



Alliance Diagnostics Other Tests 3

- Rebuild Injector valves
- Turn off GPV
- Create 'GPV Test' Method
- Firmware checksum

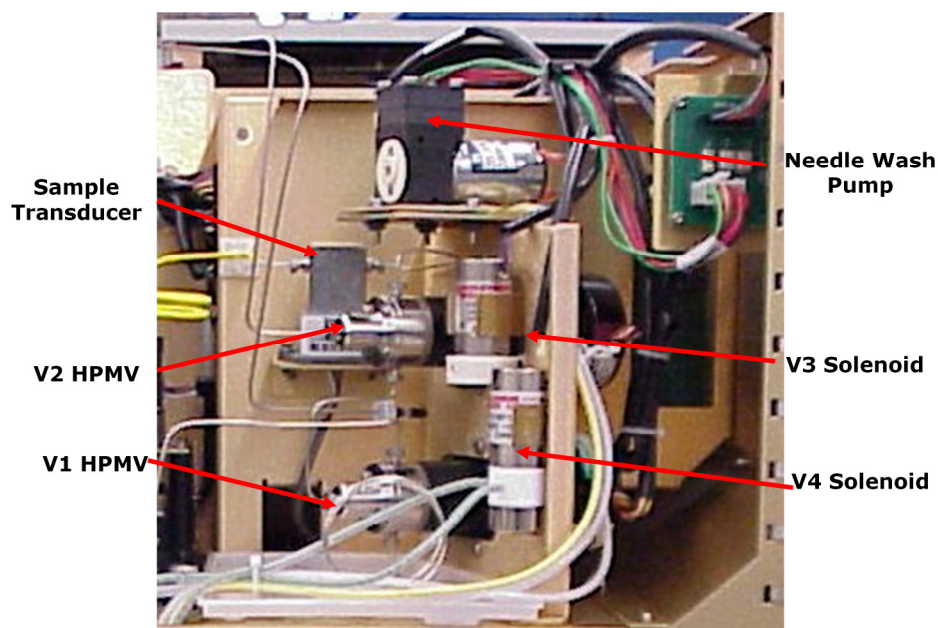
Injector Valve Rebuild

- Materials needed
 - Valve rebuild kit (WAT045424)
 - Torx wrench, T-10 (WAT410170)
 - 715 Valve rebuild tool kit (WAT045427)
 - Wash bottle with solvent
 - Waste container

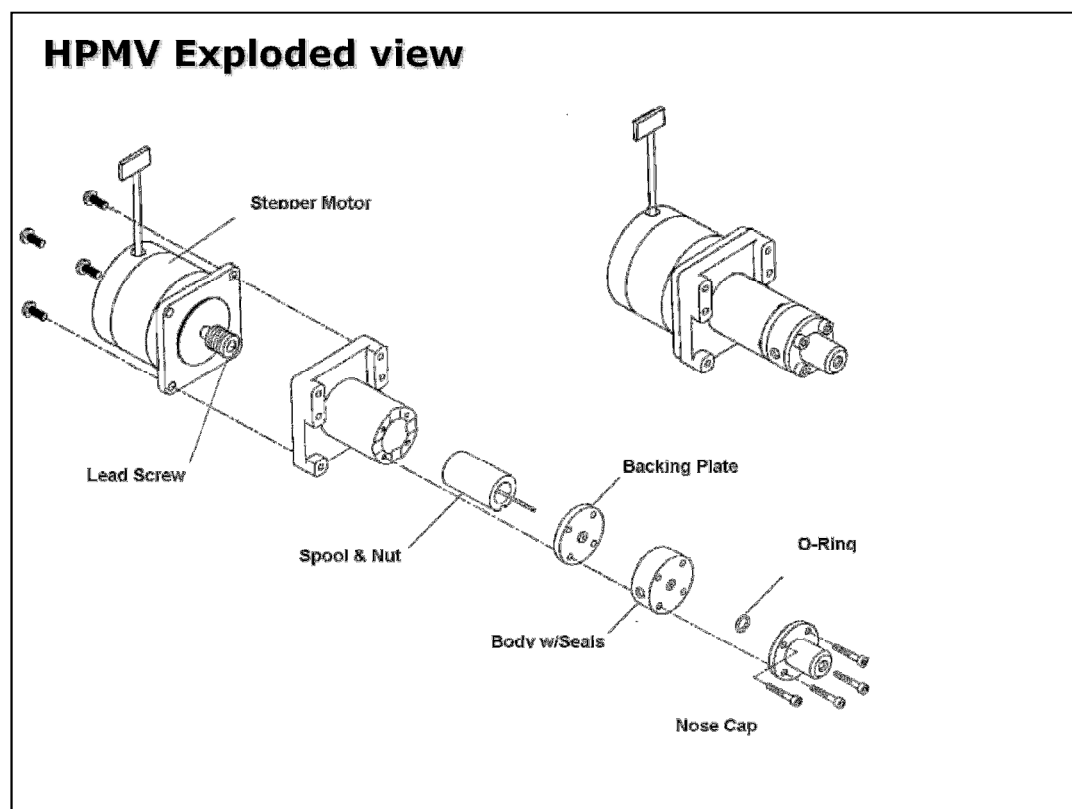
- The valve rebuild kit contains:

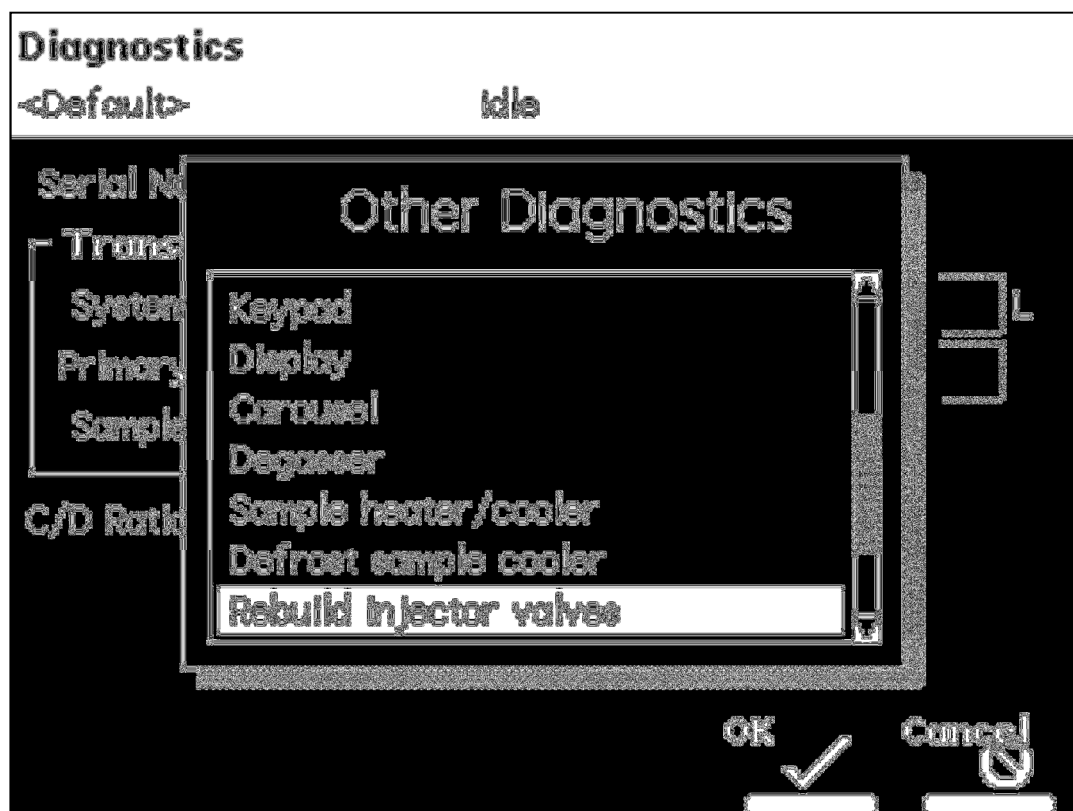
Description	Part #	Qty
Assy, Nut & Spool	WAT045266	1
M715 Seal	WAT045454	2
O-Ring, Teflon	WAT097387	1
Seal Insert	WAT021132	1

Valve Layout in 2690/2695



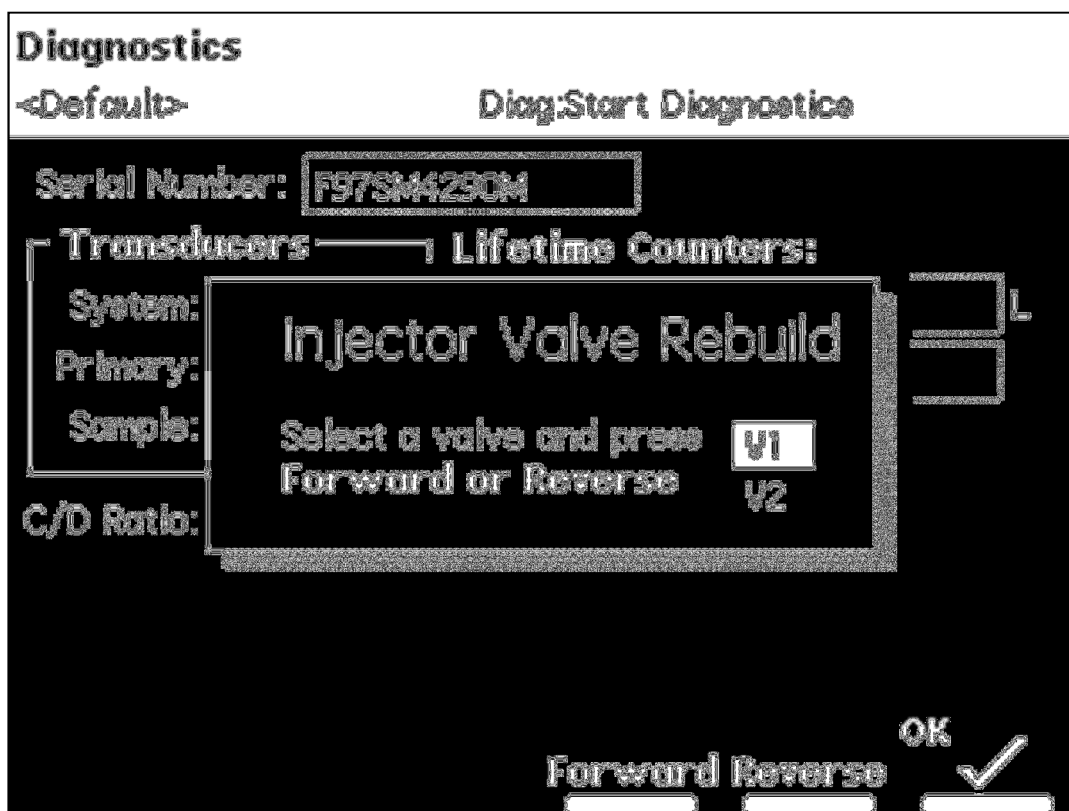
- HPMV - High Pressure Motorized Valve.





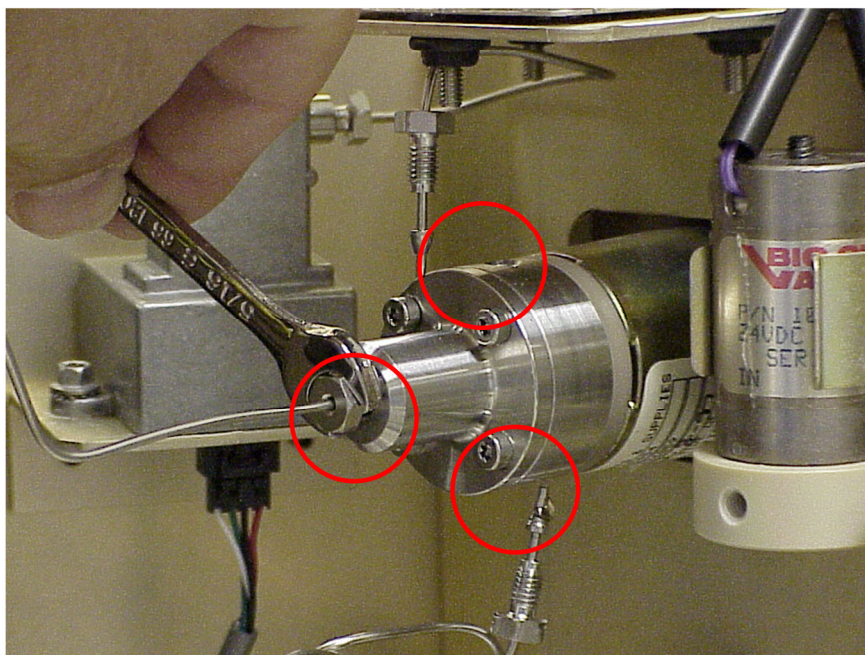
- From the Main Page
- Select **Diag**,
- Select **Other Tests**

- Scroll to Rebuild injector valves, the Rebuild injector valves utility screen is displayed.



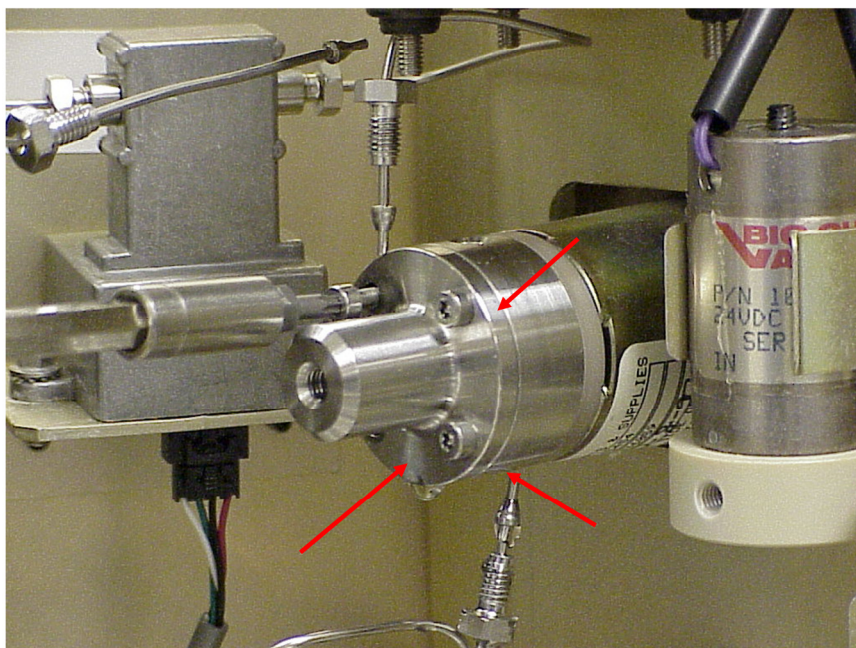
- Injector Valve Rebuild Utility screen
- Materials required
 - Rebuild kit WAT45426 (contains seal body with seals) or
 - Kit WAT45427 (1 time) and WAT45424 rebuild kit (w/o SS seal body) that contains just the seals, spool, and O ring.
 - Torx screwdriver (T-10)
 - Wash bottle with MeOH or IPA
 - Waste container

Remove Fittings



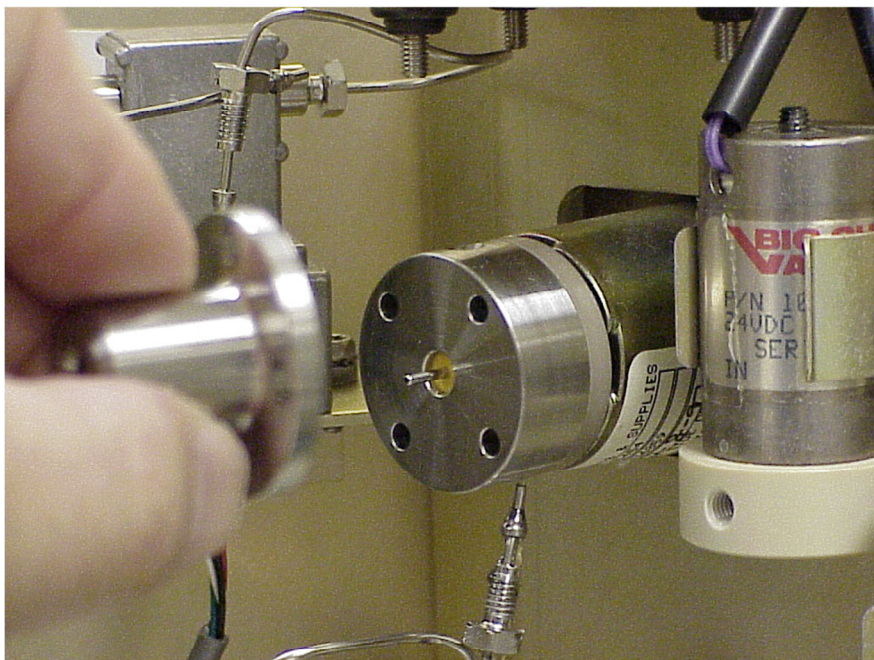
- Remove the cover from the Separations Module.
- Use the 5/16 inch open end wrench to remove the three fluid fittings on the valve to be rebuilt. This picture shows Valve 2.
- The solvent line to Valve 3 has been removed for photography purposes.

Remove the Screws



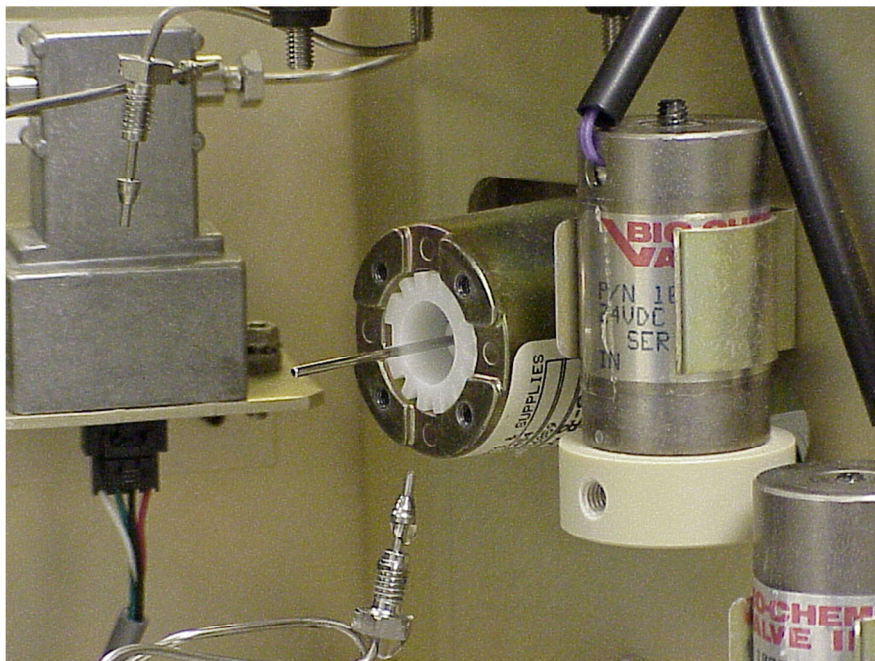
- There are 4 Torx screws (T-10) holding the valve assembly together.

Remove the Nose Cap



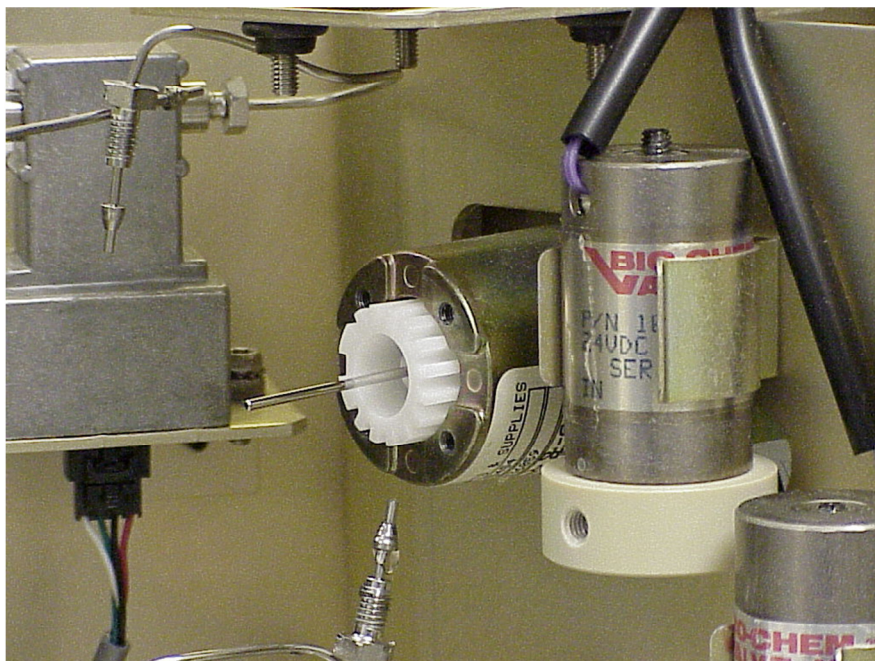
- Pull the Nose Cap straight off.

Remove Seal Body and Backing Plate



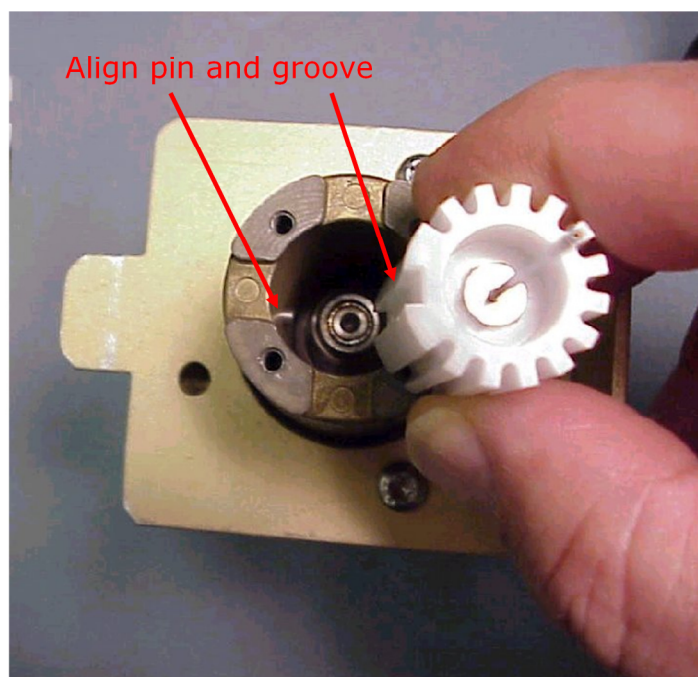
- Pull the seal body and backing plate straight off.
- With these removed, the spool is visible.

Drive the Spool Out



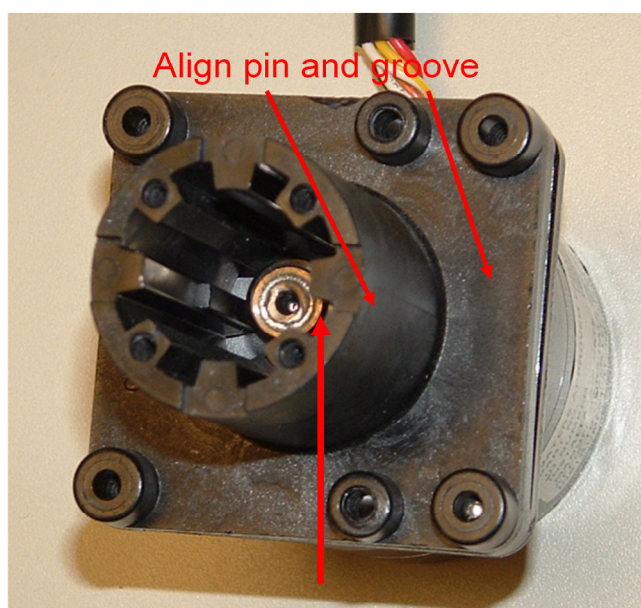
- Drive the spool out of the valve by pressing Reverse.

Install New Spool



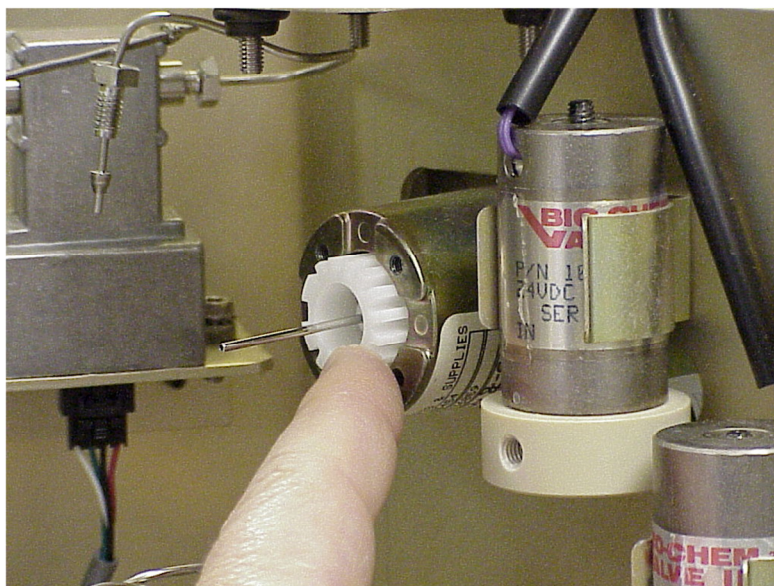
- This photo shows the alignment pin in the valve housing and the groove in the spool assembly. The pin and groove prevent the spool from rotating when the motor turns.

Install New Spool



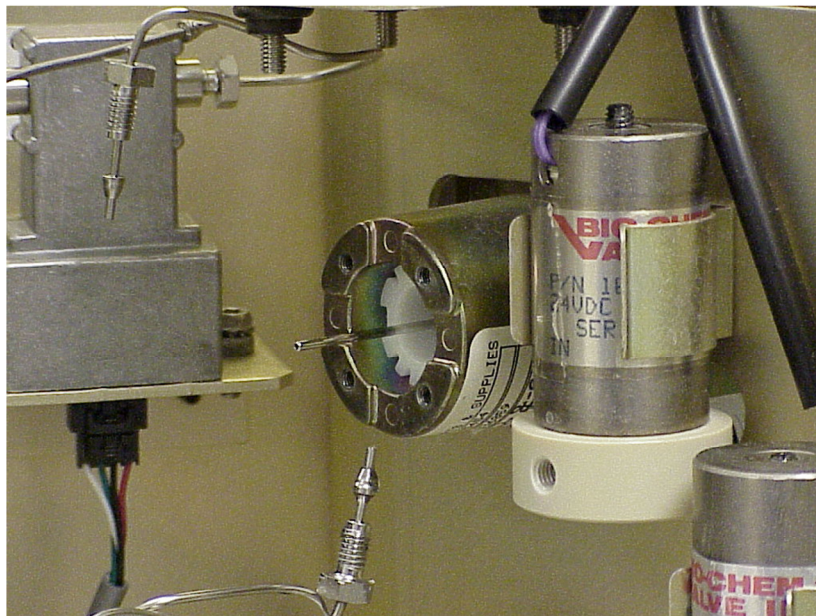
- This photo shows the alignment guide in the new polymeric valve housing and the groove in the spool assembly. The guide and groove prevent the spool from rotating when the motor turns.

Engage the New Spool



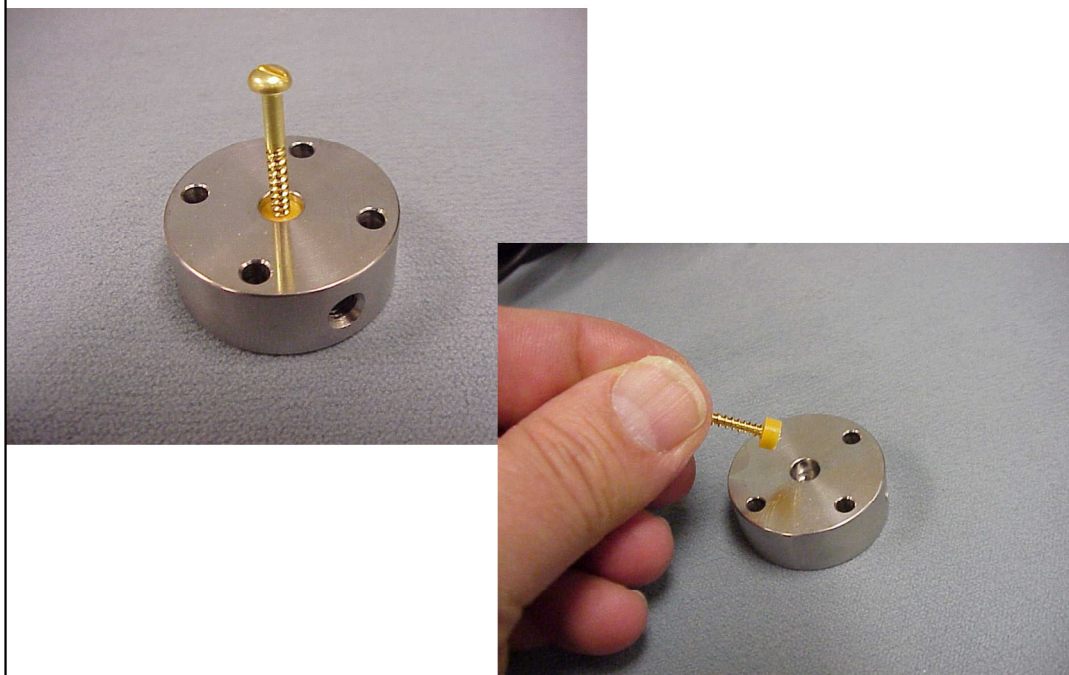
- Press Forward while gently against the spool to help engage it into the valve.

Retract the New Spool



- Retract the spool by pressing Forward again.

Remove the Seals



- Remove both old seals from the valve body by turning the seal removal tool (#4 brass wood screw) one full turn into the seal and pulling the seal out.
- Wash the valve body with methanol or isopropyl alcohol to remove any particulate matter.

Wet the Seal and Seal Guide

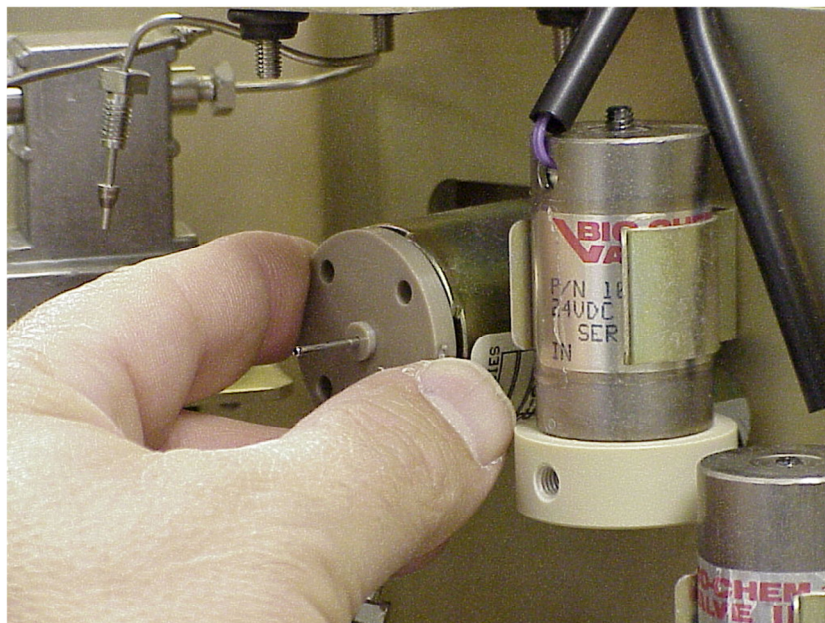


- Place the seal guide (WAT045458) over the valve body.
- Place the seal (WAT045454) on the seal punch (WAT045459) so you can see the internal spring.
- Wet the seal guide and seal with methanol (MeOH) or isopropyl alcohol (IPA).

Insert the New Seals

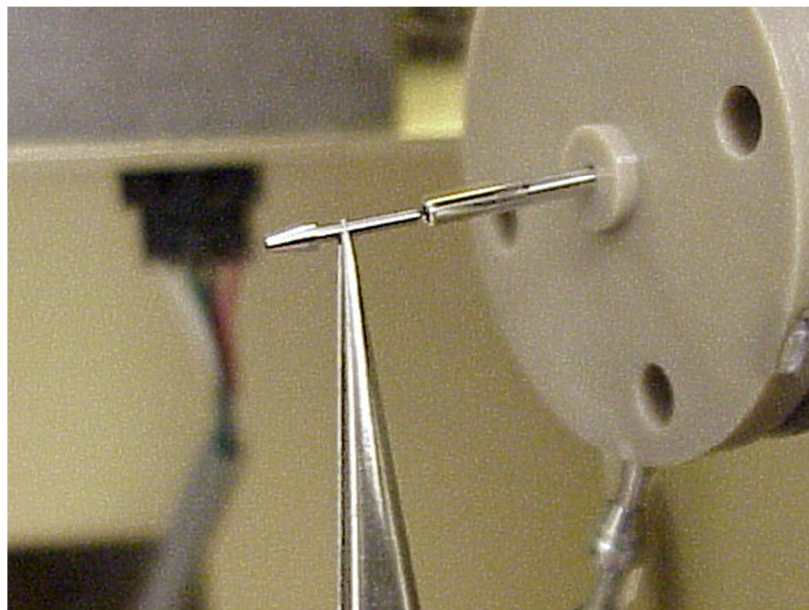
- With the valve body on a smooth, hard, flat surface (bench top) carefully insert the seal into the seal guide and press down to seat the seal in the valve body.
- Turn the valve body over and repeat for the second seal.

Install Backing Plate

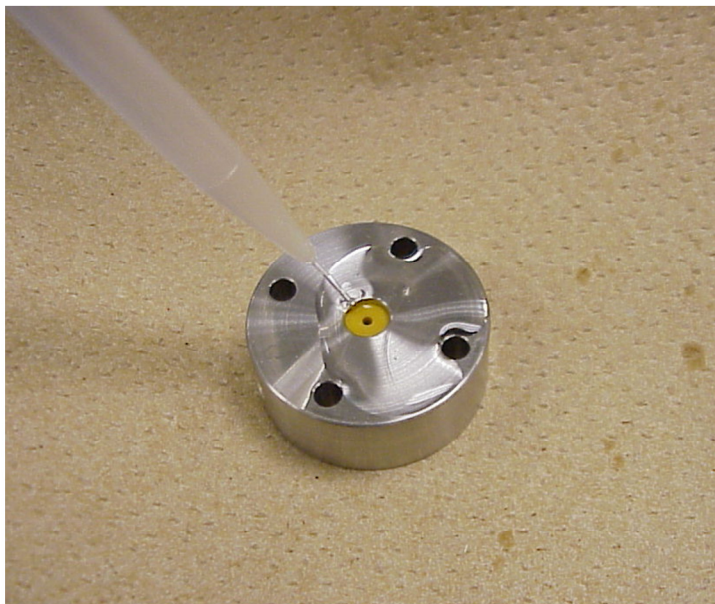


- Install the backing plate.

Install the Seal Insert

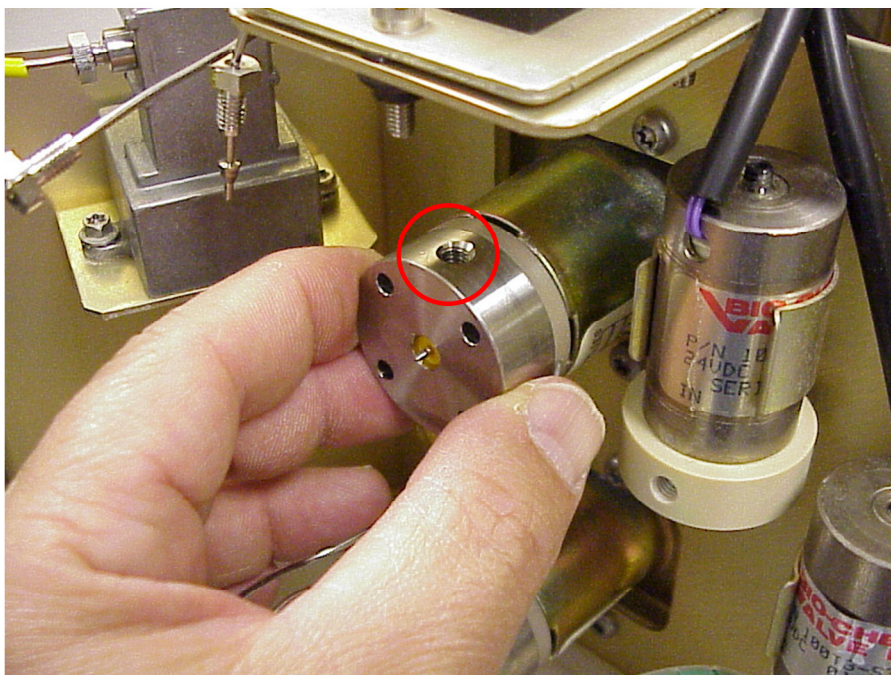


- Install the shaft of the seal insert into the spool.

Wet the Seals

- Wet the seals with MeOH or IPA.

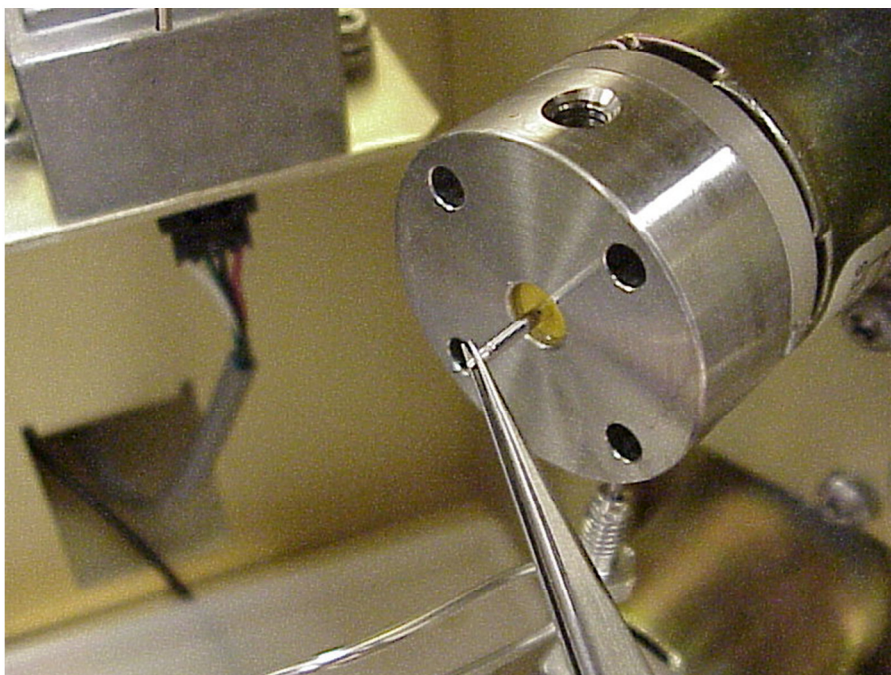
Install the Seal Body



- Being careful not to exert any side force, slide the valve body over the seal insert and spool.

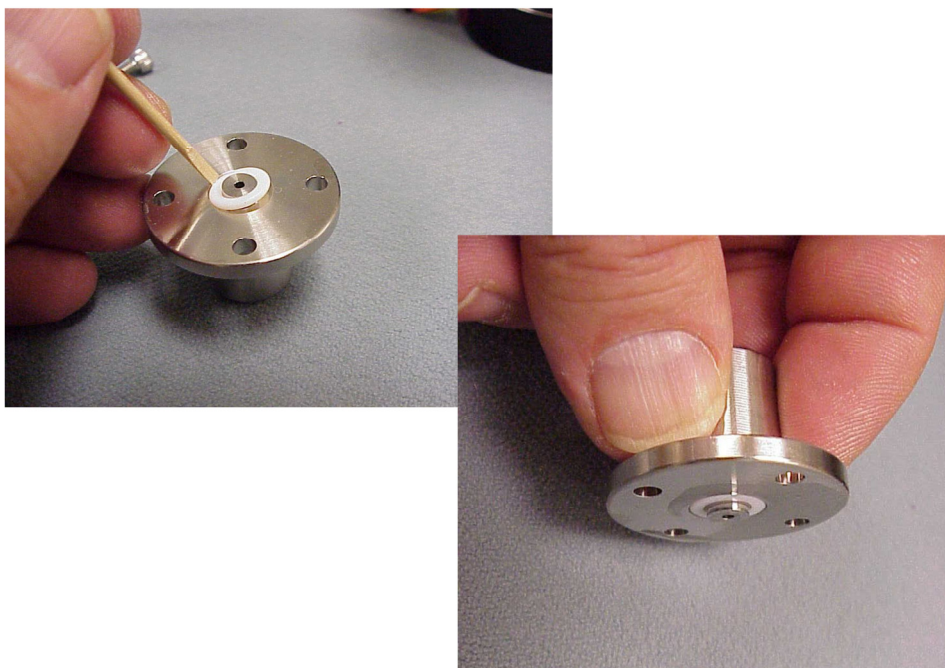
Note: The through ports on the seal body are vertical. The valve will work if the ports are horizontal, but the fitting tubing will not reach the ports.

Remove the Seal Insert



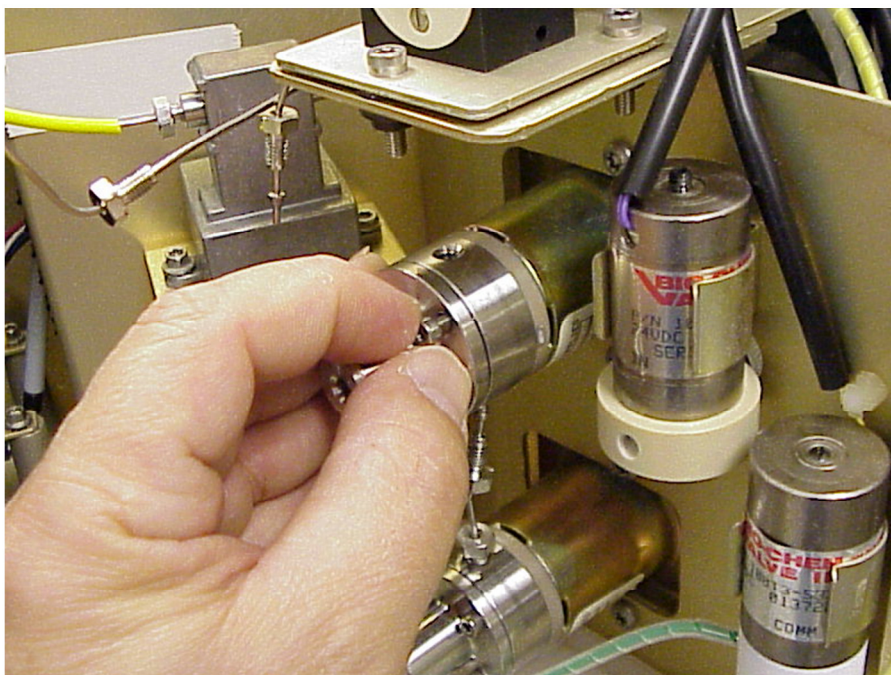
IMPORTANT! Remove the seal insert from the spool. If you do not remove the insert, the controlled valve outlet will be plugged once the valve is re-assembled.

Nose Cap O-ring



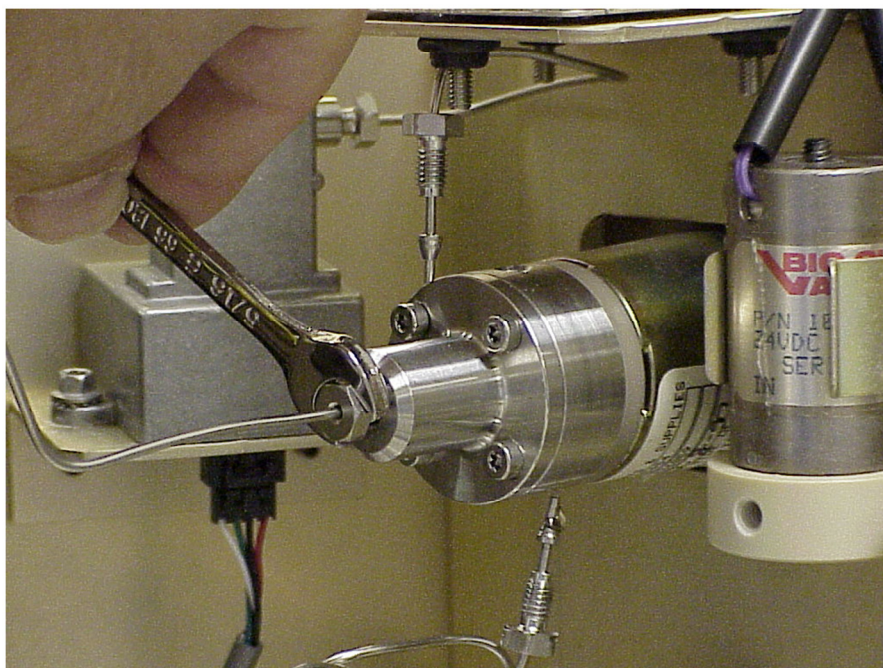
- Remove the Teflon O-ring from the nose cap of the valve. Be careful not to scratch the sealing surfaces.
- Wet the new O-ring (WAT097387) with methanol or isopropyl alcohol and press it into the groove in the nose cap.
- Slide the nose cap over the spool. Make sure the O-ring stays in the groove.

Install the Screws

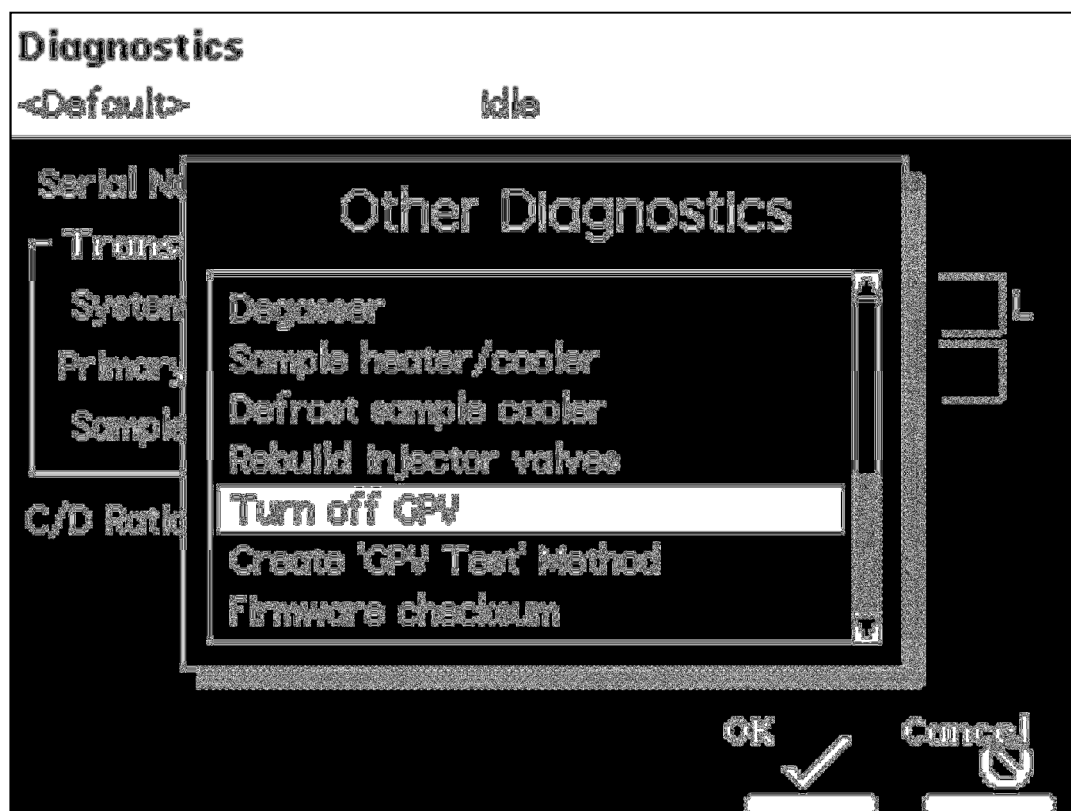


- Align the 4 mounting holes in the Nose Cap, Seal Body, and Backing Plate to install the mounting screws.

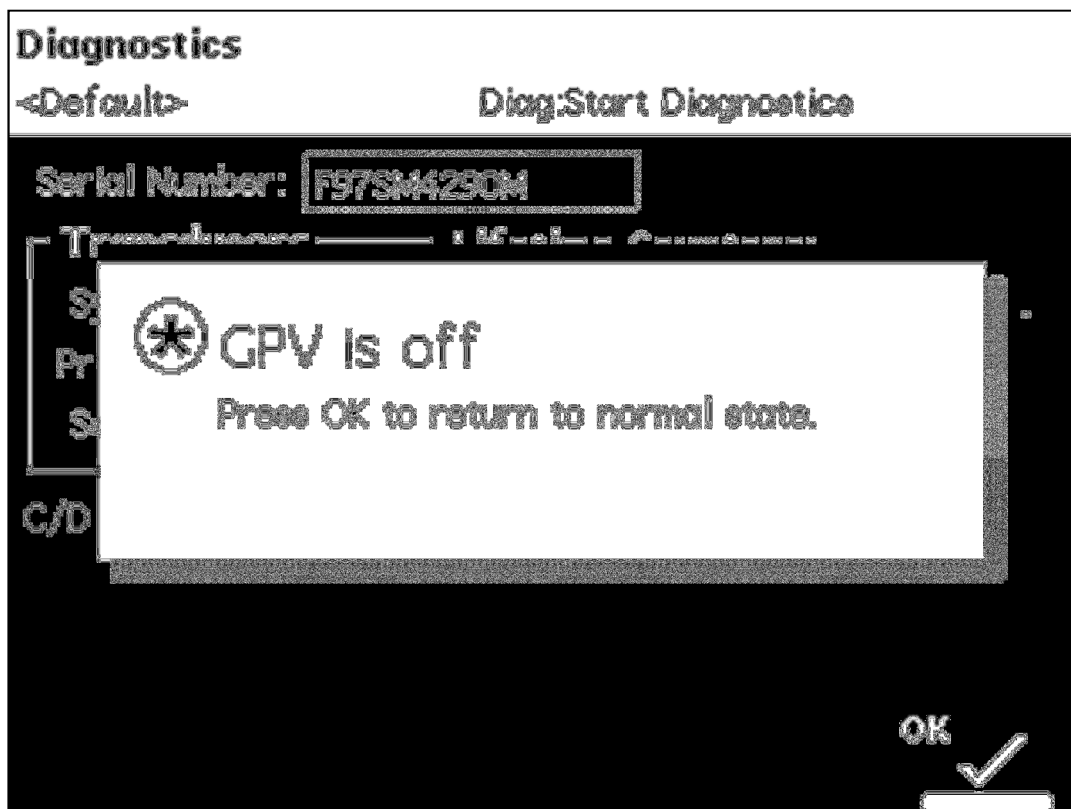
Connect The Fittings



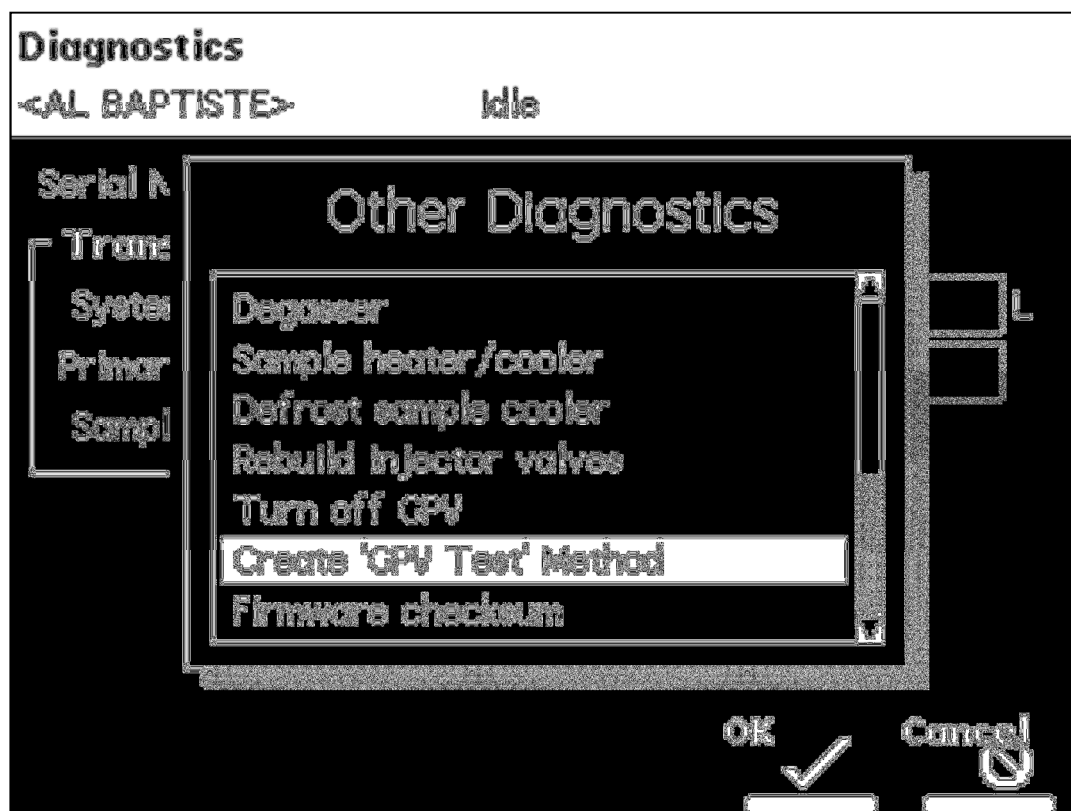
- Re-connect the three fluid fittings, and tighten them.
- Purge the system to remove air from the lines.



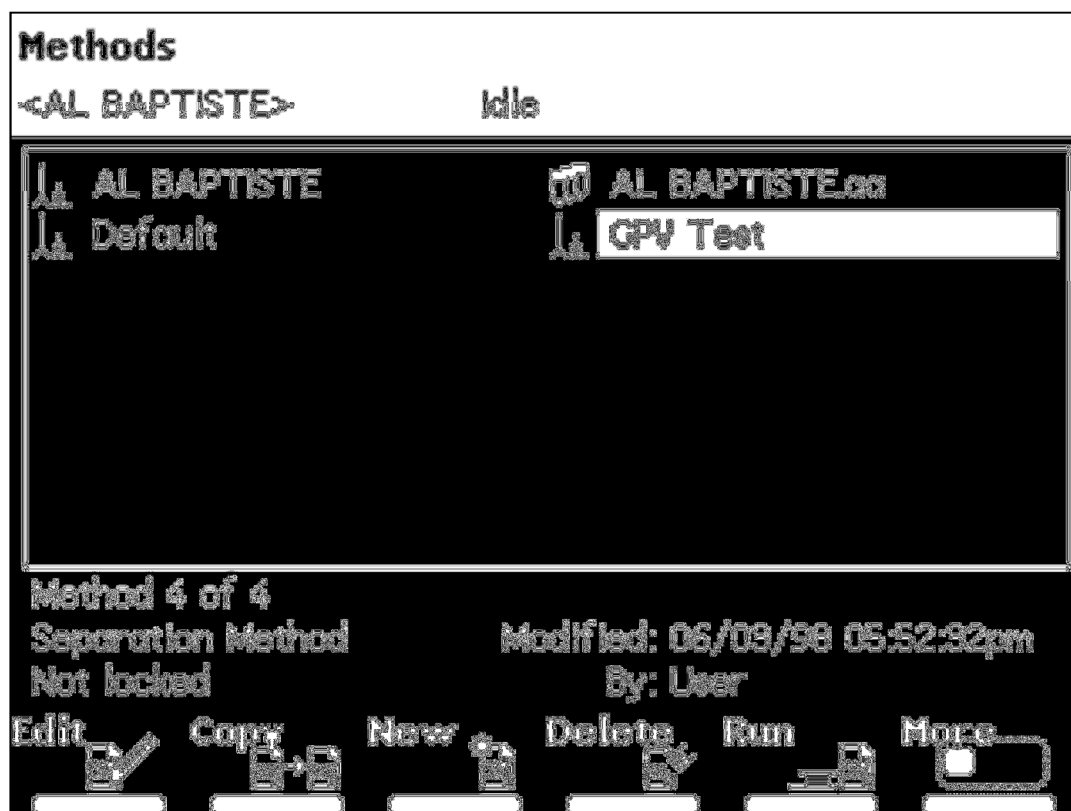
- From the Main Page, select Diag, select Other Tests,
- Scroll to Turn off GPV, the GPV is off screen is displayed.



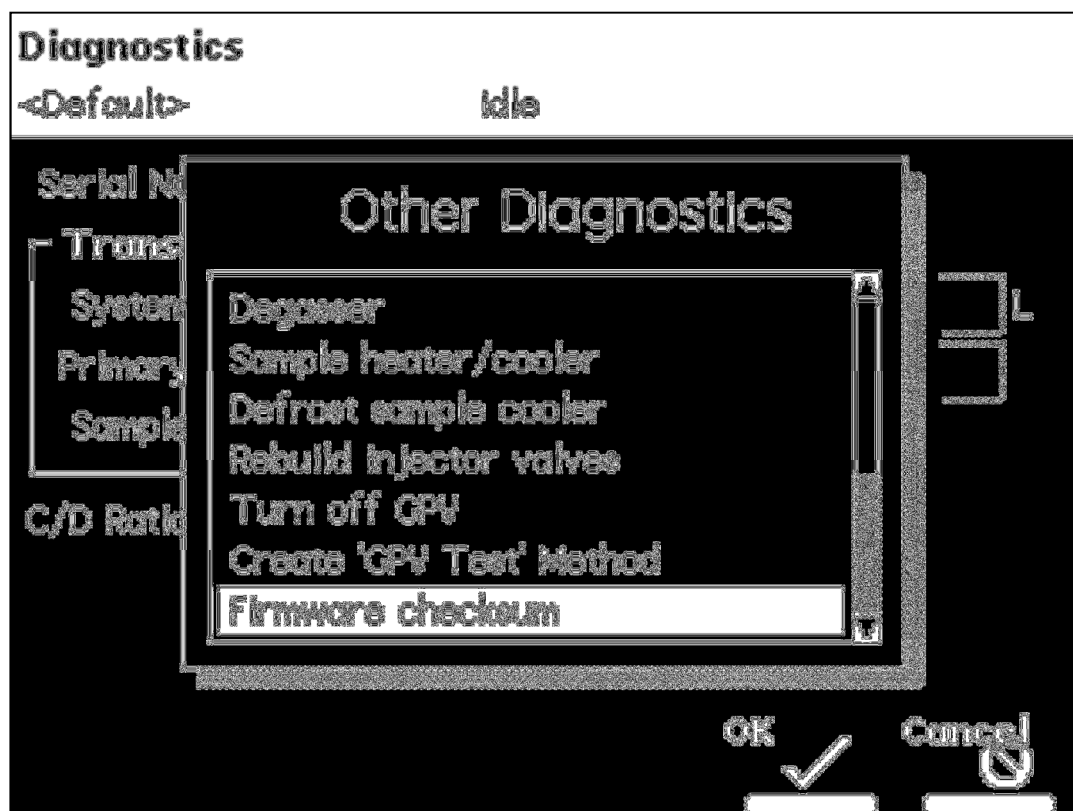
- All 4 valves in the GPV are now closed.
- Pressing OK will return the GPV to the normal state.



- Select Create GPU Test Method, then Press OK, the Diagnostics page is displayed.
- Press Exit to return to the Main Page, press Develop Methods.



- The GPV Method Set is shown on the Methods page.



- From the Main Page, select Diag, select Other Tests,
- Scroll to Firmware checksum, the Firmware checksum screen is displayed



- The Firmware checksum for Version:
 - 1.20 (2690) = 11E55753H
 - 1.21 (2690) = BED5D6C7H
 - 1.22 (2690) = 16E65888H
 - 2.00 (2695) = 48ED5EFH
 - 2.01 (2695) = not released to field
 - 2.02 (2695) = 387B4E11H