Valco Instruments Co. Inc.

Cheminert® HPLC and UHPLC Injectors

Cleaning and Rotor Replacement

Initial Precautions

After unpacking the valve, do not remove the protective cap or tape from the valve ports until you are ready to install the valve. As supplied, all surfaces are clean and free of contaminants, and must be kept clean to prevent valve damage. Open ports and fittings cause unnecessary risk of particulate matter entering the valve and scratching the sealing surfaces, which is the most frequent cause of premature valve failure.

NOTE: The most common source of particulate and chemical contamination is tubing which has not been properly cleaned before installation in the valve. To avoid this problem, we suggest purchasing our electrolytically pre-cut and polished tubing, available in standard lengths for any plumbing requirement. If other tubing is to be used, make certain that all tubing ends are free of burrs and cut square with the tube axis, and that all tubing has been chemically and mechanically cleaned.

WARNING

Failure to observe proper cleanliness procedures during installation of the valve voids the manufacturer's warranty.

Make certain that tubes are seated completely before forming the one-piece Valco ferrule on the tube. This ensures minimum connection volume. (For further information on installing fittings, refer to **Technical Note 503**, *Fitting Instructions*).

WARNING

If this valve is replacing a Rheodyne model, do not use the fittings made up in the original valve. The difference in pilot depth yields unswept volume.

Cleaning

Cleaning a valve can often be accomplished by flushing all the lines with appropriate solvents. Do not disassemble the valve unless system malfunction is definitely isolated to the valve.

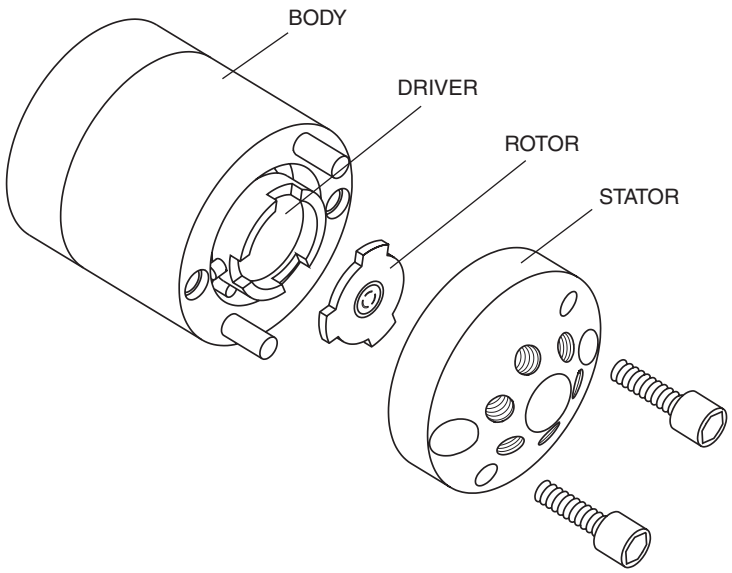

Figure 1: Exploded view of a Model C2 injector

WARNING

Unbalanced screw tension can cause permanent distortion of the stator. To prevent this, loosen the screws alternately (or tighen them, for reassembly) in quarter-turn increments.

Disassembly (Refer to **Figure 1**)

1. Use a 9/64" hex driver to remove the socket head screws which secure the stator on the valve. Start by alternating between the two screws, loosening them in quarter-turn (90°) increments until all load is removed.
2. To ensure that the sealing surface of the stator is not damaged, rest it on its outer face. Or, if the tubing is still connected, leave it suspended by the tubing.
3. With your fingers or a small tool, gently pry the rotor away from the driver.
4. Examine the rotor and stator sealing surfaces for scratches. If scratches are visible to the naked eye, or if coating is coming off of the stator, the part(s) must be replaced.
5. If no scratches are visible, clean all the parts thoroughly with an appropriate solvent, taking care that no surfaces get scratched. (The most common problem in HPLC is the formation of buffer crystals, which are usually water-soluble.) It is not necessary to dry the parts.

Reassembly

1. Replace the rotor in the driver, making sure that the rotor sealing surface with its engraved flow passages is facing out. The tab pattern is asymmetrical to prevent improper placement.
2. Replace the stator. Insert the two socket head screws and tighten them gently until they start to get snug. Then alternate between the two screws, tightening them in quarter-turn (90°) increments until the stator is flush against the valve body.

   Do not overtighten the screws – they simply hold the assembly together and do not affect the sealing force, which is automatically set as the screws close the stator against the valve body.
3. Test the valve by pressurizing the system. If it doesn't hold pressure, the valve should be returned to Valco for repair.

North America, South America, and Australia/Oceania contact:
Valco Instruments Co. Inc.
P.O. Box 55603
Houston, TX 77255
Sales: (800) 367-8424
Tech: (713) 688-9345
Fax: (713) 688-8106 valco@vici.com

Europe, Asia, and Africa contact:
VICI AG International
Parkstrasse 2
CH-6214 Schenkon
Switzerland
Phone: +41 41 925 6200
Fax: +41 41 925 6201 info@vici.ch

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