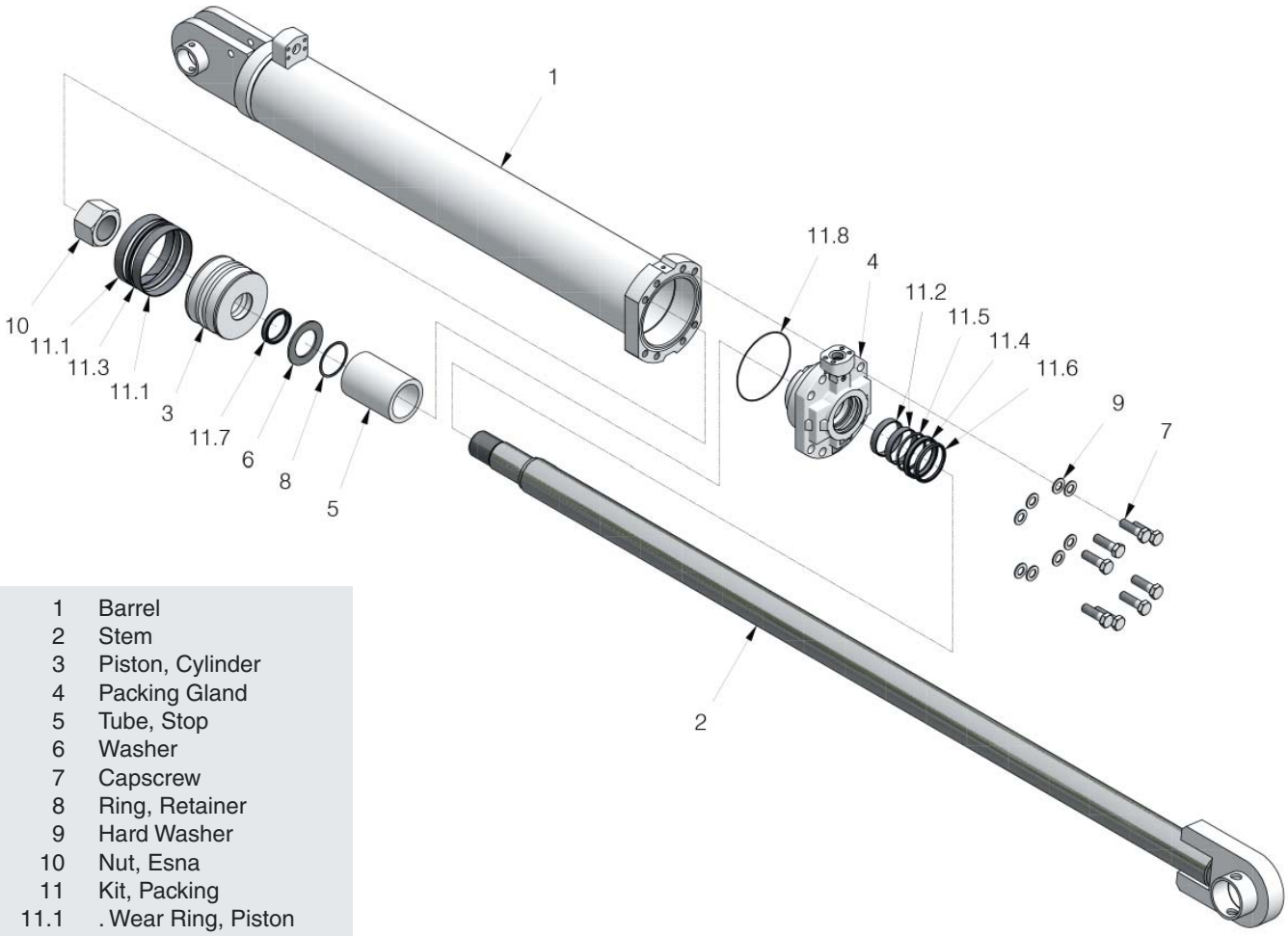
Wagner Hydraulic Cylinder Repair

General

Wagner cylinders are manufactured with close tolerances and quality materials for maximum service life. Maintaining hydraulic oil cleanliness is also vital to a long service life. Regular fluid changes, oil sampling, and filter changes are required to get the most out of your Wagner cylinders. See your operator's manual for preventive maintenance details.

A properly maintained machine can expect at least 10,000 hours of operation prior to hydraulic cylinder seal replacement.



1	Barrel
2	Stem
3	Piston, Cylinder
4	Packing Gland
5	Tube, Stop
6	Washer
7	Capscrew
8	Ring, Retainer
9	Hard Washer
10	Nut, Esna
11	Kit, Packing
11.1	. Wear Ring, Piston
11.2	. Wear Ring, Rod
11.3	. Seal, Piston
11.4	. Seal
11.5	. Seal, Buffer
11.6	. Wiper Ring
11.7	. Seal
11.8	. O-Ring

Figure 1 Typical Wagner Hydraulic Cylinder (L60 Tilt Cylinder Shown)

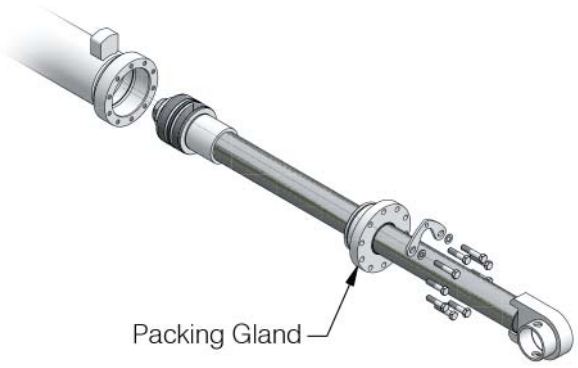


Figure 2 Remove Packing Gland

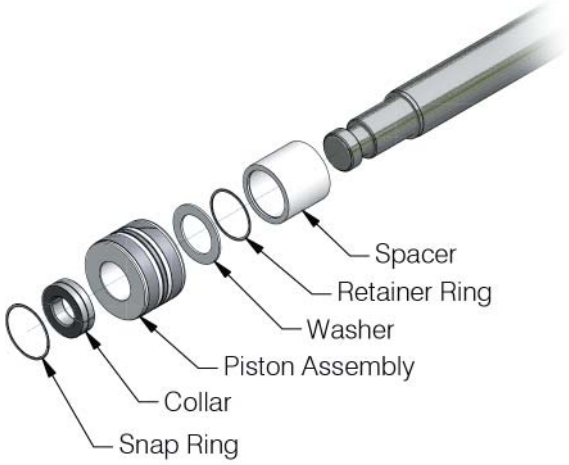


Figure 3 Remove Piston Assembly (Collar Design)

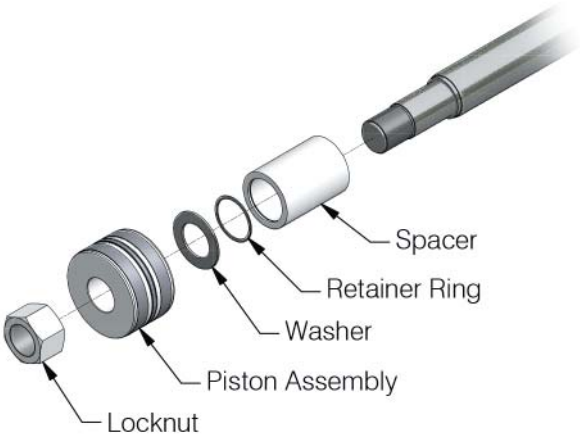


Figure 4 Remove Piston Assembly (Locknut Design)

Disassembly

1. Remove the capscrews and washers from the packing gland, and remove the packing gland from the barrel. See Figure 2.
2. Pull the stem and eye assembly from the barrel. Be careful to avoid marring the inner surface of the barrel. Keep the stem parallel to the barrel.
3. Remove either the collar (Figure 3) or the locknut (Figure 4), and remove the piston, and the washer, retaining ring, and spacer, if applicable.
4. Clean all of the metal components thoroughly.
5. Inspect all metal components for damage. Examine sealing surfaces of the stem and barrel for cuts and scratches. Small scratches may be polished out with fine emery cloth. Deeply scratched components must be replaced.
6. Inspect restrictor poppets, if applicable. See Page 4.

Seal Replacement

1. Obtain seal replacement kit for the cylinder being serviced. Consult your parts manual for part numbers.
2. Remove all seals in the piston and packing gland. See Figure 5 and Figure 6. Remove the old seals by cutting with a knife. Careful heating with a flame will soften the seal, making the removal easier.
3. Replace all seals. Never reuse old seals.
4. See Figure 7 for seal orientation.
5. Coat O-rings and Seals with petroleum jelly before installing, if required.

NOTE: DO NOT USE GREASE, as some greases will not dissolve in oil and may wash off eventually accumulating in, and clogging, the return filter.

Reassembly

1. Reassemble the cylinder in the reverse order of disassembly.
2. Torque the piston nut (if applicable) and the packing gland capscrews to the values shown in your parts manual. Apply medium strength threadlocker to the packing gland capscrews, and torque in a cross pattern.

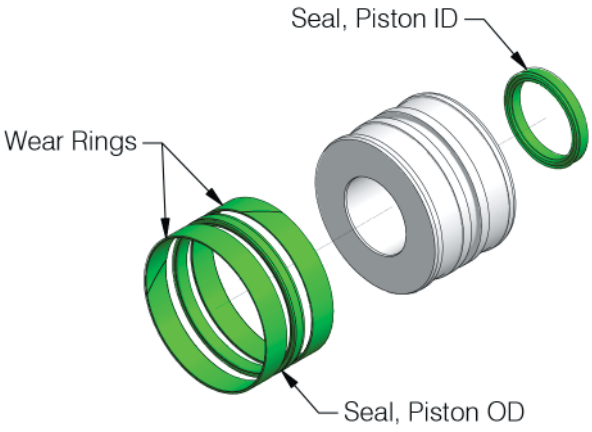


Figure 5 Remove Seals from Piston

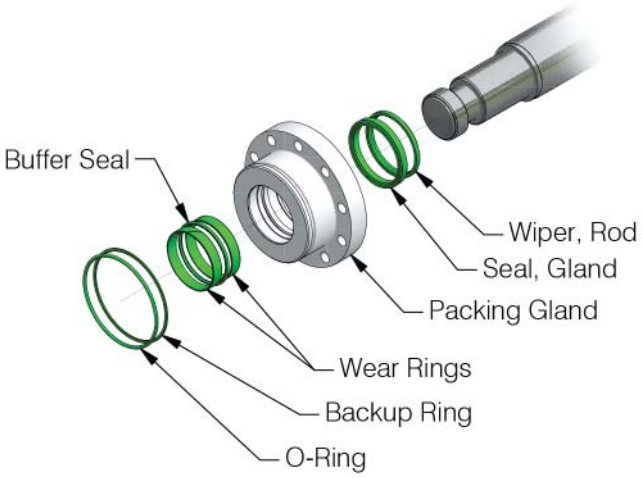


Figure 6 Remove Packing Gland and Seals

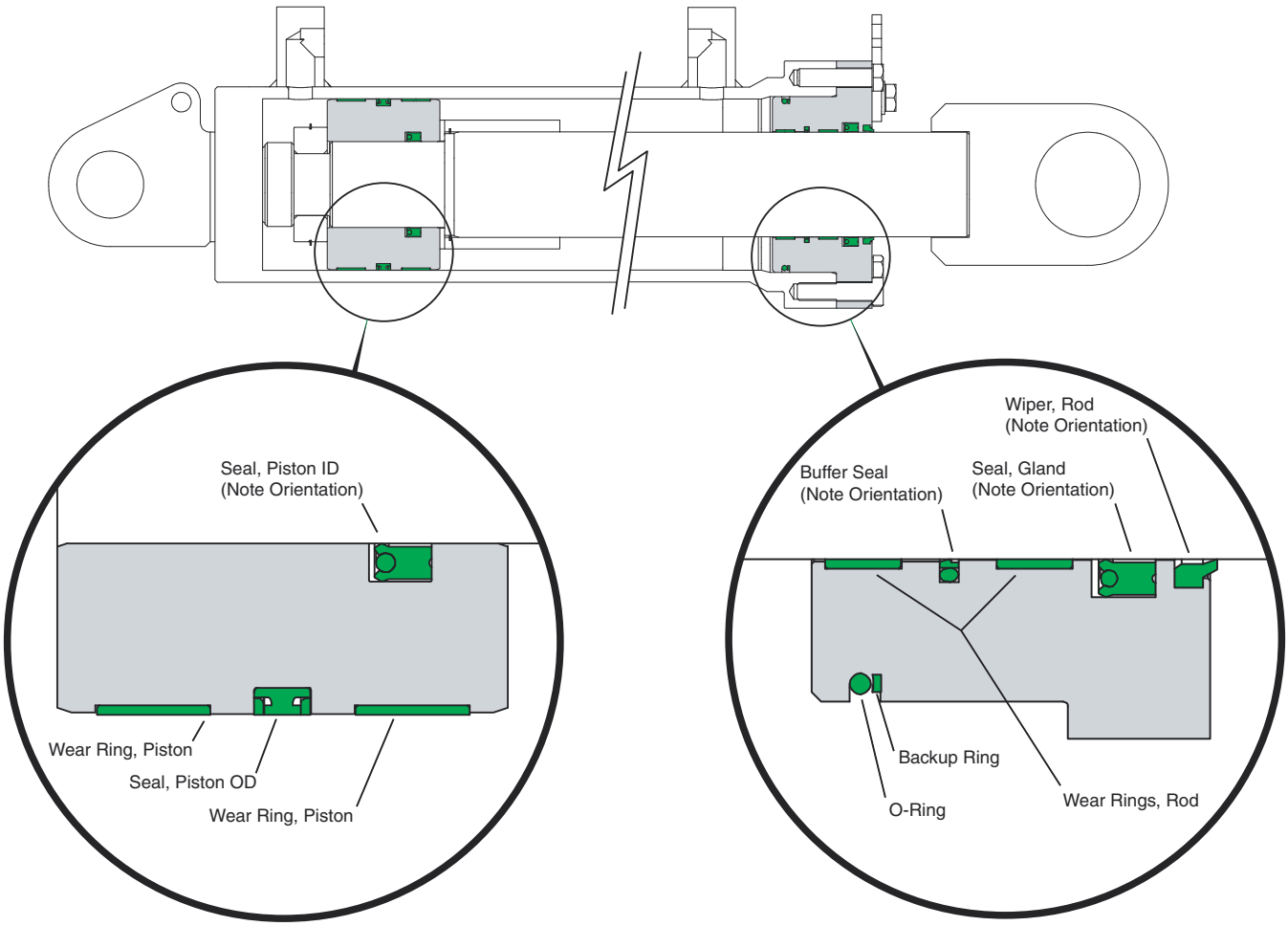


Figure 7 Seal Orientations (Typical, L60 Hoist Cylinder Shown)

Periodic Maintenance of Hoist and Tilt Hydraulic Circuit Flow Restrictors

General

Restrictor poppets are installed in the hoist and tilt circuits to prevent cylinder cavitation and control cylinder movement in case of hose or hydraulic system failure. These restrictor poppets are located at the base end of the hoist cylinders and at the stem end of the tilt cylinders.

Hoist Circuit

The restrictor poppets, located within a manifold mounted directly to the base end of the hoist cylinders (see Figure 8), restrict the flow of oil out of the cylinder base and allow free flow of oil into the cylinder base. Periodic inspection and maintenance of this system is required due to the movement of the poppets within the manifold and the subsequent wear of the machined seating surface. Whenever a cylinder is disassembled, a thorough inspection of the manifold and restrictor poppet should be performed. Replace any defective parts.

Tilt Circuit

The restrictor poppets are located at the stem end of the tilt cylinder. See Figure 9. These restrictor poppets are not installed in a manifold, but are seated against a machined area within the working port in the packing gland of the cylinder. Inspect for wear, and replace all defective parts.

⚠ WARNING

Damage to the hydraulic system, severe injury or death are possible if the restrictor poppets are not installed, or if any component requires repair. Always inspect these poppets whenever a hoist or tilt cylinder is resealed.

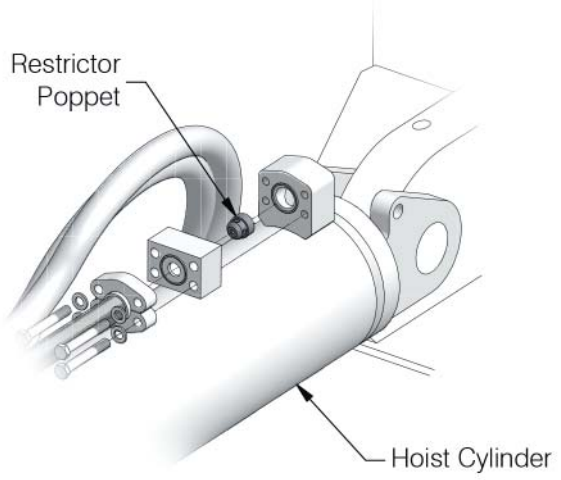


Figure 8 Hoist Cylinder Poppet Valve

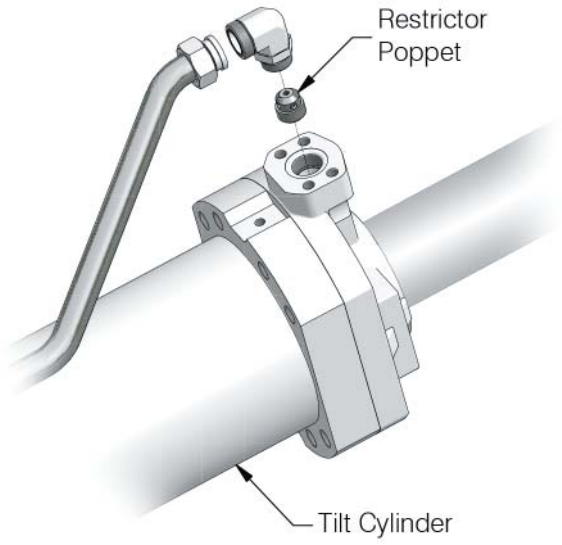


Figure 9 Tilt Cylinder Poppet Valve