

MAINTENANCE INSTRUCTIONS
SERVICE
Hydraulic Rotary Actuators
MODELS 900 THROUGH 30,000

FLO-TORK, INC.
1701 N. MAIN ST., P.O. BOX 68, ORRVILLE, OHIO 44667-0068

PHONE 330-682-0010

FAX 330-683-6857

MAINTENANCE INSTRUCTIONS

MAXIMUM OPERATING PRESSURE – 3000 psi NON-SHOCK

KEY CONSIDERATION IN THE DISASSEMBLY OF THE UNIT IS DETERMINING THE PINION SHAFT KEYWAY RELATIONSHIP TO THE RACK POSITION TO MAINTAIN PROPER TIMING AT RE-ASSEMBLY

NOTE: STANDARD UNITS ARE TIMED WITH THE PINION SHAFT KEYWAY AT 12 O'CLOCK WHEN LOOKING AT THE BEARING CAP SIDE, AS SHOWN ON THE ENCLOSED TYPICAL DRAWING

GENERAL

FLO-TORK ROTARY ACTUATORS REQUIRE CLEAN, FILTERED HYDRAULIC OIL FOR SATISFACTORY OPERATION THE SAME AS ANY OTHER HYDRAULIC COMPONENT. THE STANDARD BUNA-N SEALS ARE DESIGNED FOR PETROLEUM BASE FLUIDS. DURING RE-ASSEMBLY, TORQUE ALL BOLTS IN ACCORDANCE WITH TORQUE TABLE.

DISASSEMBLY

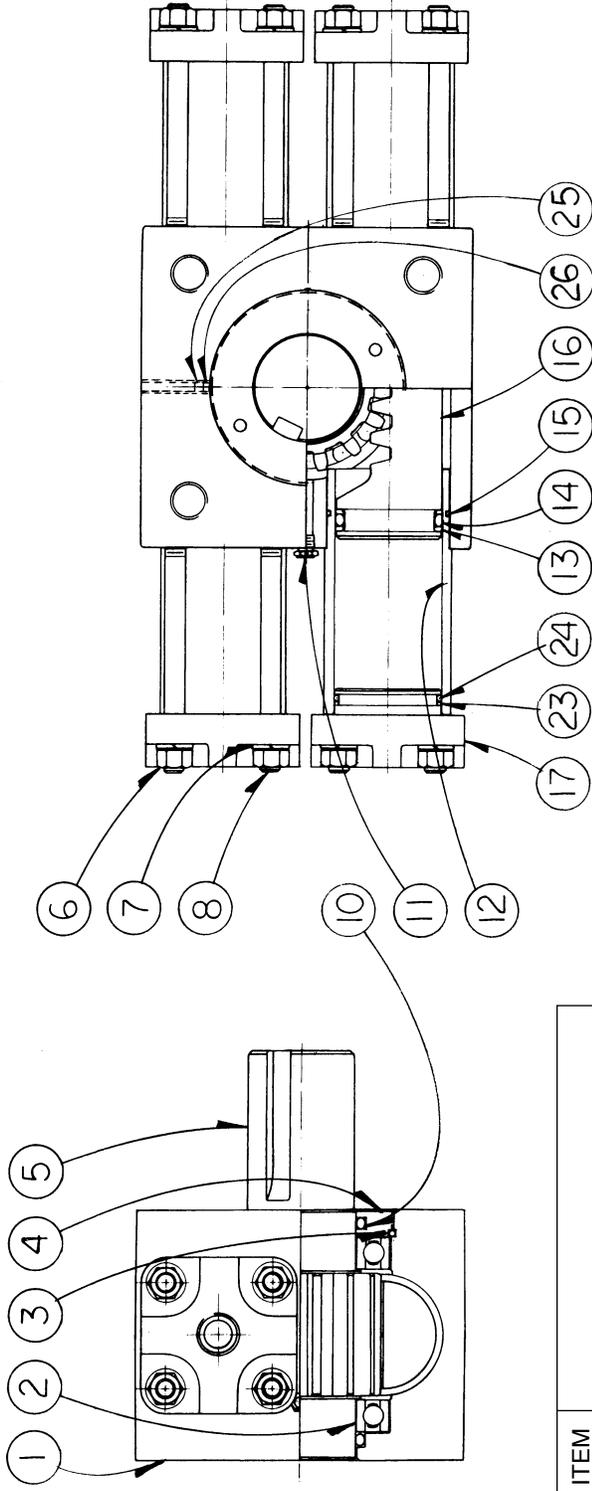
1. Remove all cylinder head tie bolts/tie rods.
2. Remove cylinder heads.
3. Determine that the rack is at mid-point of travel (Equal amounts of rack extended on each side of housing.) Note and record pinion shaft keyway location for re-assembly.
4. Back off the bearing cap set screw. Using a spanner wrench, unscrew the threaded bearing cap from the housing.
5. Remove O-ring from housing.
6. Pull pinion from the housing with the bearing on it. (NOTE: Place unit over a pan or tub before doing this as the unit is filled with gear lubricating oil which will drain from the housing when the pinion is removed.)
7. Remove the cylinder tubes.
8. Remove the piston/rack(s).
9. Remove the back bearing from the housing (if necessary).
10. Remove all remaining O-rings and seals. Replace with new O-rings and seals at re-assembly.
11. Thoroughly clean and inspect all parts for wear or damage. Replace with new parts as required. Lubricate with light oil before re-assembly.

RE-ASSEMBLY

1. Install new O-rings, back-up rings and seals in proper grooves (see drawing).
2. Install back bearing in housing.
3. Slide a cylinder tube over one end of the piston/rack assembly. If it is a double rack unit, slide a cylinder tube over one end of the second piston/rack assembly.
4. Slide piston/rack assembly and cylinder tube into the housing. If it is a double rack unit, slide both piston/rack assemblies and cylinder tubes into the same side of the housing.
5. Attach cylinder head(s) and bolts. Snug bolts up but do not torque until re-assembly is complete.
6. Center rack in housing. (Equal spacing of rack on both sides of housing.)
7. Install pinion with the shaft keyway location as noted during disassembly. (Standard unit timing will have keyway at 12 o'clock location when looking at the front mounting face.)
8. Install cylinder tube(s) on the other side of housing.
9. Attach cylinder head(s) and bolts. Snug bolts up but do not torque until re-assembly is complete.
10. Lay unit down and fill housing to top of the rack with **ISO grade 68 gear oil or other equivalent gear lubricant.**
11. Install front pinion bearing and O-ring.
12. Install bearing cap. Tighten bearing cap until snug, then further tighten slightly to insure a positive seal.
13. Insert nylon locking pellet in bearing cap set screw hole. Tighten set screw locking bearing cap.
14. Torque cylinder head bolts evenly by applying force alternately to opposite corners of the head. Torque values per bolt size are shown in the torque table.

MODEL NO.	FASTENER SIZE	RECOMMENDED TORQUE FOR CYLINDER HEAD BOLTS
900 & 1800	1/4 - 20	6 ft-lbs
3700 & 7500	5/16 - 18	12 ft-lbs
15,000 & 30,000	7/16 - 14	22 ft-lbs

STANDARD MODELS
900 THROUGH 30,000



ITEM NO.	PART NAME
1	HOUSING
2	BEARING
3	O-RING, BEARING CAP
4	BEARING CAP
5	PINION
6	NUT, TIE ROD
7	LOCKWASHER, TIE ROD
8	TIE ROD
10	O-RING, PINION
11	RELIEF VALVE
12	CYLINDER TUBE
13	PISTON - BACK-UP RING
14	SEAL, PISTON
15	O-RING, CYL. O.D.
16	PISTON RACK
17	CYLINDER HEAD
23	BACK UP, CYL. HD.
24	O-RING, CYL. HD.
25	SET SCREW-BEARING CAP
26	NYLON PELLET-BEARING CAP

ALWAYS USE SERIAL NUMBERS AND MODEL NUMBERS WHEN ORDERING PARTS.