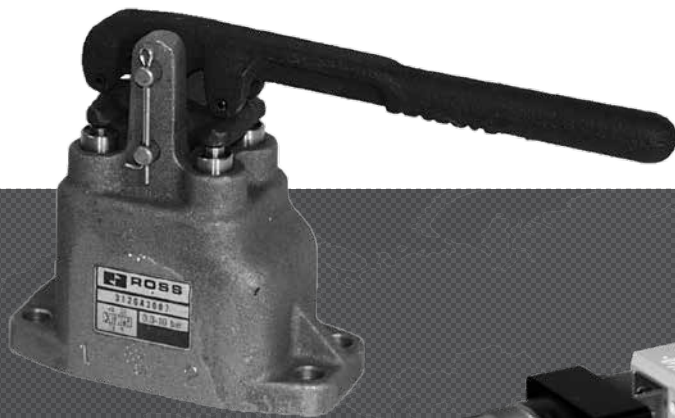













# MANUAL AND MECHANICAL VALVES

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**ROSS CONTROLS**

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

# Manual Valves

## Flush & Mushroom Pushbutton

# 12 Series

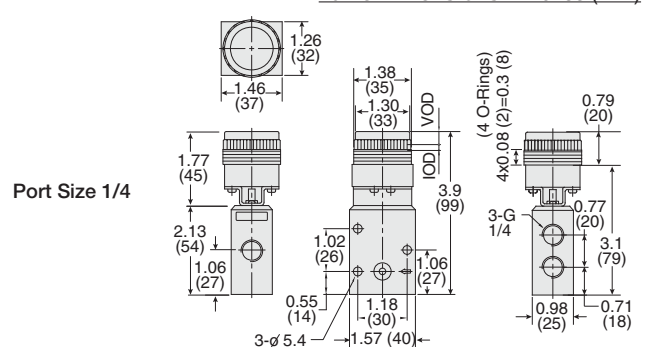
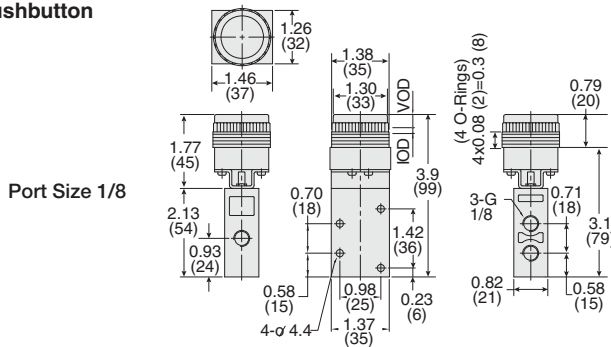
3-Way 2-Position Valves, Flush Pushbutton, Spring Return						
Port Size	Green Button		Red Button		C <sub>v</sub>	Weight lb (kg)
	Valve Model Number		Valve Model Number			
	NPT Threads	G Threads	NPT Threads	G Threads		
1/8	1223B1FPG	D1223B1FPG	1223B1FPR	D1223B1FPR	0.6	0.28 (0.13)
1/4	1223B2FPG	D1223B2FPG	1223B2FPR	D1223B2FPR	0.9	0.34 (0.15)



3-Way 2-Position Valves, Mushroom Button Spring Return						
Port Size	Green Button		Red Button		C <sub>v</sub>	Weight lb (kg)
	Valve Model Number		Valve Model Number			
	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)

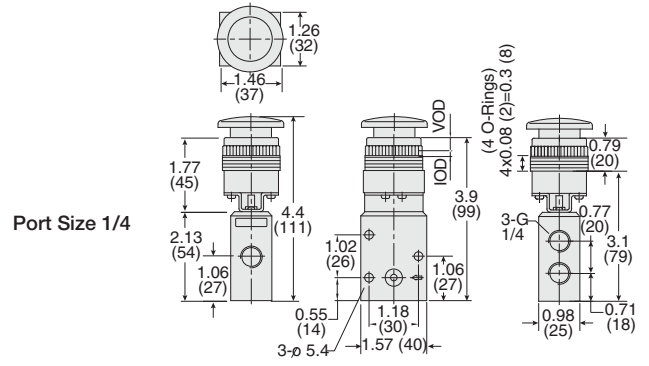
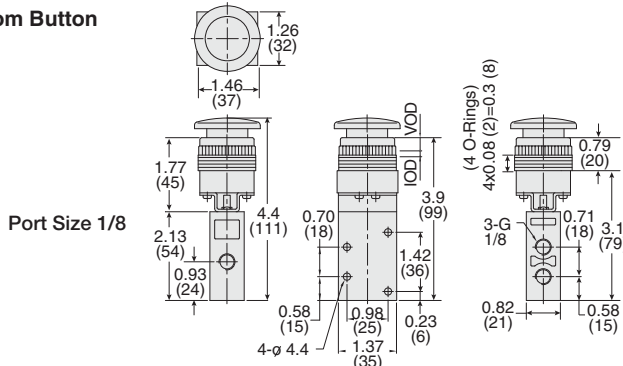


### Flush Pushbutton



### Valve Dimensions – inches (mm)

### Mushroom Button



## ACCESSORIES

Silencers	Port Size	Thread Type	Model Number		Avg. C <sub>v</sub>	Dimensions inches (mm)		Weight lb (kg)
			NPT Threads	R/Rp Threads		Width	Length	
			1/8	Male		5500A1003	D5500A1003	
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	<b>Construction Material</b> Valve Body: Cast Aluminum Button: Stainless steel, Polyoxymethylene Spool: Aluminum Spring: Stainless Steel Switch Parts: Glass filled Nylon
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)	
		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).

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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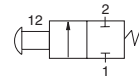
E1.3

# Manual Valves

## Palm Button & Heavy-Duty Palm Button

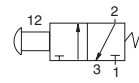
# Heavy-Duty 11 & 12 Series

2-Way 2-Position Valves, Palm Button, Spring Return						
Port Size	Normally Closed		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	Valve Model Number			F		
1-2	NPT Threads	G Threads		1-2		
1/4	1121A2001	D1121A2001	0.5	2.5		1.0 (0.5)

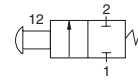


Palm Button

3-Way 2-Position Valves, Palm Button, Spring Return						
Port Size	Normally Closed		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	Valve Model Number			F		
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)

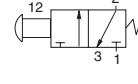


2-Way 2-Position Valves, Heavy-Duty Palm Button Spring Return								
Port Size	Normally Closed				C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	Green Button		Red Button			F		
1-2	Valve Model Number		Valve Model Number			1-2		
	NPT Threads	G Threads	NPT Threads	G Threads				
1/4	1221B2001	D1221B2001	1221B2003	D1221B2003	0.8	2.0		1.8 (0.8)



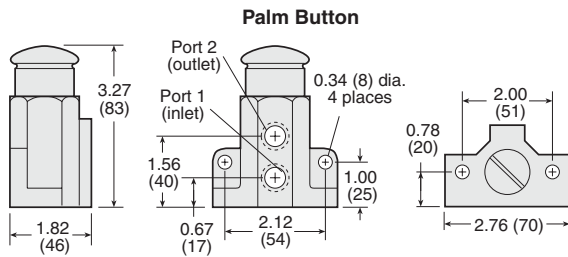
Heavy-Duty Palm Button

3-Way 2-Position Valves, Heavy-Duty Palm Button Spring Return								
Port Size	Normally Closed				C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	Green Button		Red Button			F		
1, 2, 3	Valve Model Number		Valve Model Number			1-2		2-3
	NPT Threads	G Threads	NPT Threads	G Threads				
1/4	1223B2001	D1223B2001	1223B2003	D1223B2003	0.8	2.0	2.3	1.8 (0.8)

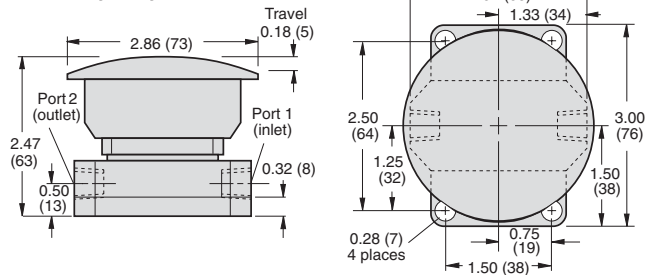


\*\* Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. F values are given in the chart above. M values for manually operated valves depend on the speed of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

### Valve Dimensions – inches (mm)



### Heavy-Duty Palm Button

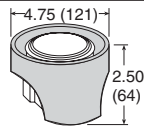


## ACCESSORIES & OPTIONS

Silencers for 3-way Valves	Port Size	Thread Type	Model Number		Avg. C <sub>v</sub>	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.

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: <b>Pushbutton:</b> Aluminum <b>Heavy-Duty Palm Button:</b> High-strength polymer

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

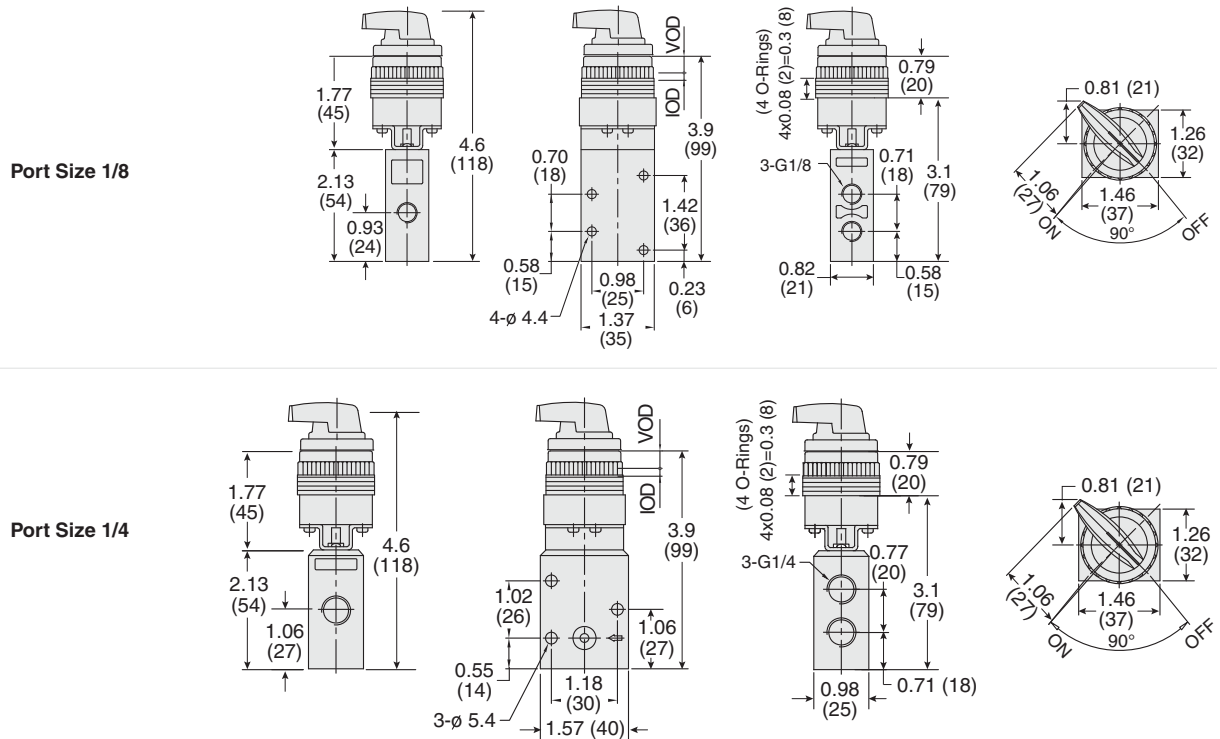
# Manual Valves Selector Switch

## 12 Series

3-Way 2-Position Valves, Detented					
Port Size	Black Switch Knob		C <sub>v</sub>	Weight lb (kg)	
	Valve Model Number				
1-2	NPT Threads	G Threads	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)



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

### ACCESSORIES

Silencers	Port Size	Thread Type	Model Number		Avg. C <sub>v</sub>	Dimensions inches (mm)		Weight lb (kg)
			NPT Threads	R/Rp Threads		Width	Length	
	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	<b>Construction Material</b> Valve Body: Cast Aluminum Button: Stainless steel, Polyoxymethylene Spool: Aluminum Seals: Nitrile Rubber Spring: Stainless Steel Switch Parts: Glass filled Nylon
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)	
		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).

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

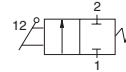


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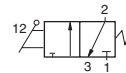
[www.rosscontrols.com](http://www.rosscontrols.com)

E1.5

2-Way 2-Position Valves, Spring Return						
Port Size	Valve Model Number		C <sub>v</sub>	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)

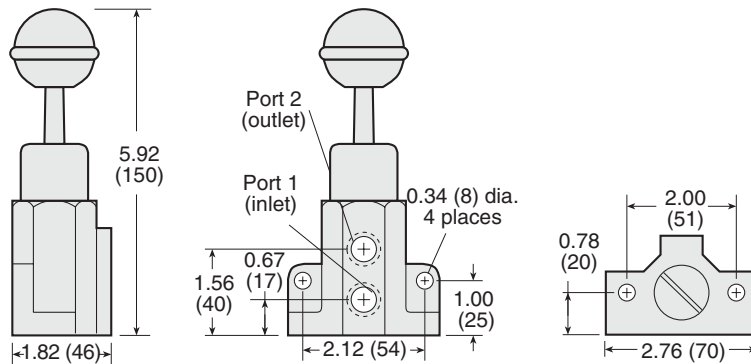


3-Way 2-Position Valves, Spring Return						
Port Size	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads		F		
				1-2	2-3	
1/4	1123A2002	D1123A2002	0.5	2.5	3.2	1.0 (0.5)



\*\* **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.

### Valve Dimensions – inches (mm)



## ACCESSORIES

Silencers for 3-way Valves	Port Size	Thread Type	Model Number		Avg. C <sub>v</sub>	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.

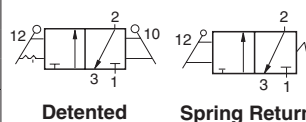
### STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	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)	Construction Material	Valve Body: Cast Aluminum
	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.		Lever Knob Material: Glass filled Nylon

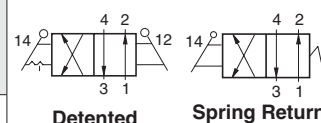
**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



3-Way 2-Position Valves, Detented or Spring Return							
Port Size	Operators	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
		NPT Threads	G Threads		F		
					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)



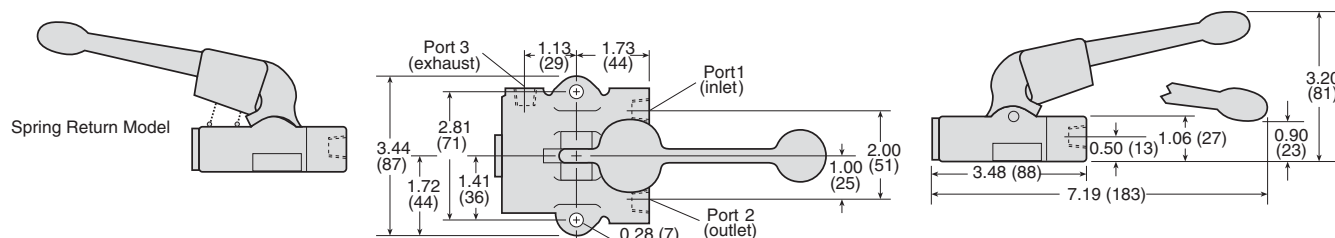
4-Way 2-Position Valves, Detented or Spring Return							
Port Size	Operators	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
		NPT Threads	G Threads		F		
					1-2, 1-4	4-3, 2-3	
1/4	Detented	3626A2003	D3626A2003	1.2	1.66	1.43	2.5 (1.1)
1/4	Spring Return	3626A2004	D3626A2004	1.2	1.66	1.43	2.5 (1.1)



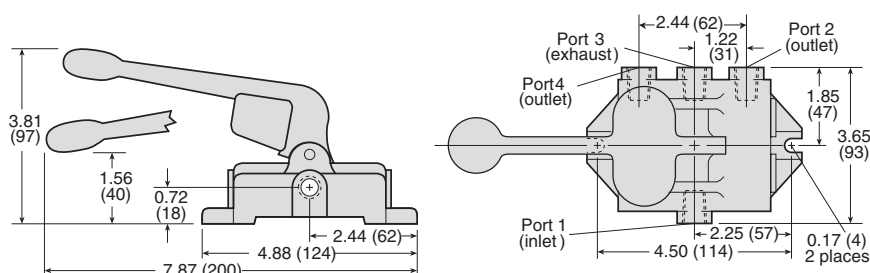
\*\* **Valve Response Time** – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. F values are given in the chart above. M values for manually operated valves depend on the speed 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 <sub>v</sub>	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.

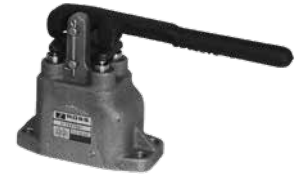
*For models with vertical handle, consult ROSS.*

### STANDARD SPECIFICATIONS (for valves on this page):

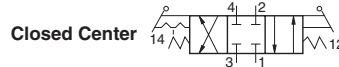
Construction Design	Poppet	Flow Media	Filtered air
Mounting Type	Side and bottom mounting flanges	Operating Pressure	5 to 150 psig (0.3 to 10 bar)
Temperature	Ambient/Media: -30° to 175°F (-34° to 80°C)	Construction Material	Valve Body: Cast Aluminum
	For temperatures below 40°F (4°C) air must be free of water vapor to prevent formation of ice. For temperatures below -30°F (-34°C), consult ROSS.		

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



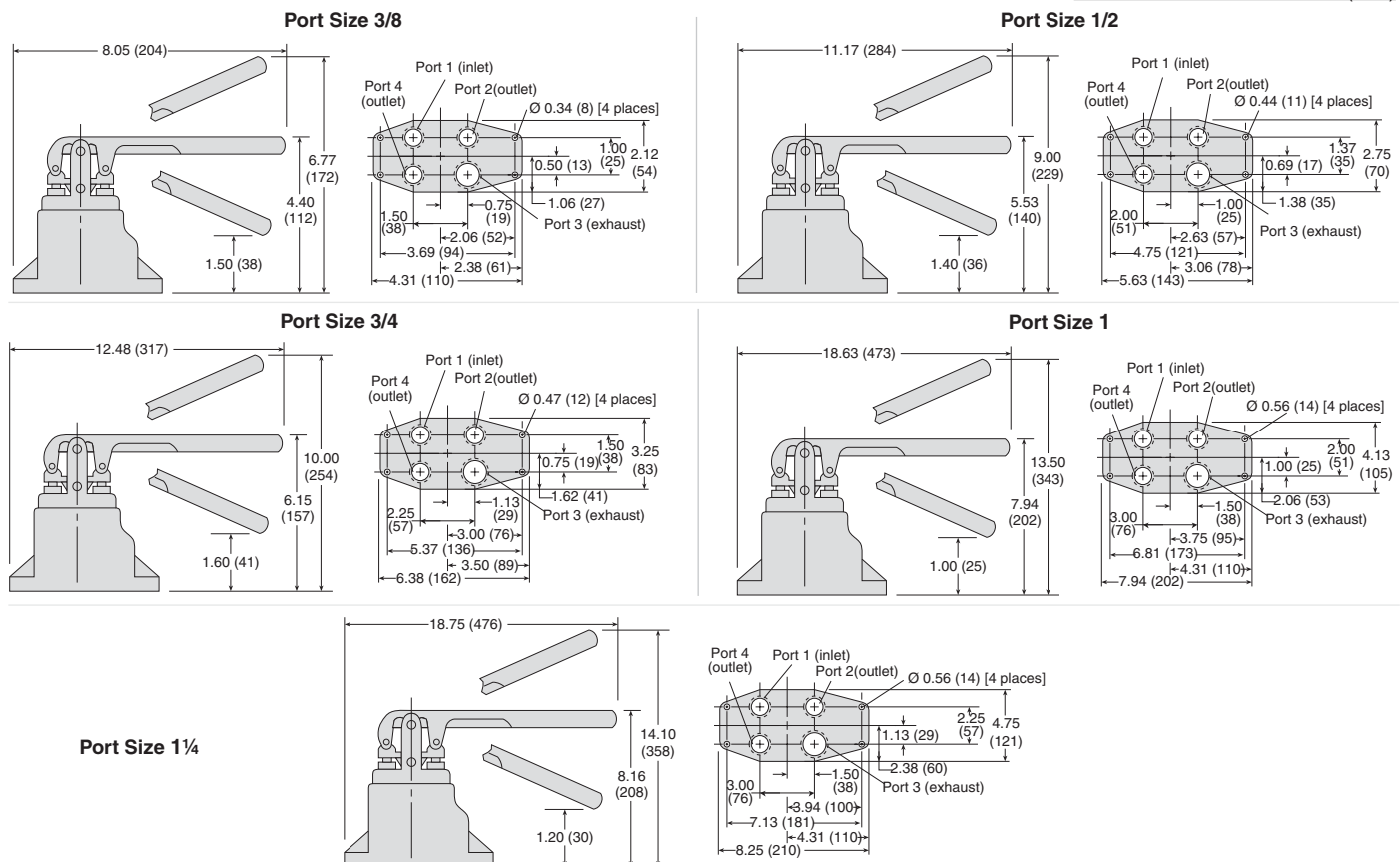


4-Way 3-Position Valves, Detented									
Port Size		Closed/Open Center	Valve Model Number		C <sub>v</sub>		Average Response Constants**		Weight lb (kg)
1, 2, 4	3		NPT Threads	G Threads	In-Out	Out-Exh.	F		
			In-Out	Out-Exh.					
3/8	1/2	Open	3126A3007	D3126A3007	1.7	1.4	1.26	1.43	2.0 (0.9)
3/8	1/2	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)



# **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)



### STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Flow Media	Filtered air
Mounting Type	Bottom mounting flanges	Operating Pressure	5 to 150 psig (0.3 to 10 bar)
Temperature	Ambient/Media: -40° to 175°F (-40° to 80°C)	Construction Material	Valve Body: Cast Aluminum
	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.		

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



4-Way 3-Position Valves, Detented or Non-Detented									
Port Size		Closed/Open Center	Valve Model Number		C <sub>v</sub>		Average Response Constants**		Weight lb (kg)
1, 2, 4	3		NPT Threads	G Threads	In-Out	Out-Exh.	F		
						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

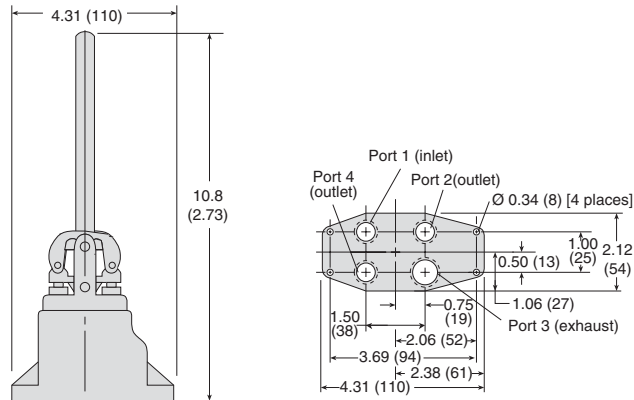
Closed Center



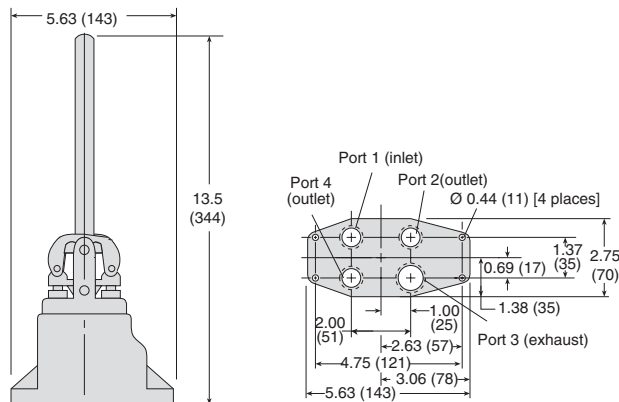
\*\* **Valve Response Time** – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. F values are given in the chart above. M values for manually operated valves depend on the speed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

### Valve Dimensions – inches (mm)

Port Size 1/2



Port Size 3/4



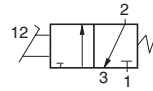
### STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Flow Media	Filtered air
Mounting Type	Bottom mounting flanges	Operating Pressure	5 to 150 psig (0.3 to 10 bar)
Temperature	Ambient/Media: -40° to 175°F (-40° to 80°C)	Construction Material	Valve Body: Cast Aluminum
	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.		

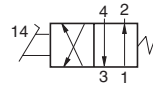
**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



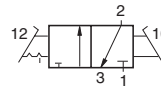
3-Way 2-Position Valves, Pedal, Spring Return						
Port Size	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads		F		
1/4	3643A2002	D3643A2002	1.2	1-2	2-3	1.3 (0.6)



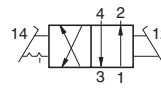
4-Way 2-Position Valves, Pedal, Spring Return						
Port Size	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads		F		
1/4	3646A2002	D3646A2002	1.2	1-2, 1-4	4-3, 2-3	2.8 (1.3)



3-Way 2-Position Valves, Treadle, Detented						
Port Size	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads		F		
1/4	3643A2001	D3643A2001	1.2	1-2	2-3	1.3 (0.6)

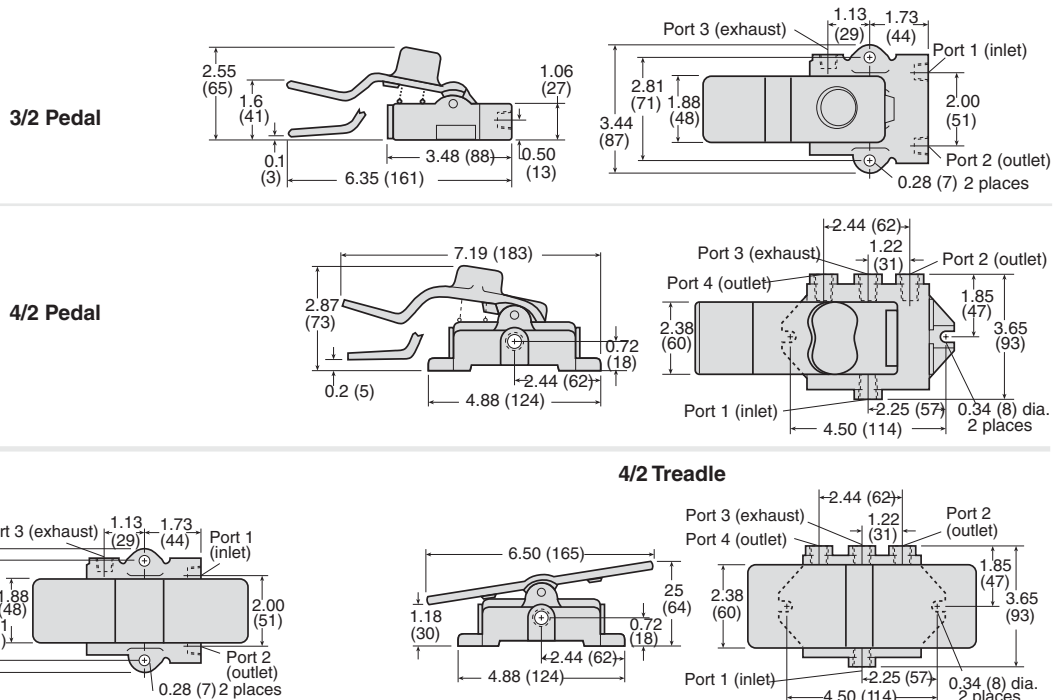


4-Way 2-Position Valves, Treadle, Detented						
Port Size	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads		F		
1/4	3646A2001	D3646A2001	1.2	1-2, 1-4	4-3, 2-3	2.8 (1.3)



\*\* 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)



### STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Flow Media	Filtered air
Mounting Type	Line	Operating Pressure	5 to 150 psig (0.3 to 10 bar)
Temperature	Ambient/Media: -30° to 175°F (-34° to 80°C)	Construction Material	Valve Body: Cast Aluminum
	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.		

**Note:** The 3/2 and 4/2 treadle valves are not designed to be used to actuate clutch/brake mechanisms on mechanical power presses.

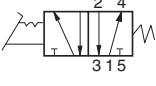
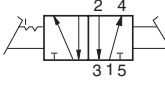
**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

# Manual Valves

## Foot Pedal with Guard

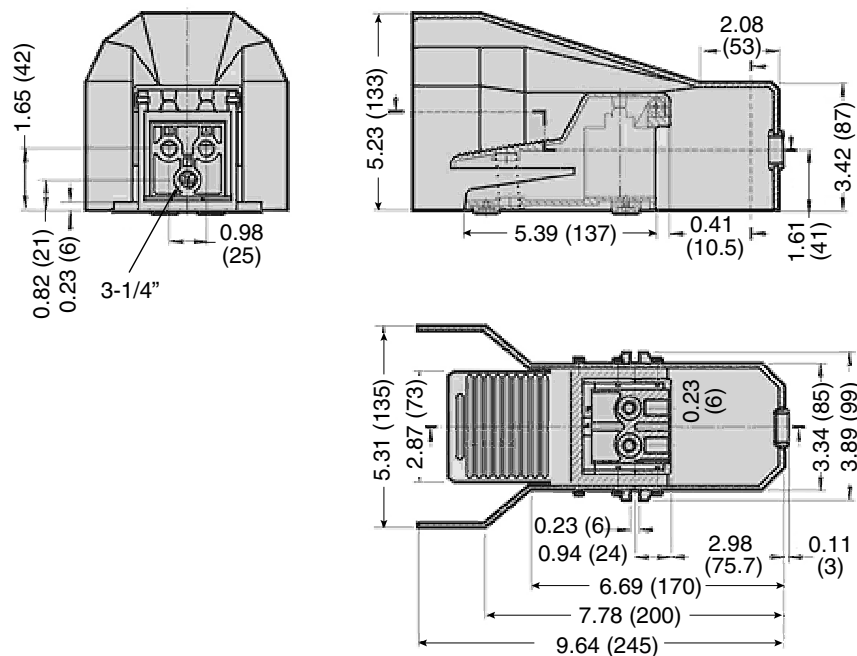
# Safeguarding

## RM Series

5-Way 2-Position Valves, Pedal				
Port Size	Operators	Valve Model Number	C <sub>v</sub>	Weight lb (kg)
		NPT Threads		
1/4	Non-locking foot pedal	RM4F210-08G	0.5	2.1 (0.9)
	Locking foot pedal	RM4F210-08LG	0.5	2.1 (0.9)
 5/2 Spring Return without Lock		 5/2 Detented with Lock		



### Valve Dimensions – inches (mm)



*Convertible to a 3-Way function.*

**Note:** Designed to meet OSHA 1910.217 Mechanical power presses, with protective guard to prevent accidental actuation.

### STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Operating Pressure	0 to 120 psig (0 to 8.2 bar)
Mounting Type	Line	Construction Material	Valve Body: Aluminum Guard: Plastic
Temperature	Ambient/Media: 23° to 140°F (-5° to 60°C)		
Flow Media	Filtered air		

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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E1.11

# Mechanical Cam Valves

## Cam Roller & Plunger

# Heavy-Duty 11 Series

2-Way 2-Position Valves, 2-Direction Cam Roller						
Port Size	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads		F	In-Out	
1/4	1131A2001	D1131A2001	0.5	2.5		1.0 (0.5)

3-Way 2-Position Valves, 2-Direction Cam Roller						
Port Size	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads		F		
				In-Out	Out-Exh.	
1/4	1133A2001	D1133A2001	0.5	2.5	3.2	1.0 (0.5)

2-Way 2-Position Valves, 1-Direction Cam Roller						
Port Size	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads		F	In-Out	
1/4	1131A2002	D1131A2002	0.5	2.5		1.0 (0.5)

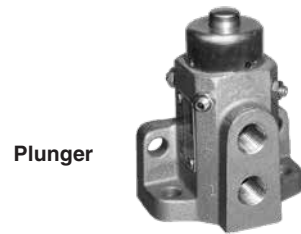
3-Way 2-Position Valves, 1-Direction Cam Roller						
Port Size	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads		F		
				In-Out	Out-Exh.	
1/4	1133A2002	D1133A2002	0.5	2.5	3.2	1.0 (0.5)

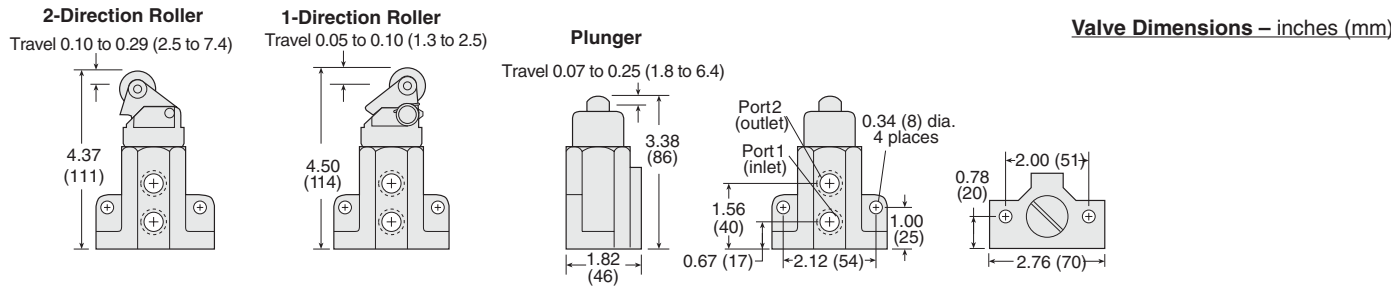
2-Way 2-Position Valves, Plunger						
Port Size	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads		F	In-Out	
1/4	1131A2003	D1131A2003	0.5	2.5		1.0 (0.5)

3-Way 2-Position Valves, Plunger						
Port Size	Valve Model Number		C <sub>v</sub>	Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads		F		
				In-Out	Out-Exh.	
1/4	1133A2003	D1133A2003	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.



## ACCESSORIES

Silencers for 3-way Valves	Port Size	Thread Type	Model Number		Avg. C <sub>v</sub>	Dimensions inches (mm)		Weight lb (kg)
			NPT Threads	BSPT Threads		Width	Length	
	1/4	Male	5500A2003	D5500A2003	2.1	0.9 (21)	2.2 (55)	0.1 (0.1)

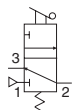
**Pressure Range:** 0 to 290 psig (0 to 20 bar) maximum. **Flow Media:** Filtered air.

## STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	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)	Construction Material	Valve Body: Cast Aluminum
	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.		

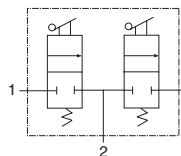
**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.





**Single 3-Way**

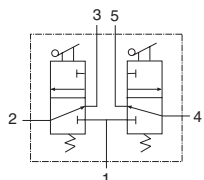
ROSS pendant control valves are a durable pneumatic solution that can be used anywhere manual control of devices is needed, such as an air hoist, air motor, or counterbalance cylinder. Ideal for use on or with material handling devices such as overhead cranes or air hoists, ROSS pendant control valves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



**Dual 2-Way**

### Single 3/2

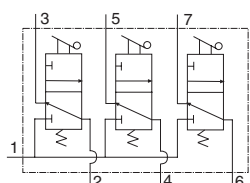
The Single 3/2 pendant control valve may be used anywhere that requires manual 3/2 control, such as operating small single acting cylinders or pressurizing vacuum cups for quick release. Ideal for use on or with material handling devices. Spring-return rubber poppet internals provide dependable shifting,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



**Dual 3-Way**

### 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.



**Triple 3-Way**

### 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.

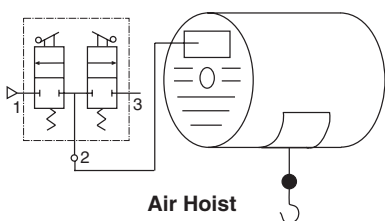
### Triple 3/2

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

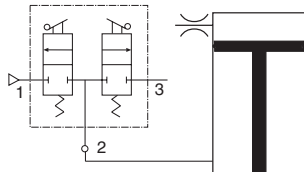
Valve Type	Port Size	Threads	# of Levers	# of Handles	Valve Model Number	C <sub>v</sub>		Dimensions inches (mm)			Weight lb (kg)	Diagram	
						1-2	2-3	A	B	C			
2/2	Dual High-Flow	1/4	NPT	Two	None	2025A2901	0.73	0.55	3.1 (78)	2.8 (71)	2.8 (70)	1.0 (0.5)	
					One	3900A0378	0.73	0.55	3.1 (78)	7.2 (182)	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

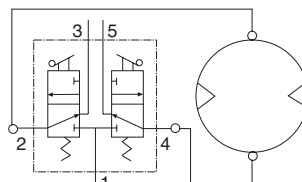


**Air Hoist**

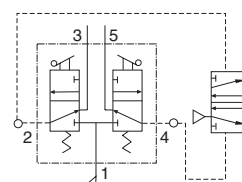


**Articulating Arm**

### 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	Flow Media	Filtered air
Mounting Type	Line	Operating Pressure	0 to 150 psig (0 to 10 bar)
Temperature	Ambient/Media: -40° to 175°F (-40° to 80°C)	Construction Material	Valve Body: Aluminum
	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.		

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.





# CAUTIONS, WARNINGS And STANDARD WARRANTY

ROSS OPERATING VALVE, ROSS CONTROLS®, ROSS DECCO®, and AUTOMATIC VALVE INDUSTRIAL, collectively the “ROSS Group”.

## PRE-INSTALLATION or SERVICE

1. Before servicing a valve or other pneumatic component, be sure all sources of energy are turned off, the entire pneumatic system is shut down and exhausted, and all power sources are locked out (ref: OSHA 1910.147, EN 1037).
2. All ROSS Group Products, including service kits and parts, should be installed and/or serviced only by persons having training and experience with pneumatic equipment. Because any product can be tampered with and/or need servicing after installation, persons responsible for the safety of others or the care of equipment must check ROSS Group Products on a regular basis and perform all necessary maintenance to ensure safe operating conditions.
3. All applicable instructions should be read and complied with before using any fluid power system to prevent harm to persons or equipment. In addition, overhauled or serviced valves must be functionally tested prior to installation and use. If you have any questions, call your nearest ROSS Group location.
4. Each ROSS Group Product should be used within its specification limits. In addition, use only ROSS Group components to repair ROSS Group Products.

**WARNINGS:** *Failure to follow these instructions can result in personal injury and/or property damage.*

## FILTRATION and LUBRICATION

1. Dirt, scale, moisture, etc., are present in virtually every air system. Although some valves are more tolerant of these contaminants than others, best performance will be realized if a filter is installed to clean the air supply, thus preventing contaminants from interfering with the proper performance of the equipment. The ROSS Group recommends a filter with a 5-micron rating for normal applications.
2. All standard ROSS Group filters and lubricators with polycarbonate plastic bowls are designed for compressed air applications only. Use the metal bowl guard, where provided, to minimize danger from high pressure fragmentation in the event of bowl failure. Do not expose these products to certain fluids, such as alcohol or liquefied petroleum gas, as they can cause bowls to rupture, creating a combustible condition and hazardous leakage. Immediately replace crazed, cracked, or deteriorated bowls.
3. Only use lubricants which are compatible with materials used in the valves and other components in the system. Normally, compatible lubricants are petroleum base oils with oxidation inhibitors, an aniline

point between 180°F (82°C) and 220°F (104°C), and an ISO 32, or lighter, viscosity. Avoid oils with phosphate type additives which can harm polyurethane components, potentially leading to valve failure which risks personal injury, and/or damage to property.

**WARNINGS:** *Failure to follow these instructions can result in personal injury and/or property damage.*

## AVOID INTAKE/EXHAUST RESTRICTION

1. Do not restrict air flow in the supply line. To do so could reduce the pressure of the supply air below minimum requirements for the valve and thereby causing erratic action.
2. Do not restrict a valve's exhaust port as this can adversely affect its operation. Exhaust silencers must be resistant to clogging and must have flow capacities at least as great as the exhaust capacities of the valves. Contamination of the silencer can result in reduced flow and increased back pressure.

**WARNINGS:** *Failure to follow these instructions can result in personal injury and/or property damage.*

## SAFETY APPLICATIONS

1. Mechanical Power Presses and other potentially hazardous machinery using a pneumatically controlled clutch and brake mechanism must use a press control double valve with a monitoring device. A double valve without a self-contained monitoring device should be used only in conjunction with a control system which assures monitoring of the valve. All double valve installations involving hazardous applications should incorporate a monitoring system which inhibits further operation of the valve and machine in the event of a failure within the valve mechanism.
2. Safety exhaust (dump) valves without a self-contained monitoring device should be used only in conjunction with a control system which assures monitoring of the valve. All safety exhaust valve installations should incorporate a monitoring system which inhibits further operation of the valve and machine in the event of a failure within the valve mechanism.
3. Per specifications and regulations, the ROSS L-O-X® and L-O-X® with EEZ-ON®, N06 and N16 Series operation products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

**WARNINGS:** *Failure to follow these instructions can result in personal injury and/or property damage.*

## STANDARD WARRANTY

All products sold by the ROSS Group are warranted for a one-year period [with the exception of Filters, Regulators and Lubricators (“FRLs”) which are warranted for a period of seven (7) years] from the date of purchase. All products are, during their respective warranty periods, warranted to be free of defects in material and workmanship. The ROSS Group’s obligation under this warranty is limited to repair, replacement or refund of the purchase price paid for products which the ROSS Group has determined, in its sole discretion, are defective. All warranties become void if a product has been subject to misuse, misapplication, improper maintenance, modification or tampering. Products for which warranty protection is sought must be returned to the ROSS Group freight prepaid.

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