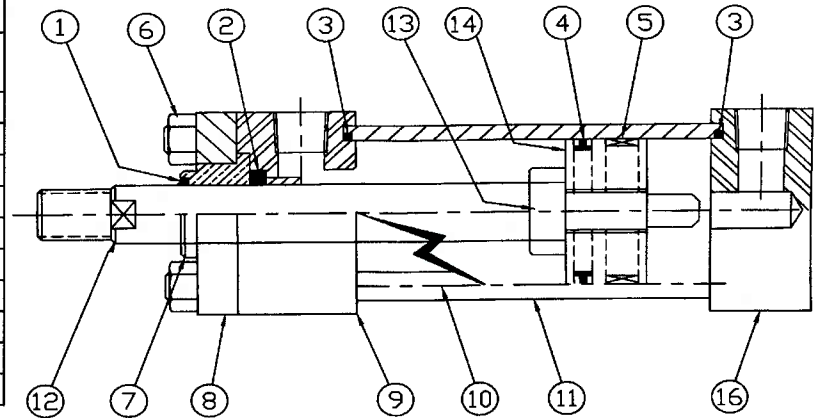




# HD SERIES SEAL KIT

"HD" SERIES CYLINDER COMPONENTS			
ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
1*	Rod Wiper	9	Head
2*	Rod Seal	10	Tie Rods
3*	End Seals	11	Tube
4*	Piston Seal	12	Piston Rod
5*	Wear Strip	13	Cushion Sleeve
6	Nuts	14	Piston
7	Bearing	15	Cap Cushion
8	Retainer	16	Cap



\* Included in repair kit

Note: If cylinder (Series AL) has lip seals, no wear strip (5) is used. Two lip seals will be supplied.

## CYLINDER MAINTENANCE INSTRUCTIONS

Cylinder life is directly dependant on proper installation and clean hydraulic fluid.

Cylinders are not structural units and are designed only to push and pull. The piston rod must be properly aligned with the mating part in both extended and retracted positions. Misalignment will cause mechanical interference and shorten cylinder life.

When rebuilding cylinders make sure all parts are clean before assembly, and avoid introducing any dirt or chips into the cylinder. Check the piston rod (12) and cylinder tube (11) for damage and replace if necessary. Call Higginson to order. Pre-lubrication of all seals prior to reassembly is recommended for ease of installation. Note: Open or v-notch side of seals always face the pressure

### Disassembly

1. Remove any rod clevis or jam nut from the piston rod end.
2. Remove nuts from one end of tie rods. Vise grips may be clamped on tie rod to stop it from turning.
3. Remove retainer (8) bearing (7) head cap (9)
4. remove piston from barrel by pulling on piston rod. Do not take piston off piston rod as piston is anaerobically (lock tite) and peaned to the rod. (some pistons may be fastened with a nut)
5. Carefully remove all seals (1) (2) (3) (4) and wear strip (5). Do not scratch sealing surfaces while removing seals.
6. Clean all surfaces with varsol or other suitable grease remover.
7. Inspect barrel inside, rod surface and bearing inside diameter for wear or scratches. If these parts show signs of wear or scratches they must be replaced. Call Higginson for part numbers.

### Re-assembly

1. Install piston seal (4) Put back up rings on either side on seal.
2. Install wear strip (5)
3. Pre-lub inside barrel (11) and push piston assembly (14) (12) into barrel. Do not pinch seal or backups when inserting.
4. Install end seals (3) in end caps. Grease may be used to hold seals in place during assembly.
5. Place front cap (9) over rod end (12) onto barrel (11) ensuring that groove with end seal seats against barrel end.
6. Pre-lub and install rod seal (2) by sliding it over the rod (12) with the open end facing head cap (9) Seat seal into head (9) by pushing on seal edges with a blunt instrument. (rounded screwdriver)  
Note: take care passing seal over rod thread. If rod has full thread, cover thread with electrical tape.
7. Install wiper (1) into bearing (7) Make sure wiper lip faces away from bearing flange.
8. Slide bearing over rod (12) with flange facing head (9)
9. Place retainer (8) over bearing (7) against head cap (9)
10. Take rear cap (16) with tie rods (10) still attached and insert tie rod ends through head cap and retainer until groove with end seal seats against barrel.
11. Install nuts (6) on tie rods (10) with torque wrench. Tighten using equal torque per chart shown. Vise grips can be used to stop tie rods from spinning. Make sure nuts have full thread engagement.

### Tie Rod Torque

Bore	Torque ft/lbs	Bore	Torque ft/lbs
1.1/2"	34	4"	120
2"	60	5"	310
2.1/2"	60	6"	530
3.1/4"	120		