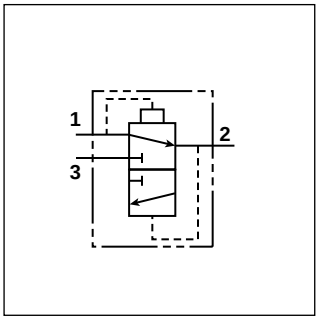
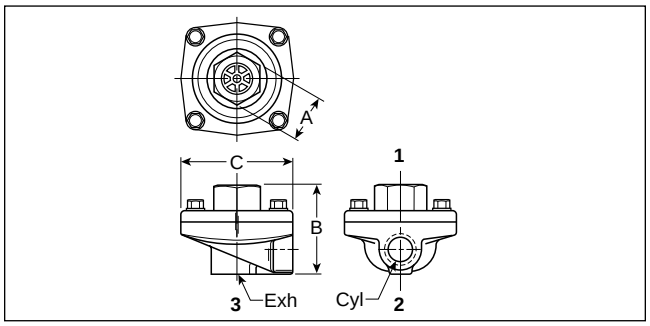
Quick Exhaust Valves

1/8" to 3/4" Ports





General Information

Quick exhaust valves provide rapid exhaust of control air when placed between control valve and actuator. They can also be used as shuttle valves. Diaphragm materials are available in urethane, Viton® and Teflon® to meet a wide variety of operating conditions.

Valve Specifications

Operating Pressure (Air)

- Maximum:

  150 PSIG

  200 PSIG for Model No. 03340 0199 (Teflon® diaphragm)

- Minimum:

  3 PSIG

  50 PSIG for Model No. 03340 0199 (Teflon® diaphragm)

Operating Temperature

- Urethane: 0° to 180° F*
- Viton®: 0°F to 400°F*
- Teflon®: 0°F to 500°F*

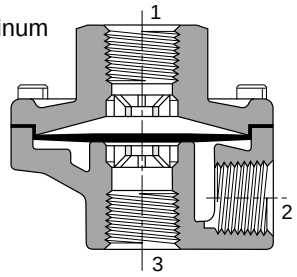
* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

Component Materials

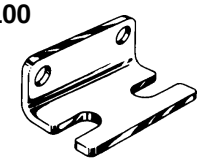
- Body Material – Die cast aluminum
- Seals – Nitrile
- Diaphragm:

  Standard – Nitrile (1/8"), Urethane (all other sizes)

  Optional – Viton®, Teflon®



Mounting Bracket Kit – No. 03640 8100
(Including body screws)
For 3640 and 3650 Series valves

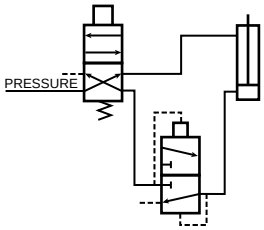


Model Selection, Performance Data and Dimensions

Port			Flow (SCFM†)	Model Number	A	B	C	Service Kit No.
A	B	C						
1/8"	1/8"	1/8"	70	03641 1000	7/8" Sq.	1.75	1.88	03640 8000
	1/8"	1/4"	70	03642 1000	7/8" Sq.	1.75	1.88	03640 8000
1/4"	1/4"	1/4"	90	03640 1000	7/8" Sq.	1.75	1.88	03640 8000
	1/4"	3/8"	150	03340 0125	1" Hex	2.06	2.44	03340 0105
	3/8"	3/8"	240	03340 0109	1" Hex	2.06	2.44	03340 0105
3/8"	3/8"	3/8"	240	03340 0099	1" Hex	2.06	2.44	03340 0105
1/2"	1/2"	1/2"	450	30077 9000	1-1/2" Hex	2.88	3.38	03475 0109
3/4"	3/4"	3/4"	550	30079 9000	1-1/2" Hex	2.88	3.38	03475 0109
Following with Viton® diaphragms for extended temperature operation								
1/8"	1/8"	1/8"	70	03651 1000	7/8" Sq.	1.75	1.88	03650 8000
	1/8"	1/4"	70	03652 1000	7/8" Sq.	1.75	1.88	03650 8000
1/4"	1/4"	1/4"	90	03650 1000	7/8" Sq.	1.75	1.88	03650 8000
3/8"	3/8"	3/8"	240	03340 0700	1" Hex	2.06	2.44	03340 0319
1/2"	1/2"	1/2"	450	30077 9500	1-1/2" Hex	2.88	3.38	03475 0120
3/4"	3/4"	3/4"	550	30079 9500	1-1/2" Hex	2.88	3.38	03475 0120
Following with Teflon® diaphragms for higher pressure and temperature								
3/8"	3/8"	3/8"	240	03340 0199	1" Hex	2.06	2.44	03340 0504

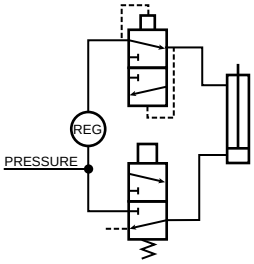
† At 100 PSIG inlet pressure with full pressure drop.

Typical "Quick Exhaust Valve" Applications



Rapid Retraction – Double Acting Cylinder

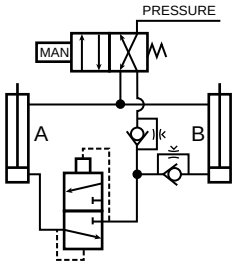
In this circuit, air is exhausted through a Quick Exhaust Valve that is **close coupled** to the cap end of the cylinder. Because the Quick Exhaust Valve has a greater exhaust capacity than the four-way Control Valve, increased cylinder speed can be accomplished with a smaller and less expensive control valve.



Dual Pressure Actuation of Double Acting Cylinder

This circuit utilizes a Quick Exhaust Valve and a three-way Control Valve to permit rapid extension of the cylinder at a high pressure. Retraction can be accomplished at a lower pressure, thus saving air and increasing cylinder life.

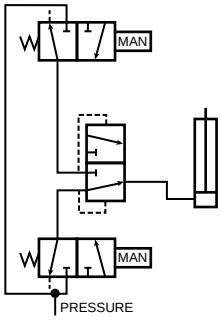
NOTE: Line pressure must be 3 or 4 times greater than rod end pressure. Effective working pressure is the differential between the cap and rod end.



Bi-Directional Control of Two Double Acting Cylinders

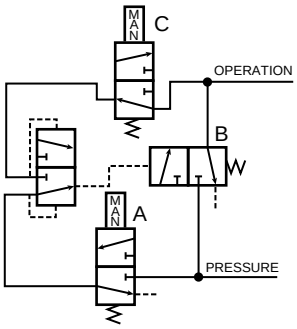
This circuit provides maximum control with a minimum of valving. A large four-way Control Valve is not needed to permit the rapid retraction of Cylinder A, as the Quick Exhaust Valve performs this function. The extension of Cylinders A and B and retraction of Cylinder B are controlled by Speed Control Valves.

Typical "Shuttle Valve" Applications



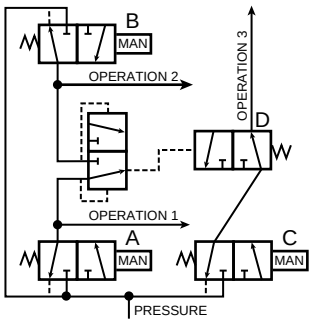
"OR" Circuit

The most common application of the Shuttle Valve is the "OR" Circuit. Here a cylinder or other work device can be actuated by either control valve. The valves can be manually or electrically actuated and located in any position.



Memory Circuit

This circuit enables continuous operation once initiated. Pressure is delivered to the circuit when Valve A is actuated. This allows pressure to pass through the shuttle valve actuating Valve B. Pressure then flows through Valve B and also the other side of the shuttle valve which holds Valve B open for continuous operation. To unlock the circuit, Valve C must be opened to exhaust the circuit and allow Valve B to return to its normally closed position.

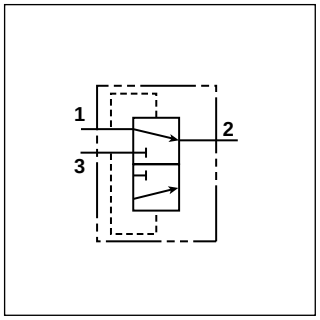


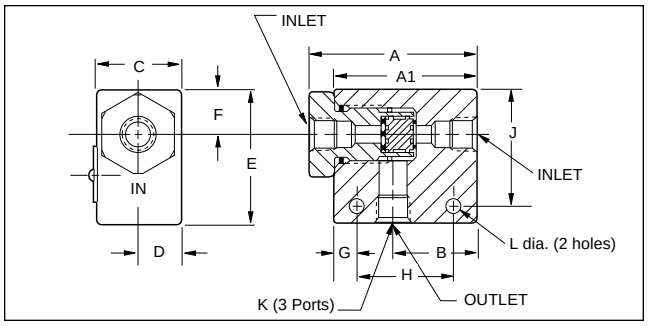
Interlock

This circuit prevents the occurence of a specific operation while one or another operation takes place. When either Valve A or B is actuated to perform operation 1 or 2, Valve D is shifted to the closed position and prevents operation 3 from occurring.

Shuttle Valves

1/8" to 3/8" Ports





General Information

Shuttle valves determine a single pneumatic output from two separate inputs. If pressure is applied to both ports simultaneously, the valve will select the port with the higher pressure.

Valve Specifications

Operating Pressure

- 200 PSIG Maximum
- 3 PSIG Minimum: Differential Pressure

Operating Temperature

- 0°F to 160° F*

* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

Component Materials

- Body Material – Aluminum
- Internal Components – Aluminum
- Seals – Nitrile

Model Selection and Dimensions

Port Size	Model Number	Dimensions (inches)											
		A	A1	B	C	D	E	F	G	H	J	K	L
1/8"	N164 1001	N/A	1.62	0.81	0.62	0.31	1.00	.281	0.312	1.00	0.75	1/8 – 27	0.219
1/4"	N164 2003	2.50	2.12	1.25	1.25	0.62	2.00	0.67	0.265	1.25	1.35	1/4 – 18	0.219
3/8"	N164 3003	2.50	2.12	1.25	1.25	0.62	2.00	0.67	0.265	1.25	1.35	3/8 – 16	0.219

Performance Data – Flow

Port Size	Model Number	Flow (Cv)
1/8"	N164 1001	0.32
1/4"	N164 2003	1.65
3/8"	N164 3003	2.02