

**POWER TEAM**

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Instruction sheet for  
**#300614 Relief Valve Repair Kit.**  
 The following procedure to be  
 done by authorized hydraulic  
 service centers only!

## DOUBLE-ACTING CYLINDER RELIEF VALVE REPLACEMENT AND ADJUSTMENT FOR CYLINDERS 300 TON AND LARGER

### WARNING

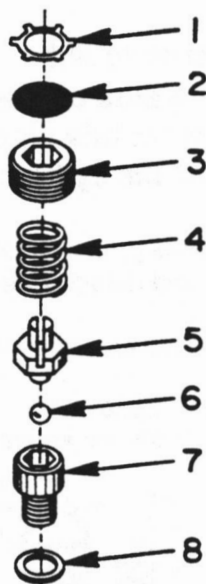
To help avoid possible personal injury,

- The following procedure must be done by qualified personnel familiar with the equipment.
- Release all pressure from the hoses and cylinder.
- Disconnect the pump completely from its power source.

### REMOVAL AND REPLACEMENT OF RELIEF VALVE

**IMPORTANT:** The following steps must be performed in a dirt-free environment to prevent any contamination from entering the hydraulic system and causing possible equipment damage.

1. Locate the rod end relief valve of the cylinder by referring to its appropriate parts list.
2. Remove all the old relief valve components, including the copper washer (#11031). Inspect the new replaceable seat. The seat must be free of any dirt or scratches.
3. Assemble all new relief valve components except the screen (#212734) and retainer (#104416) as illustrated below.



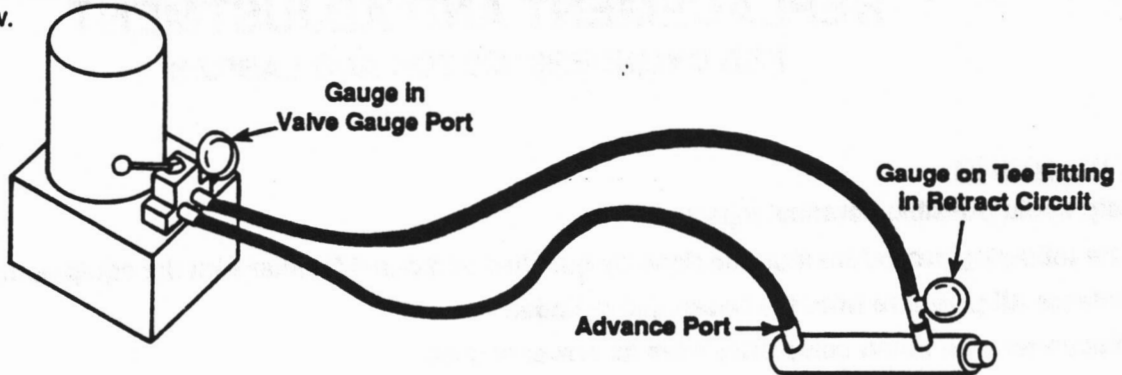
Item No.	Part No.	No. Req'd	Description
1	104416	1	Retainer
2	212734	1	Screen
3	212735	1	Hollow Lock Set Screw
4	10428	1	Compression Spring
5	306878	1	Ball Retainer
6	12223	1	Ball
7	212736	1	Replaceable Seat (Torque to 170/180 in. lbs.)
8	11031	1	Copper Washer

4. Using a 5/16" (.3125 in.) hex allen wrench, turn the hollow lock set screw (#212735) clockwise until it completely compresses spring (#10428), then immediately back out the hollow lock set screw (#212735) two (2) complete turns counterclockwise.

## RELIEF VALVE ADJUSTMENT

**⚠ DANGER:** To help avoid possible serious personal injury or death,

- The following procedure must be done by qualified personnel familiar with the equipment.
  - Never exceed the rated capacities of any component in the system.
  - Approved safety glasses must be worn at all times.
1. A pump with 10,000 PSI minimum capacity and a 10,000 PSI minimum capacity pressure gauge in the valve port must be used. Or add a 10,000 PSI minimum capacity pressure gauge into the retract circuit hydraulic line, tee as illustrated below.



2. Lay the cylinder horizontal on a surface at least one foot below the base of the pump reservoir with the ports facing upward.

**⚠ DANGER:** Before activating the pump and applying pressure to the cylinder, be certain both hoses are properly and securely connected, then stand away (at least six feet) and to one side of the rod end of the cylinder.

3. Start the pump and cycle the cylinder (Do not exceed 1,000 PSI) at least three full strokes to remove air from the cylinder. End this cycling with the cylinder completely retracted.
4. Stop the pump and release all pressure from both the advance and retract sides of the cylinder.
5. Place the cylinder in the vertical position.

**⚠ DANGER:** Before activating the pump and applying pressure to either port of the cylinder, stand away (at least six feet) and to one side of the rod end of the cylinder. Make the following observations from this distance. All other personnel in the vicinity must stay clear of the cylinder during entire procedure.

6. a. Slowly apply pressure to the retract side of the cylinder until the relief valve leaks or until 10,000 PSI is reached. Note the pressure and quickly release pressure from both advance and retract ports of the cylinder. Shut off the pump.
- b. If the relief valve leaks below 9,500 PSI, make the following adjustment to the rod end relief valve:  
Turn the hollow set screw (#212735) 1/8 turn clockwise.  
Repeat steps a and b until the relief valve stops leaking between 9,500 PSI to 10,000 PSI.
- c. If the relief valve does not leak at 10,000 PSI, make the following adjustment to the rod end relief valve:  
Turn the hollow set screw (#212735) 1/8 turn counterclockwise.  
Repeat steps a and c until the relief valve begins to leak.  
Repeat steps a and b until the relief valve stops leaking between 9,500 PSI and 10,000 PSI.  
Release pressure from both the advance and retract ports of the cylinder.  
Shut off the pump and proceed to step d.
- d. Turn hollow set screw (#212735) precisely 1/8 turn clockwise.  
Stake set screw in place by deforming the threads that engage the body threads and set screw in two places 180° apart.  
See illustration at right. Install the screen (#212734) and retainer (#104416).  
Refer to parts list illustration.

