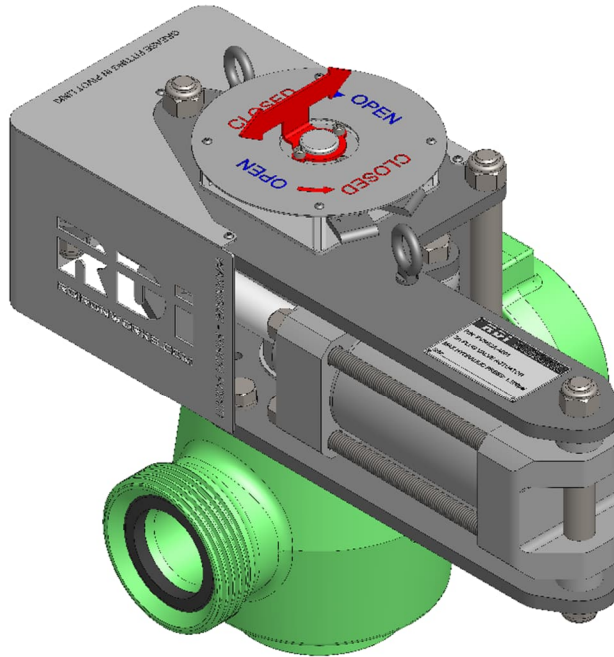


# Red Deer Ironworks

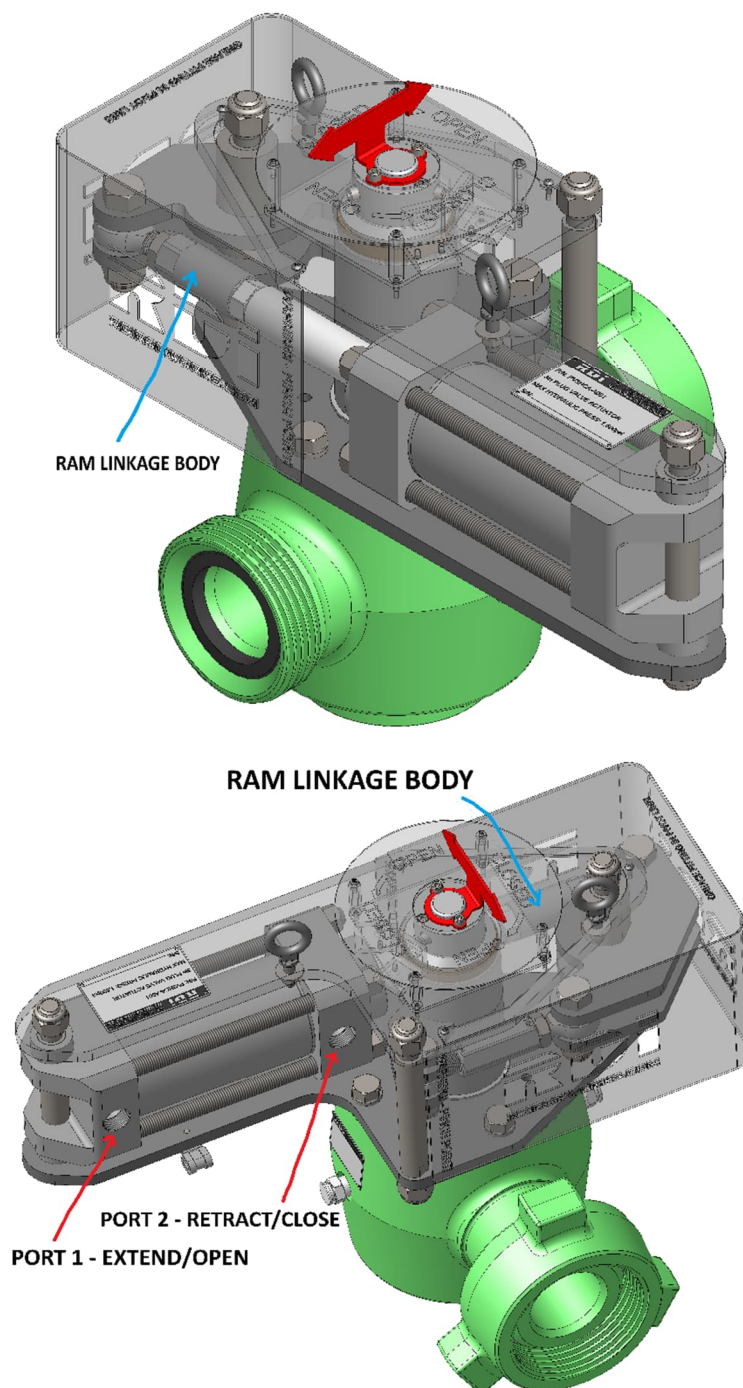


## Hydraulic Actuated Plug Valve Operation Manual



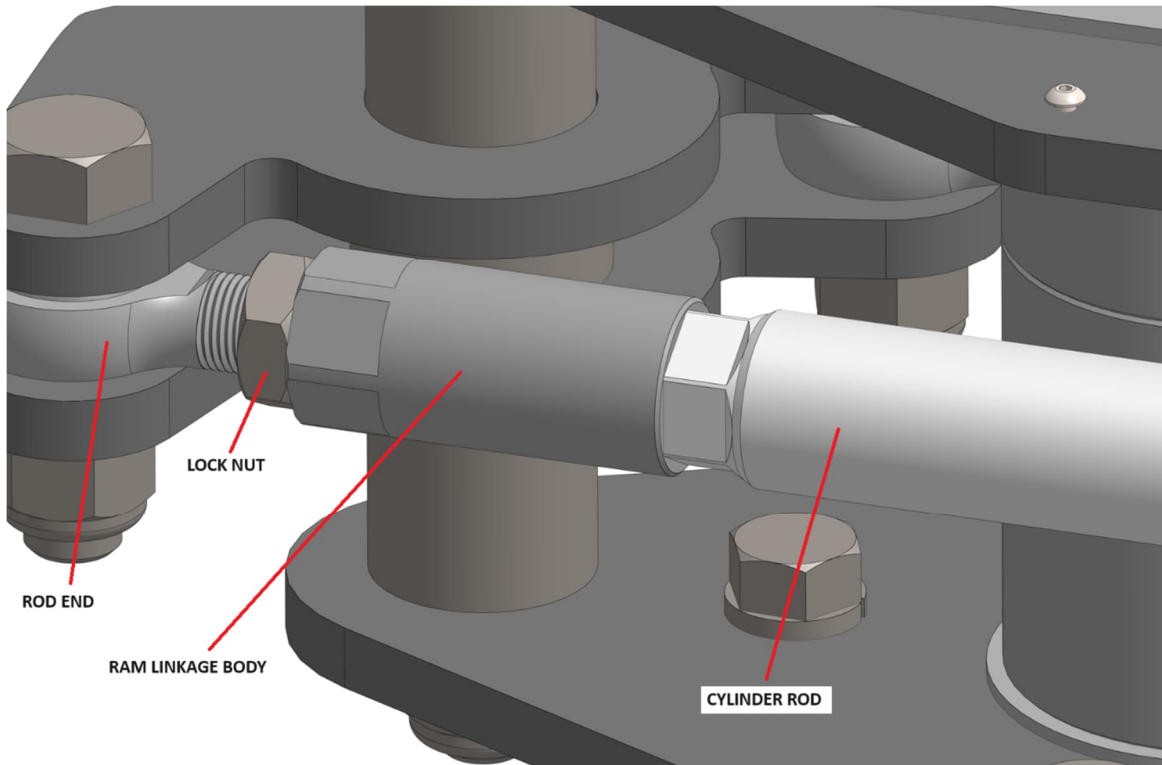
Plug Valves that this procedure can be used for: PV31502HCA, PV31502HCASTD

Failure to follow the instructions in this manual may result in damage to the hydraulic cylinder, actuator mechanism or both. Reference assembly drawings PV3HCA-A001, PV31502HCA-A001 & PV31502HCASTD-A001 to assemble the actuator and install it on the plug valve. Ensure grease nipple in pivot link is greased as needed.

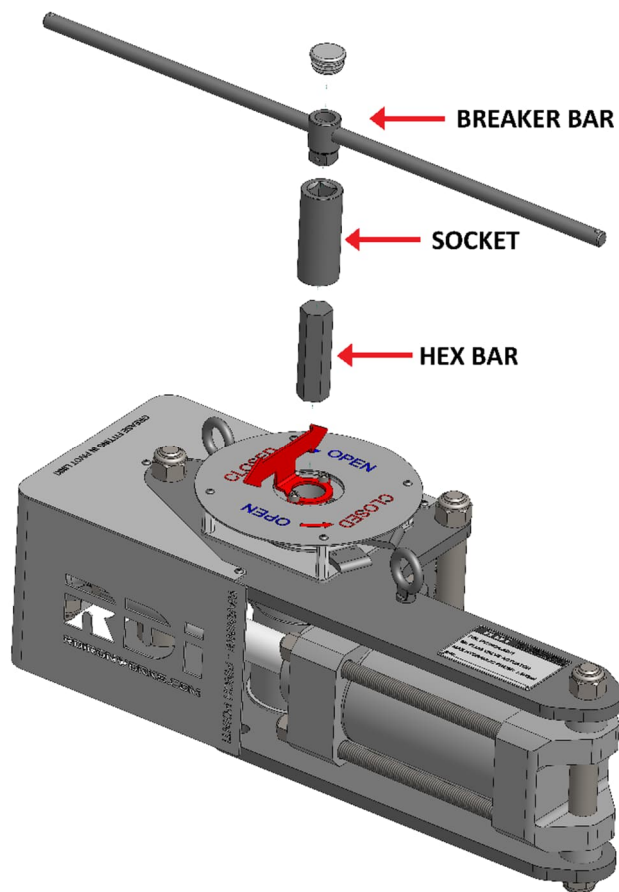


To set the alignment of the plug once the actuator is installed on the plug valve follow these steps:

1. Apply hydraulic pressure to Port 1 to fully extend the hydraulic cylinder.
  - a. The valve is now in the open position.
2. Observe the thru bore to determine if the plug bore is aligned with the thru bore in the body.
3. Release the pressure from Port 1 to allow the cylinder rod to be rotated during adjustments.



4. If adjustments are required loosen the lock nut on the ram linkage body.
5. Ensure the threaded connection between the ram linkage body and cylinder rod stays tight at all times.
6. If the plug needs to be rotated clockwise place a wrench on the ram linkage body wrench flats and rotate it down (clockwise when looking from rod end) to extend the rod end and rotate the plug clockwise.
7. If the plug needs to be rotated counter-clockwise place a wrench on the cylinder rod wrench flats and rotate it up (counter-clockwise when looking from rod end) to retract the rod end and rotate the plug counter-clockwise.
8. Once adjustment is made tighten the lock nut to lock the ram linkage body in place.
9. Apply hydraulic pressure to Port 1 to fully extend the hydraulic cylinder.
  - a. The valve is now in the open position.
10. Observe the thru bore to determine if the plug bore is aligned with the thru bore in the body.
11. If further adjustments are required return to step 3 and repeat.



**Manual Override Procedure:**

1. Ensure hydraulic control valve is in the neutral position (if available) meaning that both lines are open to tank.
2. If the hydraulic control valve does not have this ability the hydraulic lines will need to be disconnected, otherwise the cylinder will be hydrolocked and the manual override will not work.
3. Remove the plastic cap
4. Insert a 1" hex key into the top to engage in the hex machined into the drive gear adapter assembly.
5. Install a 1" socket onto the hex bar.
6. Install a breaker bar into the socket.
7. Rotate clockwise to open the valve or counterclockwise to close the valve. (See PV3HCA-A001)

Hydraulic Cylinder Technical Specifications:

Max pressure rating	1,500 psi
Port thread size & type	¾" NPTF
Port 1	extend cylinder / open valve
Port 2	retract cylinder / close valve
Required volume to extend	41.5 in <sup>3</sup> = 0.18 gal
Required volume to retract	34.1 in <sup>3</sup> = 0.15 gal

Actuator Technical Specifications:

Plug Valve MAWP	Hydraulic Pressure Required	Time to open (approx.)
10,000 psi	700 psi	5 seconds
15,000 psi	900 psi	5 seconds

The above values are based on a new clean greased valve. Time is dependent on hydraulic flowrates.

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