

**Piston
Pump
Model**

1000

HORSEPOWER REQUIREMENTS

Flow		PRESSURE			Pump RPM
		PSI 300	PSI 500	PSI 700	
GPM	L/M	BAR	BAR	BAR	
10.0	—	2.1	3.5	4.8	800
8.6	—	1.8	3.0	4.2	688
6.9	—	1.5	2.4	3.4	552
DETERMINING THE PUMP R.P.M.		Rated G.P.M. Rated R.P.M.		=	"Desired" G.P.M. "Desired" R.P.M.
DETERMINING THE REQUIRED H.P.		GPM × PSI 1460		=	Electric Brake H.P. Required
DETERMINING MOTOR PULLEY SIZE		Motor Pulley O.D. Pump R.P.M.		=	Pump Pulley O.D. Motor R.P.M.

Note: Consult engine manufacturer when using gas or diesel engine

SPECIFICATIONS

	U.S. Measure
Volume	10 G.P.M.
Discharge Pressure	700 P.S.I.
Max. Inlet Pressure	- 8.5 to + 40 P.S.I.
RPM	800 RPM
Crankcase Capacity	2-2/3 Pts.
Max. Fluid Temperature	160°F
Inlet Ports (1)	3/4" NPT
Discharge Ports (3)	3/4" NPT
Pulley Mounting	Either side
Shaft Diameter787"
Weight w/Rail & Pulley	30.75 lbs.
Dimensions w/Rails	15.98" × 10.78" × 8.23"

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.

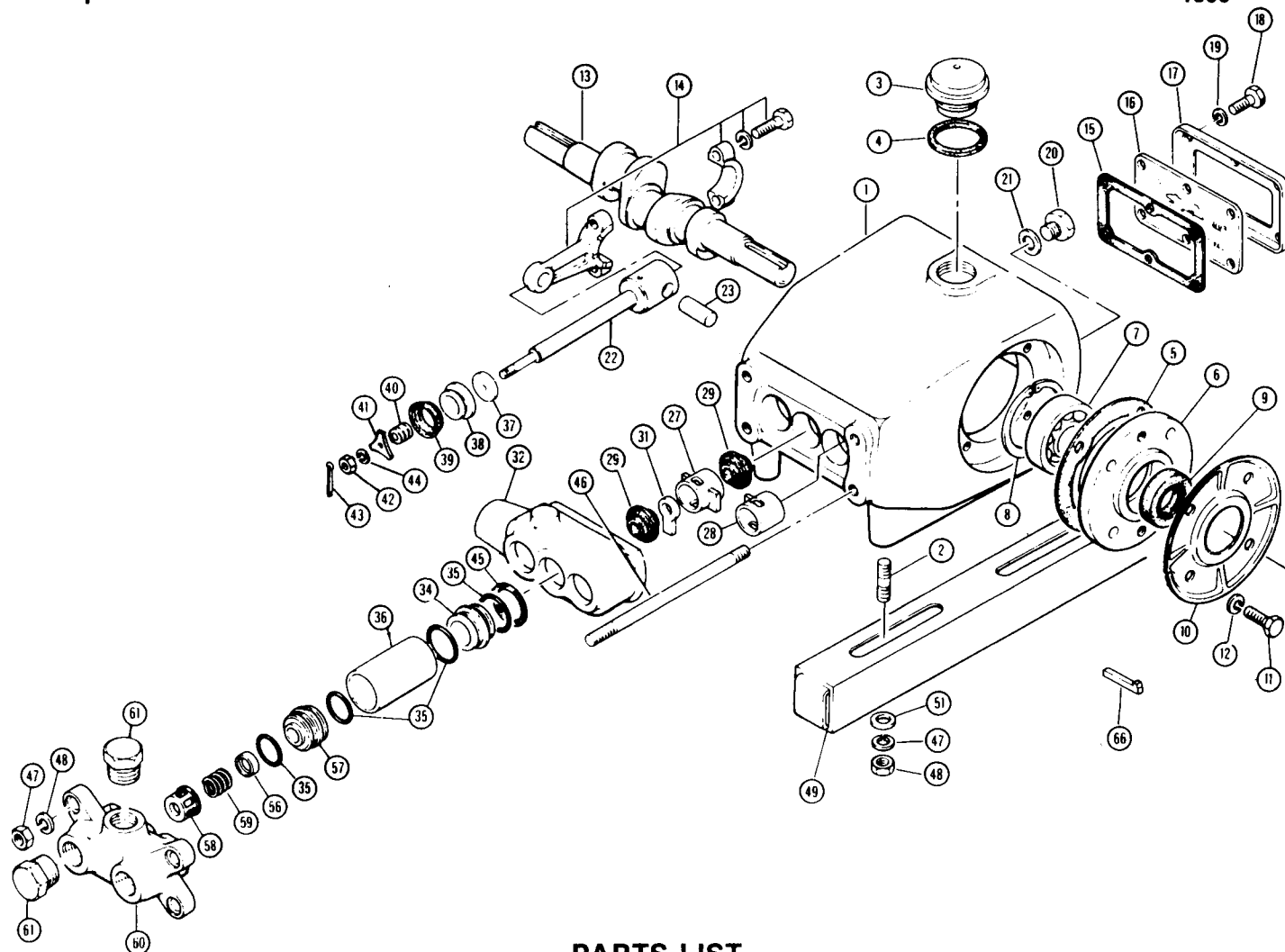
INLET ACCESSORIES are designed to protect against overpressurization, monitor inlet flow, control contamination, control temperature and provide ease of servicing.

- ☐ 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 troubleshooting, 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.



PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY.	ITEM	PART NO.	DESCRIPTION	QTY.
1	26859	Crankcase	1	35	11351	O-Ring	12
2	14050	Stud, M10 x 45	4	36	20253	Cylinder	3
3	43211	Oil Filler Cap	1	37	20123	Valve, Inlet	3
4	14177	O-Ring	1	38	27814	Piston	3
5	20235	Gasket, Bearing Case	2	39	27815	Cup, Piston Viton	3
6	24303	Bearing Case	2	40	20270	Spacer, Piston	3
7	14480	Bearing	2	41	20324	Retainer, Piston	3
8	20238	Retaining Ring, Internal	2	42	18956	Nut, S.S., M6	3
9	20239	Oil Seal, Crankshaft	2	43	14158	Cotter Pin, S.S., M1.5 x 10	3
10	20240	Bearing Cover	2	44	15849	Lock Washer	3
11	80728	Sems Hex Screw, M8 x 25, 3 pc.	8	45	11261	Spacer, Cylinder	1
12	15845	Split Lockwasher, M8	8	46	25459	Stud, M10 x 175	4
13	20216	Crankshaft	1	47	81048	Hex Nut M10 Reg. Thread	8
14	20244	Connecting Rod Assembly	3	48	12503	Split Lockwasher, M10	8
15	11292	Gasket, Oil Gauge	1	49	—	Mounting Rail	2
16	20321	Window, Oil Gauge	1	51	12490	Flat Washer, M10	4
17	15728	Frame, Oil Gauge	1	56	20262	Valve, Discharge	3
18	92519	Hex Head Screw, Sems M6 x 16	6	57	24768	Discharge, Valve Seat, S.S.	3
19	12502	Split Lockwasher, M6	6		24768	Valve Seat, Discharge, S.S.	3
20	18878	Drain Plug, Oil	1	58	43135	Retainer, Valve Spring	3
21	23170	O-Ring, Oil Drain Plug	1	59	20265	Valve Spring	3
22	25356	Piston Rod	3	60	20325	Discharge Manifold	1
23	20251	Piston Rod Pin	3		24762	Discharge Manifold, S.S.	1
27	20313	Seal Retainer (Center)	1	61	20326	Plug, 3/4" Chrome	2
28	20314	Seal Retainer (Outside)	2				
29	25461	Oil Seal	6				
31	20323	Wick, Oil	3				
32	—	Inlet Manifold	1	66	50146	Key, M7 x 7 x 40	1
	24763	Inlet Manifold - S.S.	1	—	25812	Sems Hex Screw, M8 x 30, 3 pc.	3
34	18822	Cylinder Adapter	3	—	15845	Split Lock Washer, M8	3
	24767	Cylinder Adapter - S.S.	3				