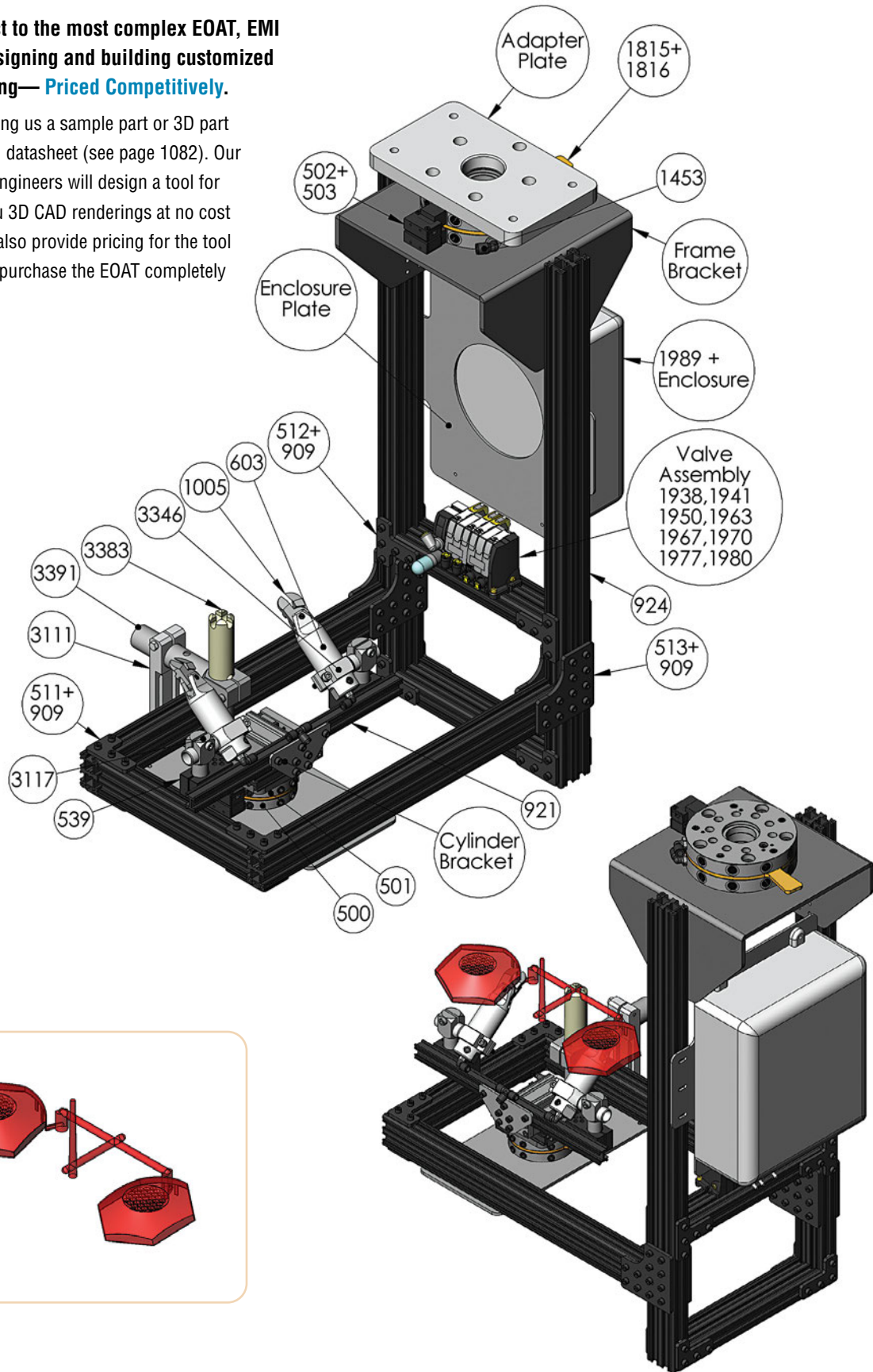


## EOAT Design and Build Service

From the simplest to the most complex EOAT, EMI specializes in designing and building customized End-of-Arm-Tooling— **Priced Competitively.**

Get started by sending us a sample part or 3D part file and a completed datasheet (see page 1082). Our experienced EOAT engineers will design a tool for you and provide you 3D CAD renderings at no cost or obligation. We'll also provide pricing for the tool should you want to purchase the EOAT completely assembled.



# Valves & Regulators Overview



## Mini Pressure Regulators p.1014

Pressure regulators meter and maintain output pressure to pneumatic devices despite power supply pressure fluctuations and help control pressure for pressure sensitive applications.

### Mini Pressure Regulators p.1014



### Flow (Speed) Control p.1015



### Exhaust Valves p.1015



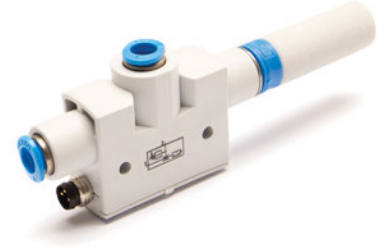
### Two-Stage Flow (Speed) Control p.1016



### In-line Solenoid Valve p.1017



### Vacuum Generator p.1017



### Inline Filters p.1015



### Vacuum Generators p.1018



### Vacuum Generators p.1022



### Clampable Vacuum Generators p.1020



### Modular Valves p.1024

Lightweight and modular, these valves are ideally suited for mounting on robotic EOAT. Use to control grippers, cylinders, and vacuum circuits.



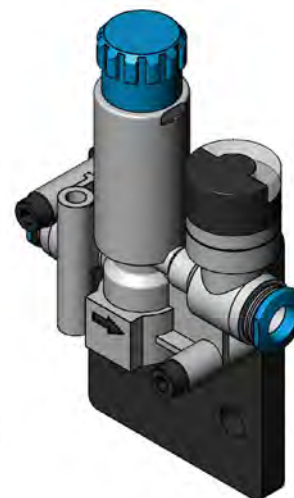
# Pressure Regulators



**NEW**



Suggested hardware: 2x #824

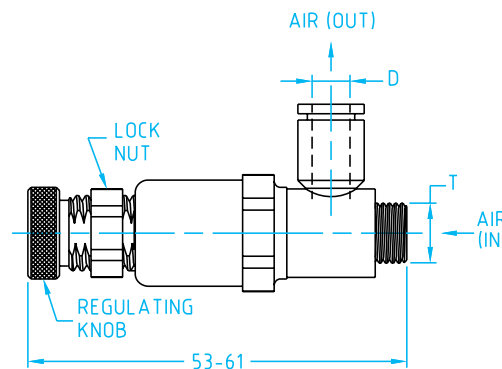


Suggested hardware: 2x #821

**Pressure Regulator (with analog pressure indicator)**

Quick#	Part#	Pressure Range	Ø Tubing	Wt.	Price
2492	GSF-VRPA-CM-Q4-E	15-116psi	4mm	23g	\$83.50
2493	GSF-VRPA-CM-Q6-E	15-116psi	6mm	23g	\$87.50
<b>Bracket for Pressure Regulator*</b>					
2490	GSC-PRMB-0406				\$13.89

\*Suggested hardware for mounting bracket to profile: 2x #854, 2x #856, 1x #6025



**Pressure Regulators (with set-point reference marks)**

Quick#	Part#	Thread	ØD	Price
1468	GSF-PR-G804	G1/8"	4	\$52.35
1469	GSF-PR-G806	G1/8"	6	\$56.64
1470	GSF-PR-G406	G1/4"	6	\$93.00
1471	GSF-PR-G808	G1/8"	8	\$97.00
1472	GSF-PR-G408	G1/4"	8	\$97.00

Use Quick#s for easy online ordering.



**Miniature Pressure Regulators (no pressure gradation marks)**

Quick#	Part#	Thread	ØD	Price
1231	GSF-GPR-G806	G1/8"	6	\$37.60
1232	GSF-GPR-G406	G1/4"	6	\$35.42
1233	GSF-GPR-G408	G1/4"	8	\$40.28
1234	GSF-GPR-06	-	6	\$37.02
1235	GSF-GPR-08	-	8	\$38.86



**Flow Control**

(#306-308 is same body style as #300-305)



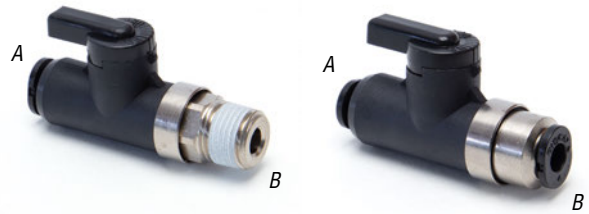
**Flow (Speed) Control**

Quick#	Part#	Thread	ØD	Control	Price
297	GSF-FCI-04	-	4	In-Line	\$29.69
298	GSF-FCI-06	-	6	In-Line	\$39.30
299	GSF-FCI-08	-	8	In-Line	\$41.77
373	GSF-FCE-M304	M3	4	Exhaust	\$10.96
300	GSF-FCE-M504	M5	4	Exhaust	\$14.72
301	GSF-FCE-M506	M5	6	Exhaust	\$18.75
302	GSF-FCE-G806	G1/8"	6	Exhaust	\$18.75
433	GSF-FCE-G1406	G1/4"	6	Exhaust	\$19.08
374	GSF-FCS-M304	M3	4	Supply	\$10.96
303	GSF-FCS-M504	M5	4	Supply	\$15.15
304	GSF-FCS-M506	M5	6	Supply	\$25.35
305	GSF-FCS-G806	G1/8"	6	Supply	\$17.35
306	GSF-FCB-M504	M5	4	Bi-Directional	\$14.23
307	GSF-FCB-M506	M5	6	Bi-Directional	\$18.60
308	GSF-FCB-G806	G1/8"	6	Bi-Directional	\$17.35



**Exhaust Valve & Silencer**

Quick#	Part#	Tubing	Dimensions	Price
1852	GSF-EQE-4	Ø4	30mm tall, 34.5mm long, 10mm wide	\$17.30
1853	GSF-EQE-6	Ø6	32.8mm tall, 37mm long, 12mm wide	\$17.80



**Shut-off Ball Valve**

Quick#	Part#	A	B	Wt.	Price
2657	GSF-BVC01-4	Ø4	R1/8"	15g	\$9.50
2658	GSF-BVC01-6	Ø6	R1/8"	15g	\$9.50
2659	GSF-BVU4-4	Ø4	Ø4	13g	\$10.00
2660	GSF-BVU6-6	Ø6	Ø6	13g	\$10.00

Note: Male R1/8" threads are compatible with female G1/8" threads.



**Replacement Elements**

Quick#	Part#	ØD	Size	Filter Area	Price
2647	GSF-SFE-2	-	SFU2	1.16 Inch <sup>2</sup>	\$3.00
2648	GSF-SFE-3	-	SFU3	1.96 Inch <sup>2</sup>	\$3.50

Replacement elements are not compatible with older versions.



**Positive & Negative Pressure Filters**

Quick#	Part#	ØD	Size	Filter Area	Wt.	Price
2644	GSF-SFU2-0404	4	SFU2	0.72 Inch <sup>2</sup>	21g	\$18.60
2645	GSF-SFU2-0606	6	SFU2	1.16 Inch <sup>2</sup>	22g	\$18.80
2646	GSF-SFU3-0808	8	SFU3	1.96 Inch <sup>2</sup>	34g	\$20.60

# Flow Control

(Dimensional Drawing Shown Full Scale)

This flow controller allows for regulating the speed of a pneumatic cylinder as well as simulating the functionality of a shock absorber. Perfect for use on cylinders without built-in shock absorbers or mounting options, including any RBT unit. One regulator per port is suggested to control both cylinder extend and retract.

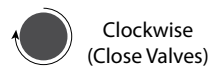
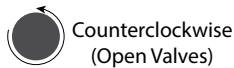
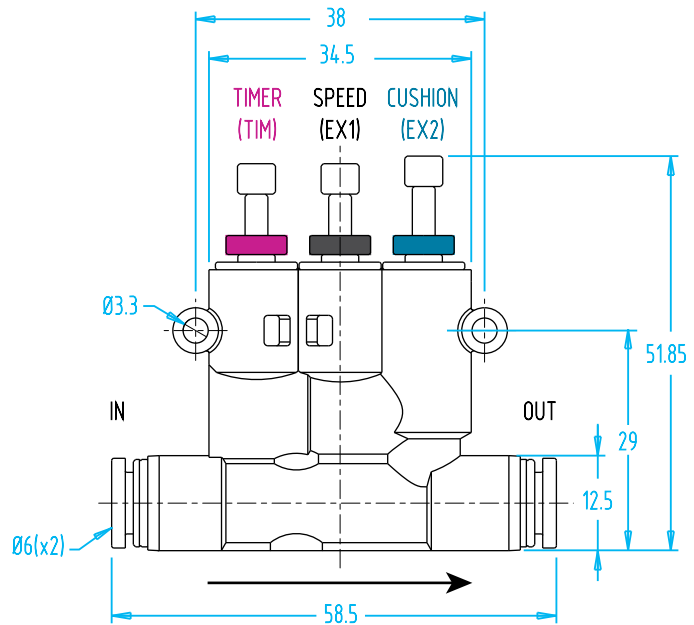


Click for a How-To Video!

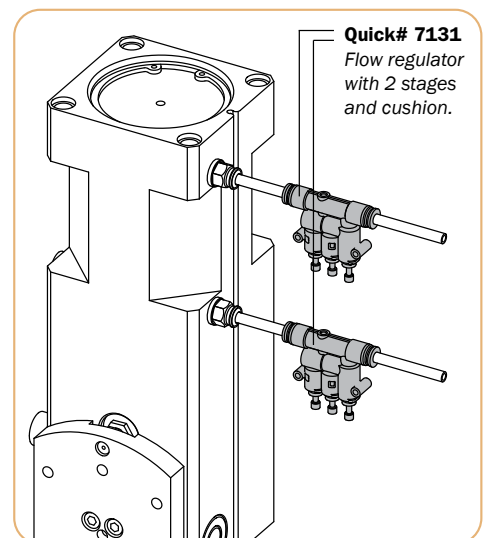
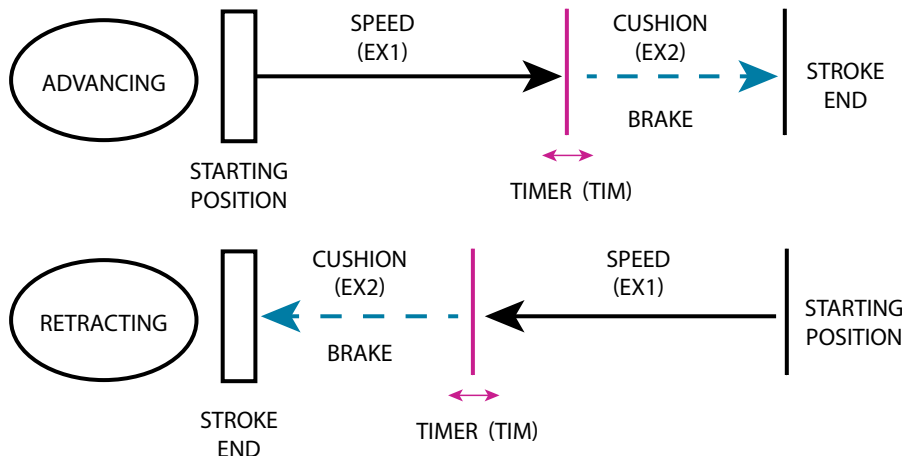


Two Stage Flow (Speed) Control

Quick#	Part#	Price	Wt.
7131	RG-BJSU6	\$51.70	33g



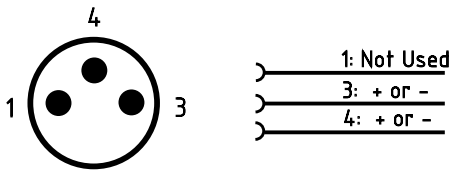
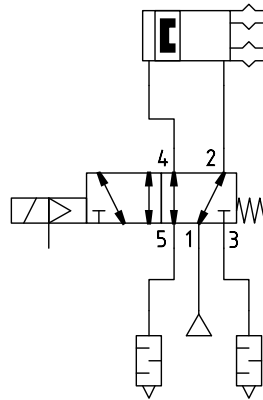
<b>TIM</b>	Shorten the time to the shift (apply brake)	Lengthen the time to shift (apply brake)
<b>EX1</b>	Increase the opening speed of the drive equipment	Decrease the opening speed of the drive equipment
<b>EX2</b>	Decrease the 2nd (braking) speed	Increase the 2nd (braking) speed



## In-line Solenoid Valve

In-line valves are designed to be used as stand-alone units, no manifold required! All pneumatic connections are on the valve, open for equipping with your preferred fittings and tubing. The electrical connection to the solenoid is made through an M8 3-pin male plug. The solenoid is controlled by switching a 24Vdc monostable signal.

Optional 3-pin Sensor cables can be found on page 985.



### 5/2 Size10 Solenoid Inline Valve

Quick#	Part#	Price	Style	Wt.
8067	VUVGL10M52-RTM5-1R8L	\$64.63	5 Port / 2 Position, Single Solenoid Valve M8, 3-pin Connector & M5 Ports	45g
<b>Accessory</b>				
8068	AMTE-M-H-M5	\$2.30	M5 Short Brass Silencer	

3-pin Sensor cables on page 985. See [www.EMICorp.com](http://www.EMICorp.com) for additional information.



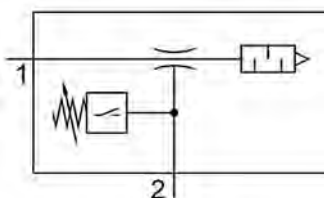
- High vacuum with integrated 3-pin M8 Male monitor switch and R01 silencer included.
- Optional low profile silencer #8069 installed with #244 G1/8 sealing ring.
- Housing made of light, impact-resistant plastic.
- Connection of compressed air and vacuum with push in Ø6mm
- Mounted by 3.4mm clearance holes with 25mm spacing.
- Operating temperature: 32°–122°F.
- Operating pressure: 1-8 bar
- Switching output: PNP

## Vacuum Generator (with Silencer)



Quick#	Part#	Price	Max Vacuum Level*	Max Suction Flow*	Air Consumption*	Standard Supply Pressure	Max Operating Pressure	Tubing OD Port	Overall Length**	Wt**
8091	VN10H-T4-PQ2-VQ2-O1P	\$218.00	93%	0.77 SCFM	1.97 SCFM	87 psi	116 psi	Ø6mm	107mm	36g

\*Values listed are achieved when supplied the listed standard supply pressure. \*\*Overall Length and weight with standard silencer (shown above). This is reduced when using Quick# 8069. Full dimensional drawing online.



### Vacuum Generator Accessories

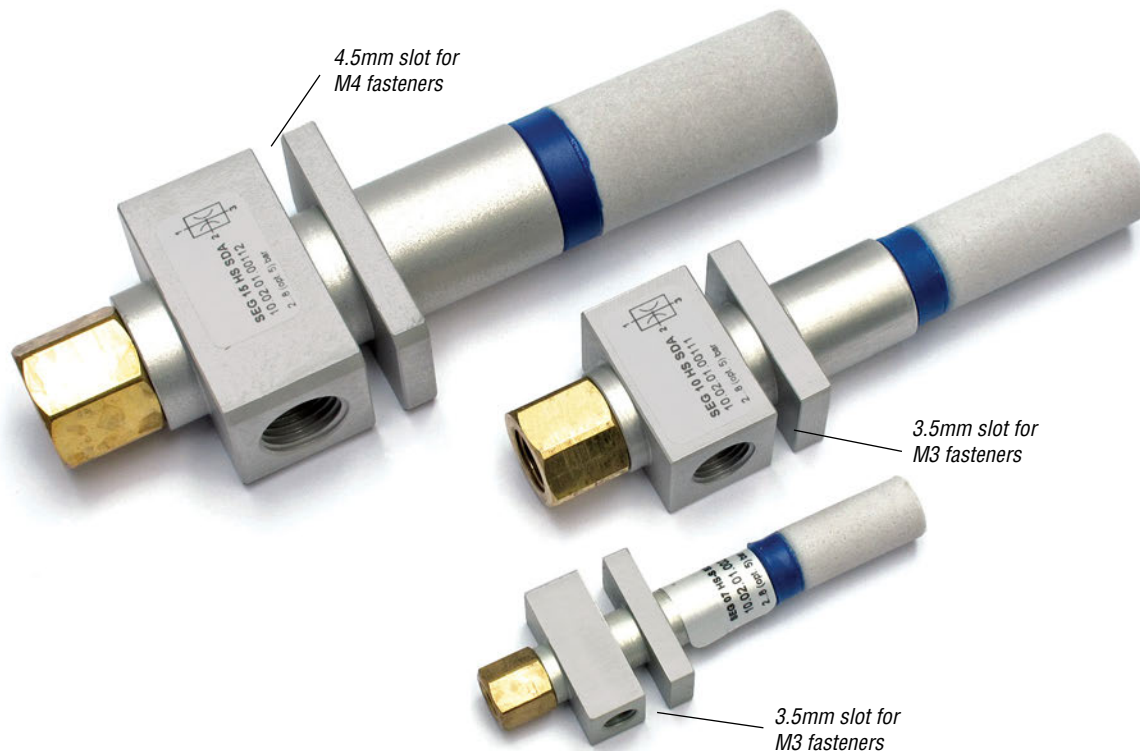
Quick#	Part#	Description	Price
8069	AMTE-M-H-G18	G1/8" Short Brass Silencer	\$2.63
244	GSF-G-G8	G1/8" Sealing Ring (use with #8069)	\$0.25

3-pin Sensor cables on page 985. Dimensional drawings online.

# Vacuum Generators (with Silencer)

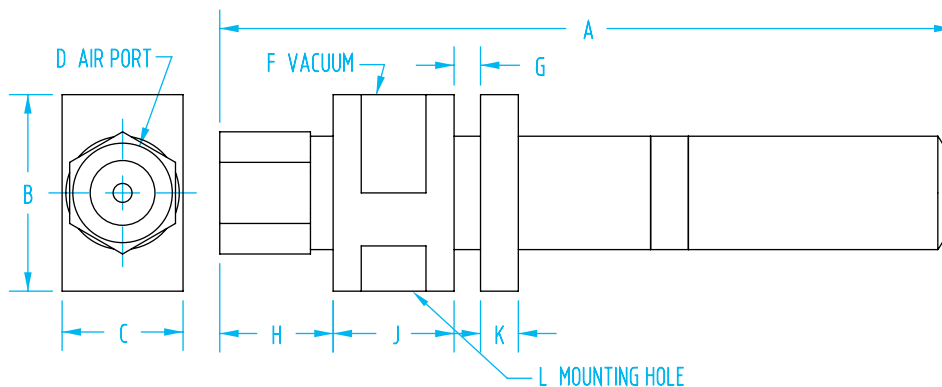
(Shown Actual Size)

These vacuum generators are made of aluminum, making them lightweight and suitable for mounting directly on your end-of-arm tooling. Use these when you need to add a simple vacuum circuit. The vacuum on/off function is controlled by switching the compressed air on/off. They have no moving parts, are maintenance free, and have silencers built in. Operating temperature range is from 14°–176°F. Operating pressure range is: 43.5–94.3 psi.



Quick#	Part#	Price	Max Vacuum Level*	Max Suction Flow*	Air Consumption*	Standard Supply Pressure	Max Operating Pressure	Thread	Overall Length	Wt
361	GSV-VG-056	\$94.53	82%	0.57 SCFM	0.74 SCFM	72.5 psi	87 psi	M5	64.5mm	11g
362	GSV-VG-119	\$94.87	85%	1.20 SCFM	1.73 SCFM			G1/8"	97mm	50g
363	GSV-VG-242	\$110.68	85%	2.44 SCFM	3.60 SCFM			G1/4"	121mm	110g

\*Values listed are achieved when supplied the listed standard supply pressure.



	A	B	C	D	F	G	H	J	K	L
361	51	20	10	M5	M5	3.5	10	8	3.5	M5x6
362	97	26	16	G1/8	G1/8	3.5	15	16	5	-
363	121	38	22	G1/4	G1/4	4.5	21	20	5	-

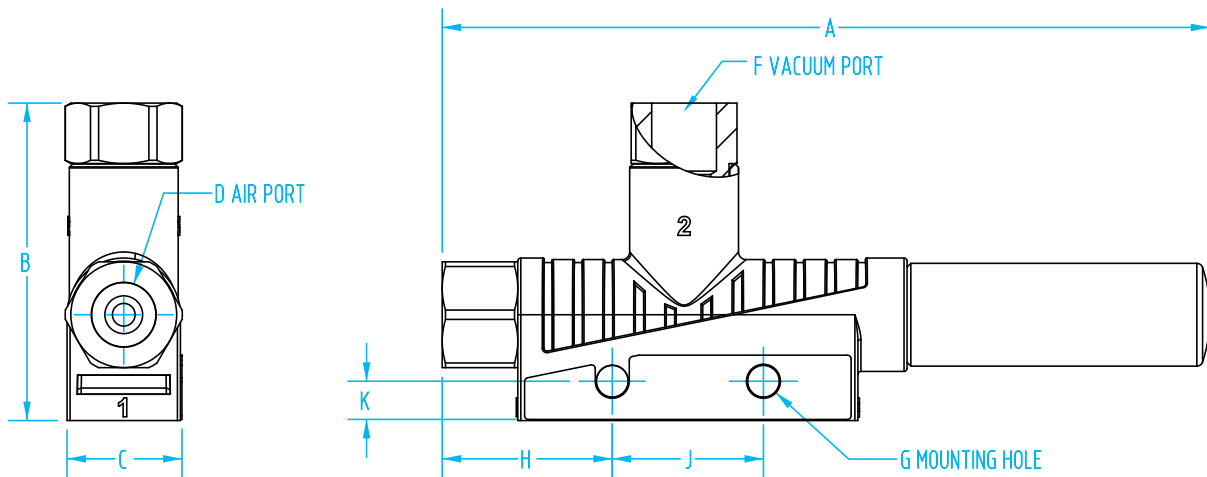
## Vacuum Generators (with Silencer)

- One-piece housing made of light, impact-resistant plastic.
- Connection of compressed air and vacuum with threaded ports.
- Vacuum generator with single nozzle, available in three power ratings, from 0.7 to 1.5mm.
- Can be fixed horizontal with mounting holes or vertical with the base on a mounting plate.
- Operating temperature: 32°–140°F.
- Operating pressure: 43.5–87psi (Optimal pressure: 65psi)



Quick#	Part#	Price	Max Vacuum Level*	Max Suction Flow*	Air Consumption*	Standard Supply Pressure	Max Operating Pressure	Thread	Overall Length	Wt
2033	SBP-07-G01-SDA	\$50.19	85%	0.57 SCFM	0.78 SCFM	65 psi	87 psi	M5	74mm	7.5g
2034	SBP-10-G02-SDA	\$52.08		1.33 SCFM	1.70 SCFM			G1/8"	102mm	22g
2035	SBP-15-G02-SDA	\$56.31		2.51 SCFM	3.71 SCFM			G1/8"	102mm	22g

\*Values listed are achieved when supplied the listed standard supply pressure.



	A	B	C	D	F	G	H	J	K
2033	74	31	10	M5	M5	4.2	17.5	20	5.2
2034	102	42	15	G1/8"	G1/8"	4.2	22.5	20	5.2
2035	102	42	15	G1/8"	G1/8"	4.2	22.5	20	5.2



## Clampable Vacuum Generators (without Silencer)

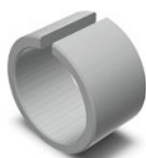
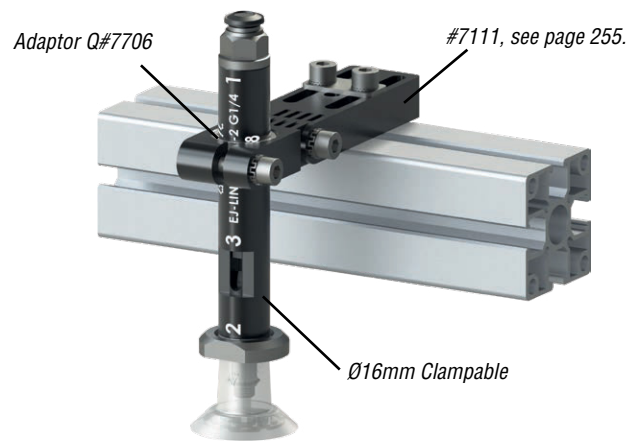
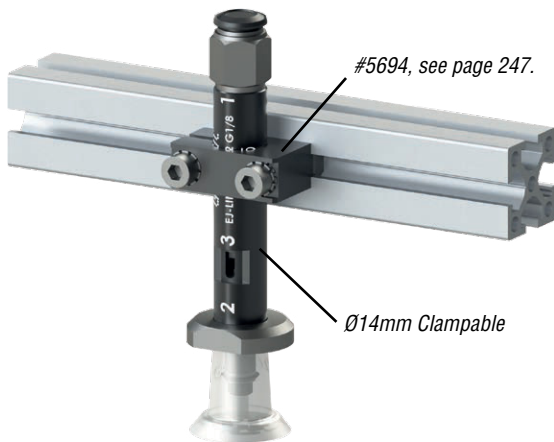
- Two size options available.
- Can be integrated near the gripping point, lightweight.
- No reduction of vacuum flow rate.
- Flexible, the clampable design enables the use of in-line or elbow fittings.
- Two vacuum port options G1/8" & G1/4".



**NEW**

Quick#	Part#	Price	Max Vacuum Level*	Max Suction Flow*	Air Consumption*	Standard Supply Pressure	Max Operating Pressure	Tubing Port	Overall Length	Wt
7687	S-LP-2-G1/8	\$23.50	82%	0.53 SCFM	0.36 SCFM	31.91 psi	101.53 psi	G1/8"	62.2mm	17g
7688	S-HF-2-G1/8	\$23.50	78%	0.61 SCFM	0.32 SCFM	87.02 psi	101.53 psi	G1/8"	62.2mm	17g
7689	S-HV-2-G1/8	\$23.50	92%	0.47 SCFM	0.28 SCFM	72.52 psi	101.53 psi	G1/8"	62.2mm	17g
7690	M-LP-2-G1/4	\$29.50	89%	1.42 SCFM	1.17 SCFM	58.02 psi	101.53 psi	G1/4"	85.9mm	27g
7691	M-HF-2-G1/4	\$29.50	73%	1.65 SCFM	0.91 SCFM	87.02 psi	101.53 psi	G1/4"	85.9mm	27g
7692	M-HV-2-G1/4	\$29.50	94%	1.61 SCFM	1.00 SCFM	72.52 psi	101.53 psi	G1/4"	85.9mm	27g

\*Values listed are achieved when supplied the listed standard supply pressure.



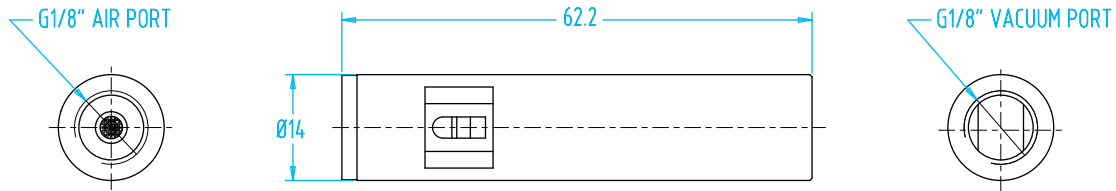
### Mounting Adaptor

Quick#	Part#	Price	Wt
7706	MFM-A106	\$10.14	5g

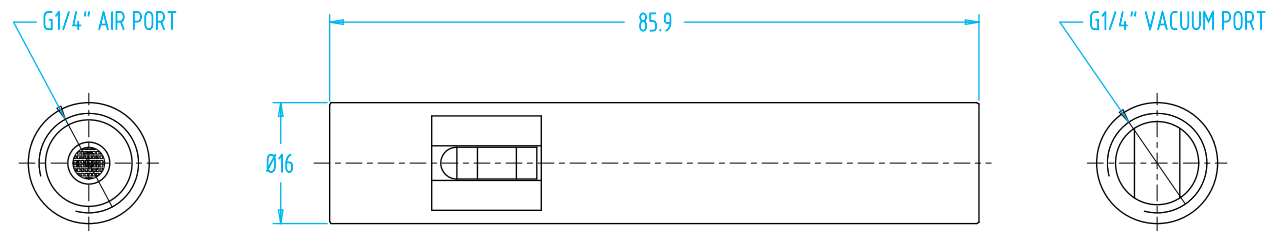
Use this Ø20mm mounting adaptor with Ø16mm vacuum generators.

## Clampable Vacuum Generators (without Silencer)

### Q# 7687-7689



### Q# 7690-7692



Quick#	Part#	Compressed Air Input	Vacuum Level	Suction Flow Rate	General Usage Notes & Typical Applications
7687	S-LP-2-G1/8	Low Feed Pressure, Low Consumption	High	Medium	<ul style="list-style-type: none"> <li>• Cost effective in use because of their high efficiency design (due to only requiring low feed pressure).</li> <li>• High vacuum holding force optimal for picking small to medium parts.</li> <li>• Applications where leakage is minimal, such as picking smooth mostly flat parts.</li> </ul>
7690	M-LP-2-G1/4				
7688	S-HF-2-G1/8	High Feed Pressure, High Consumption	Low	High	<ul style="list-style-type: none"> <li>• Applications where a low cycle time is required.</li> <li>• Recommended for pick/place of smaller lightweight parts.</li> <li>• When there is leakage, incomplete vacuum seal, uneven surfaces, texture, porous parts, cardboard, textile/fabric, and when sealing over raised/sunken logos or text.</li> <li>• Often used in combination with polyurethane or foam lip vacuum cups.</li> <li>• When large volumes of air needs to be evacuated, like when using large or multi-bellow vacuum cups.</li> </ul>
7691	M-HF-2-G1/4				
7689	S-HV-2-G1/8	Medium Feed Pressure, Medium Consumption	High	Low	<ul style="list-style-type: none"> <li>• Applications that require higher vacuum levels (i.e. larger holding forces), ideal for picking larger/heavier parts.</li> <li>• To improve cycle time it is recommended to use vacuum cups with low internal air volume (i.e. smaller diameter cups and ideally flat or 1.5 bellow vacuum cups).</li> <li>• Applications where holding force more important than cycle time (i.e. higher vacuum level).</li> </ul>
7692	M-HV-2-G1/4				

## Vacuum Generators (without Silencer)

- High vacuum flow capacity in relation to energy consumption.
- Lightweight, inline design with push-in fittings for vacuum or compressed air.
- Quick and easy installation directly on the tubing.
- See website for dimensional drawings.
- Patented COAX® cartridge technology.
- Without silencer.



Quick#	Part#	Price	Max Vacuum Level*	Max Suction Flow*	Air Consumption*	Standard Supply Pressure	Max Operating Pressure	Tubing OD Port	Overall Length	Wt
2050	PIVG-MICRO-SI6	\$38.86	74%	0.59 SCFM	0.25 SCFM	87 psi	102 psi	Ø6mm	70mm	10g
2051	PIVG-MINI-SI6	\$46.91		1.46 SCFM	0.93 SCFM			Ø6mm	96mm	23g
2052	PIVG-MINI-SI8	\$46.91		1.46 SCFM	0.93 SCFM			Ø8mm	96mm	22g

\*Values listed are achieved when supplied the listed standard supply pressure.

These vacuum generators are made of plastic so they are very lightweight and low cost. They are great for in-line use to individual vacuum cups or vacuum cup clusters. Use these when you need to add a simple vacuum circuit. The vacuum on/off function is controlled by switching the compressed air on/off. They have no moving parts and are maintenance free.

The new slim generators are more compact than the previous version.



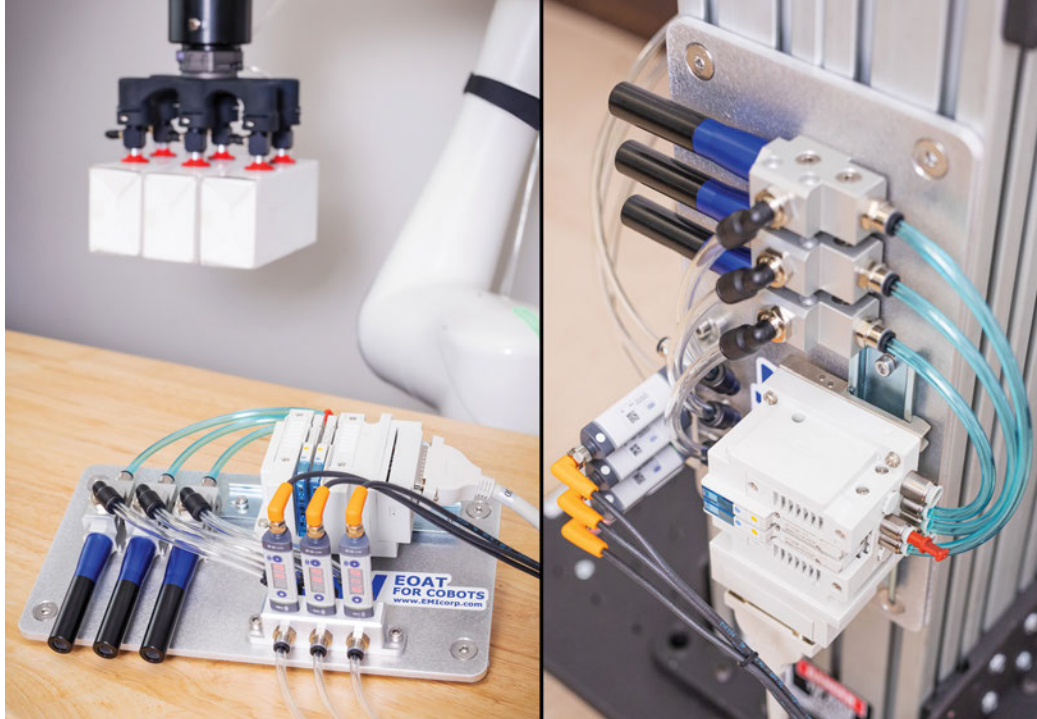
**NEW**

Quick#	Part#	Price	Max Vacuum Level*	Max Suction Flow*	Air Consumption*	Standard Supply Pressure	Max Operating Pressure	Tubing OD Port	Overall Length	Wt
5235	GSV-VG-ZU05LA	\$16.50	48%	0.46 SCFM	0.49 SCFM	65 psi	87 psi	Ø6mm	52mm	3.9g
5236	GSV-VG-ZU05SA	\$16.50	90%	0.25 SCFM	0.49 SCFM					3.9g
5237	GSV-VG-ZU07LA	\$17.50	48%	0.56 SCFM	0.98 SCFM					4.3g
5238	GSV-VG-ZU07SA	\$17.50	90%	0.39 SCFM	0.98 SCFM					4.3g

\*Values listed are achieved when supplied the listed standard supply pressure.

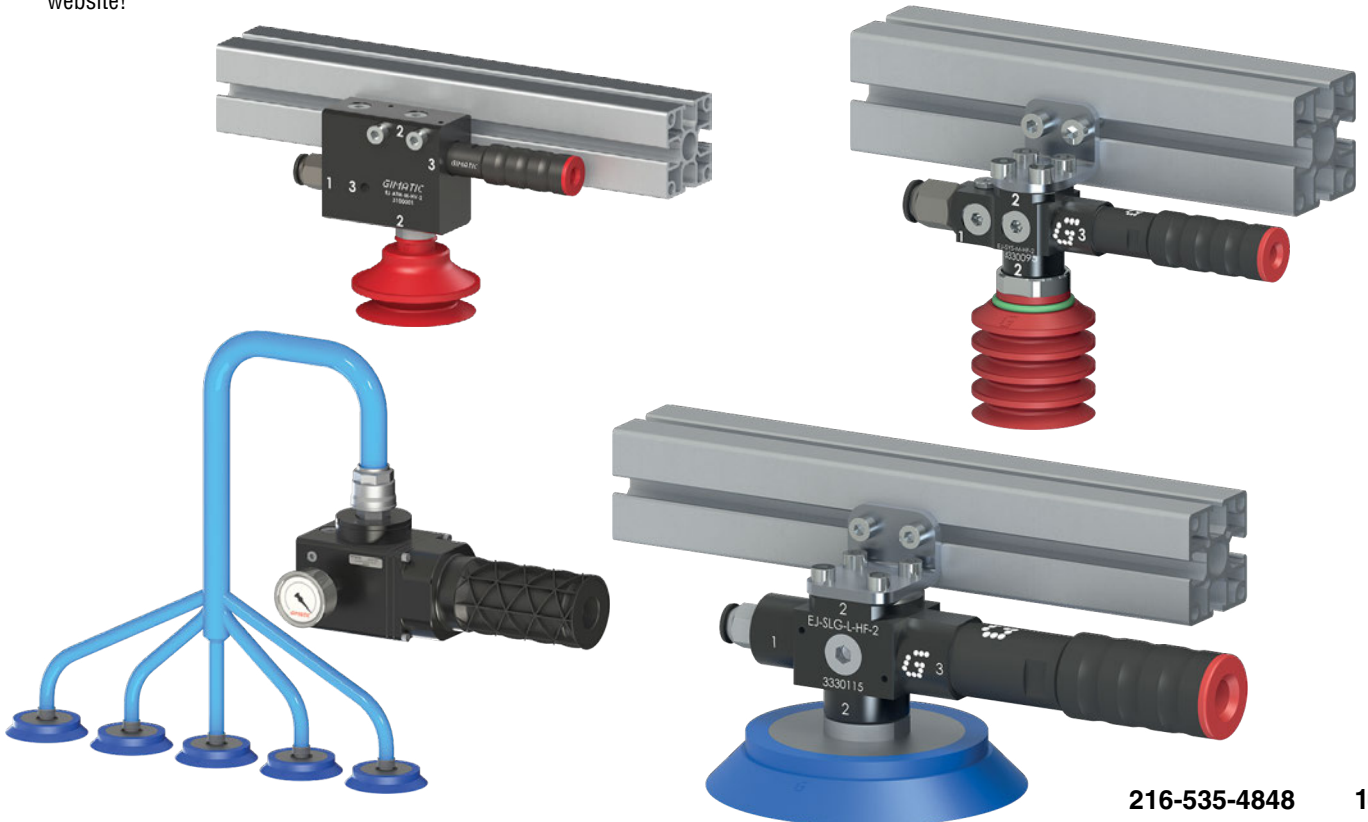
## Need the supporting pneumatic equipment to regulate and control your cobot gripper kits?

Our supply filter-regulator kit provides simple mechanical on-off control and preps your compressed air before delivery to our pneumatic valve kit, which includes a 3-zone valve stack to operate both grippers and blow-off independently.



## Find Gimatic's new line of Vacuum Products online!

Lightweight and modular vacuum pumps for decentralized and centralized applications. Find these and more on our website!





## Mix-and-Match Modularity



### Short-Build Island Example

Short-build valve assemblies typically require only one pressure supply and one exhaust connection incorporated in the island “head” module on the left.



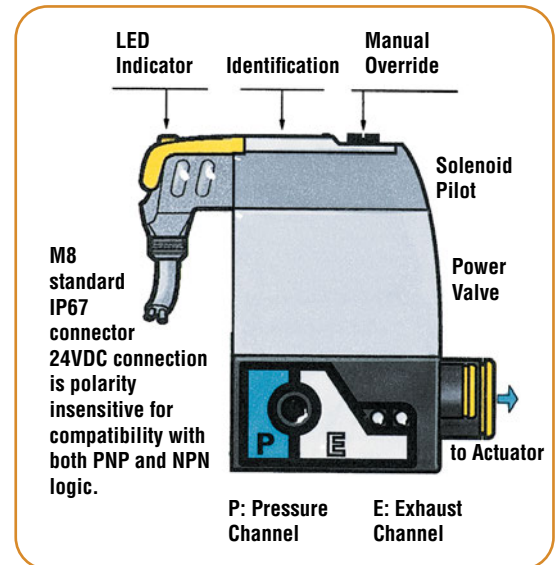
### Modular Island Assembly

Size 1 and Size 2 Modules can be combined in one assembly. Use a T9 screwdriver.



### High-Flow Island Example

Longer, high-flow island assemblies typically require two exhaust connections. An “intermediate” module on the far right is used in addition to the island “head” module.



## The Right Valve Module for Each Cylinder

### Valve Flow Passage

One island may control both large and small cylinders. This is why valve modules of different flow capabilities can be combined into the same island.



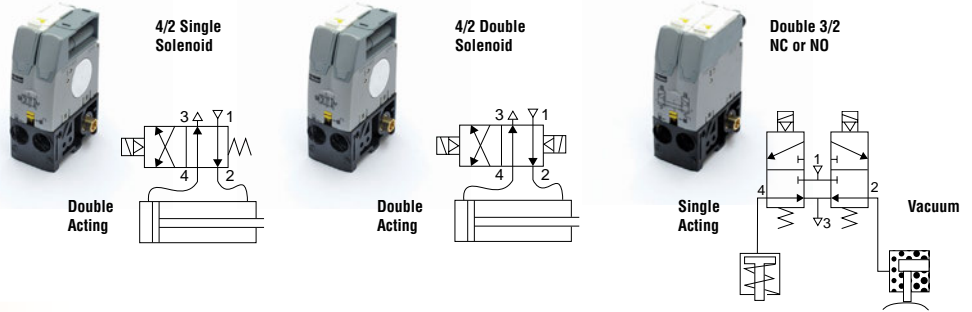
Valve Module Size	Size 1		Size 2	
Tube Size to Cylinder	Ø4mm OD	Ø6mm OD	Ø8mm OD	Ø10mm OD
Cylinder Bore Size	Ø6 to Ø25mm	Ø25 to Ø40mm	Ø40 to Ø63mm	Ø63 to Ø100mm

**Parker**  
Moduflex system  
Registered trademark of Parker Hannifin Corporation. Used with permission.

How to Order

STEP 1 DETERMINE VALVE FUNCTIONS

One island may contain multiple and differing valve control functions. See 1026 for a complete list of valves. Control may require single or double solenoid pilot valves, or both.



STEP 2 DETERMINE VALVE SIZES

Valve modules of different flow capabilities can be combined into the same island. Make sure the module is correctly sized for the cylinder bore. Contact our EOAT engineering department for assistance sizing multiple cylinders to one valve module.

Valve Module Size	Size 1		Size 2	
Tube Size to Cylinder	Ø4mm OD	Ø6mm OD	Ø8mm OD	Ø10mm OD
Cylinder Bore Size	Ø6 to Ø25mm	Ø25 to Ø40mm	Ø40 to Ø63mm	Ø63 to Ø100mm

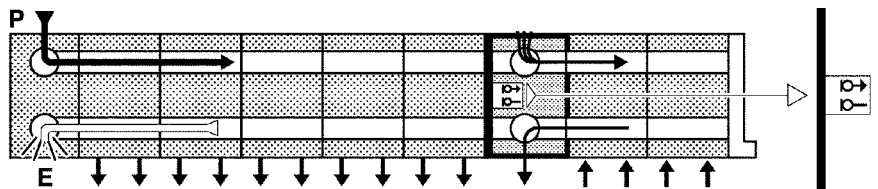
STEP 3 DETERMINE PRESSURE SECTIONS

Each Valve Island requires a "Head" module for primary supply of pressure and exhaust. An "Intermediate" module (supplied with universal configuration plates) provides additional functionality for valve island applications.



Head modules come with tail end piece.

Intermediate modules come with configuration plates. (Order push in fittings separately).



STEP 4 DETERMINE PERIPHERAL COMPONENTS

Order peripheral components separately. Push-in pneumatic connectors for tubing, mufflers, M8 electrical connectors for solenoid pilots, flow controls, pressure regulators, and check valves are all sold separately. Note: electrical connectors are compatible with both NPN and PNP logic, see 1038.



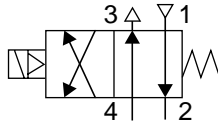
# Pricing and Components

Order Fittings Separately

Use Quick#s when ordering

## Valve Functions

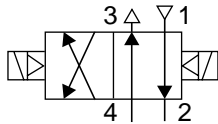
**4/2**  
4 Port  
2-Position  
Valves



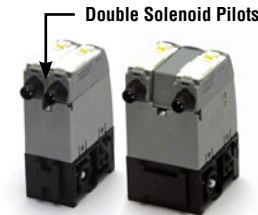
**Single Solenoid**  
(Monostable)  
Control Signal has to be Maintained.  
(Order fittings separately)



	Size 1	Size 2
<b>Quick#</b>	1936	1943
<b>Part#</b>	P2M1T4ES2C	P2M2T4ES2C
<b>Price</b>	\$ <a href="#">HERE</a>	\$ <a href="#">HERE</a>
<b>Wt.</b>	68g	74g
<b>Cv</b>	.32	.80

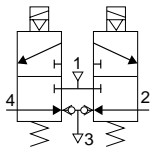


**Double Solenoid**  
(Bistable)  
Control Signals may be Momentary.  
(Order fittings separately)



<b>Quick#</b>	1937	1944
<b>Part#</b>	P2M1T4EE2C	P2M2T4EE2C
<b>Price</b>	\$ <a href="#">HERE</a>	\$ <a href="#">HERE</a>
<b>Wt.</b>	77g	83g
<b>Cv</b>	.32	.80

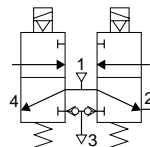
**3/2**  
3 Port  
2-Position  
Valves



**Double Solenoid (NC + NC)**  
(Normally Closed + Normally Closed)  
Single Solenoid, Outputs when Energized



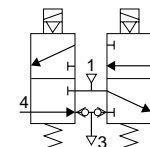
<b>Quick#</b>	1938	1945
<b>Part#</b>	P2M1TDEE2C	P2M2TDEE2C
<b>Price</b>	\$ <a href="#">HERE</a>	\$ <a href="#">HERE</a>
<b>Wt.</b>	80g	94g
<b>Cv</b>	.22	.44



**Double Solenoid (NO + NO)**  
(Normally Open + Normally Open)  
Single Solenoid, Outputs when De-energized



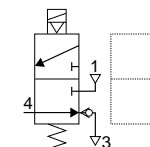
<b>Quick#</b>	1939	1946
<b>Part#</b>	P2M1TCEE2C	P2M2TCEE2C
<b>Price</b>	\$ <a href="#">HERE</a>	\$ <a href="#">HERE</a>
<b>Wt.</b>	80g	94g
<b>Cv</b>	.22	.44



**Double Solenoid (NC + NO)**  
NC: Output when Energized  
NO: Output when De-energized



<b>Quick#</b>	1940	1947
<b>Part#</b>	P2M1TEEE2C	P2M2TEEE2C
<b>Price</b>	\$ <a href="#">HERE</a>	\$ <a href="#">HERE</a>
<b>Wt.</b>	80g	94g
<b>Cv</b>	.22	.44

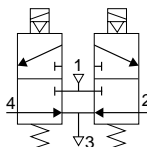


**Single Solenoid (NC)**  
(Order fittings separately)



<b>Quick#</b>	1941	1948
<b>Part#</b>	P2M1T3ES2C	P2M2T3ES2C
<b>Price</b>	\$ <a href="#">HERE</a>	\$ <a href="#">HERE</a>
<b>Wt.</b>	76g	90g
<b>Cv</b>	.22	.44

**4/3**  
4 Port  
3-Position  
Valves

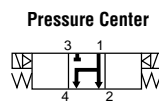
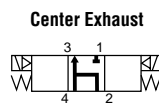
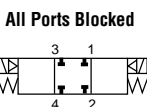


**Center Exhaust Dual 3/2 (NC + NC)**  
Without Exhaust Check Valve  
(Dual Pilot Check Valve can be ordered separately)



<b>Quick#</b>	1942	1949
<b>Part#</b>	P2M1TGEE2C	P2M2TGEE2C
<b>Price</b>	\$ <a href="#">HERE</a>	\$ <a href="#">HERE</a>
<b>Wt.</b>	80g	94g
<b>Cv</b>	.22	.44

Dual 3/2 valve modules achieve these 3-position valve functions (5/3 or 4/3) as explained on page 1035 (bottom).

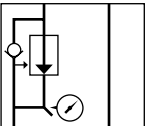

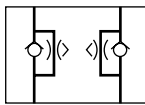

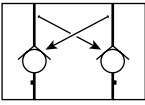



**Supply**

These components fit Size 1 & Size 2

		Size 1	Size 2
<b>Head / Tail Module</b>	<b>Pneumatic Head &amp; Tail Set</b> Requires size 2 fittings. (Order fittings Separately)		<b>Quick#</b> 1950 <b>Part#</b> P2M2HXT01 <b>Price</b> \$ <a href="#">HERE</a> <b>Wt.</b> 64g
<b>Intermediate Module</b>	<b>Intermediate Set</b> With four Configuration Plates (Order fittings Separately)		<b>Quick#</b> 1951 <b>Part#</b> P2M2BXT0A <b>Price</b> \$ <a href="#">HERE</a> <b>Wt.</b> 42g
	<b>M8 Connector for Solenoid Pilots (with 5m Cable)</b> Use this connector with new valve island installations. Integrated LED indicator and voltage surge suppression.		<b>Quick#</b> 1980 <b>Part#</b> P8LS08L526C <b>Price</b> \$ <a href="#">HERE</a> <b>Wt.</b> 148g
	<b>M8 Connector for Solenoid Pilots (no Cable)</b> Use this connector when you have pre-existing cables, (typically when replacing an old valve island). Threads into the solenoid pilots on the back of the valves.		<b>Quick#</b> 1981 <b>Part#</b> P8CS0803J <b>Price</b> \$ <a href="#">HERE</a> <b>Wt.</b> 12g

**Peripheral**

	<b>Pressure Regulator</b> <b>Order Gauge Separately (see below)</b> (Can be located remotely, or directly on valve island by using two double male unions. Order separately, see below.)		<b>0-60 psi</b>	<b>Quick#</b> 1954 <b>Part#</b> P2M1PXSL <b>Price</b> \$ <a href="#">HERE</a> <b>Wt.</b> 115g	<b>1958</b> P2M2PXSL \$ <a href="#">HERE</a> 140g
			<b>0-120 psi</b>	<b>Quick#</b> 1955 <b>Part#</b> P2M1PXSN <b>Price</b> \$ <a href="#">HERE</a> <b>Wt.</b> 115g	<b>1959</b> P2M2PXSN \$ <a href="#">HERE</a> 140g
	<b>Dual Flow Control Module</b> (Can be located remotely, or directly on valve island by using two double male unions. Order separately, below.)		<b>Quick#</b> 1952 <b>Part#</b> P2M1PXFA <b>Price</b> \$ <a href="#">HERE</a> <b>Wt.</b> 30g	<b>1956</b> P2M2PXFA \$ <a href="#">HERE</a> 45g	
	<b>Dual Pilot Operated Check Valve</b> (Can be located remotely, or directly on valve island by using two double male unions. Order separately, below.)		<b>Quick#</b> 1953 <b>Part#</b> P2M1PXCA <b>Price</b> \$ <a href="#">HERE</a> <b>Wt.</b> 25g	<b>1957</b> P2M2PXCA \$ <a href="#">HERE</a> 40g	

**Accessories**

Description	Size 1			Size 2		
	Quick#	Part#	Price	Quick#	Part#	Price
DIN Rail - for mounting	5073	EL-704W	\$ <a href="#">HERE</a>	5073	EL-704W	\$ <a href="#">HERE</a>
0-60psi Regulator Gauge	1960	P2M1K0GL	\$ <a href="#">HERE</a>	1960	P2M1K0GL	\$ <a href="#">HERE</a>
0-120psi Regulator Gauge	1961	P2M1K0GN	\$ <a href="#">HERE</a>	1961	P2M1K0GN	\$ <a href="#">HERE</a>
Muffler (for Exhaust Port)	1966	MMDVA1	\$ <a href="#">HERE</a>	1977	MMDVA2	\$ <a href="#">HERE</a>
Plug	1967	PMDYY1	\$ <a href="#">HERE</a>	1978	PMDYY2	\$ <a href="#">HERE</a>
Double Male Union:	1968	HMDXX1	\$ <a href="#">HERE</a>	1979	HMDXX2	\$ <a href="#">HERE</a>
Elbow: 4mm OD tube	1962	CMD04-1	\$ <a href="#">HERE</a>			
Elbow: 6mm OD tube	1963	CMD06-1	\$ <a href="#">HERE</a>	1969	CMD06-2	\$ <a href="#">HERE</a>
Elbow: 8mm OD tube				1970	CMD08-2	\$ <a href="#">HERE</a>
Elbow: 10mm OD tube				1971	CMD10-2	\$ <a href="#">HERE</a>
Elbow: 12mm OD tube				1972	CMD12-2	\$ <a href="#">HERE</a>
Straight: 4mm OD tube	1964	FMD04-1	\$ <a href="#">HERE</a>			
Straight: 6mm OD tube	1965	FMD06-1	\$ <a href="#">HERE</a>	1973	FMD06-2	\$ <a href="#">HERE</a>
Straight: 8mm OD tube				1974	FMD08-2	\$ <a href="#">HERE</a>
Straight: 10mm OD tube				1975	FMD10-2	\$ <a href="#">HERE</a>
Straight: 12mm OD tube				1976	FMD12-2	\$ <a href="#">HERE</a>



## Island Head Module Port Sizing

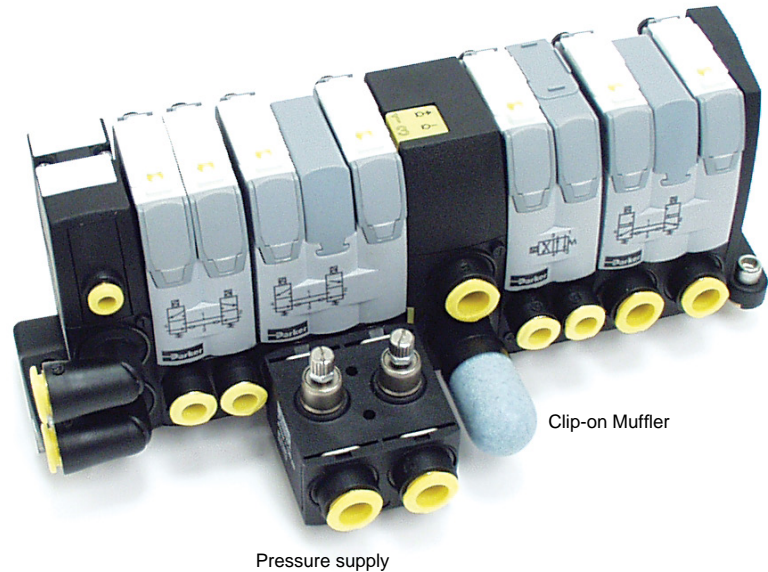
### Choice of Connections to Island 'P' and 'E' Ports

Moduflex is totally flexible – islands may have from 2–19 valves, with a choice of two valve sizes, depending on the required flow. Valve island pressure supply and exhaust collection are connected onto the head module and, if flows require it, onto intermediate supply modules added into the island.

Push-in tube connectors are simply clipped into the head module and are available in various sizes as either straight or elbow connections to suit a particular application.

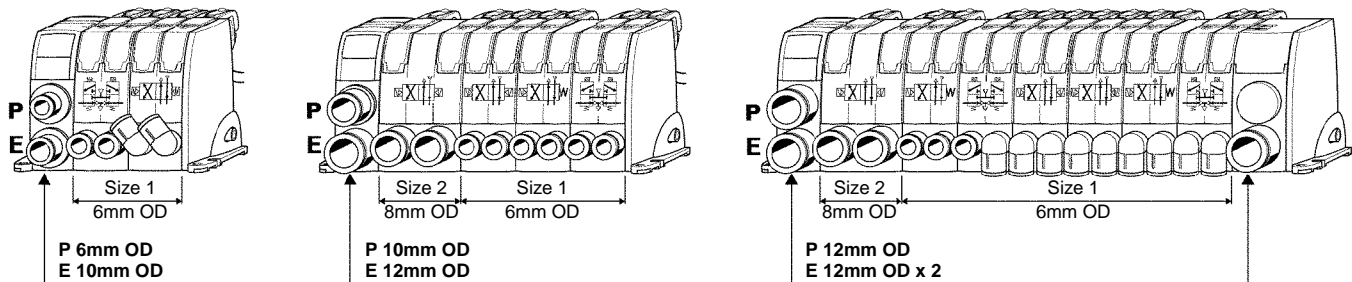
For typical EOAT applications, the exhaust may not need to be piped away. Therefore, in such cases, a clip-on muffler will provide the best options for flow and noise reduction.

Depending on the island size (short or long) and on the size of its valves, the flow requirements can be very different. Each island is easily configured to conform to the flow requirements, and can be easily modified if the cylinder speeds are insufficient.



Choice of Elbow Connectors: 6mm, 8mm, 10mm, 12mm OD Tube

### Sizing Recommendations



The three (3) valve islands above present typical situations for sizing island pressure supply and exhaust collection.

In a given island, valves do not deliver their flow at the same moment; therefore, the number of valves in an island is not the major factor to consider. More important is the size of the largest valve and the largest output tubes to the cylinders.

#### Short Islands

With only size 1 valves, a short island requires limited flow supply (the tail module is a simple plate). When a size 2 valve is integrated into the island, its flow requirements dictate the island supply and exhaust choices. In all cases, the exhaust section area must be bigger than the supply section area.

#### Long Islands

The double exhaust connector 'E' (Ø 12mm) with maximum flow is generally required, while only one pressure supply connector 'P' is necessary.

#### Recommendations:

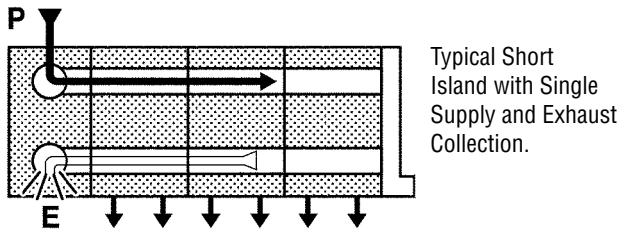
- Air supply connection at least equivalent to largest output tube to cylinders
- Exhaust collection at least twice the section area of the largest output tube to cylinders

For islands with high flows, the following options are possible:

- Use tubes up to 12mm OD or mufflers providing exhaust collection is not necessary
- Provide additional 'P' and/or 'E' connection ports by inclusion of intermediate supply modules, keeping the tube size small

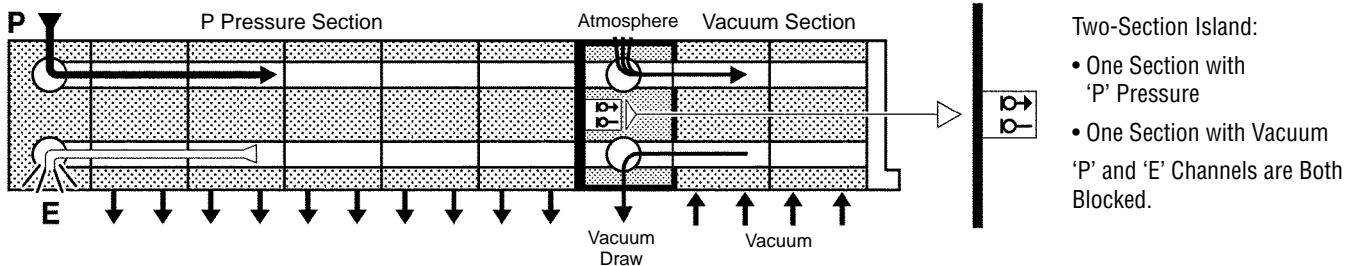
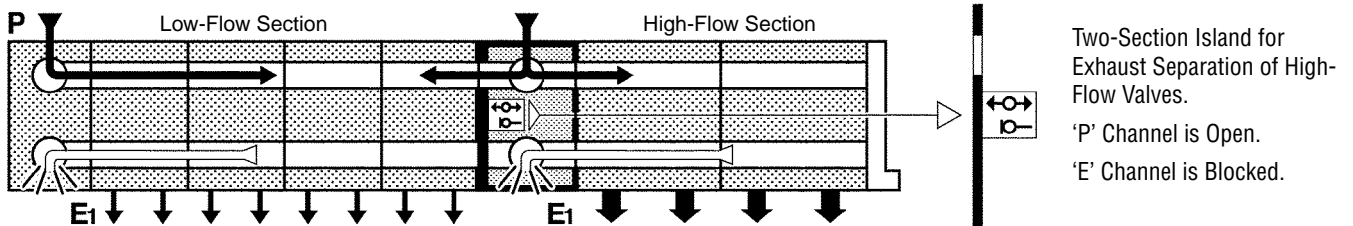
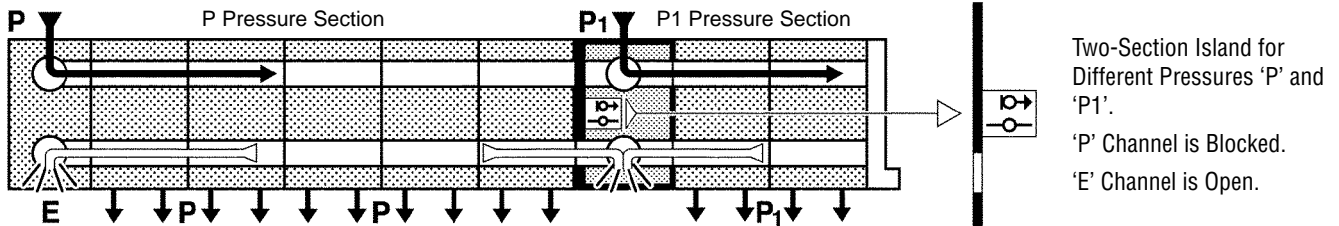
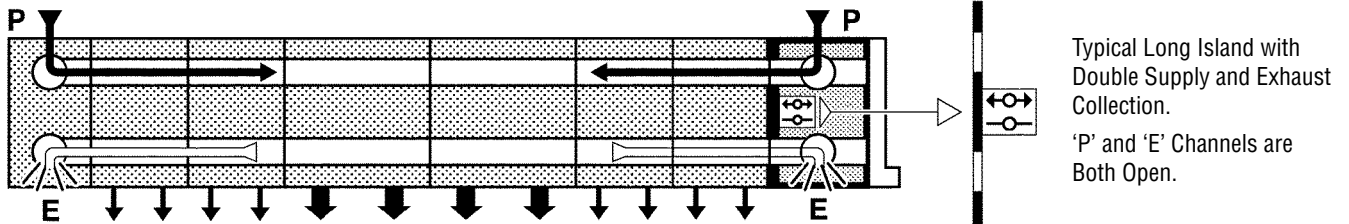
At the machine commissioning stage, the supply and exhaust connections can be easily modified until the required performance is achieved.

## Island Division into Different Pressure Sections



Valve islands may require two (2) or more different pressure sections. The universal intermediate supply module is available to provide any required combination, as shown by the following examples.

**Order Quick# 1951 (Part# P2M2BXT0A)**

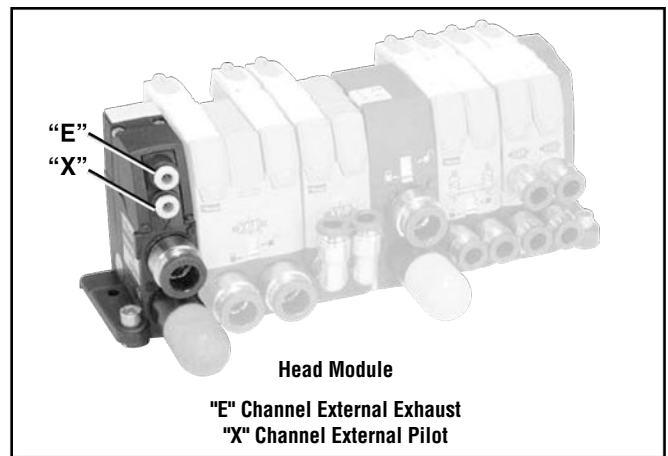
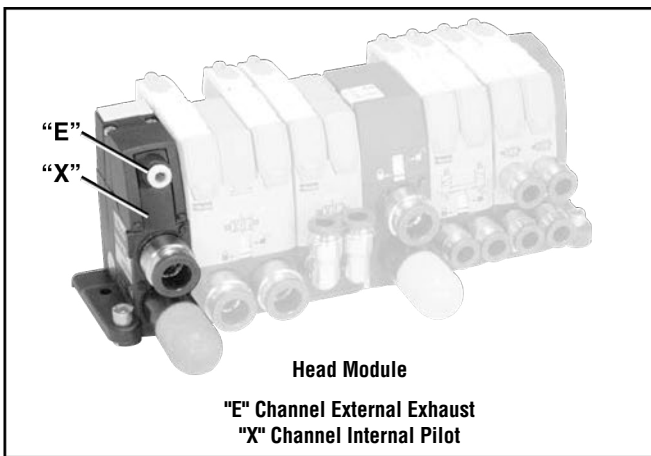
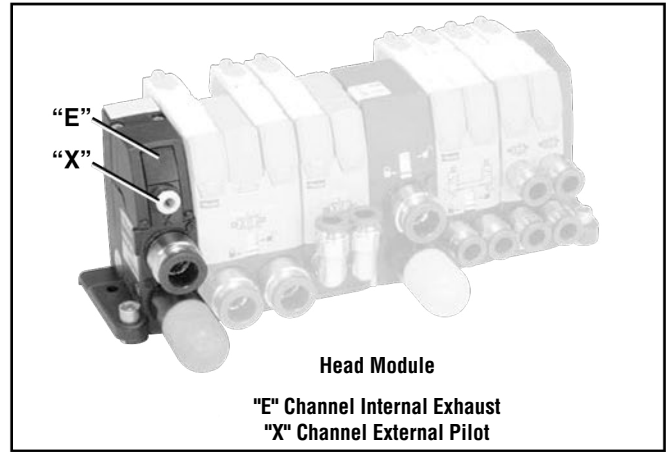
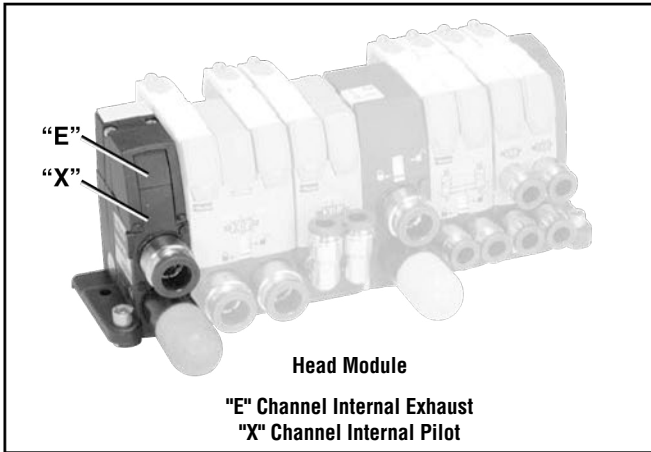


The universal intermediate supply module is supplied with four (4) configuration plates that achieve two (2) functions:

1. Block 'P' or 'E' channel, or none, or both;
2. Present a simple diagram on the island front to indicate the internal configuration.



## Internal / External Pilot Supply



In all valve islands, subbases incorporate an auxiliary channel **x** to supply pressure to the solenoid pilots. Depending on the application, this channel:

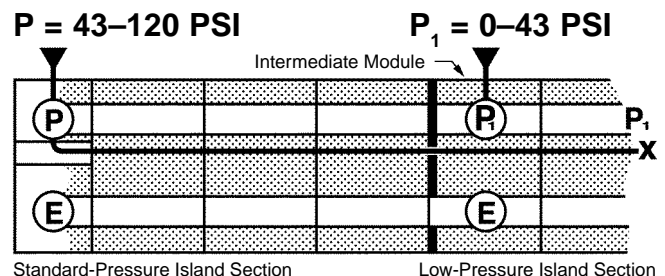
- May be fed by the main pressure **P** if it is between 43–120 PSI; this is the “internal pilot supply” of the valve island,
- May be fed separately, when pressure **P** is lower than 43psi (43psi being the minimum pressure to pilot the valves); this is the “external pilot supply” of the valve island.

The valve islands have a universal pneumatic head module that allows these two types of pilot supplies. This head module incorporates a 2 position **x** selector:

- The internal pilot supply position is the normal position; no connection port is visible since no external supply is necessary.
- If required, the external pilot supply position can be obtained manually by rotating the selector; it then presents a push-in connection port for a Ø4mm tubing that will feed the pilot pressure (43–120psi) to the **x** channel.

### Special Case: Multi-section Valve Island

The intermediate module that separates two island sections is crossed by the auxiliary channel **x**. When an island includes several sections working at different pressures, an internal pilot supply pressure is satisfactory, if the first section operates at 43–120psi pressure.

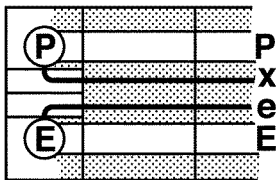


## External / Internal Pilot Exhaust

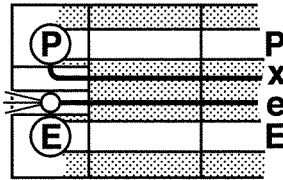
In all valve islands, subbases also incorporate an auxiliary channel **e** to collect the solenoid pilot exhausts. Depending on the application, this channel:

- May exhaust directly into the main exhaust channel **E** if no important exhaust back pressure is to be feared.
- May be collected separately when a persistent back pressure will possibly delay the depiloting of some of the valves into the island, or for vacuum applications.

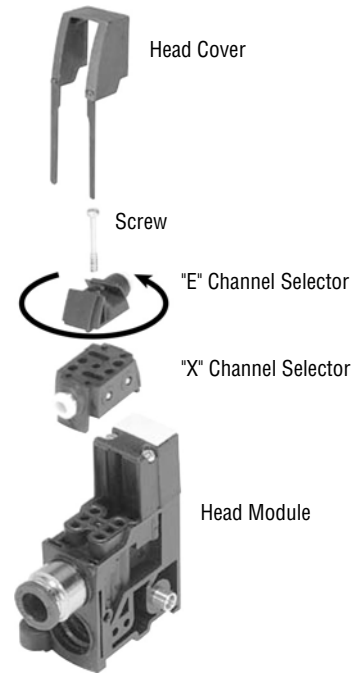
In order to choose between the internal or the external collection of the island pilot exhaust, a second 2-position selector is integrated into the pneumatic island head module, as shown here.



Configuration for Internal Collection of Pilot Exhaust **e**

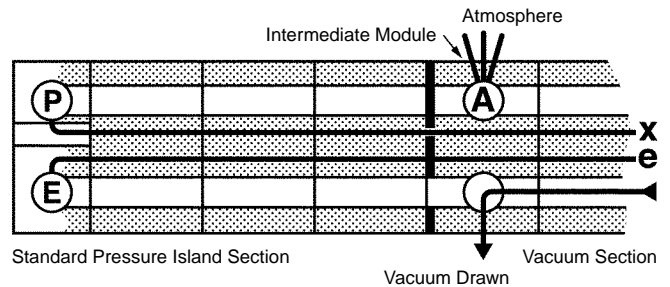


Configuration for External Collection of Pilot Exhaust **e**



### Special Case: Multi-section Valve Island

The intermediate module that separates two island sections is crossed by both auxiliary channels **x** and **e**. When an island includes several sections, including a section working with vacuum where no exhaust should pollute the vacuum drawn, an internal collection of pilot exhaust is satisfactory if the first section is the one that works at a typical pressure.



### Vacuum Generator



Note: Fittings not included

### Vacuum Generator

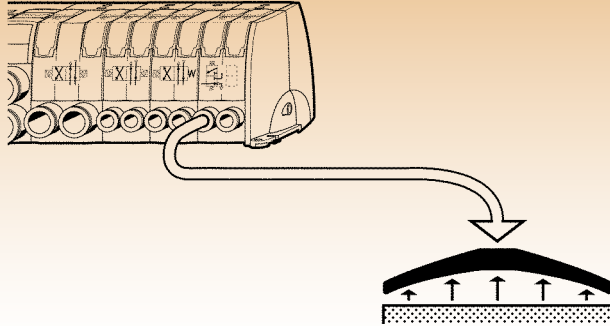
Quick#	Part#	Wt.	Price
2722	P2M1PXVA	25g	\$ HERE

Add this peripheral to your Moduflex system to create vacuum with blow-off from your compressed air circuit. Optional plug-in vacuum monitors are available for delivering a vacuum feedback signal.

The vacuum generator can be located remotely or directly on the valve island by using two double-male unions with Size 1. To use with Size 2, use tubing and push to connect fittings. For more information, see page 986.



## Valve Islands for Vacuum Applications

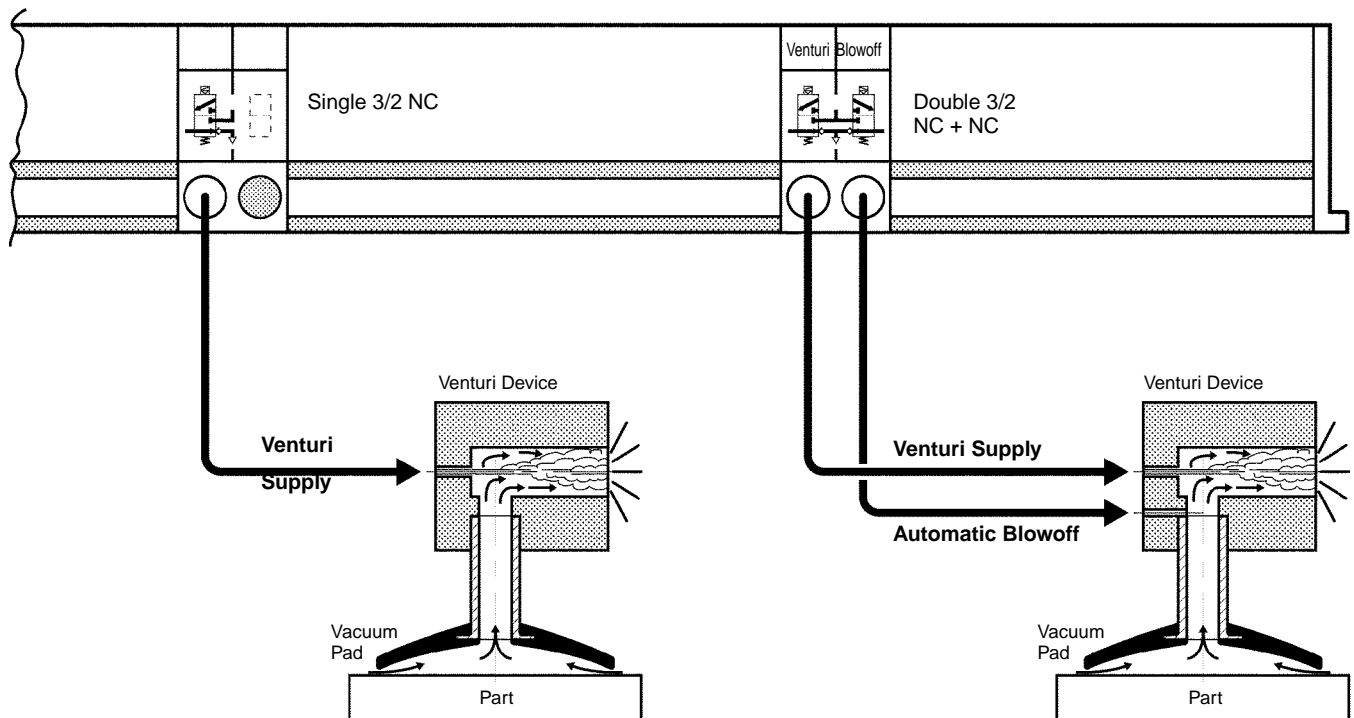


Pneumatic automation is often combined with vacuum applications:

- To pick up parts and to move them;
- To vacuum pack or to process under vacuum.

Within electro-pneumatic circuits and machines, these pneumatic valve islands can simplify circuit design and installation of combined pneumatic and vacuum systems.

### Providing Controls for Vacuum Venturi Devices



The Venturi device is also called an “ejector” or a vacuum generator and is well known to pneumatic engineers. It produces vacuum from an air pressure supply. The air jet generates a fast moving flow stream that draws the surrounding atmospheric air. The resulting air movement creates a vacuum when the entry of atmospheric air is blocked by a part.

This simple and compact system replaces costly and cumbersome vacuum pumps and their piping. It is mostly used to pick up and move parts.

The vacuum pad that picks up the part is ideally combined with the Venturi device.

In order to supply the Venturi, a single 3/2 NC valve is integrated into the closest valve island. To limit air consumption, it is advised to adjust the pressure that reaches the Venturi. This is easily done by adding a pressure regulation module to the valve island.

If an automatic blowoff is required, (in addition to the Venturi supply), a double 3/2 NC + NC will control the complete system:

- One 3/2 for the Venturi supply;
- One 3/2 for the automatic blowoff. The integrated exhaust non-return valve in all 3/2 modules size 1 will prevent external air from polluting the venturi vacuum.

# Valve Islands for Vacuum Applications

## Valve Island in a Vacuum Distribution Network

3/2 pneumatic valves are often used to control the different vacuum circuits or 4/2 pneumatic valves can be used when a double solenoid function is necessary. 3/2 pneumatic valves should be Normally Open in order to obtain vacuum outputs when electrical signals are on. Vacuum controls generally require large flows; most of the time, size 2 valves are necessary. In the valve island, vacuum is drawn through the channel normally used for the common exhaust while the other channel may be used differently, depending on the application.

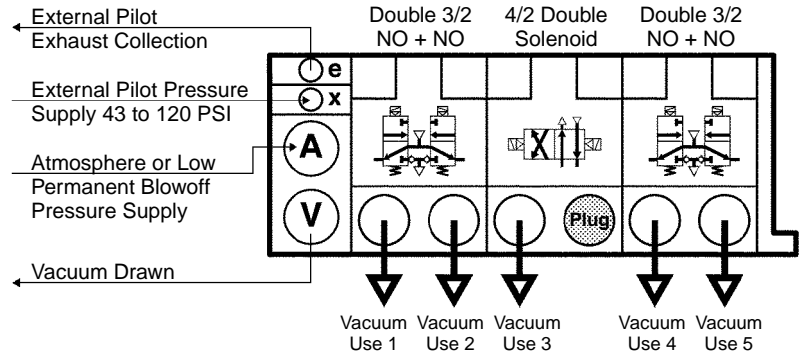
### No Blowoff or Permanent Blowoff

The top illustration presents a typical vacuum valve island whose channel is normally used for the main pressure supply either connected to atmosphere (no blowoff) or to a low-pressure supply that will act as permanent blowoff toward the vacuum pads when they are not connected to vacuum.

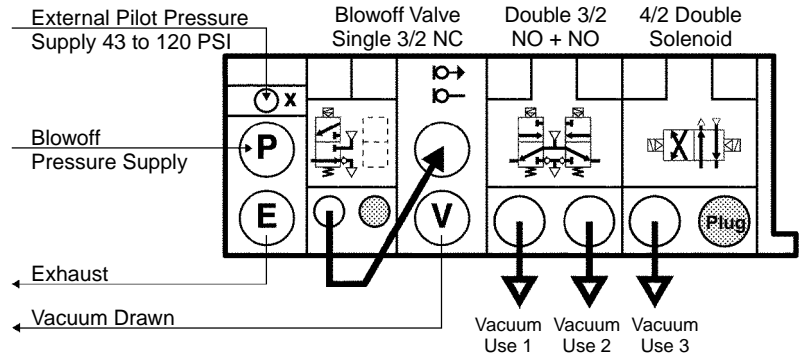
### Intermittent Blowoff

The second illustration presents a vacuum valve island equipped with a head blowoff valve that will send a pressure for blowoff only when required. A size 1 single 3/2 is sufficient for this purpose. In both cases, the auxiliary channel **x** will be supplied with a 43 to 120 PSI pressure for solenoid pilots. In the first case, the auxiliary channel **e** is collected externally in order to avoid pressurizing the vacuum channel with the pilot exhausts.

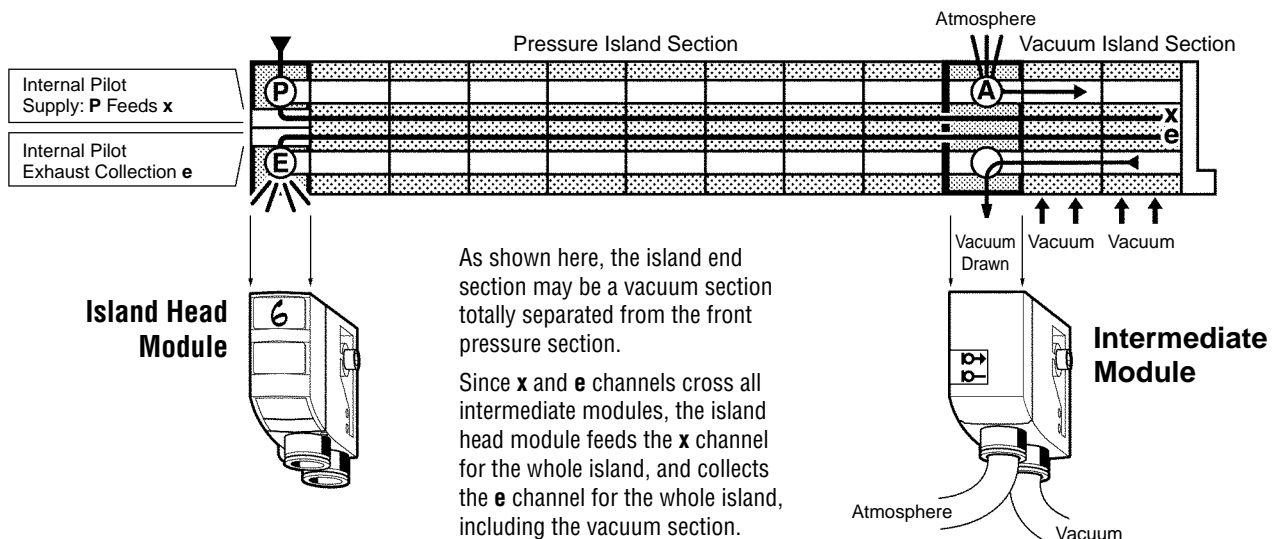
### Vacuum Valve Island with No Blowoff or with Permanent Blowoff



### Vacuum Valve Island Equipped for Intermittent Blowoff

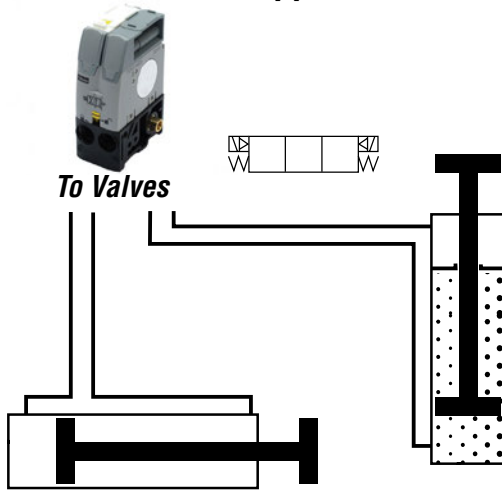


### Pressure and Vacuum Combined in the Same Island



As shown here, the island end section may be a vacuum section totally separated from the front pressure section. Since **x** and **e** channels cross all intermediate modules, the island head module feeds the **x** channel for the whole island, and collects the **e** channel for the whole island, including the vacuum section.

## Typical 3-Position Valve Applications



3-position valves are traditional for positioning, blocking or venting pneumatic cylinders.

Because pneumatic valves are now commonly assembled into islands, 3-position valve functions have to be adapted in order to meet all applications allowing for exhaust back pressures and long distances between valves and cylinders.

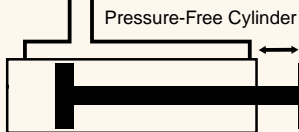
### 3-Position Center Exhaust – Pressure-Free Cylinder

#### Traditional Configuration

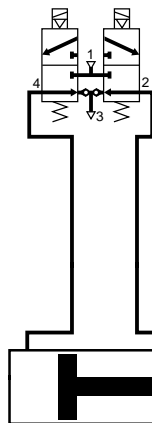
5/3 Valve  
Center Exhaust



**Problem:**  
island exhaust  
back pressures  
reach the cylinder  
and move it  
unexpectedly.

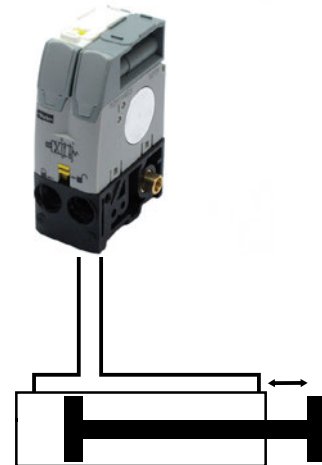
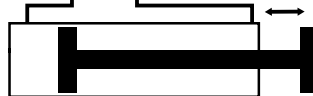


#### Using Moduflex Valves – Double 3/2 NC + NC



**Double 3/2  
NC + NC**  
(version with no  
exhaust check valves)

**Solution:**  
common exhaust  
balances back  
pressure effect  
on the cylinder.



### 3-Position Pressure Center – Cylinder Fitted with Locking Device

#### Traditional Configuration

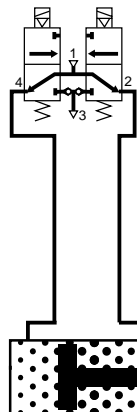


**3-Position  
Pressure Center**

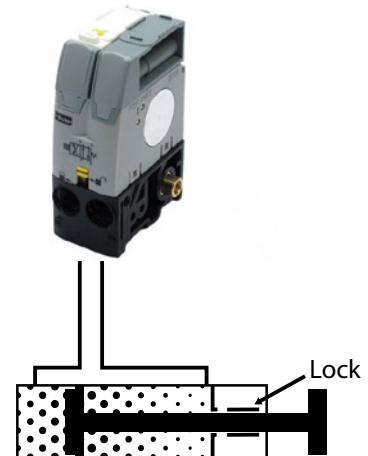
Cylinder positioning  
is achieved with  
both chambers  
under pressure.



#### Using Moduflex Valves – Double 3/2 NO + NO

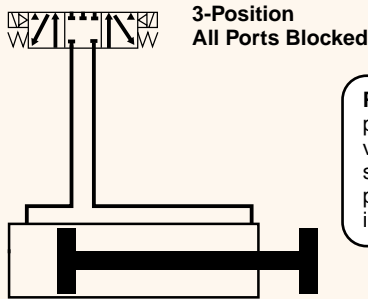


**Double 3/2  
NO + NO**



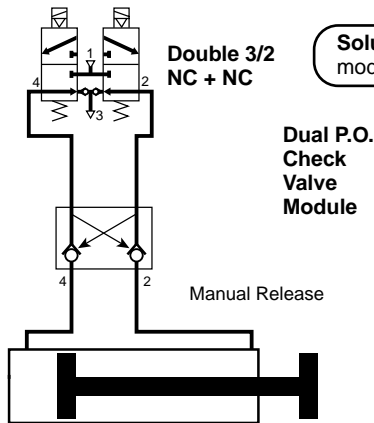
# Typical 3-Position Valve Applications

## Traditional Configuration



**Problem:** in center position, compact valves are not perfectly sealed – cylinder position cannot be held indefinitely.

## Using Moduflex Valves – Double 3/2 NC + NC and Dual P.O. Check Valve



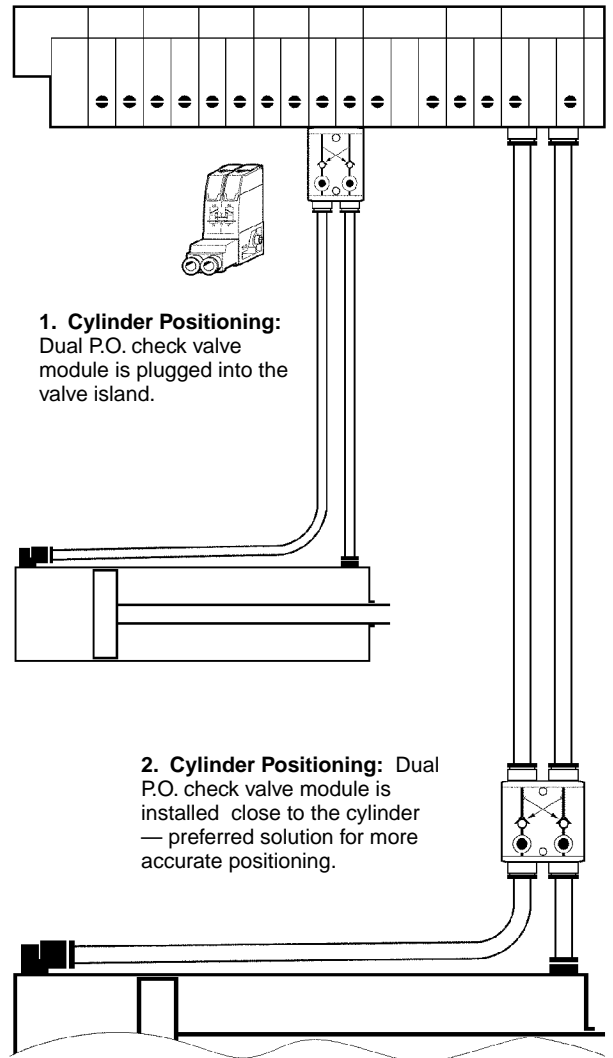
**Solution:** a dual P.O. check module is totally sealed.



At the outputs of a double 3/2 NC + NC valve, the dual P.O. check valve module achieves efficient and stable cylinder positioning. As soon as both lines are exhausted by the main control valve, the two internally piloted check valves close tight. The cylinder is then stabilized.

The manual pressure releases may then eventually be used for an adequate machine positioning.

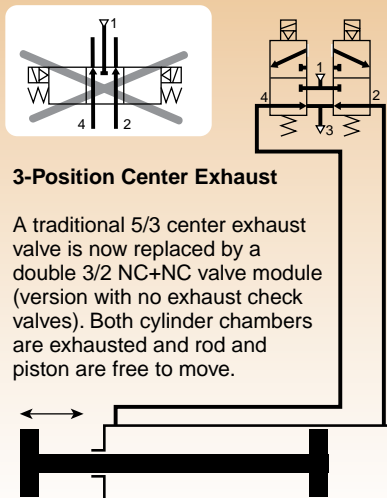
## 3-Position, All Ports Blocked – Cylinder Positioning



**1. Cylinder Positioning:** Dual P.O. check valve module is plugged into the valve island.

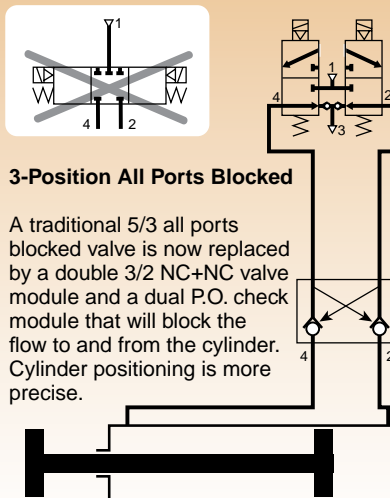
**2. Cylinder Positioning:** Dual P.O. check valve module is installed close to the cylinder — preferred solution for more accurate positioning.

## Dual 3/2 Valves Replace All 3-Position Valves for a Better Performance



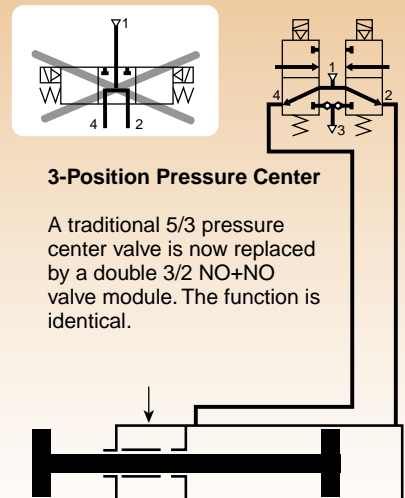
### 3-Position Center Exhaust

A traditional 5/3 center exhaust valve is now replaced by a double 3/2 NC+NC valve module (version with no exhaust check valves). Both cylinder chambers are exhausted and rod and piston are free to move.



### 3-Position All Ports Blocked

A traditional 5/3 all ports blocked valve is now replaced by a double 3/2 NC+NC valve module and a dual P.O. check module that will block the flow to and from the cylinder. Cylinder positioning is more precise.



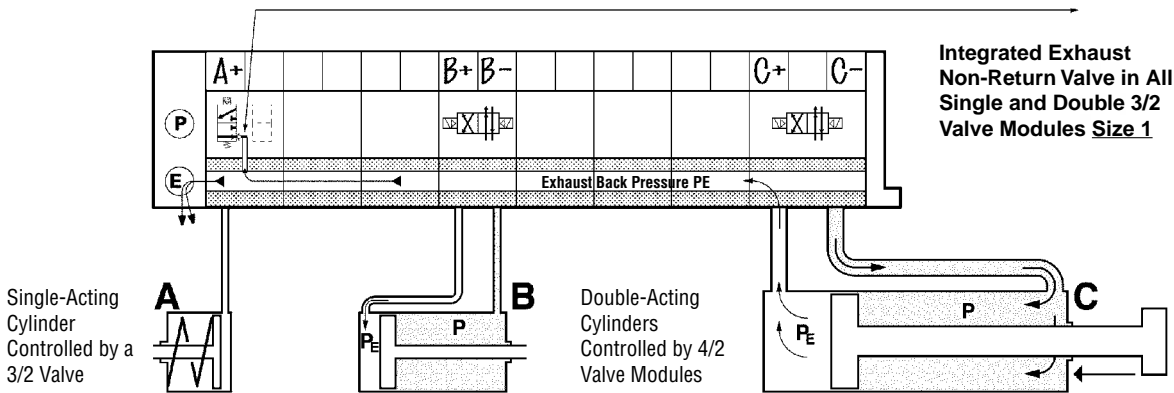
### 3-Position Pressure Center

A traditional 5/3 pressure center valve is now replaced by a double 3/2 NO+NO valve module. The function is identical.



# Exhaust Back Pressure Control

## Blocking Exhaust Back Pressures with 3/2 Modules



- **C** cylinder, large and fast moving, may feed the island exhaust channel with an exhaust back pressure PE.
- Such a back pressure is normally under 14 PSI. Since the opposite pressure, P, is high, it will not affect double-acting cylinders, such as **B**.
- However, such a back pressure may affect a single-acting cylinder **A** if its pressure threshold is low.

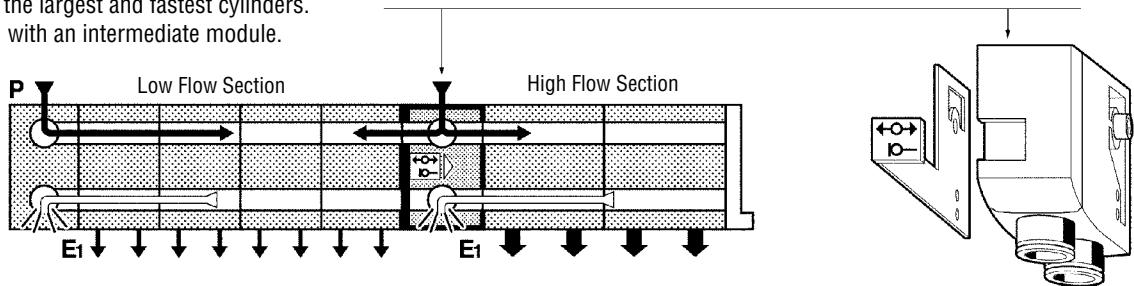
Consequently, small single-acting cylinders may pop out unexpectedly whenever an exhaust back pressure rises into the island.

To avoid such malfunctions, Size 1 3/2 valve modules feature integrated exhaust non-return valves that will block any exhaust back pressure from reaching the acting cylinders they control.

## Blocking Exhaust Back Pressures Inside the Island

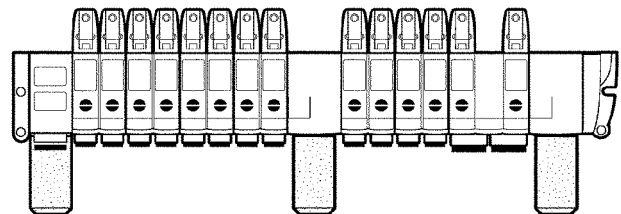
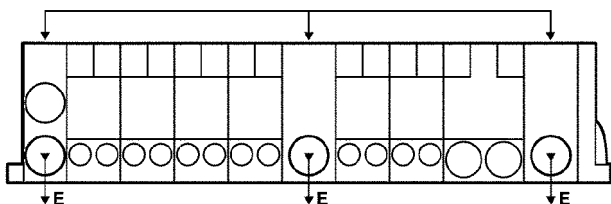
Another method to block exhaust back pressures when they may affect the application is to isolate the valves in the island that control the largest and fastest cylinders. This is easily achieved with an intermediate module.

**Intermediate Module with the Configuration Plate Blocking the Island Exhaust Channel**



## Limiting Exhaust Back Pressures in a Valve Island

In a valve island, it is important to limit exhaust back pressures to about 14 PSI maximum so that all double-acting cylinders efficiently achieve their function at 87 PSI.



### Collected Exhaust using Intermediate Modules

Depending on the sizes of the cylinders and the speed required by the application, back pressures in the island may be efficiently evacuated through multiple exhaust collections using Intermediate Modules.

### Exhaust Through Mufflers

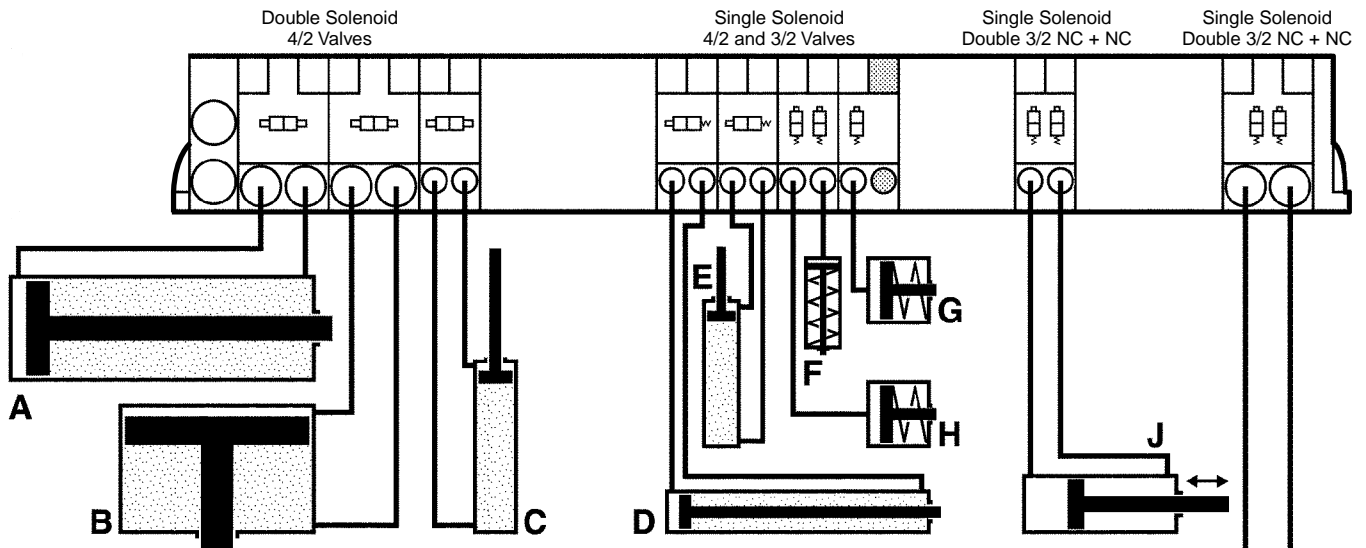
For applications that do not require the exhausts to be collected, a plug-in muffler into each exhaust port of the island will evacuate exhaust back pressures.

# Valve Islands and Emergency Machine Positioning

## Single / Double Solenoid Valve Choice for Adequate Emergency Positioning

Pneumatic cylinder / valve circuit design must take into account the machine positioning in case of electrical supply cutoff or other emergency events.

Valve islands now offer many means to do so with single and double solenoid valves, peripheral modules, integrated dump valves, etc.



These cylinders maintain their last position and action in case of electrical cutoff.

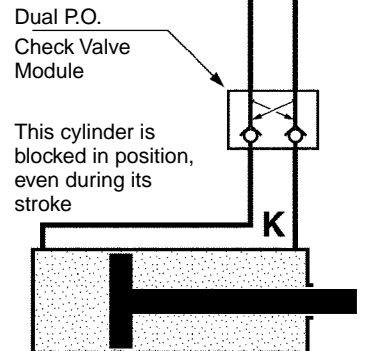
These cylinders retract in a chosen position.

This cylinder becomes totally pressure free.

Designers of electro-pneumatic machines have to define the cylinder positioning when electrical supply gets cut off; for example, for an emergency requirement. A clamping cylinder will maintain its action so that the part it is holding does not take off under the action of a cutting tool. On the contrary, a stamping cylinder will retract in its initial position, and a transfer cylinder may be blocked along its stroke. Pneumatic valve islands provide all means to obtain emergency machine positioning. The different solutions are presented on the valve island above.

- **A, B and C** double-acting cylinders are controlled with double solenoid valves. These will keep their position in case of electrical cutoff. The cylinders will maintain their positions and actions.

- **D and E** double-acting cylinders are controlled with single solenoid valves. Their spring return will bring them back in the initial position corresponding to the required initial position of the cylinder.
- **F, G, and H** single-acting cylinders will retract as well with the help of their spring.
- Controlled with a single solenoid double 3/2 NC+NC valve, the double-acting **J** cylinder will be exhausted on both chambers when an electrical cutoff happens.
- Due to the Double P.O. check valve module, the double-acting **K** cylinder will be blocked along its stroke.



This cylinder is blocked in position, even during its stroke

## Individual Electrical Connectors

### Plug-in Dust and Waterproof Connector

This electric connector plugs onto the solenoid pilot standard M8 male thread. It features a LED indicator and a voltage surge suppressor with a cable for a polarity insensitive connection.

### Positive Logic (PNP) and Negative (NPN) Compatibility

The increasing use of global automation components and machines can raise problems of compatibility between “PNP” and “NPN” circuit design. The **Moduflex** valves and islands overcome this problem as the solenoid pilots are polarity insensitive and can accept 24VDC in any orientation.

### Protection of Controls from Voltage Surges

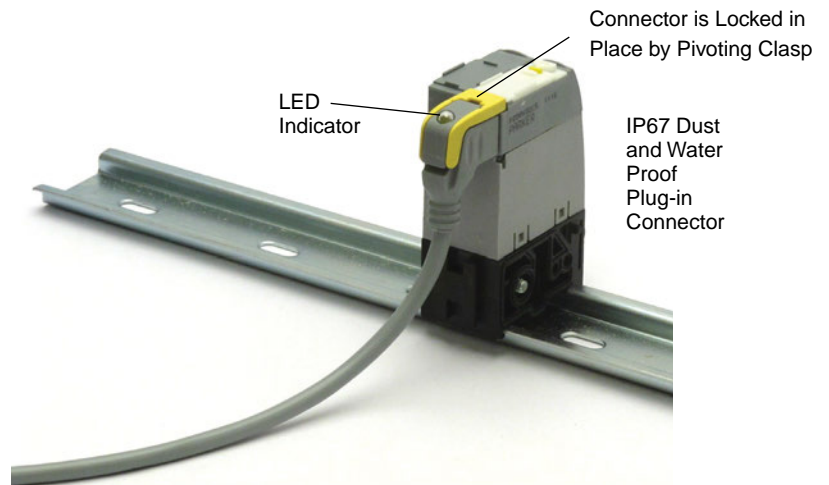
The voltage surge generated when a coil is de-energized is a common problem and can disrupt control circuits upstream of the valve island. To overcome this problem, the latest generations of valve islands incorporate a voltage surge suppressor with each solenoid pilot.

### Dependability even with Voltage Drop

Electro-pneumatic automation is often integrated to machines that are subjected to voltage drop; for example, when an electrical motor is started. In order to overcome such working conditions, standard requirements state that the solenoid pilot should still operate 15% under the voltage rating; i.e., 20.4V for a 24V rating. To fulfill such a specification, the solenoid pilot power has to be sufficiently high; for example, 1W is better than 0.5W.

Individual Electrical Connector with

- Connections to Solenoid Pilot
- LED Indicator
- Voltage Surge Suppressor

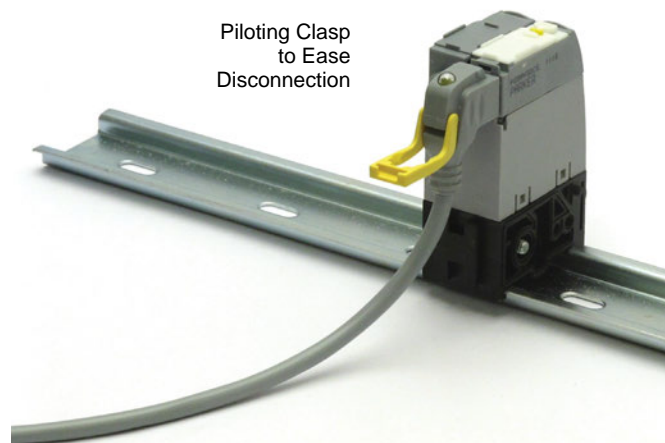


LED Indicator

Connector is Locked in Place by Pivoting Clasp

IP67 Dust and Water Proof Plug-in Connector

24VDC  
Polarity  
Insensitive



Pivoting Clasp to Ease Disconnection

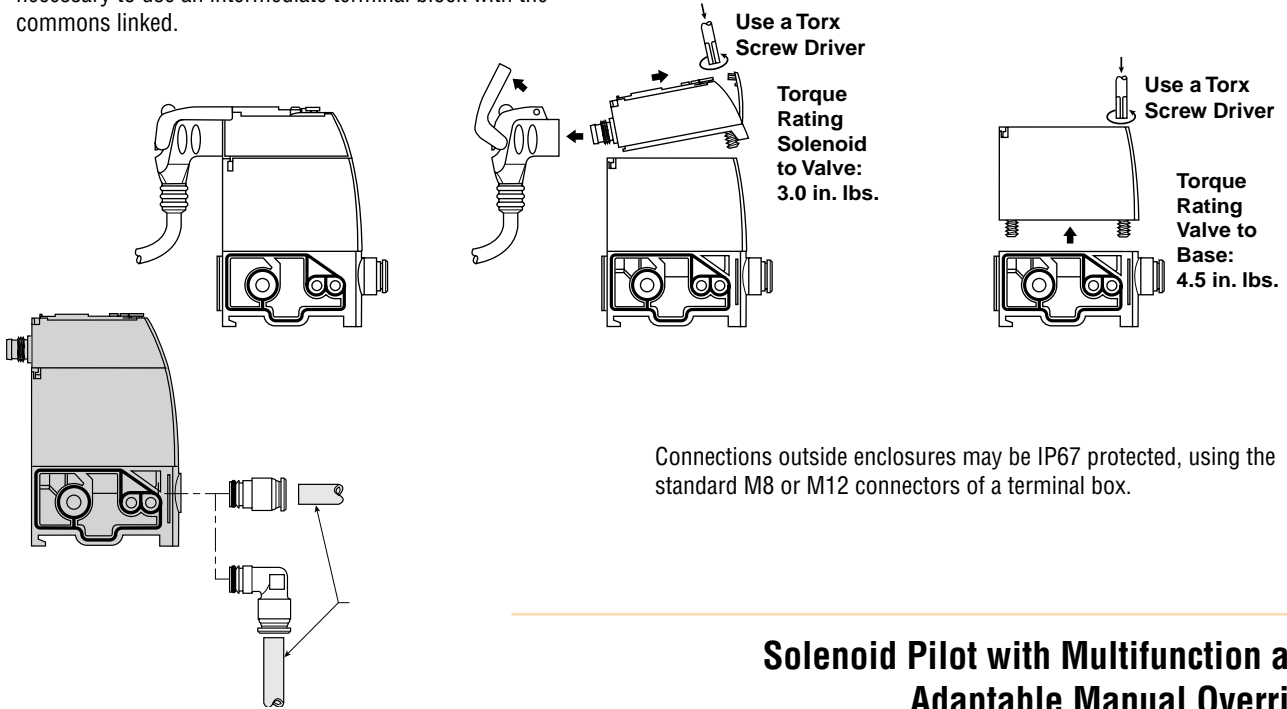


Male Standard M8 Connector will accommodate any female standard M8 connector with either a plug-in or screw-in type.

## Connections to PLCs and Other Controls

The two (2) wires of each connector cable can be taken directly to the output terminals of a PLC or field bus module.

If all outputs have a single common terminal, it will be necessary to use an intermediate terminal block with the commons linked.



Connections outside enclosures may be IP67 protected, using the standard M8 or M12 connectors of a terminal box.

## Solenoid Pilot with Multifunction and Adaptable Manual Override

For safety and standardization reasons, most machine builders now use 24VDC. This convergence towards only one voltage leads to a simpler system with a unique solenoid pilot. In order to cater to the man-machine dialog requirements, this solenoid pilot manual override is both multifunctional and adaptable to each stage, from the machine installation to its maintenance.

The standard modules have solenoid pilots with multifunction manual overrides:

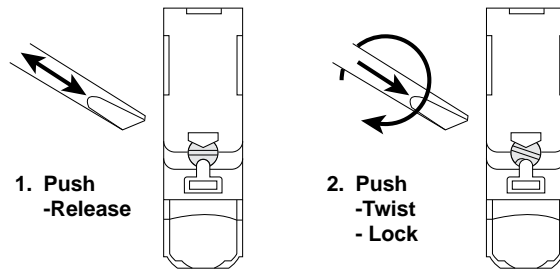
- Push-release function;
- Push-twist-lock function.

Man-machine dialog is then complete, facilitating the commissioning of each machine subassembly. Later, when electrical controls are connected, the manual override may be adapted.

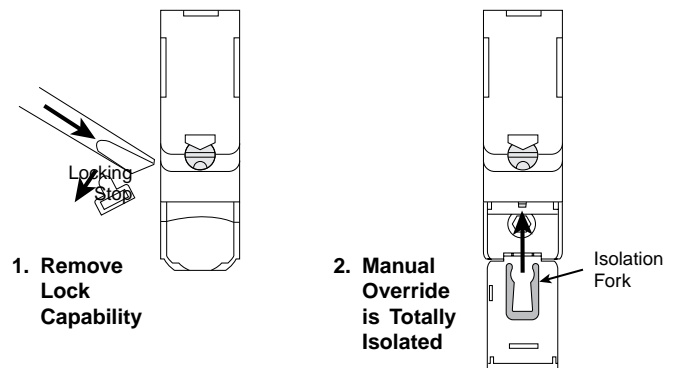
Depending on the machine and its conditions of use, one may either:

- Keep complete multifunction manual overrides;
- Delete the lock capability by removing the locking stop; this will prevent the manual override from being left in the locked position; or
- Make the manual override completely inoperative when automatic controls take care of access for maintenance. An isolation fork is available for this operation.

### Multifunction Manual Override



### Manual Override Adaptations





## Specifications

### Pneumatic Specification General

Fluid	Air, inert gas, filtered 40 $\mu$ ①, dry② or lubricated③		
Operating Pressures	Vacuum to 120 PSI		
Piloting Pressure	43 to 120 PSI for operating pressures below, use external pilot supply available on all head modules⑤		
Pilot Supply	Mixed internal / external		
Exhaust Collection	All exhausts are collectable, including solenoid pilot exhaust		
Life Cycle	100 million operations④ (with dry air, 3 Hz, 20°C, 6 bar)		
Operating Temperatures	5°F to 140°F (32°F to 130°F for field bus systems)		
Stocking Temperatures	-40°F to 155°F		
Vibration Resistance	According to IEC 68 - 2 - 6	2G	2-150Hz
Impact Resistance	According to IEC 68 - 2 - 27	15G	11 ms

① Class 5 according to ISO 8573-1

② Class 4 according to ISO 8573-1

③ With main air supply lubricated, must use external pilot supply with non-lubricated air

④ 4/2 valve

⑤ Double 3/2 minimum 50 PSI

### Flow Specification

	Size 1	Size 2
Flow Channel	12 mm <sup>2</sup>	40 mm <sup>2</sup>
Flow Rating (Cv)	.32 Cv (400 NI/min)	.80 Cv (1200 NI/min)

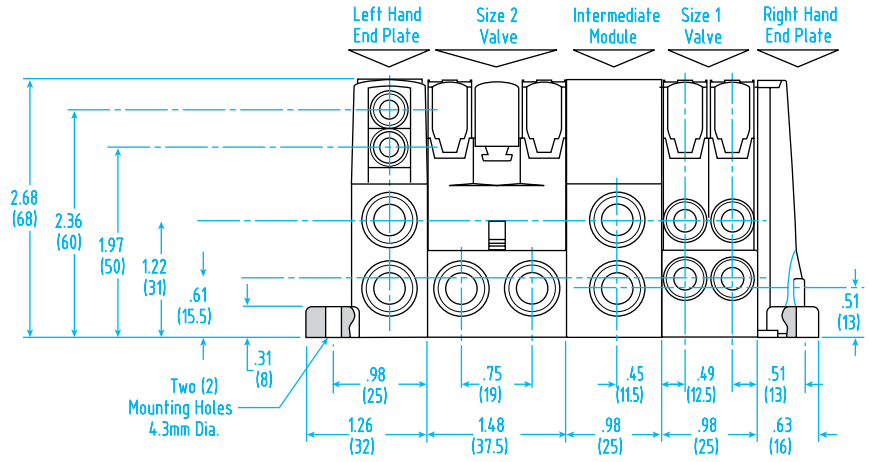
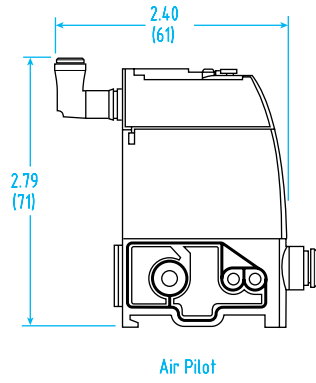
### Electrical Specification Solenoid Pilot



One size 24VDC Solenoid Pilot Common to all the Moduflex System

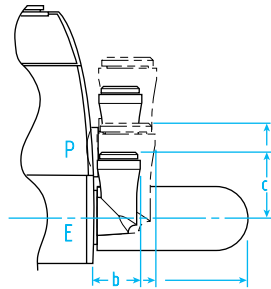
Rated Coil Voltage	24VDC	
Allowable Voltage Fluctuation	-15% to +10 % of nominal voltage	
Electrical Connection	Polarity insensitive: PNP and NPN compatible	
Coil insulation Type	Class B	
Power Consumption	1W (42 mA)	
Manual Override	Locking or non-locking, isolated if required	
Response Time of the Complete Valve	9.6 ms $\pm$ 1.2 on 4/2 double solenoid valve size 1 12.0 ms $\pm$ 1.2 on 4/2 single solenoid valve size 1 14.8 ms $\pm$ 2 on 4/2 double solenoid valve size 2 17.0 ms $\pm$ 2 on 4/2 single solenoid valve size 2 According to ISO 12238	
Type of Use	Continuous-duty solenoid	
Dust and Water Protection	According to EN 60 529	IP67

# Dimensions & Mounting



**Island Head and Intermediate Modules**

	a	b	c
6 mm Tube OD	8	13	16
8 mm Tube OD	9	16	19
10 mm Tube OD	13	18	25
12 mm Tube OD	13	19	25
Muffler		40	



**Island Valve Modules**

OD Tube Ext.	a	b	c
<b>Size 1</b> 4mm	8	10	12
<b>Modules</b> 6mm	8	13	16
<b>Size 2</b> 8mm	9	16	19
<b>Modules</b> 10mm	13	18	22

