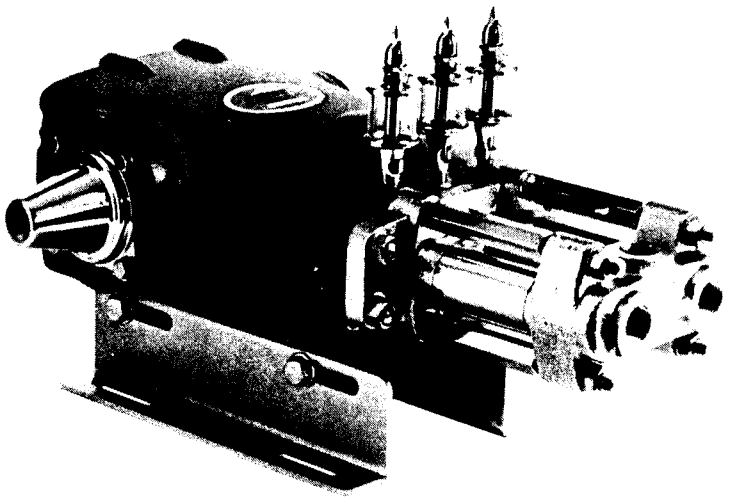


CAT PUMPS®

Sleeved Piston Pump Model 1024

HORSEPOWER REQUIREMENTS

Flow		PRESSURE PSI 1000	PSI 2000	PSI 3000	Pump RPM
GPM	L/M	BAR	BAR	BAR	
		—	—	—	
6.7	—	4.6	9.2	13.8	900
5.0	—	3.4	6.8	10.3	672
3.0	—	2.1	4.1	6.2	403

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 x 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	6.7 G.P.M.
Discharge Pressure	3000 P.S.I.
Max. Inlet Pressure	– 8.5 to + 40 P.S.I.
RPM	900 RPM
Bore	.708″
Stroke	1.457″
Crankcase Capacity	2-¾ Qts.
Max. Fluid Temperature	140°F
Inlet Ports (1)	1″ NPT
Discharge Ports (3)	3/4″ NPT
Pulley Mounting	Either side
Shaft Diameter	1.181″
Weight	73.7 Lbs.
Dimensions with Rails	22.20″ x 15.04″ x 9.84″

INLET CONDITION CHECK-LIST

Inadequate inlet conditions can cause serious malfunctions in the best designed pump. Suprisingly, 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.

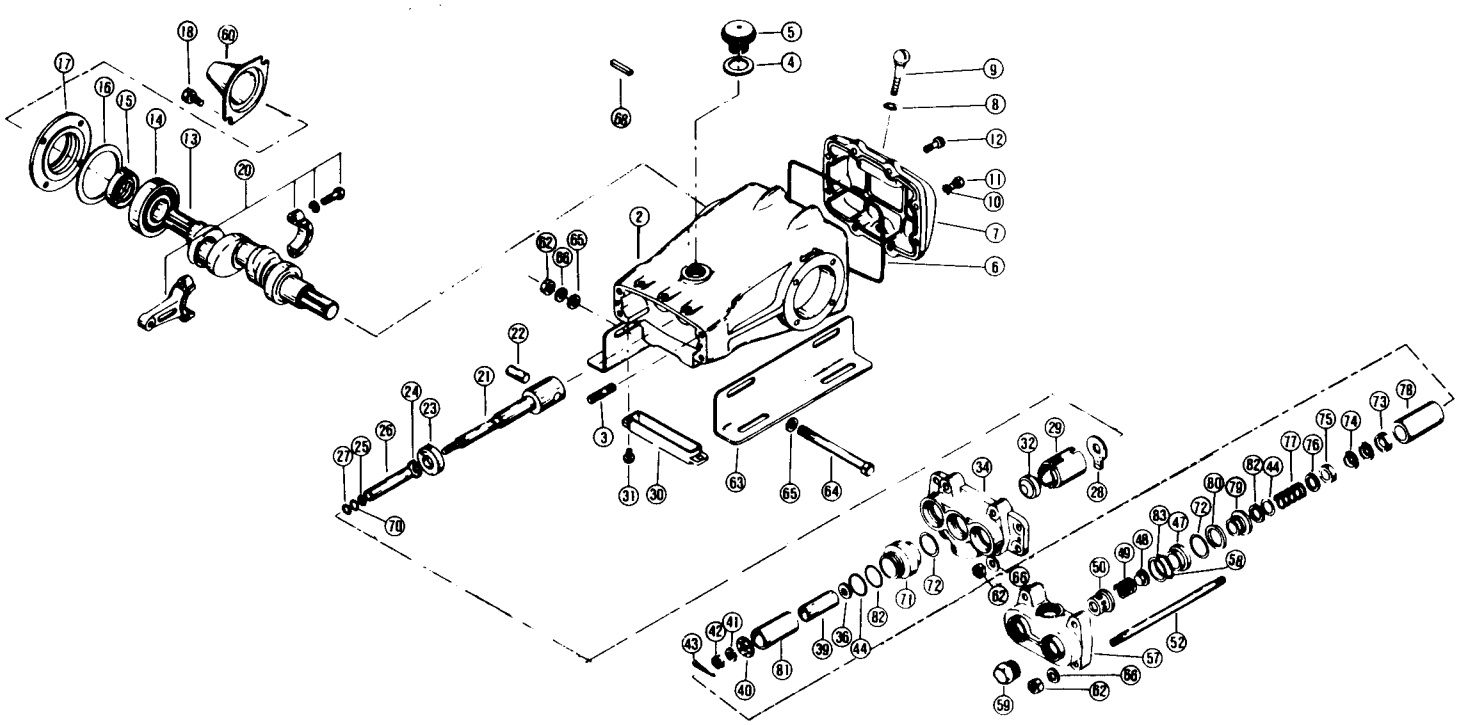
BY-PASS TO INLET Care should be exercised when deciding the method of by-pass. It is recommended the by-pass be directed to a baffled reservoir tank, with at least one baffle between the by-pass line and the inlet line to the pump. Although not recommended, by-pass fluid may be returned to the inlet 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

SLEEVED PISTON
Model 1024



PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY.
2	27762	Crankcase	1
3	85361	Stud (M12)	4
4	14177	O-ring, Cap	1
5	43211	Oil Filler Cap	1
6	27767	O-ring, Crankcase Cover	1
7	27768	Crankcase Cover	1
8	11338	O-ring, Oil Gauge	1
9	27769	Oil Gauge	1
10	23170	O-ring, Drain Plug	1
11	25625	Drain Plug	1
12	80728	Sems Hex Screw (M8 x 25)	8
13	27770	Crankshaft	1
14	26512	Bearing	2
15	27771	Oil Seal	2
16	27772	O-ring, Oil Seal Case	2
17	27773	Oil Seal Case	2
18	80728	Sems Hex Screw (M8 x 25)	8
20	27776	Connecting Rod	3
21	28664	Piston Rod	3
22	27784	Piston Pin	3
23	27785	Oil Seal	3
24	27786	Barrier Slinger	3
25	26531	O-ring, Sleeve (Inner)	3
	14198	O-ring, Sleeve (Inner) (Viton)	3
26	27787	Sleeve (M14)	3
	43122	Sleeve (M16)	3
	29052	Sleeve Unchromed (M14)	3
	43123	Sleeve Unchromed (M16)	3
27	22056	O-ring Sleeve (Outer)	3
	11681	O-ring Sleeve (Outer) (Viton)	3
28	27789	Wick, Oil (M14)	3
	43126	Wick, Oil (M16)	3
29	27788	Seal Retainer	3
30	27790	Oil Pan	1
31	92519	Hex Head Screw (M6 x 16)	2
32	26538	Seal (M14)	3
	43124	Seal (M16)	3
	28770	Seal (Viton) (M14)	3
	43125	Seal (Viton) (M16)	3
34	28666	Inlet Manifold	1
36	28676	Valve Inlet	1
39	28678	Piston, Spacer	3
40	29588	Piston, Retainer	3
41	27006	Conical Washer S.S. (M6)	3
42	27000	Slotted Nut S.S. (M6)	3

ITEM	PART NO.	DESCRIPTION		QTY.
43	14158	Cotter Pin		3
44	18391	O-ring, Cylinder		6
	11691	O-ring, Cylinder (Viton)		6
47	43061	Discharge Valve Seat		3
48	28681	Discharge Valve		3
49	28682	Valve Spring		3
50	43135	Valve Spring Retainer		3
52	85363	Cylinder Bolt		4
57	43058	Discharge Manifold (B)		1
58	43059	Back-up Ring, Dschg. Valve Seat (B)		3
59	20326	Plug		1
60	26516	Shaft Protector		1
62	81060	Hex Nut (M12)	30614	2/8
63	27808	Angle Rail	Angle	2
64	30902	Hex Cap Screw (½ x 6½)	Mounting	2
65	30930	Flat Washer 1/2"	Assembly	4
66	30908	Lockwasher 1/2"		2/8
—	—	Hub w/Screw		1
68	50146	Key		1
—	30206	9.75 Sheave AB Dbl. Gr.		1
70	28338	Back-up ring, Sleeve		3
71	28668	Cylinder Adapter (Inlet)		3
72	14200	O-ring, Cylinder Adapter		6
	11719	O-ring, Cylinder Adapter (Viton)		6
73	29586	Female Adapter		3
74	27047	V-Packing		6
75	29587	Male Adapter		6
76	29635	Washer		6
77	27045	Spring		3
78	28673	Packing Case		3
79	28674	Cylinder Adapter, Discharge		3
80	28675	Back-up Ring		3
81	29634	Piston (Sleeve-type)		3
82	28669	Back-up Ring, D.V.S.		6
83	28820	O-ring, Discharge Valve		3
	43102	O-ring, Discharge Valve (Viton)		3
	30258	Seal Kit (M14)		1
	30482	Seal Kit (M16)		1
	30617	Discharge Valve Kit		1
	30618	V-Packing Kit		1
	30817	Sleeve & Seal Kit, See Indiv. Parts		1
	30819	Sleeve & Seal Kit (M16) (M8)		1

(B) Parts Start with S/N 8770101
(M16) Parts Start with S/N 6790101