

# FOUNDATION

A solid level foundation is necessary to prevent vibration and misalignment, both of which are detrimental to your gear drive. Width and length of the base will be governed by size of gear drive, size of engine, and specifications of the pump head.

SHORT COUPLED INSTALLATIONS BETWEEN GEAR DRIVE AND ENGINE SHOULD HAVE A COMMON FOUNDATION.

The depth of the foundation should extend down to a solid footing, if possible, and will depend on the type of soil, total weight of the installation, and the climate. Where freezing temperatures occur, the foundation should extend below the frost line.

# INSTALLATION

The base of every Johnson Right Angle Gear Drive is provided with a machined rabbet to insure centering on the pump head. Therefore, it is essential that the pump shaft be in the exact center of the corresponding rabbet in the pump base.

Since a faulty headshaft will cause vibration and ultimately destroy the bearings and gears, it must be thoroughly checked for straightness and alignment. The procedure for checking the headshaft, which is outlined below, requires removal of the dome cover from the drive. *While the dome is off, care must be taken to protect against grit and dirt as even a small amount might cause damage to the bearing located in the top of the drive.*

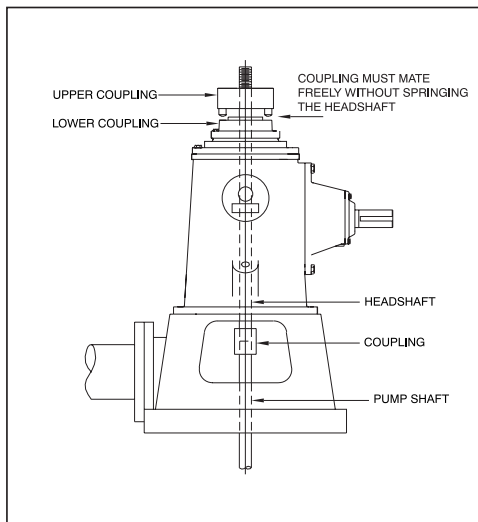


Figure 1

## Checking the Headshaft

Before an alignment check can be made, it is necessary to ascertain that the headshaft is true to size, that diameters are concentric if shaft changes in diameter, and that it is absolutely straight throughout its length.

Combination drives are furnished with a steady bearing to prevent whipping of the headshaft under electric motor operation. The headshaft of such drives must therefore be tested for fit in the steady bearing.

Steady bearings are of the sealed ball bearing type and are mounted on adaptor sleeves through which the head shaft *must be a sliding fit* but not a press fit.

Headshafts are sometimes made with the pump coupling end larger than the hole in the hollow shaft of the gear drive. This makes it necessary to lower the drive on the pump head with the headshaft coupled in place. Particular care must be taken in such cases to avoid bending the headshaft or damaging the oil seal tube.

## Mounting the Drive

After the headshaft has been thoroughly checked, inspect the machine fit of both gear drive and pump head for burrs or obstructions. Install the drive on the pump head and bolt in place, tightening thoroughly and evenly.

With the headshaft in place, slip on the upper coupling and lower it carefully into position. **WHEN THE UPPER COUPLING POSITIONS ON THE LOWER COUPLING WITHOUT SPRINGING THE HEADSHAFT, IT INDICATES THAT THE UNIT IS CORRECTLY ALIGNED.** Correct the alignment if upper and lower couplings do not meet properly.

With the gear drive and headshaft correctly aligned, install the ratchet pins and gib head key in the upper coupling. This key should be a slide fit, permitting adjustment of the headshaft by means of the adjusting nut. Tighten the nut as directed by the pump manufacturer, and lock with screw provided for this purpose. **DO NOT OIL THE RATCHET PINS.**

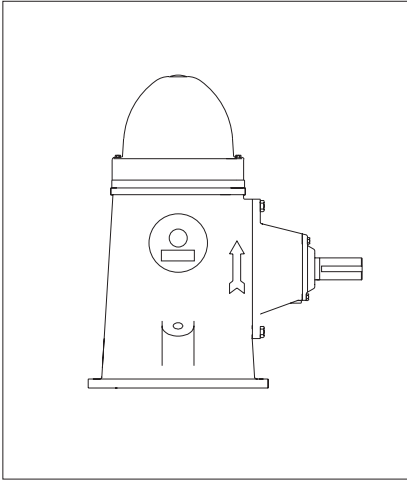


Figure 2

## Checking the Rotation

Check the rotation of the power unit and pump in relation to that of the drive, as shown by the arrow on the case. **DO NOT OPERATE IN THE REVERSE DIRECTION OF THE ARROW**, as the lubrication system will not function and the destruction of the drive will result. Rotate the drive by hand before applying the power as a precaution against a bound or locked installation. Figure 2 shows drive with standard rotation.

## Oil Cooler Connection

Models H60 and larger are supplied with counter-flow oil coolers with water connections taped for 1/2" standard pipe. These connections are arranged vertically, the top connection for the inlet and the bottom connection for the outlet. Use rubber hose or copper tubing for water supply. **DO NOT MAKE A RIGID PIPE CONNECTION**. A moderate amount of cold water should flow through the cooler when the drive is operating, and provision should be made in the piping to permit draining the cooler in localities subject to freezing weather conditions.

Under normal conditions with 70°F water available, requirements are approximately 1 to 3 gal/min (4 to 12 liters/min) for models H60 thru H200 and 4 to 6 gal/min (15 to 23 liters/min) for models H250 and above. Maximum allowable water pressure 100 psi.

## Filling with Oil

Correct lubrication of your Johnson Right Angle Gear Drive is a **MUST** for satisfactory operation. As the operator of this equipment, it is your responsibility to **KEEP THE OIL RESERVOIR FILLED AT ALL TIMES**.

Fill the oil reservoir until the oil is level with the top of the filling hole or the line on the gauge marked "Full." Be sure to tighten plug securely after filling or draining.

Look in the section on "Lubrication" for information about grades of oil, frequency of oil changes, and other data on the lubrication of the gear drive.

Oil reservoir capacities are as listed below:

<i>Models</i>	<i>Gallons - U.S.</i>	<i>Liters</i>
H20	1/2	2
H40 (12)	3/4	3
H40-H60-H80	1	4
H110-H125	1 1/2	6
H150-H200	3	12
H250-H300	4	15
H350-H425-H500-H600	6	23
H750-H1000-H1200-H1500	10 1/2	40

**OUR WARRANTY DOES NOT PROTECT YOU IN THE EVENT OF FAILURE FROM NEGLIGENCE IN MAINTAINING SUFFICIENT OIL OF RECOMMENDED GRADE IN THE GEAR DRIVE.**