

INSTRUCTION MANUAL FOR
Y81N HIGH PRESSURE TRIPLEX PUMP

General Operating Instructions

1. Never run the pump dry.
2. Do not use rusting supply barrels.
3. Always keep suction strainer clean.
4. Maximum operating pressure is 500 P.S.I.

Flow Rates and Horse Power Requirements

The Y81N pump is a positive displacement type; therefore the delivery is directly proportional to the speed regardless of pressure. In suiting the pump to your application refer to the performance table below:

<u>R.P.M.</u>	<u>G.P.M.</u>	<u>ELECTRICAL HORSEPOWER AT P.S.I.</u>				
		<u>100</u>	<u>200</u>	<u>300</u>	<u>400</u>	<u>500</u>
200	1.24	0.138	.252	.319	.395	.462
300	1.90	.209	.378	.481	.595	.695
400	2.50	.278	.530	.640	.793	.922
500	3.20	.345	.628	.795	.985	1.150
600	3.80	.417	.757	.963	1.190	1.390

Lubrication - Oil

New pumps are tested prior to shipping and lubricated. However, they are shipped, less oil, and this should be added prior to use. Keep the oil level at slightly less than half way up the gauge window.

1. Change the oil in the crankcase as required.
2. Use only a non-foaming, non-detergent #1 compressor oil.
3. Do not use a detergent motor oil.

Lubrication - Grease

Proper greasing is most important for piston and packing lubrication and maintenance of pressure. Use a good high temperature water pump grease.

Priming

The pump is self priming with suction heads up to 10 feet. For best operation it is recommended that the suction lift not exceed this height or that flooded suction be used.

If difficulty is experienced in priming remove the suction line and hold a water hose to the suction inlet for a moment so that the chamber receives some water. Once primed very little difficulty will be experienced.

Piping

SUCTION PLUMBING MUST BE AIR TIGHT

The suction connection is located at the centre of the pump just beneath the pressure gauge. A suction strainer should always be used.

Pressure Piping

There are 3 pressure outlets. The ones normally used are located on either side of the suction inlet and take a standard 3/8 inch male pipe thread. A good pipe dope or teflon tape should be used on all pressure piping.

High pressure connections to the pump should be made with high pressure hose and not rigid pipe so as to prevent vibrations from damaging the pump.

Inlet and Outlet Threads

All threads are N.P.T.

By-Pass and Pressure Regulating Valve

The pump comes equipped with a by-pass and pressure regulating valve (unless specifically ordered without it). This valve, located at the side of the suction chamber, can also be used to regulate the pump outlet pressure. The valve also acts as a by-pass valve and if desired the hose which is connected to this outlet may be returned to the supply tank so that excess fluids are reused.

Repacking Pump

The Y81N has BUNA-N V packings which are held under constant pressure by stainless steel wave springs (81N60H). No additional adjustment of the gland nuts is required after correct installation.

To repack your pump head (81N35) remove crankcase nuts (81N27 and 81N28) and pull entire fluid end of pump forward over the pistons. With fluid end free, remove old packings and wash reusable parts thoroughly. Insert new packing set in proper order, tightening gland nuts up firmly. Replace head over pistons and work it into place by moving pistons back and forth, with a pulley on the crankshaft. Once in place tighten the crankcase nuts. It is a good idea to run grease over the pistons and packings before reassembling the head to the crankcase.

NOTE: At all times when replacing the V packings, check the condition of the pistons. If badly scratched or grooved they should be replaced, deeply grooved pistons will leak and cut the V. packings.

Materials Handled

As the pump has stainless steel pistons, stainless steel valves and an all bronze body it will normally handle a very wide range of abrasive, acidic or caustic materials. However, after running any material which might attack the above metals or the V packing the pump should be flushed immediately with clear water for 5 or 10 minutes.

Replacement of Valves

Remove Chamber bolts and washers (81N44 and 81N45). Entire suction chamber can now be lifted off and the valves serviced.

NOTE: 3 back valves face downward
3 front valves are face upward

NOTE: It is essential that the proper size O rings be used in the 2 grooves on each valve. They must also be well seated in the grooves so that on tightening the piston chamber bolts, they are not squeezed out of the grooves.

Repair to Valves

The entire valve can be disassembled by tapping down on the valve disc and forcing the valve cover (81N37B) off the valve seat. To reassemble, place parts in order and squeeze together gentle in a vise or press.

NOTE: Do not hold valve seat (81N37F) in a vise so as to burr or distort this part as sealing depends upon this part being free of all burrs and distortion.

Repair to By-Pass and Pressure Control Valve

The entire valve can be disassembled for service by removing the 2 retaining bolts (81N43F). Make sure all parts are placed back in the same order on reassembly.

Disassembly of Power End for Replacement of Bearings, Crankshaft, Connecting Rods and Pistons

Remove back cover (81N8) exposing connecting rods. Remove connecting rod bolts (81N20) and push connecting rods forward through the oil seals so that the crankshaft is free. Remove the bearing cover screws and tap crankshaft through oil seal at one end so entire crankshaft can be removed.

Winter Storage

If the pump is to be exposed to freezing temperatures it should be either well drained by disconnecting the suction line and running the pump for 10 or 15 seconds or by running a mixture of anti freeze through the pump.

REPAIR PARTS - Y81N PUMPOctober 1, 1983

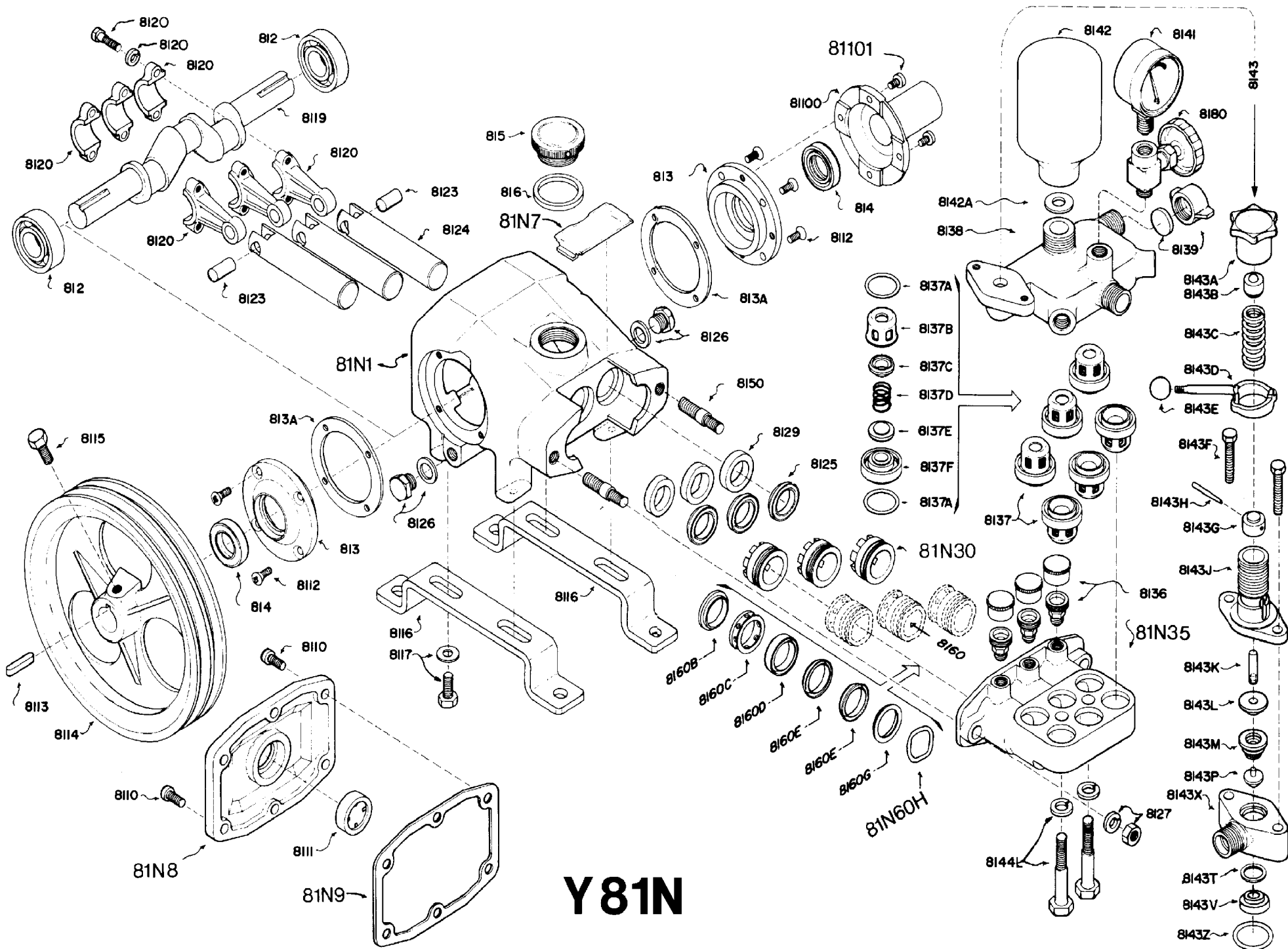
<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. OF PARTS</u>
81N1	Crankcase	1
812	Ball Bearing	2
813	Bearing Cover	2
813A	Gasket	2
814	Crankcase Oil Seal	2
815	Oil Filler Cap	1
816	Oil Cap Gasket	1
81N7	Piston Cover	1
81N8	Back Cover	1
81N9	Back Cover Gasket	1
8110	Back Cover Screws	6
8111	Oil Gauge Window	1
8112	Bearing Cover Screws	8
8113	Pulley Key	1
8114	8 in. Pulley	1
8115	Set Screw	1
8116	Pump Rail	2
8117	Bolts & Washers	4
8119	Crankshaft	1
8120	Connecting Rod Complete	3
8123	Piston Pin	3
8124	Piston	3
8125	Piston Wiper	3
8126	Oil Plug & Washer	2
8127	Crankcase Nut & Washer	2
8129	Piston Seal	3
81N30	Gland Nut	3
81N35	Piston Chamber	1
8136	Grease Cup	3
8137	Complete Valve	6
8137A	O-Ring	12
8137B	Valve Cover	6
8137C	Valve Spring Seat	6
8137D	Valve Spring	6
8137E	Valve Disc	6
8137F	Valve Seat	6
8138	Suction Chamber	1
8139	Cap & Packing	1
8141	Gauge 0 to 1000 PSI	1
8142	Air Chamber	1
8142A	Air Chamber Gasket	1
8143	Complete Control Valve	1
8143A	Pressure Adjusting Cap	1
8143B	Upper Spring Seat	1
8143C	Spring	1
8143D	Lever	1
8143E	Knob	1
8143F	Retaining Bolts - S.S.	2

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. OF PARTS</u>
8143G	Lower Spring Seat	1
8143H	Seat Pin	1
8143J	Spring Case	1
8143K	Control Spindle	1
8143L	Spindle Cage	1
8143M	Diaphragm	1
8143P	Control Stem	1
8143T	Seat Packing	1
8143V	Control Seat	1
8143X	Control Seat Case	1
8143Z	Control Case O-Ring	1
8144L	Chamber Bolt & Washer (long)	2
8150	Crankcase Studs	2
8160	Packing Kit	1
8160B	Buna-N Flange	3
8160C	Grease Ring	3
8160D	Top Female Adaptor	3
8160E	Buna-N V-Packing	6
8160G	Bottom Adaptor	3
81N60H	S.S. Wave Spring	3
8180	Needle Valve	1
8191	3/8" NPT Plug	1
81100	Crankshaft Protector	1
81101	Crankshaft Protector Screws	4

WARRANTY

Based on the logical assumption that manufacturing and material deficiencies will manifest themselves within 90 days time, all Y81N power sprayers are guaranteed for 90 days from date of purchase, by the original purchaser, against defective material and workmanship (but not against damage or wear caused by misuse, abrasion, negligence, accident, faulty installation, or tampering in a manner to impair its normal operation) when the equipment is installed and operated in accordance with factory recommendations and instructions.

All such defective parts will be repaired or replaced free of charge if returned prepaid to the factory or authorized service depot. In all cases within the guarantee period where examination indicates damage due to causes other than defectiveness repairs will be made at a reasonable charge.



Y81N