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DEAD-END FLOWPATH - SD CONFIGURATION LOW PRESSURE SELECTORS

Technical Note 710

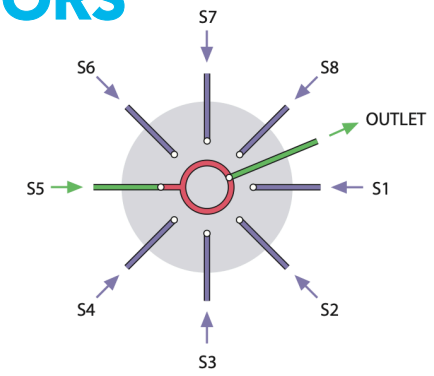


FIGURE 1: Valve body

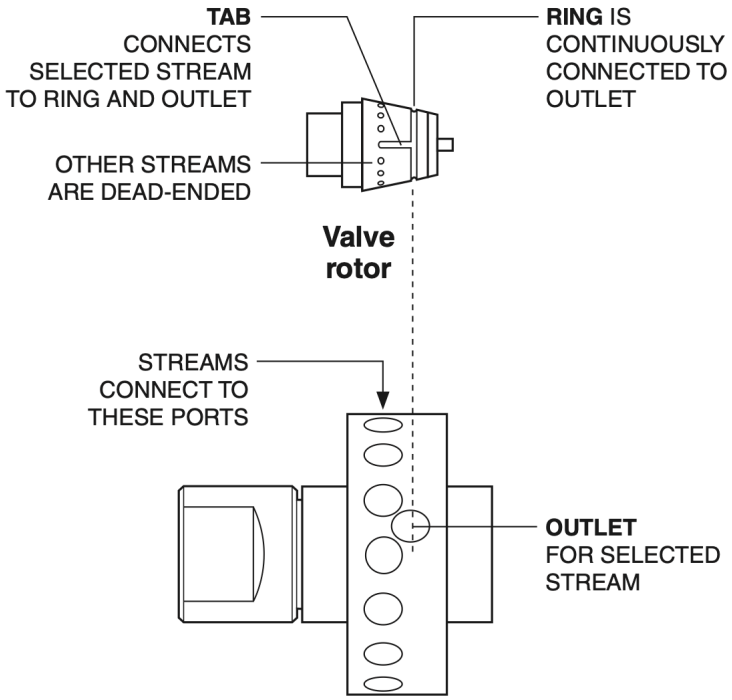


FIGURE 2: As installed on Electric Actuators

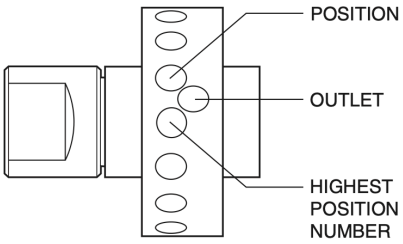
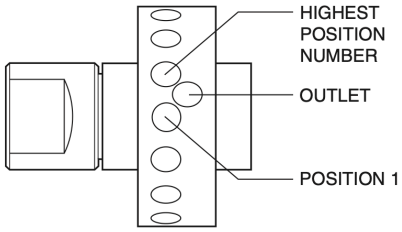


FIGURE 2: As installed on Air Actuators



CSD (1/16") and SD (1/8") selectors select one of 4 to 16 dead-ended streams. The streams are connected to the ports in the evenly spaced row that goes all the way around the valve. The selected stream (lined up with the tab on the red ring in the illustration above) flows from the outlet to a sample valve, pressure sensor, detector, column, etc.

The same flowpath can also be used to direct one stream to a number of outlets in applications such as fraction collection.

Watch an animation of the SD selector flowpath at vici.com:

STREAM SELECTION WITH DEAD-ENDED STREAMS

The selected stream flows from the valve outlet to a sample valve, pressure sensor, detector, column, etc. The same configuration may also be used to direct one stream to a number of outlets for applications such as fraction collection.

This example illustrates automated sampling of non-pressurized containers.

1 A vacuum pump is used to move sample from the containers to a 6-port sampling valve. **2** The 3-port valve is used to block the vacuum flow through the sampling valve to allow the sample within the loop to equilibrate at atmospheric pressure.

3 The 6 port valve is then switched, injecting the sample. This method eliminates any possible effect from pressure differences among the containers, providing accurate and repeatable results. All three valves can be automated with air or electric actuators for unattended operation.

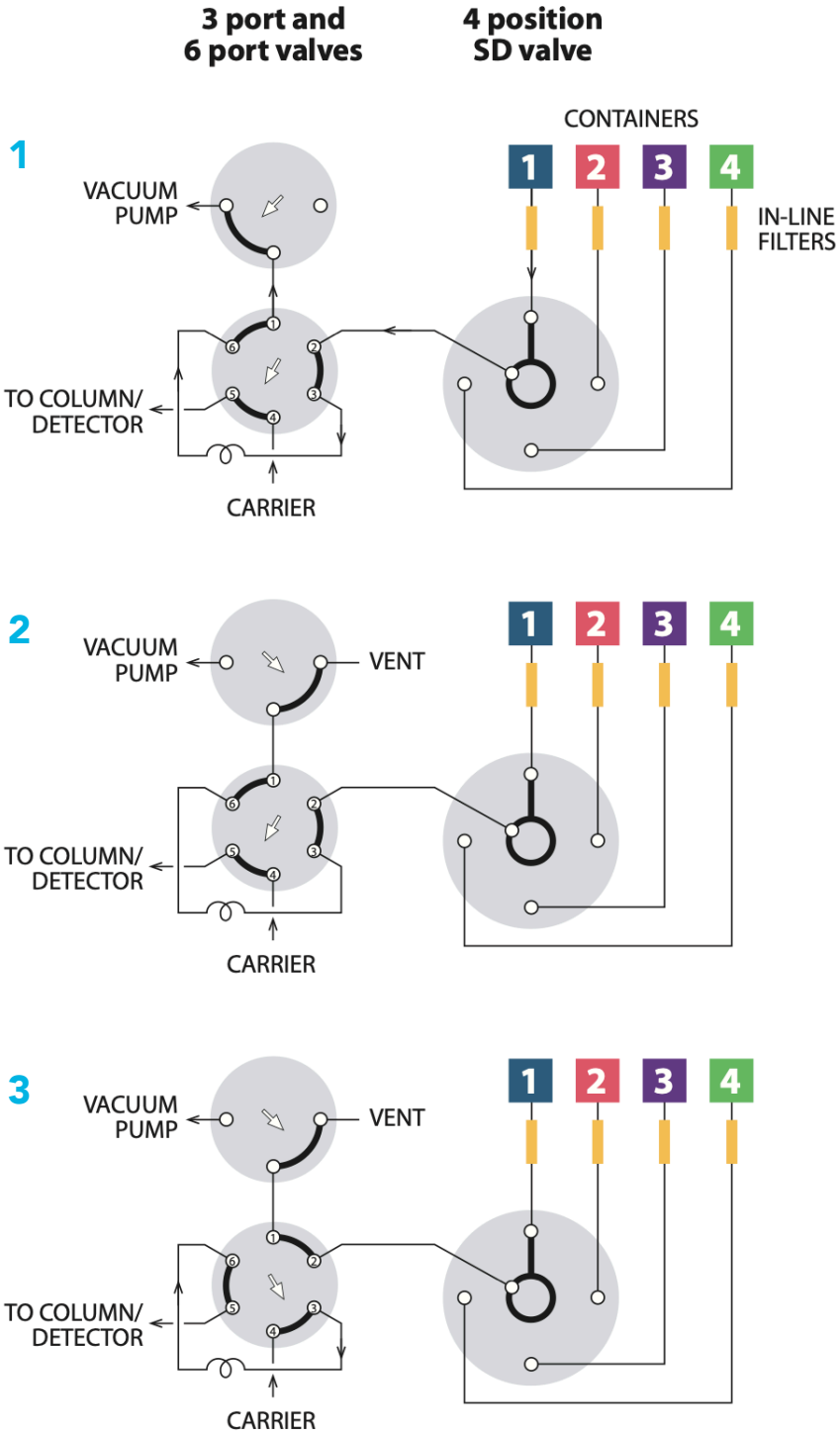
The SD flowpath isolates the unselected sample streams, but the potential exists for extraneous sample or contaminants to be in the lines when containers are first connected. To avoid problems, either prepurge each line or allow sufficient sampling time for the line to purge prior to injection.

Watch an animation of the SD selector flowpath at vici.com:

ADDITIONAL TECHNICAL NOTES

Technical notes related to cleaning/rotor replacement and proper valve/actuator alignment can be found in the Support section of vici.com.

APPLICATION - SD FLOWPATH



TECH TIP

Because the most common cause of valve failure is stray particulates entering the valve, we strongly recommend the use of in-line filters at sample entry points.

Our ZUFR filters feature inexpensive and easily replaceable low pressure drop filter screens (2 or 10 micron).

The filters are available in 1/16", 1/8", and 1/4" standard, reducing, and bulkhead versions.