GC Valves

Manual Sampling / Switching Valves

Column switching procedures make your GC system more versatile. Multiple port sampling and switching valves enable you to perform analyses that call for switching columns, reversing the elution sequence of sample components, or selecting between two columns to a single detector.

These valves also eliminate pressure surges and improve sample-to-sample reproducibility of peak separations.

Valco precision sampling and switching valves are low in dead volume and easily adapt to any type of tubing. Zero volume fittings allow you to make connections directly to the valve, minimizing dead volume for on-column injections. 303 stainless steel, with Tefzel rotor.

Manual Sampling and Switching Valves

Zero volume nuts, mounting bracket, 3-inch handle included.

Corrosive resistant Hastelloy C valves are available as custom.

NO. VALVE PORTS	FITTINGS	CAT. NO.	PRICE
175°C MAXIMUM TEMPERATURE			
4	1/8"	22975	
6	1/16"	22976	
	1/8"	22977	
10	1/8"	22981	
300°C MAXIMUM TEMPERATURE			
4	1/16"	22941	
	1/8"	22914	
6	1/16"	22950	
	1/8"	22915	
8	1/8"	22916	

Sample Loops for Gas Sampling

303 stainless steel; zero volume nuts not included.

VALVE FITTING	LOOP VOLUME (cc)	CAT. NO.	PRICE
6-PORT			
1/16"	0.25	22628	
	0.5	22629	
1/8"	0.5	22633	
	1.0	22634	
	5.0	22635	
10-PORT			
1/8"	0.5	22649	
	5.0	22651	

Shaft and Seal Assembly

For 175°C (max. temp.) 6-port valves[1]

DESCRIPTION	CAT. NO.	PRICE
Shaft and Seal for 1/16" valves	22926	

[1] Shaft and seal assemblies for 4-, 8-, and 10-port,175°C valves are available on request. Assemblies for 300°C valves are not available from Supelco – contact Valco Instruments.

Special Stainless Steel Adapter Fittings

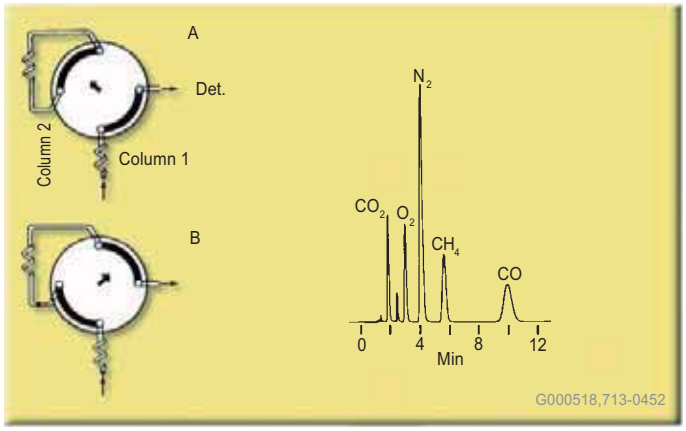
For easy connection of the valve to the detector and injector through low dead volume fittings. Nuts and ferrules are included where needed. 303 stainless steel.

DESCRIPTION	CAT. NO.	PRICE
Zero Volume Union,1/16" to 1/16"	22997-U	
Reducing Union, 1/8" to 1/16"	22999	
Zero Dead Volume External Reducer 1/16" tubing to 1/8" injector or detector fitting	22948	
Zero Dead Volume Internal Reducer 1/16" tubing to 1/8" valve port	22949	

Recommended Spare Parts

Maintain a supply of spare nuts and ferrules. We also suggest having a spare shaft and seal assembly for each valve in use. An extension shaft for remote oven operation is included with each stand-off assembly.

DESCRIPTION	CAT. NO.	PRICE
Zero Volume Ferrules, 303 SS (pk. of 10)		
1/16"	22988	
1/8"	22989	
Zero Volume Nuts, 303 SS (pk. of 10)		
1/16"	22990-U	
1/8"	22991	
Stand-Off Assembly, 6"/15cm (for oven mounting a 4-, 6-, or 8-port valve)	22995-U	

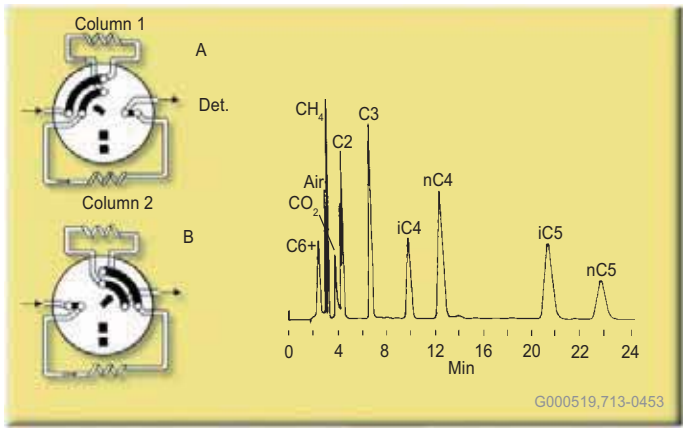


4-Port Valve Application

Isolate a column to prevent a compound, emerging from an upstream column, from being irreversibly adsorbed.

In the figure, CO_2 is separated from air in Column 1, and bypasses Column 2 when the valve is switched to position B. After the CO_2 is detected, the valve is switched back to position A and O_2, N_2, CH_4, and CO elute from Column 2 to the detector.

Column 1: 60/80 Chromosorb 102, 6' x 1/8" SS
Column 2: 60/80 Molecular Sieve 5A, 3' x 1/8" SS
Col. Temp.: 50°C, Sample: 1% mixture in H_2

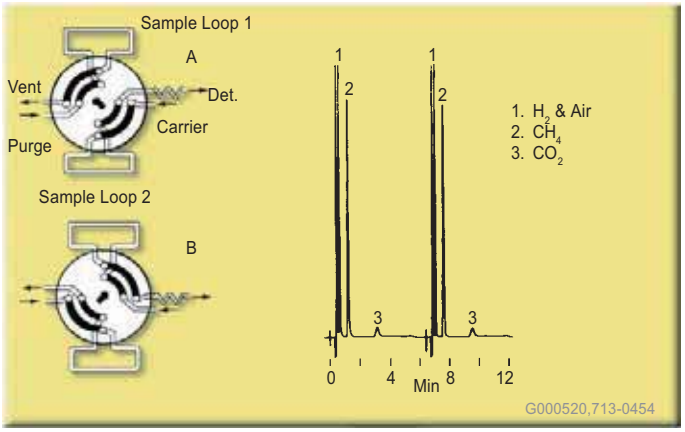


6-Port Valve Application

Foreflushing allows you to separate low molecular weight compounds. In the example shown, C1-C5 hydrocarbons are rapidly eluted from Column 1 onto Column 2 (position A).

When the valve is switched to position B, C6 and heavier compounds (which have moved slowly through Column 1) are eluted from Column 1 to the detector. C1-C5 hydrocarbons are eluted from Column 2 back onto Column 1, then to the detector.

30% DC-200 on 60/80 Chromosorb P AW,
2.5' x 1/8" SS (Column 1), 30' x 1/8" SS (Column 2)
Col. Temp.: 88°C

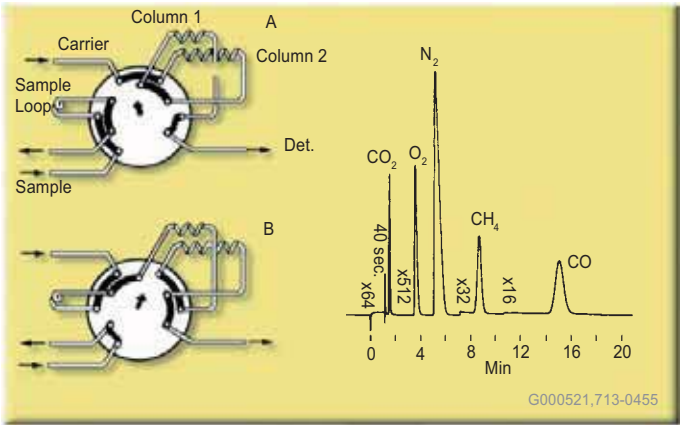


8-Port Valve Application

Select between two columns connected to a single detector requiring auxiliary gas for the second column.

The figure shows the 8-port sampling valve with two sample loops used for repetitive sample injections on one column.

Column: 60/80 Chromosorb 102, 5' x 1/8" SS
Col. Temp.: 40°C, Sample: 5% mixture in H_2



10-Port Valve Application

The figure illustrates the use of sequence reversal to monitor CO_2, CH_4, and CO in air.

The sample is injected onto Column 1 and held 40 seconds to allow the composite peak of air, CO, and CH_4 to pass onto Column 2. The valve is switched back to position A and the column sequence is reversed to allow CO_2 to pass to the detector, followed by O_2, N_2, CH_4, and CO.

Column 1: 60/80 Chromosorb 102, 5' x 1/8" SS
Column 2: 60/80 Molecular Sieve 5A, 5' x 1/8" SS
Col. Temp.: 70°C, Sample: 1% mixture in air