

Piston Pump Model 2500

HORSEPOWER REQUIREMENTS					
Flow GPM L/M		PRESSURE			Pump RPM
		PSI 300	PSI 500	PSI 700	
25	—	5.1	8.6	12.0	800
20	—	4.1	6.8	9.6	640
15	—	3.1	5.1	7.2	480
DETERMINING THE PUMP R.P.M.		$\frac{\text{Rated G.P.M.}}{\text{Rated R.P.M.}} = \frac{\text{"Desired" G.P.M.}}{\text{"Desired" R.P.M.}}$			
DETERMINING THE REQUIRED H.P.		$\frac{\text{GPM} \times \text{PSI}}{1460} = \frac{\text{Electric Brake H.P. Required}}{\text{H.P. Required}}$			
DETERMINING MOTOR PULLEY SIZE		$\frac{\text{Motor Pulley O.D.}}{\text{Pump R.P.M.}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor R.P.M.}}$			

Note: Consult engine manufacturer when using gas or diesel engine

SPECIFICATIONS

U.S. Measure

Volume	25 GPM
Discharge Pressure	700 PSI
Max. Inlet Pressure	- 8.5 to + 40 PSI
RPM	800 RPM
Crankcase Capacity	2.4 Qts.
Max. Fluid Temperature	160°F
Inlet Ports (1)	1-1/4" NPT
Discharge Ports	(1) 1" NPT & (2) 1/4" NPT
Pulley Mounting	Either side
Shaft Diameter	1.18"
Weight + 10" Pulley F Mounting Rolls	91.25 Lbs.
Dimensions with Rails	22.1" x 16.8" x 11.3"

INLET CONDITION CHECK-LIST

Inadequate inlet conditions can cause serious malfunctions in the best designed pump. Surprisingly, the simplest of things can cause the most severe problems. Some of these conditions can go unnoticed to the unfamiliar or untrained eye. To help eliminate some of these costly headaches, we have put together a check list of probable cause areas which should be evaluated before operation of any system. Remember, no two systems are alike, so there can be no **ONE** best way to set-up a system. All factors must be carefully considered.

INLET SUPPLY should be adequate to accommodate the maximum flow being delivered by the pump.

- ☐ Avoid closed loop systems, especially at higher temperatures and larger volumes. By-pass should be returned to a holding tank.
- ☐ Low vapor pressure fluids, such as solvents, require a booster pump for adequate inlet supply.
- ☐ Higher viscosity fluids require a positive NPSH for adequate inlet supply.
- ☐ Higher temperature fluids tend to vaporize and require a positive NPSH for adequate supply.
- ☐ When using an inlet holding tank, size it to provide adequate fluid to accommodate the maximum output of the pump, generally a minimum of five times the GPM (however, a combination of system factors can change this requirement significantly); provide adequate baffling in the tank to eliminate air bubbles and turbulence; install diffusers on all return lines to the tank.

INLET LINE SIZE should be adequate to avoid starving the pump.

- ☐ The line should generally be 1-1/2 to 2 times the specified pump inlet port size.
- ☐ The line **MUST** be a FLEXIBLE hose, NOT a rigid pipe, and reinforced on SUCTION systems to avoid collapsing.
- ☐ The simpler the inlet plumbing the less the potential for problems. Keep the length to a minimum, the number of elbows and joints to a minimum (ideally no elbows) and the inlet accessories to a minimum.
- ☐ Use pipe sealant to assure air-tight, positive sealing pipe joints.

INLET PRESSURE should fall within the specifications of the pump. These conditions vary slightly from the plunger to the piston pumps.

- ☐ Higher temperatures require pressurized inlet.
- ☐ Optimum pump performance is achieved with a flooded or pressurized inlet, however, negative feed is possible under ideal conditions.

INLET ACCESSORIES are designed to protect against overpressurization, monitor inlet flow, control contamination, control temperature and provide ease of servicing.

- ☐ All accessories should be sized to avoid restricting the inlet flow.
- ☐ A pressure gauge is recommended to monitor the inlet pressure and should be mounted **AS CLOSE TO THE PUMP INLET** as possible.
- ☐ All accessories should be compatible with the solution being pumped to avoid malfunction.

BY-PASS TO INLET Care should be exercised when deciding the method of by-pass. It is recommended the by-pass be directed to a baffled reservoir tank, with at least one baffle between the by-pass line and the inlet line to the pump. Although not recommended, by-pass fluid may be returned to the inlet line of the pump if the system is properly designed to protect your pump. When using this method a **PRESSURE REDUCING VALVE** should be installed on the inlet line to avoid excessive pressure to the inlet of the pump. (**REDUCING VALVE SHOULD BE INSTALLED BETWEEN THE BY-PASS CONNECTION AND THE INLET TO THE PUMP**) It is also recommended that a **TEMPERATURE SENSING VALVE** be used to monitor the temperature build-up in the by-pass loop to avoid premature seal failure.

- ☐ A low-pressure, flexible cloth braid (not metal braid) hose should be used from the by-pass connection to the inlet of the pump.
- ☐ It is recommended to use a minimum 24" by-pass hose.
- ☐ On any new installation or during periodic maintenance or trouble-shooting, it is recommended that the pressure in the by-pass line be checked to avoid overpressurizing the inlet.

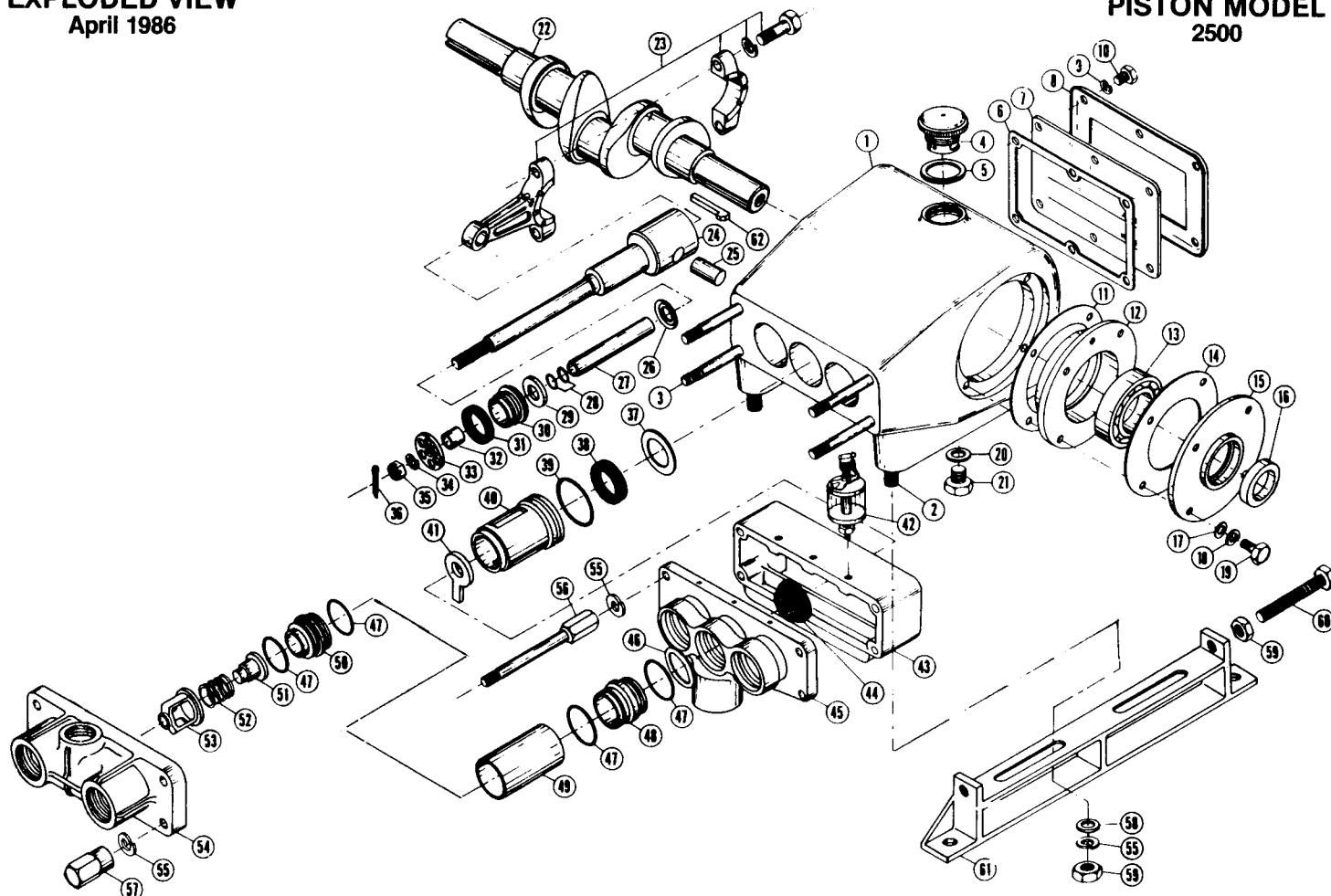
See High Pressure Guide for more information on pump protection and maintenance.

EXPLODED VIEW

April 1986

PISTON MODEL

2500



PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY.	ITEM	PART NO.	DESCRIPTION	QTY.
1	25576	Crankcase Assembly	1	34	—	Spring Washer	3
2	—	Stud	4	35	27510	Slotted Nut, S.S. M8	3
3	14135	Stud	4	36	29589	Cotter Pin, S.S. M2 x 18	3
4	43211	Oil Filler Cap	1	37	—	Washer	3
5	14177	O-Ring, Cap	1	38	25583	Oil Seal, Crankcase	3
6	13413	Gasket, Oil Gauge	1	39	113262	O-Ring, Seal Retainer	3
7	13414	Oil Gauge	1	40	25584	Seal Retainer	3
8	13626	Frame, Oil Gauge	1	41	25585	Wick	3
9	15845	Spring Washer	6	42	30278	Oiler, 1 Oz.	3
10	—	Bolt	6	43	25586	Lube Housing	1
11	13406	Gasket, Bearing Case	2	44	25588	Seal Packing	3
12	18050	Bearing Case	2	45	24298	Inlet Manifold	1
13	13410	Bearing	2	46	13430	Spacer Packing	1
14	13407	Gasket, Oil Seal Case	2	47	13429	O-Ring, Cylinder Adapter	12
15	13409	Oil Seal Case	2	48	13428	Cylinder Adapter	3
16	11433	Oil Seal, Crankshaft	2	49	13632	Cylinder	3
17	12490	Washer	8	50	13453	Discharge Valve Seat	3
18	12503	Spring Washer	8	51	19393	Discharge Valve	3
19	15989	Bolt	8	52	16163	Valve Spring	3
20	23170	O-Ring, Drain Plug	1	53	—	Retainer, Valve Spring	3
21	18878	Drain Plug, Oil	1	54	24299	Discharge Manifold	1
22	13625	Crankshaft	1	55	30908	Lockwasher, 1/2"	12
23	27776	Connecting Rod	3	56	18037	Stud Coupling Assembly	4
24	25577	Piston Rod	3	57	—	Cap Nut	4
25	13424	Piston Pin	3	58	30930	Flat Washer, 1/2"	4
26	25582	Cup Washer	3	59	81060	Hex Nut, M12, Regular Thread	5
27	25581	Piston Sleeve	3	60	—	Bolt	1
28	14175	O-Ring, Piston Rod	6	61	—	Rail	2
29	14126	Valve, Inlet	3	62	—	Key (Pulley)	1
30	13431	Piston	3	45	26281	Stainless Steel Inlet Manifold	1
31	19419	Cup, Piston	3	48	—	Stainless Steel Cylinder Adapter	3
32	13633	Spacer, Piston	3	53	26391	Stainless Steel Retainer, Valve Spring	3
33	13634	Retainer, Piston	3	54	26282	Stainless Steel Discharge Manifold	1

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