

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.



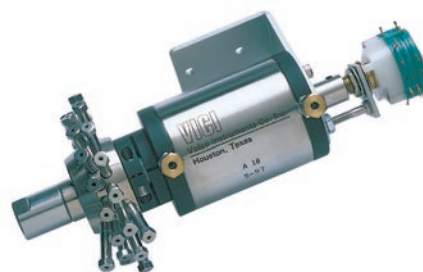
Standard air actuators

for selectors

Temperature range 0-70°C

Standoff version includes a 2" standoff. 3", 4", and 6" standoffs are also available.

	With closemount assembly	With 2" standoff assembly	With standoff mounting hardware
Description	Prod No	Prod No	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.

	With closemount assembly	With 4" standoff assembly	With standoff mounting hardware
Description	Prod No	Prod No	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

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

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Position feedback

Mounting Hardware

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Standoff mounting hardware..... 205

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



ORDER TIP

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

Two Position Air Actuators

MORE INFORMATION

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High speed
switching accessory
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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

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 sidelading, 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.

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	With 4" standoff assembly	For use with existing standoff
		Prod No	Prod No	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	With 2" standoff assembly	For use with existing standoff
		Prod No	Prod No	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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Serial Valve Interface (SVI)

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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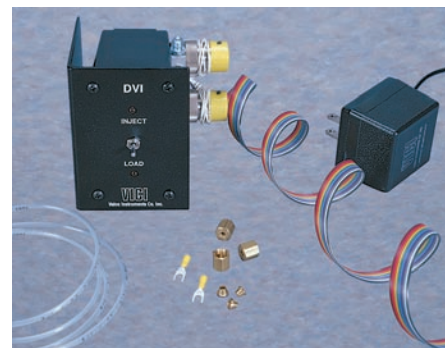
Digital Valve Interface (DVI) and Position Feedbacks

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.

	<i>Prod No</i>
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.

<i>Prod No</i>
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.

<i>Description</i>	<i>Prod No</i>
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



Purge Housings

Purge housings for Valco valves eliminate any possible diffusion from the atmosphere *into* the valve, or safely vent fugitive emissions *from* the valve. They are typically used in trace level analyses to isolate the valve from ambient air, but can also be used as a safety measure to isolate a valve against leaks into the atmosphere, such as when pyrophoric, toxic, or carcinogenic materials are present in the sample stream.

Two screws secure each half of the purge housing to the valve, so that the rear chamber of the housing (the preload assembly/spring side of the valve) can be removed for rotor inspection or replacement without affecting the actuator side of the housing.

Ideally, the purge housing should be ordered when a new valve is ordered, so that it can be factory-installed. Field installation of purge housings is generally not recommended. To order a new valve with a purge housing, add the suffix "PH" to the product number for the valve/actuator assembly, and add \$200 to the price. The purge housing requires a standoff assembly, which can be 2", 3", 4", or 6" long.

All Valco two position valves with two threaded mounting holes will accommodate a purge housing without modification. Some two position valves must be modified at the factory to accept the housing. The charge for modifying an existing valve includes the new purge housing. Call our service department to make arrangements for this service.



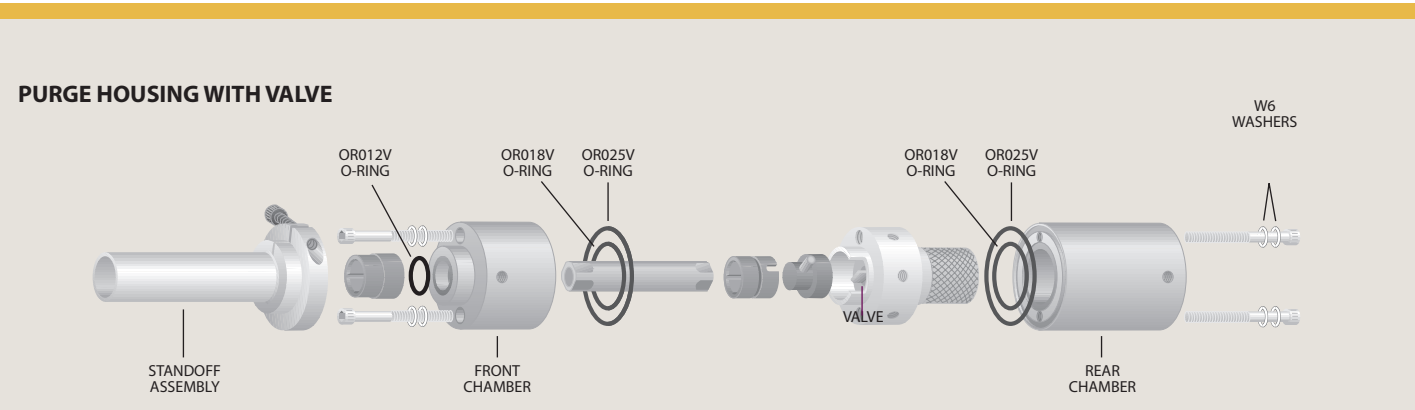
Purge housings *for two position valves and selectors*

Description	Prod No	Notes	SPECS
On a new valve	Add suffix PH to valve prod no	Add \$200 to valve price	Requires standoff assembly. Multiposition valve requires an actuator.
On existing valve, factory installation	Contact factory		
On existing valve, for field installation	Not recommended		

SPECS

Maximum temperature: 175°C

Note: The purge housing limits the maximum temperature of the purged valve to 175°C, regardless of the valve specifications.



Heated Valve Enclosures

These insulated enclosures allow valves to be operated at temperatures independent of other controlled zones of analytical instruments. The compact construction and minimum power dissipation enable mounting within larger, lower temperature zones without significantly raising the larger oven's minimum temperature or impairing its programmability.

All enclosures include a heater block and a heater cartridge with line cord. The product number chart lists the heater size typically required to heat the valve(s) to the indicated temperature. Holes are provided in the heater block for Perkin Elmer, Agilent, and Varian temperature sensors, with an additional thermocouple hole permitting temperature readout.

Since 1/32" W type valves are smaller, they require a special heater block; enclosures for 1/32" valves are denoted by asterisk (*) in the price chart below.

Note: Heated valve enclosures provide a way to heat valves. A GC's auxiliary temperature zone controller or a device such as our ITC (instrumentation temperature controller) is required to maintain the valves at a set temperature.

Includes insulated enclosure and heater assembly (standard heater block, heater cartridge, line cord). Standard voltage: 110 VAC. For a 230

VAC model, add -220 to the product number. Insulation is 1/2" thick, so internal dimensions are 1" smaller than the exterior size given below.

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Heated valve enclosures

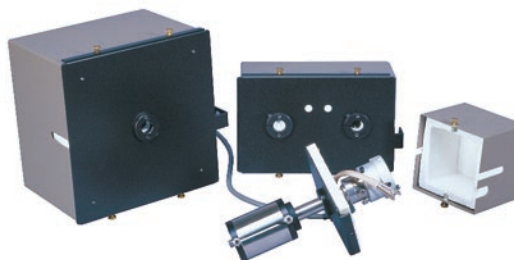
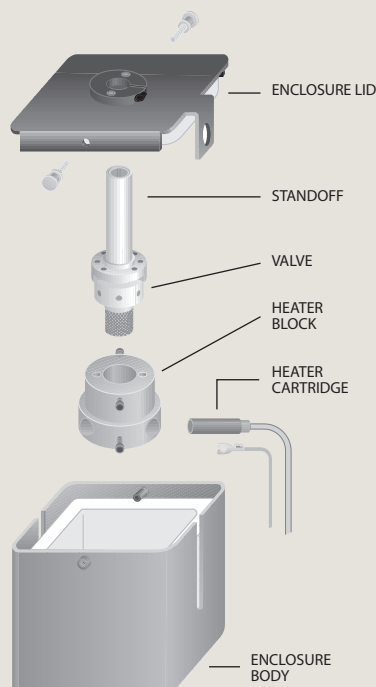
for two position valves and selectors

Capacity	Exterior dimensions (Interior approx 1" smaller)	Rating	Prod No
1 valve	4" x 4-1/4" x 3-5/8"d	65W/350°C	HVEA
		* 65W/350°C	HVEAN
	4-1/4" x 5-1/8" x 3-5/8"d	65W/350°C	HVEB
		* 65W/350°C	HVEBN
	8" x 8" x 6"d	100W/350°C	HVEC
2 valves	8" x 5-1/4" x 4"d	125W/350°C	HVE2
3 valves	13-1/2" x 5-3/4" x 4"d	150W/350°C	HVE3
6 valves	13-3/4" x 8" x 6"d	300W/350°C	HVE6

* for use with 1/32" valves

HEATED VALVE ENCLOSURE

For one valve (HV EA)



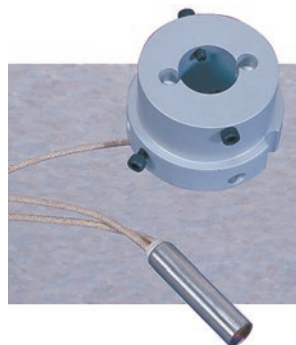
Heated Assemblies and Heater Blocks

Heater assemblies

A heater assembly includes a standard heater block, heater cartridge, and line cord. Heater cartridges are also available individually. Consult the factory for price and availability.

Standard voltage is 110 VAC. For a 230 VAC model, add -220 to the product number.

Description	Rating	Prod No
Heater assembly		
For use with HVEA or HVEB	65W/350°C	HA1
For use with HVEC	100W/350°C	HA1T
For use with HVE2	125W/350°C	HA2
For use with HVE3	150W/350°C	HA3
For use with HVE6	300W/350°C	HA6



Heater blocks

for single valves

There are two single valve heater block designs: standard and low mass. The low mass heater block, which has a .075" diameter hole for sensor or thermocouple, works well for two position valves. The standard heater block is a high mass, multipurpose design which can be used with any Valco valve. It is designed so that sample loops or short columns can be wound directly on it.

Heater blocks do not include a heater cartridge.

Description	Prod No
Low mass heater block, 1 valve	HBS
Standard heater block, 1 valve	HB
Standard heater block, 1 NW Type valve (1/32" fittings)	HB1N



Heater cartridges

for single valve heater blocks

The cartridge size is 1.5" long by 3/8" diameter. Consult the factory to purchase cartridges for larger heater blocks.

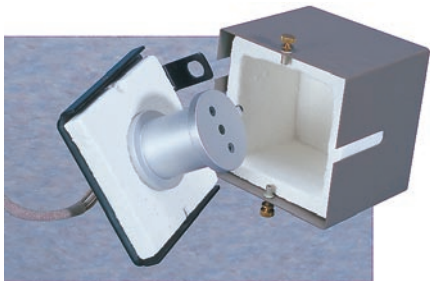
Rating	Prod No
65W, 110 VAC	I-21208-32
65W, 220 VAC	I-21208-33
100W, 110 VAC	I-21208-05
100W, 220 VAC	I-21208-06

MORE INFORMATION

Heated valve
enclosures page 201

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Heated Enclosures and Controllers



Heated column enclosures

Heated column enclosures allow a column to be operated at temperatures independent of other controlled zones in the instrument. They are similar in construction to our heated valve enclosures (*page 201*), except instead of a valve heater block they contain a column mandrel which will accept 1/8" columns up to 10' long. The HCE2 can have a heated valve installed adjacent to the heated column, with a valve heater block ordered separately.

Includes one column mandrel, insulated enclosure, and heater assembly (standard heater block, heater cartridge, line cord). Standard voltage: 110 VAC. For a 230 VAC model, add -220 to the product number. Insulation is 1/2" thick, so internal dimensions are 1" smaller than the exterior size given below.

Capacity	Exterior dimensions (Interior approx 1" smaller)	Rating	Prod No
Heated column enclosure			
1 column	4" x 4-1/4" x 3-5/8"d	65W/350°C	HCE1
	4-1/4" x 5-1/8" x 3-5/8"d	65W/350°C	HCEB
	8" x 8" x 6"d	65W/350°C	HCEC
2 columns	8" x 5-1/4" x 4"d	65W/350°C	HCE2
Column mandrel (heater assembly not included with column mandrel)			CM



ITC Instrumentation temperature controller

The ITC is an isothermal proportional controller for use in the thermal systems common to analytical instrumentation, and is often used with heated valve enclosures. The desired temperature is set in 1°C increments on the front panel. A thermocouple sensor provides quick recognition of temperature changes. The power to the heater can be attenuated from 0-90% in 10% increments, an easy-to-use feature which improves temperature stability at the set point to 0.5°C. Maximum output current is 10 amps.

The ITC is available with a range of 0°C to 399°C, in 110 VAC or 230 VAC.

		Prod No
0°C to 399°C	110 VAC	ITC10399
	230 VAC	ITC10399-220
Replacement thermocouple		I-21014-01

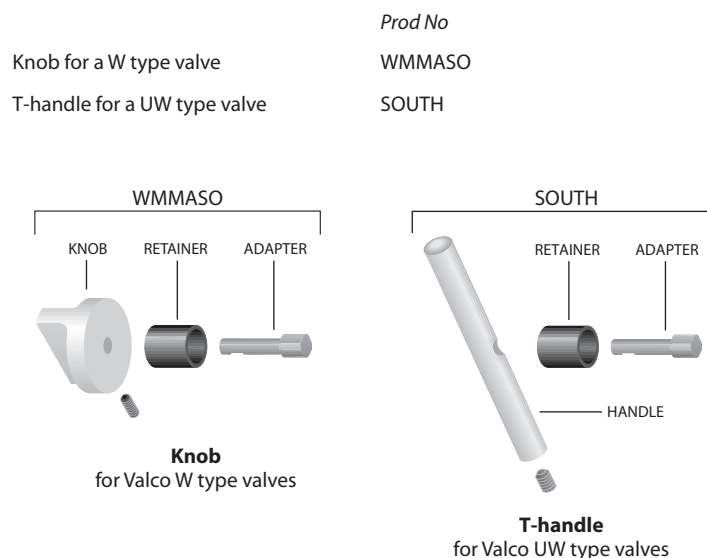
MORE INFORMATION
Heated valve enclosures page 201

Knobs, Handles, and Right Angle Drives

Knobs and handles

for use with a standoff

If you already have a spare standoff assembly (see facing page) but lack the knob or retainer, or have an actuated valve on a standoff which you'd like to convert to manual use, here's what you'll need. Includes knob or handle, retainer, and adapter.



RAD Right angle drive

for two position actuators

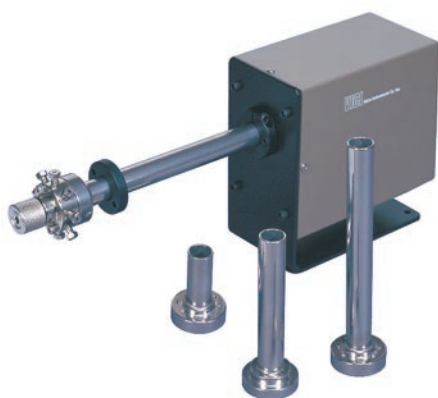
Some installations don't allow the valve and actuator to be installed in a typical in-line configuration. The RAD is a 90° gearbox which permits the actuator or handle to be installed at a right angle to the valve. The RAD fits all VICI two position electric and air actuators. Not for use with 1/4" valves.

RAD with standoff includes a 2" standoff; 3", 4", and 6" standoffs are also available.

With closemount hardware	With 2" standoff assembly
Prod No	Prod No
RAD	2RAD



Standoff Assemblies



Valves which will be installed in ovens or heated zones require a standoff assembly, which locates the actuator out of the heated zone and supports both the valve and the handle or actuator. The 5/8" outside diameter standoff tube extends through the oven wall and is secured by means of a clamp ring supplied with the assembly.

If you are converting an actuated valve from a closemount to a standoff application, order the appropriate clamp ring and two screws in addition to the standoff assembly. Consult the factory for availability of non-standard lengths.

The microelectric actuator for selectors uses a special standoff assembly (SOMMP) which is keyed to both valve and actuator. The key guarantees proper alignment and positioning of the valve.

Product numbers show the most common length of standoffs: 4" for air actuators and manual knobs, 2" for microelectric and standard electric actuators. Standoff assemblies are available in lengths of 2", 3", and 6". To order a 6" standoff instead of a 4" one, change the 4 in the product number to a 6.

Standoff assemblies and mounting hardware

for actuators

MORE INFORMATION

For illustrations of standoffs on valves and actuators, see pages 206-207.

TECH TIP

If you need the **actuator as well as the hardware**, you can order it complete with the appropriate hardware or with the required standoff already installed.

Actuators

Air pages 194-195
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	Standoff assembly <i>Prod No</i>	Clamp ring <i>Prod No</i>	Screws <i>Prod No</i>
Air actuators			
For Valco two position valves with 1 or 2 mounting holes	450A	CR3	HWSC-SC8-6
with no mounting holes	450AMP	CR3	HWSC-SC8-6
For Valco selectors	450AMP	CR3	HWSC-SC8-6
For Cheminert valves	450AMP	CR3	HWSC-SC8-6
Microelectric actuators			
For Valco two position valves with 1 or 2 mounting holes	250A	CR8	HWSC-SC8-8B
with no mounting holes	250AMP	CR8	HWSC-SC8-8B
For Valco multiposition valves (UW and MW Types only)	250AMMP	CR10	HWSC-SC8-8TDH
For Cheminert two position valves	250AMP	CR8	HWSC-SC8-8B
For Cheminert selectors	250AMMP	CR10	HWSC-SC8-8TDH
Standard electric actuators			
For Valco two position valves with 1 or 2 mounting holes	250A	CR3	HWSC-SC8-8B
with no mounting holes	250AMP	CR3	HWSC-SC8-8B
For Valco selectors	250AMP	CR3	HWSC-SC8-8B
For Cheminert valves	250AMP	CR3	HWSC-SC8-8B

Standoff assemblies

for manual valves

Includes knob, standoff assembly, retainer, and adapter. For illustration, see page 206, top.

	<i>Prod No</i>
For Valco W and UW Type two position valves rated less than 5,000 psi with 1 or 2 mounting holes	450WK
with no mounting holes	450WKMP
For Valco UW Type two position valves rated 5,000 psi and higher with 1 or 2 mounting holes	450UTH
with no mounting holes	450UTHMP
For Cheminert valves	450WKMP



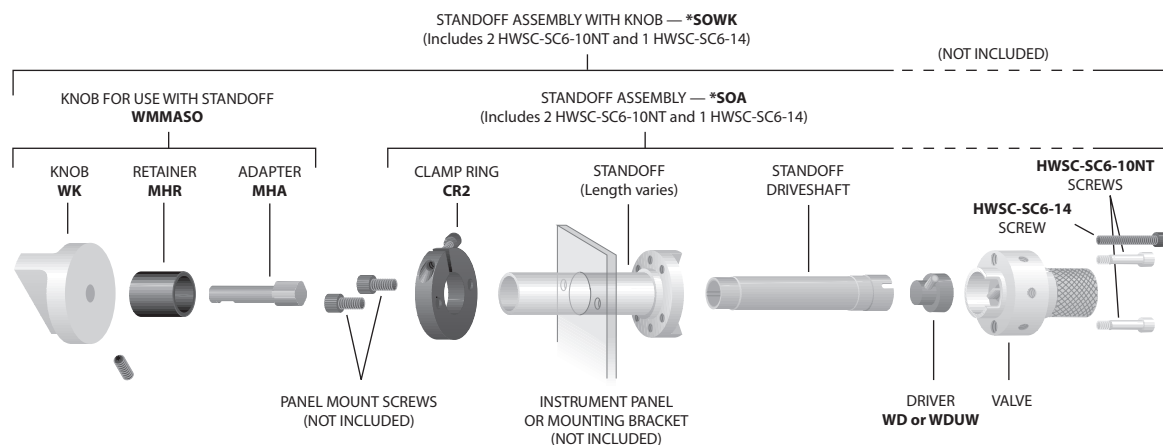
CONVERTING FROM CLOSEMOUNT TO A STANDOFF

If you are converting an actuated valve from a closemount to a standoff application, the clamp ring and screws which secure the standoff to the actuator are **not included** in the standoff assembly. Order clamp ring and screws in addition to the standoff assembly.

Standoff Assemblies

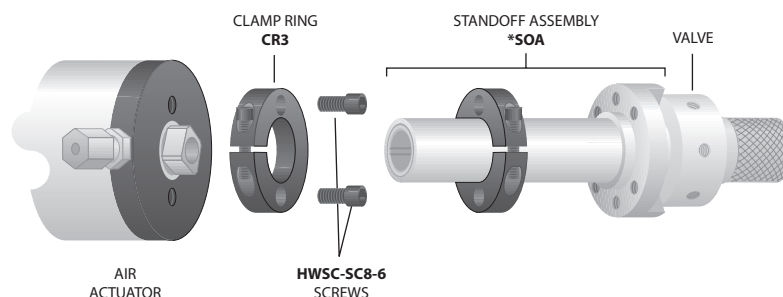
Standoff with

VALCO TWO POSITION VALVE – MANUAL



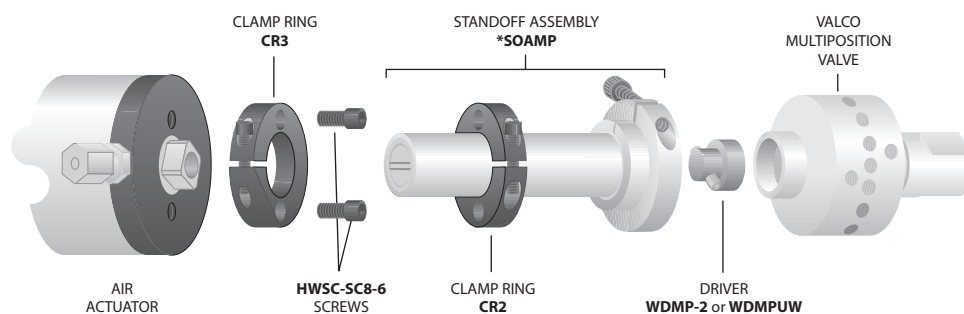
Standoff with

VALCO TWO POSITION VALVE – AIR ACTUATOR



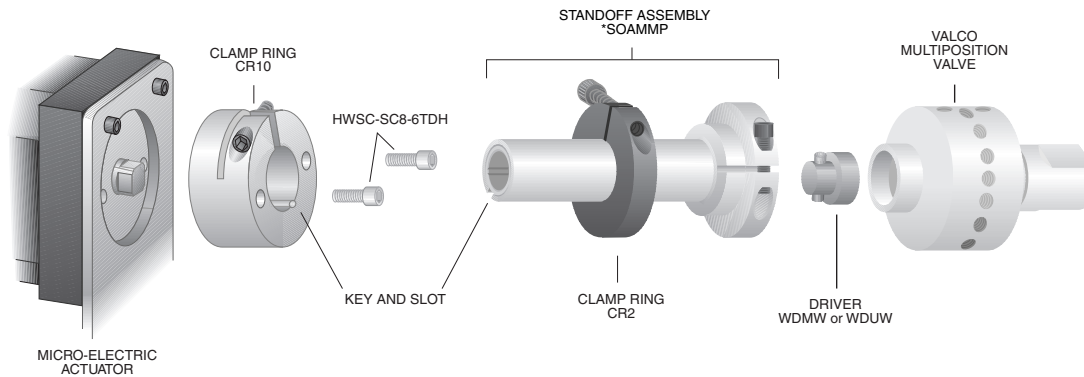
Standoff with

VALCO SELECTOR – AIR ACTUATOR



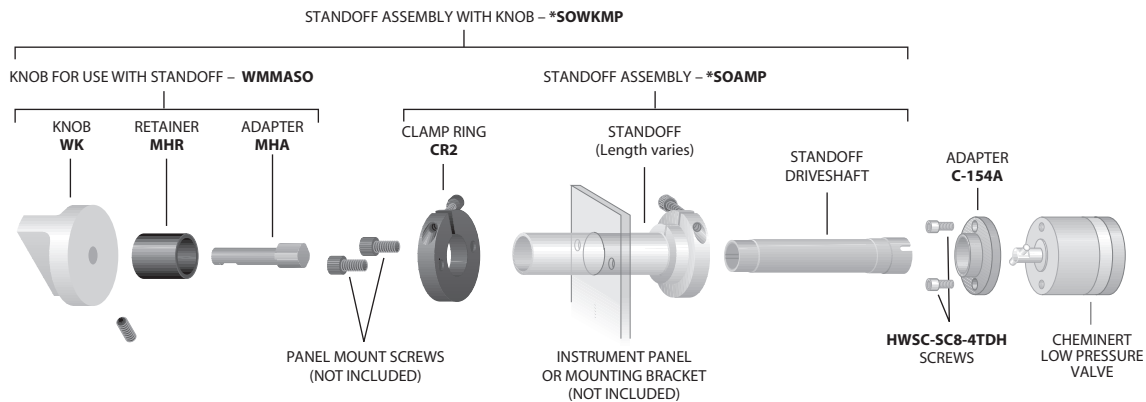
Keyed standoff with

VALCO SELECTOR – MICROELECTRIC ACTUATOR



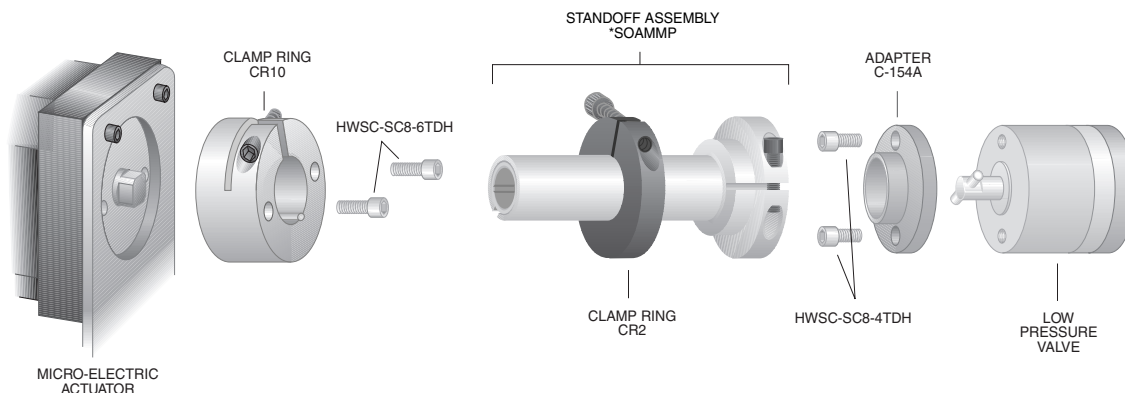
Standoff with

CHEMINERT TWO POSITION VALVE – MANUAL



Keyed standoff with

CHEMINERT SELECTOR – MICROELECTRIC ACTUATOR



Closemount Hardware

If a valve is not going to be heated beyond the temperature range of the actuator, closemount hardware often makes the cleanest installation.

Closemount hardware *for manual valves*

If you have a Valco W Type valve with no hardware and want a knob on it, or if you are converting an air or electrically actuated two position valve to manual use, this is what you need. There are two versions: one for valves with threaded mounting holes and one for valves with unthreaded mounting holes. (If your valve has no mounting holes, you will have to use it with a standoff.)

Description	Prod No
For valves with threaded mounting holes	WMMA
unthreaded mounting holes	WMMA10



Closemount hardware *for actuators*

Order the appropriate closemount hardware if you want to change your valve and actuator from a standoff to a closemount connection. Two mounting screws are included. If air and standard electric actuators require different mounting screws, two of each screw are included with the closemount hardware.

Description	Prod No
Air or standard electric actuators	
For Valco two position valves with 1 or 2 mounting holes	CMH
with no mounting holes	CMHMP
For Valco multiposition valves	CMHMP
For Cheminert valves high pressure design	CMH11H
low pressure design	CMH11L
(low pressure design includes required adapter)	



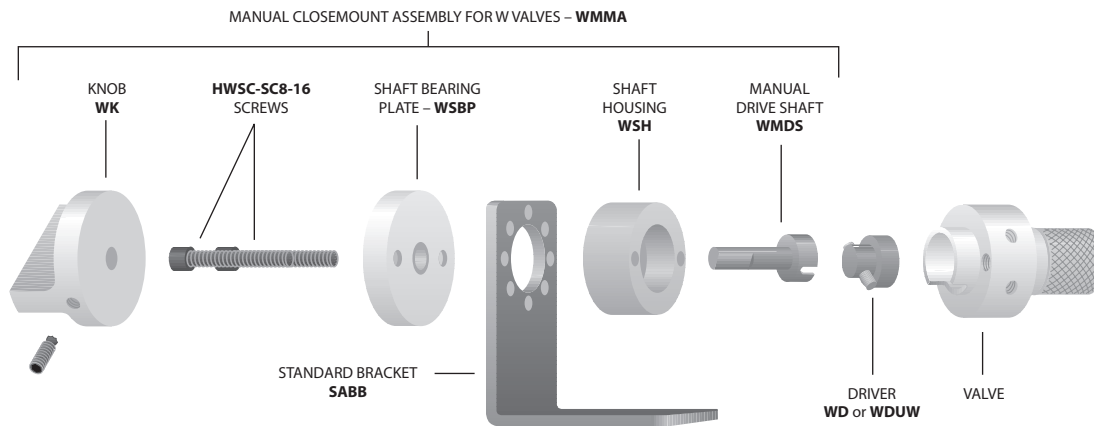
Microelectric actuators	
For Valco two position valves with 1 or 2 mounting holes	CMH12H
with no mounting holes	CMH12H
For Valco multiposition valves (UW and MW Types only)	CMH13
For Cheminert two position valves high pressure design	CMH12H
low pressure design	CMH12L
(low pressure design includes required adapter)	
For Cheminert multiposition valves high pressure design	CMH13H
low pressure design	CMH13L
(low pressure design includes required adapter)	

TECH TIP
If you need the **actuator as well as the hardware**, you can order it complete with the appropriate hardware or with the required standoff already installed.

Actuators	
Air	pages 194-195
Microelectric	188-191
Standard elec	193

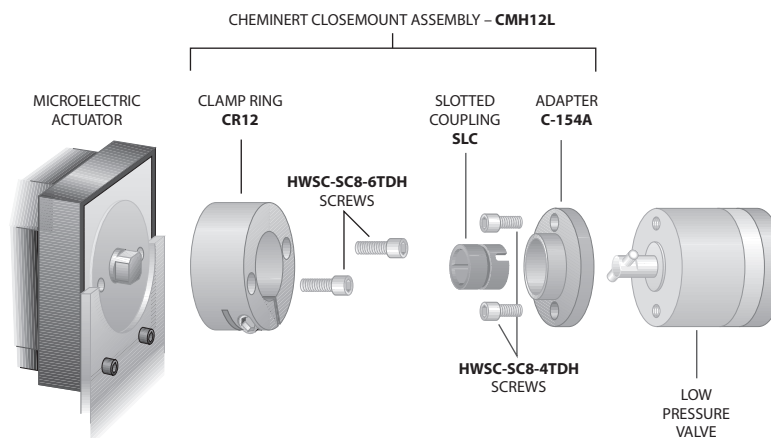
Closemount with

VALCO VALVE – MANUAL



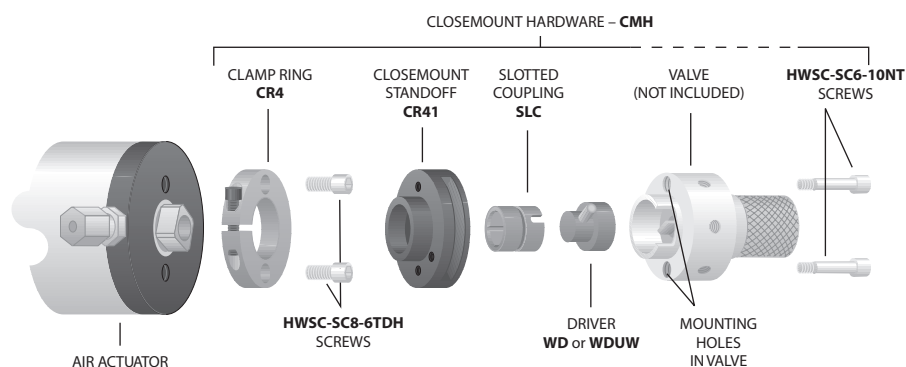
Closemount with

CHEMINERT VALVE (Low pressure two position) – MICROELECTRIC



Closemount with

VALCO VALVE (1 or 2 mounting holes) – AIR ACTUATOR



Tools

As a convenience to our customers, we stock several standard tools that are useful for working with valves, fittings, and other products from VICI. In addition, we offer custom tools which are designed and machined in our factory to facilitate use of specific VICI products.

Custom socket wrench

This 1/4" socket wrench with a slot to slip over 1/16" tubing is the perfect tool for installing fittings in some of our multiposition valves, in which the proximity of the ports makes it difficult to get a normal open end wrench in position.

Prod No
SWH4



Hex key set

The hex key set has a wrench to fit any socket head screw on any VICI valve or actuator. Includes .050", 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", and 5/32" sizes.

Prod No
HKS



Open end wrenches

Size	For use with	Prod No
3/16" x 1/4"	1/32" and 1/16" nuts	OEW
3/8" x 7/16"	1/8" nuts	OEW-2
1/2" x 9/16"	1/4" nuts	OEW-3



Pencil magnet

A pencil-type magnet is useful for removing the rotor from Valco valves when the rotor must be replaced or rotated. The process of disassembly and assembly is described in Technical Note 201, which may be requested by phoning or faxing. It may also be found in the support section at www.vici.com.

Prod No
PM



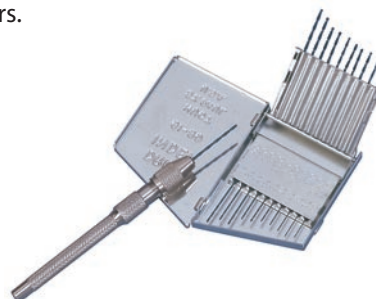
MORE INFORMATION
Ferrule removal kit. . . . 54

Pin vise and drill index

The drill index has drills sized from 0.0135" to 0.039" (0.34 to 1 mm). These are useful tools when a fused silica tube breaks in a union, or for enlarging the inner diameter of fused silica adapters.

Prod No

PV

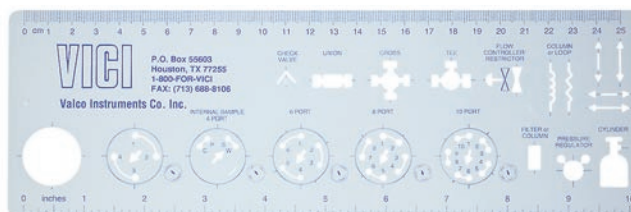


Template

This tool is just what you need when you're working out plumbing and valve switching schematics. It features templates for two position valves with 4, 6, 8, and 10 ports with indications of both positions, as well as various flow symbols. For added convenience, the sides are edged with metric and inch rulers.

Prod No

TEMPLATE1



Valve spanner handle

A special tool for gripping a multiposition valve body. It is especially useful during valve alignment procedures.

Prod No

VSH

