

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 1/2" 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 1/2 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

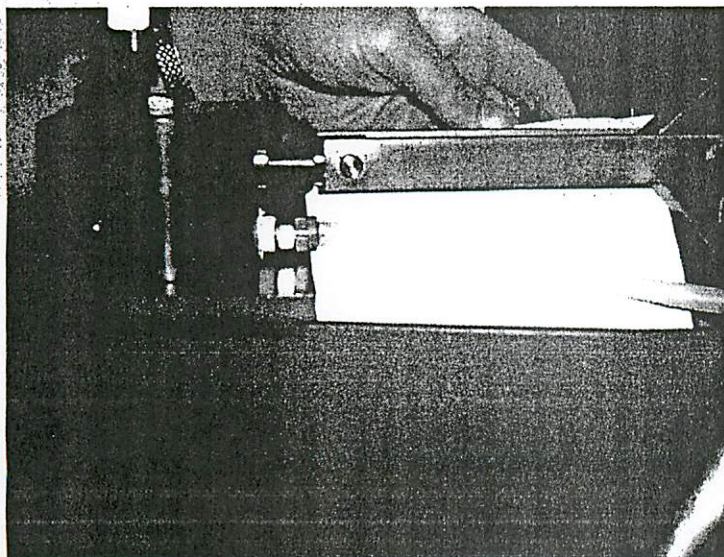
PRIMING INSTRUCTIONS FOR THE DEVIN LP-500 10 TON ARBOR PRESS

Figure #1

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.

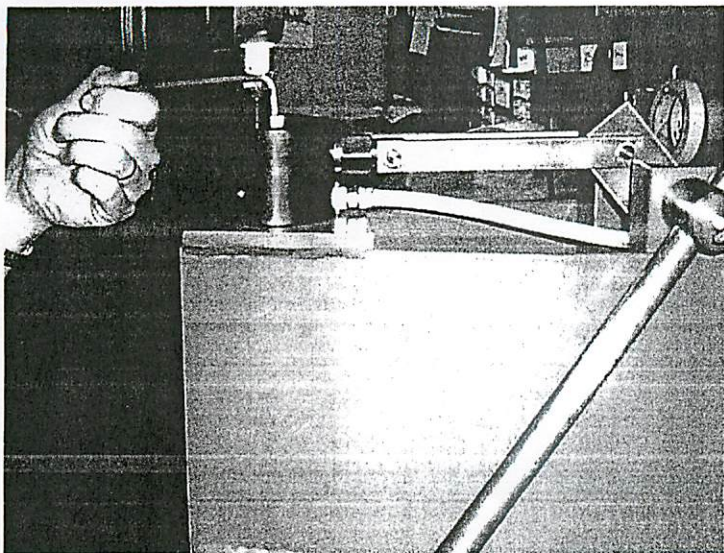


Figure #2

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)

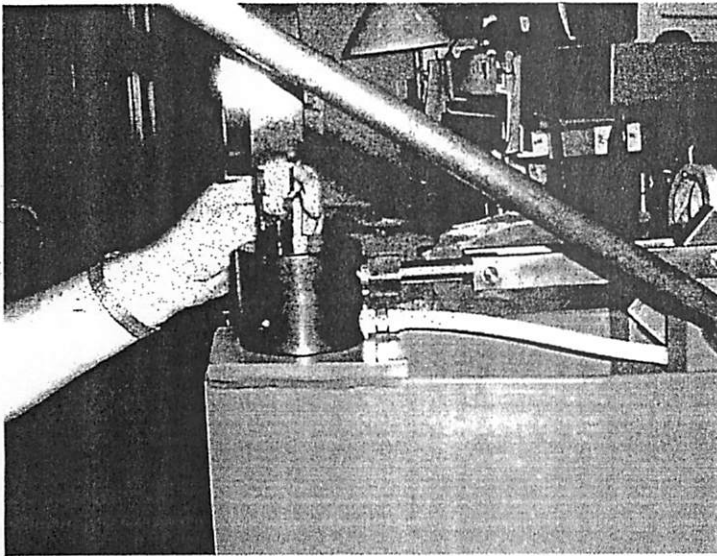


Figure #3

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)

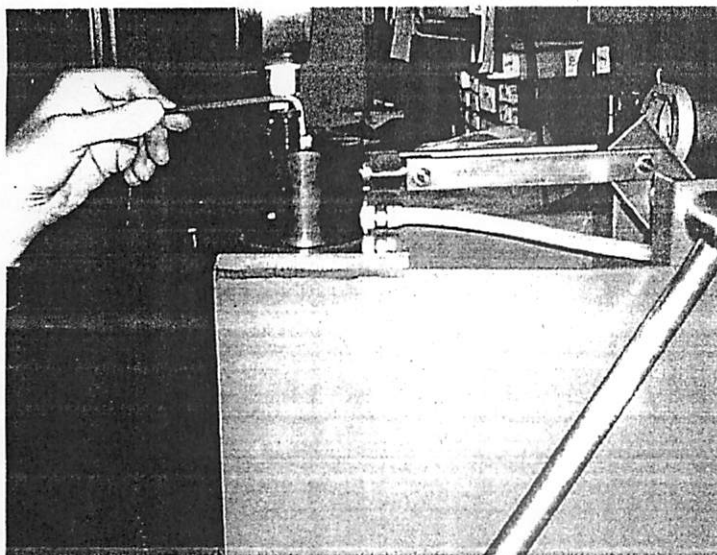


Figure #4

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)

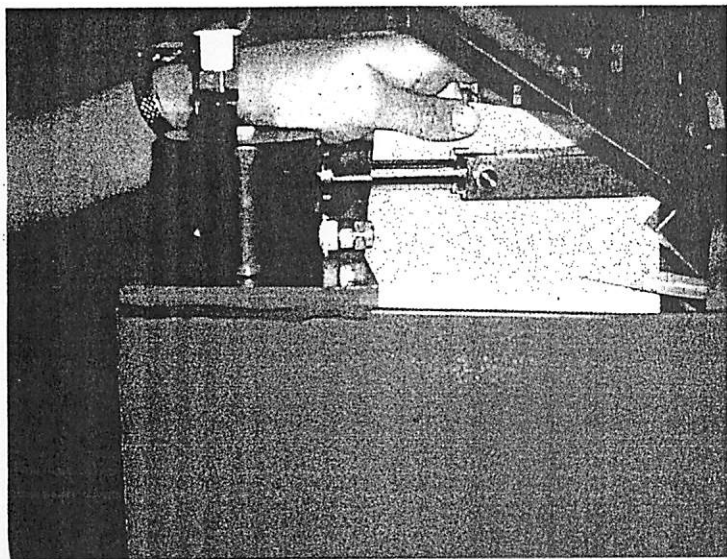


Figure #5

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.