ROSS®

PRODUCT INFORMATION

HAND OPERATED VALVES

11,12, 31, 36, PENDANT SERIES

ROSS CONTROLS

Pushbutton

Palm Button

Toggle Lever

Cam Roller

Plunger

Heavy-Duty Hand Lever

Foot Pedal with Guard

Pendant

Accessories

VALVE TYPE	VALVE SERIES	AVAILABLE PORT SIZES							MAX. FLOW Cv	FUNCTIONS					Page
		1/8	1/4	3/8	1/2	3/4	1	1¼		2/2	3/2	4/2	4/3	5/2	
Flush & Mushroom Pushbutton															
	12	■	■						0.9		■				E1.3
Palm Button & Heavy Duty Palm Button															
	11 & 12	■	■						0.5	■	■				E1.4
Selector Switch															
	12	■	■						0.9		■				E1.5
Toggle Lever															
	11		■						0.5	■	■				E1.6
Lever															
	36		■						1.2		■	■			E1.7
Heavy-Duty Hand Lever															
	31			■	■	■	■	■	14				■		E1.8 - E1.9
Pedal & Treadle															
	36		■						1.2		■	■			E1.10
Foot Pedal with Guard															
	RM		■						0.5					■	E1.11
Mechanical Cam Roller & Plunger Valves															
	11		■						0.5	■	■				E1.12
Pendant Control															
	20 & 39		■						0.5	■	■				E1.13

บริษัท ฟลูเทค จำกัด
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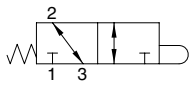
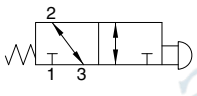
3-Way 2-Position Valves, Flush Pushbutton, Spring Return

Port Size	Green Button Valve Model Number		Red Button Valve Model Number		C_v	Weight lb (kg)
	NPT Threads	G Threads	NPT Threads	G Threads		
1/8	1223B1FPG	D1223B1FPG	1223B1FPR	D1223B1FPR	0.6	0.28 (0.13)
1/4	1223B2FPG	D1223B2FPG	1223B2FPR	D1223B2FPR	0.9	0.34 (0.15)



3-Way 2-Position Valves, Mushroom Button Spring Return

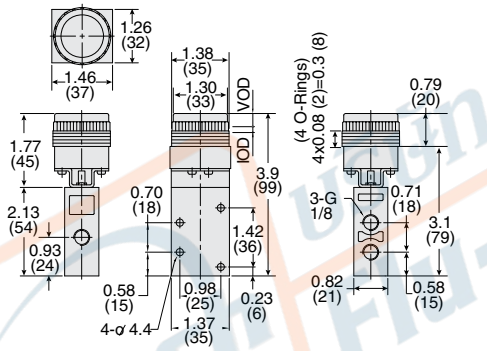
Port Size	Green Button Valve Model Number		Red Button Valve Model Number		C_v	Weight lb (kg)
	NPT Threads	G Threads	NPT Threads	G Threads		
1/8	1223B1MBG	D1223B1MBG	1223B1MBR	D1223B1MBR	0.6	0.29 (0.13)
1/4	1223B2MBG	D1223B2MBG	1223B2MBR	D1223B2MBR	0.9	0.35 (0.16)



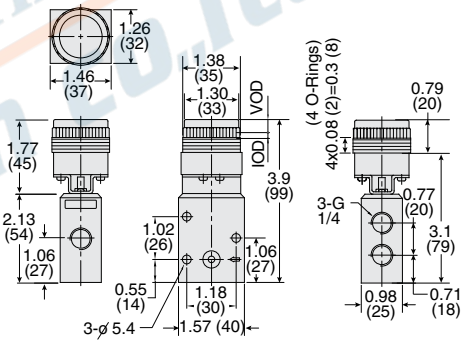
Flush Pushbutton

Valve Dimensions – inches (mm)

Port Size 1/8

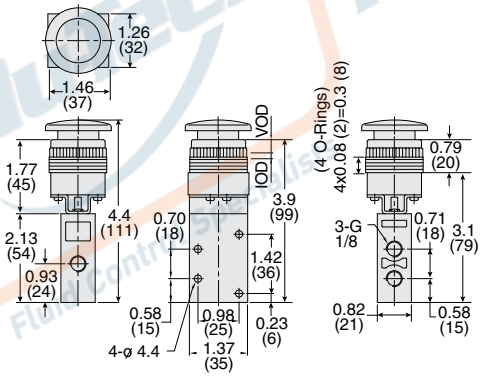


Port Size 1/4

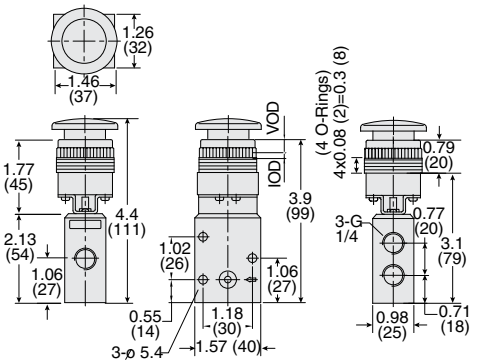


Mushroom Button

Port Size 1/8



Port Size 1/4



Accessories

	Port Size	Thread Type	Model Number NPT Threads	Model Number R/Rp Threads	Avg. C_v	Dimensions inches (mm) Width	Dimensions inches (mm) Length	Weight lb (kg)
Silencers	1/8	Male	5500A1003	D5500A1003	1.2	0.9 (21)	2.0 (51)	0.1 (0.1)
	1/4	Male	5500A2003	D5500A2003	2.1	0.9 (21)	2.2 (55)	0.1 (0.1)
	Pressure Range: 0 to 290 psig (0 to 20 bar) maximum. **Flow Media:** Filtered air.							

Normally Closed or Normally Open simply by piping the inlet supply accordingly.

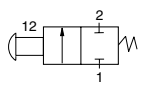
STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Spool & Sleeve
Mounting Type	In-line
Temperature	Ambient/Media: 40° to 175°F (4° to 80°C)
Flow Media	Filtered air
Operating Pressure	5 to 150 psig (0.3 to 10 bar)

Construction Material	**Valve Body:** Cast Aluminum **Button:** Stainless steel, Polyoxymethylene **Spool:** Aluminum **Spring:** Stainless Steel **Switch Parts:** Glass filled Nylon
Valid Operation Distance: 0.22 inches (5.5 mm). **Invalid Operation Distance:** 0.04 inches (1.0 mm). **Pressure for Valid/Invalid Operation:** 7.7 lb (3.5 Kg).	

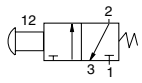
2-Way 2-Position Valves, Palm Button, Spring Return

Port Size	Normally Closed Valve Model Number		C_v	Average Response Constants** F	Weight lb (kg)
1-2	NPT Threads	G Threads		1-2	
1/4	1121A2001	D1121A2001	0.5	2.5	1.0 (0.5)



3-Way 2-Position Valves, Palm Button, Spring Return

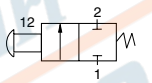
Port Size	Normally Closed Valve Model Number		C_v	Average Response Constants** F		Weight lb (kg)
1, 2, 3	NPT Threads	G Threads		1-2	2-3	
1/4	1123A2001	D1123A2001	0.5	2.5	3.2	1.0 (0.5)



Palm Button

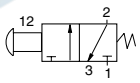
2-Way 2-Position Valves, Heavy-Duty Palm Button Spring Return

Port Size	Normally Closed Green Button Valve Model Number		Red Button Valve Model Number		C_v	Average Response Constants** F	Weight lb (kg)
1-2	NPT Threads	G Threads	NPT Threads	G Threads		1-2	
1/4	1221B2001	D1221B2001	1221B2003	D1221B2003	0.8	2.0	1.8 (0.8)



3-Way 2-Position Valves, Heavy-Duty Palm Button Spring Return

Port Size	Normally Closed Green Button Valve Model Number		Red Button Valve Model Number		C_v	Average Response Constants** F		Weight lb (kg)
1, 2, 3	NPT Threads	G Threads	NPT Threads	G Threads		1-2	2-3	
1/4	1223B2001	D1223B2001	1223B2003	D1223B2003	0.8	2.0	2.3	1.8 (0.8)

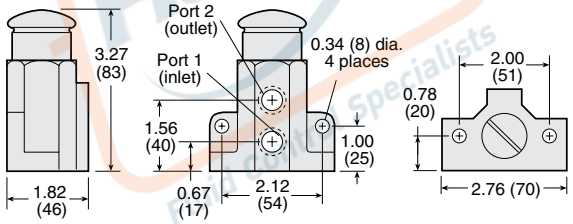


Heavy-Duty Palm Button

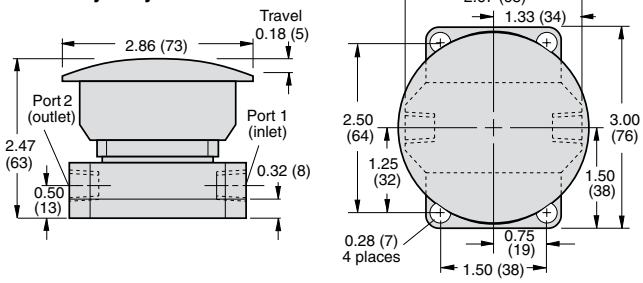
** **Valve Response Time** – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. F values are given in the chart above. M values for manually operated valves depend on the speed of actuation, and may be taken as zero for most practical applications.

Valve Dimensions – inches (mm)

Palm Button

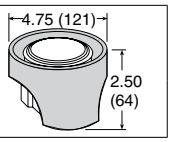


Heavy-Duty Palm Button



Accessories & Options

Silencers for 3-way Valves	Port Size	Thread Type	Model Number NPT Threads	Model Number R/Rp Threads	Avg. C_v	Dimensions inches (mm) Width	Dimensions inches (mm) Length	Weight lb (kg)
	1/4	Male	5500A2003	D5500A2003	2.1	0.9 (21)	2.2 (55)	0.1 (0.1)
	Pressure Range: 0 to 290 psig (0 to 20 bar) maximum. **Flow Media:** Filtered air.							

RING GUARD for Heavy-Duty Palm Button	Model Number	
	278B30	

Helps to protect against accidental valve actuation.

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Flow Media	Filtered air
Mounting Type	Side and bottom mounting flanges	Operating Pressure	5 to 150 psig (0.3 to 10 bar)
Temperature	Ambient/Media: -10° to 175°F (-23° to 80°C) *For temperatures below 40°F (4°C) air must be free of water vapor to prevent formation of ice.* *For temperatures below -10°F (-23°C), consult ROSS.*	Construction Material	**Valve Body:** Cast Aluminum **Button:** ***Pushbutton:*** Aluminum *Heavy-Duty Palm Button:* High-strength polymer

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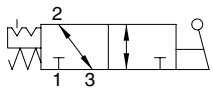
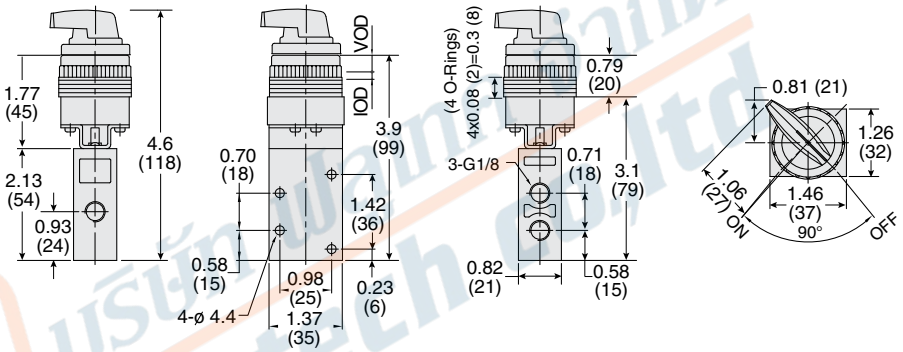
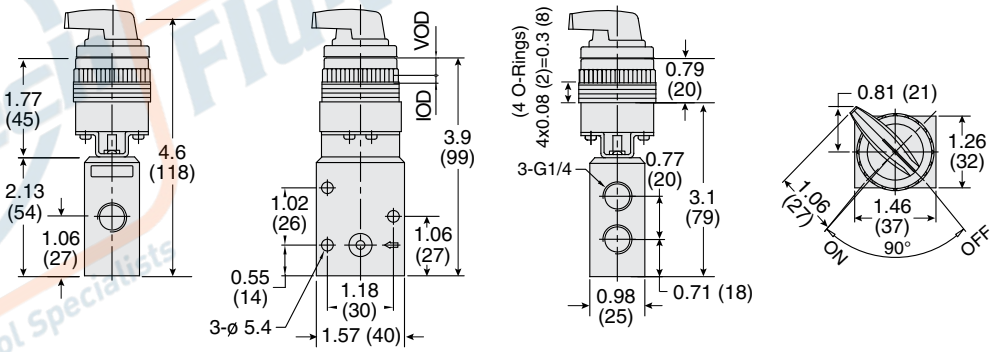
3-Way 2-Position Valves, Detented					
Port Size	Black Switch Knob Valve Model Number		C_v	Weight lb (kg)	
	NPT Threads	G Threads			
1-2			1-2		
1/8	1223B1SLB	D1223B1SLB	0.6	0.31 (0.14)	
1/4	1223B2SLB	D1223B2SLB	0.9	0.37 (0.17)	

Valve Dimensions – inches (mm)

Port Size 1/8



Port Size 1/4



Normally Closed or Normally Open simply by piping the inlet supply accordingly.

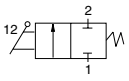
Accessories

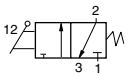
Silencers	Port Size	Thread Type	Model Number NPT Threads	Model Number R/Rp Threads	Avg. C_v	Dimensions inches (mm) Width	Dimensions inches (mm) Length	Weight lb (kg)
	1/8	Male	5500A1003	D5500A1003	1.2	0.9 (21)	2.0 (51)	0.1 (0.1)
	1/4	Male	5500A2003	D5500A2003	2.1	0.9 (21)	2.2 (55)	0.1 (0.1)
	Pressure Range: 0 to 290 psig (0 to 20 bar) maximum. **Flow Media:** Filtered air.							

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Spool & Sleeve
Mounting Type	In-line
Temperature	Ambient/Media: 40° to 175°F (4° to 80°C)
Flow Media	Filtered air
Operating Pressure	5 to 150 psig (0.3 to 10 bar)

Construction Material	**Valve Body:** Cast Aluminum **Button:** Stainless steel, Polyoxymethylene **Spool:** Aluminum **Seals:** Nitrile Rubber **Spring:** Stainless Steel **Switch Parts:** Glass filled Nylon
Valid Operation Distance: 0.22 inches (5.5 mm). **Invalid Operation Distance:** 0.04 inches (1.0 mm). **Pressure for Valid/Invalid Operation:** 7.7 lb (3.5 Kg).	

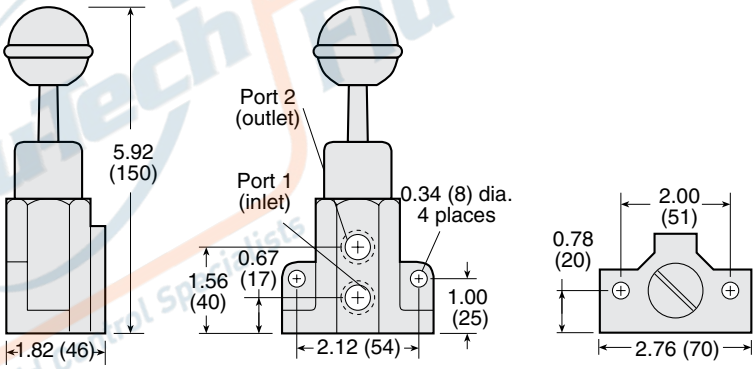
2-Way 2-Position Valves, Spring Return						
Port Size	Valve Model Number		C_v	Average Response Constants**	Weight lb (kg)	
	NPT Threads	G Threads		F 1-2		
1/4	1121A2002	D1121A2002	0.5	2.5	1.0 (0.5)	

3-Way 2-Position Valves, Spring Return						
Port Size	Valve Model Number		C_v	Average Response Constants** F		Weight lb (kg)	
	NPT Threads	G Threads		1-2	2-3		
1/4	1123A2002	D1123A2002	0.5	2.5	3.2	1.0 (0.5)	

** **Valve Response Time** – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. F values are given in the chart above. M values for manually operated valves depend on the speed of actuation, and may be taken as zero for most practical applications.

E1

Valve Dimensions – inches (mm)



E

Accessories

Silencers for 3-way Valves	Port Size	Thread Type	Model Number		Avg. C_v	Dimensions inches (mm)		Weight lb (kg)
			NPT Threads	R/Rp Threads		Width	Length	
	1/4	Male	5500A2003	D5500A2003	2.1	0.9 (21)	2.2 (55)	0.1 (0.1)
	Pressure Range: 0 to 290 psig (0 to 20 bar) maximum. **Flow Media:** Filtered air.							

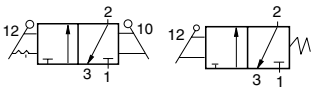
STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet
Mounting Type	Side and bottom mounting flanges
Temperature	Ambient/Media: -10° to 175°F (-23° to 80°C) *For temperatures below 40°F (4°C) air must be free of water vapor to prevent formation of ice.* *For temperatures below -10°F (-23°C), consult ROSS.*

Flow Media	Filtered air
Operating Pressure	5 to 150 psig (0.3 to 10 bar)
Construction Material	**Valve Body:** Cast Aluminum **Lever Knob Material:** Glass filled Nylon

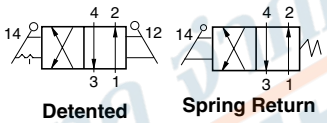
3-Way 2-Position Valves, Detented or Spring Return

Port Size	Operators	Valve Model Number		C_v	Average Response Constants** F		Weight lb (kg)
		NPT Threads	G Threads		1-2	2-3	
1/4	Detented	3623A2003	D3623A2003	1.2	1.66	1.43	1.3 (0.6)
1/4	Spring Return	3623A2004	D3623A2004	1.2	1.66	1.43	1.3 (0.6)



4-Way 2-Position Valves, Detented or Spring Return

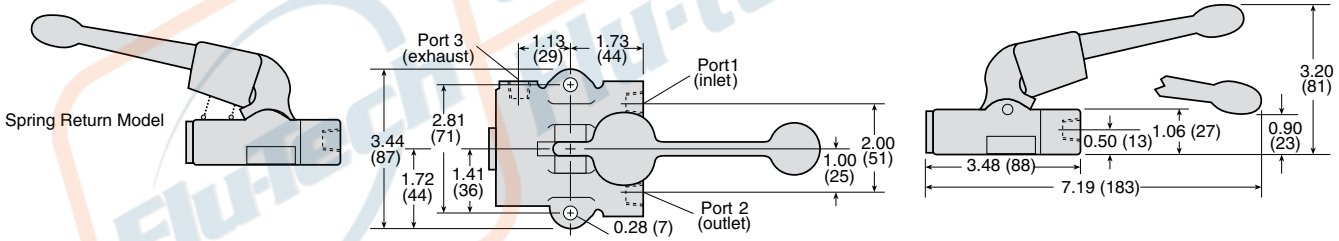
Port Size	Operators	Valve Model Number		C_v	Average Response Constants** F		Weight lb (kg)
		NPT Threads	G Threads		1-2, 1-4	4-3, 2-3	
1/4	Detented	3626A2003	D3626A2003	1.2	1.66	1.43	2.5 (1.1)
1/4	Spring Return	3626A2004	D3626A2004	1.2	1.66	1.43	2.5 (1.1)



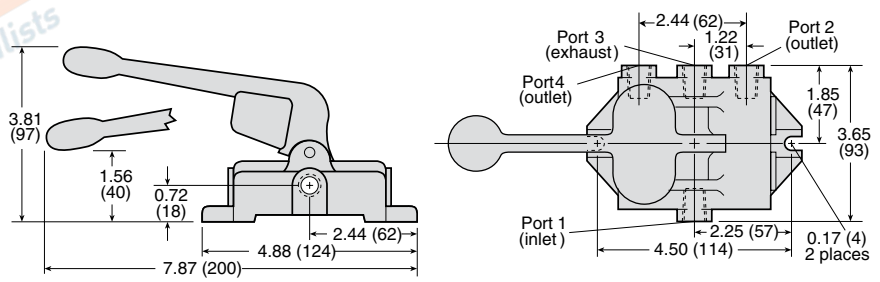
** **Valve Response Time** – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. F values are given in the chart above. M values for manually operated valves depend on the speed of actuation, and may be taken as zero for most practical applications.

Valve Dimensions – inches (mm)

3/2 Valve



4/2 Valve



Accessories

Silencers for 3-way Valves	Port Size	Thread Type	Model Number		Avg. C_v	Dimensions inches (mm)		Weight lb (kg)
			NPT Threads	R/Rp Threads		Width	Length	
	1/4	Male	5500A2003	D5500A2003	2.1	0.9 (21)	2.2 (55)	0.1 (0.1)
	Pressure Range: 0 to 290 psig (0 to 20 bar) maximum. **Flow Media:** Filtered air.							

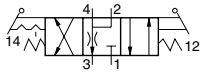
For models with vertical handle, consult ROSS.

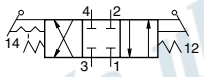
STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet
Mounting Type	Side and bottom mounting flanges
Temperature	Ambient/Media: -30° to 175°F (-34° to 80°C) *For temperatures below 40°F (4°C) air must be free of water vapor to prevent formation of ice.* *For temperatures below -30°F (-34°C), consult ROSS.*

Flow Media	Filtered air
Operating Pressure	5 to 150 psig (0.3 to 10 bar)
Construction Material	**Valve Body:** Cast Aluminum

4-Way 3-Position Valves, Detented									
Port Size		Closed/Open Center	Valve Model Number		C_v		Average Response Constants**		Weight lb (kg)
							F		
1, 2, 4	3		NPT Threads	G Threads	In-Out	Out-Exh.	In-Out	Out-Exh.	
3/8	1/2	Open	3126A3007	D3126A3007	1.7	1.4	1.26	1.43	2.0 (0.9)
3/8	1/2	Closed	3126A3010	D3126A3010	1.7	1.4	1.26	1.43	2.0 (0.9)
1/2	3/4	Open	3126A4007	D3126A4007	2.8	2.3	0.87	1.01	3.8 (1.7)
1/2	3/4	Closed	3126A4010	D3126A4010	2.8	2.3	0.87	1.01	3.8 (1.7)
3/4	1	Open	3126A5007	D3126A5007	5.0	4.2	0.55	0.63	5.0 (2.3)
3/4	1	Closed	3126A5010	D3126A5010	5.0	4.2	0.55	0.63	5.0 (2.3)
1	1¼	Open	3126A6007	D3126A6007	10	7.5	0.30	0.39	10.0 (4.5)
1	1¼	Closed	3126A6010	D3126A6010	10	7.5	0.30	0.39	10.0 (4.5)
1¼	1½	Open	3126A7007	D3126A7007	14	9.6	0.23	0.32	11.0 (5.0)
1¼	1½	Closed	3126A7010	D3126A7010	14	9.6	0.23	0.32	11.0 (5.0)

Open Center 

Closed Center 

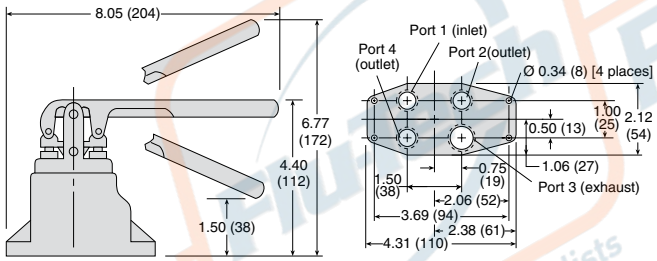
E1

E

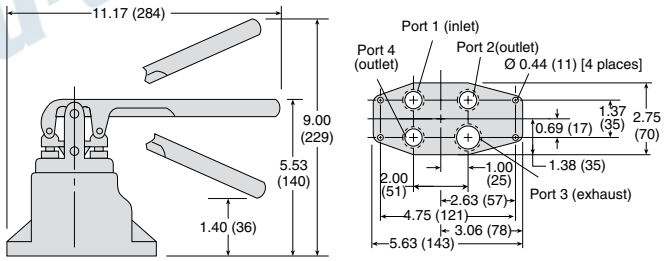
Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. F values are given in the chart above. M values for manually operated valves depend on the speed of actuation, and may be taken as zero for most practical applications.

Valve Dimensions – inches (mm)

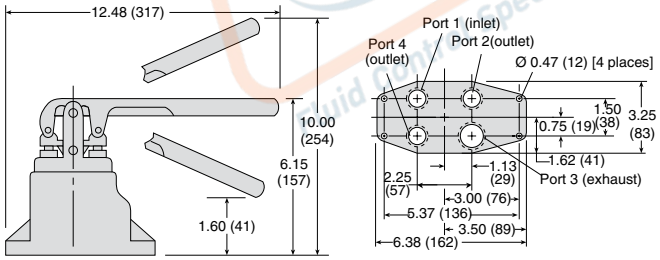
Port Size 3/8



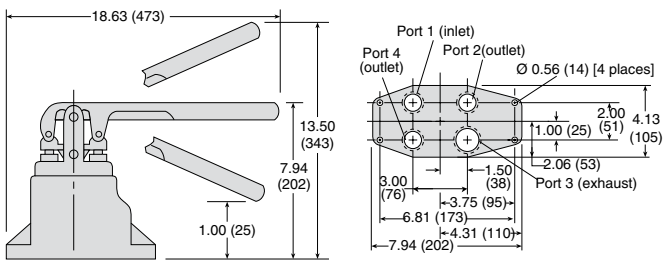
Port Size 1/2



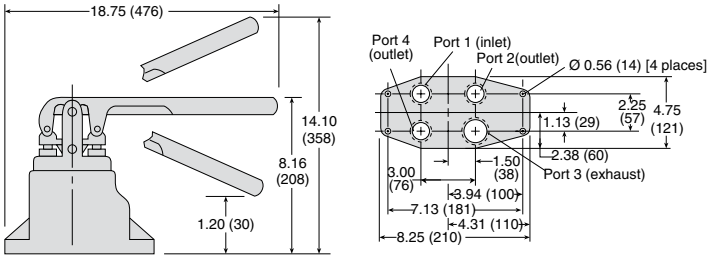
Port Size 3/4



Port Size 1



Port Size 1¼



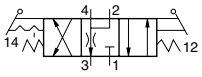
STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet
Mounting Type	Bottom mounting flanges
Temperature	Ambient/Media: -40° to 175°F (-40° to 80°C) *For temperatures below 40°F (4°C) air must be free of water vapor to prevent formation of ice.* *For temperatures below -40°F (-40°C), consult ROSS.*

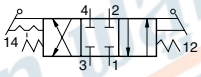
Flow Media	Filtered air
Operating Pressure	5 to 150 psig (0.3 to 10 bar)
Construction Material	**Valve Body:** Cast Aluminum

4-Way 3-Position Valves, Detented or Non-Detented									
Port Size		Closed/Open Center	Valve Model Number		C_v		Average Response Constants**		Weight lb (kg)
							F		
1, 2, 4	3		NPT Threads	G Threads	In-Out	Out-Exh.	In-Out	Out-Exh.	
3/8	1/2	Open	3126A3009	D3126A3009	1.7	1.4	1.26	1.43	2.4 (1.1)
3/8	1/2	Open	3126A3012#	D3126A3012#	1.7	1.4	1.26	1.43	2.4 (1.1)
3/8	1/2	Closed	3126A3013	D3126A3013	1.7	1.4	1.26	1.43	2.4 (1.1)
3/8	1/2	Closed	3126A3014#	D3126A3014#	1.7	1.4	1.26	1.43	2.4 (1.1)
1/2	3/4	Open	3126A4009	D3126A4009	2.8	2.3	0.87	1.01	4.8 (2.2)
1/2	3/4	Open	3126A4012#	D3126A4012#	2.8	2.3	0.87	1.01	4.8 (2.2)
1/2	3/4	Closed	3126A4013	D3126A4013	2.8	2.3	0.87	1.01	4.8 (2.2)
1/2	3/4	Closed	3126A4014#	D3126A4014#	2.8	2.3	0.87	1.01	4.8 (2.2)
# Non-detented models.									

Open Center



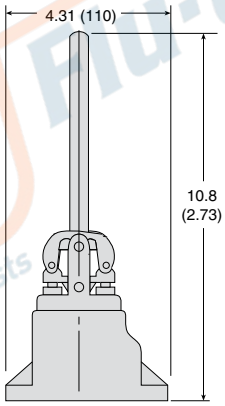
Closed Center

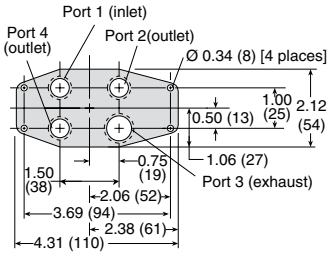


** **Valve Response Time** – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. F values are given in the chart above. M values for manually operated valves depend on the speed of actuation, and may be taken as zero for most practical applications.

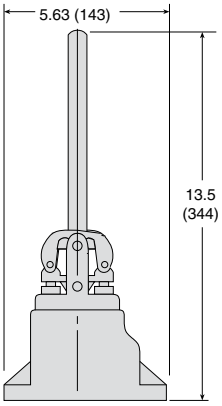
Valve Dimensions – inches (mm)

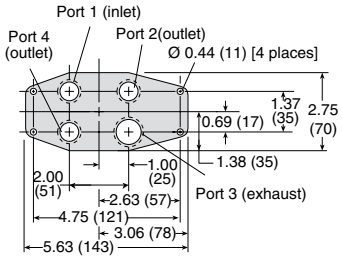
Port Size 1/2





Port Size 3/4



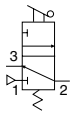


STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet
Mounting Type	Bottom mounting flanges
Temperature	Ambient/Media: -40° to 175°F (-40° to 80°C) *For temperatures below 40°F (4°C) air must be free of water vapor to prevent formation of ice.* *For temperatures below -40°F (-40°C), consult ROSS.*

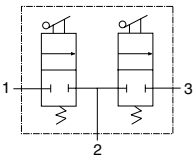
Flow Media	Filtered air
Operating Pressure	5 to 150 psig (0.3 to 10 bar)
Construction Material	**Valve Body:** Cast Aluminum

บริษัท ฟลูเทค จำกัด
FLU-TECH CO.,LTD
845/3-4 หมู่ 3 ถ.เทพารักษ์ ต.เทพารักษ์ อ.เมือง จ.สมุทรปราการ 10270
845/3-4 Thepharak RD., T.Thepharak, A.Muang, Samutprakarn 10270 THAILAND
Tel. 0 2384 6060, Fax 0 2384 5701, Email : sales@flutech.co.th, www.flutech.co.th

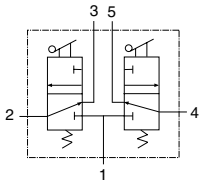


Single 3-Way

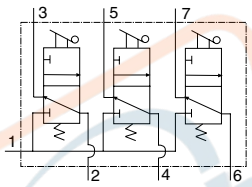
ROSS pendant control valves are a durable pneumatic solution that can be used anywhere manual control of devices is needed, such as an air hoist, air motor, or counterbalance cylinder. Ideal for use on or with material handling devices such as overhead cranes or air hoists, ROSS pendant control valves can withstand even the toughest environments.



Dual 2-Way



Dual 3-Way



Triple 3-Way

Single 3/2

The Single 3/2 pendant control valve may be used anywhere that requires manual 3/2 control, such as operating small single acting cylinders or pressurizing vacuum cups for quick release. Ideal for use on or with material handling devices. Spring-return rubber poppet internals provide dependable shifting, long life, and low cost.

Dual 2/2

Ideal for use on or with material handling devices. Spring-return rubber poppet internals provide dependable shifting, long life, and low cost.

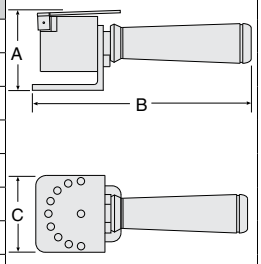
Dual 3/2

Ideal for use on or with material handling devices. Twin Pacer® inserts ensure reliability, dirt tolerance, and easy maintenance. May be used as a pilot valve convertible to a dual 2/2 function.

Triple 3/2

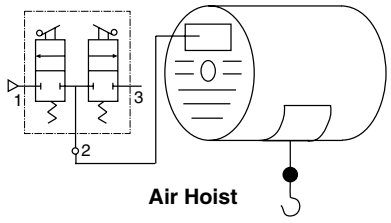
The Triple 3/2 pendant control valve may be used anywhere that three independant manual outputs are needed. Provides remote pilot signals to pressure controlled valves. Three Pacer® inserts ensure reliability and dirt tolerance.

Valve Type		Port Size	Threads	# of Levers	# of Handles	Valve Model Number	C_v 1-2	C_v 2-3	Dimensions inches (mm) A	B	C	Weight lb (kg)
2/2	Dual High-Flow	1/4	NPT	Two	None	2025A2901	0.73	0.55	3.1 (78)	2.8 (71)	2.8 (70)	1.0 (0.5)
					One	3900A0378	0.73	0.55	3.1 (78)	7.2 (182)	2.8 (70)	1.7 (0.8)
3/2	Single	1/4	NPT	One	None	2025A2904	0.24	0.42	4.7 (120)	6.0 (170)	1.8 (46)	1.0 (0.5)
					One	3900A1111	0.24	0.42	4.7 (120)	7.2 (182)	1.8 (46)	1.7 (0.8)
	Dual	1/8	NPT	Two	None	2025A1900	0.24	0.42	2.1 (54)	2.8 (71)	2.5 (64)	0.9 (0.4)
					One	3900A0379	0.24	0.42	2.9 (73)	7.2 (182)	2.8 (70)	1.6 (0.7)
	Triple	1/4	NPT	Three	None	2025A2902	0.24	0.42	2.8 (71)	2.8 (71)	3.8 (97)	1.6 (0.7)
					One	3900A0407	0.24	0.42	2.8 (71)	7.2 (182)	3.8 (97)	2.3 (1.0)

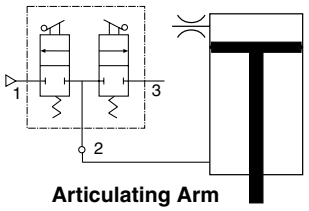


Application Data

Dual 2/2 - High-Flow

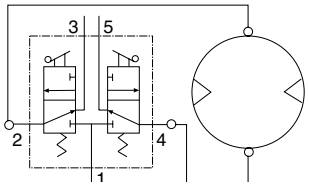


Air Hoist

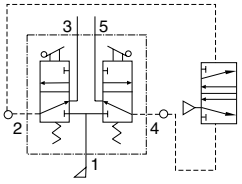


Articulating Arm

Dual 3/2



Bi-directional Air Motor



Pilot for Larger Double Pressure Controlled Valve

To convert a Dual 3/2 into a Dual 2/2:
Plug ports 3 and 5. Connect supply line to port 2. Port 1 becomes the outlet and port 4 becomes the exhaust port.

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet
Mounting Type	Line
Temperature	Ambient/Media: -40° to 175°F (-40° to 80°C)
	For temperatures below 40°F (4°C) air must be free of water vapor to prevent formation of ice. For temperatures below -40°F (-40°C), consult ROSS.

Flow Media	Filtered air
Operating Pressure	0 to 150 psig (0 to 10 bar)
Construction Material	**Valve Body:** Aluminum