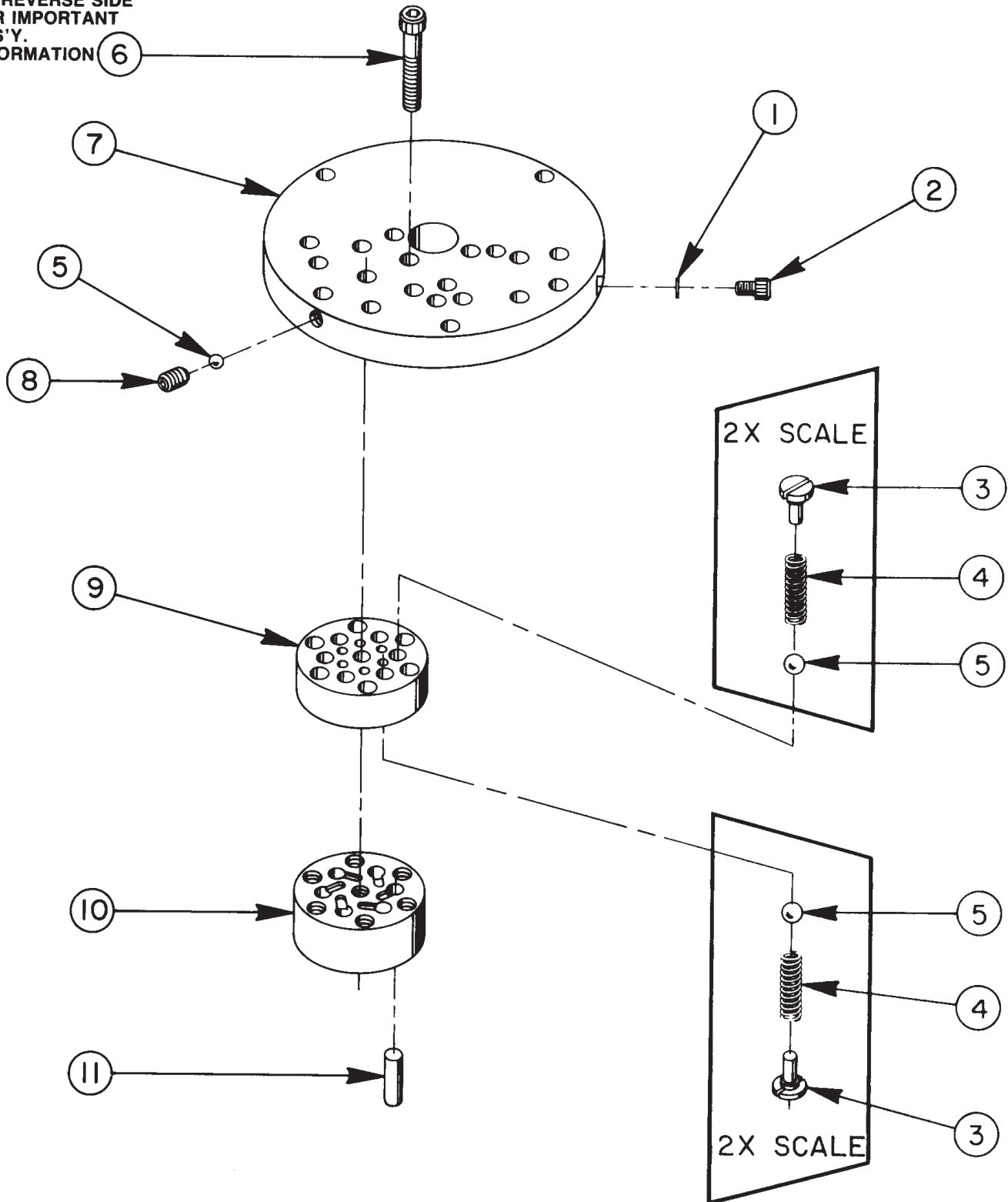
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HIGH PRESSURE PUMP ASSEMBLY

6 PISTON -- 9/32 DIA.

To Parts
List

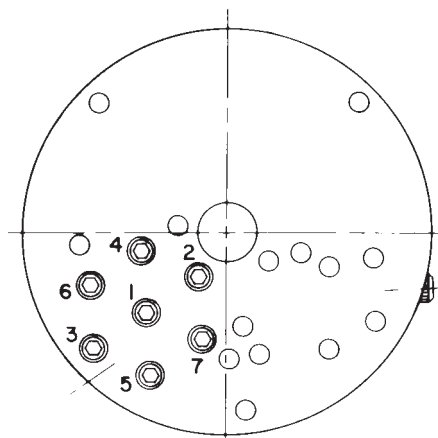
SEE DIAGRAM
ON REVERSE SIDE
FOR IMPORTANT
ASS'Y.
INFORMATION



Item No.	Part No.	No. Req'd	Description
1	10442	1	Copper Washer (3/8 x 1/4 x 1/32)
2	10002	1	Soc. Hd. Cap Screw (1/4-20 UNC x 3/8 Lg.; Torque to 140/160 in. lbs.)
3	24549	12	Valve Guide
4	10445	12	Compression Spring (5/32 O.D. x 3/4 Lg.)
5	12223	13	Steel Ball (3/16 dia.)
6	10023	7	Soc. Hd. Cap Screw (1/4-28 UNF x 1-1/2 Lg.; Torque to 170/180 in. lbs. See note below.)
7	50411	1	Top Plate
8	10519	1	Soc. Set Screw (1/4-20 UNC x 3/8 Lg.; Torque to 65/70 in. lbs.)
9	41048	1	Valve Head
10	41063	1	Pump Barrel
11	21628	6	Piston



BOLT TIGHTENING SEQUENCE



NOTE: Assemble in sequence shown.
Lubricate under head and on threads.
Torque to 180 in. lbs.