

Valve Selection

Following is an overview of the many types of valves available from VICI.

Valco Injectors and Valves for GC

pages 96–99, 102–111

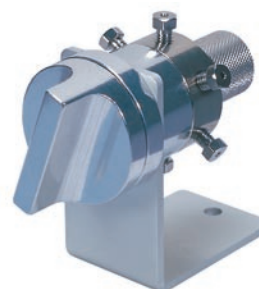
For nearly 40 years Valco valves have been the industry standard in gas chromatography. Models are available with 3, 4, 6, 8, 10, 12, or 14 ports, with 1/32", 1/16", 1/8", or 1/4" fittings, and with bore sizes from 0.25 mm (.010") to 4 mm (.156"). In addition, Valco valves offer the widest range of rotor and body materials of any valve available, with alloys and polymer composites capable of meeting virtually any system requirement. All models can be ordered in manual, pneumatic, or electrically actuated versions.



Valco Injectors and Valves for HPLC

pages 96–99, 112–116

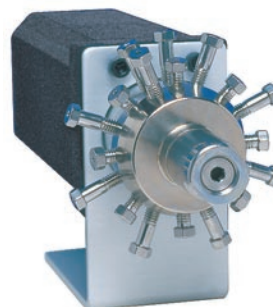
A pioneer and industry leader in products for HPLC, Valco continues to offer the market's most diverse line in terms of number of ports, fitting sizes, materials of construction, and actuation. 3, 4, 6, 8, 10, 12 port versions are offered, with 1/32", 1/16", or 1/8" fittings. As with the GC line, Valco valves offer the widest range of rotor and body materials of any valves available, with alloys and polymer composites capable of meeting virtually any system requirement. All models can be ordered in manual, pneumatic, or electrically actuated versions.



Valco Selectors

pages 100–101, 122–133

One inherent benefit of the Valco conical rotary design is that it allows multiple planes of ports, facilitating a variety of unique multiposition configurations useful for stream selection, column selection, or trapping. Versions are available for GC and HPLC applications, with 1/16", 1/8", or 1/4" fittings, with bore sizes from 0.40 to 4.0 mm (.016" to .156"). Selectors are available for up to 16 streams (34 ports), all with Valco's trademark flexibility in terms of actuation and material options.



Diaphragm Valves for GC

pages 140–143

A diaphragm valve consists of plungers and ports arranged in a circular pattern, with the plungers controlled by the reciprocating action of two air actuated pistons. Extremely long lifetime (typically 1,000,000 cycles at ambient temperature; approximately 500,000 cycles at elevated temperatures), very short actuation time (10 milliseconds), minimum internal dead volume, and reliability have made this type of valve very successful in process gas chromatography for both sample injection and column switching. Our miniature version features 1/16" or 1/32" zero dead volume fittings, and is the first to offer a 10 port configuration in addition to the 6 port and internal sample 4 port models.



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Cheminert Injectors for Nanovolume® HPLC and UHPLC

pages 146, 152–155

New nanovolume® injectors feature a uniform flowpath as small as 100 microns, with specially designed fittings for 1/32" or 360 micron PEEK, fused silica, or Valco electroformed nickel tubing. Models are rated from 5,000 to 20,000 psi, with most having a proprietary coated stainless stator and high-strength PAEK rotor to ensure long periods of maintenance-free operation.



Cheminert Injectors and Valves for HPLC and UHPLC

pages 147, 156–163

The Cheminert line includes 4, 6, 8, and 10 port versions. The submicroliter injector has an injection volume as small as 10 nanoliters. Valves feature 1/16" zero dead volume fittings, with bore sizes from 0.15 mm (.006") to 0.75 mm (.030"). Most models are available in manual, air, or electrically actuated versions, and some can be ordered with a proprietary coated stainless stator and high-strength PAEK rotor to ensure long periods of maintenance-free operation.



Cheminert Injectors and Valves for Low Pressure Applications

pages 148, 164–167

Cheminert's two position design offers 4, 6, 8, or 10 port configurations. The design features a choice of Valco 1/16" zero dead volume fittings or 1/4-28 Cheminert internal fittings for 1/16" or 1/8" OD tubing. All models are available in manual, air, or electrically actuated versions.



Cheminert Selectors

pages 150-151, 170–177

Choose among 4, 6, 8, 10, 14, 20, 24, or 26 position stream selection valves, in high pressure and low pressure models. A variety of configurations are available with bore sizes from 0.10 mm (.004") for HPLC column selection to 4.6 mm (.180") for applications requiring minimal restriction across the valve. Metal or all-polymeric valves can be ordered, with models available in manual, pneumatic, or electrically actuated versions.



40,000 psi Ultra-High Pressure Injector System

page 84

The VICI 40K injector is comprised of six miniature air actuated needle valves, plumbed to simulate the flow path of a conventional rotor/stator injector. An integral controller sends the on/off positioning signals to each valve, coordinating them to perform load, inject, and flush functions.

FOR OEMs

See our injectors for autosamplers and our new low and high pressure integrated motor/injector and motor/selector assemblies designed specifically to be built into OEM systems.

HPLCpp 178-181

Low pressure ... 182-183

Selectors 184-185





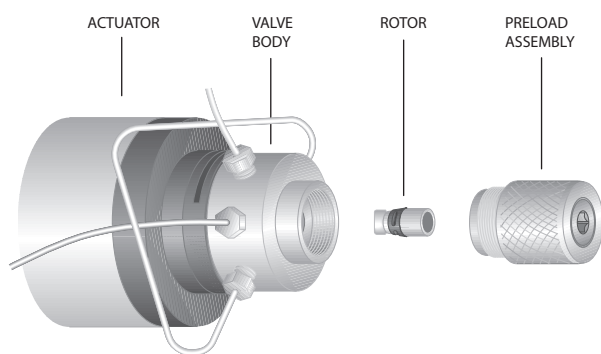
Valco Injectors and Valves

- 1/32", 1/16", 1/8", or 1/4" Valco ZDV fittings
- 3, 4, 6, 8, 10, 12, and 14 port and internal sample two position versions
- Five multiposition flowpath configurations with as many as 16 positions
- A variety of materials for hostile environments and continuous use at elevated temperature
- Can be configured for use at temperatures up to 350°C or pressures up to 10,000 psi

The Valco design lends itself to a unique variety of connecting slots and port arrangements. The rotor is held in place by a preload assembly, which allows rotor replacement without removing loops and tubing and without disengaging the valve from the actuator or mounting bracket.

In addition, the preload assembly ensures that the valve is always reassembled to the factory-set tension.

Two position injector and valve descriptions are on page 99; product numbers and prices begin on page 102. For information on **selectors**, refer to pages 100-101.



MORE INFORMATION

Decoding Valco valve product no's... 266-269

Valve descriptions

Cheminert injectors 144-149
Cheminert selectors 144, 150-151
Diaphragm 140-141
Valco two position 99
Valco selectors 100-101

Valco valve prices

GC 102-111
HPLC 112-116
Selector 122-133

TECH TIP

For optimal zero dead volume connections, make sure your tubing meets the best industry standards. The OD tolerance should be nominal dimension $\pm .002$ ".

Fractional dimension	Nominal dimension
1/32"	.031
1/16"	.062
1/8"	.125
1/4"	.250
3/8"	.375
1/2"	.500

Materials of Construction

The standard valve body material is Nitronic 60, a gall-resistant stainless steel which has proven superior to Type 316 or 303 in the majority of applications. Valves may also be ordered in Hastelloy C-22, Inconel 600, Type 316 stainless, Monel 400, Nickel 200, Nitronic 50, or Titanium.

Medium temperature GC valves have a rotor made of Valcon E, a polyaryletherketone/PTFE composite. The high temperature versions use a polyimide/PTFE/carbon composite designated Valcon T. Valcon H, a carbon-fiber-reinforced, PTFE-lubricated inert polymer, is standard in HPLC valves.

Appropriate fittings are supplied with all valves. Valves rated at 1000 psi or less have Type 303 stainless ferrules; those rated above 1000 psi have Type 316 stainless ferrules. A valve ordered with an optional body material is supplied with ferrules of the same material as the body, with Type 316 stainless nuts.

SPECIAL BODY MATERIAL— CODES AND PRICES

TWO POSITION VALVES

Body material	Code	1/32" and 1/4" fittings	1/16" and 1/8" fittings
HPLC grade Stainless steel	SS	Standard	Standard
Hastelloy C-22	HC		
Inconel 600	IN		
Monel 400	M4		
Nickel	NI		
Nitronic 50	N5		
Titanium *	TI		

* Not available for WT, UWT, or T series valves (high temperature) due to material temperature limit.

MULTIPOSITION VALVES

Body material	Code	1/16" and 1/8" fittings		1/4" fittings
		SC and SD flowpaths	SF and ST flowpaths	SD, SC, SF flowpaths
HPLC grade Stainless steel	SS	Standard, most versions	Standard, most versions	Standard
Hastelloy C-22	HC			
Inconel 600	IN			
Monel 400	M4			
Nickel	NI			
Nitronic 50	N5			
Titanium *	TI			

* Not available for WT, UWT, or T series valves (high temperature) due to material temperature limit.

Specifying a Special Body Material

To specify a special valve body material, add the material code to the end of the valve product number, and add the amount listed in charts opposite to the base price.

Example:

An A4C6WE (air actuated 1/16" 6 port WE valve with a 4" standoff) made of Hastelloy C-22 would be designated A4C6WEHC.

The cost is \$830 + \$170 = \$1000.

Due to design requirements, several special grades of stainless steel may be used where "HPLC grade" is noted. The specific types include Nitronic 60, Type 316 stainless steel, and Type 316L stainless steel. VICI will select the material to be used based on availability and quality. HPLC grade stainless is the standard material for all Valco two position valves and high pressure multiposition valves.

MORE INFORMATION Materials

Metals..... pp 254-255
Polymers256
Valve rotors.....257

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Leak Testing

The standard test methods for cross-port and outport leakage insure valve performance at pressures and temperatures up to the specifications listed. For valves used on mass spectrometers or for ultra-trace fixed gas analysis, we recommend an optional test method utilizing a helium mass spectrometer, which provides data on mechanical leaks and on those due to seal porosity and permeability. With this method, we can certify leak rates as low as 10^{-10} cc-atm/sec.

Please consult the factory prior to ordering, since the minimum leak rate will vary widely depending on valve configuration.

Leak Rates for Gas Sampling Valves

The actual minimum leak rates attainable vary widely with seal material and valve type. In general, the acceptable leak rates fall into three ranges. (See chart below.)

In order to seal to less than 10^{-7} , the valve loading tension is increased, which somewhat lowers the maximum operating temperature and the valve lifetime. Currently, only select material can seal to 10^{-8} in most valve styles. Valcon M rotor material can seal to 10^{-10} , but has a temperature limit of 50°C.

Not all valves can achieve these leak rates. As a general rule, the larger the valve seal and port size, the higher the leak rate.

Test Method for Liquid Sampling Valves

The standard test method for liquid valves is a pressure drop over time for both crossport and outport leakage, using isopropanol at the specified test pressure. This test is designed to ensure proper performance at the specification limit.

RANGES FOR ACCEPTABLE LEAK RATES

10^{-4} to 10^{-5} cc-atm/sec	Commercial use Not normally sold by VICI
10^{-6} to 10^{-7} cc-atm/sec	General GC use Standard tension and components
10^{-8} to 10^{-10} cc-atm/sec	Ultra trace gas analysis (ppb range) Higher tension and specially processed stator and rotor material

OPTIONAL LEAK TESTING with Helium Mass Spectrometer

To order a valve certified to have helium leak rates less than 10^{-7} cc-atm/sec, add the suffix "Z" to the valve product number and \$175 to the price.

Certified valves are supplied with gold-plated stainless steel ferrules.

We can generally tell you what leak rate is possible prior to manufacturing the valve.

About Two Position Injectors and Switching Valves



Two position injectors and switching valves have many applications, as shown in the section beginning on page 117. In this catalog, Valco two position valves are divided into GC and HPLC sections, with the GC section starting on page 102 and the HPLC section on page 112.

Sample Injectors

Since the most common method of sample injection utilizes a 6 port valve with an external sample loop, 6 port valves are often referred to as "injectors." However, as the Applications section shows, 6 port valves can do more than inject sample, and 8 and 10 port valves can be sample injectors at the same time they're also being backflushers or column switchers. One more variation is the 4 port internal sampling valve (pages 102–103 and 112), which is used when the sample size must be smaller than the smallest available loop. The internal sample "loop" is actually an engraved connecting slot on the rotor which is sized to contain a specified amount of sample.

Sample Loops

Loops are electrolytically cut and electrochemically polished to ensure square, burr-free ends, then cleaned with microfiltered steam from deionized water. Standard material is Type 316 stainless, but loops can be supplied in electroformed nickel, Hastelloy C, Nickel 200, titanium, or several polymers. Consult the factory for availability.

Valco sample loops are accurately sized for each valve type. The volume tolerance matches the ID tolerance of the tubing, which is typically ± 0.001 ". This results in a variance ranging from 30% with tubing of 0.005" diameter to 5% for loops made from tubing 0.040" in diameter.

SPECIFICATIONS

VALCO TWO POSITION VALVES

Valve type	Standard rotor material	Max pressure	Max temp	Max pressure	Max temp
		Internal sample injectors		Sampling and switching valves	
GC					
W and UW	Valcon E	1000 psi liq	175°C	400 psi gas	225°C
	Valcon T	–	–	300 psi gas	330°C
MW	Valcon E2	–	–	100 psi gas	75°C
HPLC					
W and UW	Valcon H	5000 psi liq	75°C	5000 psi liq	75°C

MORE INFORMATION

Actuation .. pp 186-209

Applications . 117-121

Materials

Metals..... 254-255
Polymers256
Valve rotors.....257

Valve descriptions

Cheminert injectors..... 144-149
Cheminert selectors 144, 150-151
Diaphragm 140-141
Valco

Valco valve prices

GC 102-111
HPLC..... 112-116
Selectors 122-133

VALVE TYPES

	Fitting size	Standard port diameter
W Type	1/32"	0.25 mm (.010")
	1/16"	0.40 mm (.016")
UW Type	1/16"	0.75 mm (.030")
	1/8"	0.75 mm (.030")
MW Type	1/4"	4.0 mm (.156")

For special port diameters, please consult the factory.

OPTIONAL ROTORS

Valcon M	400 psi	50°C
Valcon P	400 psi	175°C
Valcon R	400 psi	75°C
Valcon TF	200 psi	50°C

See page 257 for a discussion of these optional rotor materials.

About Selectors

Instead of the back and forth switching of two position valves, selectors (multiposition valves) step incrementally through continuous revolutions (bi-directionally with the microelectric actuator). While we can supply older models, all the valves in this catalog have a preload assembly. This design allows the rotor to be inspected or replaced without taking the valve off the actuator, and valves ordered with a microelectric actuator are permanently aligned.

Flowpath Configurations

SD (dead-ended) valves select one of 4 to 16 dead-ended streams, directing it through the valve outlet to a sample valve, pressure sensor, detector, column, etc. The same configuration can also direct one stream to a number of outlets for fraction collection.

SC (common outlet) selectors are similar to SDs, except that instead of being dead-ended the non-selected streams flow to a common outlet.

SF (flow-through) selectors are similar to SDs and SCs, selecting a stream and sending it to the outlet. However, SFs allow the non-selected streams to flow through individual outlets instead of a common outlet.

ST (trapping) selectors are used for multi-column, multi-sample, or multi-trap operations.

STF (trapping/flow-through) selectors are similar to STs, with the single difference being that the non-selected streams are returned to their own vents or sources rather than being dead-ended or trapped as they are in the standard ST configuration.

PORT DIAMETERS—

Low pressure (MW)

Fitting size	No. of Positions	Standard port diameter
SD		
1/16"	4 - 16	0.75 mm (.030")
1/8"	4 - 16	1.0 mm (.040")
1/4"	4 - 10	4.0 mm (.156")

SC		
1/16"	4 - 16	1.0 mm (.040")
1/8"	4 - 16	1.0 mm (.040")
1/4"	4 - 8	4.0 mm (.156")

SF		
1/16"	4 - 16	1.0 mm (.040")
1/8"	4 - 16	1.0 mm (.040")
1/4"	4 - 8	4.0 mm (.156")

ST		
1/16"	4 - 16	0.75 mm (.030")
1/8"	4 - 16	1.0 mm (.040")

STF		
1/16"	4 - 16	0.75 mm (.030")
1/8"	4 - 16	1.0 mm (.040")

PORT DIAMETERS—

High pressure (UW)

Fitting size	No. of Positions	Standard port diameter
SD		
1/16"	4 - 12	0.40 mm (.016")
1/8"	4, 6, 8	0.75 mm (.030")

ST		
1/16"	4, 6	0.40 mm (.016")



MORE INFORMATION

Actuation . . pp 186-209

Applications . 134-139

Materials

Metals 254-255
Polymers 256
Valve rotors 257

Specifying a special body material 97

Selector prices

Low pressure

SD 122-123
SC 124-125
SF 126-127
ST 128-129
STF 130-131

High pressure

SD 132
ST 133

Loops, if required, are found on corresponding valve pages.

For special port diameters, please consult the factory.

Low Pressure Selectors

Valco **MW Type** selectors are available with 1/16", 1/8", or 1/4" fittings. (For port diameters, refer to the chart on the preceding page.) The 1/16" and 1/8" selectors can be ordered with 4, 6, 8, 10, 12, or 16 positions, in any of the five flowpath configurations. Selectors with 1/4" fittings are available in SD, SC, and SF flowpaths: SDs have 4, 6, 8, or 10 positions; SCs and SFs have 4, 6, or 8.

Although not shown in this catalog, MW selectors are also available in a higher temperature version. While actual specifications vary with the configuration, typical specifications are 200 psi and 330°C. Consult our technical staff for more information.

SPECIFICATIONS

VALCO SELECTORS – Low pressure (MW)

Fittings size	Number of positions	Standard rotor material	Max pressure	Max temp	Max pressure	Max temp	Max pressure	Max temp
			SD Dead-end flowpath		SC Common outlet flowpath			
1/16"	4 - 16	Valcon E	400 psi gas	200°C	200 psi gas	200°C	Note: All low pressure 1/16" and 1/8" valves are also available in versions up to 330°C.	
1/8"	4 - 8	Valcon E	400 psi gas	200°C	200 psi gas	200°C		
	10 - 16	Valcon E	200 psi gas	200°C	200 psi gas	200°C		
1/4"	4 - 8	Valcon E2	100 psi gas	75°C	100 psi gas	75°C		
			SF Flow-through flowpath		ST Trapping flowpath		STF Trapping/Flow-through flowpath	
1/16"	4 - 16	Valcon E	200 psi gas	200°C	200 psi gas	200°C	200 psi gas	200°C
1/8"	4 - 16	Valcon E	200 psi gas	200°C	200 psi gas	200°C	200 psi gas	200°C
1/4"	4 - 8	Valcon E2	100 psi gas	75°C	—	—	—	—

High Pressure Selectors

Valco **UW Type** high pressure selectors are available in SD and ST flowpaths. SD selectors with 1/16" fittings are available in 4, 6, 8, 10, or 12 positions, while 1/8" selectors can be

ordered with 4, 6, 8, or 10 positions. ST flowpath UW selectors have 1/16" fittings, with either 4 or 6 positions. (For port diameters, refer to the chart on the preceding page.)

SPECIFICATIONS

VALCO SELECTORS – High pressure (UW)

Fittings size	Number of positions	Standard rotor material	Max pressure	Max temp	Max pressure	Max temp
<div> <div>SD</div> <div>Dead-end flowpath</div> </div> <div> <div>ST</div> <div>Trapping flowpath</div> </div>						
1/16"	4 - 12	Valcon E	5000 psi liq	75°C	5000 psi liq	75°C
1/8"	4 - 8	Valcon E	5000 psi liq	75°C	–	–

Internal sample injectors, 1/32" fittings, 0.25 mm ports (.010")

W Type

Med temp

Internal sample

1/32"0.25 mm

Includes 2" standoff.

Manual version is not available without standoff.


Standard electric actuator:

110 VAC for USA;

110/230 VAC to 24 VDC power supply for international

Microelectric actuator:

24 VDC, with 110/230 VAC to 24 VDC power supply



SPECS

1000 psi liq

175°C max

Nitronic 60 valve body

Valcon E rotor

Sample volume	.06 µl		.1 µl		.2 µl		.5 µl	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual with standoff	2NI4WE.06	\$775	2NI4WE.1		2NI4WE.2		2NI4WE.5	
With air actuator	A2NI4WE.06		A2NI4WE.1		A2NI4WE.2		A2NI4WE.5	
With standard electric actuator	E2NI4WE.06		E2NI4WE.1		E2NI4WE.2		E2NI4WE.5	
With microelectric actuator	EP2NI4WE.06		EP2NI4WE.1		EP2NI4WE.2		EP2NI4WE.5	
Replacement valve	DNI4WE.06		DNI4WE.1		DNI4WE.2		DNI4WE.5	
Replacement rotor	SSANI4WE.06		SSANI4WE.1		SSANI4WE.2		SSANI4WE.5	

OPTIONS

■ 3", 4", and 6" standoffs

■ Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)

Internal sample injectors, 1/16" fittings, 0.40 mm ports (.016")

W Type

Med temp

Internal sample

1/16"0.40 mm

Includes 2" standoff.

Manual version has no standoff.


Standard electric actuator:

110 VAC for USA;

110/230 VAC to 24 VDC power supply for international

Microelectric actuator:

24 VDC, with 110/230 VAC to 24 VDC power supply



SPECS

1000 psi liq

175°C max

Nitronic 60 valve body

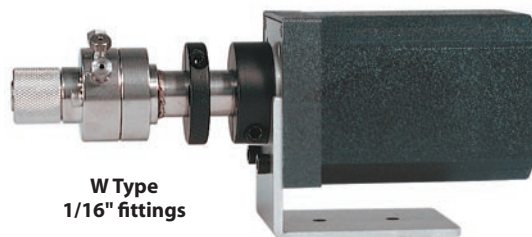
Valcon E rotor

Sample volume	.06 µl		.1 µl		.2 µl		.5 µl	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual	C14WE.06		C14WE.1		C14WE.2		C14WE.5	
Manual with standoff	2C14WE.06		2C14WE.1		2C14WE.2		2C14WE.5	
With air actuator	A2C14WE.06		A2C14WE.1		A2C14WE.2		A2C14WE.5	
With standard electric actuator	E2C14WE.06		E2C14WE.1		E2C14WE.2		E2C14WE.5	
With microelectric actuator	EP2C14WE.06		EP2C14WE.1		EP2C14WE.2		EP2C14WE.5	
Replacement valve	DC14WE.06		DC14WE.1		DC14WE.2		DC14WE.5	
Replacement rotor	SSAC14WE.06		SSAC14WE.1		SSAC14WE.2		SSAC14WE.5	

OPTIONS

■ 3", 4", and 6" standoffs

■ Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)



MORE INFORMATION

Actuators

Air page 195
 Manual 204
 Microelectric .. 188-189
 Standard elec. 193

Materials

Metals 254-255
 Polymers 256
 Valve rotors. 257

Standoff

assemblies 205

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Internal sample injectors, 1/16" fittings, 0.75 mm ports (.030")

UW Type

SPECS
1000 psi liq
175°C maxNitronic 60 valve body
Valcon E rotorIncludes 2" standoff.
Manual version has no
standoff.Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for international
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC power supply

Med temp

Internal sample

1/16" 0.75 mm

OPTIONS

- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)

Sample volume

	.2 µl		.5 µl		1 µl		2 µl	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual	CI4UWE.2		CI4UWE.5		CI4UWE1		CI4UWE2	
Manual with standoff	2CI4UWE.2		2CI4UWE.5		2CI4UWE1		2CI4UWE2	
With air actuator	A2CI4UWE.2		A2CI4UWE.5		A2CI4UWE1		A2CI4UWE2	
With std electric actuator	E2CI4UWE.2		E2CI4UWE.5		E2CI4UWE1		E2CI4UWE2	
With microelectric actuator	ED2CI4UWE.2		ED2CI4UWE.5		ED2CI4UWE1		ED2CI4UWE2	
Replacement valve	DCI4UWE.2		DCI4UWE.5		DCI4UWE1		DCI4UWE2	
Replacement rotor	SSACI4UWE.2		SSACI4UWE.5		SSACI4UWE1		SSACI4UWE2	

Internal sample injectors, 1/8" fittings, 0.75 mm ports (.030")

UW Type

SPECS
1000 psi liq
175°C maxNitronic 60 valve body
Valcon E rotorIncludes 2" standoff.
Manual version has no
standoff.Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for international
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC power supply

Med temp

Internal sample

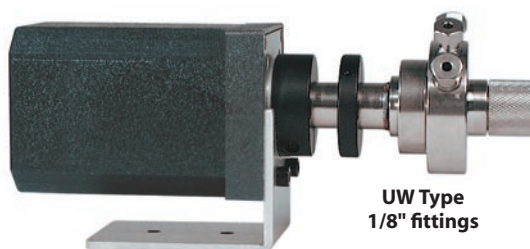
1/8" 0.75 mm

OPTIONS

- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)

Sample volume

	.2 µl		.5 µl		1 µl		2 µl	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual	I4UWE.2		I4UWE.5		I4UWE1		I4UWE2	
Manual with standoff	2I4UWE.2		2I4UWE.5		2I4UWE1		2I4UWE2	
With air actuator	A2I4UWE.2		A2I4UWE.5		A2I4UWE1		A2I4UWE2	
With std electric actuator	E2I4UWE.2		E2I4UWE.5		E2I4UWE1		E2I4UWE2	
With microelectric actuator	ED2I4UWE.2		ED2I4UWE.5		ED2I4UWE1		ED2I4UWE2	
Replacement valve	DI4UWE.2		DI4UWE.5		DI4UWE1		DI4UWE2	
Replacement rotor	SSAI4UWE.2		SSAI4UWE.5		SSAI4UWE1		SSAI4UWE2	

UW Type
1/8" fittings

Capillary GC

Sampling and switching valves, 1/32" fittings, 0.25 mm ports (.010")

W Type

Med temp

1/32"

0.25 mm

Includes 4" standoff.
Manual version not
available without
standoff.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply
for international
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supply

Sample loops are not
included with valves.
Order separately.

SPECS

400 psi gas

225°C max

Nitronic 60 valve body
Valcon E rotor

For 300 psi, 350°C max,
see facing page.



4 Ports

Prod No Price



6 Ports

Prod No Price



8 Ports

Prod No Price



10 Ports

Prod No Price

Manual with standoff
With air actuator

4N4WE

A4N4WE

4N6WE

A4N6WE

4N8WE

A4N8WE

4N10WE

A4N10WE

With standard electric actuator
With microelectric actuator

E4N4WE

EH4N4WE

E4N6WE

EH4N6WE

E4N8WE

EH4N8WE

E4N10WE

EH4N10WE

Replacement valve
Replacement rotor

DN4WE

SSAN4WE

DN6WE

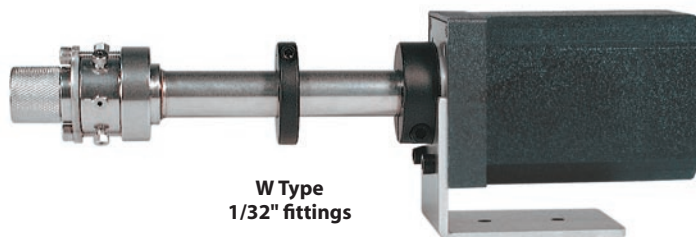
SSAN6WE

DN8WE

SSAN8WE

DN10WE

SSAN10WE



W Type
1/32" fittings

OPTIONS

- 3 and 12 port valves available
- 2", 3", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)

1/32" Stainless steel loops

for W Type valves

Each stainless steel loop includes two stainless nuts and two stainless ferrules. Order special fittings separately.



Volume	Prod No	Price	Volume	Prod No	Price
2 µl	SL2NW		25 µl	SL25NW	
5 µl	SL5NW		50 µl	SL50NW	
10 µl	SL10NW		100 µl	SL100NW	
15 µl	SL15NW		250 µl	SL250NW	
20 µl	SL20NW		500 µl	SL500NW	

MORE INFORMATION

Actuators

Air page 195
Manual 204
Microelectric .. 188-189
Standard elec. 193

Materials

Metals. 254-255
Polymers 256
Valve rotors. 257

Standoff

assemblies 205

ABOUT LOOPS

- Other materials available in many sizes: Electroformed Nickel, Nickel 200, PEEK, and PTFE

Sampling and switching valves, 1/32" fittings, 0.25 mm ports (.010")

W Type

SPECS**300 psi gas
350°C max**Nitronic 60 valve body
Valcon T rotorFor 400 psi, 225°C max,
see facing pageIncludes 4" standoff.
Manual version not
available without
standoff.Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for
international
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supplySample loops are not
included with valves.
Order separately.**High temp****1/32"****0.25 mm****OPTIONS**■ 3 and 12 port
valves available

■ 2", 3", and 6" standoffs

■ Materials: Hastelloy C,
Inconel 600, Monel 400,
Nickel 200, Nitronic 50,
Titanium, Zirconium
(see pages 254-255)Manual with standoff
With air actuatorWith standard electric actuator
With microelectric actuatorReplacement valve
Replacement rotor**4 Ports**

Prod No Price

4N4WT \$725
A4N4WT 885**6 Ports**

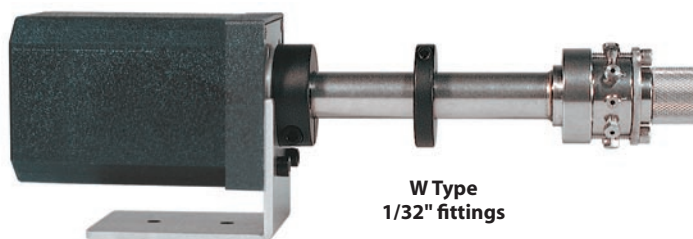
Prod No Price

4N6WT \$780
A4N6WT 940**8 Ports**

Prod No Price

4N8WT \$835
A4N8WT 995**10 Ports**

Prod No Price

4N10WT \$835
A4N10WT 995E4N4WT 1205
EH4N4WT 1375E4N6WT 1260
EH4N6WT 1430E4N8WT 1315
EH4N8WT 1485E4N10WT 1315
EH4N10WT 1485DN4WT 635
SSAN4WT 75DN6WT 690
SSAN6WT 75DN8WT 745
SSAN8WT 75DN10WT 745
SSAN10WT 75**W Type
1/32" fittings****1/32" Stainless steel loops**

for W Type valves

Each stainless steel loop includes two stainless
nuts and two stainless ferrules. Order special
fittings separately.

Volume	Prod No	Price	Volume	Prod No	Price
2 µl	SL2NW	\$25.00	25 µl	SL25NW	\$25.00
5 µl	SL5NW	25.00	50 µl	SL50NW	27.50
10 µl	SL10NW	25.00	100 µl	SL100NW	27.50
15 µl	SL15NW	25.00	250 µl	SL250NW	31.25
20 µl	SL20NW	25.00	500 µl	SL500NW	37.50

ABOUT LOOPS■ Other materials
available in many
sizes: Electroformed
Nickel, Nickel 200,
PEEK, and PTFE

Sampling and switching valves, 1/16" fittings, 0.40 mm (.016")

W Type

Med temp

1/16" 0.40 mm

Includes 4" standoff
Manual version has no
standoff

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply
for international
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supply

Sample loops are not
included with valves.
Order separately.

SPECS

400 psi gas
225°C max
Nitronic 60 valve body
Valcon E rotor

For 300 psi, 350°C max,
see page 108.



4 Ports

Prod No Price



6 Ports

Prod No Price



8 Ports

Prod No Price



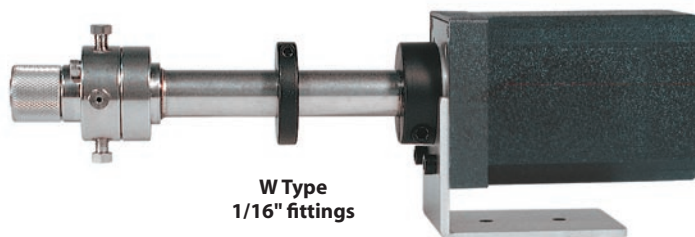
10 Ports

Prod No Price

Manual	C4WE	C6WE	C8WE	C10WE
Manual with standoff	4C4WE	4C6WE	4C8WE	4C10WE
With air actuator	A4C4WE	A4C6WE	A4C8WE	A4C10WE
With standard electric actuator	E4C4WE	E4C6WE	E4C8WE	E4C10WE
With microelectric actuator	EH4C4WE	EH4C6WE	EH4C8WE	EH4C10WE
Replacement valve	DC4WE	DC6WE	DC8WE	DC10WE
Replacement rotor	SSAC4WE	SSAC6WE	SSAC8WE	SSAC10WE

OPTIONS

- 3 and 12 port valves available
- 2", 3", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)

W Type
1/16" fittings

1/16" Stainless steel loops

for W Type valves

Each stainless steel loop includes two stainless nuts and two stainless ferrules. Order special fittings separately.



Volume	Prod No	Price	Volume	Prod No	Price
2 µl	SL2CW		100 µl	SL100CW	
5 µl	SL5CW		250 µl	SL250CW	
10 µl	SL10CW		500 µl	SL500CW	
15 µl	SL15CW		1 ml	SL1KCW	
20 µl	SL20CW		2 ml	SL2KCW	
25 µl	SL25CW		5 ml	SL5KCW	
50 µl	SL50CW		10 ml	SL10KCW	

MORE INFORMATION

Actuators

Air page 195
Manual 204
Microelectric .. 188-189
Standard elec. 193

Materials

Metals. 254-255
Polymers 256
Valve rotors. 257

Standoff

assemblies 205

ABOUT LOOPS

- Other materials available in many sizes: Electroformed Nickel, Hastelloy C, Nickel 200, PEEK, PTFE, and Titanium
- Loops > 2 ml are made from 1/8" OD tubing with brazed or welded 1/16" tube ends or reducing unions.

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Sampling and switching valves, 1/16" fittings, 0.75 mm ports (.030")

UW Type

SPECS

**400 psi gas
225°C max**Nitronic 60 valve body
Valcon E rotorFor 300 psi, 330°C max,
see page 109.Includes 4" standoff.
Manual version has no
standoff.Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply
for international
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supplySample loops are not
included with valves.
Order separately.

Med temp

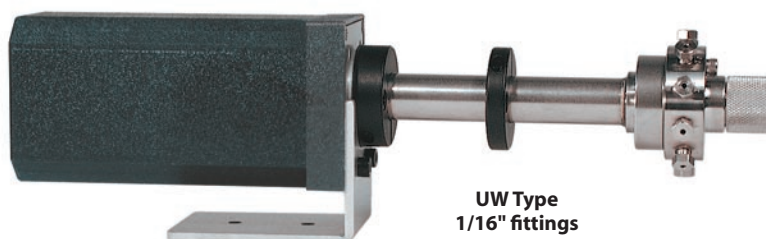
1/16"

0.75 mm

OPTIONS

- 3, 12 and 14 port valves available
- 2", 3", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)
- Larger bore available

	4 Ports		6 Ports		8 Ports		10 Ports	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual	C4UWE		C6UWE	\$570	C8UWE		C10UWE	
Manual with standoff	4C4UWE		4C6UWE	615	4C8UWE		4C10UWE	
With air actuator	A4C4UWE		A4C6UWE	775	A4C8UWE		A4C10UWE	
With standard electric actuator	E4C4UWE		E4C6UWE	1095	E4C8UWE		E4C10UWE	
With microelectric actuator	ED4C4UWE		ED4C6UWE	1325	ED4C8UWE		ED4C10UWE	
Replacement valve	DC4UWE		DC6UWE	525	DC8UWE		DC10UWE	
Replacement rotor	SSAC4UWE		SSAC6UWE	75	SSAC8UWE		SSAC10UWE	



1/16" Stainless steel loops

for UW Type valves

Each stainless steel loop includes two stainless nuts and two stainless ferrules. Order special fittings separately.



ABOUT LOOPS

- Other materials available in many sizes: Electroformed Nickel, Hastelloy C, Nickel 200, PEEK, PTFE, and Titanium
- Loops > 2 ml are made from 1/8" OD tubing with brazed or welded 1/16" tube ends or reducing unions.

Volume	Prod No	Price	Volume	Prod No	Price
5 µl	SL5CUW		100 µl	SL100CUW	
10 µl	SL10CUW		250 µl	SL250CUW	
15 µl	SL15CUW		500 µl	SL500CUW	
20 µl	SL20CUW		1 ml	SL1KCUW	
25 µl	SL25CUW		2 ml	SL2KCUW	
50 µl	SL50CUW		5 ml	SL5KCUW	
			10 ml	SL10KCUW	

High Temperature GC

Sampling and switching valves, 1/16" fittings, 0.40 mm ports (.016")

W Type

High temp

1/16" 0.40 mm

Includes 4" standoff

Standard electric actuator:

110 VAC for USA

110/230 VAC to 24 VDC power supply
for international

Microelectric actuator:

24 VDC, with 110/230 VAC to 24 VDC
power supplySample loops are not
included with valves.
Order separately.

SPECS

300 psi gas
350°C maxNitronic 60 valve body
Valcon T rotorFor 400 psi, 225°C max,
see page 106.

4 Ports

Prod No Price



6 Ports

Prod No Price



8 Ports

Prod No Price



10 Ports

Prod No Price

Manual with standoff
With air actuator

4C4WT

A4C4WT

4C6WT

A4C6WT

4C8WT

A4C8WT

4C10WT

A4C10WT

With standard electric actuator
With microelectric actuator

E4C4WT

EH4C4WT

E4C6WT

EH4C6WT

E4C8WT

EH4C8WT

E4C10WT

EH4C10WT

Replacement valve
Replacement rotor

DC4WT

SSAC4WT

DC6WT

SSAC6WT

DC8WT

SSAC8WT

DC10WT

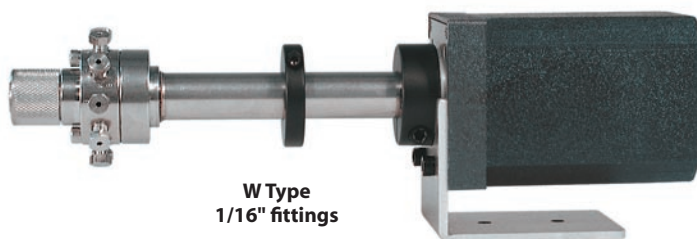
SSAC10WT

OPTIONS

- 3 and 12 port valves available
- UW type: 3, 12, and 14 port valves available

- 2", 3", and 6" standoffs

- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)

W Type
1/16" fittings

1/16" Stainless steel loops

for W Type valves

Each stainless steel loop includes two stainless nuts and two stainless ferrules. Order special fittings separately.



Volume	Prod No	Price	Volume	Prod No	Price
2 µl	SL2CW		100 µl	SL100CW	
5 µl	SL5CW		250 µl	SL250CW	
10 µl	SL10CW		500 µl	SL500CW	
15 µl	SL15CW		1 ml	SL1KCW	
20 µl	SL20CW		2 ml	SL2KCW	
25 µl	SL25CW		5 ml	SL5KCW	
50 µl	SL50CW		10 ml	SL10KCW	

MORE INFORMATION

Actuators

Air page 195
Manual 204
Microelectric .. 188-189
Standard elec. 193

Materials

Metals. 254-255
Polymers 256
Valve rotors. 257

Standoff

assemblies 205

ABOUT LOOPS

- Other materials available in many sizes: Electroformed Nickel, Hastelloy C, Nickel 200, PEEK, PTFE, and Titanium

- Loops > 2 ml are made from 1/8" OD tubing with brazed or welded 1/16" tube ends or reducing unions.

Sampling and switching valves, 1/16" fittings, 0.75 mm ports (.030")

UW Type

SPECS

300 psi gas
330°C maxNitronic 60 valve body
Valcon T rotorFor 400 psi, 225°C max,
see page 107.

Includes 4" standoff

Standard electric actuator:

110 VAC for USA

110/230 VAC to 24 VDC power supply for
international

Microelectric actuator:

24 VDC, with 110/230 VAC to 24 VDC
power supplySample loops are not
included with valves.
Order separately.

High temp

1/16" 0.75 mm

OPTIONS

- 3, 12 and 14 port valves available
- 2", 3", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)
- Larger bore available



4 Ports

Prod No Price



6 Ports

Prod No Price



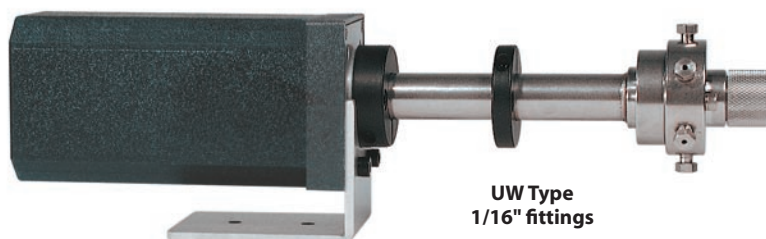
8 Ports

Prod No Price



10 Ports

Prod No Price

Manual with standoff
With air actuator4C4UWT
A4C4UWT4C6UWT
A4C6UWT4C8UWT
A4C8UWT4C10UWT \$670
A4C10UWTWith standard electric actuator
With microelectric actuatorE4C4UWT
ED4C4UWTE4C6UWT
ED4C6UWTE4C8UWT
ED4C8UWTE4C10UWT
ED4C10UWTReplacement valve
Replacement rotorDC4UWT
SSAC4UWTDC6UWT
SSAC6UWTDC8UWT
SSAC8UWTDC10UWT
SSAC10UWTUW Type
1/16" fittings

1/16" Stainless steel loops

for UW Type valves

Each stainless steel loop includes two stainless nuts
and two stainless ferrules. Order special fittings
separately.

ABOUT LOOPS

- Other materials available in many sizes: Electroformed Nickel, Hastelloy C, Nickel 200, PEEK, PTFE, and Titanium
- Loops > 2 ml are made from 1/8" OD tubing with brazed or welded 1/16" tube ends or reducing unions.

Volume	Prod No	Price	Volume	Prod No	Price
5 µl	SL5CUW		100 µl	SL100CUW	
10 µl	SL10CUW		250 µl	SL250CUW	
15 µl	SL15CUW		500 µl	SL500CUW	
20 µl	SL20CUW		1 ml	SL1KCUW	
25 µl	SL25CUW		2 ml	SL2KCUW	
50 µl	SL50CUW		5 ml	SL5KCUW	
			10 ml	SL10KCUW	

Sampling and switching valves, 1/8" fittings, 0.75 mm ports (.030")

UW Type

Med temp		Includes 4" standoff. Manual version has no standoff.	Standard electric actuator: 110 VAC for USA 110/230 VAC to 24 VDC power supply for international Microelectric actuator: 24 VDC, with 110/230 VAC to 24 VDC power supply		Sample loops are not included with valves. Order separately (see facing page).		
1/8"	0.75 mm						

Sampling and switching valves, 1/8" fittings, 0.75 mm ports (.030")

UW Type

SPECS

300 psi gas
330°C maxNitronic 60 valve body
Valcon T rotorFor 400 psi, 225°C max,
see facing page.Includes 4" standoff.
Manual version not
available without
standoff.Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for
international
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supplySample loops are not
included with valves.
Order separately.

High temp

1/8"

0.75 mm

OPTIONS

- 3, 12, and 14 port valves available
- 2", 3", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)
- Larger bore available



4 Ports

Prod No Price



6 Ports

Prod No Price



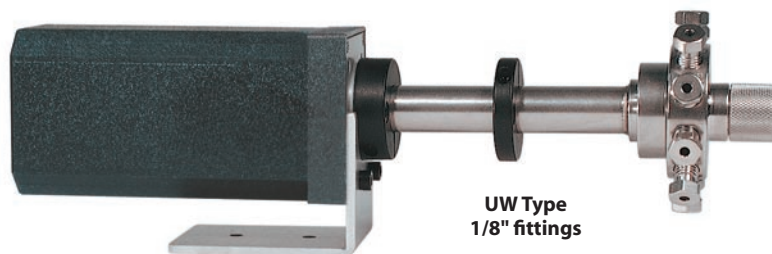
8 Ports

Prod No Price



10 Ports

Prod No Price

Manual with standoff
With air actuator44UWT
A44UWT46UWT
A46UWT48UWT
A48UWT410UWT
A410UWTWith standard electric actuator
With microelectric actuatorE44UWT
ED44UWTE46UWT
ED46UWTE48UWT
ED48UWTE410UWT
ED410UWTReplacement valve
Replacement rotorD4UWT
SSA4UWTD6UWT
SSA6UWTD8UWT
SSA8UWTD10UWT
SSA10UWTUW Type
1/8" fittings

MORE INFORMATION

Actuators

Air page 195
Manual 204
Microelectric .. 188-189
Standard elec. 193

Materials

Metals 254-255
Polymers 256
Valve rotors 257

Standoff

assemblies 205

ABOUT LOOPS

- Other materials available in many sizes: Electroformed Nickel, Hastelloy C, Nickel 200, PEEK, PTFE, and Titanium
- Loops <100 µl are made from 1/16" OD tubing with brazed or welded 1/8" tube ends.



1/8" Stainless steel loops

for UW Type valves

Each stainless steel loop includes two stainless nuts and two stainless ferrules. Order special fittings separately.

Volume	Prod No	Price	Volume	Prod No	Price
10 µl	SL10UW		250 µl	SL250UW	
15 µl	SL15UW		500 µl	SL500UW	
20 µl	SL20UW		1 ml	SL1KUW	
25 µl	SL25UW		2 ml	SL2KUW	
50 µl	SL50UW		5 ml	SL5KUW	
100 µl	SL100UW		10 ml	SL10KUW	
			20 ml	SL20KUW	

HPLC Injectors

Internal sample injectors, 1/16" fittings, 0.40 mm ports (.016")
0.25 mm column port diameter (.010")

W Type

5,000 psi

Internal sample

1/16" 0.40 mm

Standard electric actuator:

110 VAC for USA

110/230 VAC to 24 VDC power supply for international

Microelectric actuator:

24 VDC, with 110/230 VAC to 24 VDC power supply.



SPECS

5000 psi liq

75°C max

Nitronic 60 valve body
Valcon H rotor

Sample volume

.06 µl

.1 µl

.2 µl

.5 µl

Prod No Price

Prod No Price

Prod No Price

Prod No Price

Manual

CI4W.06

CI4W.1

CI4W.2

CI4W.5

With air actuator

ACI4W.06

ACI4W.1

ACI4W.2

ACI4W.5

With standard electric actuator

ECI4W.06

ECI4W.1

ECI4W.2

ECI4W.5

With microelectric actuator

EPCI4W.06

EPCI4W.1

EPCI4W.2

EPCI4W.5

Replacement valve

DCI4W.06

DCI4W.1

DCI4W.2

DCI4W.5

Replacement rotor

SSACI4W.06

SSACI4W.1

SSACI4W.2

SSACI4W.5

W Type
1/16" fittingsUW Type
1/16" fittings

OPTIONS

■ 2", 3", 4", and 6"
standoffs■ Materials: Hastelloy C,
Inconel 600, Monel 400,
Nickel 200, Nitronic 50,
Titanium, Zirconium
(see pages 254-255)■ 1/32" fittings with
0.25 mm bore (.010")
also available. Consult
factory for product
number and pricing.

Internal sample injectors, 1/16" fittings, 0.75 mm ports (.030")

UW Type

5,000 psi

Internal sample

1/16" 0.75 mm

Standard electric actuator:

110 VAC for USA

110/230 VAC to 24 VDC power supply for international

Microelectric actuator:

24 VDC, with 110/230 VAC to 24 VDC power supply.



SPECS

5000 psi liq

75°C max

Nitronic 60 valve body
Valcon H rotor

Sample volume

.2 µl

.5 µl

1 µl

2 µl

Prod No Price

Prod No Price

Prod No Price

Prod No Price

Manual

CI4UW.2

CI4UW.5

CI4UW.1

CI4UW.2

With air actuator

ACI4UW.2

ACI4UW.5

ACI4UW.1

ACI4UW.2

With standard electric actuator

ECI4UW.2

ECI4UW.5

ECI4UW.1

ECI4UW.2

With microelectric actuator

EDCI4UW.2

EDCI4UW.5

EDCI4UW.1

EDCI4UW.2

Replacement valve

DCI4UW.2

DCI4UW.5

DCI4UW.1

DCI4UW.2

Replacement rotor

SSACI4UW.2

SSACI4UW.5

SSACI4UW.1

SSACI4UW.2

OPTIONS

■ 2", 3", 4", and 6"
standoffs■ Materials: Hastelloy C,
Inconel 600, Monel 400,
Nickel 200, Nitronic 50,
Titanium, Zirconium
(see pages 254-255)■ 1/32" fittings with
0.25 mm bore (.010")
also available. Consult
factory for product
number and pricing.

Injectors and switching valves, 1/16" fittings, 0.40 mm ports (.016")

W Type

SPECS

5000 psi liq
75°C maxNitronic 60 valve body
Valcon H rotor

Standard electric actuator:

110 VAC for USA

110/230 VAC to 24 VDC power supply for international

Microelectric actuator:

24 VDC, with 110/230 VAC to 24 VDC power supply

Sample loops are not
included with valves.
Order separately.

5,000 psi

Analytical

1/16"

0.40 mm

OPTIONS

- 3 and 12 port valves available
- 2", 3", 4", and 6" standoffs
- 1/32" and 1/16" versions available with 0.25 mm (.010") bore
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)



4 Ports

Prod No Price

Manual
With air actuator

C4W

AC4W

With standard electric actuator
With microelectric actuator

EC4W

EPC4W

Replacement valve
Replacement rotor

DC4W

SSAC4W



6 Ports

Prod No Price

C6W

AC6W

EC6W

EPC6W

DC6W

SSAC6W



8 Ports

Prod No Price

C8W

AC8W

EC8W

EPC8W

DC8W

SSAC8W



10 Ports

Prod No Price

C10W

AC10W

EC10W

EPC10W

DC10W

SSAC10W

W Type
1/16" fittings

MORE INFORMATION

Actuators

Air page 195

Manual 204

Microelectric .. 188-189

Standard elec. 193

Materials

Metals 254-255

Polymers 256

Valve rotors 257

Standoff

assemblies 205

ABOUT LOOPS

- Other materials available in many sizes: Electroformed Nickel, Hastelloy C, Nickel 200, PEEK, PTFE, and Titanium
- Loops > 2 ml are made from 1/8" OD tubing with brazed or welded 1/16" tube ends or reducing unions.

1/16" Stainless steel loops

for W Type valves

Each stainless steel loop includes
two stainless nuts and two stainless ferrules.
Order special fittings separately.

Volume	Prod No	Price	Volume	Prod No	Price
2 µl	SL2CW		100 µl	SL100CW	
5 µl	SL5CW		250 µl	SL250CW	
10 µl	SL10CW		500 µl	SL500CW	
15 µl	SL15CW		1 ml	SL1KCW	
20 µl	SL20CW		2 ml	SL2KCW	
25 µl	SL25CW		5 ml	SL5KCW	
50 µl	SL50CW		10 ml	SL10KCW	

UW Type

Semi-prep

1/16"

0.75 mm

24 VDC, with 110/230 VAC to 24 VDC power supply

Sample loops are not included with valves. Order separately.

Nitronic 60 valve body
Valcon H rotor



4 Ports

Prod No	Price
---------	-------



6 Ports

Prod No	Price
---------	-------



8 Ports

Prod No	Price
---------	-------



10 Ports

Prod No	Price
1	10
2	20
3	30
4	40
5	50
6	60
7	70
8	80
9	90
10	100

Replacement valve
Replacement rotor

AC4UW

AC6UW

AC8UW

AC10UW

EDC4UW

EDC6UW

EDC8UW

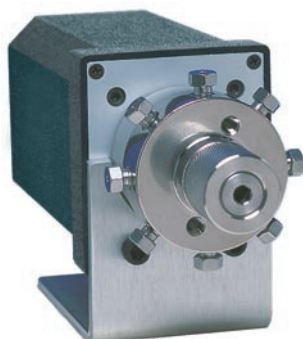
EDC10UW

SSAC4UW

SSAC6UW

SSAC8UW

SSAC10UW



**UW Type
1/16" fittings**

for UW Type valves

Each stainless steel loop includes two stainless nuts and two stainless ferrules. Order special fittings separately.



<i>Volume</i>	<i>Prod No</i>	<i>Price</i>
100 µl	SL100CUW	
250 µl	SL250CUW	
500 µl	SL500CUW	
1 ml	SL1KCUW	
2 ml	SL2KCUW	
5 ml	SL5KCUW	
10 ml	SL10KCUW	

- Loops > 2 ml are made from 1/8" OD tubing with brazed or welded 1/16" tube ends or reducing unions.

Injectors and switching valves, 1/8" fittings, 0.75 mm (.030")

UW Type

SPECS
5000 psi liq
75°C maxNitronic 60 valve body
Valcon H rotorManual 10 port
includes 2" standoff.Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for
international
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supplySample loops are not
included with valves.
Order separately.**5,000 psi****Semi-prep****1/8"****0.75 mm****OPTIONS**

- 3 and 12 port valves available
- 2", 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)
- Larger bore available. (see page 116)

Manual
With air actuator

With standard electric actuator
With microelectric actuatorReplacement valve
Replacement rotor**4 Ports**

Prod No Price

4UW

A4UW

E4UW

ED4UW

D4UW

SSA4UW

**6 Ports**

Prod No Price

6UW

A6UW

E6UW

ED6UW

D6UW

SSA6UW

**8 Ports**

Prod No Price

8UW

A8UW

E8UW

ED8UW

D8UW

SSA8UW

**10 Ports**

Prod No Price

210UW \$720

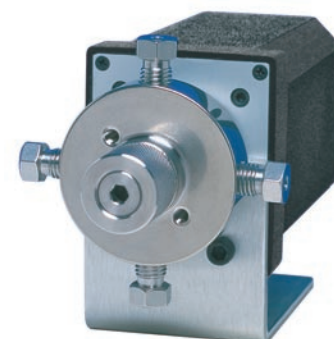
A10UW

E10UW 1200

ED10UW 1430

D10UW

SSA10UW

**UW Type**
1/8" fittings**MORE INFORMATION**

Actuators

Air page 195

Manual.....204

Microelectric .. 188-189

Standard elec.....193

Materials

Metals..... 254-255

Polymers256

Valve rotors.....257

Standoff

assemblies205

ABOUT LOOPS

- Other materials available in many sizes: Electroformed Nickel, Hastelloy C, Nickel 200, PEEK, PTFE, and Titanium
- Loops < 100 µl are made from 1/16" OD tubing with brazed or welded 1/8" tube ends.

**1/8" Stainless steel loops**

for UW Type valves

Each stainless steel loop includes two stainless nuts and two stainless ferrules. Order special fittings separately.

Volume	Prod No	Price	Volume	Prod No	Price
10 µl	SL10UW		250 µl	SL250UW	
15 µl	SL15UW		500 µl	SL500UW	
20 µl	SL20UW		1 ml	SL1KUW	
25 µl	SL25UW		2 ml	SL2KUW	
50 µl	SL50UW		5 ml	SL5KUW	
100 µl	SL100UW		10 ml	SL10KUW	
			20 ml	SL20KUW	

Preparative HPLC

Injectors and switching valves, 1/8" fittings, large bore

UW Type

5,000 psi

Prep

1/8" Large bore

Manual 10 port
includes 2" standoff.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for
international.

Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supply.

Sample loops are not
included with valves.
Order separately.

SPECS

5000 psi liq
75°C max
Nitronic 60 valve body
Valcon H rotor



4 Ports

1.7 mm (.067")

Prod No Price



6 Ports

1.7 mm (.067")

Prod No Price



8 Ports

1.3 mm (.050")

Prod No Price



10 Ports

1.0 mm (.040")

Prod No Price

Manual
With air actuator

With standard electric actuator
With microelectric actuator

Replacement valve
Replacement rotor

L4UW
AL4UW

EL4UW
EDL4UW

DL4UW
SSAL4UW

L6UW
AL6UW

EL6UW
EDL6UW

DL6UW
SSAL6UW

L8UW
AL8UW

EL8UW
EDL8UW

DL8UW
SSAL8UW

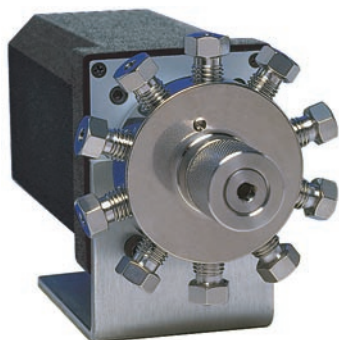
2L10UW
AL10UW

EL10UW
EDL10UW

DL10UW
SSAL10UW

OPTIONS

- 3 port valve available
- 2", 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium, Zirconium (see pages 254-255)
- Smaller bore available. (see page 115)



UW Type
1/8" fittings

MORE INFORMATION

Actuators

Air page 195
Manual 204
Microelectric .. 188-189
Standard elec. 193

Materials

Metals 254-255
Polymers 256
Valve rotors. 257

Standoff

assemblies 205

1/8" Stainless steel loops for UW Type valves

Each stainless steel loop includes two stainless nuts and two stainless ferrules. Order special fittings separately.

Volume	Prod No	Price	Volume	Prod No	Price
100 µl	SL100UW		2 ml	SL2KUW	
250 µl	SL250UW		5 ml	SL5KUW	
500 µl	SL500UW		10 ml	SL10KUW	
1 ml	SL1KUW		20 ml	SL20KUW	



ABOUT LOOPS

- Other materials available in many sizes: Electroformed Nickel, Hastelloy C, Nickel 200, PEEK, PTFE, and Titanium
- Loops < 100 µl are made from 1/16" OD tubing with brazed or welded 1/8" tube ends..

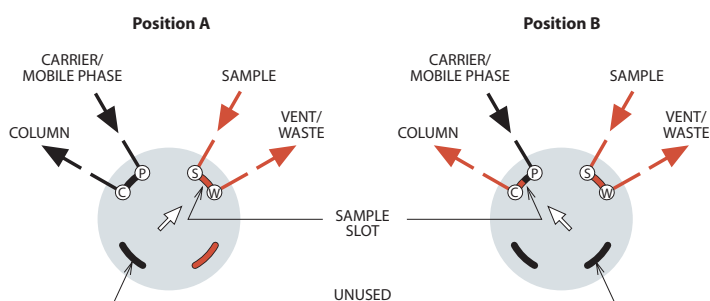
CHROMalytic TECHNOlogy Pty Ltd AUSTRALIAN Distributors e-mail: sales@chromtech.net.au Tel: 03 9762 2034

Two Position Applications

These illustrations show basic sample injection techniques using Valco two position valves. With rare exceptions, there is no difference between switching valves and external volume sampling valves, so the same valve can be used for either function.

The unique advantage of 8 and 10 port valves is that they reduce extra column volume by combining sampling and switching functions in a single valve. This minimizes expense, maintenance, service, and risk of leaks as compared to multiple 6 port valve systems.

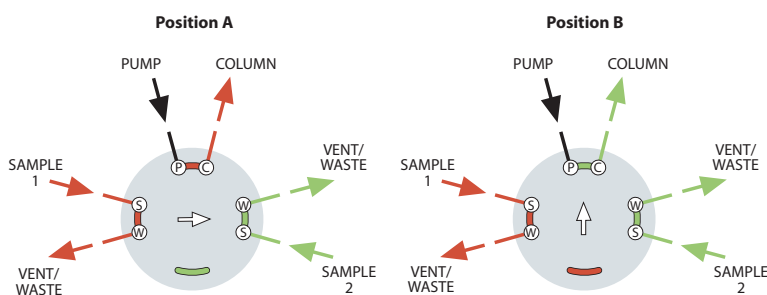
4 port internal sample injector



MICROVOLUME SAMPLE INJECTION

The internal sample (fixed volume) flowpath is used when very small sample volumes are required. The sample size is determined by a passage engraved on the valve rotor, allowing precise, repeatable injections. In Position A, the sample flows through the sample passage while the mobile phase flows through to the column. The third passage is inactive. In Position B, the sample passage is in line with the column and the mobile phase injects the contents of the sample passage onto the column. The passage which was inactive in Position A allows the sample to continue flowing without interruption.

6 port internal sample injector



DUAL MICROVOLUME SAMPLE INJECTION

This microvolume injector can be used to alternate between two different samples. Each time the valve is switched, a sample is injected. By connecting the two sample inlets in series, the valve injects the sample each time the valve switches. This is particularly useful in heavy duty cycle operations to minimize valve wear. The valve can also be used to make alternating injections of the same sample onto two different columns by swapping sample/waste and pump/column connections.

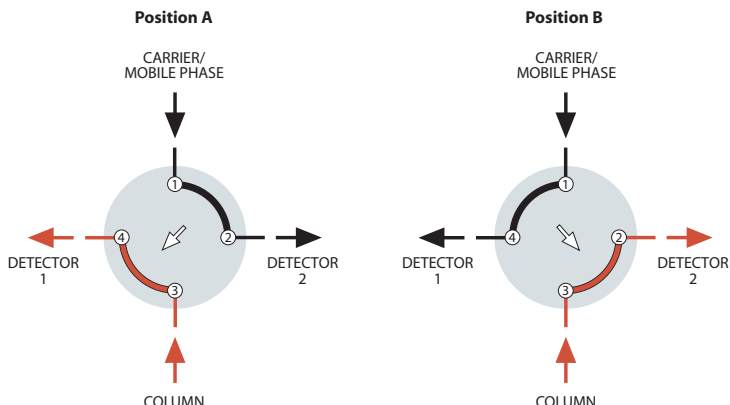
Note: This CI6 valve is not shown in this catalog. Call for details.

Two Position Applications

4 port switching valve

DETECTOR SELECTION FROM TWO COLUMNS OR ONE COLUMN AND AUXILIARY CARRIER

This unique configuration allows analyses of different parts of one analysis with two different detectors, without splitting or multiple injections. For example, fixed gases can be analyzed with a thermal conductivity detector, followed by the analysis of a hydrocarbon fraction with a flame ionization detector.

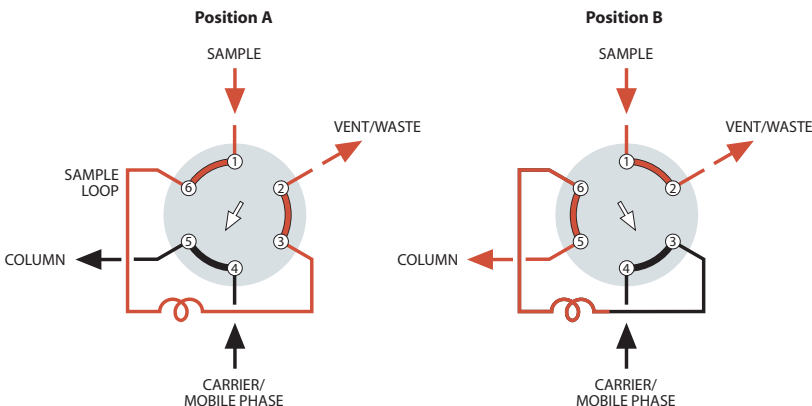


6 port external sample injector

SAMPLE INJECTION

With the valve in Position A, sample flows through the external loop while the mobile phase flows directly through to the chromatographic column. When the valve is switched to Position B, the sample contained in the sample loop and valve flow passage is displaced by the mobile phase and is carried onto the column.

Note: This is especially critical for partially-filled loops. The flow direction of the mobile phase through the loop should be opposite (backflush) to the flow direction during the loading of the loop.

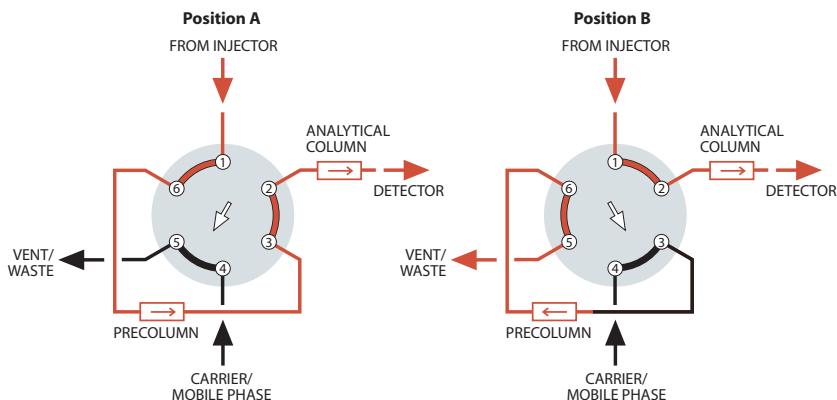


6 port column switching

BACKFLUSH OF PRECOLUMN TO VENT

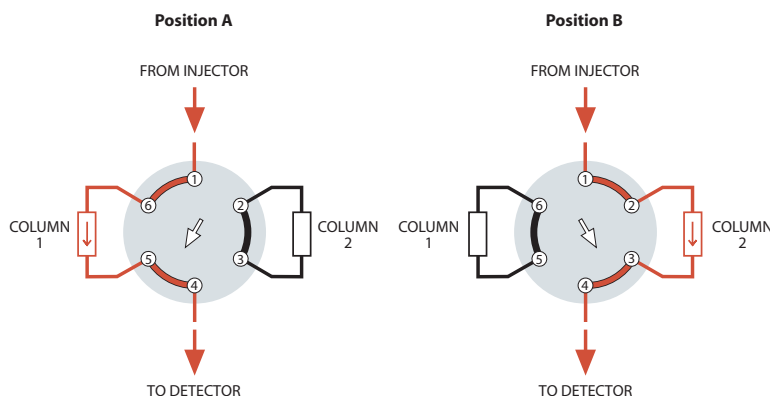
This plumbing scheme allows slower eluting components (end cut) which are not of interest to be backflushed to vent. Often a shorter version of the analytical column is used as the precolumn. Once all the components of interest have entered the main column (at port 2), the valve switches, backflushing the precolumn to vent and reducing analysis time.

Note: An auxiliary source of carrier or mobile phase is required for this application.



Two Position Applications

6 port column selection

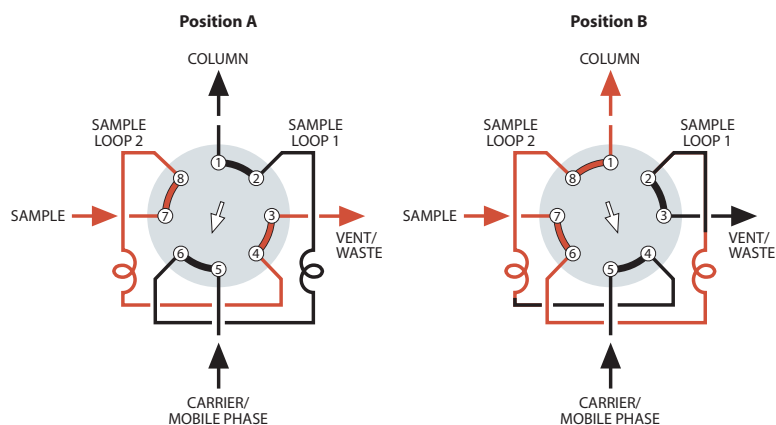


TWO COLUMN SELECTION

When two different columns are required at frequent intervals at similar oven temperatures, a 6 port valve can provide rapid selection of the one to be used. The column not in use is protected by a blanket of inert mobile phase and may be rapidly brought to equilibrium when required.

Note: If flow must be maintained to the non-selected column, an 8 or 10 port valve is required.

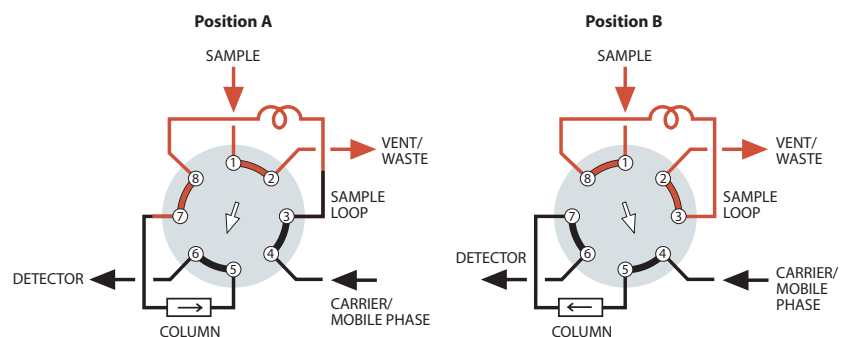
8 port dual external sample injector



SAME SAMPLE TO DIFFERENT LOOPS

In a dual external sample loop configuration, sample is injected in both positions. In Position A, Loop 2 is loaded while the mobile phase flows through Loop 1 and onto the column. In Position B, the Loop 2 sample is injected into the column and another sample is loaded into Loop 1. When the valve is returned to Position A, the Loop 1 sample is injected onto the column and Loop 2 is reloaded.

8 port sampling/switching



LOOP SAMPLING WITH BACKFLUSH TO DETECTOR

One valve functions as both a sampling and a backflush valve, simplifying operation and reducing cost. When components of interest are detected, the strongly retained components are backflushed and removed from the column without temperature programming.

Two Position Applications

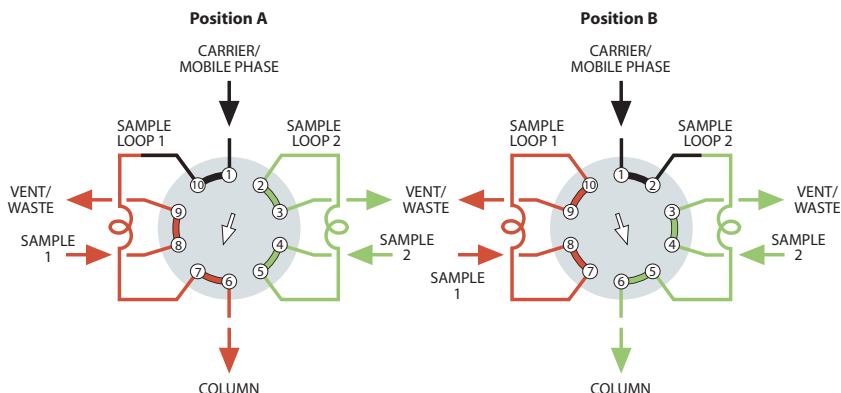
10 port dual external sampling

TWO DIFFERENT SAMPLES TO SAME COLUMN

A 10 port valve permits alternate injections from the two loops, which may be identical or of different sizes. This technique replaces a 4 port sample selector and a 6 port sample injector.

In Position A, Loop 2 is loaded with sample 2 while the mobile phase flows through Loop 1 and onto the column.

In Position B, the Loop 2 sample is injected onto the column and Loop 1 is loaded with sample 1. When the valve is returned to Position A, the Loop 1 sample is injected onto the column and Loop 2 is reloaded with sample 2.

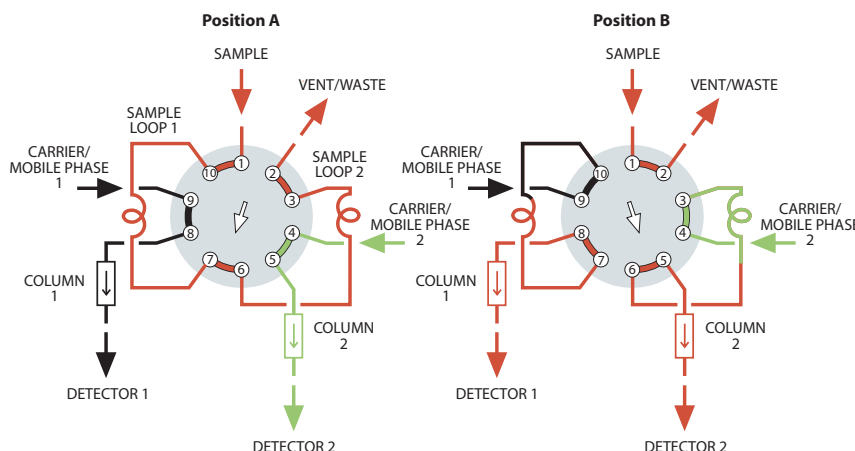


10 port dual external sampling

SIMULTANEOUS INJECTION OF THE SAME SAMPLE ONTO SEPARATE COLUMNS

In Position A, sample fills the two loops in series. In Position B, the sample is simultaneously injected into two separate flow systems. A single autosampler used with this flowpath can automate two analytical procedures for the same sample.

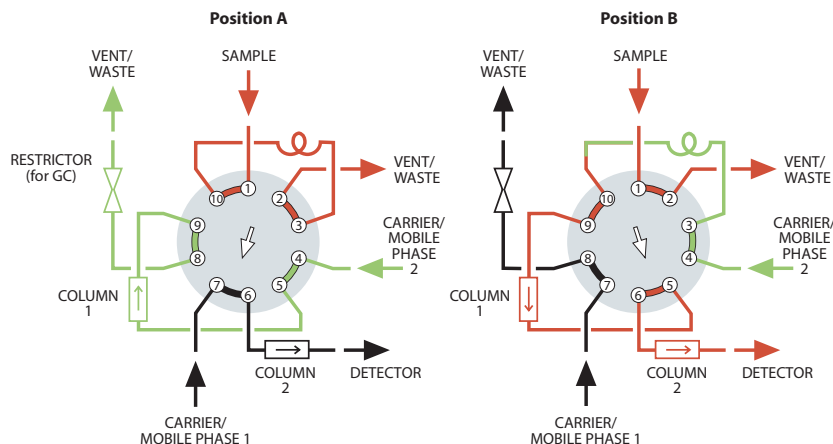
In an important non-chromatographic application, the roles of carrier and sample are reversed, permitting two different quantities of two different materials to be dispensed together, as in automatic dilution.



10 port sampling/switching

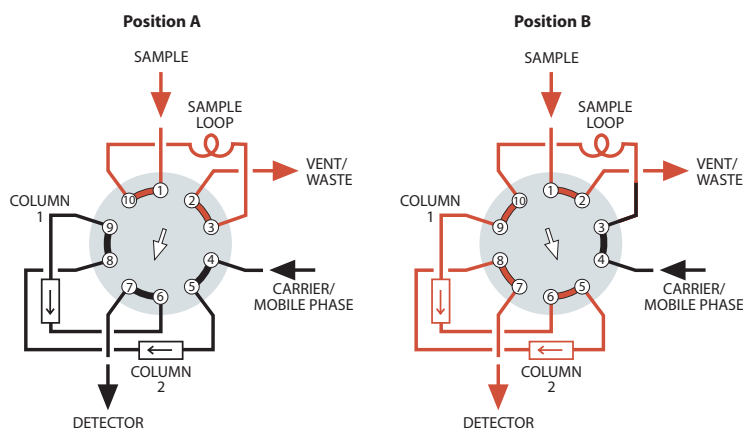
LOOP SAMPLING WITH BACKFLUSH OF PRE-COLUMN TO VENT

When components of interest have low boiling points, this plumbing scheme allows "heavy" components with long retention times to be backflushed to waste. After the sample loop is loaded in Position A, the valve is switched to Position B to inject the sample onto column 2. As soon as all components of interest have entered column 2, the valve is switched back to Position A. Column 1 is backflushed to vent during the analysis, reducing the total analysis time.



Two Position Applications

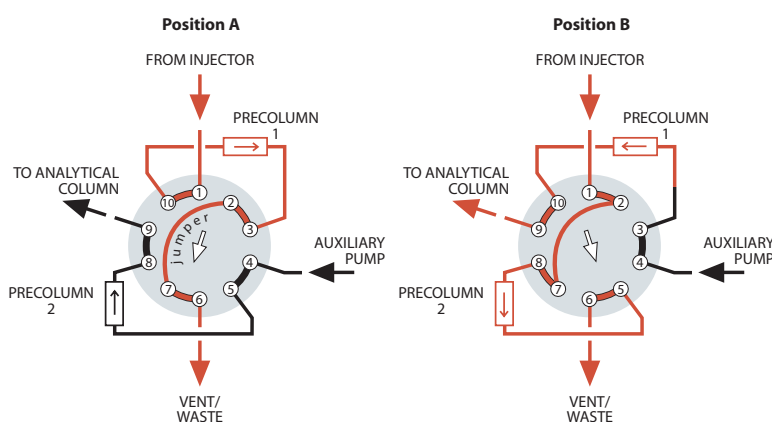
10 port sampling/switching



LOOP SAMPLING WITH TWO COLUMN SEQUENCE REVERSAL

This is ideal for fixed-gas-from-CO₂ analysis where no "high boilers" are present. Column 1 is packed with a porous polymer and Column 2 with molecular sieve. The sample loop is loaded in Position A. When the valve is switched, the loop contents are sent onto Column 1. As the inorganic gases and methane leave Column 1 and enter Column 2, the valve is returned to Position A, reversing the column sequence. CO₂ now leaves Column 1, becoming the first peak. The inorganics and methane are separated by the molecular sieve and pass through the porous polymer column to the detector.

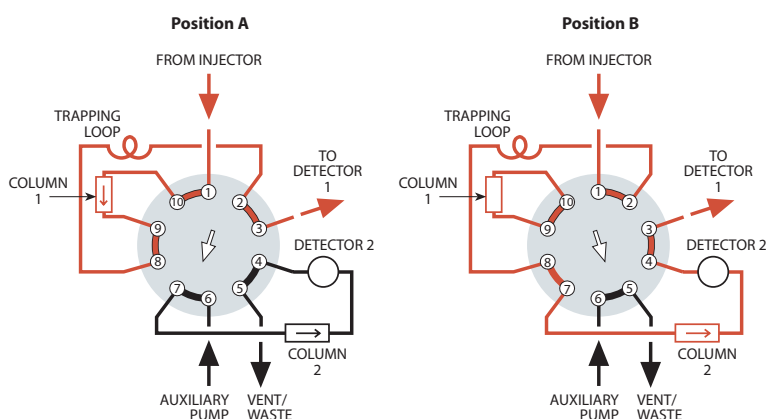
10 port column switching



SAMPLE ENRICHMENT (CLEANUP) USING DUAL PRECOLUMNS

Sample is injected by a separate injector onto one of two precolumns (stripper). Early eluting components vent at port 6 while components of interest are retained on the stripper. When the valve is switched, a new injection is made onto the second stripper while components retained on the first stripper are backflushed onto the analytical column at port 9. Note: This application requires an auxiliary pump at port 4.

10 port column switching



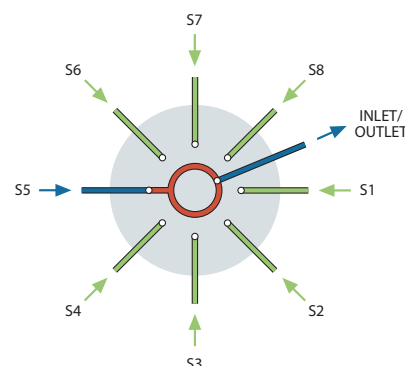
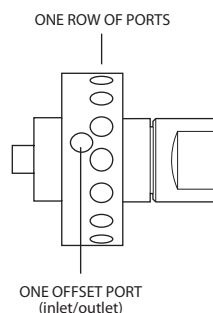
HEART CUT TRAPPED IN A LOOP AND INJECTED ONTO A SECOND COLUMN

Sample is injected (using a separate injector) onto an analytical column. Early eluting components (front cut) pass through a trapping loop and are detected (at port 3). The valve is then switched, and the center (or heartcut) which was retained in the trapping loop is injected onto the second column to the detector (at port 4). Late eluting components (end cut) are trapped on the first column. When the valve is switched again, the end cut passes through the trapping loop to the first detector, completing the analysis.

Selectors – Low Pressure

Dead-end flowpath –
SD configuration

SD valves select one of 4 to 16 dead-ended streams. The selected stream 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. For an application suggestion, see page 134.



1/16" fittings, 0.75 mm ports (.030")

MW Type

Low pressure

SD
Dead-end

1/16" 0.75 mm

Includes 2" standoff.
Ask about closemount
assembly if valve will
not be heated.

Standard electric actuators:
110 VAC for USA
110/230 VAC to 24 VDC power supply for international
Microelectric actuators:
24 VDC (includes a 110/230 VAC to 24 VDC power supply)

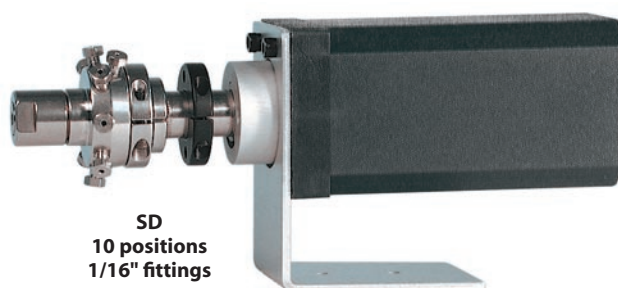
SPECS

400 psi gas
200°C max
Nitronic 60 body
Valcon E rotor

OPTIONS

- 4 and 8 positions available
- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)
- Larger bore available except 16 position

	6 Position		10 Position		12 Position		16 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual (not recommended)	2CSD6MWE		2CSD10MWE		2CSD12MWE		2CSD16MWE	
With air actuator	A2CSD6MWE		A2CSD10MWE		A2CSD12MWE		A2CSD16MWE	
With standard electric actuator	E2CSD6MWE		E2CSD10MWE		E2CSD12MWE		E2CSD16MWE	
With microelectric actuator	EMT2CSD6MWE		EMT2CSD10MWE		EMT2CSD12MWE		EMT2CSD16MWE	
Replacement valve	DCSD6MWE		DCSD10MWE		DCSD12MWE		DCSD16MWE	
Replacement rotor	SSACSD6MWE		SSACSD10MWE		SSACSD12MWE		SSACSD16MWE	



MORE INFORMATION

Application.... page 134
Actuators
Air194
Microelectric .. 190-191
Standard elec.....193
Materials
Metals..... 254-255
Polymers256
Valve rotors.....257
Mounting hardware
Closemount208
Standoff.....205

Selectors – Low Pressure

1/8" fittings, 1.0 mm ports (.040")

MW Type

SPECS

4-8 Positions:
400 psi gas
200°C max
 10-16 Positions:
200 psi gas
200°C max
 Nitronic 60 body
 Valcon E rotor

Includes 2" standoff.
 Ask about closemount
 assembly if valve will
 not be heated.

Standard electric actuators:
 110 VAC for USA
 110/230 VAC to 24 VDC power supply for international
 Microelectric actuators:
 24 VDC (includes a 110/230 VAC to 24 VDC power supply)

OPTIONS

- 4 and 8 positions available
- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)
- Larger bore available

Low pressure

SD
Dead-end

1/8"

1.0 mm

	6 Position		10 Position		12 Position		16 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual (not recommended)	2SD6MWE		2SD10MWE		2SD12MWE		2SD16MWE	
With air actuator	A2SD6MWE		A2SD10MWE		A2SD12MWE		A2SD16MWE	
With standard electric actuator	E2SD6MWE		E2SD10MWE		E2SD12MWE		E2SD16MWE	
With microelectric actuator	EMT2SD6MWE		EMT2SD10MWE		EMT2SD12MWE		EMT2SD16MWE	
Replacement valve	DSD6MWE		DSD10MWE		DSD12MWE		DSD16MWE	
Replacement rotor	SSASD6MWE		SSASD10MWE		SSASD12MWE		SSASD16MWE	

1/4" fittings, 4.0 mm ports (.156")

MW Type

SPECS

100 psi gas
75°C max
 Nitronic 60 body
 Valcon E2 rotor

Includes 2" standoff.
 Ask about closemount
 assembly if valve
 will not be heated.

Manual version not
 available.

Standard electric actuators:
 110 VAC for USA
 110/230 VAC to 24 VDC power supply for
 international
 Microelectric actuators:
 24 VDC (includes a 110/230 VAC to 24 VDC
 power supply)

OPTIONS

- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)

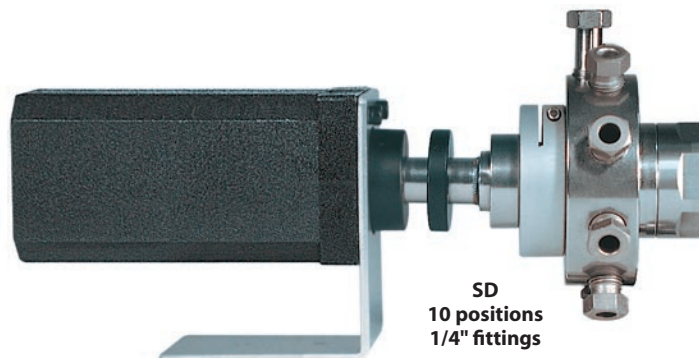
Low pressure

SD
Dead-end

1/4"

4.0 mm

	4 Position		6 Position		8 Position		10 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
With air actuator	AH2VLS4MWE2		AH2VLS6MWE2		AH2VLS8MWE2		AH2VLS10MWE2	
With std electric actuator	E2VLS4MWE2		E2VLS6MWE2		E2VLS8MWE2		E2VLS10MWE2	
With microelectric actuator	EMT2VLS4MWE2		EMT2VLS6MWE2		EMT2VLS8MWE2		EMT2VLS10MWE2	
Replacement valve	DVLS4MWE2		DVLS6MWE2		DVLS8MWE2		DVLS10MWE2	
Replacement rotor	SSAVLS4MWE2		SSAVLS6MWE2		SSAVLS8MWE2		SSAVLS10MWE2	

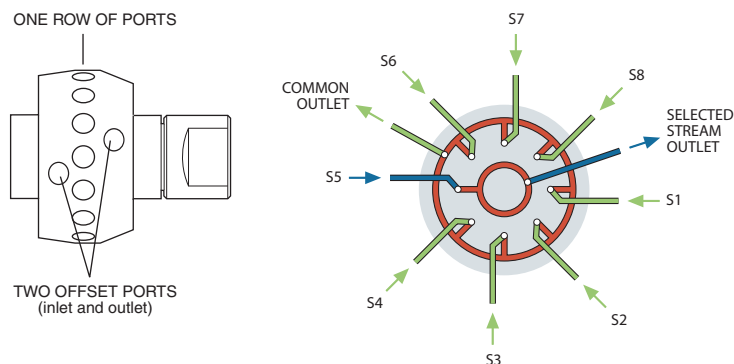


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Selectors – Low Pressure

Common outlet flowpath – SC configuration

SC selectors are similar to the SD configuration, except that instead of being dead-ended the non-selected streams flow to a common outlet. For an application suggestion, see page 135.



1/16" fittings, 1.0 mm ports (.040")

MW Type

Low pressure

SC
Common outlet

1/16" 1.0 mm

Includes 2" standoff.
Ask about closemount
assembly if valve will
not be heated.

Standard electric actuators:

110 VAC for USA

110/230 VAC to 24 VDC power supply for international

Microelectric actuators:

24 VDC (includes a 110/230 VAC to 24 VDC power supply)

SPECS

200 psi gas

200°C max

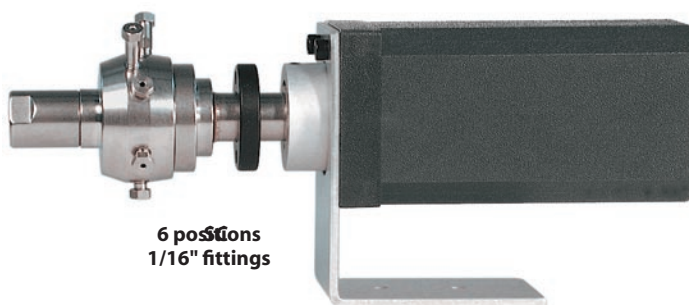
Nitronic 60 body

Valcon E rotor

OPTIONS

- 4 and 8 positions available
- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)

	6 Position		10 Position		12 Position		16 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual (not recommended)	2CSC6MWE		2CSC10MWE		2CSC12MWE		2CSC16MWE	
With air actuator	A2CSC6MWE		A2CSC10MWE		A2CSC12MWE		A2CSC16MWE	
With standard electric actuator	E2CSC6MWE		E2CSC10MWE		E2CSC12MWE		E2CSC16MWE	
With microelectric actuator	EMT2CSC6MWE		EMT2CSC10MWE		EMT2CSC12MWE		EMT2CSC16MWE	
Replacement valve	DCSC6MWE		DCSC10MWE		DCSC12MWE		DCSC16MWE	
Replacement rotor	SSACSC6MWE		SSACSC10MWE		SSACSC12MWE		SSACSC16MWE	



MORE INFORMATION

Application. . . . page 135

Actuators

Air194

Microelectric . . 190-191

Standard elec. . . .193

Materials

Metals. 254-255

Polymers256

Valve rotors.257

Mounting hardware

Closemount208

Standoff.205

1/8" fittings, 1.0 mm ports (.040")

MW Type

SPECS
200 psi gas
200°C max
 Nitronic 60 body
 Valcon E rotor

Includes 2" standoff.
 Ask about closemount
 assembly if valve will
 not be heated.

Standard electric actuators:
 110 VAC for USA
 110/230 VAC to 24 VDC power supply for international
 Microelectric actuators:
 24 VDC (includes a 110/230 VAC to 24 VDC power supply)

Low pressure

SC
Common outlet

1/8"

1.0 mm

OPTIONS

- 4 and 8 positions available
- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)
- Larger bore available except 16 position

	6 Position		10 Position		12 Position		16 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual (not recommended)	2SC6MWE		2SC10MWE		2SC12MWE		2SC16MWE	
With air actuator	A2SC6MWE		A2SC10MWE		A2SC12MWE		A2SC16MWE	
With standard electric actuator	E2SC6MWE		E2SC10MWE		E2SC12MWE		E2SC16MWE	
With microelectric actuator	EMT2SC6MWE		EMT2SC10MWE		EMT2SC12MWE		EMT2SC16MWE	
Replacement valve	DSC6MWE		DSC10MWE		DSC12MWE		DSC16MWE	
Replacement rotor	SSASC6MWE		SSASC10MWE		SSASC12MWE		SSASC16MWE	

1/4" fittings, 4.0 mm ports (.156")

MW Type

SPECS
100 psi gas
75°C max
 Nitronic 60 body
 Valcon E2 rotor

Includes 2" standoff.
 Ask about closemount
 assembly if valve
 will not be heated.

Manual version not
 available.

Standard electric actuators:
 110 VAC for USA
 110/230 VAC to 24 VDC power supply for
 international
 Microelectric actuators:
 24 VDC (includes a 110/230 VAC to 24 VDC
 power supply)

Low pressure

SC
Common outlet

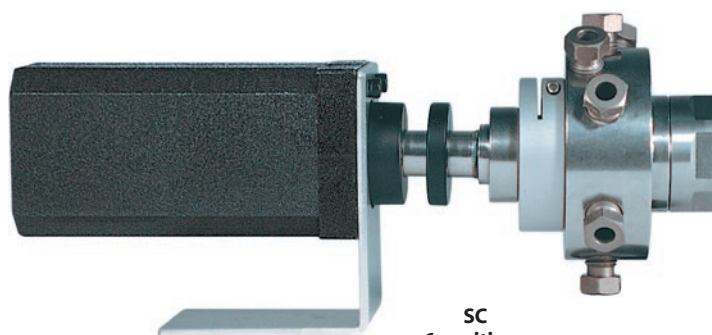
1/4"

4.0 mm

OPTIONS

- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)

	4 Position		6 Position		8 Position	
	Prod No	Price	Prod No	Price	Prod No	Price
With air actuator	AH2VLSC4MWE2		AH2VLSC6MWE2		AH2VLSC8MWE2	
With std electric actuator	E2VLSC4MWE2		E2VLSC6MWE2		E2VLSC8MWE2	
With microelectric actuator	EMT2VLSC4MWE2		EMT2VLSC6MWE2		EMT2VLSC8MWE2	
Replacement valve	DVLSC4MWE2		DVLSC6MWE2		DVLSC8MWE2	
Replacement rotor	SSAVLSC4MWE2		SSAVLSC6MWE2		SSAVLSC8MWE2	



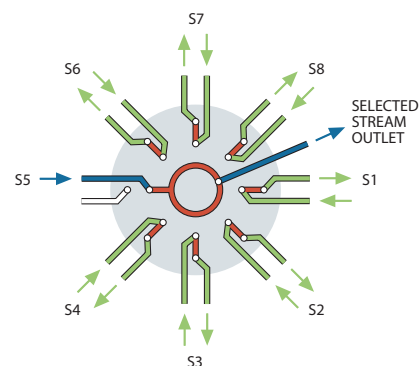
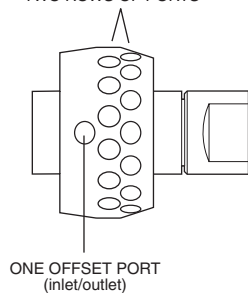
SC
 6 positions
 1/4" fittings

Selectors – Low Pressure

Flow-through flowpath – SF configuration

SD and SC valves select and isolate one of 4 to 16 streams, with the remainder dead-ended in the SD and flowing to a common outlet in the SC. The SF selector is similar, but carries the evolution a step further with the non-selected streams flowing through individual outlets. For an application suggestion, see page 136.

TWO ROWS OF PORTS



1/16" fittings, 1.0 mm ports (.040")

MW Type

Low pressure

SF
Flow-through

1/16" 1.0 mm

Includes 2" standoff.
Ask about closemount
assembly if valve will
not be heated.

Standard electric actuators:

110 VAC for USA

110/230 VAC to 24 VDC power supply for international

Microelectric actuators:

24 VDC (includes a 110/230 VAC to 24 VDC power supply)

SPECS

200 psi gas

200°C max

Nitronic 60 body

Valcon E rotor

OPTIONS

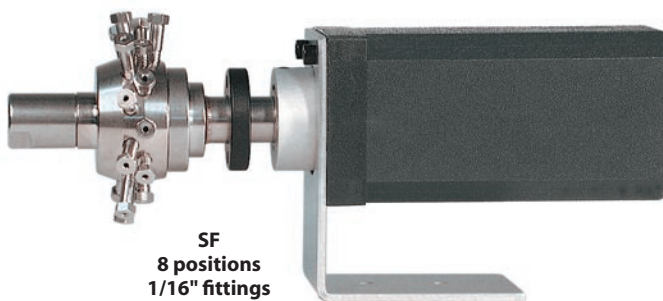
■ 4 and 8 positions available

■ 3", 4", and 6" standoffs

■ Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages

254-255)

	6 Position		10 Position		12 Position		16 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual (not recommended)	2CSF6MWE		2CSF10MWE		2CSF12MWE		2CSF16MWE	
With air actuator	A2CSF6MWE		A2CSF10MWE		A2CSF12MWE		A2CSF16MWE	
With standard electric actuator	E2CSF6MWE		E2CSF10MWE		E2CSF12MWE		E2CSF16MWE	
With microelectric actuator	EMT2CSF6MWE		EMT2CSF10MWE		EMT2CSF12MWE		EMT2CSF16MWE	
Replacement valve	DCSF6MWE		DCSF10MWE		DCSF12MWE		DCSF16MWE	
Replacement rotor	SSACSF6MWE		SSACSF10MWE		SSACSF12MWE		SSACSF16MWE	



MORE INFORMATION

Application..... page 136

Actuators

Air194

Microelectric .. 190-191

Standard elec.....193

Materials

Metals..... 254-255

Polymers256

Valve rotors.....257

Mounting hardware

Closemount208

Standoff.....205

1/8" fittings, 1.0 mm ports (.040")

MW Type

SPECS
200 psi gas
200°C max
 Nitronic 60 body
 Valcon E rotor

Includes 2" standoff.
 Ask about closemount
 assembly if valve will
 not be heated.

Standard electric actuators:
 110 VAC for USA
 110/230 VAC to 24 VDC power supply for international
 Microelectric actuators:
 24 VDC (includes a 110/230 VAC to 24 VDC power supply)

Low pressure

SF
Flow-through

1/8"

1.0 mm

OPTIONS

- 4 and 8 positions available
- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)
- Larger bore available except 16 position

	6 Position		10 Position		12 Position		16 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual (not recommended)	2SF6MWE		2SF10MWE		2SF12MWE		2SF16MWE	
With air actuator	A2SF6MWE		A2SF10MWE		A2SF12MWE		A2SF16MWE	
With standard electric actuator	E2SF6MWE		E2SF10MWE		E2SF12MWE		E2SF16MWE	
With microelectric actuator	EMT2SF6MWE		EMT2SF10MWE		EMT2SF12MWE		EMT2SF16MWE	
Replacement valve	DSF6MWE		DSF10MWE		DSF12MWE		DSF16MWE	
Replacement rotor	SSASF6MWE		SSASF10MWE		SSASF12MWE		SSASF16MWE	

1/4" fittings, 4.0 mm ports (.156")

MW Type

SPECS
100 psi gas
75°C max
 Nitronic 60 body
 Valcon E2 rotor

Includes 2" standoff.
 Ask about closemount
 assembly if valve will
 not be heated.

Manual version is not
 available.

Standard electric actuators:
 110 VAC for USA
 110/230 VAC to 24 VDC power supply for
 international
 Microelectric actuators:
 24 VDC (includes a 110/230 VAC to 24 VDC
 power supply)

Low pressure

SF
Flow-through

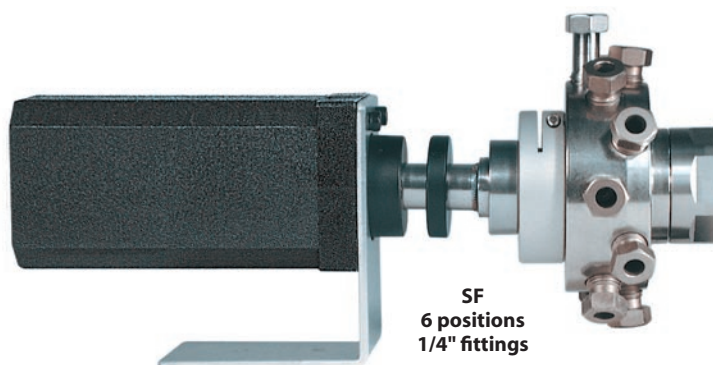
1/4"

4.0 mm

OPTIONS

- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)

	4 Position		6 Position		8 Position	
	Prod No	Price	Prod No	Price	Prod No	Price
With air actuator	AH2VLSF4MWE2		AH2VLSF6MWE2		AH2VLSF8MWE2	
With std electric actuator	E2VLSF4MWE2		E2VLSF6MWE2		E2VLSF8MWE2	
With microelectric actuator	EMT2VLSF4MWE2		EMT2VLSF6MWE2		EMT2VLSF8MWE2	
Replacement valve	DVLSF4MWE2		DVLSF6MWE2		DVLSF8MWE2	
Replacement rotor	SSAVLSF4MWE2		SSAVLSF6MWE2		SSAVLSF8MWE2	

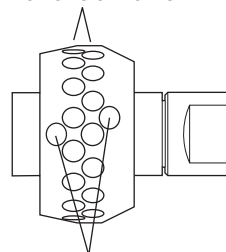
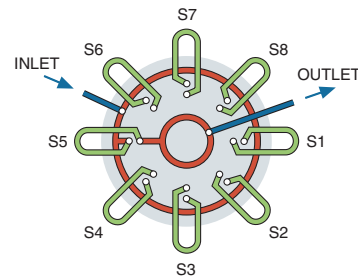


Selectors – Low Pressure

Trapping flowpath –
ST configuration

ST selectors are used for multi-column, multi-sample, or multi-trap operations, and are available for use with 4 to 16 loops, or positions. For an application suggestion, see page 137.

TWO ROWS OF PORTS

TWO OFFSET PORTS
(inlet and outlet)

1/16" fittings, 0.75 mm ports (.030")

MW Type

Low pressure

ST
Trapping

1/16"

0.75 mm

Includes 2" standoff.
Ask about closomount
assembly if valve will
not be heated.

Standard electric actuators:

110 VAC for USA

110/230 VAC to 24 VDC power supply for international

Microelectric actuators:

24 VDC (includes a 110/230 VAC to 24 VDC power supply)

SPECS

200 psi gas

200°C max

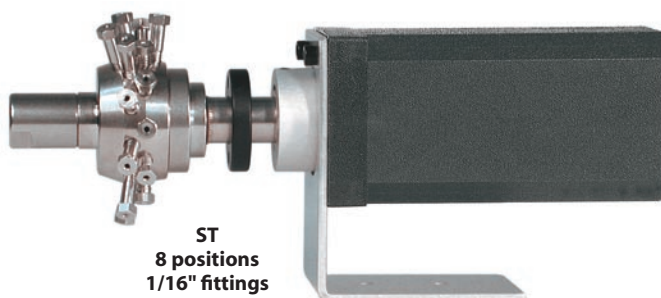
Nitrone 60 body

Valcon E rotor

OPTIONS

- 4 and 8 positions available
- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)

	6 Position		10 Position		12 Position		16 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual (not recommended)	2CST6MWE		2CST10MWE		2CST12MWE		2CST16MWE	
With air actuator	A2CST6MWE		A2CST10MWE		A2CST12MWE		A2CST16MWE	
With standard electric actuator	E2CST6MWE		E2CST10MWE		E2CST12MWE		E2CST16MWE	
With microelectric actuator	EMT2CST6MWE		EMT2CST10MWE		EMT2CST12MWE		EMT2CST16MWE	
Replacement valve	DCST6MWE		DCST10MWE		DCST12MWE		DCST16MWE	
Replacement rotor	SSACST6MWE		SSACST10MWE		SSACST12MWE		SSACST16MWE	



1/16" Stainless steel loops

for MW Type valves

Each stainless steel loop includes two stainless nuts and two stainless ferrules. Order special fittings separately. When a set of loops is ordered, loops will be supplied from the same lot.

Volume	Prod No	Price	Volume	Prod No	Price
50 µl	SL50CSTP		1 ml	SL1KCSTP	
100 µl	SL100CSTP		2 ml	SL2KCSTP	
250 µl	SL250CSTP		5 ml	SL5KCSTP	
500 µl	SL500CSTP		10 ml	SL10KCSTP	



MORE INFORMATION

Application. page 137
Actuators

Air 194

Microelectric .. 190-191

Standard elec. 193

Materials

Metals. 254-255

Polymers 256

Valve rotors. 257

Mounting hardware

Closomount 208

Standoff. 205

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1/8" fittings, 1.0 mm ports (.040")

MW Type

SPECS**200 psi gas****200°C max**Nitronic 60 body
Valcon E rotorIncludes 2" standoff.
Ask about closemount
assembly if valve will
not be heated.

Standard electric actuators:

110 VAC for USA

110/230 VAC to 24 VDC power supply for international

Microelectric actuators:

24 VDC (includes a 110/230 VAC to 24 VDC power supply)

Low pressure

ST
Trapping

1/8"

1.0 mm

OPTIONS

- 4 and 8 positions available
- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)
- Larger bore available except 16 position

	6 Position		10 Position		12 Position		16 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual (not recommended)	2ST6MWE		2ST10MWE		2ST12MWE		2ST16MWE	
With air actuator	A2ST6MWE		A2ST10MWE		A2ST12MWE		A2ST16MWE	
With standard electric actuator	E2ST6MWE		E2ST10MWE		E2ST12MWE		E2ST16MWE	
With microelectric actuator	EMT2ST6MWE		EMT2ST10MWE		EMT2ST12MWE		EMT2ST16MWE	
Replacement valve	DST6MWE		DST10MWE		DST12MWE		DST16MWE	
Replacement rotor	SSAST6MWE		SSAST10MWE		SSAST12MWE		SSAST16MWE	

ABOUT LOOPS

- Other materials are available in many sizes: Electroformed Nickel, Hastelloy C, Nickel 200, PEEK, PTFE, and Titanium
- 1/16" loops > 2 ml are made from 1/8" OD tubing with brazed or welded 1/16" tube ends or reducing unions.
- 1/8" loops < 100 µl are made from 1/16" OD tubing with brazed or welded 1/8" tube ends.

**1/8" Stainless steel loops**

for MW Type valves

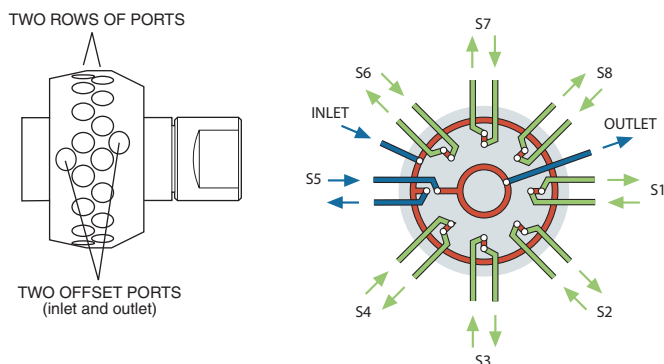
Each stainless steel loop includes two stainless nuts and two stainless ferrules. Order special fittings separately. When a set of loops is ordered, loops will be supplied from the same lot.

Volume	Prod No	Price	Volume	Prod No	Price
100 µl	SL100STP		1 ml	SL1KSTP	
250 µl	SL250STP		2 ml	SL2KSTP	
500 µl	SL500STP		5 ml	SL5KSTP	
			10 ml	SL10KSTP	

Selectors – Low Pressure

Trapping/flow-through flowpath – STF configuration

The STF selector is a variation of the ST flowpath, with the single difference that the non-selected streams are returned to their own vents or sources rather than being dead-ended or trapped as they are in the standard ST configuration. For an application suggestion, see page 138.



1/16" fittings, 0.75 mm ports (.030")

MW Type

Low pressure

Includes 2" standoff.
Ask about closemount
assembly if valve will
not be heated.

Standard electric actuators:

110 VAC for USA

110/230 VAC to 24 VDC power supply for international

Microelectric actuators:

24 VDC (includes a 110/230 VAC to 24 VDC power supply)

SPECS

200 psi gas

200°C max

Nitronic 60 body

Valcon E rotor

STF
Trap/ flow-throw

1/16"

0.75 mm

OPTIONS

- 4 and 8 positions available
- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)

	6 Position		10 Position		12 Position		16 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual (not recommended)	2CSTF6MWE		2CSTF10MWE		2CSTF12MWE		2CSTF16MWE	
With air actuator	A2CSTF6MWE		A2CSTF10MWE		A2CSTF12MWE		A2CSTF16MWE	
With standard elec actuator	E2CSTF6MWE		E2CSTF10MWE		E2CSTF12MWE		E2CSTF16MWE	
With microelectric actuator	EMT2CSTF6MWE		EMT2CSTF10MWE		EMT2CSTF12MWE		EMT2CSTF16MWE	
Replacement valve	DCSTF6MWE		DCSTF10MWE		DCSTF12MWE		DCSTF16MWE	
Replacement rotor	SSACSTF6MWE		SSACSTF10MWE		SSACSTF12MWE		SSACSTF16MWE	

MORE INFORMATION

Application..... page 138

Actuators

Air194

Microelectric .. 190-191

Standard elec.....193

Materials

Metals..... 254-255

Polymers256

Valve rotors.....257

Mounting hardware

Closemount208

Standoff.....205

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1/8" fittings, 1.0 mm ports (.040")

MW Type

SPECS
200 psi gas
200°C max
 Nitronic 60 body
 Valcon E rotor

Includes 2" standoff.
 Ask about closemount
 assembly if valve will
 not be heated.

Standard electric actuators:
 110 VAC for USA
 110/230 VAC to 24 VDC power supply for international
 Microelectric actuators:
 24 VDC (includes a 110/230 VAC to 24 VDC power supply)

Low pressure

STF
Trap/ flow-throw

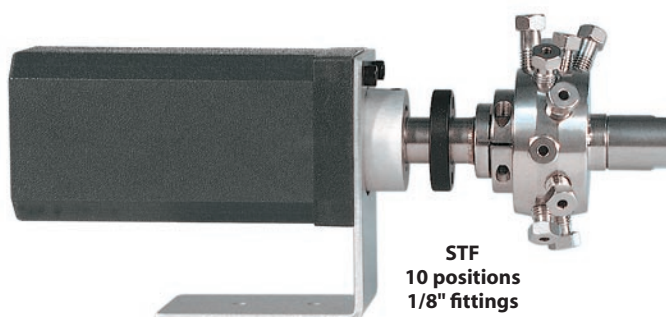
1/8"

1.0 mm

OPTIONS

- 4 and 8 positions available
- 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)
- Larger bore available except 16 position

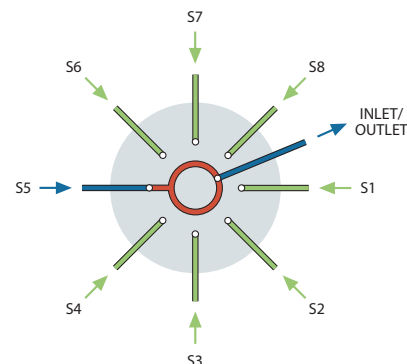
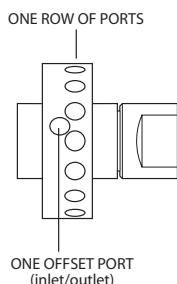
	6 Position		10 Position		12 Position		16 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual (not recommended)	2STF6MWE		2STF10MWE		2STF12MWE		2STF16MWE	
With air actuator	A2STF6MWE		A2STF10MWE		A2STF12MWE		A2STF16MWE	
With standard elec actuator	E2STF6MWE		E2STF10MWE		E2STF12MWE		E2STF16MWE	
With microelectric actuator	EMT2STF6MWE		EMT2STF10MWE		EMT2STF12MWE		EMT2STF16MWE	
Replacement valve	DSTF6MWE		DSTF10MWE		DSTF12MWE		DSTF16MWE	
Replacement rotor	SSASTF6MWE		SSASTF10MWE		SSASTF12MWE		SSASTF16MWE	



Selectors – High Pressure

Dead-end flowpath –
SD configuration

SD valves select one of 4 to 16 dead-ended streams. The selected stream flows from the valve outlet to a sample valve, pressure sensor, detector, column, etc. This configuration may also be used to direct one stream to a number of outlets for applications such as fraction collection. For an application suggestion, see page 139.



1/16" fittings, 0.4 mm ports (.016")

UW Type

5,000 psi

SD
Dead-end

1/16" 0.40 mm

Standard electric actuators:

110 VAC for USA;

110/230 VAC to 24 VDC power supply for international

Microelectric actuators:

24 VDC (includes a 110/230 VAC to 24 VDC power supply)

SPECS

5000 psi

75°C max

Nitronic 60 body

Valcon E rotor

OPTIONS

- 8 and 12 positions available
- 2", 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)
- Low pressure, high temperature versions available
- Larger bore available except 10 and 12 positions

4 Position

Prod No Price

6 Position

Prod No Price

10 Position

Prod No Price

Manual (not recommended)

CSD4UW

CSD6UW

CSD10UW

With air actuator

ACSD4UW

ACSD6UW

ACSD10UW

With standard electric actuator

ECSD4UW

ECSD6UW

ECSD10UW

With microelectric actuator

EMTCS4UW

EMTCS6UW

EMTCS10UW

Replacement valve

DCSD4UW

DCSD6UW

DCSD10UW

Replacement rotor

SSACSD4UW

SSACSD6UW

SSACSD10UW

1/8" fittings, 0.75 mm ports (.030")

UW Type

5,000 psi

SD
Dead-end

1/8" 0.75 mm

Standard electric actuators:

110 VAC for USA

110/230 VAC to 24 VDC power supply for international

Microelectric actuators:

24 VDC (includes a 110/230 VAC to 24 VDC power supply)

SPECS

5000 psi liq

75°C max

Nitronic 60 body

Valcon E rotor

OPTIONS

- 2", 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see page 254-255)
- Low pressure, high temperature versions available
- Larger bore available except 8 position

4 Position

Prod No Price

6 Position

Prod No Price

8 Position

Prod No Price

Manual (not recommended)

SD4UW

SD6UW

SD8UW

With air actuator

ASD4UW

ASD6UW

ASD8UW

With standard electric actuator

ESD4UW

ESD6UW

ESD8UW

With microelectric actuator

EMTSD4UW

EMTSD6UW

EMTSD8UW

Replacement valve

DSD4UW

DSD6UW

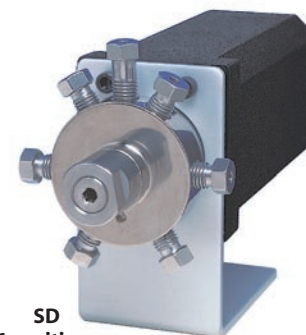
DSD8UW

Replacement rotor

SSASD4UW

SSASD6UW

SSASD8UW

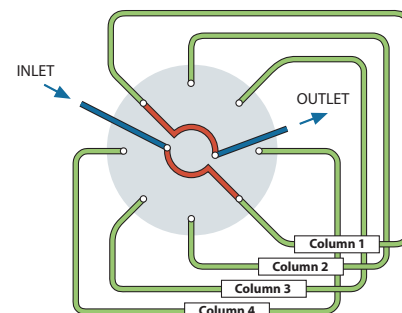
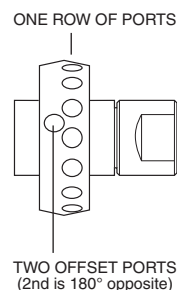


SD
6 positions
1/8" fittings

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Both column ends selected – ST configuration

ST selectors are used for multi-column, multi-sample, or multi-trap operations. This valve can be used between an injector and detector to permit manual or automated HPLC column selection. For an application suggestion, see page 139.



1/16" fittings, 0.4 mm ports (.016")

UW Type

SPECS
5000 psi liq
75°C max
Nitronic 60 body
Valcon E rotor

Manual versions are not available.

Standard electric actuators:

110 VAC for USA

110/230 VAC to 24 VDC power supply for international

Microelectric actuators:

24 VDC (includes a 110/230 VAC to 24 VDC power supply).

5,000 psi

ST
Trapping

1/16" 0.40 mm

OPTIONS

- 2", 3", 4", and 6" standoffs
- Materials: Hastelloy C, Inconel 600, Monel 400, Nickel 200, Nitronic 50, Titanium (see pages 254-255)
- Low pressure, high temperature versions available. (Consult factory.)

	4 Columns or Loops		6 Columns or Loops	
	Prod No	Price	Prod No	Price
With air actuator	ACST4UW		ACST6UW	
With standard electric actuator	ECST4UW		ECST6UW	
With microelectric actuator	EMTCST4UW		EMTCST6UW	
Replacement valve	DCST4UW		DCST6UW	
Replacement rotor	SSACST4UW		SSACST6UW	



ST
4 position
1/16" fittings

MORE INFORMATION

Application..... page 139

Actuators

Air194

Microelectric .. 190-191

Standard elec.....193

Materials

Metals..... 254-255

Polymers256

Valve rotors.....257

Mounting hardware

Closemount208

Standoff.....205

ABOUT LOOPS

- Other materials are available in many sizes: Electroformed Nickel, Hastelloy C, Nickel 200, PEEK, PTFE, and Titanium
- Loops > 2 ml are made from 1/8" OD tubing with brazed or welded 1/16" tube ends or reducing unions.



1/16" Stainless steel loops

for UW Type valves

Each stainless steel loop includes two stainless nuts and two stainless ferrules. Order special fittings separately.

When a set of loops is ordered, loops will be supplied from the same lot.

Volume	Prod No	Price	Volume	Prod No	Price
10 µl	SL10CSTUW		250 µl	SL250CSTUW	
15 µl	SL15CSTUW		500 µl	SL500CSTUW	
20 µl	SL20CSTUW		1 ml	SL1KCSTUW	
25 µl	SL25CSTUW		2 ml	SL2KCSTUW	
50 µl	SL50CSTUW		5 ml	SL5KCSTUW	
100 µl	SL100CSTUW		10 ml	SL10KCSTUW	

Selector Applications

SD flowpath — low pressure

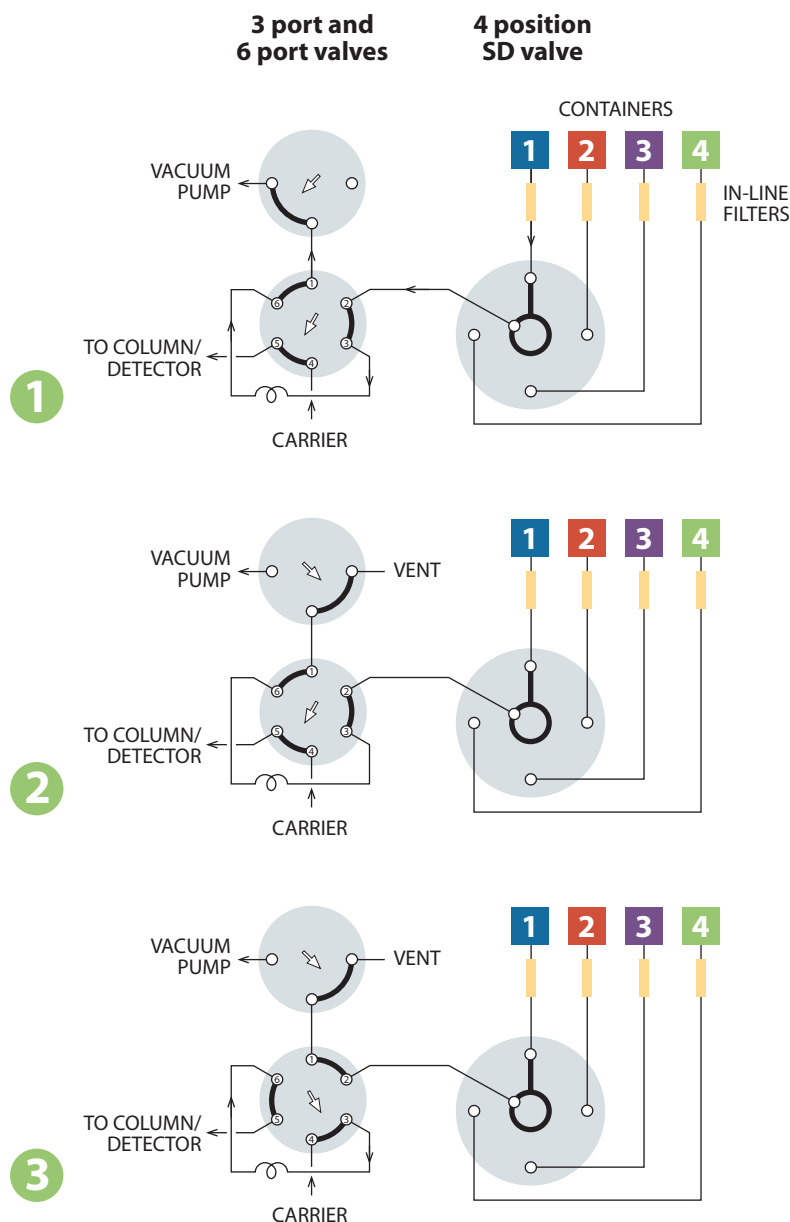
STREAM SELECTION WITH DEAD-ENDED STREAMS

SD valves select one of 4 to 16 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.



MORE INFORMATION

SD prices

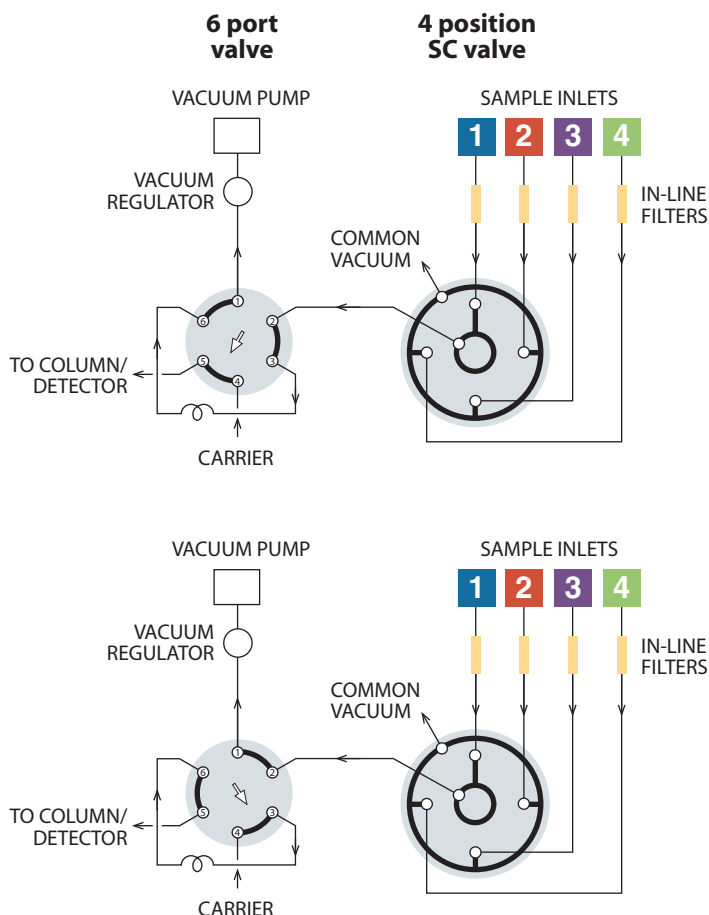
Low pressure .. 122-123

High pressure132

Application

High pressure SD ...139

SC flowpath



STREAM SELECTION WITH CONTINUOUS FLOW TO A COMMON OUTLET

SC selectors are similar to the SD configuration, except that instead of being dead-ended the non-selected streams flow to a common outlet. They are also available in 4, 6, 8, 10, 12, or 16 position versions.

The SC configuration is ideal for air quality monitoring, illustrated in this example.

The application is essentially the same as the one shown for the SD selectors on the previous page, except that the non-selected streams are continuously pulled through the valve, insuring that the most current sample will be provided as each point is selected for analysis. ① The sample loop on the 6 port valve is loaded from Stream 1. ② The 6 port valve is switched, injecting the sample. Both valves can be automated with air or electric actuators for unattended operation.

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.

Filters pages 52

MORE INFORMATION

Actuators

Air page 194

Microelectric .. 190-193

Standard elec.....

SC prices..... 124-125

Selector Applications

SF flowpath

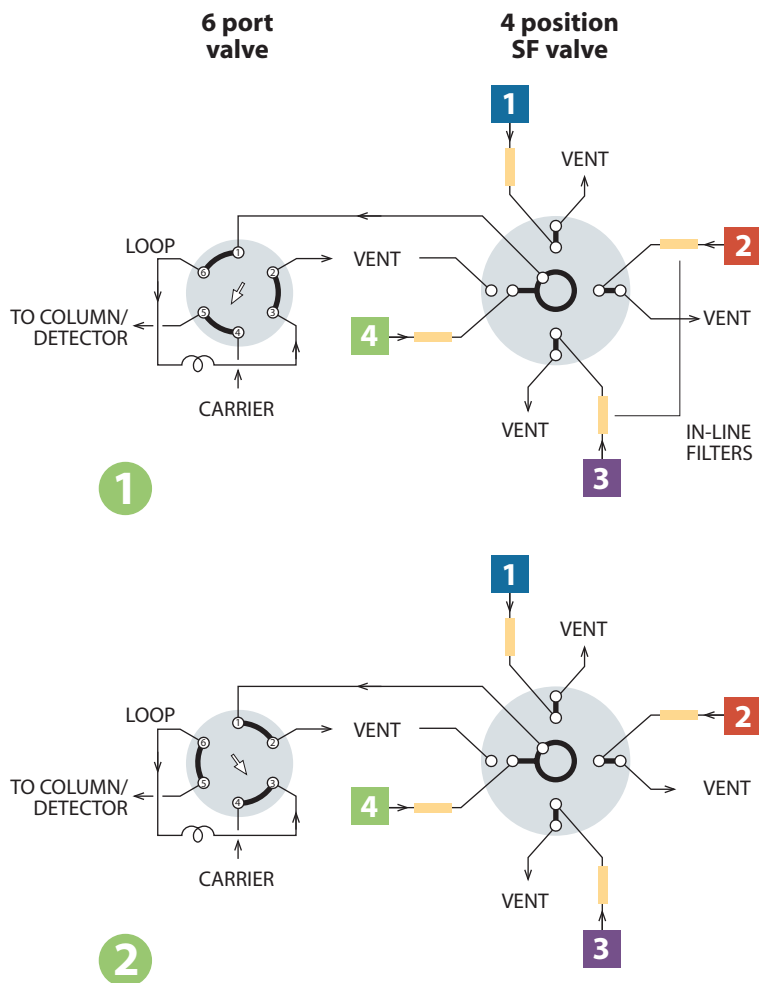
STREAM SELECTION WITH CONTINUOUS FLOW TO INDIVIDUAL OUTLETS

SD and SC valves select and isolate one of 4 to 16 streams, with the remainder dead-ended in the SD and flowing to a common outlet in the SC. The SF selector is similar, but carries the evolution a step further with the non-selected streams flowing through individual outlets.

This is the ideal solution when reactions or process streams with differing upstream pressures must be analyzed, and can also provide independent containment of toxic or noxious streams. An SF selector together with a 6 port sampling valve and pneumatic or electric actuators comprise a complete sampling system for the automated analysis of up to 16 sample points.

Note that streams 1 and 4 are vented while streams 2 and 3 are returned to their sources in this example.

Mode ① shows sample loading from stream 4, while mode ② shows sample injected onto the analytical column.

**MORE INFORMATION**

Actuators

Air page 194

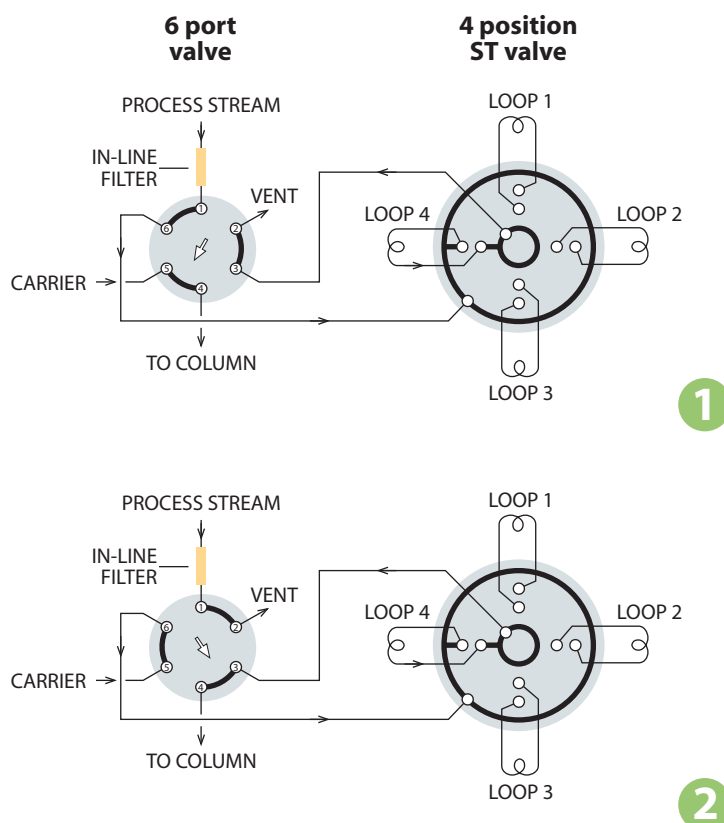
Microelectric .. 190-191

Standard elec.....193

SF prices

..... 126-127

ST flowpath — low pressure



SAMPLE TRAPPING APPLICATIONS FOR 4 TO 16 STREAMS

ST selectors are used for multi-column, multi-sample, or multi-trap operations. The ST configuration is available in both MW and UW type designs.

A typical application, shown here, is the collection of fractions at timed intervals for analysis at a later time. Valves can be ordered with matched loops already installed.

In this example, the 6 port valve shown is used to select between **1** collection/trapping and **2** analysis/desorption. Both valves can be supplied with pneumatic or electric actuators to automate these functions.

MORE INFORMATION

ST prices

Low pressure .. 128-129

High pressure133

Application

High pressure ST ...139

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.

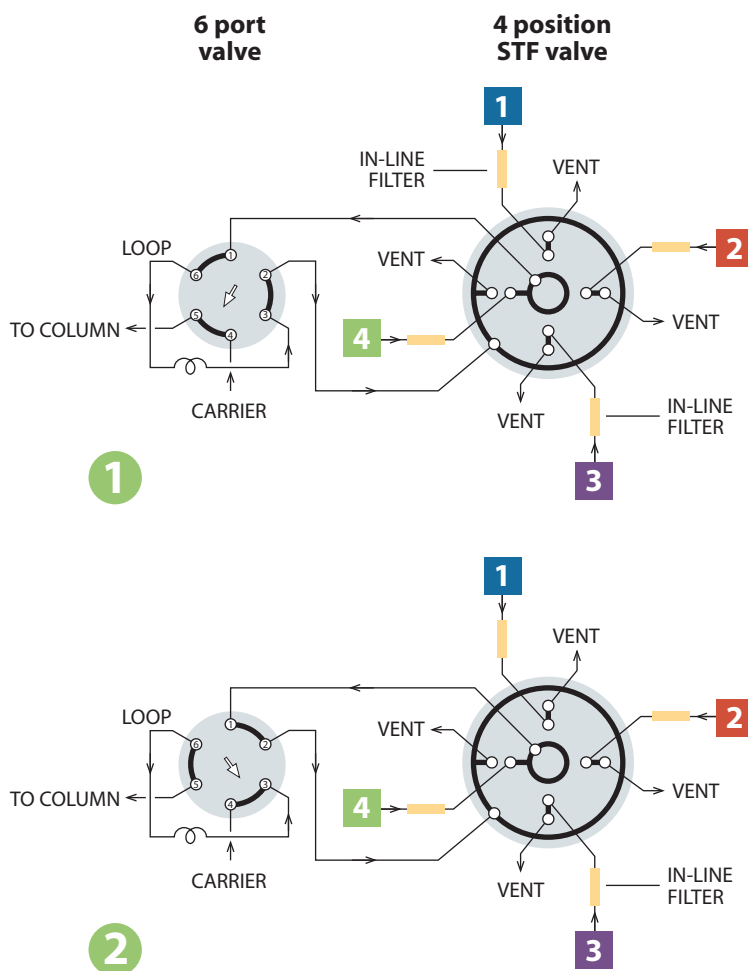
Filters page 52

STF flowpath

SAMPLE TRAPPING WITH CONTINUOUS FLOW TO INDIVIDUAL OUTLETS

The STF selector is a variation of the ST flowpath, with the single difference that the non-selected streams are returned to their own vents or sources rather than being dead-ended or trapped as they are in the standard ST configuration. This is ideal for reactor processes in which removal of substantial amounts of sample would upset the equilibrium within the reactor, or if the stream is toxic or noxious and must be isolated.

An STF selector on an air or electric actuator along with a similarly equipped 6 port valve comprise a complete sampling system for the automated analysis of up to 16 sampling points.



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.

MORE INFORMATION

Actuators

Airpage 194-195

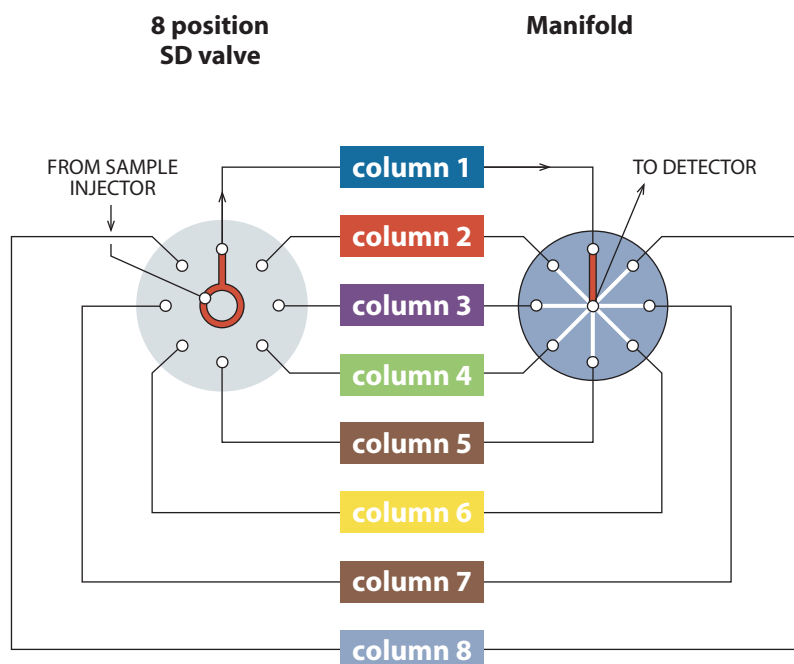
Microelectric .. 188-191

Standard elec.....193

STF prices 130-131

Filters page 52

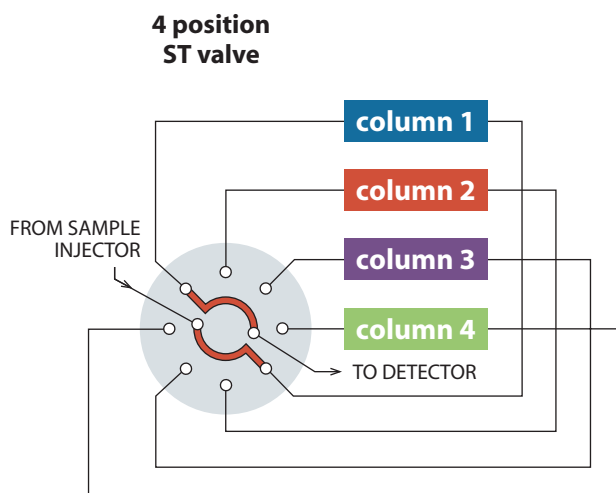
SD flowpath — high pressure



HPLC COLUMN SELECTION FOR UP TO 10 COLUMNS

This example illustrates an SD (UW type) selector used for HPLC column selection. This allows multiple columns to be installed permanently in the system, eliminating instrument downtime and leakage potential resulting from having to change columns repeatedly. The SDUW valve selects only column inlets – the column outlets are connected to the detector via a low-volume manifold. The manifold is sold separately.

ST flowpath — high pressure



HPLC COLUMN SELECTION FOR 4 OR 6 COLUMNS

Up to 6 HPLC columns can be rapidly accessed by column selection valves, eliminating the instrument downtime involved in exchanging columns and the leakage due to repeated changing of tubing fittings. The columns are installed as a part of the loop system, as shown in this drawing. A 6 position valve can support 6 columns.

MORE INFORMATION

Prices

SD high pressure ... 132

ST high pressure ... 133

Application

Low pressure SD ... 134

Low pressure ST ... 137

Manifolds 33



Diaphragm Valves

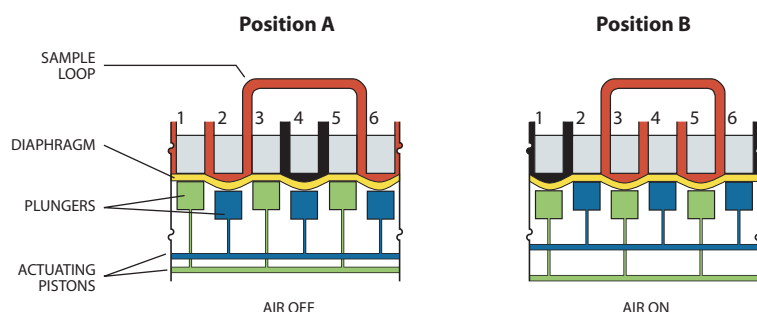
- Only 35 mm (1.375") in diameter
- >1,000,000 cycle lifetime
- Three configurations – 6 port, 10 port, and 4 port internal sample
- Built in actuator
- 1/16" or 1/32" Valco zero dead volume fittings

The VICI mini diaphragm valve is designed for trouble-free use in applications requiring minimal maintenance and maximum lifetime, making it an ideal choice for the process industry, automated lab analyzers, or continuous-monitoring environmental analyses.

Design

The mini diaphragm valve consists of plungers and ports arranged in a circular pattern, with the plungers

controlled by the reciprocation action of two air actuated pistons. Maintenance procedures are greatly simplified, since a single screw holds the valve together and locating pins ensure proper alignment. Extremely long lifetime, very short actuation time (10 milliseconds), minimum internal dead volume, and reliability have made this type of valve very successful in process gas chromatography for both sample injection and column switching.



TECH TIP

For optimal zero dead volume connections, make sure your tubing meets the best industry standards. OD tolerance should be nominal dimension $\pm .002$ ".

Fractional dimension	Nominal dimension
1/32"	.031
1/16"	.062
1/8"	.125
1/4"	.250
3/8"	.375
1/2"	.500

Dimensions

Valve diameter is 35 mm (1.375"), height is 42 mm (1.625"), and weight is less than 255 g (9 oz).

Valve Fittings

The valve cap has Valco 1/32" or 1/16" ZDV fitting details – a rugged design which allows easy replacement of tubing or of the valve itself.

Standard bore size is 0.40 mm (.016"). Optional bore sizes are 0.25 mm (.010") and 0.75 mm (.030").

Lifetime

Diaphragm valve lifetime can exceed 1,000,000 cycles at ambient temperature or 500,000 cycles at 175°C.

Temperature/Pressure Specifications

The standard valve can be operated at temperatures up to 175°C, at 300 psi. The specially-formed diaphragm also permits sampling at subambient pressures.

Materials of Construction

The cap is Nitronic 60 stainless (optional Hastelloy C or Type 316 stainless), with remaining metal parts of 300 series stainless. The diaphragm is formed from a specialized polyimide.

Actuation

Actuator air (50-60 psi) is supplied to a side port with 10-32 female threads, permitting use of a variety of compression or barbed fittings. A 3-way solenoid is required for actuation. See information box below.

MORE INFORMATION**Materials**

Metals pp 254-255

Valve descriptions

Cheminert injectors and valves 144-149

Cheminert selectors . . 144, 150-151

Valco injectors and valves 96-99

Valco selectors . . 100-101

Valve prices

Cheminert HPLC. 152-163

Cheminert low pressure 164-167

Cheminert selectors 170-177

Valco GC 102-111

Valco HPLC 112-116

Valco selectors . . 122-133

ACTUATION

A 3-way solenoid is required for actuation.

31E1-120VAC \$120

31E1-220VAC 120

DIAPHRAGM VALVES

Ordering Information

Diaphragm valves, 1/32" fittings, 0.25 mm ports (.010")

Process GC	
1/32"	0.25 mm

Includes stainless steel nuts and ferrules.

A 3-way solenoid is required for actuation. Order separately.

SPECS

Internal sample:

750 psi liq

50°C max





Sampling/switching:

300 psi gas

175°C max

Nitronic 60 valve body

Polyimide diaphragm

			
4 port	4 port	6 port	10 port
.5 µl internal sample	1 µl internal sample	sampling/switching	multifunctional
Prod No Price	Prod No Price	Prod No Price	Prod No Price
DV12-1114-.5	DV12-1114-1	DV12-1116	DV12-1110

Diaphragm valves, 1/16" fittings, 0.40 mm ports (.016")

Process GC	
1/16"	0.40 mm

Includes stainless steel nuts and ferrules.

A 3-way solenoid is required for actuation. Order separately.

SPECS

Internal sample:

750 psi liq

50°C max





Sampling/switching:

300 psi gas

175°C max

Nitronic 60 valve body

Polyimide diaphragm

			
4 port	4 port	6 port	10 port
.5 µl internal sample	1 µl internal sample	sampling/switching	multifunctional
Prod No Price	Prod No Price	Prod No Price	Prod No Price
DV22-2114-.5	DV22-2114-1	DV22-2116	DV22-2110

Diaphragm valves, 1/16" fittings, 0.75 mm ports (.030")

Process GC	
1/16"	0.75 mm

Includes stainless steel nuts and ferrules.

A 3-way solenoid is required for actuation. Order separately.

SPECS

Internal sample:

750 psi liq

50°C max

Sampling/switching:

300 psi gas





175°C max

Nitronic 60 valve body

Polyimide diaphragm



6 port
1/16" fittings

			
4 port	4 port	6 port	10 port
.5 µl internal sample	1 µl internal sample	sampling/switching	multifunctional
Prod No Price	Prod No Price	Prod No Price	Prod No Price
DV22-3114-.5	DV22-3114-1	DV22-3116	DV22-3110

1/16" Stainless steel loops

for DV valves

Each loop includes two stainless steel nuts and ferrules. Order special fittings separately. For 1/32" loops, use NW loops (page 104).



Volume	Prod No	Price	Volume	Prod No	Price
2 µl	CSL2		250 µl	CSL250	
5 µl	CSL5		500 µl	CSL500	
10 µl	CSL10		1 ml	CSL1K	
20 µl	CSL20		2 ml	CSL2K	
50 µl	CSL50		5 ml	CSL5K	
100 µl	CSL100		10 ml	CSL10K	

Replacement diaphragms

Description	Prod No	Price
Polyimide diaphragm for .010" or .016"	DV22-21D	
for .030"	DV22-31D	
PTFE diaphragm	DV22-22D	

MORE INFORMATION

More applications . . . pp 117-121

OPTIONS

■ Mounting kit
Use this ring to attach diaphragm valves to a surface.

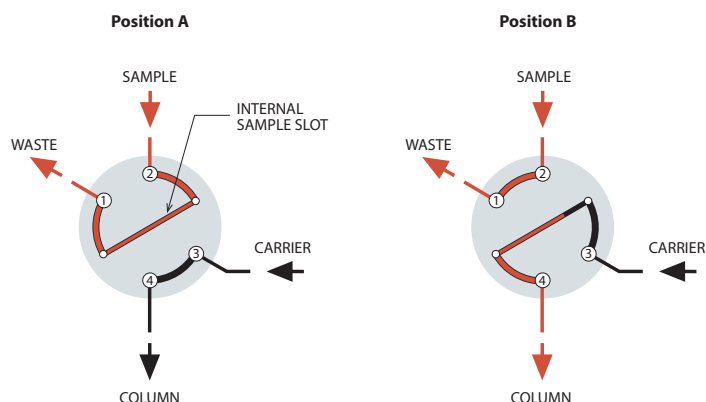
Prod No	Price
DVBRKIT	\$20

■ Materials:
Hastelloy C
Type 316 stainless

For more information, refer to the metals discussion on pages 254-255 .

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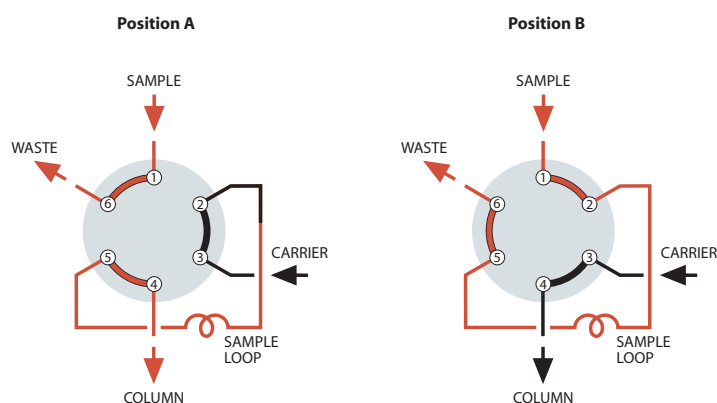
4 port sample injector



MICROVOLUME SAMPLE INJECTION

The internal sample (fixed volume) flowpath is used when very small sample volumes are required. The sample size is determined by a passage engraved on the valve cap, allowing precise, repeatable injections. In Position A, the sample flows through the sample passage while the carrier flows through to the column. In Position B, the sample passage is in line with the column and the carrier injects the contents of the sample passage into the column.

6 port sample injector



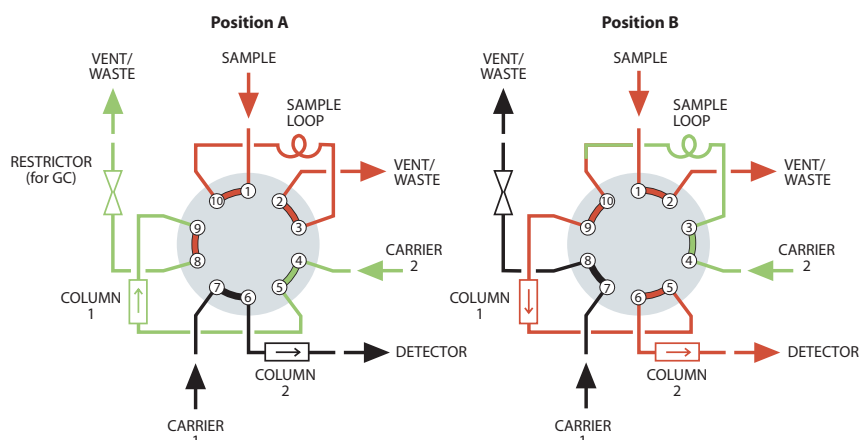
SAMPLE INJECTION

With the valve in Position A, sample flows through the external loop while the carrier flows directly through to the column. When the valve is switched to Position B, the sample contained in the sample loop and valve flow passage is injected into the column.

MORE INFORMATION

More applicationspages 118-119

10 port sample injector



LOOP SAMPLING WITH BACKFLUSH OF PRE-COLUMN TO VENT

When components of interest are low boiling, this plumbing scheme allows "heavy" components with long retention times to be backflushed to waste. After the sample loop is loaded in Position A, the valve is switched to Position B to inject the sample into column 1. As soon as all components of interest have entered column 2, the valve is switched back to Position A. Column 1 is backflushed to vent during the analysis, reducing the total analysis time.

MORE INFORMATION

More applicationspages 120-121



Cheminert® Injectors and Valves

- Pressure ratings from 100 psi to 20,000 psi
- Inert, biocompatible construction
- Easy field service
- Automated operation – pneumatic or electric
- 4, 6, 8, and 10 port and internal sample two position models
- Multiposition stream selection versions with up to 26 positions

Design

The basic Cheminert design involves a flat rotor which is engraved with slots which connect the ports. A stator is held at a constant, preset force against the rotor. When repairs are required, all that is necessary for rotor access is the removal of two or three screws. Remove the old rotor and replace it, put the screws back in and tighten them, and the valve is ready for use at the factory-set pressure specification. No adjustments are possible, much less required. Other advantages of the design include easy panel mounting, low actuating torque, and compact size. The flat plate design offers flow paths for basic flow switching, sample injection, and stream selection up to 10 positions (26 positions in some models).

Two position valve descriptions, product numbers, and prices begin on page 146.

Selector (multiposition valve) information may be found on pages 150-151.

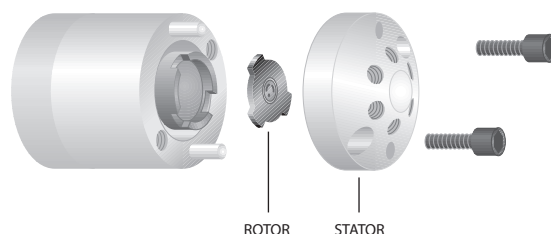
OEM injectors and selectors are on pages 178-185.

Materials of Construction

UHPLC models have stators of specially coated stainless steel, with PAEK rotors. **HPLC** models have stators of Nitronic 60 stainless steel, PAEK, Hastelloy C, or titanium, all of which are compatible with common HPLC solvents. Many are available with a proprietary long-life coating. Valcon H rotors are used with metal stators, and Valcon E with PAEK. **Low pressure** models have PPS stators and rotors of Valcon E2, a proprietary reinforced PTFE composite.

Metal valves are supplied with stainless nuts, with ferrules of the same material as the stator. Fittings for polymeric valves vary with the valve design. The valve price lists contain more detailed information.

Sample injection loops are available in a variety of materials, and are found on the pages with their corresponding valves.



TECH TIP

For optimal zero dead volume connections, make sure your tubing meets the best industry standards. OD tolerance should be nominal dimension $\pm .002$ ".

Fractional dimension	Nominal dimension
1/32"	.031
1/16"	.062
1/8"	.125
1/4"	.250
3/8"	.375
1/2"	.500

CHROMalytic TECHNOlogy Pty Ltd AUSTRALIAN Distributors e-mail: sales@chromtech.net.au Tel: 03 9762 2034

Injectors and Switching Valves

The applications section beginning on pages 168-169 gives an overview of the many functions which can be performed by two position valves. Since the most common method of sample injection utilizes a 6 port valve with an external sample loop, 6 port valves are often referred to as "injectors". However, as the Applications section illustrates, 6 port valves can do more than inject sample, and 8 and 10 port valves can be sample injectors at the same time they're also used for backflushing or column switching.

One more variation is the 4 port internal sample injector, which is used when the sample size must be smaller than the smallest available loop. The internal sample "loop" is actually an engraved connecting slot on the rotor, sized to contain a specified amount of sample.

All these valves (except manual Models C1 and C1CF) are compatible with all VICI actuation options, with position feedback available for manual valves.

Stream Selectors (Multiposition Valves)

Selectors move in continuous revolutions by incremental steps, unlike the back and forth switching of two position valves. Each step selects one of 4 to 26 streams, directing it through the valve outlet to a sample valve, pressure sensor, detector, column, etc. The same valve can also direct one stream to a number of outlets for fraction collection.

In the standard models, the non-selected streams are dead-ended. However, some valves can be ordered with an optional rotor that returns each stream to its source. Consult the factory for more information.

MORE INFORMATION

Decoding
Cheminert valve
product no's... 264-265

Actuation 186-209

Applications . 168-169

Materials

Metals..... 254-255
Polymers256
Valve rotors.....257

Valve descriptions

Cheminert
injectors..... 146-149
selectors..... 150-151
nanovolume®.....146
Diaphragm 140-141
Valco
injectors..... 99
selectors..... 100-101

Cheminert valve prices

HPLC 152-163
Low pressure .. 164-167
Nanovolume®
..... 152-155, 170-171
Selectors 170-177
OEM..... 178-185


Nanovolume® HPLC Injectors and Switching Valves

Cheminert nanovolume injectors and switching valves are ideal for high speed, high throughput techniques which demand a valve and fitting system that minimize internal volume and eliminate dead volume. A proprietary rotor material and stator coating achieve pressures to 20,000 psi, suitable for the most demanding analytical techniques. All models are compatible with any VICI actuation option.



NEW Injectors with 360 micron fittings, 100 or 150 micron bore


Models C72MU and C72MX [p. 152](#)

- 360 µm Cheminert fittings 
- Choice of 100 or 150 µm flowpath
- 10,000, 15,000, and 20,000 psi versions
- 4, 6, 8, or 10 ports (4 or 6 in 20,000 psi versions)
- Coated stator

These injectors incorporate our unique fittings which permit direct connection of 360 micron OD fused silica, PEEK, stainless, or electroformed nickel tubing.


Injectors with 1/32" Cheminert fittings, 100 micron bore

Models CN2 and CN4 [pp. 154-155](#)

- 1/32" Cheminert fittings 
- 100 or 150 µm flowpath
- 5,000 psi rating
- 6 or 10 ports
- Internal sample version with sample size of 4, 10, or 20 nanoliters
- Uncoated PAEK stator

Injectors with 1/32" Valco fittings, 100 or 150 micron bore


Models C72NX and C74NX [p. 153](#)

- 1/32" Valco fittings 
- Choice of 100 or 150 µm flowpath
- 10,000, 15,000, and 20,000 psi versions
- 4, 6, 8, or 10 ports (4 or 6 in 20,000 psi versions)
- Internal sample version with sample size of 4, 10, or 20 nanoliters
- Coated stator

Selectors with 1/32" or 1/16" Valco fittings, 100 - 250 micron bore

Model C75NX [p. 170](#)

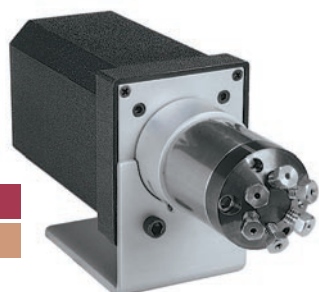
Model C75H [p. 171](#)

- 1/32" or 1/16" Valco fittings 
- 150 or 250 µm flowpath
- 10,000, 15,000, and 20,000 psi versions
- 4, 6, 8, or 10 ports (4 or 6 in 20,000 psi versions)
- Coated stator

Model C72
page 156

15,000 psi

10,000 psi



NEW UHPLC Injectors and Switching Valves

New this year from VICI are UHPLC **Models C72X** and **C72H** valves, with pressure ratings of 15,000 psi and 10,000 psi, respectively. They can be used as injectors or switching valves.

Microbore **Models C74X** and **C74H** are equivalent internal volume sample injectors, with sample sizes ranging from 4 nanoliters to 50 nanoliters.

HPLC Injectors and Switching Valves

Microbore

Model C2 valves can be used as injectors or switching valves.

Model C4 is an internal volume sample injector with sample sizes ranging from 10 nl to 50 nl.

Model C6 continuous flow injector is designed to maintain pump flow during most of the switching cycle, virtually eliminating pressure spikes.

Model C1 is a through-the-handle (front-loading) injector designed for direct replacement of existing competitive models. All Model C1 injectors are manual, with position feedback standard.

Model C1CF is a 6 port through-the-handle continuous flow injector. An engraving on the stator maintains pump flow between ports 5 and 4 during most of the switching cycle, virtually eliminating pressure spikes. Because the handle is integral to the design, all Model C1CF valves are manual, with position feedback standard.

Analytical

Models C2, C6, and **C1** are also available for analytical injection and switching, with port sizes of 0.40 mm (.016"). **Model C4** offers internal volume sample sizes ranging from 0.1 to 0.5 µl.

Semi-Preparative HPLC

Model C2 valves are available with flow passages optimized for semi-preparative HPLC. Choose from 4, 6, 8, or 10 port versions. Contact our sales or technical support departments for more information.

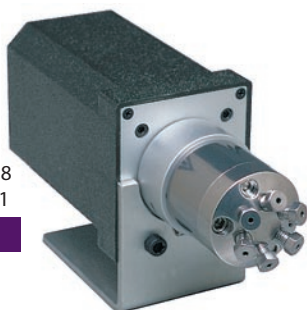
Autosampler Replacements

We supply direct replacements for injectors in many popular autosamplers. Call technical support to determine which replacement is best for your application.

Model C2

Microbore, page 158
Analytical, page 161

5,000 psi



Model C4

Microbore, page 159
Analytical, page 162

5,000 psi

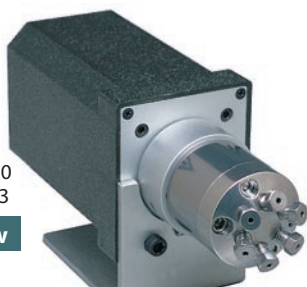
Internal sample



Model C6

Microbore, page 160
Analytical, page 163

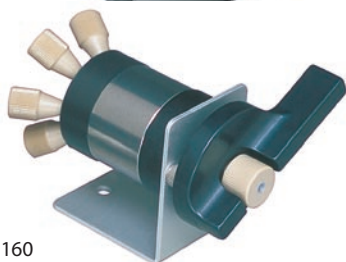
Continuous flow



Model C1

Microbore, page 160
Analytical, page 163

Through-handle



Low Pressure Injectors and Switching Valves

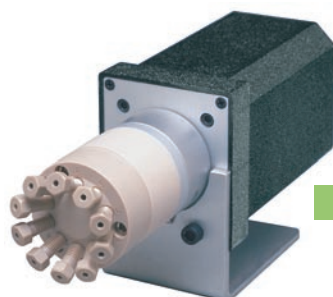
With Valco Zero Dead Volume (ZDV) Fittings

C20Z valves with zero dead volume fittings (10-32 thread) are shipped with standard PEEK nuts and ferrules. Zero dead volume fingertight fittings and nuts and ferrules of other materials may be ordered separately. Standard specifications are 100 psi gas/250 psi liquid at 75°C. On request, the pressure rating can be as high as 600 psi liquid.

Caution: Metal fittings will damage the threads and details of C20Z series valves. Use of metal fittings in a C20Z valve voids the warranty.

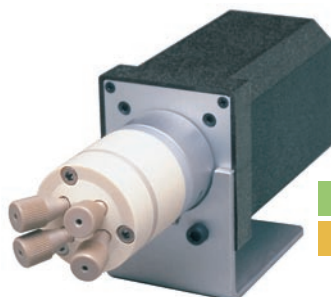
The **Model C22Z** is a conventional two position sample injector and switching valve, with 4, 6, 8, or 10 ports. Sample injection requires a loop, ordered separately.

The **Model C24Z** is an internal sample injector, for applications in which the sample size is smaller than that of any available external loop. Sample sizes available are 0.2, 0.5, and 1 µl.



Model C22Z
page 164

10-32 ZDV



Model C24Z
page 166

10-32 ZDV

Internal sample

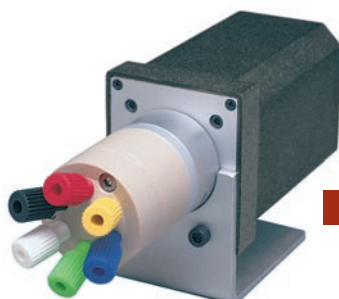
With Cheminert 1/4-28 Fittings

C20 Series valve caps have female threads for direct connection of lines – no couplings are required. C20 Series valves are available in 4, 6, 8, and 10 port versions. Standard specifications are 100 psi gas/250 psi liquid at 75°C.

Multicolored Cheminert 1/4-28 flangeless fittings for 1/16" or 1/8" OD tubing (depending on the valve model) are included.

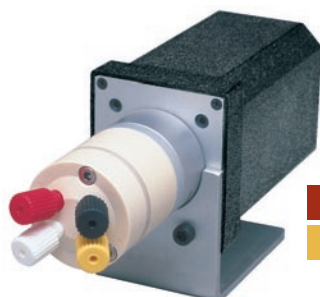
Model C22 valves are used for sample injection or switching. (Functionally equivalent to Model C22Z) Sample injection requires a loop, ordered separately.

The **Model C24** is an internal sample injector like the C24Z, available with 0.5, 1.0, or 2.0 µl sample size.



Model C22
page 165

1/4-28 Int.



Model C24
page 167

1/4-28 Int.

Internal sample

MORE INFORMATION

Decoding
Cheminert valve
product no's... 264-265

Actuation 186-209

Applications . 168-169

Materials

Metals..... 254-255
Polymers256
Valve rotors.....257

Valve descriptions

Cheminert
injectors..... 146-149
selectors..... 150-151
nanovolume®.....146
Diaphragm 140-141
Valco
injectors.....99
selectors..... 100-101

Cheminert valve prices

HPLC..... 152-163
Low pressure .. 164-167
Nanovolume®
..... 152-155, 170-171
Selectors 170-177
OEM..... 178-185

CAUTION

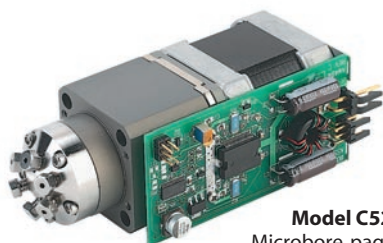
Metal fittings will damage the threads and details of C20Z series valves (models C22Z, C24Z, C25Z). Use of metal fittings in a C20Z valve voids the warranty.

TECH TIP

Our life tests indicate that these valves will typically give more than 100,000 cycles before requiring any service. This assumes that the fluid used is free of particulates and not reactive toward the valve components. If the stream may contain particulates, or if it has high salt content which could precipitate within the sample lines, use an in-line filter.

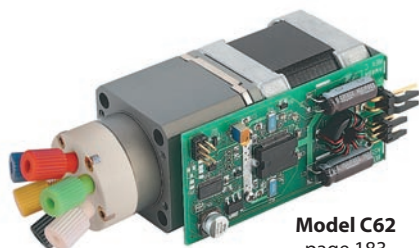
Note: Valves with purge ports are available on request.

Injectors for OEM Applications



Model C52
Microbore, page 178
Analytical, page 180

5,000 psi



Model C62
page 183

Low pressure

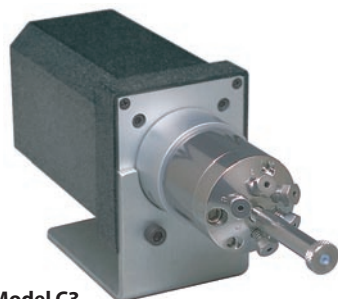
NEW Integrated Motor/Injector Assemblies for OEMs

Cheminert's new **Model C52** (HPLC) and **Model C62** (low pressure) injectors are integrated motor/valve assemblies designed specifically to be built into an OEM system. Using the well-proven Cheminert injector designs and the 24 volt motor from our popular microelectric actuators, the C52 and C62 need only to be connected to the instrument's power supply.

Control is simplified to require a single contact closure; the injector's position is determined by whether the closure is held high or low. There's even an easy way for the instrument to confirm the valve's position by sensing the output from a built-in sensor.

In the default control mode, a contact closure moves the injector from load to inject, where it remains until the contact is broken and the injector reverts to the load position. A simple jumper change shifts the mode to dual contact closure, in which one contact closure shifts the injector to inject and a second is required to shift it back to load. Jumper settings can also be modified to change the motor's degree of rotation so it can be used with any of the valve models available.

All these features are built into a compact and lightweight package and are available in 4, 6, 8, and 10 port configurations.

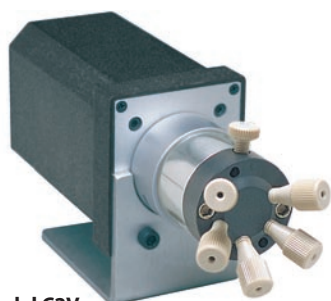
Autosampler and Other OEM Injectors

Model C3
Microbore, page 179
Analytical, page 181

Centered port

Model C3 is a unique injector with a syringe injection port centered on the rear face of the valve (opposite the handle or actuator), allowing convenient syringe insertion when the valve is mounted on an actuator inside an instrument.

Model C2V is designed specifically for use in an autosampler. It is like the standard C2 except that the sample port is perpendicular to the valve axis. This permits the valve and actuator to be installed horizontally, while the syringe loads the injector vertically.

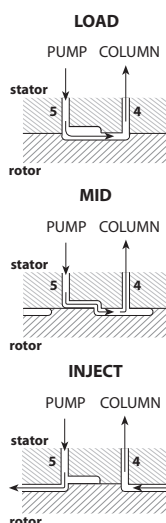


Model C2V
Microbore, page 179
Analytical, page 181

Vertical port

UNIVERSAL ACTUATOR

The new universal actuator for OEMs operates virtually any Valco or Cheminert rotary valve – two position and selector alike – greatly simplifying the electronic aspect of instrument design.
See page 192.

MODEL C1CF FLOWPATH**OEM SELECTOR VALVES**

See pages 151, 184-185 for selector (multiposition) valves for OEMs.

Stream Selectors

UHPLC and High Pressure Selectors

NEW Model C75 selectors offer pressure ratings of 15,000 psi and 10,000 psi with 1/32" and 1/16" fittings.

The **Model C5**, with Valco ZDV fitting details, is available with 4, 6, 8, or 10 positions. Stators are available in Nitronic 60 stainless, titanium, and Hastelloy C-22, with rotors of Valcon H, all of which are compatible with common HPLC solvents. PAEK stators are used in combination with Valcon E rotors.

The C5 valve is the backbone of the Cheminert **HPLC column selector system**, which includes two stream selection valves mounted on a single microelectric actuator. Columns are not included.

Model C75
pages 170 and 171

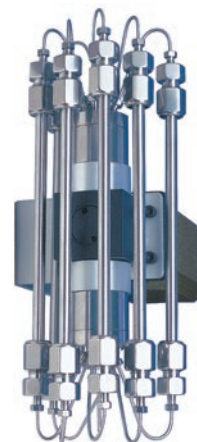
15,000 psi

10,000 psi



Model C5
page 172

5,000 psi



**HPLC
column selector
system**
page 173

5,000 psi

**Column selector
system**

Low Pressure Selectors

With Valco Zero Dead Volume Fittings

Model C25Z valves have Valco ZDV fitting details, and are available in 4, 6, 8, 10, 12, and 14 position models.

Model C35Z valves have 1/16" Valco ZDV details, and are available in 20, 24, and 26 position models. This is a tapered rotor valve limited to 100 psi liquid. Rotors are made from Valcon E2, with valve body made from PPS.

With Cheminert 1/4-28 Fittings

The **Model C25** has female 1/4-28 threaded fitting details for direct connection of lines – no couplings are required. The C25 is available in 4, 6, 8, and 10 position models. Multicolored Cheminert 1/16" or 1/8" flangeless fittings are included. Order other fittings separately as required. Rotors are made of Valcon E2, a proprietary reinforced PTFE composite, with stators of PPS.

With Cheminert 1/2-20 Fittings

Model C45 valves feature 1/2-20 threaded fitting details for use with 1/4" OD tubing. This is a tapered rotor valve with large bore for high flow applications. Rotors are made from Valcon E2, with valve body made from PPS. Available in 4 and 6 port configurations.



Model C25Z
page 174

Low pressure

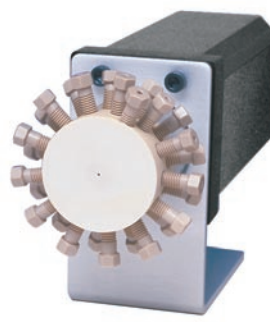
10-32 ZDV



Model C25
page 175

Low pressure

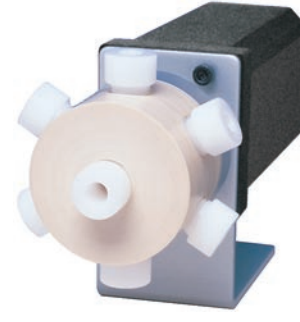
1/4-28 Internal



Model C35Z
page 176

Low pressure

10-32 ZDV



Model C45
page 177

Low pressure

1/2-20 Int.

Stream Selectors for OEM Applications

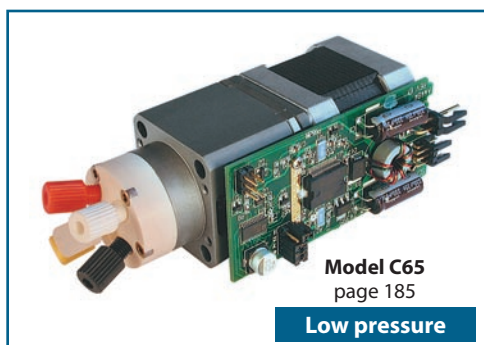
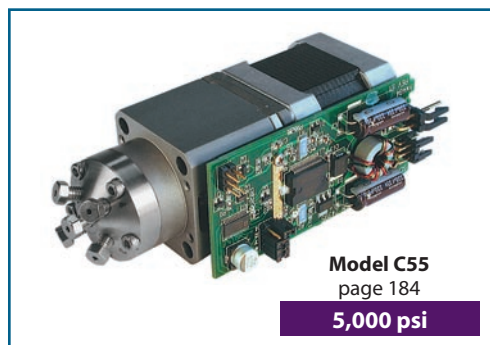
NEW Integrated Motor/Stream Selectors for OEMs

Cheminert's new **Model C55** (HPLC) and **Model C65** (low pressure) stream selectors are integrated motor/valve assemblies designed specifically to be built into an OEM system. The compact, lightweight package is available in 4, 6, 8, and 10 position configurations.

Using the well-proven Cheminert stream selector design and the 24 volt motor from our popular microelectric actuators, the Models C55, C65, and C65Z need only to be connected to an instrument's power supply. A single momentary contact closure steps the valve to the next position; a separate

contact closure moves the valve to position 1 (Home).

See how our stream selectors can simplify your instrument design and minimize time to market – all while trimming your costs.

**UNIVERSAL ACTUATOR**

The new universal actuator for OEMs operates virtually any Valco or Cheminert rotary valve – two position and selector alike – greatly simplifying the electronic aspect of instrument design.

See page 192.

MORE INFORMATION

Actuation 186-209

Applications . 168-169

Materials

Metals..... 254-255
Polymers256
Valve rotors.....257

Valve descriptions

Cheminert
injectors..... 146-149
selectors..... 150-151
nanovolume®.....146
Diaphragm 140-141
Valco
injectors.....99
selectors..... 100-101

Cheminert valve prices

HPLC..... 152-163
Low pressure .. 164-167
Nanovolume®
..... 152-155, 170-171
Selectors 170-177
OEM..... 178-185

TECH TIP**Caution:**

Metal fittings will damage the threads and details of C25Z, C35Z, and C65Z series valves.

Use of metal fittings in these valves voids the warranty.

SPECIFICATIONS**CHEMINERT MULTIPOSITION VALVES**

Model	Stator material	Std rotor material	Max pressure	Max temp	Number of positions
High Pressure					
C5	Metal	Valcon H	5000 psi liq	75°C	4, 6, 8, 10
	PAEK	Valcon E	5000 psi liq	50°C	4, 6, 8, 10
Low Pressure					
C25Z	PPS	Valcon E2	100 psi gas/ 250 psi liq	75°C	4, 6, 8, 10, 12, 14
C25	PPS	Valcon E2	100 psi gas/ 250 psi liq	75°C	4, 6, 8, 10
C35Z	PPS	Valcon E2	100 psi liq	50°C	20, 24, 26
C45	PPS	Valcon TF	100 psi liq	50°C	4, 6, 8
OEM – High Pressure					
C55	Metal	Valcon H	5000 psi liq	50°C	4, 6, 8, 10
	PAEK	Valcon E	5000 psi liq	50°C	4, 6, 8, 10
OEM – Low Pressure					
C65Z	PPS	Valcon E2	100 psi gas/ 250 psi liq	50°C	4, 6, 8, 10
C65	PPS	Valcon E2	100 psi gas/ 250 psi liq	50°C	4, 6, 8, 10


PORT DIAMETERS

Model	Fitting size	Standard port diameter
High Pressure		
C5	1/16" ZDV	0.15 mm (.006") 0.25 mm (.010") 0.40 mm (.016") 0.75 mm (.030")
Low Pressure		
C25Z	1/16" ZDV	0.75 mm (.030")
C25	1/4-28 for 1/16" tubing	0.75 mm (.030") 1.50 mm (.060")
C35Z	1/16" ZDV	0.75 mm (.030")
C45	1/2-20 for 1/4" tubing	4.6 mm (.180")
OEM – High Pressure		
C55	1/16" ZDV	0.25 mm (.010") 0.40 mm (.016") 0.75 mm (.030")
OEM – Low Pressure		
C65Z	1/16" ZDV	0.75 mm (.030")
C65	1/4-28 for 1/16" tubing	0.75 mm (.030") 1.50 mm (.060")
	1/4-28 for 1/8" tubing	

NEW UHPLC Nanovolume Injectors with 360 µm fittings

NEW 20,000 psi UHPLC Nanovolume valves 360 micron fittings, 100 micron bore (.004")

Model C72MU

20,000 psi	Includes stainless 360 micron fittings.	Microelectric actuator: 24 VDC, with 110/230 VAC to 24 VDC power supply.
360µm 100 µm		

SPECS

20,000 psi liq
50°C max
Stainless w/ inert coating
stator
Valcon E3 rotor

OPTIONS

- 150 micron (.006") bore
- Internal sample injector (4 - 20 nl)
- 10,000 and 15,000 psi versions available

Coated stainless stator

Manual	C72MU-4694	C72MU-4696
With pneumatic actuator	C72MU-4694A	C72MU-4696A
With standard electric actuator	C72MU-4694E	C72MU-4696E
With microelectric actuator	C72MU-4694EH	C72MU-4696EH
Replacement valve	C72MU-4694D	C72MU-4696D
Replacement rotor	C72M-46R4	C72M-46R6
Replacement stator	C72M-4C94	C72M-4C96



4 Port

Prod No

Price



6 Port

Prod No


Price



Model C72MU
360 micron fittings
(Model C72MX is similar)

NEW 15,000 psi UHPLC Nanovolume valves 360 micron fittings, 150 micron bore (.006")

Model C72MX

15,000 psi	Includes stainless 360 micron fittings.	Microelectric actuator: 24 VDC, with 110/230 VAC to 24 VDC power supply.
360µm 150 µm		

SPECS

15,000 psi liq
50°C max
Stainless w/ inert coating
stator
Valcon E3 rotor

OPTIONS

- 100 micron (.004") bore
- Internal sample injector (4 - 20 nl)
- 10,000 psi version available
- 4 and 8 port versions available

Coated stainless stator

Manual	C72MX-6696	C72MX-6690
With pneumatic actuator	C72MX-6696A	C72MX-6690A
With standard electric actuator	C72MX-6696E	C72MX-6690E
With microelectric actuator	C72MX-6696EH	C72MX-6690EH
Replacement valve	C72MX-6696D	C72MX-6690D
Replacement rotor	C72M-66R6	C72M-66R0
Replacement stator	C72M-6C96	C72M-6C90



6 Port

Prod No

Price



10 Port

Prod No

Price

MORE INFORMATION

360 micron nanovolume
fittings page 58

UHPLC Nanovolume Injectors with 1/32" Valco stainless fittings **NEW****NEW 15,000 psi UHPLC Nanovolume valves**
1/32" Valco stainless fittings, 150 micron bore (.006")

Model C72NX

SPECS
15,000 psi liq
50°C maxStainless w/ inert coating
stator
Valcon E3 rotorIncludes 1/32" Valco
stainless steel fittings.Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supply.* The 6 port valve
includes a 5 µl loop of
the stator material.**15,000 psi****1/32"****150 µm****6 Port ***

Prod No

Price

**10 Port**

Prod No

Price

OPTIONS

- 100 micron (.004") bore
- 250 micron (.010") bore
- 10,000 psi version available
- 4 and 8 port versions available

Coated stainless statorManual
With pneumatic actuatorWith standard electric actuator
With microelectric actuatorReplacement valve
Replacement rotor
Replacement statorC72NX-6696
C72NX-6696AC72NX-6696E
C72NX-6696EHC72NX-6696D
C72N-66R6
C72N-6C96C72NX-6690
C72NX-6690AC72NX-6690E
C72NX-6690EDC72NX-6690D
C72N-66R0
C72N-6C90**Model C72NX**
1/32" Valco stainless fittings**Sample loops for C72NX valves**

Each stainless loop includes two stainless 1/32" Cheminert nanovolume fittings.

Volume	Stainless	
	Prod No	Price
1 µl	CSLN1K	\$35.00
2 µl	CSLN2K	45.00
5 µl	CSLN5K	52.50

**Model C74NX**
1/32" Valco stainless fittings**NEW 15,000 psi UHPLC Nanovolume internal sample injectors**
1/32" Valco stainless fittings, 150 micron bore (.006")

Model C74NX

SPECS
15,000 psi liq
50°C maxStainless w/ inert coating
stator
Valcon E3 rotorIncludes 1/32" Valco
stainless steel fittings.Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC power supply.**15,000 psi****Internal sample****1/32"****150 µm****4 nanoliters**

Prod No

Price

10 nanoliters

Prod No

Price

20 nanoliters

Prod No

Price

Coated stainless statorManual
With pneumatic actuatorWith standard electric actuator
With microelectric actuatorReplacement valve
Replacement rotor
Replacement statorC74NX-6694-.004
C74NX-6694-.004AC74NX-6694-.004E
C74NX-6694-.004EHC74NX-6694-.004D
C74N-66R-.004
C74N-6C9C74NX-6694-.01
C74NX-6694-.01AC74NX-6694-.01E
C74NX-6694-.01EHC74NX-6694-.01D
C74N-66R-.01
C74N-6C9C74NX-6694-.02
C74NX-6694-.02AC74NX-6694-.02E
C74NX-6694-.02EHC74NX-6694-.02D
C74N-66R-.02
C74N-6C9**OPTIONS**





- 250 micron (.010") bore
- 10,000 and 20,000 psi versions available

MORE INFORMATION1/32" Valco
fittings pages 10, 12
1/16" nanovolume
injectors
C72X156
C74X157

Nanovolume Injectors with 1/32" Cheminert Fittings

**5,000 psi Nanovolume valves,
1/32" Cheminert fittings, 100 micron ports (.004")**

Model CN2

<div>5,000 psi</div> <div>1/32"100 µm</div>					
Includes 1/32" PEEK Cheminert nanovolume fittings.		Microelectric actuator: 24 VDC, with 110/230 VAC to 24 VDC power supply.		* The 6 port valve includes a 250 nI PEEK loop.	
<div> For 6 port</div> <div> For 10 port</div>		<div>6 Port*</div> <div>Prod NoPriceProd NoPrice</div>		<div>10 Port</div> <div>Prod NoPrice</div>	
PAEK stator				OPTIONS <div>■ 150 micron (.006") bore</div>	
Manual		CN2-4346		CN2-4340	
With microelectric actuator		CN2-4346EH		CN2-4340EH	
Replacement valve		CN2-4346D		CN2-4340D	
Replacement rotor		CN2-43R6		CN2-43R0	
Replacement stator		CN2-4C46I		CN2-4C40I	



Sample loops *for CN2 valves*

Each PEEK loop includes two PEEK Cheminert nanovolume fittings.

	PEEK	
Volume	Prod No	Price
250 nl	CNSL250PK	
500 nl	CNSL500PK	
1 µl	CNSL1KPK	
2 µl	CNSL2KPK	
5 µl	CNSL5KPK	



MORE INFORMATION
 1/32" PEEK Cheminert fitting (nut with collapsible ferrule) p.59

Nanovolume Injectors with 1/32" Cheminert Fittings

5,000 psi Nanovolume internal sample injector, 1/32" Cheminert fittings, 100 micron ports (.004")

Model CN4

SPECS
5000 psi liq
50°C max
PAEK stator
Valcon E rotor

Includes 1/32"
PEEK Cheminert
nanovolume fittings.



Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC power supply.



5,000 psi

Internal sample

1/32"

100 µm

OPTIONS

- 150 micron (.006") bore

Sample volume

4 nanoliters

10 nanoliters

20 nanoliters

PAEK stator

Manual

Prod No CN4-4344-.004

Price

Prod No CN4-4344-.01

Price

Prod No CN4-4344-.02

Price

With microelectric actuator

Prod No CN4-4344-.004EH

Prod No CN4-4344-.01EH

Prod No CN4-4344-.02EH

Replacement valve

Prod No CN4-4344-.004D

Prod No CN4-4344-.01D

Prod No CN4-4344-.02D

Replacement rotor

Prod No CN4-43R-.004

Prod No CN4-43R-.01

Prod No CN4-43R-.02

Replacement stator

Prod No CN4-4C4I

Prod No CN4-4C4I

Prod No CN4-4C4I



Model CN4
1/32" Cheminert
fittings

MORE INFORMATION

1/32" PEEK Cheminert
fitting (nut with
collapsible ferrule) p.59

CHROMalytic TECHNOlogy Pty Ltd AUSTRALIAN Distributors e-mail: sales@chromtech.net.au Tel: 03 9762 2034

Microbore UHPLC

NEW 15,000 psi UHPLC microbore valves, 1/16" Valco fittings, 0.25 mm ports (.010")

Model C72X

<div>15,000 psi</div> <div>Microbore</div> <div>1/16"0.25 mm</div>	Includes stainless steel nuts and ferrules.		Standard electric actuator: 110 VAC for USA 110/230 VAC to 24 VDC power supply for international.		* The 6 port valve includes a 5 µl stainless steel sample loop.		<div>SPECS</div> <div>15,000 psi liq</div> <div>50°C max</div> <div>Stainless stator with inert coating</div> <div>Valcon E3 rotor</div>	
			Microelectric actuator: 24 VDC, with 110/230 VAC to 24 VDC power supply.					

**NEW 15,000 psi UHPLC microbore internal sample injectors,
1/16" Valco fittings, 0.25 mm ports (.010")**

Model C74X

SPECS

15,000 psi liq
50°C max
Stainless stator
with inert coating
Valcon E3 rotor

Includes stainless steel
nuts and ferrules.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for
international.
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supply.



15,000 psi

Microbore

Internal sample

1/16" 0.25 mm

OPTIONS

0.15 mm ports (.006")

	10 nanoliters		20 nanoliters		50 nanoliters	
	Prod No	Price	Prod No	Price	Prod No	Price
Manual	C74X-1694-.01		C74X-1694-.02		C74X-1694-.05	
With pneumatic actuator	C74X-1694-.01A		C74X-1694-.02A		C74X-1694-.05A	
With standard electric actuator	C74X-1694-.01E		C74X-1694-.02E		C74X-1694-.05E	
With microelectric actuator	C74X-1694-.01EH		C74X-1694-.02EH		C74X-1694-.05EH	
Replacement valve	C74X-1694-.01D		C74X-1694-.02D		C74X-1694-.05D	
Replacement rotor	C74-16R-.01		C74-16R-.02		C74-16R-.05	
Replacement stator	C74-1C9		C74-1C9		C74-1C9	

**NEW 10,000 psi UHPLC microbore internal sample injectors,
1/16" Valco fittings, 0.25 mm ports (.010")**

Model C74H

SPECS

10,000 psi liq
50°C max
Stainless stator
with inert coating
Valcon E3 rotor

Includes stainless steel
nuts and ferrules.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for
international.
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supply.



10,000 psi

Microbore

Internal sample

1/16" 0.25 mm

OPTIONS

0.15 mm ports (.006")

	10 nanoliters		20 nanoliters		50 nanoliters	
	Prod No	Price	Prod No	Price	Prod No	Price
Manual	C74H-1694-.01		C74H-1694-.02		C74H-1694-.05	
With pneumatic actuator	C74H-1694-.01A		C74H-1694-.02A		C74H-1694-.05A	
With standard electric actuator	C74H-1694-.01E		C74H-1694-.02E		C74H-1694-.05E	
With microelectric actuator	C74H-1694-.01EH		C74H-1694-.02EH		C74H-1694-.05EH	
Replacement valve	C74H-1694-.01D		C74H-1694-.02D		C74H-1694-.05D	
Replacement rotor	C74-16R-.01		C74-16R-.02		C74-16R-.05	
Replacement stator	C74-1C9		C74-1C9		C74-1C9	

MORE INFORMATION

Actuators

Air page 195

Microelectric .. 188-189

Standard electric ... 193

Materials

Metals..... 254-255

Polymers 256

Valve rotors..... 257

Standoff

assemblies 205-207



Model C74H
(C74X similar)
1/16" ZDV fittings

Microbore HPLC

Microbore valves, 1/16" Valco fittings, 0.25 mm ports (.010")

Model C2

5,000 psi	Includes stainless steel nuts and ferrules of the stator material. Valves with PEEK stators have PEEK nuts and ferrules.	Standard electric actuator: 110 VAC for USA 110/230 VAC to 24 VDC power supply for international.	* The 6 port valve includes a 5 µl loop of the stator material.
Microbore		Microelectric actuator: 24 VDC, with 110/230 VAC to 24 VDC power supply.	
1/16"	0.25 mm		

SPECS

5000 psi liq
75°C max
Metal stator
Valcon H rotor

5000 psi liq
50°C max
PAEK stator
Valcon E rotor



4 Port

Prod No Price



6 Port*

Prod No Price



8 Port

Prod No Price



10 Port

Prod No Price

N60 stainless stator

Manual	C2-1004	C2-1006	C2H-1008	C2H-1000
With pneumatic actuator	C2-1004A	C2-1006A	C2H-1008A	C2H-1000A
With standard electric actuator	C2-1004E	C2-1006E	C2H-1008E	C2H-1000E
With microelectric actuator	C2-1004EH	C2-1006EH	C2H-1008EH	C2H-1000EH
Replacement valve	C2-1004D	C2-1006D	C2H-1008D	C2H-1000D
Replacement rotor	C2-10R4	C2-10R6	C2-10R8H	C2-10R0H
Replacement stator	C-1C04	C-1C06	C-1C08H	C-1C00H

PAEK stator

Manual	C2-1344	C2-1346	C2H-1348	C2H-1340
With pneumatic actuator	C2-1344A	C2-1346A	C2H-1348A	C2H-1340A
With standard electric actuator	C2-1344E	C2-1346E	C2H-1348E	C2H-1340E
With microelectric actuator	C2-1344EH	C2-1346EH	C2H-1348EH	C2H-1340EH
Replacement valve	C2-1344D	C2-1346D	C2H-1348D	C2H-1340D
Replacement rotor	C2-13R4	C2-13R6	C2-13R8H	C2-13R0H
Replacement stator	C-1C44	C-1C46	C-1C48H	C-1C40H

Titanium stator

Manual	C2-1034	C2-1036	C2H-1038	C2H-1030
With pneumatic actuator	C2-1034A	C2-1036A	C2H-1038A	C2H-1030A
With standard electric actuator	C2-1034E	C2-1036E	C2H-1038E	C2H-1030E
With microelectric actuator	C2-1034EH	C2-1036EH	C2H-1038EH	C2H-1030EH
Replacement valve	C2-1034D	C2-1036D	C2H-1038D	C2H-1030D
Replacement rotor	C2-10R4	C2-10R6	C2-10R8H	C2-10R0H
Replacement stator	C-1C34	C-1C36	C-1C38H	C-1C30H

OPTIONS

- Continuous flow version is available as Model C6.
See page 160.
- Hastelloy C stators
- Loop fill port assembly for injection from front of the valve.
See page 41.
- 0.15 mm (0.006") bore



Order loops from page 159.



Model C2
1/16" ZDV fittings

MORE INFORMATION

- Actuators
- Air page 195
 - Microelectric .. 188-189
 - Standard electric ... 193
- Materials
- Metals..... 254-255
 - Polymers 256
 - Valve rotors..... 257
- Nuts
- Metal..... 10
 - PEEK 63
- Ferrules
- Metal..... 12
 - PEEK 63
- Standoff assemblies 205-207

Microbore nanoliter sample injector, 1/16" Valco fittings, 0.15 mm ports (.006")

Model C4

SPECS
5000 psi liq
75°C max
 Metal stator
 Valcon H rotor

5000 psi liq
50°C max
 PAEK stator
 Valcon E rotor

Includes stainless steel nuts and ferrules of the stator material. Valves with PAEK stators have PEEK nuts and ferrules.

Standard electric actuator:
 110 VAC for USA
 110/230 VAC to 24 VDC power supply for international.
 Microelectric actuator:
 24 VDC, with 110/230 VAC to 24 VDC power supply.



5,000 psi

Microbore

Internal sample

1/16"

0.15 mm

OPTIONS

- 100, 200, and 500 nl sample volumes are also available in 0.25 mm bore. See page 162.
- Loop fill port assembly for injection from front of the valve. See page 41.
- 0.25 mm (0.010") bore

Sample volume

N60 stainless stator

Manual
 With pneumatic actuator

With standard electric actuator
 With microelectric actuator

Replacement valve
 Replacement rotor
 Replacement stator

PAEK stator

Manual
 With pneumatic actuator

With standard electric actuator
 With microelectric actuator

Replacement valve
 Replacement rotor
 Replacement stator

10 nanoliters

Prod No Price

C4-0004-.01
 C4-0004-.01A

 C4-0004-.01E
 C4-0004-.01EH

 C4-0004-.01D
 C4-00R-.01
 C4-0C0

20 nanoliters

Prod No Price

C4-0004-.02
 C4-0004-.02A

 C4-0004-.02E
 C4-0004-.02EH

 C4-0004-.02D
 C4-00R-.02
 C4-0C0

50 nanoliters

Prod No Price

C4-0004-.05
 C4-0004-.05A

 C4-0004-.05E
 C4-0004-.05EH

 C4-0004-.05D
 C4-00R-.05
 C4-0C0



Sample loops

for C1, C2, C2V, C3, and C6 valves

Each metal loop includes two stainless steel nuts and ferrules.
 Each PEEK loop includes two PEEK nuts and ferrules.

Stainless Steel

PEEK (for PAEK stators)

Titanium

Volume	Prod No	Price	Prod No	Price	Prod No	Price
2 µl	CSL2		CZSL2PK		–	
5 µl	CSL5		CZSL5PK		–	
10 µl	CSL10		CZSL10PK		CSL10TI	
20 µl	CSL20		CZSL20PK		CSL20TI	
50 µl	CSL50		CZSL50PK		CSL50TI	
100 µl	CSL100		CZSL100PK		CSL100TI	
250 µl	CSL250		CZSL250PK		CSL250TI	
500 µl	CSL500		CZSL500PK		CSL500TI	
1 ml	CSL1K		CZSL1KPK		CSL1KTI	
2 ml	CSL2K		CZSL2KPK		–	
5 ml	CSL5K		CZSL5KPK		–	
10 ml	CSL10K		–		–	

ABOUT LOOPS

- Other materials are available in many sizes: Electroformed Nickel, Hastelloy C, Nickel 200, and PTFE (see pages 254-256).
- Metal loops > 2 ml are made from 1/8" OD tubing with brazed or welded 1/16" tube ends or reducing unions.



Model C4
1/16" ZDV fittings

Microbore HPLC

Microbore through-the-handle injector, 1/16" Valco fittings, 0.25 mm ports (.010")

Model C1

5,000 psi
Microbore
Through-handle
1/16" **0.25 mm**



Available only in manual version.
Position feedback included.

Includes stainless steel nuts and ferrules.
Valves with PEEK stators have PEEK nuts and ferrules.

Includes one 5 µl loop of the stator material.

SPECS

5000 psi liq
75°C max
Metal stator
Valcon H rotor

5000 psi liq
50°C max
PAEK stator
Valcon E rotor



Model C1
and C1CF
1/16" ZDV fittings

6 port injector
Replacement rotor
Replacement stator

Replacement injector fitting

N60 stainless stator

Prod No	Price
C1-1006	
C1-10R6	
C-1C06	

PAEK stator

Prod No	Price
C1-1346	
C1-13R6	
C-1C46	

Prod No	Price
C-261	



OPTIONS

- Titanium and Hastelloy stators available.
- 0.40 mm bore (.016") on page 163.

Microbore continuous flow through-the-handle injector, 1/16" Valco fittings, 0.25 mm ports (.010")

Model C1CF

5,000 psi
Microbore
Continuous flow
Through-handle
1/16" **0.25 mm**



Available only in manual version.
Position feedback included.

Includes stainless steel nuts and ferrules.
Valves with PEEK stators have PEEK nuts and ferrules.

Includes one 5 µl loop of the stator material.

SPECS

5000 psi liq
75°C max
Metal stator
Valcon H rotor

5000 psi liq
50°C max
PAEK stator
Valcon E rotor

6 port injector
Replacement rotor
Replacement stator

Replacement injector fitting

N60 stainless stator

Prod No	Price
C1CF-1006	
C1-10R6	
C6-1C06	

PAEK stator

Prod No	Price
C1CF-1346	
C1-13R6	
C6-1C46	

Prod No	Price
C-261	



OPTIONS

- 0.40 mm bore (.016") on page 163.

Microbore continuous flow injector, 1/16" Valco fittings, 0.25 mm ports (.010")

Model C6

5,000 psi
Microbore
Continuous flow
1/16" **0.25 mm**

Includes stainless steel nuts and ferrules.

* Includes a 5 µl loop of the stator material.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for international.

Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC power supply.

N60 stainless stator

Prod No	Price
C6-1006	
C6-1006A	

PAEK stator

Prod No	Price
C6-1346	
C6-1346A	
C6-1346E	
C6-1346EH	

Manual
With pneumatic actuator

With standard electric actuator
With microelectric actuator

Replacement valve
Replacement rotor
Replacement stator

C6-1006D	C6-1346D
C2-10R6	C2-13R6
C6-1C06	C6-1C46

SPECS

5000 psi liq
75°C max
Metal stator
Valcon H rotor

5000 psi liq
50°C max
PAEK stator
Valcon E rotor

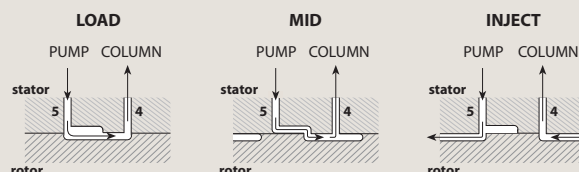
Order loops from page 159.



Model C6
1/16" ZDV fittings

C1CF and C6 CONTINUOUS FLOWPATH

An engraving on the stator maintains pump flow between ports 5 and 4 during most of the switching cycle, virtually eliminating pressure spikes.



Analytical valves, 1/16" Valco fittings, 0.40 mm ports (.016")

Model C2

SPECS

5000 psi liq
75°C max
Metal stator
Valcon H rotor

5000 psi liq
50°C max
PAEK stator
Valcon E rotor

Includes stainless steel nuts and ferrules of the stator material. Valves with PEEK stators have PEEK nuts and ferrules.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for international.
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC power supply.

* The 6 port valve includes a 20 µl loop of the stator material.

5,000 psi**Analytical****1/16"****0.40 mm****OPTIONS**

- Continuous flow version is available as Model C6. See page 163.
- Hastelloy C stators
- Semi-prep version with 0.75 mm ports (.030") available
- Loop fill port assembly for injection from front of the valve. See page 41.



Order loops from page 159.

OPTIONAL FLOWPATH

Model C2 6 port valves can also be ordered with a dual 3-way rotor, as described in EPA Method 555.

To specify this flowpath, substitute "6X" for "6" in the valve or rotor product number.

**AUTOSAMPLER REPLACEMENT VALVES**

The Cheminert Model C2 6 port valve is an excellent replacement for the valve originally supplied in many autosamplers, including autosamplers manufactured by Beckman, Gilson, Spark-Holland, CTC, Thermo Fisher, and Varian.

Call technical support to determine which replacement is best for your application.

**4 Port**

Prod No Price

**6 Port***

Prod No Price

**8 Port**

Prod No Price

**10 Port**

Prod No Price

N60 stainless stator

Manual C2-2004
With pneumatic actuator C2-2004A

With standard electric actuator C2-2004E
With microelectric actuator C2-2004EH

Replacement valve C2-2004D
Replacement rotor C2-20R4
Replacement stator C-2C04

PAEK stator

Manual C2-2344
With pneumatic actuator C2-2344A

With standard electric actuator C2-2344E
With microelectric actuator C2-2344EH

Replacement valve C2-2344D
Replacement rotor C2-23R4
Replacement stator C-2C44

Titanium stator

Manual C2-2034
With pneumatic actuator C2-2034A

With standard electric actuator C2-2034E
With microelectric actuator C2-2034EH

Replacement valve C2-2034D
Replacement rotor C2-20R4
Replacement stator C-2C34

C2-2006
C2-2006A

C2-2006E
C2-2006EH

C2-2006D
C2-20R6
C-2C06

C2-2346
C2-2346A

C2-2346E
C2-2346EH

C2-2346D
C2-23R6
C-2C46

C2-2036
C2-2036A

C2-2036E
C2-2036EH

C2-2036D
C2-20R6
C-2C36

C2H-2008
C2H-2008A

C2H-2008E
C2H-2008EH

C2H-2008D
C2-20R8H
C-2C08H

C2H-2348
C2H-2348A

C2H-2348E
C2H-2348EH

C2H-2348D
C2-23R8H
C-2C48H

C2H-2038
C2H-2038A

C2H-2038E
C2H-2038EH

C2H-2038D
C2-20R8H
C-2C38H

C2H-2000
C2H-2000A

C2H-2000E
C2H-2000EH

C2H-2000D
C2-20R0H
C-2C00H

C2H-2340
C2H-2340A

C2H-2340E
C2H-2340EH

C2H-2340D
C2-23R0H
C-2C40H

C2H-2030
C2H-2030A

C2H-2030E
C2H-2030EH

C2H-2030D
C2-20R0H
C-2C30H



Model C2
1/16" ZDV fittings

Analytical HPLC

Analytical internal sample injector, 1/16" Valco fittings, 0.25 mm ports (.010")

Model C4

5,000 psi

Analytical

Internal sample

1/16"

0.25 mm



Includes stainless steel nuts and ferrules of the stator material. Valves with PAEK stators have PEEK nuts and ferrules.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for international.
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC power supply.

SPECS

5000 psi liq
75°C max
Metal stator
Valcon H rotor

5000 psi liq
50°C max
PAEK stator
Valcon E rotor

Sample volume

0.1 µl

0.2 µl

0.5 µl

Prod No Price Prod No Price Prod No Price

N60 stainless stator

Manual	C4-1004-.1
With pneumatic actuator	C4-1004-.1A
With standard electric actuator	C4-1004-.1E
With microelectric actuator	C4-1004-.1EH
Replacement valve	C4-1004-.1D
Replacement rotor	C4-10R-.1
Replacement stator	C4-1C0

C4-1004-.2
C4-1004-.2A
C4-1004-.2E
C4-1004-.2EH
C4-1004-.2D
C4-10R-.2
C4-1C0

C4-1004-.5
C4-1004-.5A
C4-1004-.5E
C4-1004-.5EH
C4-1004-.5D
C4-10R-.5
C4-1C0

PAEK stator

Manual	C4-1344-.1
With pneumatic actuator	C4-1344-.1A
With standard electric actuator	C4-1344-.1E
With microelectric actuator	C4-1344-.1EH
Replacement valve	C4-1344-.1D
Replacement rotor	C4-13R-.1
Replacement stator	C4-1C4

C4-1344-.2
C4-1344-.2A
C4-1344-.2E
C4-1344-.2EH
C4-1344-.2D
C4-13R-.2
C4-1C4

C4-1344-.5
C4-1344-.5A
C4-1344-.5E
C4-1344-.5EH
C4-1344-.5D
C4-13R-.5
C4-1C4

Titanium stator

Manual	C4-1034-.1
With pneumatic actuator	C4-1034-.1A
With standard electric actuator	C4-1034-.1E
With microelectric actuator	C4-1034-.1EH
Replacement valve	C4-1034-.1D
Replacement rotor	C4-10R-.1
Replacement stator	C4-1C3

C4-1034-.2
C4-1034-.2A
C4-1034-.2E
C4-1034-.2EH
C4-1034-.2D
C4-10R-.2
C4-1C3

C4-1034-.5
C4-1034-.5A
C4-1034-.5E
C4-1034-.5EH
C4-1034-.5D
C4-10R-.5
C4-1C3

OPTIONS

- .05 µl sample volumes are also available.
- Loop fill port assembly for injection from front of the valve.
See page 41.



Model C4
1/16" ZDV fittings

MORE INFORMATION

Actuators
Air page 195
Microelectric .. 188-189
Standard electric ... 193
Materials
Metals..... 254-255
Polymers 256
Valve rotors..... 257
Standoff
assemblies 205-207

Analytical through-the-handle injector, 1/16" Valco fittings, 0.40 mm ports (.016")

Model C1

SPECS

5000 psi liq
75°C max
Metal stator
Valcon H rotor

5000 psi liq
50°C max
PAEK stator
Valcon E rotor

Available only in manual version.
Position feedback included.

Includes stainless steel nuts and ferrules.
Valves with PAEK stators have PEEK nuts and ferrules.

Includes one 20 µl loop of the stator material.



5,000 psi

Analytical

Through-handle

1/16" 0.40 mm

OPTIONS

- Titanium stator available.
- 0.25 mm bore (.010") on page 160.

6 port injector
Replacement rotor
Replacement stator

N60 stainless stator

Prod No

Price

C1-2006

C1-20R6

C-2C06

Prod No

Price

C-261

**PAEK stator**

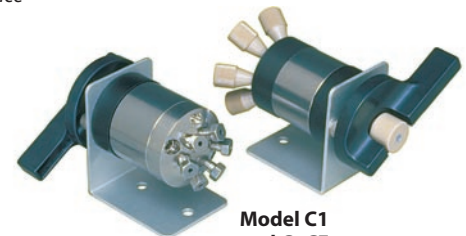
Prod No

Price

C1-2346

C1-23R6

C-2C46



Model C1 and C1CF
1/16" ZDV fittings

Analytical continuous flow through-the-handle injector, 1/16" Valco fittings, 0.40 mm ports (.016")

Model C1CF

SPECS

5000 psi liq
75°C max
Metal stator
Valcon H rotor

5000 psi liq
50°C max
PAEK stator
Valcon E rotor

Available only in manual version.
Position feedback included.

Includes stainless steel nuts and ferrules.
Valves with PAEK stators have PEEK nuts and ferrules.

Includes one 20 µl loop of the stator material.



5,000 psi

Analytical

Continuous flow

Through-handle

1/16" 0.40 mm

OPTIONS

- 0.25 mm bore (.010") on page 160.

6 port injector
Replacement rotor
Replacement stator
Prod No

N60 stainless stator

Prod No

Price

C1CF-2006

C1-20R6

C6-2C06

Price

PAEK stator

Prod No

Price

C1CF-2346

C1-23R6

C6-2C46

C-261



Analytical continuous flow injector, 1/16" Valco fittings, 0.40 mm ports (.016")

Model C6

SPECS

5000 psi liq
75°C max
Metal stator
Valcon H rotor

5000 psi liq
50°C max
PAEK stator
Valcon E rotor

Includes stainless steel nuts and ferrules.

Includes a 20 µl loop of the stator material.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for international.

Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC power supply.

N60 stainless stator

Prod No

Price

C6-2006

C6-2006A

C6-2006E

C6-2006EH

C6-2006D

C2-20R6

C6-2C06

PAEK stator

Prod No

Price

C6-2346

C6-2346A

C6-2346E

C6-2346EH

C6-2346D

C2-23R6

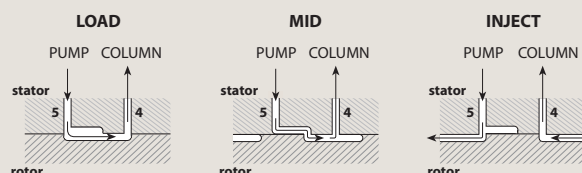
C6-2C46

Manual
With pneumatic actuator
With standard electric actuator
With microelectric actuator
Replacement valve
Replacement rotor
Replacement stator

Order loops from page 159.

C1CF and C6 CONTINUOUS FLOWPATH

An engraving on the stator maintains pump flow between ports 5 and 4 during most of the switching cycle, virtually eliminating pressure spikes.



Model C6
1/16" ZDV fittings

Low Pressure




Valves with 1/16" Valco ZDV fittings, 0.75 mm ports (.030")

Model C22Z

<div>Low pressure</div> <div>10-32 ZDV</div> <div>1/16"0.75 mm</div>	Includes Valco ZDV PEEK nuts and ferrules.		Standard electric actuator: 110 VAC for USA 110/230 VAC to 24 VDC power supply for international. Microelectric actuator: 24 VDC, with 110/230 VAC to 24 VDC power supply.		Sample loops are not included with valves. Order separately.		<div>SPECS</div> <div>100 psi gas/ 250 psi liq</div> <div>75°C max</div> <div>PPS stator</div> <div>Valcon E2 rotor</div>	
							<div>OPTIONS</div> <div>■ Purge option</div> <div>■ Other polymeric rotors and stators are available.</div> <div>Consult the factory for prices and information.</div>	
							<div>PURGE OPTION</div> <div>The purge option permits</div>	

Valves with 1/4-28 fitting details for 1/16" tubing, 0.75 mm ports (.030")

Model C22

<div>SPECS</div> <div>100 psi gas/ 250 psi liq</div> <div>75°C max</div> <div>PPS stator</div> <div>Valcon E2 rotor</div>	Includes multicolored Cheminert 1/4-28 flangeless fittings for 1/16" tubing.		Standard electric actuator: 110 VAC for USA 110/230 VAC to 24 VDC power supply for international.		Sample loops are not included with valves. Order separately.		<div>Low pressure</div> <div>1/4-28 Internal</div> <div>1/16"0.75 mm</div>		
			Microelectric actuator: 24 VDC, with 110/230 VAC to 24 VDC power supply.						
									
			4 Port		6 Port		8 Port		
			Prod No Price		Prod No Price		Prod No Price		
								10 Port	
								Prod No Price	
		Manual		C22-3184		C22-3186		C22-3188	
		With pneumatic actuator		C22-3184A		C22-3186A		C22-3188A	
		With standard electric actuator		C22-3184E		C22-3186E		C22-3188E	
		With microelectric actuator		C22-3184EH		C22-3186EH		C22-3188EH	
		Replacement valve		C22-3184D		C22-3186D		C22-3188D	
		Replacement rotor		C22-314		C22-316		C22-318	
		Replacement stator		C22-384		C22-386		C22-388	

Valves with 1/4-28 fitting details for 1/8" tubing, 1.50 mm ports (.060")

Model

<div>SPECS</div> <div>100 psi gas/ 250 psi liq</div> <div>75°C max</div> <div>PPS stator</div> <div>Valcon E2 rotor</div>	Includes multicolored Cheminert 1/4-28 flangeless fittings for 1/8" tubing.		Standard electric actuator: 110 VAC for USA 110/230 VAC to 24 VDC power supply for international.		Sample loops are not included with valves. Order separately.		<div>Low pressure</div> <div>1/4-28 Internal</div> <div>1/8"1.50 mm</div>		
			Microelectric actuator: 24 VDC, with 110/230 VAC to 24 VDC power supply.						
			<div>4 Port</div> <div>Prod NoPrice</div>		<div>6 Port</div> <div>Prod NoPrice</div>		<div>8 Port</div> <div>Prod NoPrice</div>		<div>10 Port</div> <div>Prod NoPrice</div>
	Manual		C22-6184		C22-6186		C22-6188		C22-6180
	With pneumatic actuator		C22-6184A		C22-6186A		C22-6188A		C22-6180A
With standard electric actuator		C22-6184E		C22-6186E		C22-6188E		C22-6180E	
With microelectric actuator		C22-6184EH		C22-6186EH		C22-6188EH		C22-6180EH	
Replacement valve		C22-6184D		C22-6186D		C22-6188D		C22-6180D	
Replacement rotor		C22-614		C22-616		C22-618		C22-610	
Replacement stator		C22-684		C22-686		C22-688		C22-680	

Sample loops

for Model C22

Loops include flangeless fittings with white color nuts. Loops smaller than 500 µl are made from 1/16" OD tubing; loops 500 µl or bigger are made from 1/8" OD tubing.

Volume	FEP		PTFE		PEEK	
	Prod No	Price	Prod No	Price	Prod No	Price
20 µl	CFSL20FEP		CFSL20TF	\$17.50	CFSL20PK	
50 µl	CFSL50FEP		CFSL50TF		CFSL50PK	
100 µl	CFSL100FEP		CFSL100TF		CFSL100PK	
250 µl	CFSL250FEP		CFSL250TF		CFSL250PK	
500 µl	CFSL500FEP		CFSL500TF		CFSL500PK	
1 ml	CFSL1KFEP		CFSL1KTF		CFSL1KPK	
2 ml	CFSL2KFEP		CFSL2KTF		CFSL2KPK	



Model C22
1/4-28 fittings

Low Pressure

Internal sample injectors, 1/16" Valco ZDV fittings, 0.40 mm ports (.016")

Model C24Z

Low pressure

Internal sample

10-32 ZDV

1/16" 0.40 mm



Includes Valco ZDV
PEEK nuts and ferrules.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for
international.
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supply.

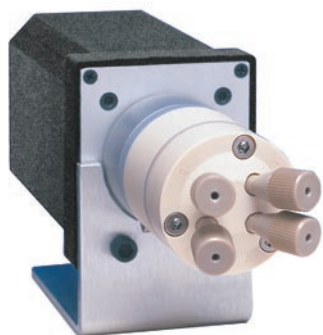
SPECS

100 psi gas/ 250 psi liq
75°C max
PPS stator
Valcon E2 rotor

Sample volume	0.2 µl		0.5 µl		1 µl	
	Prod No	Price	Prod No	Price	Prod No	Price
Manual	C24Z-2184-.2		C24Z-2184-.5		C24Z-2184-1	
With pneumatic actuator	C24Z-2184-.2A		C24Z-2184-.5A		C24Z-2184-1A	
With standard electric actuator	C24Z-2184-.2E		C24Z-2184-.5E		C24Z-2184-1E	
With microelectric actuator	C24Z-2184-.2EH		C24Z-2184-.5EH		C24Z-2184-1EH	
Replacement valve	C24Z-2184-.2D		C24Z-2184-.5D		C24Z-2184-1D	
Replacement rotor	C24-10R-.2		C24-10R-.5		C24-10R-1	
Replacement stator	C24Z-1C8		C24Z-1C8		C24Z-1C8	

OPTIONS

- 2.0 µl sample volumes are also available.
- Purge option. *See more information below.*
- Other polymeric rotors and stators are available. Consult the factory for prices and information.



Model C24Z
1/16" ZDV fittings

PURGE OPTION

The purge option permits a flow of liquid or gas to flush the valve interior of potentially toxic or corrosive components. We recommend this option for applications using materials (such as salt solutions) that could damage the metal parts of the valve.

Consult our technical staff for details.

MORE INFORMATION

Actuators	
.....	page 195
Microelectric ..	188-189
Standard electric ...	193
Materials	
.....	254-255
.....	256
Metals
Polymers	257
Standoff	
Valve rotors....	205-207
assemblies	

Internal sample injectors, 1/4-28 for 1/16" tubing, 0.50 mm ports (.020")

Model C24

SPECS
 100 psi gas/ 250 psi liq
 75°C max
 PPS stator
 Valcon E2 rotor

Includes multicolored
 Cheminert 1/4-28
 flangeless fittings for
 1/16" tubing.

Standard electric actuator:
 110 VAC for USA
 110/230 VAC to 24 VDC power supply for
 international.
 Microelectric actuator:
 24 VDC, with 110/230 VAC to 24 VDC
 power supply.



Low pressure

Internal sample

1/4-28 Internal

1/16" 0.50 mm

OPTIONS

- 0.2 µl sample volumes are also available.
- Purge option
- Other polymeric rotors and stators are available. Consult the factory for prices and information.

Sample volume

0.5 µl

1 µl

2 µl

	Prod No	Price	Prod No	Price	Prod No	Price
Manual	C24-2184-.5		C24-2184-1		C24-2184-2	
With pneumatic actuator	C24-2184-.5A		C24-2184-1A		C24-2184-2A	
With standard electric actuator	C24-2184-.5E		C24-2184-1E		C24-2184-2E	
With microelectric actuator	C24-2184-.5EH		C24-2184-1EH		C24-2184-2EH	
Replacement valve	C24-2184-.5D		C24-2184-1D		C24-2184-2D	
Replacement rotor	C24-10R-.5		C24-10R-1		C24-10R-2	
Replacement stator	C24-1C8		C24-1C8		C24-1C8	



Model C24
 1/4-28 fittings

Injector and Switching Valve Applications

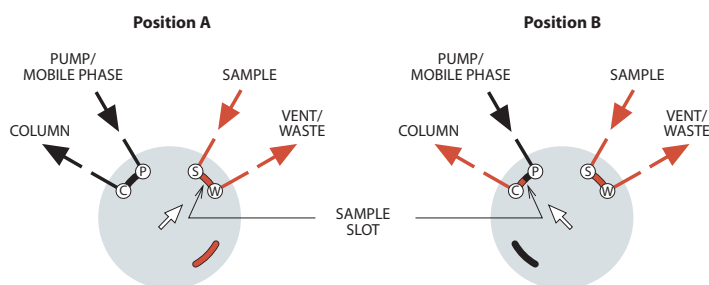
These illustrations show basic sample injection techniques using Valco two position valves. With rare exceptions, there is no difference between switching valves and external volume sampling valves, so the same valve can be used for either function.

The unique advantage of 8 and 10 port valves is that they reduce extra column volume by combining sampling and switching functions in a single valve. This minimizes expense, maintenance, service, and risk of leaks as compared to multiple 6 port valve systems.

4 port internal sample injector

MICROVOLUME SAMPLE INJECTION

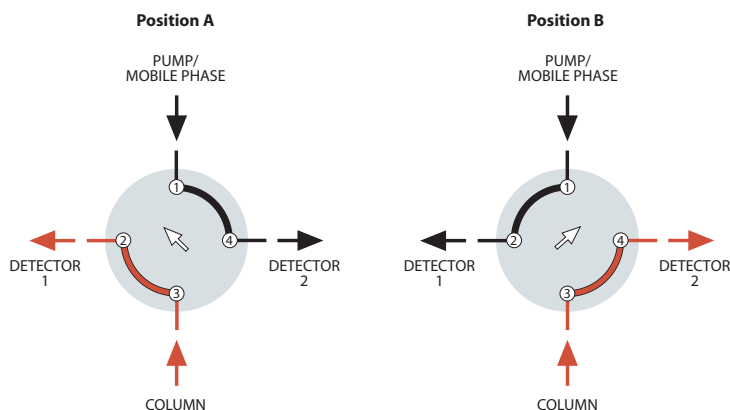
The internal sample (fixed volume) flowpath is used when very small sample volumes are required. The sample size is determined by a passage engraved on the valve rotor, allowing precise, repeatable injections. In Position A, the sample flows through the sample passage while the mobile phase flows through to the column. The third passage is inactive. In Position B, the sample passage is in line with the column and the mobile phase injects the contents of the sample passage into the column. The passage which was inactive in Position A allows the sample to continue flowing without interruption.



4 port switching valve

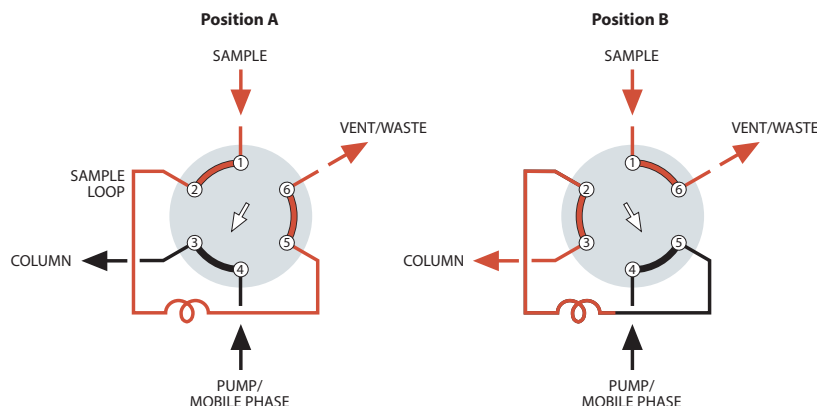
DETECTOR SELECTION FROM TWO COLUMNS OR ONE COLUMN AND AUXILIARY CARRIER

This unique configuration allows analyses of different parts of one analysis with two different detectors, without splitting or multiple injections.



Injector and Switching Valve Applications

6 port external sample injector

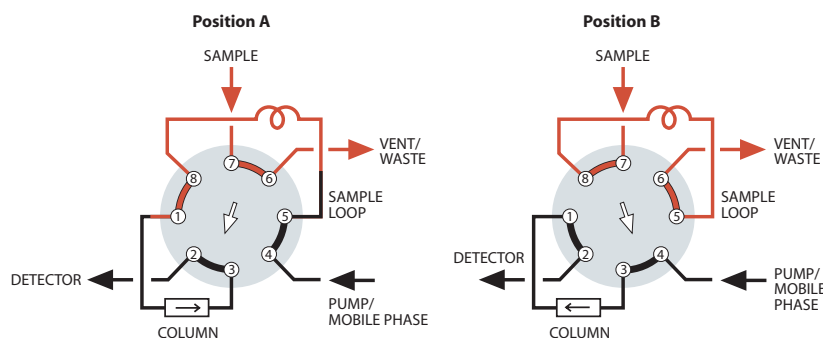


SAMPLE INJECTION

With the valve in Position A, sample flows through the external loop while the mobile phase flows directly through to the column. When the valve is switched to Position B, the sample contained in the sample loop and valve flow passage is displaced by the mobile phase and is carried into the column. *Note:* Especially for partial-filled loops, the flow direction of the mobile phase through the loop should be opposite (backflush) to the flow direction during the loading of the loop.

More applicationspages 118-119

8 port sampling/switching

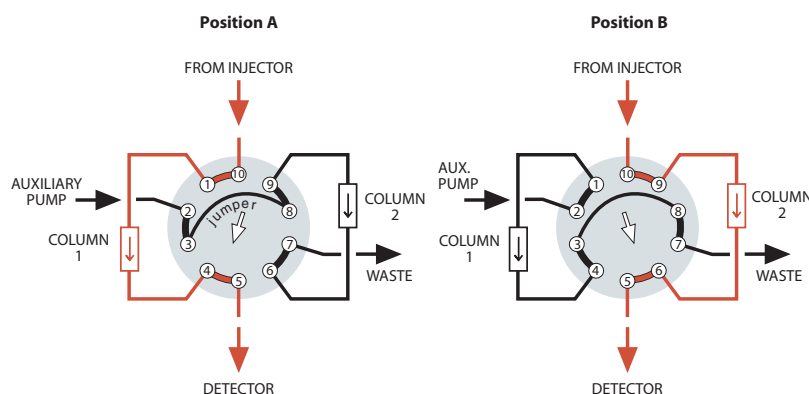


LOOP SAMPLING WITH BACKFLUSH TO DETECTOR

One valve performs the functions of sampling and backflush valves, simplifying operation and reducing cost. When components of interest are detected, the strongly retained components are backflushed and removed from the column without temperature programming.

More applications page 119

10 port sampling/switching



ALTERNATE COLUMN REGENERATION

When columns must be regenerated following each analysis, this technique permits automation of the process. While one column performs the analysis, the second column undergoes regeneration through use of an auxiliary pump. Once the first analysis is complete, the valve is switched and the regenerated column is ready for analytical use.

More applicationspages 120-121

NEW Selectors – Nanovolume UHPLC

NEW 15,000 psi UHPLC Nanovolume selectors, 1/32" Valco fittings, 150 micron ports (.006")

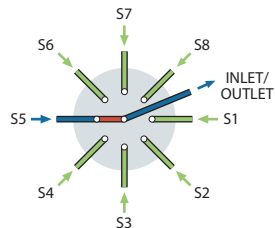
Model C75NX

15,000 psi
Stream selector
1/32" **150 µm**

Includes 1/32" Valco stainless steel fittings.



Manual version not available.
Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for international.
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC power supply.



SPECS

15,000 psi liq
50°C max
Stainless stator
with inert coating
Valcon E3 rotor

OPTIONS

- 100 micron (.004") bore
- 250 micron (.010") bore
- 10,000 and 20,000 psi versions available
- 4 positions

	6 Position		8 Position		10 Position	
	Prod No	Price	Prod No	Price	Prod No	Price
Coated stainless stator						
With pneumatic actuator	C75NX-6696A		C75NX-6698A		C75NX-6690A	
With standard electric actuator	C75NX-6696E		C75NX-6698E		C75NX-6690E	
With microelectric actuator	C75NX-6696EMH		C75NX-6698EMT		C75NX-6690EMT	
Replacement valve	C75NX-6696D		C75NX-6698D		C75NX-6690D	
Replacement rotor	C75N-66R6		C75N-66R8		C75N-66R0	
Replacement stator	C75N-6C96		C75N-6C98		C75N-6C90	



Model C75NX
1/32" Valco stainless
fittings

**NEW 10,000 psi UHPLC microbore selectors,
1/16" Valco fittings, 250 micron ports (.010")**

Model C75H

SPECS

10,000 psi liq
50°C max
 Stainless stator
 with inert coating
 Valcon E3 rotor



Includes 1/16" Valco
 stainless steel fittings.

Manual version not available.

Standard electric actuator:

110 VAC for USA

110/230 VAC to 24 VDC power supply for
 international.

Microelectric actuator:

24 VDC, with 110/230 VAC to 24 VDC
 power supply.

10,000 psi

Stream selector

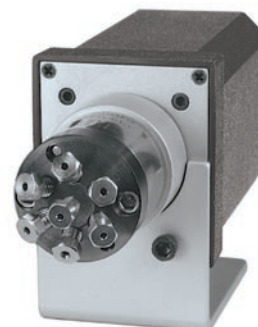
1/16"

250 µm

OPTIONS

- 150 micron (.006") bore
- 15,000 psi version available
- 4 positions

	6 Position		8 Position		10 Position	
	Prod No	Price	Prod No	Price	Prod No	Price
Coated stainless stator						
With pneumatic actuator	C75H-1696A		C75H-1698A		C75H-1690A	
With standard electric actuator	C75H-1696E		C75H-1698E		C75H-1690E	
With microelectric actuator	C75H-1696EMH		C75H-1698EMT		C75H-1690EMT	
Replacement valve	C75H-1696D		C75H-1698D		C75H-1690D	
Replacement rotor	C75-16R6		C75-16R8		C75-16R0	
Replacement stator	C75-1C96		C75-1C98		C75-1C90	



Model C75H
 1/16" Valco stainless
 fittings

Selectors – High Pressure

HPLC stream selector, 1/16" Valco ZDV fittings, 0.40 mm ports (.016")

Model C5

5,000 psi

Stream selector

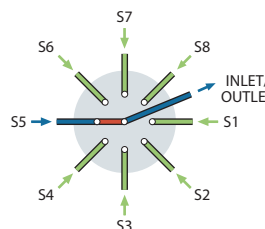
10-32 ZDV

1/16"

0.40 mm

Includes stainless steel nuts and ferrules of the stator material. Valves with PAEK stators have PEEK nuts and ferrules.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for international.
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC power supply.



SPECS

5000 psi liq
75°C max
Metal stator
Valcon H rotor

5000 psi liq
50°C max
PAEK stator
Valcon E rotor

	4 Position		6 Position		8 Position		10 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
N60 stainless stator								
Manual	C5-2004		C5-2006		C5H-2008		C5H-2000	
With pneumatic actuator	C5-2004A		C5-2006A		C5H-2008A		C5H-2000A	
With standard electric actuator	C5-2004E		C5-2006E		C5H-2008E		C5H-2000E	
With microelectric actuator	C5-2004EMH		C5-2006EMH		C5H-2008EMT		C5H-2000EMT	
Replacement valve	C5-2004D		C5-2006D		C5H-2008D		C5H-2000D	
Replacement rotor	C5-20R4		C5-20R6		C5-20R8H		C5-20R0H	
Replacement stator	C5-2C04		C5-2C06		C5-2C08H		C5-2C00H	
PAEK stator								
Manual	C5-2344		C5-2346		C5H-2348		C5H-2340	
With pneumatic actuator	C5-2344A		C5-2346A		C5H-2348A		C5H-2340A	
With standard electric actuator	C5-2344E		C5-2346E		C5H-2348E		C5H-2340E	
With microelectric actuator	C5-2344EMH		C5-2346EMH		C5H-2348EMT		C5H-2340EMT	
Replacement valve	C5-2344D		C5-2346D		C5H-2348D		C5H-2340D	
Replacement rotor	C5-23R4		C5-23R6		C5-23R8H		C5-23R0H	
Replacement stator	C5-2C44		C5-2C46		C5-2C48H		C5-2C40H	
Titanium stator								
Manual	C5-2034		C5-2036		C5H-2038		C5H-2030	
With pneumatic actuator	C5-2034A		C5-2036A		C5H-2038A		C5H-2030A	
With standard electric actuator	C5-2034E		C5-2036E		C5H-2038E		C5H-2030E	
With microelectric actuator	C5-2034EMH		C5-2036EMH		C5H-2038EMT		C5H-2030EMT	
Replacement valve	C5-2034D		C5-2036D		C5H-2038D		C5H-2030D	
Replacement rotor	C5-20R4		C5-20R6		C5-20R8H		C5-20R0H	
Replacement stator	C5-2C34		C5-2C36		C5-2C38H		C5-2C30H	

OPTIONS

- 2", 3", 4", and 6" standoffs
- Hastelloy C stator
- Optional 0.15 mm (.006") and 0.25 mm (.010") bores available
- Optional 0.75 mm (.030") bore for Prep HPLC available

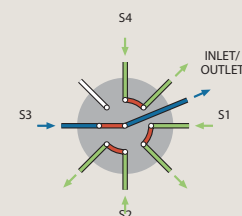
MORE INFORMATION

Manifolds page 33

OPTIONAL FLOWPATH

Model C5F, the flow-through version, is similar to the C5 but its non-selected streams continue flowing through individual outlets. 3, 4, and 5 positions are available.

Consult the factory for C5F prices and information.



Model C5F
schematic diagram



Model C5
6 positions
1/16" ZDV fittings

Selectors – High Pressure

HPLC column selector system with 1/16" Valco ZDV fittings, 0.40 mm ports (.016")

Model C5

SPECS

5000 psi liq
75°C max
 Metal stator
 Valcon H rotor

5000 psi liq
50°C max
 PAEK stator
 Valcon E rotor

The system comprises two stream selection valves mounted on a single microelectric actuator, which can be controlled manually, via remote logic level signal, or by RS-232 interface (RS-485 optional). See plumbing diagram below.

Includes stainless steel nuts and ferrules of the stator material.

Valves with PAEK stators have PEEK nuts and ferrules.

Includes microelectric actuator: 24 VDC, with 110/230 VAC to 24 VDC power supply.

5,000 psi**Column selector system****10-32 ZDV****1/16" 0.40 mm****OPTIONS**

- 2", 3", 4", and 6" standoffs
- Hastelloy C stator
- Optional 0.25 mm (.010") bore available
- Optional 0.75 mm (.030") bore for Prep HPLC available

N60 stainless stator

System

Replacement valve

Replacement rotor

Replacement stator*

PAEK stator

System

Replacement valve

Replacement rotor

Replacement stator*

6 Column

Prod No

Price

8 Column

Prod No

Price

10 Column

Prod No

Price

C5-2006EMTD

C5-2006D

C5-20R6

C5-2C06

C5H-2008EMTD

C5H-2008D

C5-20R8H

C5-2C08H

C5H-2000EMTD

C5H-2000D

C5-20R0H

C5-2C00H

C5-2346EMTD

C5-2346D

C5-23R6

C5-2C46

C5H-2348EMTD

C5H-2348D

C5-23R8H

C5-2C48H

C5H-2340EMTD

C5H-2340D

C5-23R0H

C5-2C40H

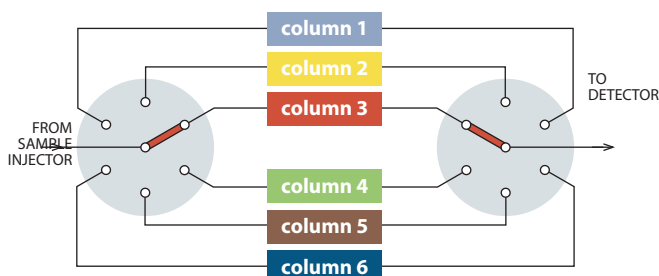
* See note on ordering stators, below.

RS-232 interface cable

Prod No

Price

I-22697

**MORE INFORMATION****Actuators**

Air page 194

Microelectric .. 190-191

Standard electric ... 193

Loop fill port

assembly 41

Materials

Metals..... 254-255

Polymers 256

Valve rotors..... 257

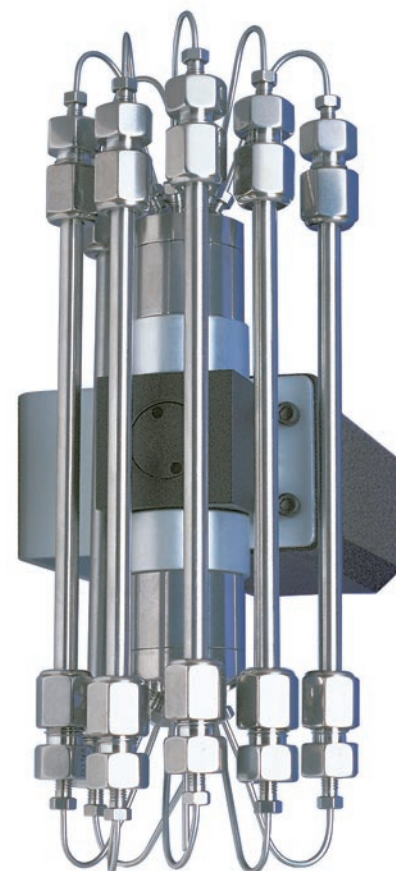
Standoff

assemblies 205-207

ORDERING STATORS

Valves for dual drive assemblies have mirror image stators. Consult Technical Support for correct product number before ordering.

Both valves use the same rotor.

**Model C5 system**

Columns not included

Selectors – Low Pressure

Stream selector, 1/16" Valco ZDV fittings, 0.75 mm ports (.030")

Model C25Z

Low pressure

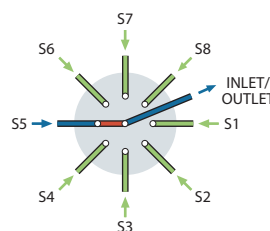
Stream selector

10-32 ZDV

1/16" 0.75 mm

Includes Valco ZDV
PEEK nuts and ferrules.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power
supply for international.
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supply.



SPECS

100 psi gas/ 250 psi liq
75°C max
PPS stator
Valcon E2 rotor

OPTIONS

- 4 and 12 positions available
- 2", 3", 4", and 6" standoffs
- Other polymeric materials are available. Consult the factory.

	6 Position		8 Position		10 Position		14 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual	C25Z-3186		C25Z-3188		C25Z-3180		C25Z-31814	
With pneumatic act.	C25Z-3186A		C25Z-3188A		C25Z-3180A		C25Z-31814A	
With std electric act.	C25Z-3186E		C25Z-3188E		C25Z-3180E		C25Z-31814E	
With microelectric act.	C25Z-3186EMH		C25Z-3188EMH		C25Z-3180EMH		C25Z-31814EMH	
Replacement valve	C25Z-3186D		C25Z-3188D		C25Z-3180D		C25Z-31814D	
Replacement rotor	C15-310		C15-310		C15-310		C25Z-325	
Replacement stator	C25Z-386		C25Z-388		C25Z-380		C25Z-38-14	

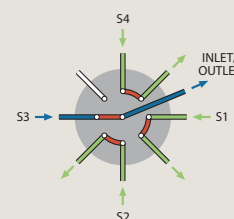


Model C25Z
10 positions
1/16" ZDV fittings

OPTIONAL FLOWPATH

Model C25ZF, the flow-through version, is similar to the C25Z but its non-selected streams continue flowing through individual outlets, instead of being dead-ended. 3, 4, 5, 6, and 7 positions are available.

Consult the factory for C25ZF prices and information.



Selectors – Low Pressure

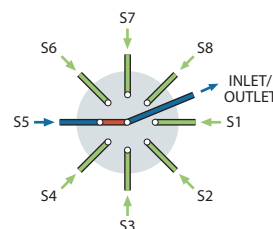
Stream selector, 1/4-28 fittings for 1/16" tubing, 0.75 mm ports (.030")

Model C25

SPECS
100 psi gas/ 250 psi liq
75°C max
PPS stator
Valcon E2 rotor

Includes multicolored
Cheminert 1/4-28
flangeless fittings
for 1/16" tubing.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power
supply for international.
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supply.



Low pressure

Stream selector

1/4-28 Internal

1/16" 0.75 mm

OPTIONS

- 2", 3", 4", and 6" standoffs
- CTFE stator

	4 Position		6 Position		8 Position		10 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual	C25-3184		C25-3186		C25-3188		C25-3180	
With pneumatic act.	C25-3184A		C25-3186A		C25-3188A		C25-3180A	
With std electric act.	C25-3184E		C25-3186E		C25-3188E		C25-3180E	
With microelec act.	C25-3184EMH		C25-3186EMH		C25-3188EMH		C25-3180EMH	
Replacement valve	C25-3184D		C25-3186D		C25-3188D		C25-3180D	
Replacement rotor	C25-314		C25-316		C25-318		C25-310	
Replacement stator	C25-384		C25-386		C25-388		C25-380	

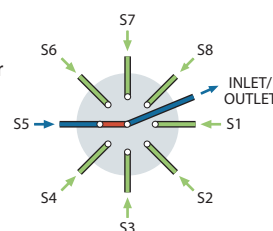
Stream selector, 1/4-28 fittings for 1/8" tubing, 1.50 mm ports (.060")

Model C25

SPECS
100 psi gas/ 250 psi liq
75°C max
PPS stator
Valcon E2 rotor

Includes multicolored
Cheminert 1/4-28
flangeless fittings
for 1/8" tubing.

Standard electric actuator:
110 VAC for USA
110/230 VAC to 24 VDC power supply for
international.
Microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supply.



Low pressure

Stream selector

1/4-28 Internal

1/8" 1.50 mm

OPTIONS

- 2", 3", 4", and 6" standoffs
- CTFE stator

MORE INFORMATION

Actuators

Air page 194
Microelectric .. 190-191
Standard electric ... 193
Materials
Metals..... 254-255
Polymers 256
Valve rotors. 257
Standoff
assemblies 205-207

	4 Position		6 Position		8 Position		10 Position	
	Prod No	Price	Prod No	Price	Prod No	Price	Prod No	Price
Manual	C25-6184		C25-6186		C25-6188		C25-6180	
With pneumatic act.	C25-6184A		C25-6186A		C25-6188A		C25-6180A	
With std electric act.	C25-6184E		C25-6186E		C25-6188E		C25-6180E	
With microelec act.	C25-6184EMH		C25-6186EMH		C25-6188EMH		C25-6180EMH	
Replacement valve	C25-6184D		C25-6186D		C25-6188D		C25-6180D	
Replacement rotor	C25-614		C25-616		C25-618		C25-610	
Replacement stator	C25-684		C25-686		C25-688		C25-680	

OPTIONAL FLOWPATH

Model C25F is the flow-through version of C25. (See discussion on facing page.) 3, 4, 5, 6, and 7 positions are available.

Consult the factory for C25F prices and information.



Model C25
10 position
1/4-28 fittings

CHROMalytic TECHNOlogy Pty Ltd AUSTRALIAN Distributors e-mail: sales@chromtech.net.au Tel: 03 9762 2034

Selectors – Low Pressure

Stream selector, 1/16" Valco ZDV fittings, 0.75 mm ports (.030")

Model C35Z

Low pressure

Stream selector

10-32 ZDV

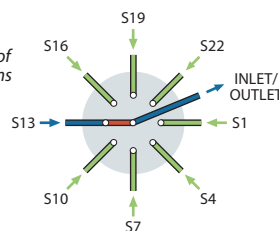
1/16"

0.75 mm

Includes Valco ZDV
PEEK nuts and ferrules.

Available only with microelectric actuator:
24 VDC, with 110/230 VAC to 24 VDC
power supply.

(For clarity, only eight of
the twenty-four streams
are illustrated.)



SPECS

100 psi liq
50°C max
PPS stator
Valcon E2 rotor

OPTIONS

- Optional bore:
0.5 mm (.020")
1.0 mm (.040")
- 2", 3", 4", and 6"
standoffs
- Consult the factory
for optional materials.

20 Position

Prod No

Price

24 Position

Prod No

Price

26 Position

Prod No

Price

With microelectric actuator

C35Z-31820EMT

C35Z-31824EMT

C35Z-31826EMT

Replacement valve

C35Z-31820D

C35Z-31824D

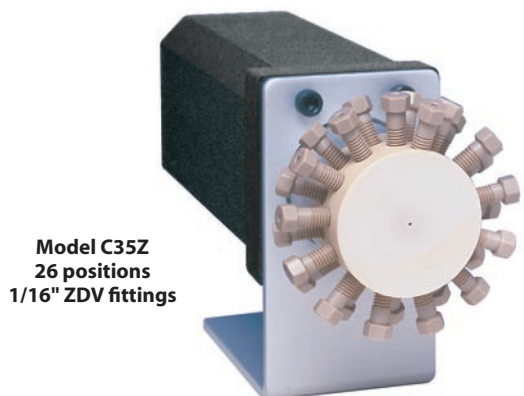
C35Z-31826D

Replacement rotor

C35Z-31R20

C35Z-31R20

C35Z-31R20



Model C35Z
26 positions
1/16" ZDV fittings

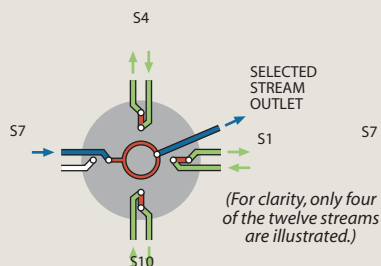
OPTIONAL FLOWPATHS

Model C35Z valves select and isolate one of 20-26 streams, with the remainder dead-ended.

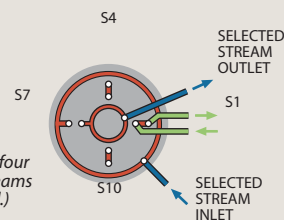
Model C35ZF, the flow-through version, is similar to the C35Z but its non-selected streams continue flowing through individual outlets. 10, 12, and 13 positions are available.

Model C35ZT, the trapping version, is similar to the C35ZF but has a second selected port. Non-selected streams continue flowing. 10, 12, and 13 positions are available.

Call for pricing and information.



Model C35ZF
schematic



Model C35ZT
schematic

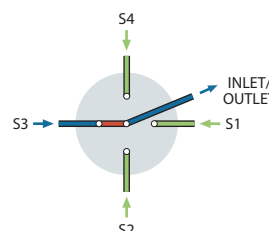
Stream selector, 1/2-20 fittings for 1/4" tubing, 4.6 mm ports (.180")

Model C45

SPECS
100 psi liq
50°C max
 PPS stator
 Valcon TF rotor

Manual version not available.
 Includes Cheminert 1/2-20 flangeless fittings for 1/4" tubing, Delrin nuts and CTFE ferrules.

Standard electric actuator:
 110 VAC for USA
 110/230 VAC to 24 VDC power supply for international.
 Microelectric actuator:
 24 VDC, with 110/230 VAC to 24 VDC power supply.



Low pressure

Stream selector

1/2-20 Internal

1/4"

4.6 mm

OPTIONS

- 2", 3", 4", and 6" standoffs
- Consult the factory for optional materials.
- 8 position selectors are available with 3 mm (.120") ports

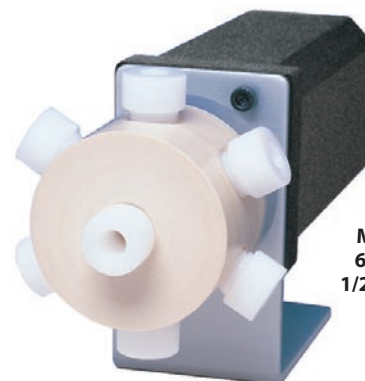
	4 Position		6 Position	
	Prod No	Price	Prod No	Price
With pneumatic actuator	C45-9784A		C45-9786A	
With std electric actuator	C45-9784E		C45-9786E	
With microelectric actuator	C45-9784EMT		C45-9786EMT	
Replacement valve	C45-9784D		C45-9786D	
Replacement rotor	C45-97R4		C45-97R6	

Fittings for C45 valves

For additional 1/2-20 fittings and adapters, see page 72.



	Prod No	Price
Delrin nut	CFL-4D	
CTFE nut	CFL-4KF	
PPS nut	CFL-4PPS	
CTFE ferrule	CFL-CB4KF-S	



Model C45
6 positions
1/2-20 fittings

MORE INFORMATION

Actuators

Air page 194

Microelectric .. 190-191

Standard electric ... 193

Materials

Metals..... 254-255

Polymers 256

Valve rotors..... 257

Standoff

assemblies 205-207