

Devin Mfg., Inc.

INSTRUCTION FOR UNPACKING AND PREPARING THE DEVIN MFG., INC. LP-500 ARBOR PRESS FOR OPERATION

The Devin Mfg., Inc. LP-500 Hydraulic Arbor Press has been factory tested and will be ready for use after performing the following instruction set:

TO UNPACK YOUR PRESS:

1. Cut the shipping bands and remove.
CAUTION: STAY CLEAR AS THESE BANDS MAY RECOIL WHEN CUT AND COULD CAUSE INJURY!!
2. Lift the cardboard cover straight up to clear, remove all packaging material from the press and place aside.
3. Remove the pump handle, the rest plate and the “V” blocks from the press package and set aside.
4. Remove the four (4) carriage bolts that hold the press frame to the shipping skid.
5. Place the press frame on a level mounting surface and securely bolt to that surface using six (6) ½ “ machine bolts through the provided holes in the press frame.
6. Remove the four (4) Cover Plate Screws (#2) from the Cover Plate (#1) and set both aside. Remove the Reservoir Shipping Plug from the reservoir and save to use if you ship the press at a later date. Replace the Cover and the Cover Screws.
7. Make sure that the Removable ram extension (#53) is properly attached to the ram (#46)
8. Place the supplied press plate (#20) evenly across the press frame (#21) directly under the ram (#46).
9. Slide the supplied pump handle (#18) through the pump handle shaft (#8) with the snap ring at the top.

TO OPERATE THE PRESS:

1. Check to be sure that the Release Valve Handle (#69) is closed by first opening it by turning it counter clockwise then closing it by turning it clockwise until it stops.
DO NOT OVER TIGHTEN. YOU COULD DAMAGE THE VALVE SEAT!!

2. Advance the ram to the work by first lifting the pump handle (#18) until it stops then stroking it in a downward manner. Repeat the pumping action until the ram extension contacts the work piece. At this point pressure will begin to build. You can read the pressure amount on the gage (#54). When you reach the desired pressure and your operation is complete, release the pressure by opening the Release Valve Handle counter clockwise. Close the valve when the ram retracts to the desired height.

LP-500 Rebuild Instructions

Disassembly

Be sure the ram is at the top of its travel or stroke. Disconnect the links (#14) from the plunger (#27) by removing the link pin (#15). For now, leave the plunger (#27) inside the sleeve (#28). Unscrew and remove the sleeve and plunger. Remove the gasket (#30) and discard. Disconnect the plastic suction tube (#13) at the back of the pump body (#31). Remove the gage (#54). Loosen but do not remove the safety valve screw (#65). Remove the inlet valve hole plug (#33). Remove the ram extension (#53). Loosen the head (#51) by using large adjustable wrench across flats or a strap or pipe wrench on outside. While holding down on the pump body (#31), carefully unscrew the head. As the threads disengage between the head and cylinder (#48), spring pressure will force the head down or the pump body up. Drop the spring (#47) out of cylinder. Carefully lift the pump body-cylinder-ram assembly up out of press frame.

Holding the pump body in a vise, remove the cylinder. Remove the ram (#46) from the cylinder. Inspect the cylinder bore for damage by shining a light into the bore. With the pump body still in vise, loosen and remove the discharge valve plug (#35) that is inside bottom of pump body. Save the plug for rebuild. Discard the discharge spring (#34) and ball (#32). Unscrew and remove the release valve (#69). Gently remove the O-ring (#36) and discard. Unscrew and remove the safety valve screw (#65). Remove the safety plunger (#63). Gently remove the small o-ring (#74) and discard. Gently remove the o-ring at the bottom of the threads on the safety valve nut (#73) and discard. Remove the safety valve spring (#56). Remove the safety valve plunger (#57). Remove the safety valve ball (#58) and discard. Gently remove and discard the piston packing (#40). Carefully remove the plunger (#27) from the sleeve (#28). Inspect the plunger for scratches on shaft. Remove the plunger packing (#29) from the sleeve and discard.

Clean all parts that are not discarded.

Rebuilding

*When installing all o-rings and packings, lubricate o-rings, packings and parts that are being installed on or in with Vaseline or hydraulic oil. All parts must be clean before assembly.

Place one 9/32" ball (#32) into the discharge valve hole in the bottom of the pump body (#31). Place the discharge valve spring (#34) on top of the ball. Gently screw in the discharge valve plug (#35) and tighten.

Lubricate the inner face in the bottom of the pump body. Place the cylinder seal o-ring (#39) into the counter bore in the top of the cylinder (#48).

Holding the cylinder vertically, screw the pump body down onto the cylinder and tighten by hand. Place the pump body in a vice and tighten the cylinder slightly more with a pipe or strap wrench.

Install the piston packing (#40) onto the piston and ram assembly.

Place the pump body and cylinder assembly on a table with the cylinder facing up. Make sure the cylinder wall is well oiled and install the piston and ram assembly into the cylinder. Push the ram and piston assembly all the way down until the piston contacts the pump body.

Insert the pump body, cylinder and ram assembly down into the press frame. Take care not to damage the threads on the end of the cylinder.

Install the o-ring (#36) onto the release valve (#69). Lubricate the ½" diameter hole in the side of the pump body and gently screw in the release valve until it comes to a stop. Reconnect the plastic suction tube (#13) to the pump body.

Insert a 9/32" ball (#32) into the inlet valve hole at the top of the pump body (center hole). Look down the hole to make sure the ball is resting in the seat directly below the hole. Install the plunger packing (#29) into the groove inside the plunger sleeve (#28). Both the packing and sleeve must be well lubricated. Make sure the packing is properly seated. Lubricate, then gently push the plunger (#27) through the packing into fully into the sleeve. Slip the sleeve gasket wrench in to tighten the sleeve further (about ½ turn – **do not over tighten**).

Reattach the links (#14) to the plunger (#27) using the link pin (#15).

Insert a 5/32" ball (#58) into the safety valve port. Place the safety valve plunger (#57) over the ball. Place the safety valve spring (#56) over the safety valve. Install an o-ring (#73) over the threads on the safety valve body (#64) and slide it onto the undercut at the shoulder of the nut and the thread. Install an o-ring (#74) onto the safety plunger (#63). Gently push the safety plunger into the safety valve body. Set the body and plunger assembly aside for use later when filling the unit with hydraulic oil.

Remove the old wiper washer (#49) and ram wiper (#50) from the cylinder head (#51). Place a new wiper and then the washer into the head. Slide the piston return spring (#47) over the ram and up into the cylinder. While holding down on the pump body, install the cylinder head over the ram and spring. Push the cylinder head up to engage the cylinder thread and screw together. Tighten with a wrench.

Filling With Hydraulic Oil (use ISO Grade 32 hydraulic oil) after Rebuild Only

Open the release valve (#69). Double check to make sure that the ram is all the way up at the top of its stroke.

Slowly pour oil down the hole on the top left hand side where the gage will be attached. When oil starts to appear in the plastic suction tube, close the release valve and fill to the top of the body. Very slowly pour oil in the safety valve port, fill until it is level with the top of the spring. Screw in the safety valve body safety plunger (previously assembled) and lightly tighten with a wrench – **do not over tighten**. Screw in the gage (#54). Use 3 or 4 wraps of Teflon tape on the fitting before attaching.

Priming the Pump

See Devin Bulletin 021220

PRIMING INSTRUCTIONS FOR THE DEVIN LP-500 10 TON ARBOR PRESS

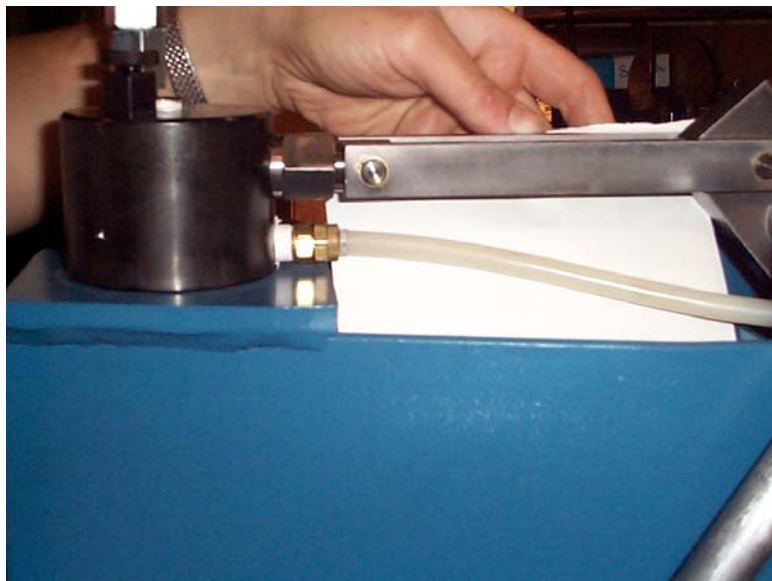
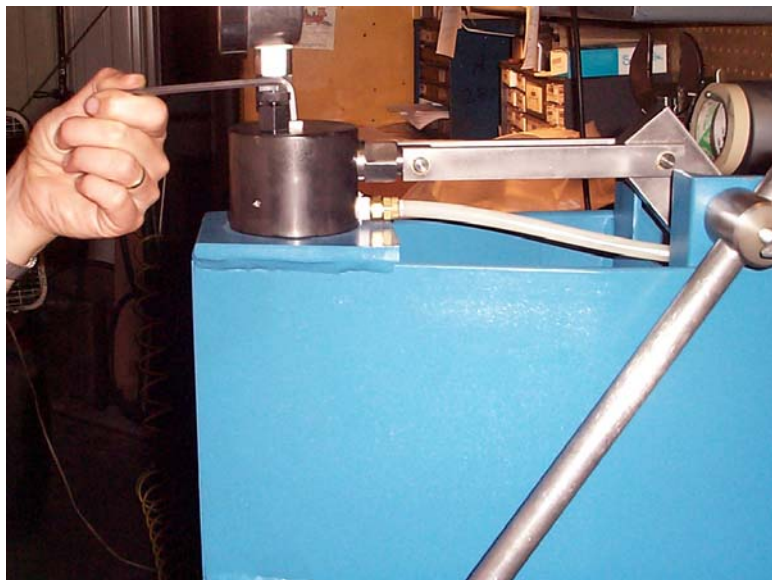


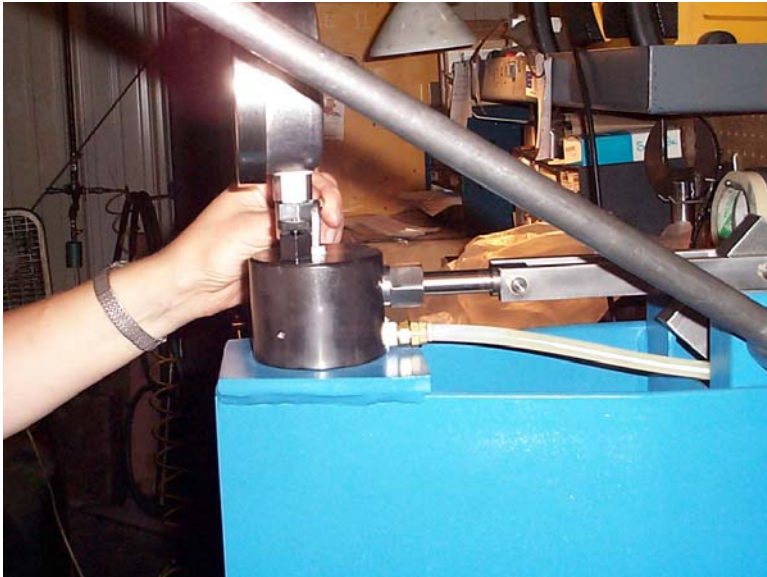
Figure #1 shows the suction tube (item #13) empty with no oil visible. The most likely reason for this condition is the loss of prime. If this has occurred you must prime the pump. The following instructions will instruct you on how best to do this. Depending on the screw type used for the inlet valve plug (item #33), you will need either a 3/16" hex key or a 7/16" combination wrench.

Figure #1



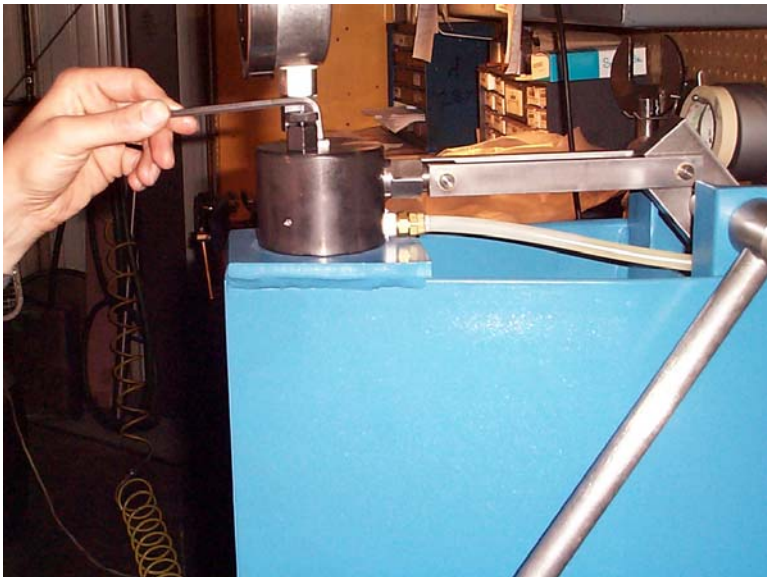
Step #1: Start with the plug (#33) tight, the pump handle (#18) in the down position and the release valve (item #69) closed. (See figure #2)

Figure #2



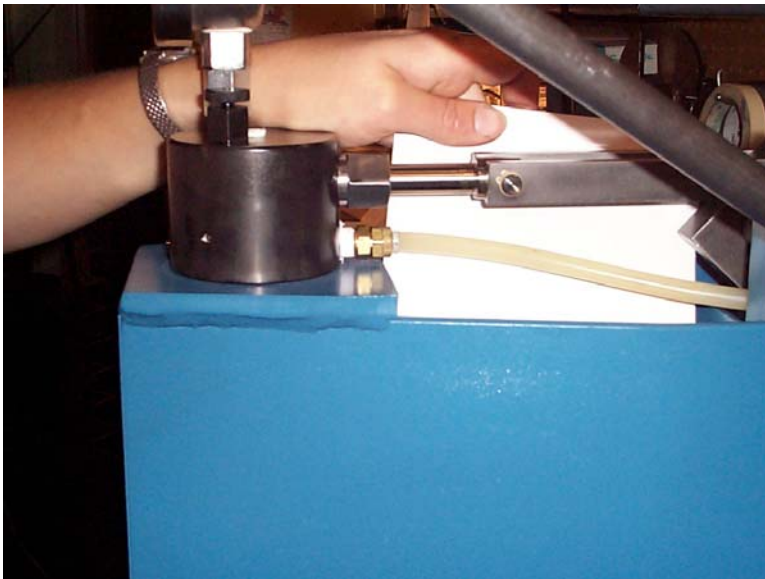
Step #2: Slowly raise the pump handle (#18) all the way up and hold it in that position. Open the plug (#33) by loosening it two revolutions counter-clockwise so that the air can vent. (See figure #3)

Figure #3



Step #3: Slowly push the pump handle all the way down. (You should hear or see air and oil venting around the plug, if not, open the plug (#33) one more revolution). Now tighten the plug snugly. (Figure #4)

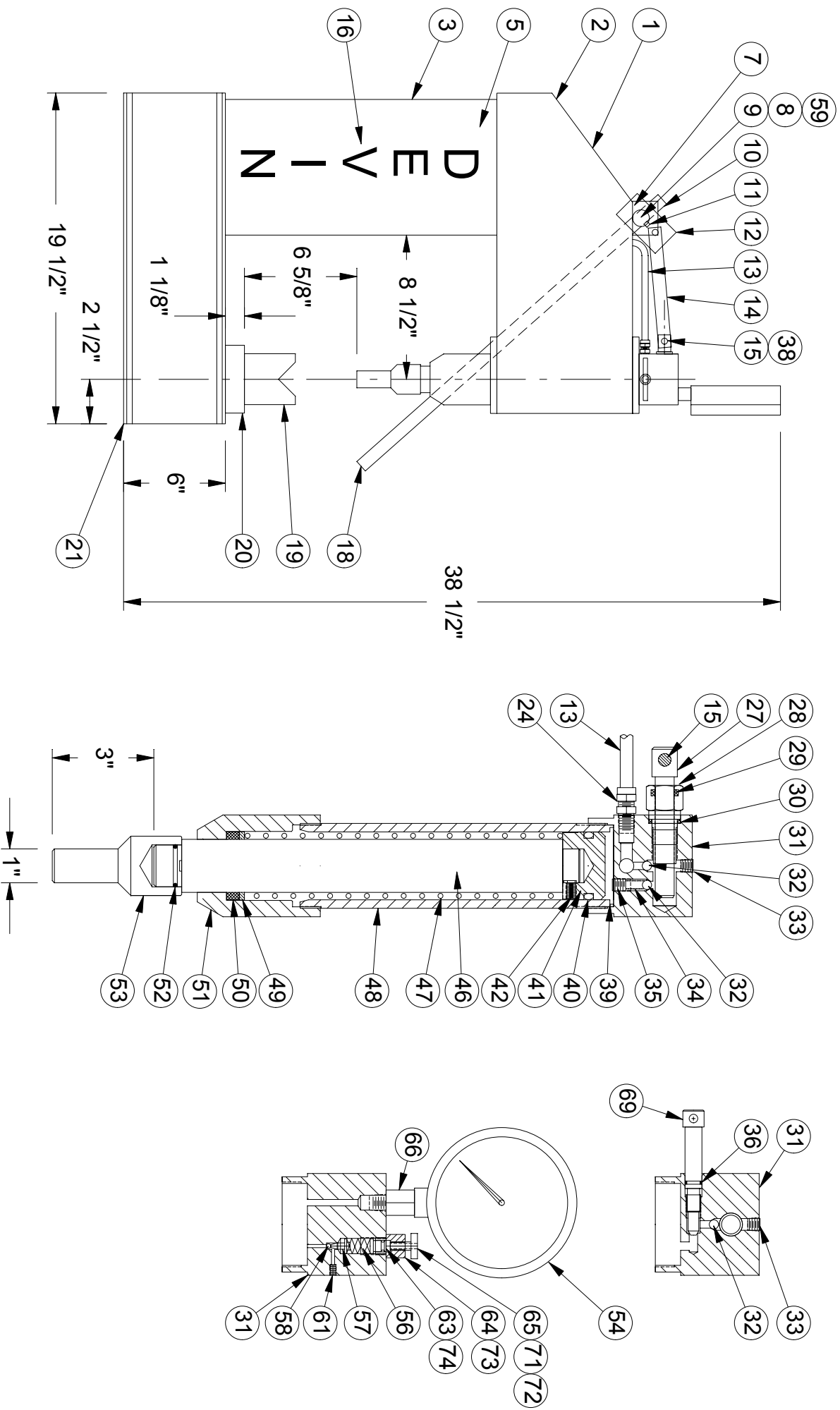
Figure #4



Repeat steps 1-3 until oil flows from the reservoir, through the suction tube (Figure #5), into the head and no more air bubbles are observed coming from around the plug when you perform step #3. When you are satisfied that there is no more air in the system, stop with the pump handle all the way down and firmly tighten the plug. NOTE: If a spongy feel is noticed when using the press there is still air present in the system.

Figure #5

LP-500 10 TON ARBOR PRESS



DEVIN LP-500 PARTS LIST

ITEM	PART NUMBER	NO. REQ'D	NAME
1	P-500-3-10	1	COVER PLATE
2	P-500-3-11	4	COVER PLATE SCREW
3	P-500-9-1	1	MODEL & SERIAL NO. PLATE
5	P-500-3-9	2	SIDE COVER PLATE
6	P-500-6-12	1	OIL RESERVOIR (NOT SHOWN)
7	P-500-6-10	1	SCREW, PUMP LEVER
8	P-500-6-1	1	SHAFT, PUMP HANDLE
9	P-500-6-13	1	THUMB SCREW, SHAFT
10	P-500-6-7	1	RING, HANDLE
11	P-500-6-9	1	KEY, LEVER
12	P-500-6-2	1	LEVER, SHAFT
13	P-500-6-15	1	TUBE, SUCTION
14	P-500-6-4	2	LINK, PLUNGER
15	P-500-6-5	2	PIN, LINK
16	P-500-8-1	1	DECAL SET
18	P-500-6-3	1	PUMP HANDLE
19	P-500-7-2	2	"VEE" BLOCK
20	P-500-7-1	1	REST PLATE
21	P-500-3	1	PRESS FRAME
24	P-500-6-17	2	SUCTION FITTING W/ SLEEVE AND NUT
27	P-500-4-2	1	PUMP PLUNGER
28	P-500-4-3	1	PLUNGER SLEEVE
29	P-500-4-17	1	PLUNGER PACKING
30	P-500-4-4	1	SLEEVE GASKET
31	P-500-4-1	1	PUMP BODY
32	P-500-4-16	2	BALL, INLET & DISCHARGE
33	P-500-4-12	1	PLUG, INLET VALVE HOLE
34	P-500-4-6	1	SPRING, DISCHARGE VALVE
35	P-500-4-11	1	PLUG, DISCHARGE VALVE HOLE
36	P-500-4-8	1	"O"RING, RELEASE VALVE
38	P-500-6-8	4	SNAP RING, LINK PIN
39	P-500-5-12	1	"O"RING, CYLINDER SEAL
40	P-500-5-2	1	PACKING, PISTON
41	P-500-5-4	1	PISTON
42	P-500-5-3	1	SCREW, PISTON
46	P-500-5-6	1	RAM
47	P-500-5-5	1	PISTON RETURN SPRING
48	P-500-5-1	1	CYLINDER
49	P-500-5-15	1	WIPER WASHER
50	P-500-5-14	1	RAM WIPER
51	P-500-5-7	1	CYLINDER HEAD
52	P-500-5-9	1	RETAINING RING, RAM EXTENSION
53	P-500-5-8	1	RAM EXTENSION
54	P-500-7-3	1	GAGE, PRESSURE
56	P-500-4-7	1	SPRING, SAFETY VALVE

DEVIN LP-500 PARTS LIST

ITEM	PART NUMBER	NO. REQUIRED	NAME
57	P-500-4-14	1	PLUNGER, BALL, SAFETY VALVE
58	P-500-4-15	1	BALL, SAFETY VALVE
59	P-500-6-6	1	RETAINING RING, SHAFT
61	P-500-4-13	1	PLUG, CROSS HOLE
63	P-500-4-19	1	PLUNGER, SAFETY VALVE
64	P-500-8-36	1	BODY, SAFETY VALVE
65	P-500-4-5	1	SCREW, SAFETY VALVE
66	S-4-A	1	ADAPTER, GAUGE
67	P-500-6-18	1	SUCTION COUPLING
68	P-500-6-19	1	ELBOW, SUCTION TUBE CONNECTION
69	P-500-4-9/10	1	RELEASE VALVE ASSEMBLY
70	P-500-6-25	2	BOLT, RESERVOIR MOUNTING
71	P-500-8-37	1	HIGH END SET SCREW
72	P-500-8-38	1	HIGH END LOCK SCREW
73	P-500-4-25	1	"O"RING, SAFETY VALVE BODY
74	P-500-4-24	1	"O"RING, SAFETY PLUNGER
	P-500-9	1	SUCTION, RESERVOIR PICKUP ASSEMBLY
	P-500-4	1	PUMP ASSEMBLY (NOT SHOWN)
	P-500-RK	1	REBUILD KIT, LP-500 (NOT SHOWN)
	LP-500-FS		OPTIONAL FLOOR STAND
	LP-500-6		OPTIONAL INSERT NOSE SET
	LP-500-RAK		RAPID RAM ADVANCE FIELD INSTALL KIT