Actuators and Accessories

Two position valves switch back and forth between Load and Inject, or Position A and Position B. Selectors operate in continuous revolutions by incremental steps. There are several ways to actuate each type of valve, along with a number of supporting controllers and devices to interface the actuators with computer-controlled systems.

With the exception of low pressure Cheminert selectors, we recommend that selectors be purchased with air or electric actuators. While a manual detent assembly is available, the higher turning torque of our other selector designs makes them more difficult to position accurately by hand.

Manual Actuation

Simplicity and low cost are the main advantages of manual actuation. Some models can be ordered with position feedback, an option which sends a signal to start a data system when the valve is switched.

Knobs
page 204

Air Actuation

Air actuators are useful in situations where any spark could be disastrous or where there is no electricity available. They are small, relatively inexpensive, very rugged and dependable, and field-serviceable. Low gas consumption and lightweight, compact construction make the air actuator suitable for aerospace flight hardware applications as well as laboratory or process applications.

With the addition of a DVI (digital valve interface) to translate the timed event signals into the necessary air pulses, air actuators can be automatically switched by a data system, integrator, or controller such as our DVSP (digital valve sequence programmer) or SVI (serial valve interface).

Air actuator
Two position, page 195
Selector, page 194

MORE INFORMATION

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Electric Actuation

The **microelectric actuator** features automatic valve alignment, high-speed switching, compact size, 24 VDC power input, and reversible direction (in the selector model).

If lower cost outranks those factors in your consideration, our **standard electric actuator** (110/230 VAC) offers a dependable, economical solution.

Both types of electric actuators can be operated manually with a controller assembly that features position-indicating LEDs and a toggle switch, but can be easily connected to an external data system for fully automated control. The microelectric actuator has built-in multidrop RS-232 (RS-485 optional) for bidirectional communications. The SVI (serial valve interface) was designed specifically to interface our standard electric actuators with RS-232 compatible systems, allowing control of up to six actuators via modem, BASIC program, or Valco-supplied PC software.

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

Microelectric actuator
Two position, page 189
For selectors (multiposition), page 190

Standard electric actuator
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Universal actuator
page 192

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page 205

Standoff Assemblies

All valves, no matter what their actuation mode, can be ordered with a standoff assembly. The standoff is an extension shaft mounted between the handle or actuator and the valve, allowing the valve to be installed within a heated zone while the actuator or handle remains outside at ambient temperature. The standoff extends through the oven wall, and is secured by a clamp ring supplied with the assembly. Standard standoff assembly lengths are 2", 3", 4", and 6". Other lengths can be special-ordered at additional cost.

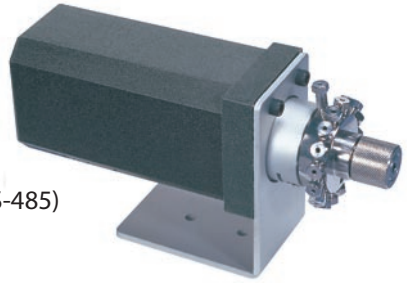
Right Angle Drive

Some installations don't allow the valve and actuator to be installed in a typical in-line configuration. The RAD (right angle drive) is a 90° gearbox which permits the actuator or handle to be installed at a right angle to the valve. The RAD fits all VICI electric and air actuators.

ight angle drive
R page 204

Microelectric Actuators

- CE certified
- Automatic alignment
- Manual control with position indication
- Remote control by contact closures or TTL logic level signals
- RS-232 bidirectional communication (optional RS-485)
- Two position and selector versions
- Universal power supply, 110/230 VAC to 24 VDC
-



The microelectric actuator offers Valco dependability in a unit which is less than half the size of our standard model. The actuator consists of a control module, a stepper motor/gearbox assembly, a manual remote control, interconnecting cables, and a 110/230 VAC to 24 VDC power supply. The composite version combines the stepper motor/gearbox assembly with the control module. The RS-232 interface cable, if required, must be ordered separately.

Since different valve models have varying actuation torque requirements, there are five microelectric actuator models for two position valves – EQ, EH, EP, ED, and ET – and two versions for multiposition – EMH and EMT. Consult the chart on the respective ordering information page to determine which model meets your requirements. When a valve and actuator are ordered at the same time, the proper actuator is supplied automatically.

An actuator can be specified with closemount hardware, with a standoff, or with just the standoff mounting hardware, if your valve already has a standoff. The microelectric actuator is designed for room temperature use. Valves which will be mounted in ovens require a standoff assembly, which locates the actuator out of the heated zone.

MORE INFORMATION

Microelectric actuators
For two position 189
For selectors . . . 190-191

Mounting Hardware

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Right angle drive 204
Standoff assembly 205
Standoff mounting hardware 205

TECH TIP

Electric actuators can be directly controlled by signals from microprocessor-based instruments, data systems, or valve programmers, unlike air actuators, which require an interface to convert the signal to an air pulse.

ORDER TIP

To purchase a ***valve with a microelectric actuator installed***, see valve ordering information.

Valco

Injectors and valves . . . . pp 102-116
Selectors 122-133

Cheminert

Injectors and valves 152-167
Selectors 170-177

- CE certified
- Stall-sensing circuitry – no mechanical microswitches
- High speed switching – <100 ms in EQ model
- A model for every valve we sell

The two position microelectric actuator features exclusive stall-sensing circuitry which eliminates problems associated with valve/actuator misalignment. Power to the actuator motor is switched off when the driver pin goes against the stop of the valve cutout – no sooner, no later – and it's all done without any mechanical microswitches. Not only does this mean that alignment problems are a thing of the past, it means that you can stock one actuator for valves that turn 30°, 36°, 45°, 60°, 90°, or anything in between.

During initialization, the valve rotates at moderate speed while the actuator waits to sense the stall. Once the rotation angle has been measured and confirmed by repetition, the angle is memorized and actuation takes place at maximum speed. Valve position memory is maintained even in the event of a power failure. There is nothing more to do unless you wish to install a valve with a different angle of rotation. In that event, cycling the actuator with no valve mounted sets up reinitialization.

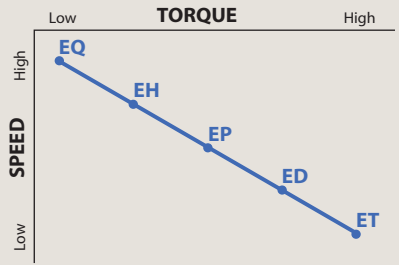
WHICH MODEL FOR WHICH TWO POSITION VALVE?

Fitting size	Valve type	Actuator model	Valve type	Actuator model
	Valco GC		**Valco HPLC**	
1/32"	W	EH	W	EP
1/16"	W	EH	W	EP
1/16"	UW	ED	UW	ED
1/8"	UW	ED	UW	ED
1/4"	MW	ET	—	—

Cheminert HPLC & Low Pressure

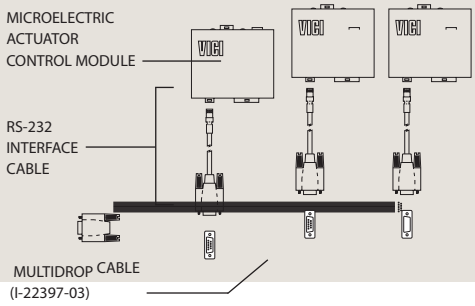
All valves EH

SPEED AND TORQUE: Inversely proportional



TECH TIP

Multi-drop cables permit a single serial port (RS-232) to control multiple microelectric actuators.



Microelectric actuators *for two position valves*

Standard voltage 24 VDC. Includes autosensing 24 VDC power supply.
Standoff version includes a 2" standoff. 3", 4", and 6" standoffs are also available.
Consult the chart below to determine which actuator model is best suited for your valve.

Description	**With closemount assembly** *Prod No*	**With 2" standoff assembly** *Prod No*	**For use with existing standoff** *Prod No*
Highest speed actuator	EQ	EQ2	EQS
High speed actuator	EH	EH2	EHS
Medium torque actuator	EP	EP2	EPS
High torque actuator	ED	ED2	EDS
Highest torque actuator	ET	ET2	ETS

RS-232 interface cable

Description	*Prod No*
RS-232 interface cable	I-22697

Multi-drop cables *for multiple microelectric actuators*

Multi-drop cables permit a single serial port (RS-232) to control multiple microelectric two position and multiposition actuators. Cables have one female DB9 and 2 to 8 male DB9 connectors – approximately 6" long.
Note: The RS-232 interface cable (I-22697), above, is required for ***each*** actuator.

No. of actuators to be controlled	*Prod No*
2	I-22897-02
3	I-22897-03
4	I-22897-04
5	I-22897-05
6	I-22897-06
8	I-22897-08

Microelectric Actuators for Selectors

- CE certified
- Direction reversal
- Position indication
  - LED display
  - RS-232 output
  - BCD 5V negative true output
- Manual control
  - Step and home functions
  - Clockwise and counterclockwise functions
- Remote control
  - Step and home functions with contact closure
  - Direct position access with BCD 5V negative true input
  - Direct position access with RS-232 input (RS-485 optional)
- Automatic self-alignment with keyed valves and standoffs

One actuator can be used on any selector, from 2 to 96 positions – you tell the actuator how many stops to make through its 360° of rotation. So you can stock only one type of actuator even if you have 4, 6, 8, 10, 12, and 16 position valves. Valve position memory is maintained even in the event of a power failure.

The direction reversal feature means that if a 6 position stream selection valve is on stream 1 and you select stream 6, you have the option of stepping "backwards" to stream 6 instead of passing through 2, 3, 4, and 5. The RS-232 input offers various commands like position access, direction control, shortest route, etc. (The RS-232 cable must be ordered separately.)

MORE INFORMATION

Microelectric actuators
For two position 189

Mounting Hardware

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hardware . . . . . page 208
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Standoff assembly 205
Standoff mounting
hardware 205

ORDER TIP

To purchase a ***valve with a microelectric actuator installed***, see valve ordering information.

Valco

Injectors and
valves . . . . pp 102-116
Selectors 122-133

Cheminert

Injectors and
valves 152-167
Selectors 170-177

Microelectric actuators *for selectors*

Standard voltage 24 VDC. Includes autosensing 24 VDC power supply.
Standoff version includes a 2" standoff. 3", 4", and 6" standoffs are also available.
Consult the chart below to determine which actuator model is best suited for your valve.

Description	**With keyed closemount assembly** *Prod No*	**With keyed 2" standoff assembly** *Prod No*	**For use with existing standoff** *Prod No*
High speed actuator	EMH	EMH2	EMHS
High torque actuator	EMT	EMT2	EMTS

RS-232 interface cable

Description	*Prod No*
RS-232 interface cable	I-22697

Multi-drop cables *for multiple microelectric actuators*

Multi-drop cables permit a single serial port (RS-232) to control multiple microelectric two position and selector actuators. Cables have one female DB9 and 2 to 8 male DB9 connectors – approximately 6" long.
Note: The RS-232 interface cable (I-22697), above, is required for ***each*** actuator.

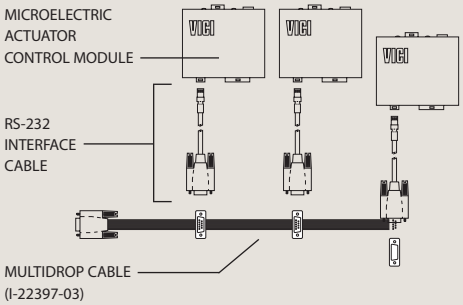
No. of actuators to be controlled	*Prod No*
2	I-22897-02
3	I-22897-03
4	I-22897-04
5	I-22897-05
6	I-22897-06
8	I-22897-08

WHICH MODEL FOR WHICH SELECTOR?

Valve model		Actuator model
Valco		
All valves		EMT
Cheminert high pressure		
C5	4, 6 positions	EMH
	8, 10 positions	EMT
C75NX		EMH
C75H		EMH
Cheminert low pressure		
C25Z		EMH
C25		EMH
C35Z		EMH
C45		EMT

TECH TIP

Multi-drop cables permit a single serial port (RS-232) to control multiple microelectric actuators.



ABOUT STANDOFFS

Keyed standoff assemblies are used with selector (multiposition) microelectric actuators, to key the valve body to the actuator and standoff so that the actuators can self-align and operate valves with any number of positions.

Valco selectors are not keyed unless ordered with a microelectric actuator. To install a microelectric actuator on an existing Valco selector, the key (pin) must be removed from the actuator clamp ring assembly. This can be done easily with a pair of pliers.

See page 207, top and bottom illustrations, for drawings of keyed standoff assemblies with multiposition microelectric actuators.

NEW OEM – Universal Actuators

- One actuator works with two position valves *and* selectors
- Simplified, universal communication protocol
- Variety of interfaces
- Three versions for various valve torque requirements

Shown with BCD option

The universal actuator allows instrument manufacturers to use a single motor and control software to operate virtually any Valco or Cheminert rotary valve. This simplifies the electronic aspect of instrument design and streamlines the development process.

All our Valco and Cheminert valves and selectors, with their wide range of turning torques, are covered by three actuator versions: high speed, medium speed/medium torque, and high torque. *(See charts below)*

Actuators listed below include universal 24 volt DC power supply and manual interface. An OEM version that excludes these items is also available. Current interface options include RS232/485, USB, and BCD.

While the actuators listed on this page are universal, the valve mounting hardware is not. The product numbers shown below do not include the hardware required for mounting a valve, since the necessary hardware depends on the valve type. If you are ordering the actuator for use with an *existing* valve, call our sales or technical staff to determine the correct hardware needed. If you want to order the universal actuator with a *new* valve, simply substitute the actuator product number in place of a different actuator and we'll provide the correct hardware. For example, to order the universal actuator in place of the air actuator in A4C6UWE, order p/n EUD4C6UWE, or to order C2-2006EH with a universal actuator, order C2-2006EUH.

NEW Universal actuators

	High speed (EUH)	Medium torque (EUD)	High torque (EUT)
Description	*Prod no*	*Prod no*	*Prod no*
Without interface	EUH	EUD	EUT
With RS-232/485	EUHA	EUDA	EUTA
With USB	EUHB	EUDB	EUTB
With BCD	EUHC	EUDC	EUTC

Cheminert HPLC selector
on universal actuator

Cheminert LC injector
on universal actuator

Valco GC selector
on universal actuator

Refer to these charts to determine which of the three versions best suits the valves you use, or simply ask our sales or technical staff.

WHICH MODEL FOR WHICH SELECTOR?

Valco

	Actuator model
All valves	EUT

Cheminert

	Actuator model **HPLC**	*Actuator model* **UHPLC**
4 and 6 position *	EUH	EUH
8 and 10 position	EUD	EUD
	Low pressure	
Model C25 and C25Z	EUH	
Model C35Z	EUD	
Model C45	EUT	

* 20,000 psi versions use EUD.

WHICH MODEL FOR WHICH INJECTOR / TWO POSITION VALVE?

Valco

Fitting size	*Valve type*	*Actuator model* **GC**	*Actuator model* **HPLC**
1/32"	W	EUH	EUD
1/16"	W	EUH	EUD
1/16"	UW	EUD	EUD
1/8"	UW	EUD	EUD
1/4"	MW	EUT	—

Cheminert

	Actuator model **HPLC**	*Actuator model* **UHPLC**
4 and 6 ports *	EUH	EUH
8 and 10 ports	EUH	EUD
	Low pressure	
All valves	EUH	

*20,000 psi versions use EUD.

Two position standard electric actuators may be operated manually by a toggle switch or automatically by any data system with momentary contact closures or 5 VDC negative true logic outputs. A complete system, the actuator includes interface cable, power cord, and manual controller assembly with position indication.

Multiposition (selector) models work with any of our multiposition valves. The manual controller with LED display allows the user to step sequentially from one position to the next or to return to Position 1 (Home). A data system with momentary contact closures can direct the step and home functions; 5 VDC negative true logic outputs provide direct position access. A 20-conductor interface cable permits the system to step the actuator sequentially, move the actuator directly to any position, and read the actual valve position.

Standard electric actuators can be ordered with closemount hardware, a standoff, or just the standoff mounting hardware, if your valve already has a standoff. Valves which will be mounted in ovens require a standoff assembly so that the actuator is located out of the heated zone.

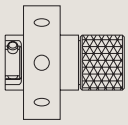
The actuator's rotation (two position) or number of positions (multiposition) must be properly matched to the valve's. If you are converting a manual valve to electric actuation and have any doubts about which actuator and hardware you need, call our sales or technical staff for assistance.

ORDER TIP
To purchase a ***valve with a standard electric actuator installed***, see valve ordering information.

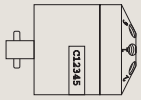
Valco
Injectors and valves .... pp 102-116
Multiposition valves 122-133
Cheminert
Injectors and valves 152-167
Multiposition valves 170-177

TECH TIP
Valco two position W and UW type valves and Cheminert valves have the following angles of rotation:

3 port	90°
4 port	90°
6 port	60°
8 port	45°
10 port	36°
12 port	30°
14 port	26°



Valco



Cheminert

MORE INFORMATION
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DVSP.....page 196
Digital valve sequence programmer
SVI 197
Serial valve interface

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Standoff assembly 205
Standoff mounting hardware..... 205

Standard electric actuators *for two position valves*

Standard voltage: 110 VAC. (230 VAC and 24 volt CE versions optional. Consult factory for product numbers and pricing.)
Standoff version includes a 2" standoff. 3", 4", and 6" standoffs are also available.

No. of ports in valve	*Description*	**With closemount assembly** *Prod No*	**With 2" standoff assembly** *Prod No*	**For use with existing standoff** *Prod No*
3, 4	90° rotation	E90	E902	E90S
6	60° rotation	E60	E602	E60S
8	45° rotation	E45	E452	E45S
10	36° rotation	E36	E362	E36S
12	30° rotation	E30	E302	E30S

Standard electric actuators *for selectors*

Standard voltage: 110 VAC. (230 VAC optional. Consult factory for product numbers and pricing.)
Standoff version includes a 2" standoff. 3", 4", and 6" standoffs are also available.

Description	**With closemount assembly** *Prod No*	**With 2" standoff assembly** *Prod No*	**For use with existing standoff** *Prod No*
4 position	E4	E42	E4S
4 x 2*	E4X2	E4X22	E4X2S
6 position	E6	E62	E6S
6 x 2**	E6X2	E6X22	E6X2S
8 position	E8	E82	E8S
10 position	E10	E102	E10S
12 position	E12	E122	E12S
16 position	E16	E162	E16S

* The 4 column selection valve, CST4UW, is an 8 position valve and needs a 4 x 2 actuator.
** The 6 column selection valve, CST6UW, is a 12 position valve and needs a 6 x 2 actuator.

Air Actuators

Air actuators offer reliable performance under the most stringent conditions. Low gas consumption and lightweight, compact construction make the air actuator suitable for aerospace flight hardware applications as well as laboratory or process applications.

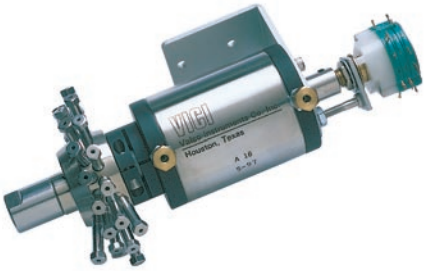
The standard air actuator is rated for up to 80 psig at temperatures up to 70°C. Generally speaking, valves which will be heated require a standoff assembly, which locates the air actuator out of the heated zone and supports both the valve and actuator. A high temperature model permits both valve and actuator to be mounted within an oven (175°C maximum), but it is not recommended for use below 50°C.

Air Actuators for Selectors

The recommended method for implementing a selector (multi-position) air actuator requires only a single 4-way solenoid. Up to 80 psig may be used without damaging the valve or actuator. Bottled instrument air or nitrogen is recommended.

If plant air from compressors must be used, an oil separator and water dryer are required.

Multiposition air actuators include a rotary switch which may be connected to a digital readout or your own design.



Standard air actuators *for selectors*

Temperature range 0-70°C
Standoff version includes a 2" standoff. 3", 4", and 6" standoffs are also available.

Description	With closemount assembly Prod No	With 2" standoff assembly Prod No	With standoff mounting hardware Prod No
4 position	A4	A42	A4S
6 position	A6	A62	A6S
8 position	A8	A82	A8S
10 position	A10	A102	A10S
12 position	A12	A122	A12S
16 position	A16	A162	A16S

High temperature air actuators *for selectors*

Temperature range 50-175°C
Standoff version includes a 4" standoff. 2", 3", and 6" standoffs are also available.

Description	With closemount assembly Prod No	With 4" standoff assembly Prod No	With standoff mounting hardware Prod No
4 position	AT4	AT44	AT4S
6 position	AT6	AT64	AT6S
8 position	AT8	AT84	AT8S
10 position	AT10	AT104	AT10S
12 position	AT12	AT124	AT12S
16 position	AT16	AT164	AT16S

Replacement O-rings

Includes a complete set of O-rings for a multiposition air actuator.

Description	Prod No	Price
Standard	ORMP	$16
High temp	ORTMP	20

TECH TIP
The actuator's rotation must be properly matched to the valve's. If you are converting a manual valve to air actuation and have any doubts about which actuator and hardware you need, call our sales or technical staff for assistance.

MORE INFORMATION
PFAF . . . . . page 199
Position feedback

Mounting Hardware
Closemount hardware. . . . . page 208
Right angle drive 204
Standoff assembly. . . . 205
Standoff mounting hardware. 205

ORDER TIP
To purchase a ***valve with an air actuator installed***, go directly to valve ordering information.

The recommended method for implementing a two position air actuator is a manifold solenoid valve assembly (MSVA), a block-mounted pair of 3-way solenoids that pulses air to the actuator to switch it from position to position. If air is applied continuously, the continuous rotational force applied to the valve can cause sideloading, leaking, and additional wear.

Typical actuation pressure is 40 to 50 psig, but up to 80 psig may be used.

Ideally, only enough air pressure should be used to switch the valve in 1/3 to 1/2 second. Bottled instrument air or nitrogen is recommended. If plant air from compressors must be used, an oil separator and water dryer are required.

A high speed switching accessory (HSSA) can upgrade valve switching times to less than 30 ms with air or 8 ms with helium. A position feedback (PFAF) with contact closures in both positions is also available as an option.

MORE INFORMATION
HSSA. . . . . page 198
High speed switching accessory
PFAF 199
Position feedback

TECH TIP
Here's what you'll get when you order:

Air actuator with a **closemount assembly**

Air actuator with a **4" standoff assembly**

Air actuator **for use with an existing standoff**

Standard air actuators *for two position valves*

Temperature range 0-70°C
Standoff version includes a 4" standoff. 2", 3", and 6" standoffs are also available.

No. of ports in valve	*Description*	**With closemount assembly** *Prod No*	**With 4" standoff assembly** *Prod No*	**For use with existing standoff** *Prod No*
3, 4	90° rotation	A90	A904	A90S
6	60° rotation	A60	A604	A60S
8	45° rotation	A45	A454	A45S
10	36° rotation	A36	A364	A36S
12	30° rotation	A30	A304	A30S

High temperature air actuators *for two position valves*

Temperature range 50-175°C
Standoff version includes a 2" standoff. 3", 4", and 6" standoffs are also available.

No. of ports in valve	*Description*	**With closemount assembly** *Prod No*	**With 2" standoff assembly** *Prod No*	**For use with existing standoff** *Prod No*
3, 4	90° rotation	AT90	AT902	AT90S
6	60° rotation	AT60	AT602	AT60S
8	45° rotation	AT45	AT452	AT45S
10	36° rotation	AT36	AT362	AT36S
12	30° rotation	AT30	AT302	AT30S

Replacement O-rings

Includes a complete set of O-rings for a two position air actuator.

Description	*Prod No*
Standard	OR
High temp	ORT

Actuator compression fittings

Includes 1/8" compression to 10-32 male thread, plus 1/8" brass ferrule and hex nut.

Description	*Prod No*
3 piece fitting assembly	F-TCF

Digital Valve Sequence Programmer (DVSP)

The digital valve sequence programmer (DVSP) is an add-on or stand-alone timer/programmer with 4 intervals, settable in ranges of 0-99 seconds, 0-9.9 minutes, or 0-99 minutes. The DVSP is most commonly used for remote operation of electrical devices such as solenoid valves, Valco two position or multiposition electric actuators, and the Valco DVI (digital valve interface), which converts contact closures into pneumatic pulses for switching Valco two position air actuators.

The DVSP has two operational modes: in the AUTO mode, the DVSP will return to the first interval and begin another sequence after the last interval is completed, and in the SINGLE CYCLE mode it stops after completing one sequence. During a cycle or sequence, simple controls allow the user to stop the cycle, reset it to Interval 1, switch to the AUTO mode, or advance to the next interval. The DVSP can also be wired for remote operation by contact closure from a data system or other control device.

Each interval has one double pole, double throw relay, rated at 5 amps, which provides two sets of contacts with no connection from one side to the other. This means that a single interval can be used to perform two separate functions requiring differing voltage requirements. For example, one side of Relay A (Interval 1) can be used to switch an electric actuator (contact closure) while the other side is connected to 110/230 VAC and switches a 110/230 VAC solenoid valve at the same time as the electric actuator. In addition, Relay E supplies a two second contact. When solenoid valves are wired in series with this relay the result is "pulsed operation" of the air actuator, which avoids the potential valve and actuator problems associated with continuously-applied air pressure.

Both 12 VDC and 110/230 VAC power supplies are included within the DVSP, but the relays may be supplied with power from an external power source. For example, 24 VDC solenoid valves can be switched by the DVSP relays if the 24 volts is supplied to the relays from an external 24 VDC power supply.

DVSP
Digital valve sequence programmer

for all air and electric actuators

	Prod No
110 VAC	DVSP4
230 VAC	DVSP4-220

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The serial valve interface (SVI) is a device that converts commands from a computer, via a serial port, into positional control for two position and selectors (multiposition valves). Each SVI can control up to four air actuated (via a DVI, page 199) or electrically actuated two position valves and two electrically actuated selectors. The timing program can be run in the background, freeing the computer for other applications. Two serial ports (one male, one female) allow up to eight SVIs to be daisy-chained and run from a single serial communication port. In addition to controlling valves, the SVI can be used to control other devices which require logic level, BCD, or single line inputs.

The SVI is a self-contained unit, with its own 110 VAC (or 230 VAC Eurostandard) power supply. There is no need to open the computer to connect the SVI, because its DB-9 to DB-9 RS-232 cable connects to any available serial port. It also includes an interface cable for Valco two position actuators, and two Ansley 20-wire connectors for installation on the interface cable which comes as part of the multiposition electric actuator. For air actuated valves, optional interface cables are available for the DVI, which converts electrical signals to pneumatic pulses.

Software is supplied on a Windows-compatible CD. If different program functionality is needed, information is given in the manual which will assist in writing the necessary software.

SVI
Serial valve interface

for all air and standard electric actuators

	Prod No
110 VAC	SVI
230 VAC	SVI-220
DVI/SVI interface cable	I-22239

Solenoids and High Speed Accessory

41E1 4-Way solenoid air valve *for selector air actuators*

This 4-way solenoid air valve with 1/8" tube fittings is the simplest method of stepping a selector air actuator. Energizing the solenoid steps the valve to its next position, and de-energizing the solenoid resets the mechanical ratchet in the actuator. This implementation, not recommended for two position actuators, can be useful when only a limited number of external events is available on the data system.

	Prod No
110 VAC	41E1-120VAC
230 VAC	41E1-220VAC
24 VAC	41E1-24VAC
12 VDC	41E1-12VDC
24 VDC	41E1-24VDC

MSVA Manifold 3-way solenoid valve assembly *for two position air actuators*

The recommended way to switch two position air actuated valves is to "pulse" a pair of 3-way solenoid valves. This method applies air to the actuator only during switching, and alleviates problems associated with continuous air pressure. The MSVA is a block-mounted pair of 3-way solenoid air valves with 1/8" tube connections, available in 12 VDC, 24 VDC, 24 VAC, 110 VAC, and 230 VAC models.

	Prod No
110 VAC	MSVA-110VAC
230 VAC	MSVA-220VAC
24 VAC	MSVA-24VAC
12 VDC	MSVA-12VDC
24 VDC	MSVA-24VDC

HSSA High speed switching accessory *for two position air actuators*

The HSSA is an add-on for our standard air actuators, providing increased air or helium flow for the fast actuation required in microbore chromatography or partial loop injections. Normal switching time for a C6W with 100 psi air is 180 ms. With the HSSA that drops to 20 ms; substitute 100 psi helium and the valve switches in 8 ms. Usually the HSSA is used in conjunction with the DVI discussed on page 199.

Prod No
HSSA

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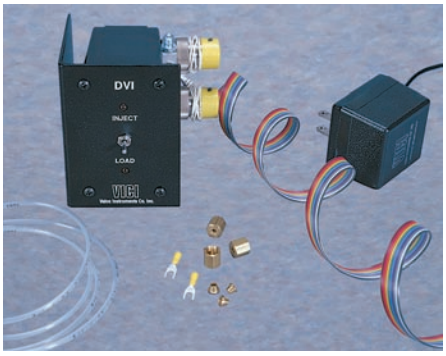
DVI Digital valve interface *for two position air actuators*

We highly recommend the DVI for use with two position air actuators. It sends a two second pulse of air to switch the valve and then vents the air, simulating switching by hand and eliminating the potential for damaging the valve or actuator with continuously-applied pressure. It also features LED position indication, manual and remote operation, and a contact closure output on arrival to the INJECT position, a feature which can be used to start a run or integration. The DVI is available for 110 or 230 VAC.

	Prod No
110 VAC	DVI
230 VAC	DVI-220



PFAF Position feedback *for two position air actuators*

The optional position feedback (PFAF) can be field installed on any two position standard air actuator. Each position provides a contact closure for TTL logic level signals.

Prod No
PFAF

Position feedback *for manual valves*

An optional position feedback is available for manual Valco W type and Cheminert C2 and C4 series valves (standard on Cheminert C1 valves). The continuous contact closure, provided only while the valve is in the inject position, can remote start a chromatograph or data system.

Description	*Prod No*
For Valco W type valves	
4 port	PFW90
6 port	PFW60
8 and 10 port	PFW36
For Cheminert valves	
C2 series except 4 port	PFC2
C2 series, 4 port	PFC4
C4 series	PFC4