RP OIL PUMP AND MOTOR SET

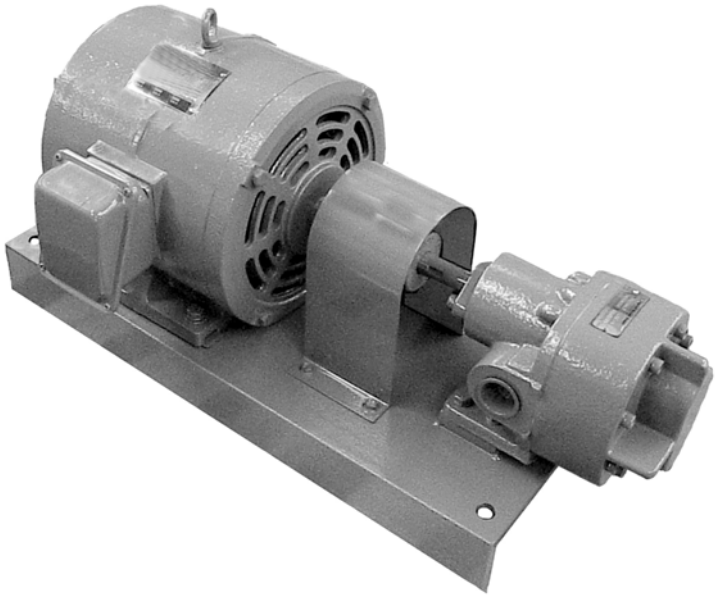


Fig. 1 – Typical RP Pump Set

WARNING

These instructions are intended for use only by experienced, qualified combustion start-up personnel.

Adjustment of this equipment and its components, by unqualified personnel, can result in fire, explosion, severe personal injury, or even death.

TABLE OF CONTENTS

These instructions are intended to serve as guidelines covering the installation, operation, and maintenance of Hauck equipment. While every attempt has been made to ensure completeness, unforeseen or unspecified applications, details, and variations may preclude covering every possible contingency. **WARNING: TO PREVENT THE POSSIBILITY OF SERIOUS BODILY INJURY, DO NOT USE OR OPERATE ANY EQUIPMENT OR COMPONENT WITH ANY PARTS REMOVED OR ANY PARTS NOT APPROVED BY THE MANUFACTURER.** Should further information be required or desired or should particular problems arise which are not covered sufficiently for the purchaser's purpose, contact Hauck Mfg. Co.

WARNING

This equipment is potentially dangerous with the possibility of serious personal injury and property damage. Hauck Manufacturing Company recommends the use of flame supervisory equipment and fuel safety shutoff valves. Furthermore, Hauck urges rigid adherence to National Fire Protection Association (NFPA) standards and insurance underwriter's requirements. Operation and regular preventative maintenance of this equipment should be performed only by properly trained and qualified personnel. Annual review and upgrading of safety equipment is recommended.

A. GENERAL INFORMATION

Hauck's "RP" Series Pump and Motor Sets are factory assembled units designed to meet specific volume and discharge pressure requirements at the viscosity specified. Each set combines a positive displacement rotary gear pump with a suitable "T" frame industrial electric motor mounted on a steel base. The motor and pump are matched to ensure that the requirements of the application are met with maximum efficiency. A pressure relief valve (not supplied as part of the set) must be installed immediately downstream of the pump. This pressure relief valve (bypass valve) should be capable of maintaining the required pump discharge pressure of either 50, 100, or 150 psig.

B. RECEIVING AND INSPECTION

Upon receipt, check each item on the bill of lading and/or invoice to determine that all equipment has been received. A careful examination of all parts should be made to ascertain if there has been any damage in shipment.

IMPORTANT

If the installation is delayed and the equipment is stored outside, provide adequate protection as dictated by climate and period of exposure. Special care should be given to all motors and bearings, if applicable, to protect them from rain or excessive moisture.

C. INSTALLATION

1. Locate the pump set at a convenient place in the line. The unit should be mounted on a flat concrete or other suitable floor.

2. Bolt the unit to the floor using the holes provided for this purpose in the channel irons of the base.

3. Pipe the inlet (suction) oil line to the appropriate connection on the unit. The suction line should be as short as possible with a minimum number of elbows. For best operation, the following conditions should be met.

    a. Use piping one size larger, and never any smaller in size, than the connection on the pump.

    b. Position the piping with a slight upward slope toward the pump.

c. Avoid upward loops or high points where air might be trapped.

d. Use clean pipe with good threaded joints.

e. Ensure tight joints by using a sealing compound recommended for oil use. We recommend using a high quality thread sealant with teflon (Loctite 565 or equal).

CAUTION
Leaky joints in the suction piping will cause the pump to become over bound. This could result in excessive wear and serious pump damage.

4. Pipe the outlet (discharge) oil line to the appropriate connection on the pump. Use piping the same size as the connection provided. A larger size may be used when the lines are long to avoid excessive pressure losses. A relief valve (bypass valve) must be installed as shown in figure 2. This valve must be adjusted so as to control and maintain the required pump discharge pressure of either 50, 100 or 150 psig. Refer to the instructions which accompanied the valve.

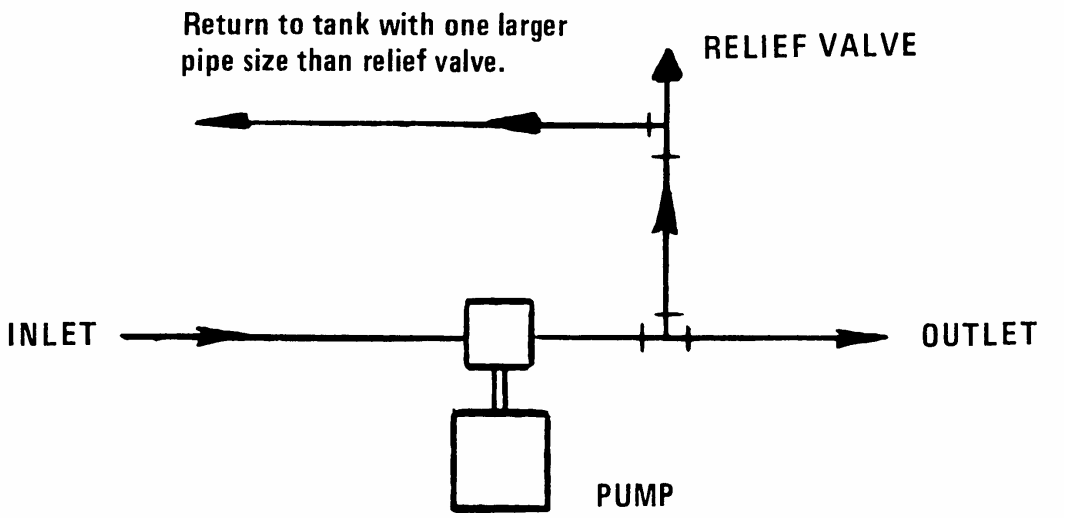


Fig. 2 - Typical piping arrangement showing pressure relief valve placement.

5. Complete all wiring in accordance with the electrical codes applicable to your location.

6. Wire the pump as indicated on the unit's nameplate. Starters are not normally supplied as a part of the set. This permits the customer to choose the most convenient location for the switch. Before the wiring is sealed, momentarily energize the pump motor and check the direction of the pump rotation. The pump must rotate in the direction which causes the oil to be carried around, not between, the gears (as indicated in Figure 3).

Attach the red arrow (Hauck supplied) to the mechanical guard so that it points in the direction of oil flow.

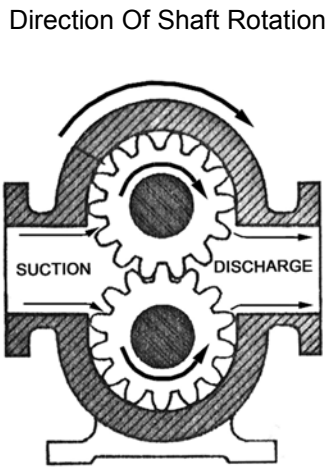


Figure 3. Proper Oil Flow Through Gear-Type Rotary Pump.

CAUTION

Before operating pump set, re-check all bearing alignment. The pump and drive shafts should be aligned to within 0.005 inches in four quadrants when using a dial indicator. Alignment problems can result from excessive or inadequate pipe tightening or mishandling during shipping or installation. Final alignment should follow mounting and piping.

D. OPERATION

Start oil flow to the pump.

DO NOT RUN THE PUMPS WITHOUT OIL. When it is impossible to prime the suction side of the pump, be certain that the pump is wetted with oil and that the discharge side of the pump has a head of oil to allow oil in the pump while drawing air. The presence of air in the oil piping can cause damage to the pumping equipment. For this reason, all air should be bled from the system as soon as possible after the pump has been started.

Start the pump.

E. MAINTENANCE

Lubricate the pump and motor fittings as required.

If it should become necessary to remove a pump for repair or replacement, accomplish the following.

a. Isolate the pump to be removed by closing the shutoff valves in the pump's suction and discharge lines. On duplex pump units, one pump can be removed while the system remains fully operational.

b. Remove the mechanical guard which covers the drive shaft and coupling.

c. Remove the pump and/or motor from the mounting base. The pumps are aligned on their mounting bases at the factory for both piping and drive shaft alignment accuracy. AVOID BREAKING PIPING CONNECTIONS OTHER THAN AT UNIONS.

d. Disassemble the pump for maintenance or repair.

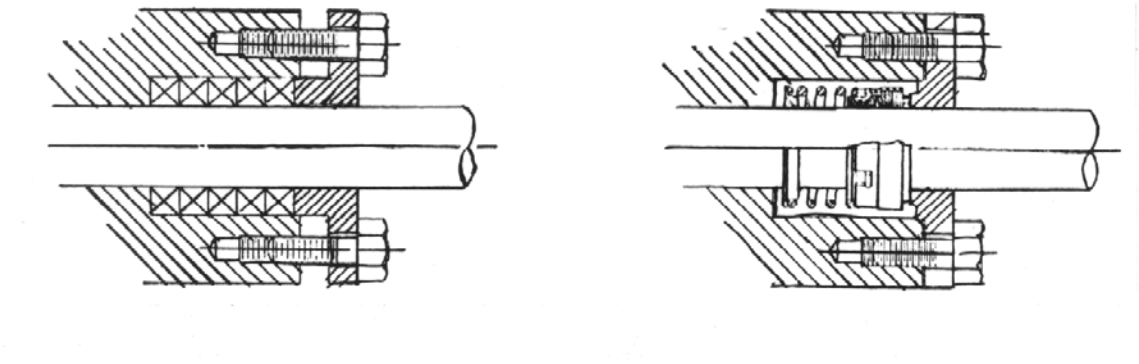
e. Reassemble the pump. Always use gaskets of the same size as the originals since pump operation and performance are dictated by accurate gasket clearances.

f. Replace the pump on its mounting base. Be certain to realign the unit with proper shim stock for drive shaft alignment. The pump and drive shafts should be aligned to within 0.005 inches in four quadrants when using a dial indicator. Final alignment should follow mounting and piping.

CAUTION
Alignment problems can result from excessive or inadequate pipe tightening.

g. Replace the mechanical guard.

h. Rotate the pump shaft by hand to ensure that there are no restrictions to its movement. Periodically inspect the seals for leakage. If leakage is occurring, the seals should be replaced. If the oil temperature at the pump exceeds 200°F, a high temperature seal is recommended and available. Replacement seals and drive couplings should be stocked for maintenance use.



Packing Gland Packed Stuffing Box **Mechanical Seal**

Figure 4. Cross-Sectional Views of Pump Shaft Seals.