

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.



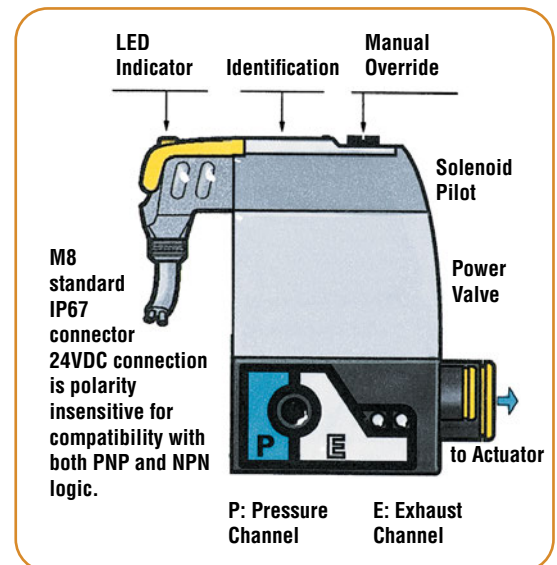
Modular Island Assembly

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.



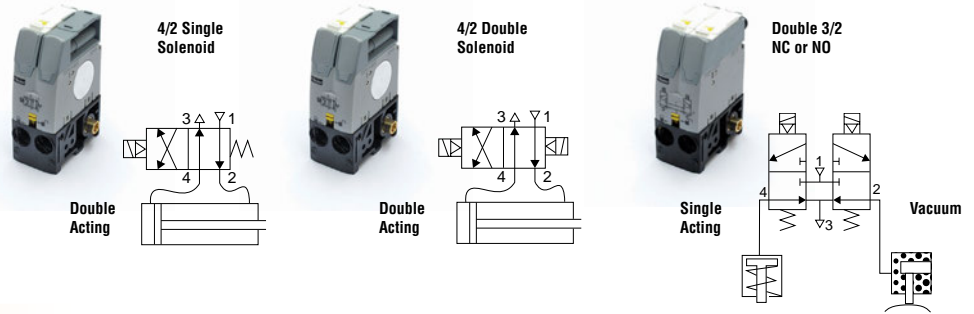
Valve Module Size	Size 1		Size 2	
Tube Size to Cylinder	Ø4mm OD	Ø6mm OD	Ø8mm OD	Ø10mm OD
Cylinder Bore Size	Ø6 to Ø25mm	Ø25 to Ø40mm	Ø40 to Ø63mm	Ø63 to Ø100mm

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

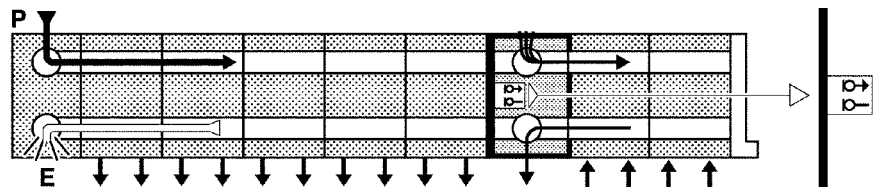
STEP 3 DETERMINE PRESSURE SECTIONS

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.



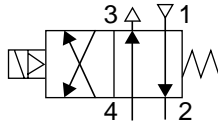
Pricing and Components

Order Fittings Separately

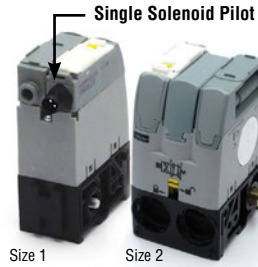
Use Quick#s when ordering

Valve Functions

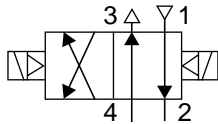
4/2
4 Port
2-Position
Valves



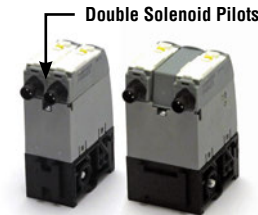
Single Solenoid
(Monostable)
Control Signal has to be Maintained.
(Order fittings separately)



	Size 1	Size 2
Quick#	1936	1943
Part#	P2M1T4ES2C	P2M2T4ES2C
Price	\$ HERE	\$ HERE
Wt.	68g	74g
Cv	.32	.80

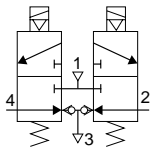


Double Solenoid
(Bistable)
Control Signals may be Momentary.
(Order fittings separately)



Quick#	1937	1944
Part#	P2M1T4EE2C	P2M2T4EE2C
Price	\$ HERE	\$ HERE
Wt.	77g	83g
Cv	.32	.80

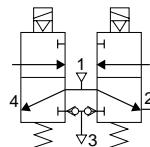
3/2
3 Port
2-Position
Valves



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



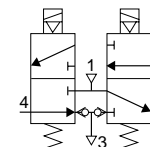
Quick#	1938	1945
Part#	P2M1TDEE2C	P2M2TDEE2C
Price	\$ HERE	\$ HERE
Wt.	80g	94g
Cv	.22	.44



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



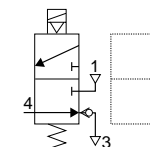
Quick#	1939	1946
Part#	P2M1TCEE2C	P2M2TCEE2C
Price	\$ HERE	\$ HERE
Wt.	80g	94g
Cv	.22	.44



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



Quick#	1940	1947
Part#	P2M1TEEE2C	P2M2TEEE2C
Price	\$ HERE	\$ HERE
Wt.	80g	94g
Cv	.22	.44

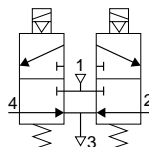


Single Solenoid (NC)
(Order fittings separately)



Quick#	1941	1948
Part#	P2M1T3ES2C	P2M2T3ES2C
Price	\$ HERE	\$ HERE
Wt.	76g	90g
Cv	.22	.44

4/3
4 Port
3-Position
Valves

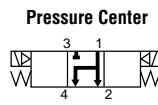
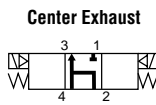
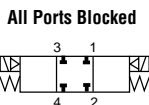


Center Exhaust Dual 3/2 (NC + NC)
Without Exhaust Check Valve
(Dual Pilot Check Valve can be ordered separately)






Quick#	1942	1949
Part#	P2M1TGEE2C	P2M2TGEE2C
Price	\$ HERE	\$ HERE
Wt.	80g	94g
Cv	.22	.44

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

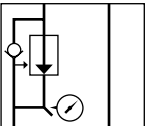

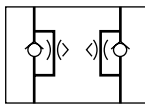

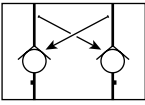



Supply

These components fit Size 1 & Size 2

		Size 1	Size 2
Head / Tail Module	Pneumatic Head & Tail Set Requires size 2 fittings. (Order fittings Separately)		Quick# 1950 Part# P2M2HXT01 Price \$ HERE Wt. 64g
Intermediate Module	Intermediate Set With four Configuration Plates (Order fittings Separately)		Quick# 1951 Part# P2M2BXT0A Price \$ HERE Wt. 42g
	M8 Connector for Solenoid Pilots (with 5m Cable) Use this connector with new valve island installations. Integrated LED indicator and voltage surge suppression.		Quick# 1980 Part# P8LS08L526C Price \$ HERE Wt. 148g
	M8 Connector for Solenoid Pilots (no Cable) 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.		Quick# 1981 Part# P8CS0803J Price \$ HERE Wt. 12g

Peripheral

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

Accessories

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

Island Head Module Port Sizing

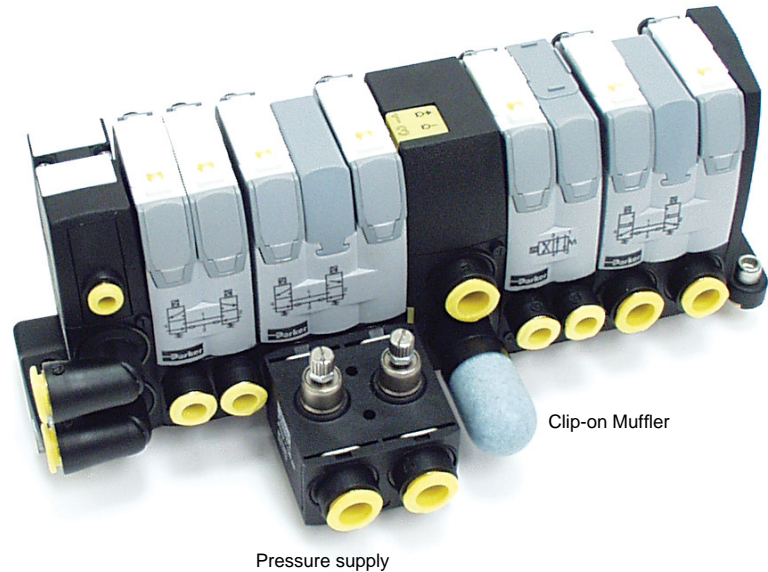
Choice of Connections to Island 'P' and 'E' Ports

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.

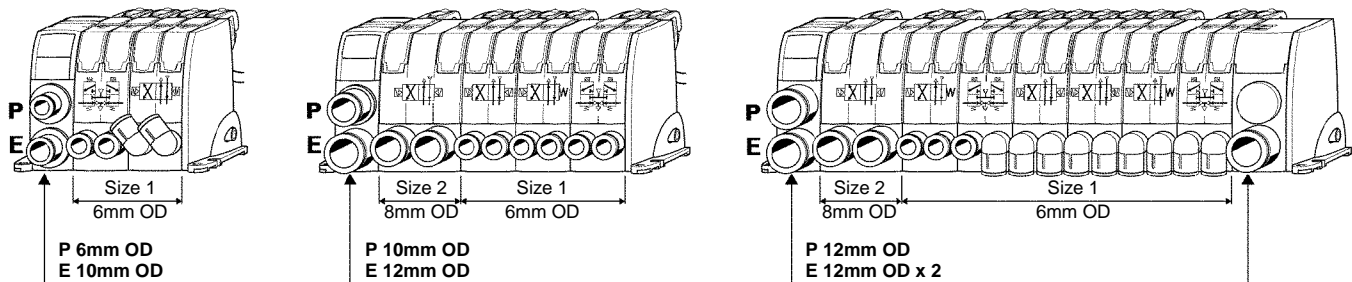
For typical EOAT applications, the exhaust may not need to be piped away. Therefore, in such cases, a clip-on muffler will provide the best options for flow and noise reduction.

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:

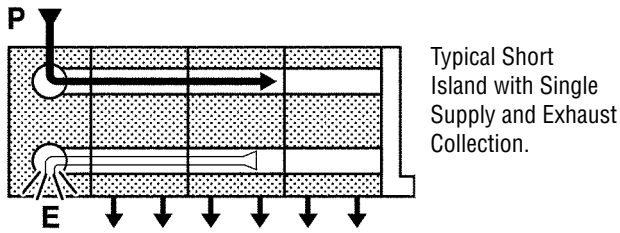
- Air supply connection at least equivalent to largest output tube to cylinders
- Exhaust collection at least twice the section area of the largest output tube to cylinders

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

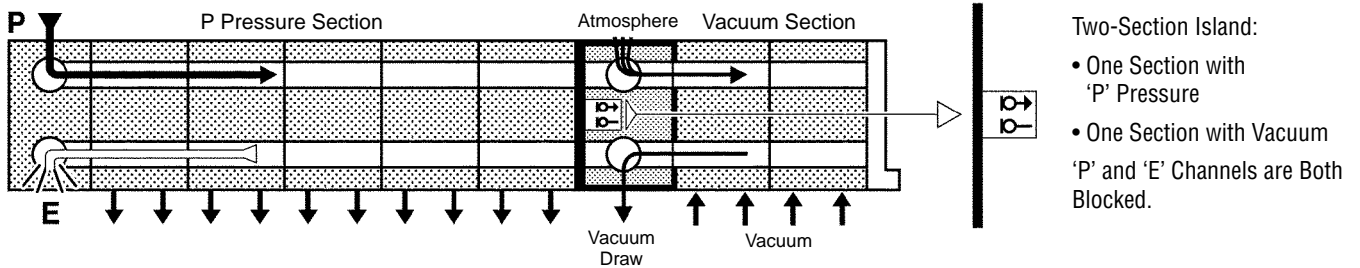
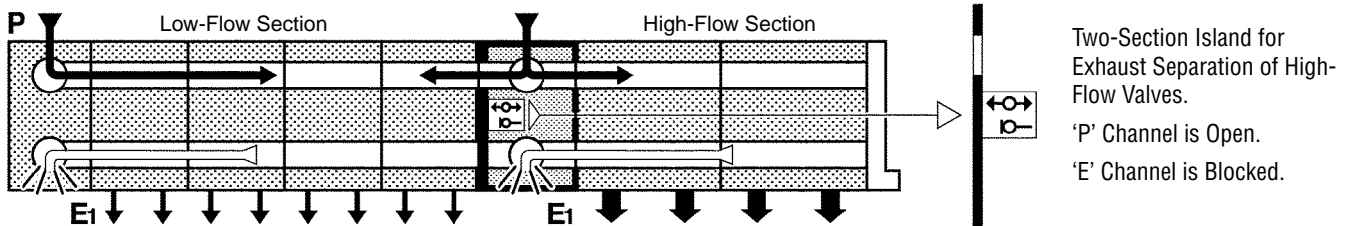
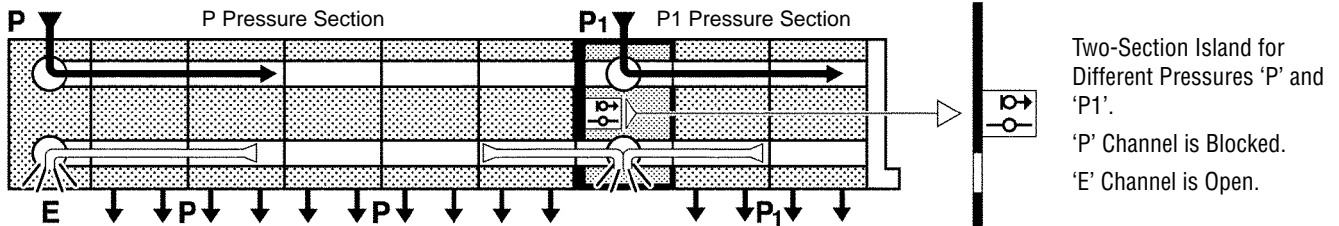
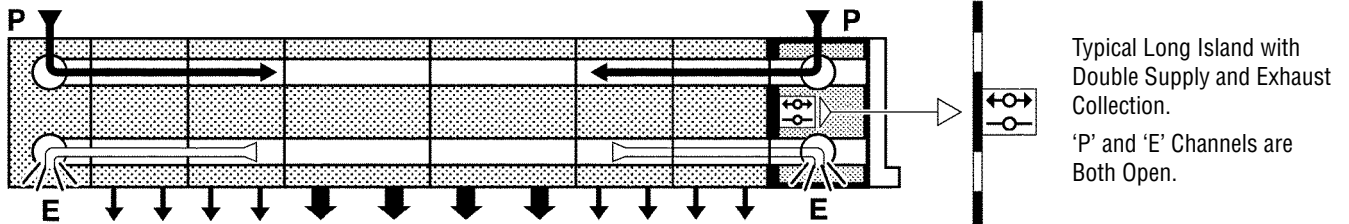
At the machine commissioning stage, the supply and exhaust connections can be easily modified until the required performance is achieved.

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)

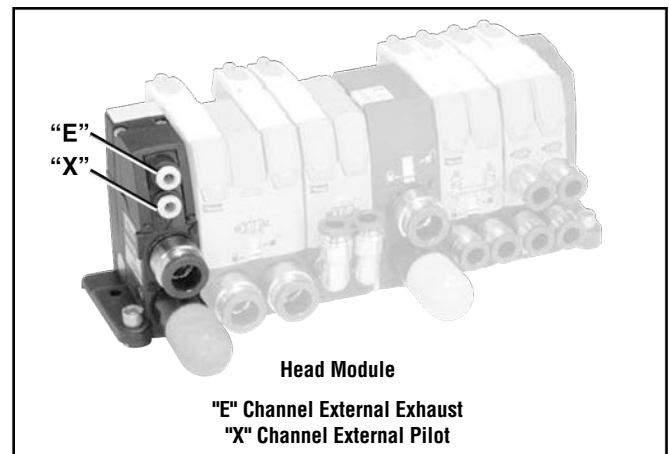
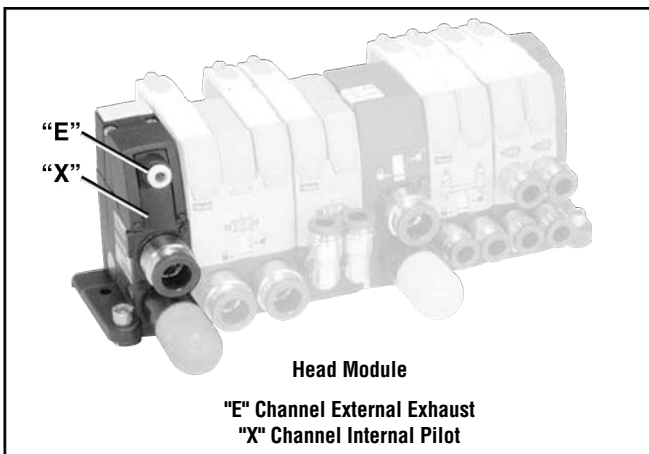
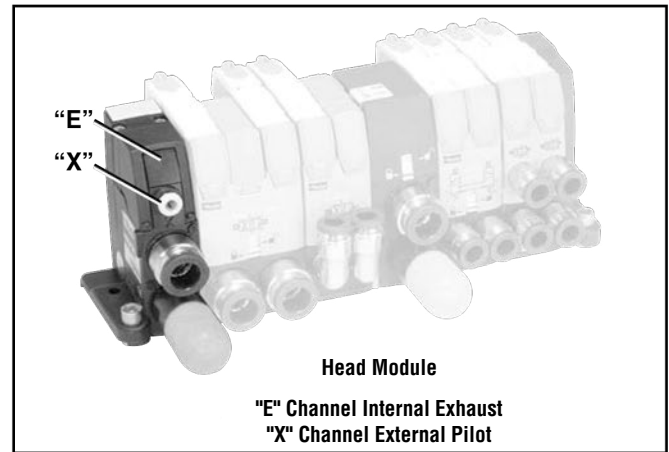
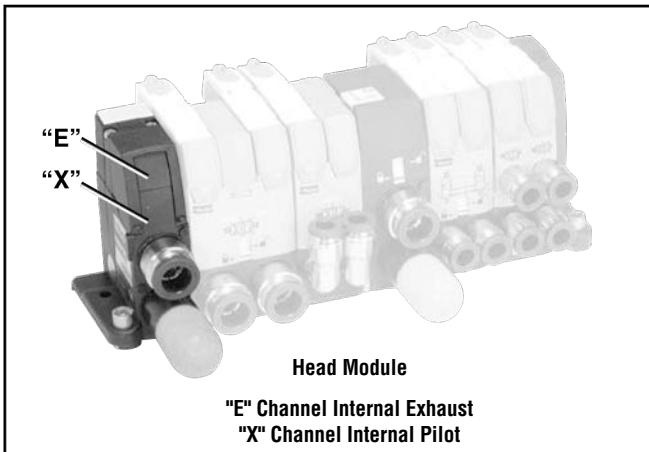


The universal intermediate supply module is supplied with four (4) configuration plates that achieve two (2) functions:

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:

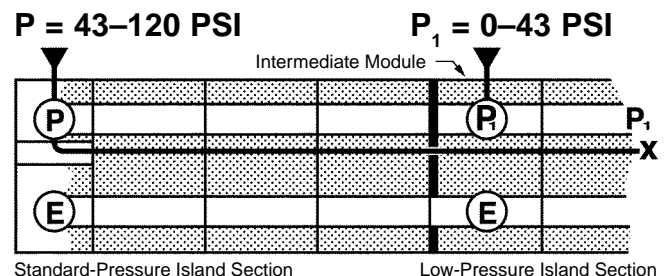
- May be fed by the main pressure **P** if it is between 43–120 PSI; this is the “internal pilot supply” of the valve island,
- May be fed separately, when pressure **P** is lower than 43psi (43psi being the minimum pressure to pilot the valves); this is the “external pilot supply” of the valve island.

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 $\varnothing 4\text{mm}$ 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.

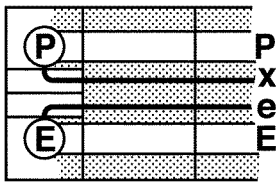


External / Internal Pilot Exhaust

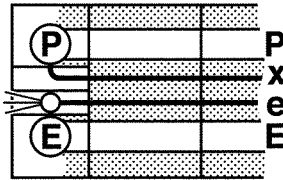
In all valve islands, subbases also incorporate an auxiliary channel **e** to collect the solenoid pilot exhausts. Depending on the application, this channel:

- 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.

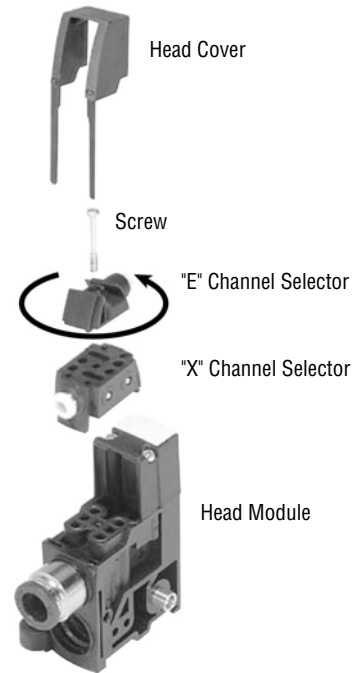
In order to choose between the internal or the external collection of the island pilot exhaust, a second 2-position selector is integrated into the pneumatic island head module, as shown here.



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

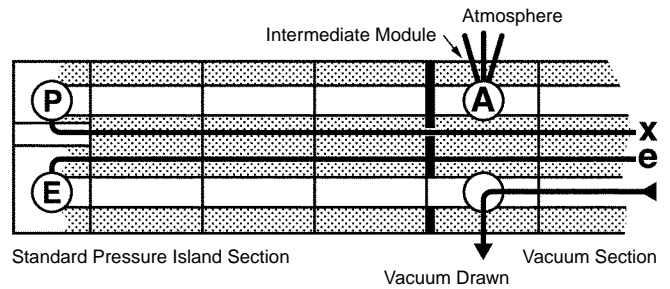


Configuration for External Collection of Pilot Exhaust **e**



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

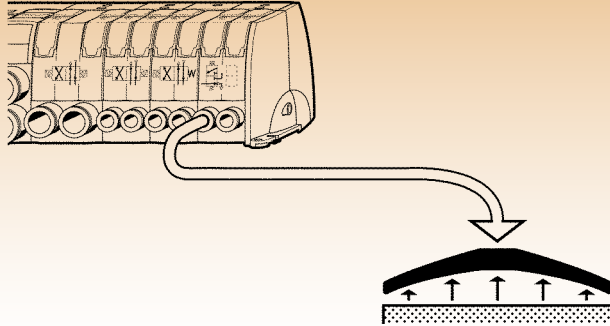
Vacuum Generator

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

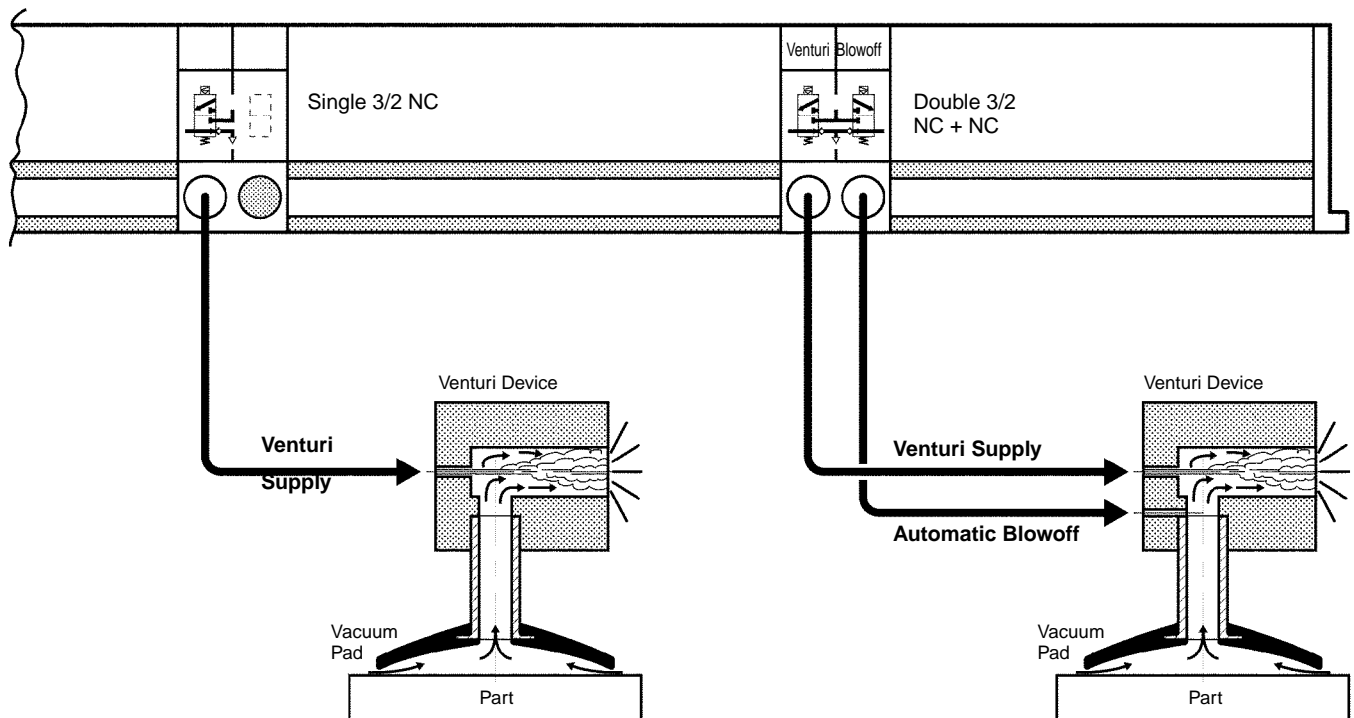


Pneumatic automation is often combined with vacuum applications:

- 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

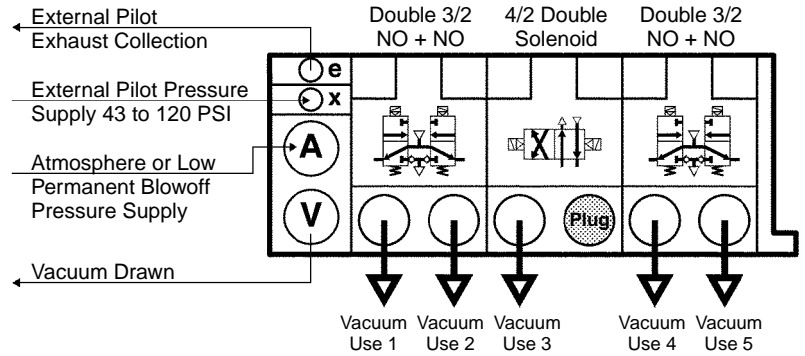
The top illustration presents a typical vacuum valve island whose channel is normally used for the main pressure supply either connected to atmosphere (no blowoff) or to a low-pressure supply that will act as permanent blowoff toward the vacuum pads when they are not connected to vacuum.

Intermittent Blowoff

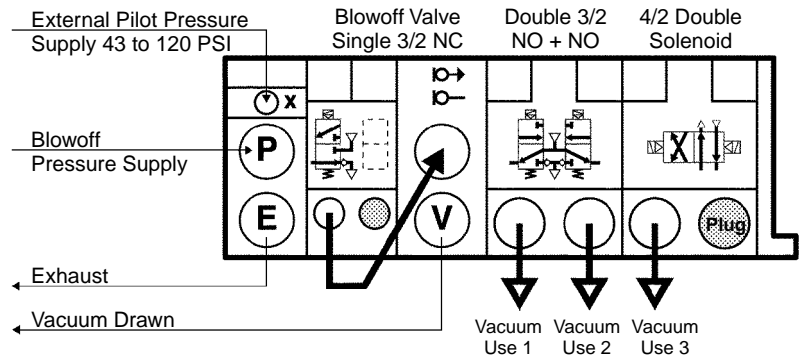
The second illustration presents a vacuum valve island equipped with a head blowoff valve that will send a pressure for blowoff only when required. A size 1 single 3/2 is sufficient for this purpose.

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.

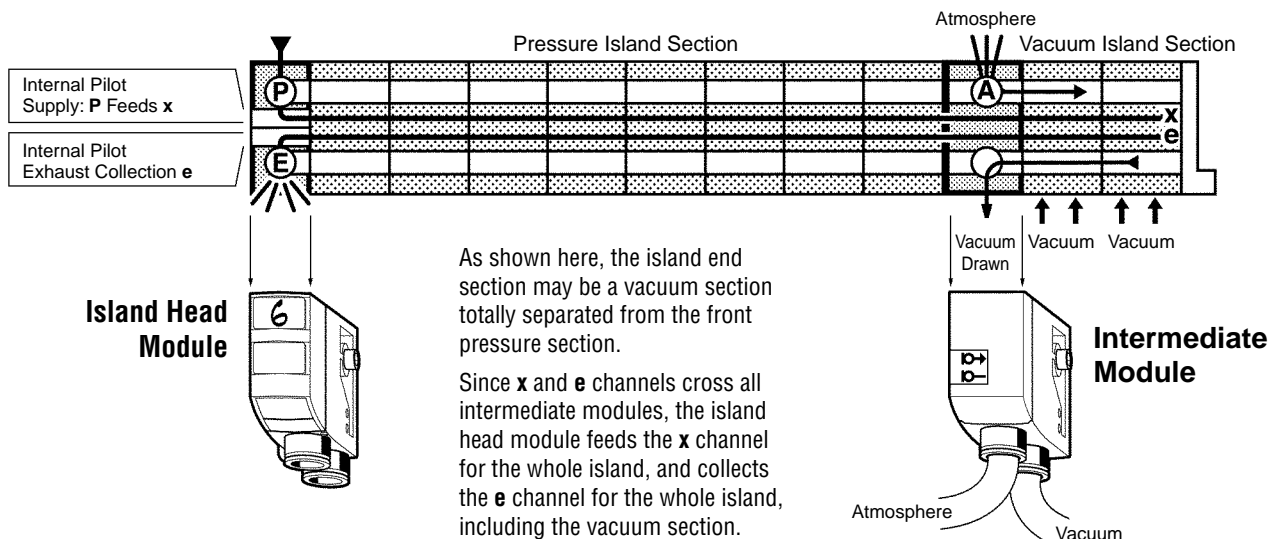
Vacuum Valve Island with No Blowoff or with Permanent Blowoff



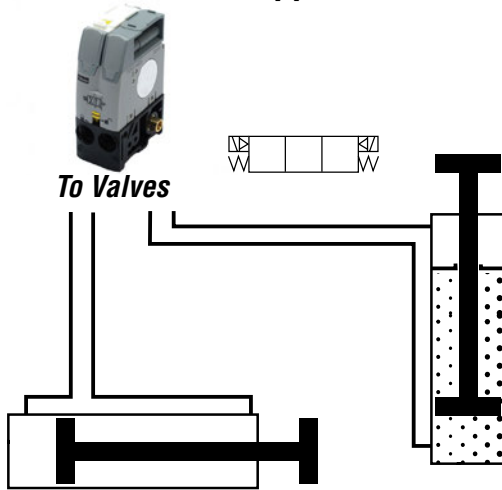
Vacuum Valve Island Equipped for Intermittent Blowoff



Pressure and Vacuum Combined in the Same Island



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.

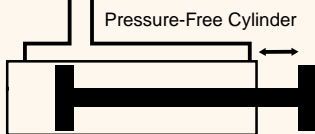
3-Position Center Exhaust – Pressure-Free Cylinder

Traditional Configuration

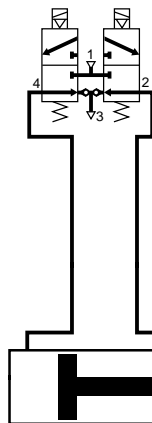
5/3 Valve
Center Exhaust



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

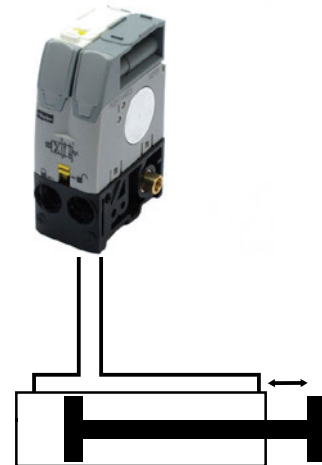
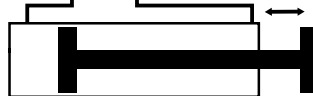


Using Moduflex Valves – Double 3/2 NC + NC



**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

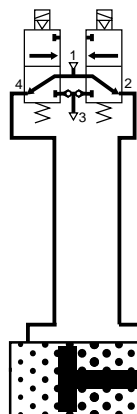


**3-Position
Pressure Center**

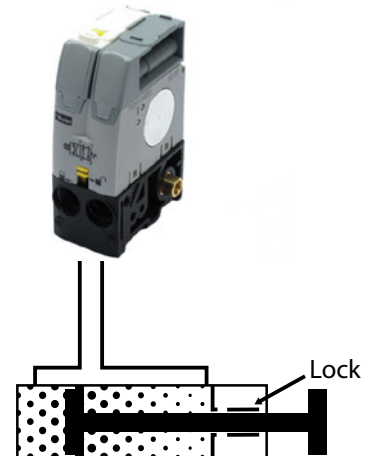
Cylinder positioning
is achieved with
both chambers
under pressure.



Using Moduflex Valves – Double 3/2 NO + NO

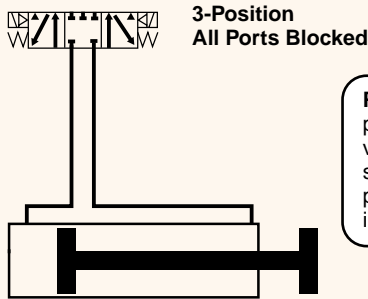


**Double 3/2
NO + NO**



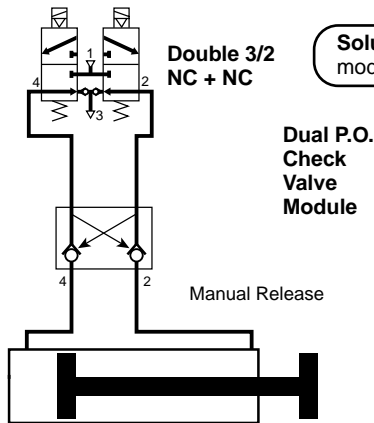
Typical 3-Position Valve Applications

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



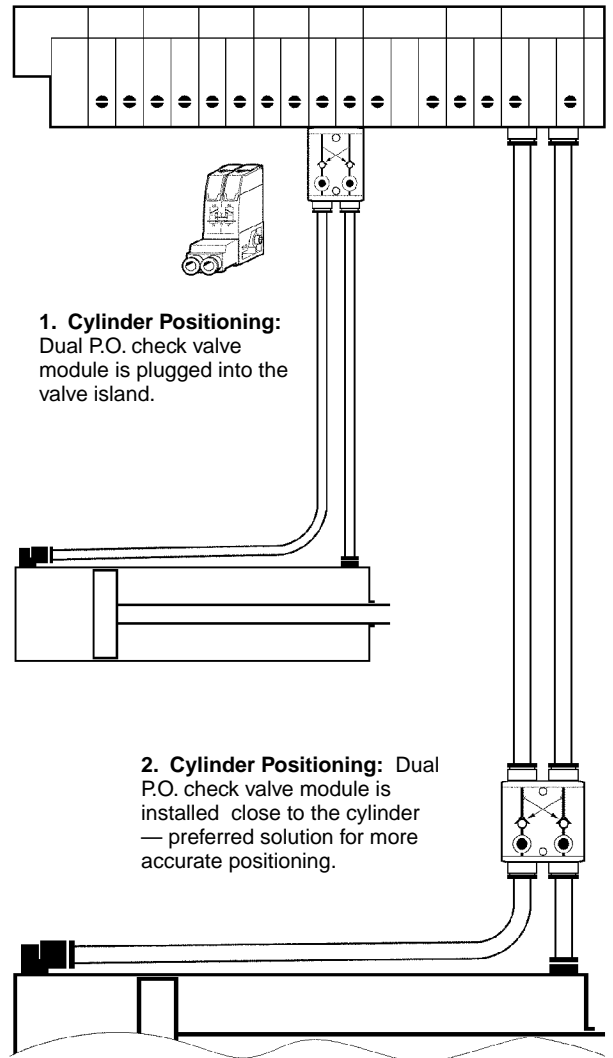
Solution: a dual P.O. check module is totally sealed.



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.

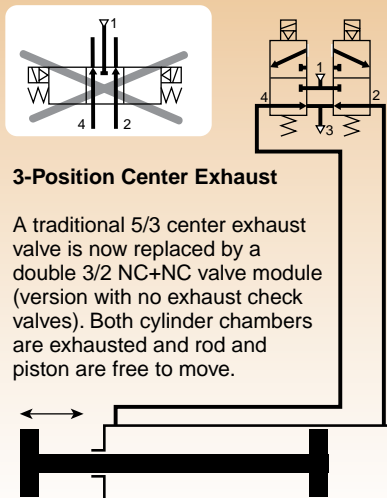
3-Position, All Ports Blocked – Cylinder Positioning



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

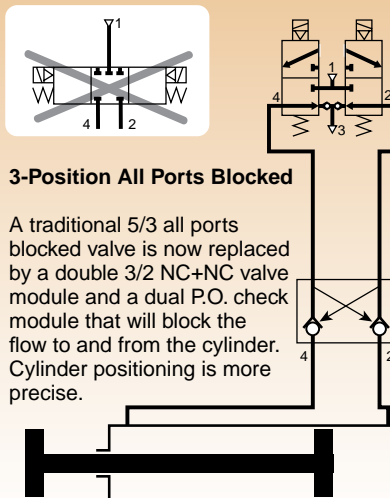
2. Cylinder Positioning: Dual P.O. check valve module is installed close to the cylinder — preferred solution for more accurate positioning.

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



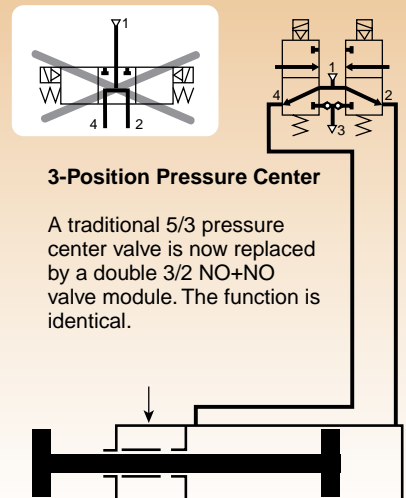
3-Position Center Exhaust

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.

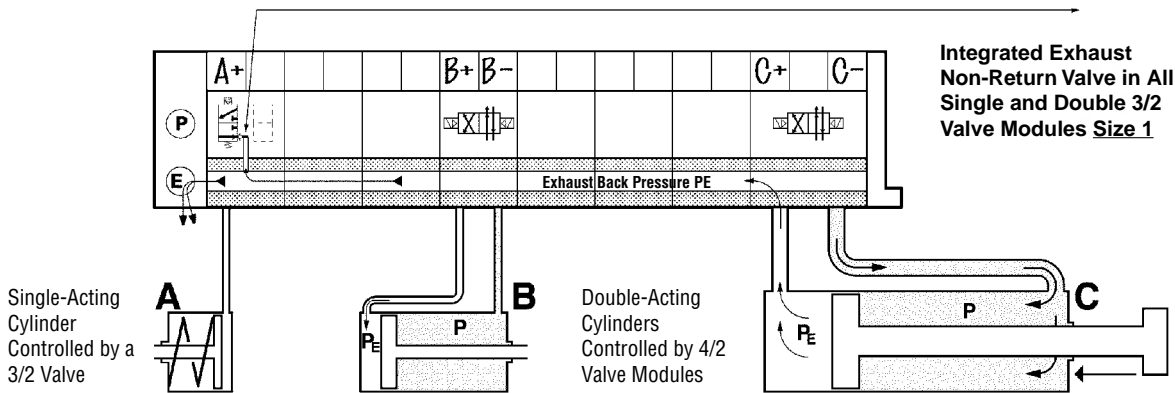


3-Position Pressure Center

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



Integrated Exhaust Non-Return Valve in All Single and Double 3/2 Valve Modules Size 1

- **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.

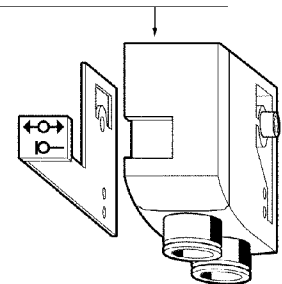
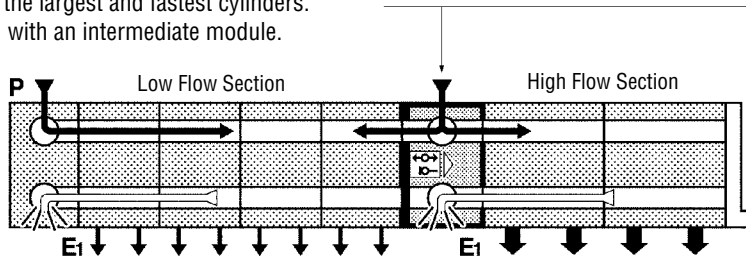
Consequently, small single-acting cylinders may pop out unexpectedly whenever an exhaust back pressure rises into the island.

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

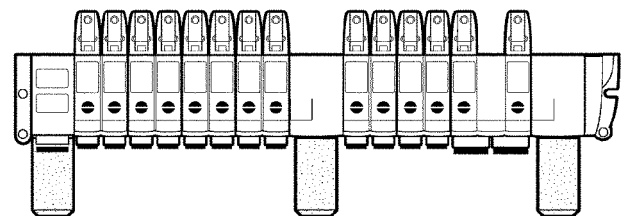
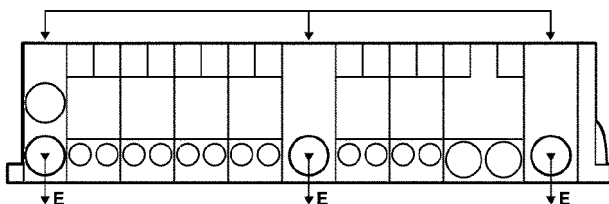
Another method to block exhaust back pressures when they may affect the application is to isolate the valves in the island that control the largest and fastest cylinders. This is easily achieved with an intermediate module.

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 Muffers

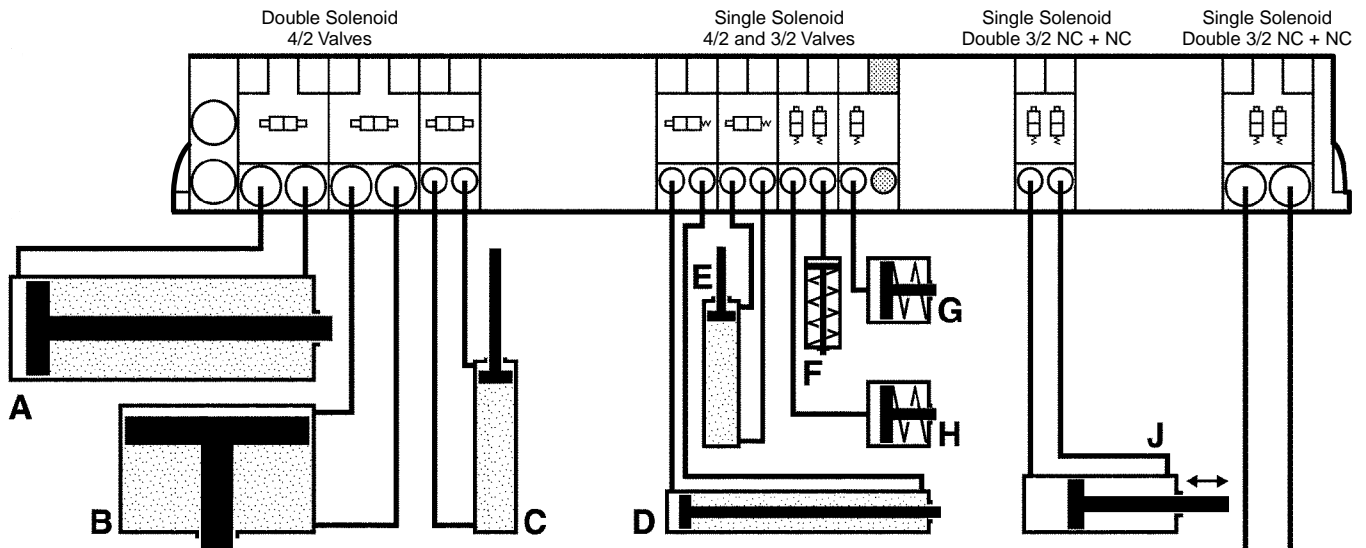
For applications that do not require the exhausts to be collected, a plug-in muffer into each exhaust port of the island will evacuate exhaust back pressures.

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.

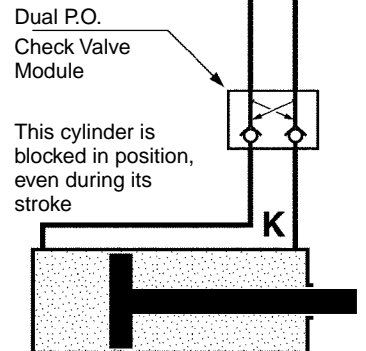
These cylinders retract in a chosen position.

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

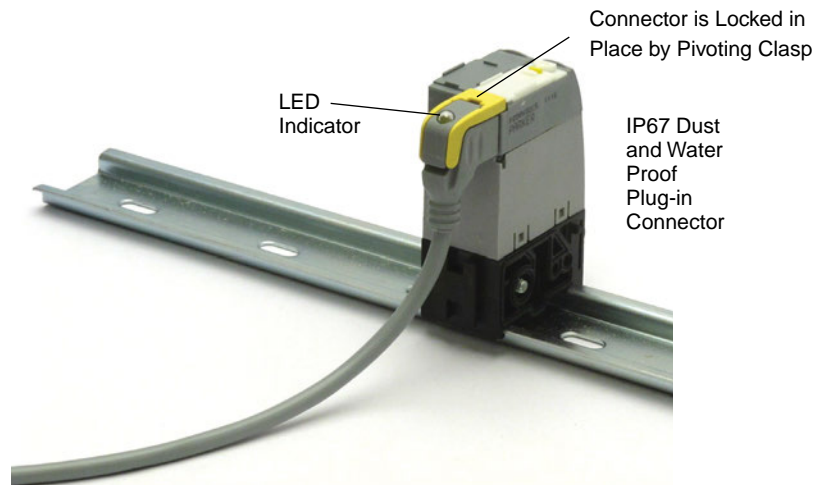
The voltage surge generated when a coil is de-energized is a common problem and can disrupt control circuits upstream of the valve island. To overcome this problem, the latest generations of valve islands incorporate a voltage surge suppressor with each solenoid pilot.

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

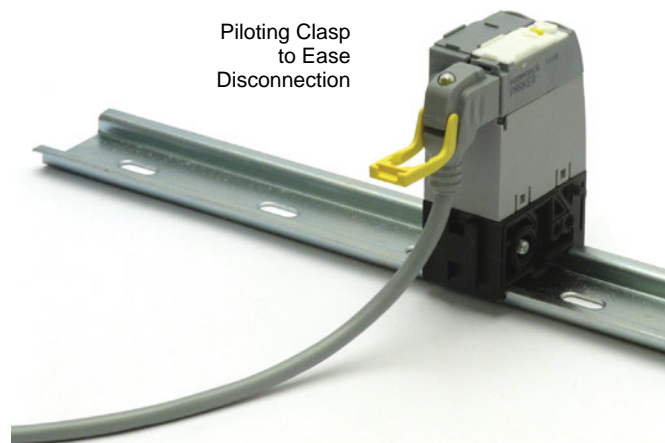


LED Indicator

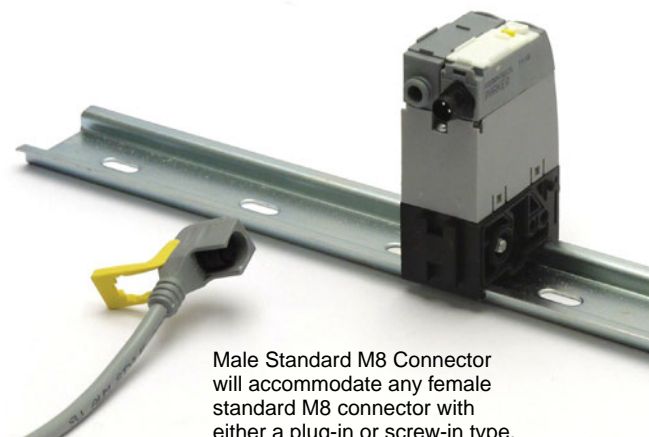
Connector is Locked in Place by Pivoting Clasp

IP67 Dust and Water Proof Plug-in Connector

24VDC Polarity Insensitive



Pivoting Clasp to Ease Disconnection

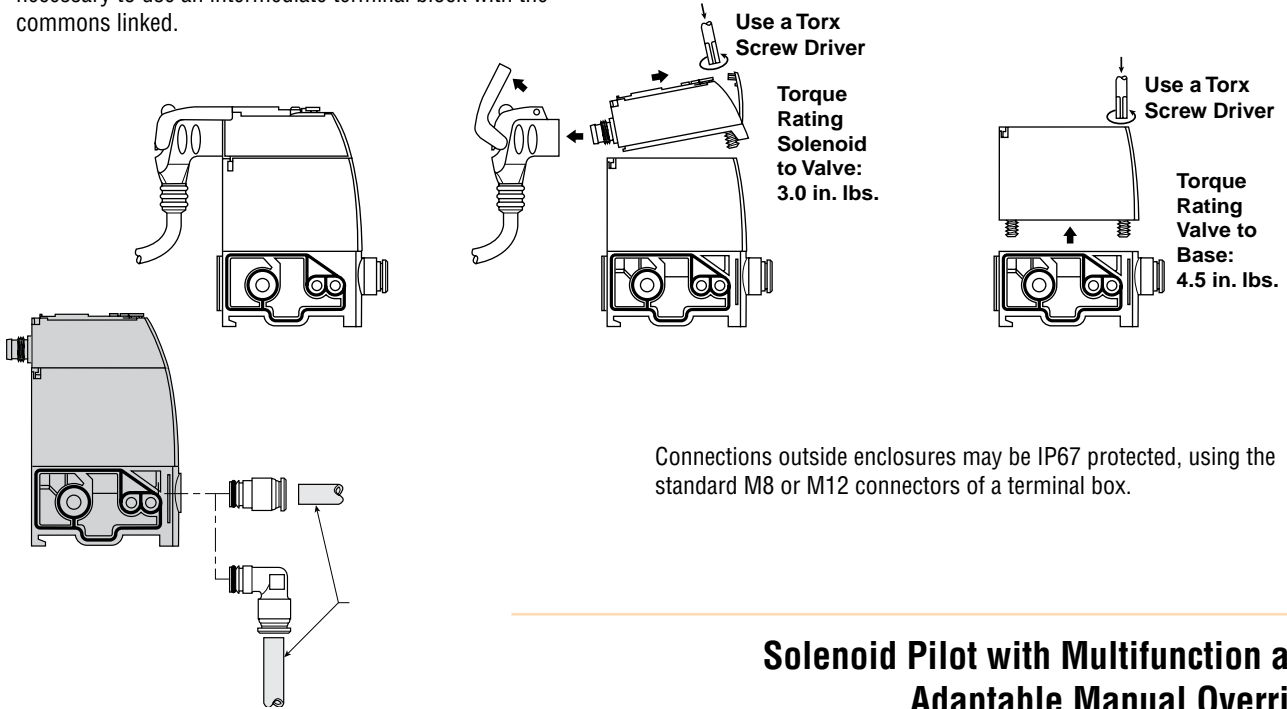


Male Standard M8 Connector will accommodate any female standard M8 connector with either a plug-in or screw-in type.

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:

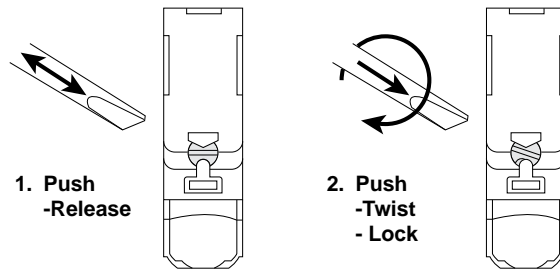
- Push-release function;
- Push-twist-lock function.

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.

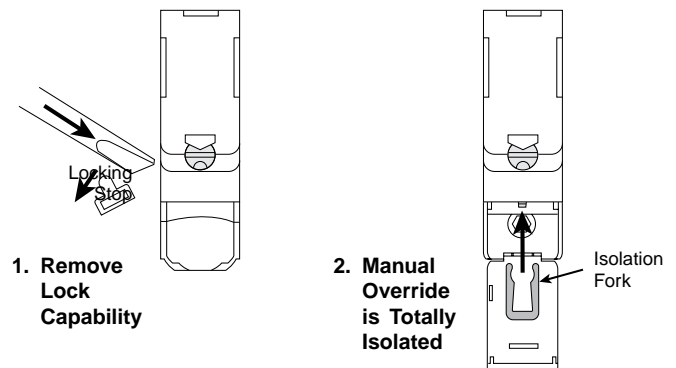
Depending on the machine and its conditions of use, one may either:

- 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 μ 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 ²	40 mm ²
Flow Rating (Cv)	.32 Cv (400 NI/min)	.80 Cv (1200 NI/min)

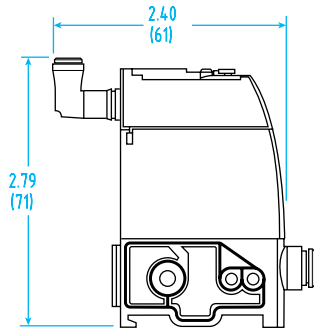
Electrical Specification Solenoid Pilot



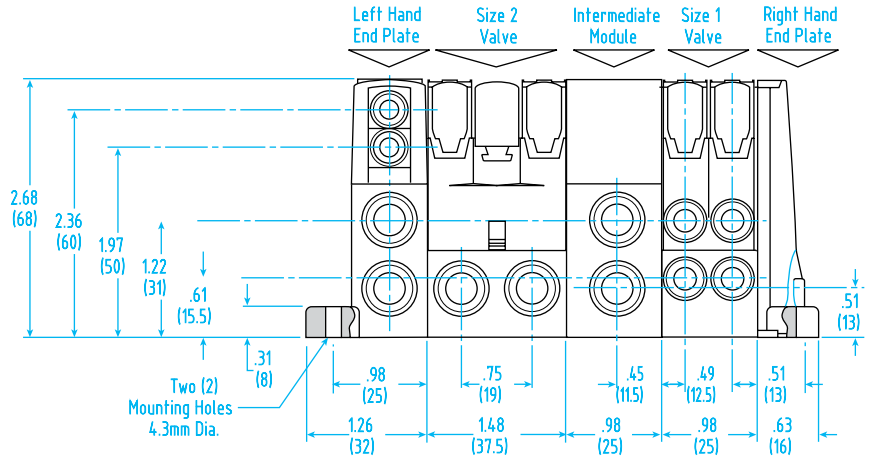
One size 24VDC Solenoid Pilot Common to all the Moduflex System

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

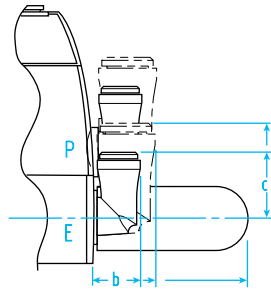


Air Pilot



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
Size 1 4mm	8	10	12
Modules 6mm	8	13	16
Size 2 8mm	9	16	19
Modules 10mm	13	18	22

