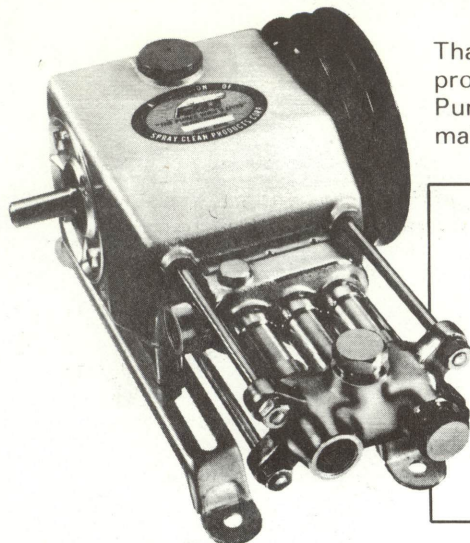


OPERATING INSTRUCTIONS



Thank you for buying a CAT PUMP. We are pleased that you have chosen our product and assure you of its unexcelled quality and performance. This Cat Pump will provide long and trouble-free service if attention is given to routine maintenance.

SPECIFICATIONS

Volume	Up to 5 GPM
Pressure	Up to 1000 PSI
RPM	Up to 800
Crankcase capacity	2-2/3 Pts. #30
Maximum temperature of pumped liquid	140°F
Inlet port	(1) 3/4" NPT
Discharge ports	(3) 3/4" NPT
Pulley mounting ... Either side	Shaft Dia.787"
Shaft rotation	Top of pulley towards cylinders
Weight with pulley and mounting rails	34.75#

MODEL 00500 and Stainless Steel MODEL 00501

SERIES CAT PUMP

WARRANTY CONDITIONS

FILL CRANKCASE AND OIL WICKS according to instructions prior to initial operation. Maintain per recommended lubrication schedule.

PUMP MUST NOT BE RUN DRY and must be drained of water prior to exposure to freezing temperatures.

OPERATION MUST BE within RPM and pressure. Use of other than Cat Pump parts voids the warranty.

sure specifications. Pressure relief valve and pulsation dampener must be installed.

DO NOT PUMP ACIDS OR ABRASIVE FLUIDS with this unit! The following are typical acids which will damage the pump: hydrofluoric acid, hydrochloric acid, muriatic acid, amino acid, nitric acid, sulfuric acid. Questionable solutions must be approved in writing by the manufacturer.

LUBRICATION SCHEDULE

Failure to Comply With These Recommendations Invalidates Warranty

PRIOR TO INITIAL OPERATION: Crankcase... fill to mark on oil gauge window (approximately 2-2/3 pints), SAE #30 non-detergent oil.

Piston rod oil wicks... 25 drops of oil (one pump of a

push-type oil can) in each of three holes on top of inlet manifold.

PERIODIC LUBRICATION: Crankcase... change oil every 2 months. Piston rod oil wicks... 15 drops, twice per month.

Good lubrication is the easiest, most efficient and least expensive method of preventative maintenance.



CAT PUMPS CORPORATION 1600 Freeway Boulevard North Minneapolis, MN 55430

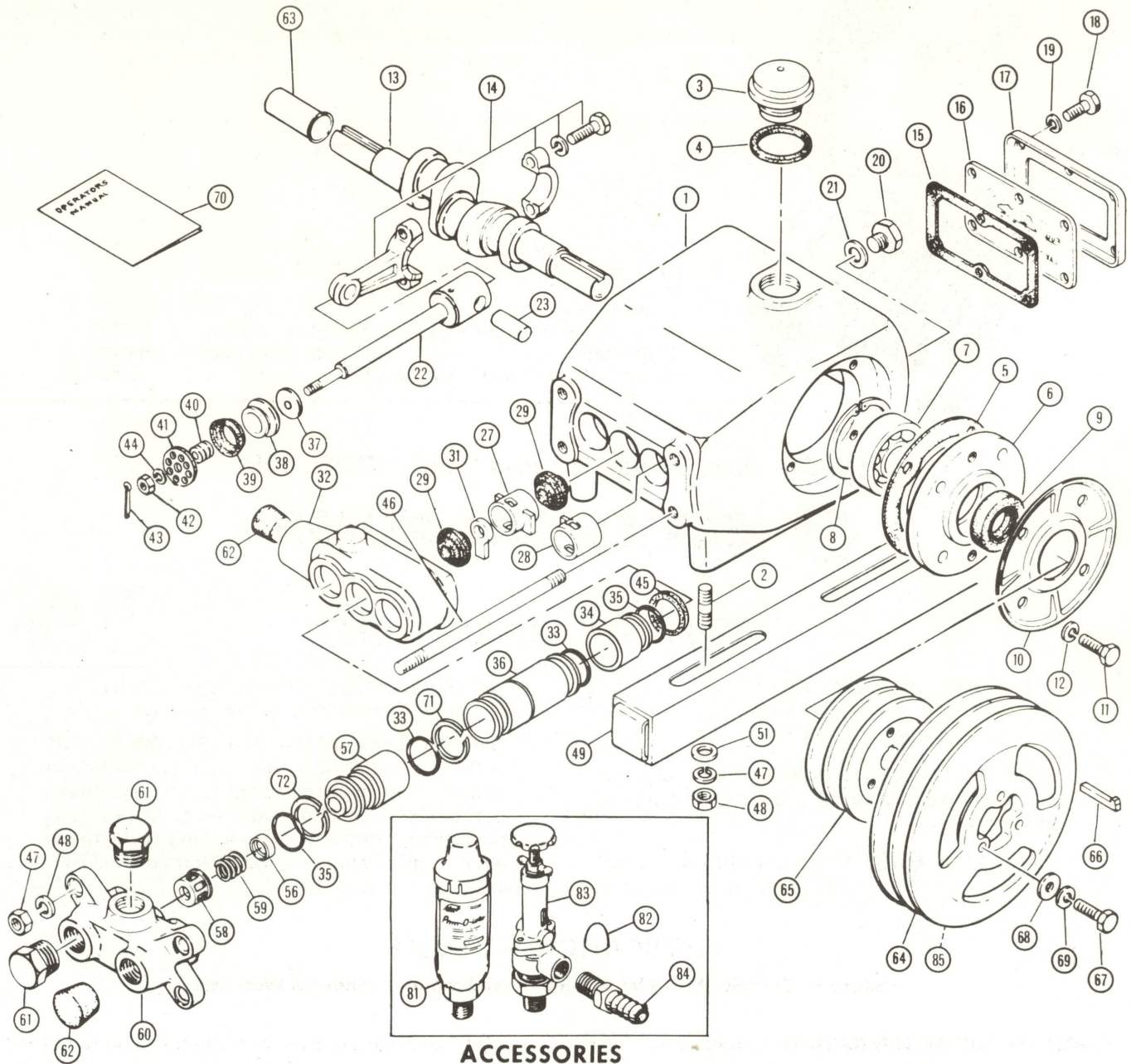
CAT PUMPS INTERNATIONAL N.V. Harmoniestraat 29 2000 Antwerp BELGIUM

CAT PUMPS DEUTSCHLAND GmbH Rostocker Strasse 9 6200 Wiesbaden-Bierstadt WEST GERMANY

CAT PUMPS (U.K.) LTD. 17A Kings Road Fleet Hampshire GU13 9AA ENGLAND

PARTS FOR SERIES CAT PUMPS

MODEL 00500 and Stainless Steel MODEL 00501



ACCESSORIES

MOTOR PULLEY SELECTION

Pump speed and pump output in gallons per minute as tabulated is based upon a 1725 RPM drive motor. Select motor pulley size to provide GPM of the approximate pump output desired.

Pump RPM and GPM output are approximate values due to variations in pulleys, belts and motors between manufacturers and a $\pm 5\%$ pump output tolerance.

TABLE I

Model 00500		Motor Pulley Outside Diameter						
CAT PUMP		2.5"	2.8"	3.0"	3.2"	3.4"	3.6"	3.8"
7.5" OD	GPM Output	3.4	3.8	4.2	4.5	4.9	5.2	NR
	Pump RPM	525	600	650	700	760	800	NR
10.0" OD	GPM Output	2.5	2.9	3.1	3.4	3.6	3.8	4.1
	Pump RPM	390	450	485	525	560	600	635

PARTS LIST

C Series CAT PUMP, MODEL 00500 and Stainless Steel MODEL 00501

Item	Part No.	Qty.	Description	Item	Part No.	Qty.	Description
1	20320	1	Crankcase	37	22020	3	Valve, Inlet
2	15706	4	Stud	38	22021	3	Piston
3	18871	1	Cap, oil filler	39	22024	3	Cup, Piston
4	14177	1	O-ring	40	22670	3	Spacer, piston
5	20235	2	Gasket, bearing case	41	22023	3	Retainer, piston
6	20236	2	Bearing case	42	18955	3	Nut
7	20237	2	Bearing	43	12758	3	Cotter pin
8	20238	2	Retaining ring, internal	44	15848	3	Lock washer
9	20239	2	Oil seal, crankshaft	45	11261	1	Spacer, cylinder
10	20240	2	Bearing cover	46	20260	4	Stud
11	20234	8	Screw	47	12479	8	Nut
12	12507	8	Lock washer	48	12334	8	Lock washer
13	20216	1	Crankshaft	49	20317	2	Mounting rail
14	20244	3	Connecting rod assembly	51	12494	4	Washer, flat
15	11292	1	Gasket, oil gauge	56	20262	3	Valve, discharge
16	20321	1	Window, oil gauge	57	21983	3	Valve seat, discharge
17	15728	1	Frame, oil gauge	58	20264	3	Retainer, valve spring
18	15422	6	Screw	59	20265	3	Valve spring
19	15835	6	Lock washer	60	20325	1	Discharge manifold
20	18878	1	Drain plug, oil	60-SS	24762	1	Discharge manifold—SS
21	13592	1	Gasket, oil drain plug	61	20326	2	Plug, 3/4" chrome
22	21980	3	Piston rod	62	20327	2	Plug, rubber
23	20251	3	Piston rod pin	63	20294	1	Crank cap
27	20313	1	Seal retainer (center)	64	20310	1	Pulley, 7-1/2", 2 Gr., AB Sect.
28	20314	2	Seal retainer (outside)				
29	20122	6	Seal, piston rod	65	20311	1	Pulley, hub
31	20323	3	Wick, oil	66	20242	1	Key, gibed
32	20328	1	Inlet manifold	67	15424	3	Screw
32-SS	24763	1	Inlet manifold—SS	68	12489	3	Washer, flat
33	11378	6	O-ring	69	12507	3	Lock washer
34	21982	3	Cylinder adapter	70	30044	1	Operating Instructions
35	11351	6	O-ring	71	21985	3	Back-up ring, cylinder
36	21984	3	Cylinder	72	21986	3	Back-up ring, discharge valve

ACCESSORIES

81	06000	1	Prrrr-O-Lator accumulator	83	06050	1	Pressure regulating relief valve
82	30013	1	Cup inserter	84	30030	1	#4 Barb, 3.5-5.0 GPM
				85	22969	1	Pulley, 10", 2 Gr., AB Sect.

TABLE II
HORSEPOWER REQUIREMENTS*

Pump Output GPM	Pressure — Pounds Per Square Inch					
	500	600	700	800	900	1000
2.5	1.0	1.5	1.5	1.5	2.0	2.0
2.9	1.0	1.5	1.5	2.0	2.0	2.0
3.4	1.5	1.5	2.0	2.0	3.0	3.0
3.8	1.5	2.0	2.0	3.0	3.0	3.0
4.2	1.5	2.0	3.0	3.0	3.0	3.0
4.5	1.5	2.0	3.0	3.0	3.0	5.0
4.9	2.0	2.0	3.0	3.0	3.0	5.0

*Horsepower figures shown are for electric motor only. For gas engine requirements, follow engine manufacturer's recommendations. In general, use a gas engine with approximately double the electric motor horsepower.

Servicing discharge valves and valve seats

Remove the discharge manifold as described and pictured on page 5. Remove the discharge valve seats and invert the manifold. The discharge valve springs and spring retainers will fall out.

Inspect the discharge valves for wear or ridges. If damaged, replace them. Check valve seats. If nicked or rough, lap on a fine oilstone until smooth. Check seal by placing the discharge valve tightly over face of the valve seat and blow through the valve. No air will pass through if properly seated. Replace valve seat O-ring if worn or cut.

Reassemble valves and valve seats in the manifold — spring retainer first, then the spring and then the valve. The flat side of the discharge valve faces out. The recessed side of the discharge valve fits over the spring. Insert the discharge valve Seats. Do not pinch or cut the discharge valve seat O-rings!

Insert one end of cylinders into the discharge valve seats, being careful not to damage cylinder O-rings. Position assembly back on the pump, again being careful not to damage cylinder O-ring when inserting cylinders into the inlet manifold. Replace lock washers and nuts. Torque to 125-inch-pounds.

CAUTION: Any cylinder motion will cause premature failure of the O-ring cylinder seals. If cylinders move when pump is started, correct by (1) remove discharge valve seat of the loose cylinder to add cylinder spacers as required, (2) be sure all stud nuts are torqued evenly during reassembly.

PROPER INSTALLATION ASSURES RATED PERFORMANCE

Optimum performance of the pump is dependent upon the entire fluid system and will be obtained only with the proper selection and installation of plumbing and accessories.

Lubrication: Follow instructions for filling the crankcase and oiling wicks before installation.

Pulley Selection: Determine size of motor pulley required to deliver the desired volume. See Table I.

Motor Selection: The motor or engine driving the pump must be of adequate horsepower to maintain full RPM when the pump is under load. Select a motor size from Table II according to required pump discharge volume and maximum pressure at the pump!

Mount the pump on a rigid, horizontal surface in a manner to permit drainage of crankcase oil. An uneven mounting surface will cause extensive damage to the pump base. Use the correct belt; make sure pulleys are aligned. Excessive belt tension is harmful to the main bearings of the pump crankshaft.

Inlet Plumbing must be at least the same diameter as the threaded inlet to the manifold, preferably one size larger. Restrictions in the inlet plumbing will cause cavitation in the pump, drastically reducing cup life and cylinder life. All joints must be air tight.

Inlet Accessories: Install an inlet strainer of twice the rated capacity of the pump.

A stand pipe to help maintain a positive pressure head in the inlet line is desirable.

A shut-off gate valve is recommended to facilitate maintenance.

Discharge Plumbing: Install a pulsation dampening device mounted directly on the discharge manifold and precharged to a pressure calibrated for operating conditions.

A reliable pressure gauge must be installed near the discharge outlet of the high pressure manifold. This is extremely important for adjusting pressure regulating devices and also for proper sizing of the nozzle or restricting orifice. The pump is rated for a maximum pressure; this is the pressure which would be read at the discharge manifold of the pump, not at the gun or nozzle end of a long hose.

A pressure regulating relief valve or unloader must be installed to prevent over-pressure in the event the discharge or downstream plumbing becomes plugged or is turned off. Severe damage to the pump will result if this condition occurs without a relief valve in the line. Failure to install a proper safety by-pass valve will void the warranty on the pump.

CORRECT INSTALLATION

The illustration at the right shows the basic elements for the proper installation of a high-pressure pump. Each component offers potential problems that too often are ascribed to a perfectly functioning pump. A clogged strainer, a partially closed shut-off valve or a faulty pressure gauge or pressure regulating unloader may be the source of trouble.

Proper system installation, routine lubrication and monitoring of components are your best guarantees of optimum pump performance. These precautions will eliminate most problems, minimize corrective maintenance, and give many, many added hours of trouble free operation.

