

81-CA332 MAIN HYDRAULIC PUMP INSTALLATION & STARTUP GUIDE



PLACE YOUR ORDER TODAY PHONE ORDERS 1-800-569-1264 FAX ORDERS 1-860-627-9060

WWW.DARCYSAW.COM

USE MOBIL DTE 25 HYDRAULIC OIL ON ALL 81 MACHINES

SYSTEM CLEANLINESS

Extreme care must be taken when assembling components into the system to ensure that no dirt is present to damage the new pump. The oil reservoir should be sandblasted and cleaned completely. Hose assemblies, lines, and fittings must have all scale, cutting and metal chips removed before installation. A thorough cleaning in a degreasing solvent is recommended for all parts.

PIPING

Be certain that all plastic or shipping plugs are removed. Mount unit with case drain on top. Lines should conform to sizes as indicated by ports for all circuits. Minimum drain size must be the same ID as the pump drain connection. Loop the drain line above the highest point of the unit to prevent oil from draining out of the case at all times. The drain line is to extend below the oil level of the reservoir.

It is recommended that a 100 mesh strainer be installed at the end of the pump inlet line in the reservoir. Periodic inspection and cleaning of the strainer is required. A magnetic plug should be installed in the reservoir and should be removed and cleaned every 500 hours. A 10 micron return line filter is recommended. Replace the 10 micron filter element after the first 25 hours of use, and thereafter as needed. New oil should be filtered through a 10 micron filter.

OIL TYPE

See attached to pump or contact factory for recommended oil types.

STARTUP

IMPORTANT: Check that the pump is going to be rotated in the correct direction. Refer to the stamped directional arrow on the pump. Rotating the pump in the wrong direction might damage the pump and may void the warranty. Pump drain line pressure is not to exceed 5 PSI at the pump drain port.

Fill cleaned oil reservoir to required level with clean, filtered oil. Proper oil level should be maintained at all times. Pump inlet line is to extend well below the oil reservoir level to prevent air from being drawn into the circuit. Air leaks into the pump inlet system must be eliminated. Air in the pump will cause internal damage and may void the warranty.

Fill pump and motor housing as full as possible with clean, filtered oil. Drain hoses should come from upper most drain port of housings. Fill inlet hose and loop lines to pump with clean, filtered oil. Open all valves. Start the pump against zero load. If possible, slowly increase RPM's of pump to 1000RPM. Check that pump inlet vacuum does not exceed 5 inches mercury.

Run pump up to 300 PSI for 10 minutes, while bleeding air from the system. Air in the pump will cause internal damage and may void the warranty. All air must be removed from the system. Gradually increase the speed and outlet pressure of the pump during the break-in period.

Check oil reservoir level. Maximum allowable temperature of the pump is 180F. Preferred operating range is 100F to 150F.

The pump is now ready for full operation. Replace the 10 micron return line filter after 25 hours and thereafter as required.

If any unusual noises or conditions are noted during break-in or during operation, immediately stop the pump and call the distributor or the factory.

81-CA332 MAIN HYDRAULIC PUMP INSTALLATION & STARTUP GUIDE (CONT'D)



PLACE YOUR ORDER TODAY PHONE ORDERS 1-800-569-1264 FAX ORDERS 1-860-627-9060

WWW.DARCYSAW.COM

1. MOUNTING THE PUMP

- 1.1 Uncrate unit carefully.
- 1.2 Make certain that electric motor rotation is correct for the pump used.
- 1.3 Leave protective plugs installed in ports.
- 1.4 Mount the unit to the appropriate mounting flange with case drain up.
- 1.5 Make certain that keyed or splined drives are properly engaged as to alignment.

2. CONNECTING THE PUMP

- 2.1 Remove case drain protective plug. Fill case fully with new, clean hydraulic oil.
- 2.2 Minimum drain size must be the same I.D. as pump drain connection. Loop drain line above highest point of pump regardless of mounting position to assure that pump is always filled with hydraulic oil.
- 2.3 Remove protective closure from drain line hose; making sure I.D. is clean, connect to pump.
- 2.4 If pump is to be operated with case drain on horizontal axis, rotate pump to operating position. Install and tighten mounting bolts and set screws.
- 2.5 Repeat step 2.3 for Pressure port connection.
- 2.6 Repeat step 2.3 for Inlet port connection. NOTE: Inlet section should be primed with hydraulic oil before making final connection.
- 2.7 Make certain that inlet line is free of restrictions and that inlet strainer is clean.
- 2.8 Check reservoir for cleanliness and fill to proper level with new, clean hydraulic oil Preferred reservoir oil level is pump inlet port height or above ("flooded" inlet)

3. START-UP PROCEDURE

- 3.1 From the pressure port of the pump trace the pressure line to the first device (valve or actuator), downstream of the pump.
- 3.2 Vent the valve or actuator to atmosphere by use of the vent port, if provided or by partially loosening the fitting at the inlet to the valve or actuator. This will allow any air trapped in the pump inlet and pressure lines to

escape in front of the oil. Operating the unit after installation without venting trapped air can result in permanent damage to the pump.

- 3.3 Jog the motor ON-OFF switch to cause slow rotation of the pump shaft.
- 3.4 When jogging the unit, watch the point at which the system is being vented. Milky colored air and oil will appear seeping out of the vent. Continue jogging until vented oil appears clear. Re-tighten fitting or vent port.
- 3.5 Re-check reservoir and refill if any appreciable amount of oil has been vented.
- 3.6 Operate at "No Load" capacity.
- 3.7 Repeat steps 3.2 and 3.6 for all other devices (if any) downstream of the pump.
- 3.8 Check reservoir oil level and condition. If reservoir oil is milky, check for loose inlet connections or inlet fitters.

4. ADJUSTING THE PUMP

- 4.1 Deadhead pressure adjustment.
 - e. Before adjusting the deadhead pressure, install a pressure gauge of the appropriate pressure range in the pump output line.
 - f. Start the unit. Block the downstream pressure line. Read the gauge pressure. If the gauge pressure is not at the desired level, then remove the large hexagonal valve cap from the unit.
 - g. If the gauge pressure is too low, turn the slotted adjusting screw clockwise to increase the compensator pressure setting.
 - h. If the gauge pressure does not increase as the screw is being turned clockwise, then reverse the direction of screwdriver rotation and turn the adjusting screw counter-clockwise until the adjusting screw projects from compensator housing .220 to .240 inch.
 - i. Now, check and make sure that there is no valve open to tank downstream, including any relief valves.
 - j. Repeat Step c.
 - k. If the deadhead pressure setting is higher than desired, then turn the adjusting screw counter-clockwise until desired deadhead pressure setting is reached.
 - l. Replace the hexagonal valve cap and tighten with a 1-inch wrench while pump is operating at the desired deadhead pressure.

81-CA332 MAIN HYDRAULIC PUMP INSTALLATION & STARTUP GUIDE (CONT'D)



PLACE YOUR ORDER TODAY PHONE ORDERS 1-800-569-1264 FAX ORDERS 1-860-627-9060

WWW.DARCYSAW.COM

4.2 Minimum Flow Adjustment (if equipped with one)

- a. The minimum flow adjustment screw is identified by the stamped letters "MIN" located adjacent to the screw.
- b. The minimum flow adjustment screw limits the minimum ramp angle and therefore minimum flow rate attainable during pump compensation.
- c. **Note:** It is essential to include a pressure relief valve located immediately downstream from the pump in the pump output line. (The relief valve must be located between the pump and the directional control valve). When the "MIN" flow adjustment is utilized and the pump is undergoing pressure compensation, there will still be pump output flow. If the system does not include a properly adjusted relief valve (relief valve should be adjusted so as to operate at a higher pressure than the compensator setting, but in no instance should it exceed 3000psi.) in the pump discharge line, the system pressure will immediately to to extremely high pressure and failure will occur.
- d. Operate pump at desired deadhead pressure setting, observing the pump output flow rate at deadhead. If the flow rate is not as desired, then the minimum flow rate adjustment setting must be changed.
- e. To change the minimum flow rate setting, loosen the lock nut of the minimum flow screw, rotating the nut counter-clockwise.
- f. Reduce the pump discharge pressure to minimum pressure attainable ("Free Flow").
- g. Using an adjustable wrench on the flats of the min. flow adjustment screw, rotate the screw counter-clockwise 90° to decrease the flow rate, or rotate the screw clockwise 90° to increase the flow rate.
- h. Repeat steps d, f, and g until desired flow rate at deadhead is attained.
- i. When desired flow rate at deadhead is attained, maintain that setting of the minimum flow adjustment screw with the adjustable wrench applied to the flats of the screw, while tightening the lock nut clockwise.

4.3 Maximum Flow Adjustment (If equipped with one)

- a. The maximum flow adjustment screw is identified by the stamped letter "MAX" located adjacent to the screw.
- b. The maximum flow adjustment screw limits the maximum ramp angle and therefore the maximum output flow rate of the pump.
- c. To change the maximum flow rate setting, loosen the lock nut with a wrench, rotating the nut counter-clockwise.
- d. Reduce the pump discharge pressure to minimum pressure attainable ("Free Flow").
- g. Using an adjustable wrench on the flats on the end of the max. flow adjustment screw, rotate the screw counter-clockwise to increase the flow rate or clockwise to decrease the flow rate. When desired flow rate is attained, maintain that setting with the adjustable wrench on the adjustment screw, while tightening the lock nut clockwise.