



# **SAFE LOAD HOLDING PO CHECK VALVES**

## **19 & 27 SERIES**

### **PRODUCT CATALOG**








# Right Angle Pilot Operated Check Valves 19 Series



## Product Overview

### Pilot Operated Check Function

Pilot Operated Check valves are designed to trap pressure in order to hold a cylinder in place when a safety event occurs.

Model with Threaded Banjo		Model with Push-to-Connect Fittings	
			
Adapter with G Thread	Adapter with NPT Thread	Model with Adapter Illustrated	
			

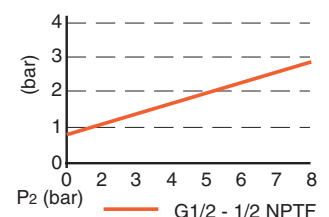
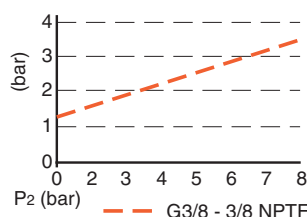
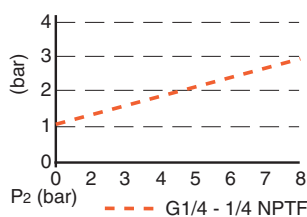
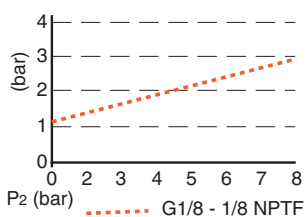
Pilot Operated Check Valves are used to block the return of air from cylinders or other devices. Air flows freely from port 1 to port 2, but a signal at port 12 is required to allow flow in the reverse direction from port 2 to port 1. Right-angle models with threaded Banjo are designed for easy positioning of pipe or tubing.

VALVE FEATURES	
Design	Right-angle design for easy positioning of pipe or tubing
Mounting	
Connectivity	Right Angle Valves with Threaded Banjo or Push-to-Connect Fitting
Ease of Maintenance	Lube or non-lube operation
PRODUCT CREDENTIALS	
Safety Category	EAC Conformity Declaration
	

STANDARD SPECIFICATIONS			
GENERAL	Function		Safe Load Holding
	Construction Design		Poppet
	Actuation		Pneumatic
	Mounting		Directly in cylinder ports
	Connection	Type	Threaded; G, NPT
			Push-in-tubing ports
		Orientation	Any
Minimum Operation Frequency		Once per month, to ensure proper function	
OPERATING CONDITIONS	Temperature	Ambient	15° to 160°F (-10° to 70°C)
		Media	
	Flow Media		Filtered air
	Operating Pressure		5 to 150 psig (0.3 to 10 bar)
CONSTRUCTION MATERIAL	Valve Body		Nickel Plated Brass and Anodized Aluminum
	Poppet		Acetal and Stainless Steel
	Seals		Buna-N; Fluorocarbon
	Manual Override		Valve equipped with port, manual override adapter available
IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS, WARNINGS on the inside back cover.			

## Signal Pressure

The charts below show the minimum signal pilot port pressure to open the valve versus port 2 pressure ( $P_2$ ) when there is no pressure at port 1 ( $P_1 = 0$  bar).



## Ordering Information

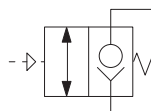
### Pilot Operated Check Right Angle Valves with Threaded Banjo

Port Size		Port Thread	Valve Model Number	Port 12
Port 1 (female thread)	Port 2 (male thread)			
1/8	1/8	G	D1958A1010	M5
1/4	1/4	G	D1958A2010	
3/8	3/8	G	D1958A3010	
1/2	1/2	G	D1958A4010	
1/8	1/8	NPT	1958A1010	10-32 UNF
1/4	1/4	NPT	1958A2010	
3/8	3/8	NPT	1958A3010	
1/2	1/2	NPT	1958A4010	

Port Size	Port Thread	C <sub>v</sub>		Tightening Torque Max. Ft-lb (Nm)
		1-2	2-1	
1/8	G	0.4	0.4	7.38 (10)
1/4	G	0.8	0.7	8.85 (12)
3/8	G	1.2	1.3	14.75 (20)
1/2	G	2.3	2.2	22.13 (30)
1/8	NPT	0.4	0.4	22.13 (30)
1/4	NPT	0.8	0.7	14.75 (20)
3/8	NPT	1.2	1.3	22.13 (30)
1/2	NPT	2.3	2.2	29.50 (40)

Manual Override	Manual Trapped Pressure Relief Adapter			
	Port 1 (male thread)	Port 2	Port Thread	Model Number*
	M5	M5 Manual Operated Check	G	D1998A1010
	10/32 tubing	5/32 Manual Operated Check	NPT	1998A1015
	* Adapter threads into the signal port.			

### Valve Schematic



## Pilot Operated Check Right Angle Valves with Push-to-Connect Fitting

Port Size		Port 2 Thread Type	Valve Model Number	Port 12
Port 1 # (tube fittings)	Port 2 (male thread)			
4 mm	1/8	G	D1958A1140	M5
6 mm	1/8	G	D1958A1160	
8 mm	1/8	G	D1958A1180	
6 mm	1/4	G	D1958A2160	
8 mm	1/4	G	D1958A2180	
10 mm	3/8	G	D1958A3110	
5/32"	1/8	NPT	1958A1115	10-32 UNF
1/4"	1/8	NPT	1958A1120	
	1/4	NPT	1958A2120	
3/8"	1/4	NPT	1958A2130	
	3/8	NPT	1958A3130	

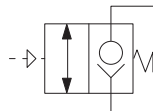
# Port 1 tubing size in inches (") or millimeters (mm).

Port Size		Port 2 Thread Type	C <sub>v</sub>		Tightening Torque Max. Ft-lb (Nm)
Port 1 # (tube fittings)	Port 2 (male thread)		1-2	2-1	
4 mm	1/8	G	0.4	0.4	7.38 (10)
6 mm	1/8	G	0.4	0.4	
8 mm	1/8	G	0.4	0.4	
6 mm	1/4	G	0.8	0.7	8.85 (12)
8 mm	1/4	G	0.8	0.7	
10 mm	3/8	G	1.2	1.3	14.75 (20)
5/32"	1/8	NPT	0.4	0.4	11.06 (15)
1/4"	1/8	NPT	0.4	0.4	
	1/4	NPT	0.8	0.7	14.75 (20)
3/8"	1/4	NPT	0.8	0.7	
	3/8	NPT	1.2	1.3	22.13 (30)

# Port 1 tubing size in inches (") or millimeters (mm).

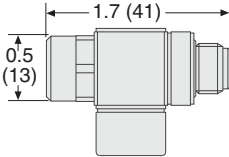
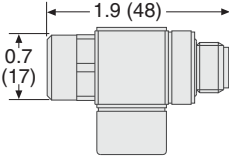
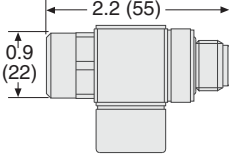
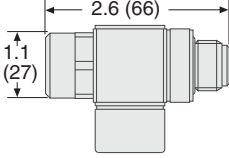
Manual Override	Manual Trapped Pressure Relief Adapter			
	Port 1 (male thread)	Port 2	Port Thread	Model Number*
	M5	M5 Manual Operated Check	G	D1998A1010
	10/32 tubing	5/32 – Manual Operated Check	NPT	1998A1015
	* Adapter threads into the signal port.			

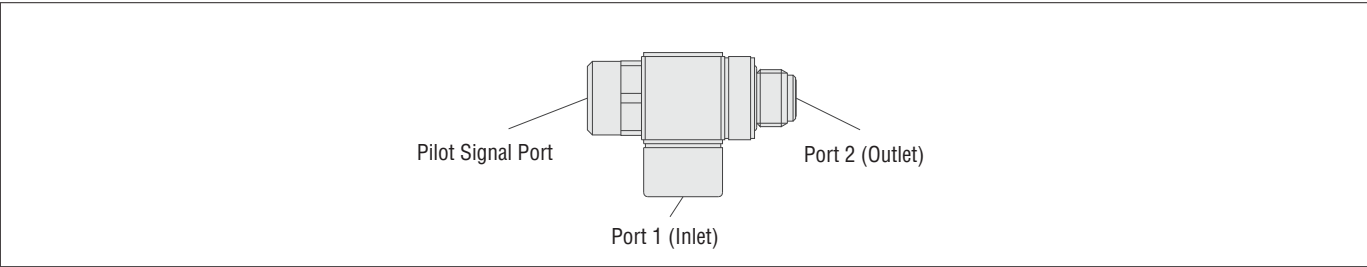
## Valve Schematic



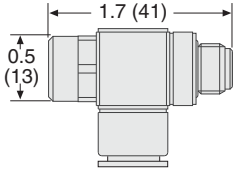
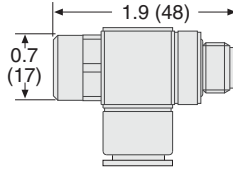
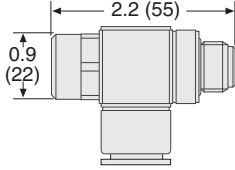
# Valve Technical Data

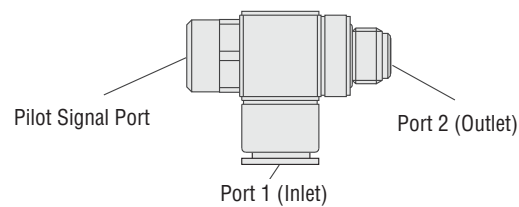
## Right Angle Pilot Operated Check Valves with Threaded Banjo

DIMENSIONS		Inches (mm)
Port Size 1/8		
Port Size 1/4		
Port Size 3/8		
Port Size 1/2		
For additional information, and to assist you with piping and connectivity designs, our products are available in downloadable 2D drawings and 3D CAD models in a wide range of options including native formats, visit <a href="http://www.rosscontrols.com">www.rosscontrols.com</a> .		



## Right Angle Pilot Operated Check Valves with Push-to-Connect Fitting

DIMENSIONS	Inches (mm)
Port Size 1/8	
Port Size 1/4	
Port Size 3/8	
For additional information, and to assist you with piping and connectivity designs, our products are available in downloadable 2D drawings and 3D CAD models in a wide range of options including native formats, visit <a href="http://www.rosscontrols.com">www.rosscontrols.com</a> .	



# Pilot Operated Check Valves 27 Series

## Product Overview

### Pilot Operated Check Function

Pilot Operated Check valves are used for load holding or cylinder position holding applications, designed to trap pressure in order to hold a cylinder in place when a safety event occurs.





Valve without Trapped Pressure Relief		Valve with Manual Trapped Pressure Relief	Dual Valve with Remote Trapped Pressure Relief
GEN I	GEN II		
			

Illustration examples.

Pilot Operated Check valves can be used wherever a high-flow or remotely-controlled checking function is needed. Can be used in a circuit to provide automatic stopping of a cylinder in the event of the loss of electrical or pneumatic power.

VALVE FEATURES	
Poppet Design	Poppet construction for near zero leakage
Trapped Pressure Release Options	Manual or remote trapped pressure release when pressure is removed from the Blowdown Signal Port (BP)
Mounting	Inline

PRODUCT CREDENTIALS				
Safety Category	EAC Declaration of Conformity	ISO Standard	CSA Certificate of Compliance	CRN Certification
<div>Cat. 1 PL c</div> <div>SIL 2 Functional Safety</div>	<div>EAC</div>	<div>ISO 13849-1:2015</div>	<div><div><div>CSA<sup>®</sup></div><div>CUS</div></div><div>Solenid Pilot Valves</div></div>	<div>Available for appropriately tested valves</div>



STANDARD SPECIFICATIONS						
GENERAL	Function		2/2 Valves			
	Construction Design		Poppet			
	Actuation		Electrical - Solenoid Pilot Controlled			
			Pneumatic - Pressure Controlled Valves			
	Mounting	Type	Inline			
		Orientation	Any, preferably vertical			
	Connection		Threaded; G, NPT			
Minimum Operation Frequency		Once per month, to ensure proper function				
OPERATING CONDITIONS	Temperature	Ambient	40° to 175°F (4° to 80°C)			
		Media				
	Flow Media		Filtered air			
	Operating Pressure	Solenoid Pilot Controlled	15 to 150 psig (1 to 10.3 bar)			
		Pressure Controlled	30 to 150 psig (2 to 10.3 bar)			
	Pilot Pressure		Must be equal to or greater than inlet pressure			
ELECTRICAL DATA FOR SOLENOID PILOT CONTROLLED VALVES	Solenoid		Operating Voltage		Power Consumption (each solenoid)	
			24 volts DC	4-pin Micro connector – 4.5 watts		
				3-pin Mini connector – 60 watts		
			110-120 volts AC, 50/60 Hz	8 VA inrush, 6 VA holding		
			230-240 volts AC, 50/60 Hz			
	Rated for continuous duty					
	Enclosure Rating		IP65, IEC 60529			
	Electrical Connection		EN DIN 175301-803 Form A, 3-Pin Mini or 4-Pin Micro.			
CONSTRUCTION MATERIAL	Valve Body		Cast Aluminum			
	Poppet		Acetal and Stainless Steel			
	Seals		Buna-N			
IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS, WARNINGS on the inside back cover.						

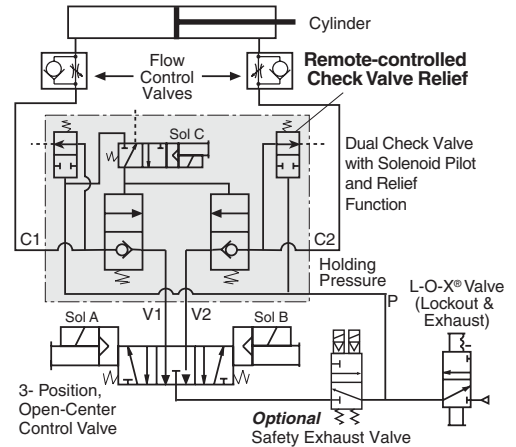
# Applications

## Solenoid Pilot Controlled Valve Application

### Dual Pilot Operated Check Valve

#### CIRCUIT FEATURES

- To operate cylinder, simultaneously energize solenoids A and C or B and C.
- Pilot supply and exhaust are independent of control valve.
- Response time is not affected by exhaust restrictions of the control valve.
- Cylinder remains stationary if neither control valve solenoid is energized, or if electrical signal is lost.
- Pressure in cylinder is exhausted when the air supply at "P" port is lost or locked-out.
- L-O-X® valve provides lockable shut-off of air supply, and exhausting of trapped downstream air.

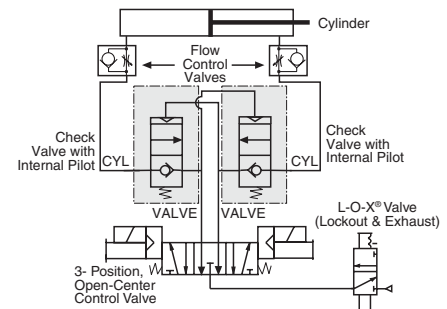


## Pressure Controlled Valve Application

### Single Pilot Operated Check Valve

#### CIRCUIT FEATURES

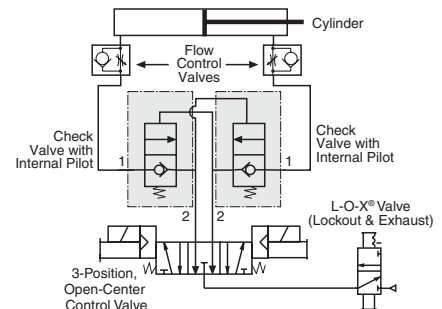
- Cylinder moves as long as the control valve solenoid is energized. Use for continuous motion or jogging.
- Cylinder remains stationary if neither control valve solenoid is energized, or if electrical signal is lost.



### Single Pilot Operated Check Valve

#### CIRCUIT FEATURES

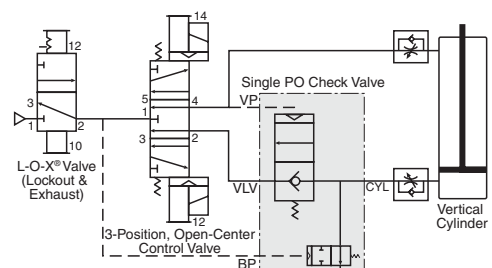
- Cylinder moves as long as the control valve solenoid is energized. Use for continuous motion or jogging.
- Cylinder remains stationary if neither control valve solenoid is energized, or if electrical signal is lost.



### Single Pilot Operated Check Valve with Trapped Pressure Relief Application

#### CIRCUIT FEATURES

- Trapped pressure between check valve and cylinder is exhausted when the air supply at the Blowdown Signal Port (BP) is lost or locked-out.
- Cylinder moves as long as the control valve solenoid is energized. Use for continuous motion or jogging.
- Cylinder remains stationary if neither control valve solenoid is energized, or if electrical signal is lost.

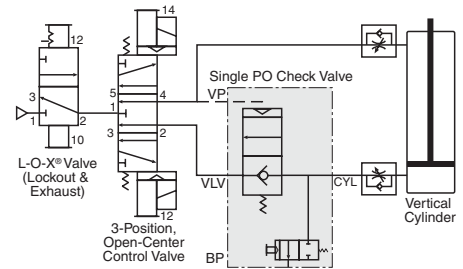


## Pressure Controlled Valve Application

### Single Pilot Operated Check Valve with Manual Trapped Pressure Relief

#### CIRCUIT FEATURES

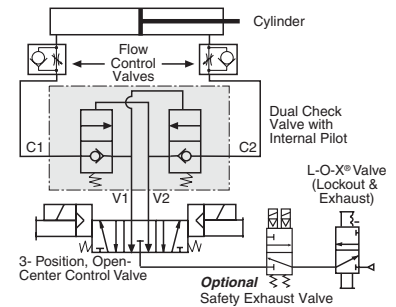
- To operate cylinder, simultaneously energize solenoids A and C or B and C.
- Pilot supply and exhaust are independent of control valve.
- Response time is not affected by exhaust restrictions of the control valve.
- Cylinder remains stationary if neither control valve solenoid is energized, or if electrical signal is lost.
- Pressure in cylinder is exhausted when the air supply at "P" port is lost or locked-out.
- L-O-X® valve provides lockable shut-off of air supply, and exhausting of trapped downstream air.



### Single Pilot Operated Check Valve

#### CIRCUIT FEATURES

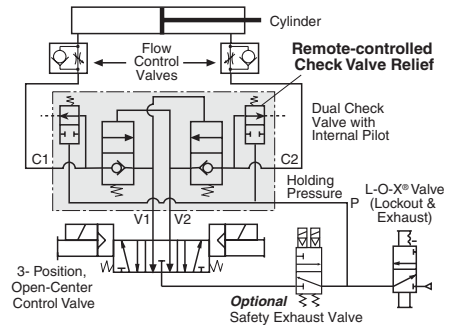
- Cylinder moves as long as the control valve solenoid is energized. Use for continuous motion or jogging.
- Cylinder remains stationary if neither control valve solenoid is energized, or if electrical signal is lost.



### Single Pilot Operated Check Valve

#### CIRCUIT FEATURES

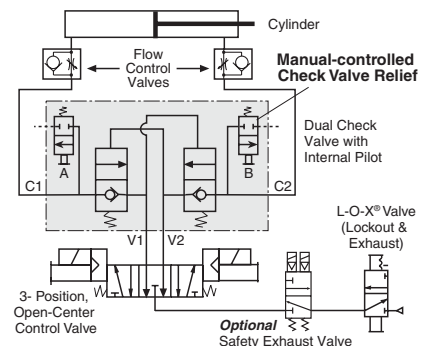
- Cylinder moves as long as the control valve solenoid is energized. Use for continuous motion or jogging.
- Cylinder remains stationary if neither control valve solenoid is energized, or if electrical signal is lost.



### Dual Pilot Operated Check Valve Manual Trapped Pressure Relief

#### CIRCUIT FEATURES

- Trapped pressure between check valve and cylinder is exhausted when the air supply at the Blowdown Signal Port (BP) is lost or locked-out.
- Cylinder moves as long as the control valve solenoid is energized. Use for continuous motion or jogging.
- Cylinder remains stationary if neither control valve solenoid is energized, or if electrical signal is lost.



# Ordering Information – Solenoid Pilot Controlled Valves

## Dual Pilot Operated Check – Valves with Remote Trapped Pressure Relief

### Valves with DIN EN Connector

### 2-Way 2-Position Valves

Port Size	Valve Model Number					
	G Thread			NPT Thread		
	24 V DC	110-120 V AC	230 V AC	24 V DC	110-120 V AC	230 V AC
3/8	D2778D3900W	D2778D3900Z	D2778D3900Y	2778D3900W	2778D3900Z	2778D3900Y
1/2	D2778D4900W	D2778D4900Z	D2778D4900Y	2778D4900W	2778D4900Z	2778D4900Y
3/4	D2778D5900W	D2778D5900Z	D2778D5900Y	2778D5900W	2778D5900Z	2778D5900Y
1	D2778D6900W	D2778D6900Z	D2778D6900Y	2778D6900W	2778D6900Z	2778D6900Y

### Valves with 3-Pin Mini Connector

### 2-Way 2-Position Valves

Port Size	Valve Model Number					
	G Thread			NPT Thread		
	24 V DC	110-120 V AC	230 V AC	24 V DC	110-120 V AC	230 V AC
3/8	D2778D3901W	D2778D3901Z	D2778D3901Y	2778D3901W	2778D3901Z	2778D3901Y
1/2	D2778D4901W	D2778D4901Z	D2778D4901Y	2778D4901W	2778D4901Z	2778D4901Y
3/4	D2778D5901W	D2778D5901Z	D2778D5901Y	2778D5901W	2778D5901Z	2778D5901Y
1	D2778D6901W	D2778D6901Z	D2778D6901Y	2778D6901W	2778D6901Z	2778D6901Y

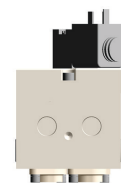
### Valves with 4-Pin Micro Connector

### 2-Way 2-Position Valves

Port Size	Valve Model Number	
	24 V DC	
	G Thread	NPT Thread
3/8	D2778D3904	2778D3904
1/2	D2778D4904	2778D4904
3/4	D2778D5904	2778D5904
1	D2778D6904	2778D6904

Port Size	Signal Port	Flow $C_v$	Weight lb (kg)
3/8	1/8	2.9	4.0 (1.8)
1/2	1/8	3.2	4.2 (1.9)
3/4	1/8	8.5 #	4.2 (1.9)
1	1/8	8.5 #	6.1 (2.8)

# Effective  $C_v$  varies with load and pressure drop. Consult ROSS for specifics on your system.



Valve Schematic	Solenoid Pinout DIN EN 175301-803 Form A	Connector Wiring			
		DIN EN	AC Mini	DC Mini	DC Micro
	<p>1 - Positive 2 - Negative 3 - Ground 4 - Ground</p>				


# Ordering Information – Pressure Controlled Valves



## Single Pilot Operated Check - Valves without Trapped Pressure Relief


### Valves without Trapped Pressure Relief – GEN I

### 2-Way 2-Position Valves

Port Size	Body Size	Valve Model Number		Signal Port	Flow C <sub>v</sub>	Weight lb (kg)		
		G Thread	NPT Thread					
1/4	3/8	D2751A2903	2751A2903	1/4	2.3	1.3 (0.6)		
3/8	3/8	D2751A3901	2751A3901	1/4	3.8			
1/2	3/8	D2751A4902	2751A4902	1/4	4			2.3 (1.0)
	3/4	D2751A4905	2751A4905	1/4	7.7			
3/4	3/4	D2751A5903	2751A5903	1/4	9			
1	3/4	D2751A6901	2751A6901	1/4	9	6.0 (2.7)		
	1-1/4	D2751B6904	2751B6904	1/4	24			
1-1/4	1-1/4	D2751B7901	2751B7901	1/4	29			
1-1/2	1-1/4	D2751B8902	2751B8902	1/4	29			


### Valves without Trapped Pressure Relief – GEN II

### 2-Way 2-Position Valves

Port Size	Valve Model Number		Signal Port	Flow C <sub>v</sub>	Weight lb (kg)	
	G Thread	NPT Thread				
1/4	D2751A2908	2751A2908	1/8	2.2	2.3 (1.0)	
3/8	D2751A3908	2751A3908	1/8	2.9		
1/2	D2751A4915	2751A4915	1/8	3.2		


### Valves with Remote Trapped Pressure Relief

### 2-Way 2-Position Valves

Port Size	Valve Model Number		Signal Port	Flow C <sub>v</sub>	Weight lb (kg)	
	G Thread	NPT Thread				
3/8	D2751A3922	2751A3922	1/8	2.6	1.8 (0.8)	
1/2	D2751A4922	2751A4922	1/8	2.8		
3/4	D2751A5917	2751A5917	1/8	9.2	2.9 (3.1)	

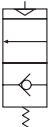
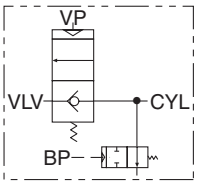
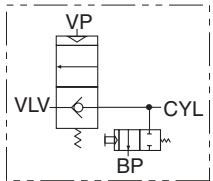
### Valves with Manual Trapped Pressure Relief

### 2-Way 2-Position Valves

Port Size	Valve Model Number		Flow C <sub>v</sub>	Weight lb (kg)	
	G Thread	NPT Thread			
3/8	D2751A3920	2751A3920	2.6	1.8 (0.8)	
1/2	D2751A4920	2751A4920	2.8		
3/4	D2751A5919	2751A5919	9.2	2.9 (3.1)	

## Valve Schematic

### Trapped Pressure Relief Options

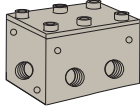
None	Remote	Manual
		

# Ordering Information – Pressure Controlled Valves

## Dual Pilot Operated Check – Pressure Controlled Valves

### Valves without Trapped Pressure Relief


### 2-Way 2-Position Valves

Port Size	Valve Model Number		Signal Port	Flow C <sub>v</sub>	Weight lb (kg)	
	G Thread	NPT Thread				
3/8	D2768C3900	2768C3900	1/8	2.9	2.0 (0.9)	
1/2	D2768C4900	2768C4900	1/8	3.2	2.4 (1.1)	
3/4	D2768C5900	2768C5900	1/8	8.5 #	3.8 (1.7)	
1	D2768A6900	2768A6900	1/8	8.5 #	6.8 (3.1)	

# Effective C<sub>v</sub> varies with load and pressure drop. Consult ROSS for specifics on your system.

### Valves with Remote Trapped Pressure Relief


### 2-Way 2-Position Valves

Port Size	Valve Model Number		Signal Port	Flow C <sub>v</sub>	Weight lb (kg)	
	G Thread	NPT Thread				
3/8	D2768D3901	2768D3901	1/8	2.9	2.3 (1.1)	
1/2	D2768D4901	2768D4901	1/8	3.2	2.3 (1.1)	
3/4	D2768D5901	2768D5901	1/8	8.5 #	3.8 (1.7)	
1	D2768D6901	2768D6901	1/8	8.5 #	7.4 (3.4)	

# Effective C<sub>v</sub> varies with load and pressure drop. Consult ROSS for specifics on your system.

### Valves with Manual Trapped Pressure Relief

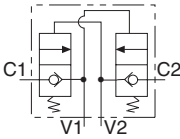
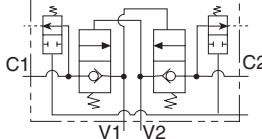
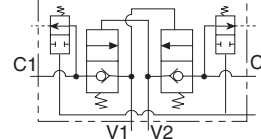
### 2-Way 2-Position Valves

Port Size	Valve Model Number		Flow C <sub>v</sub>	Weight lb (kg)	
	G Thread	NPT Thread			
3/8	D2768D3904	2768D3904	2.9	2.3 (1.1)	
1/2	D2768D4904	2768D4904	3.2	2.3 (1.1)	
3/4	D2768D5904	2768D5904	8.5 #	3.8 (1.7)	
1	D2768D6904	2768D6904	8.5 #	6.58 (3.0)	

# Effective C<sub>v</sub> varies with load and pressure drop. Consult ROSS for specifics on your system.

### Valve Schematic

#### Trapped Pressure Relief Options

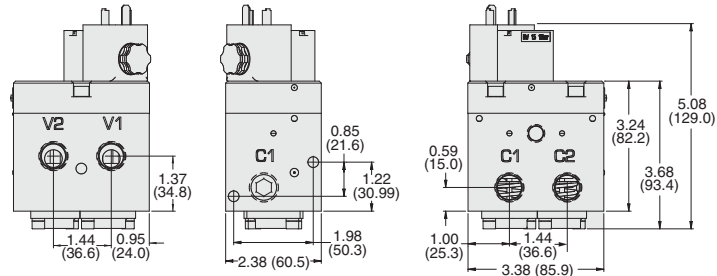
None	Remote	Manual
		

## Solenoid Pilot Controlled Valves – Dual PO Check with Remote Trapped Pressure Relief

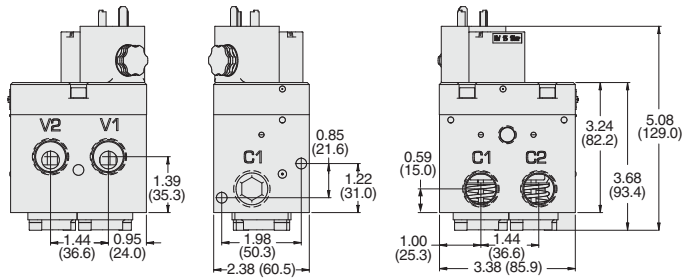
### DIMENSIONS

Inches (mm)

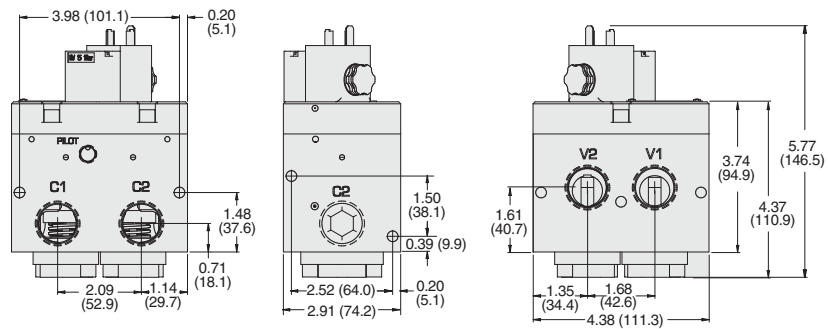
Port Size 3/8



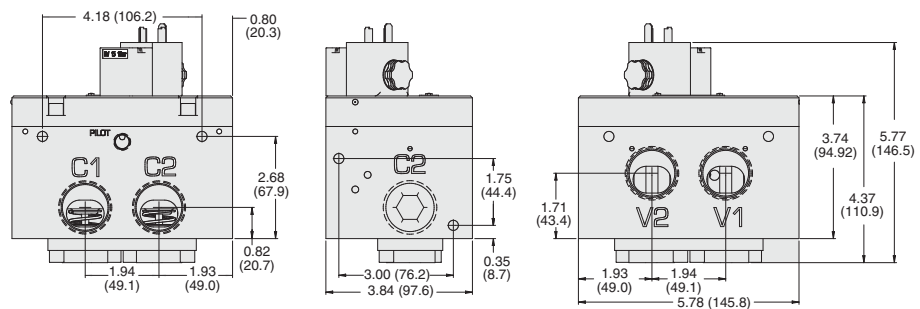
Port Size 1/2



Port Size 3/4

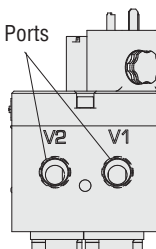


Port Size 1

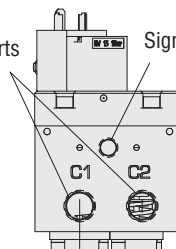


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Valve Ports



Cylinder Ports

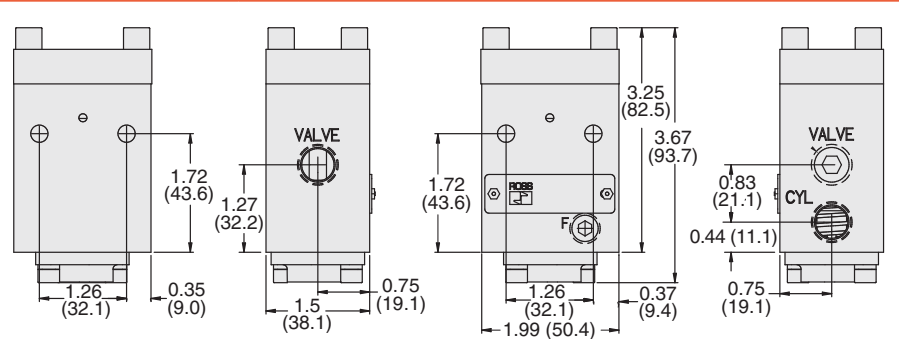
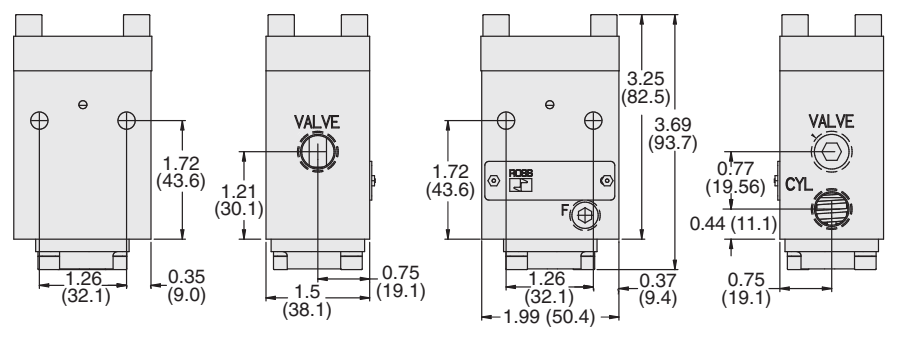
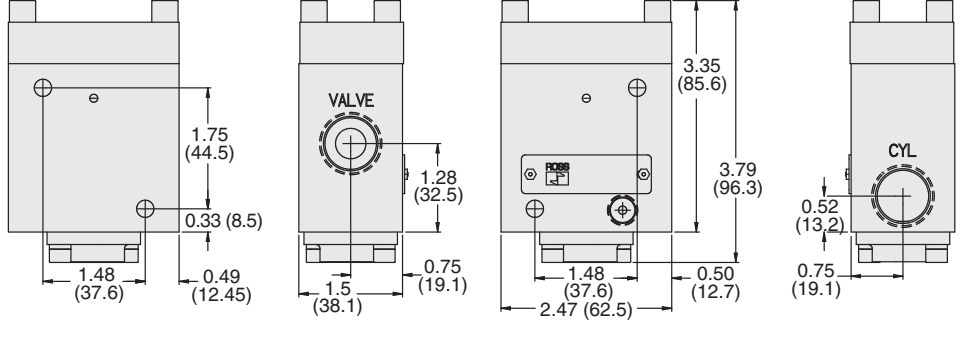


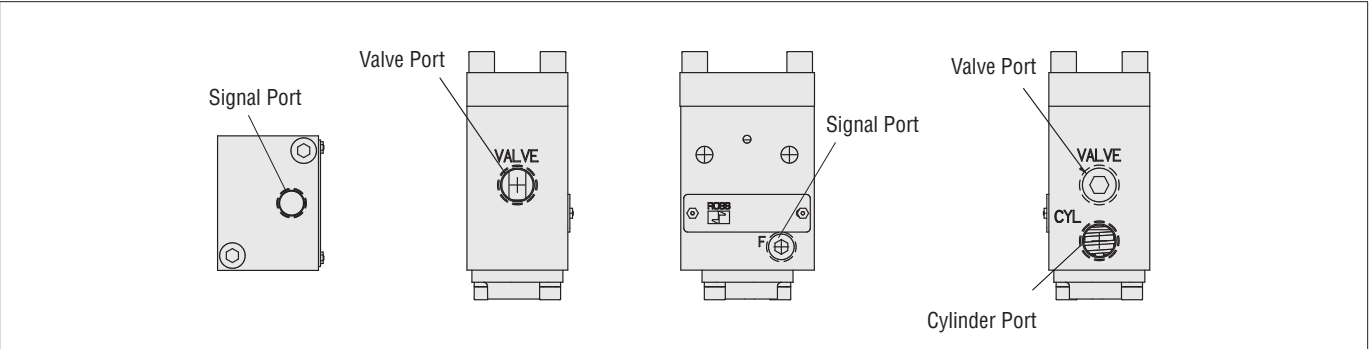
Signal Port



# Valve Technical Data

## Pressure Controlled Valves – Single PO Check Valves without Trapped Pressure Relief

DIMENSIONS		Inches (mm)
Port Size 1/4		
Port Size 3/8		
Port Size 1/2		
For additional information, and to assist you with piping and connectivity designs, our products are available in downloadable 2D drawings and 3D CAD models in a wide range of options including native formats, visit <a href="http://www.rosscontrols.com">www.rosscontrols.com</a> .		



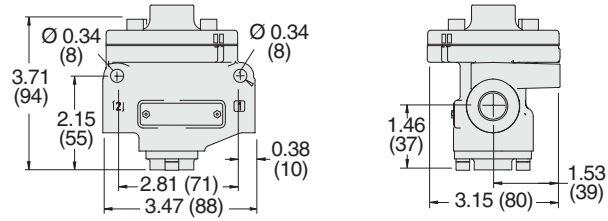


## Pressure Controlled Valves – Single PO Check Headline Valves without Trapped Pressure Relief

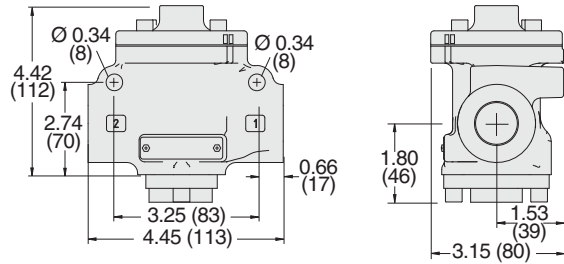
### DIMENSIONS

Inches (mm)

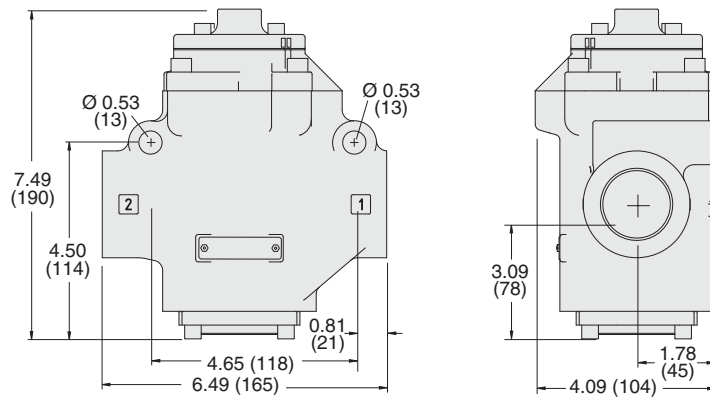
#### Body Size 3/8



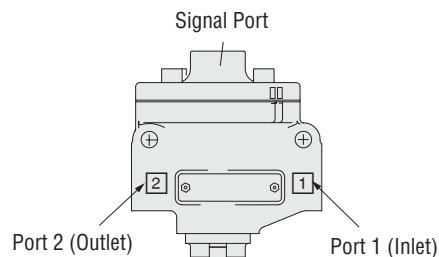
#### Port Size 3/4



#### Port Size 1-1/4

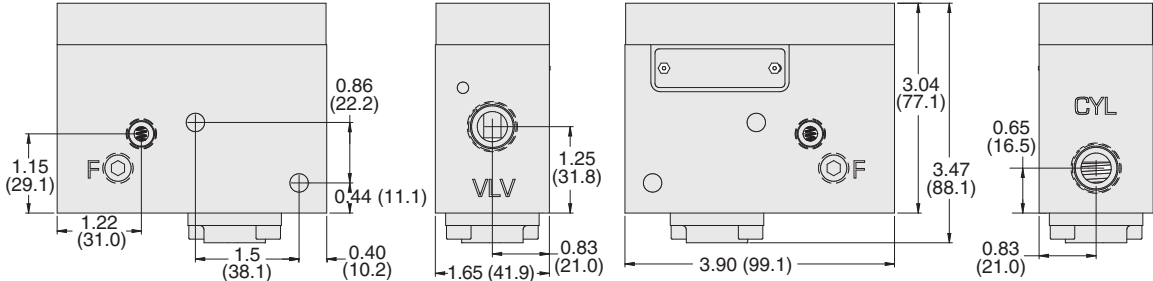
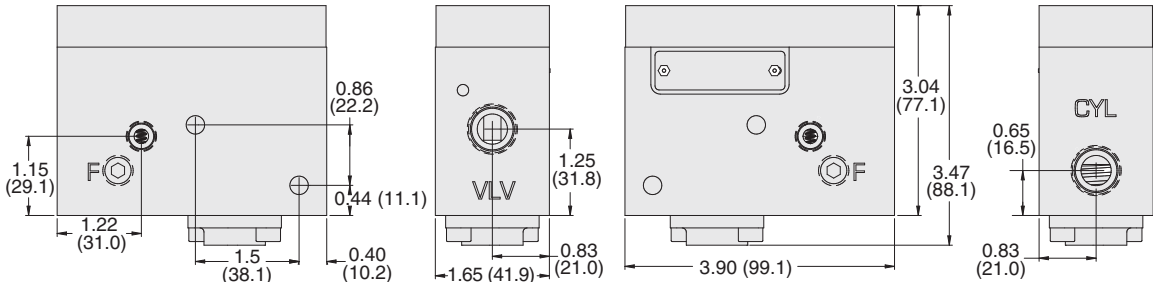
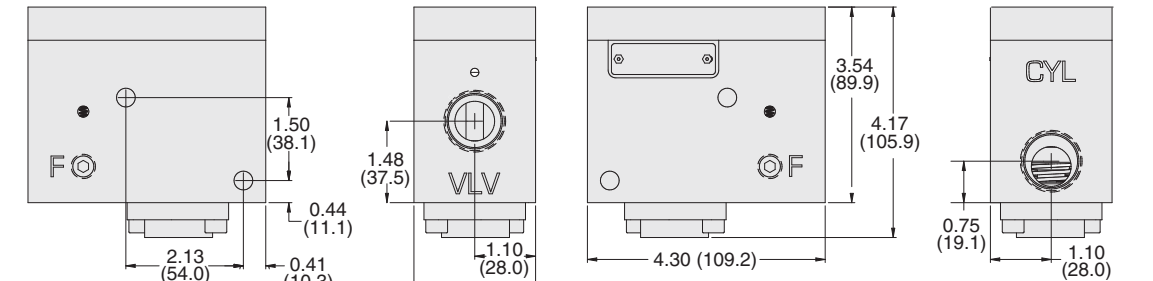


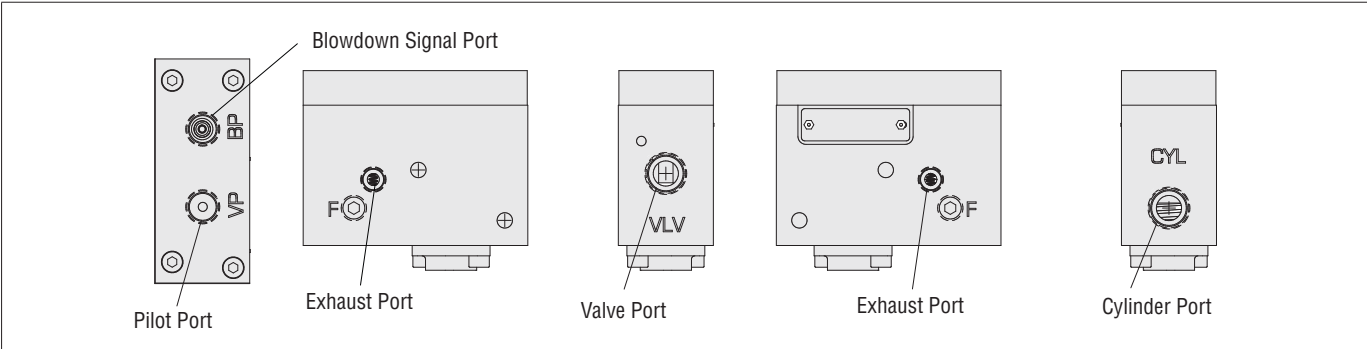
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# Valve Technical Data

## Pressure Controlled Valves – Single PO Check Valves with Remote Trapped Pressure Relief

DIMENSIONS		Inches (mm)			
Body Size 3/8					
Port Size 1/2					
Port Size 3/4					
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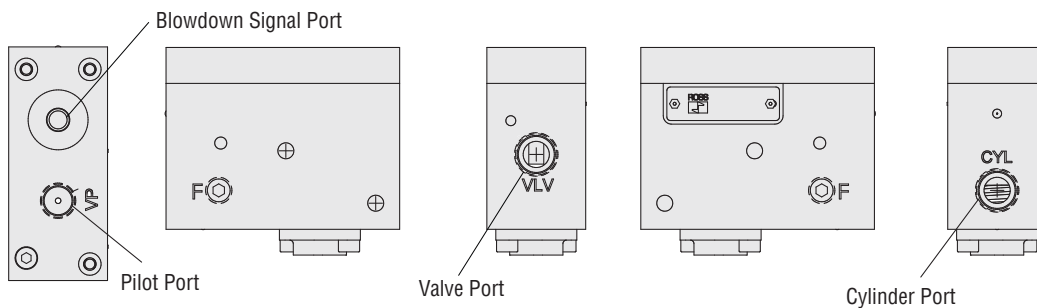
## Pressure Controlled Valves – Single PO Check Valves with Manual Trapped Pressure Relief

### DIMENSIONS

Inches (mm)

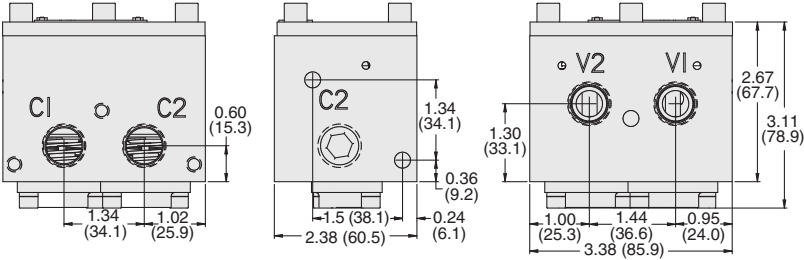
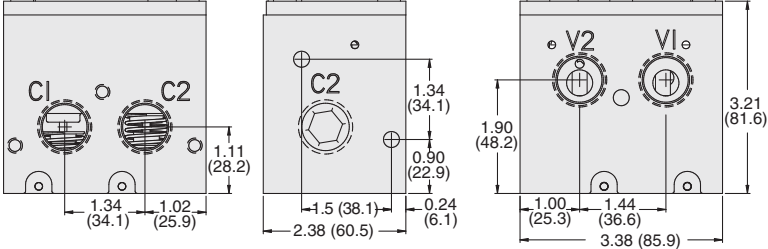
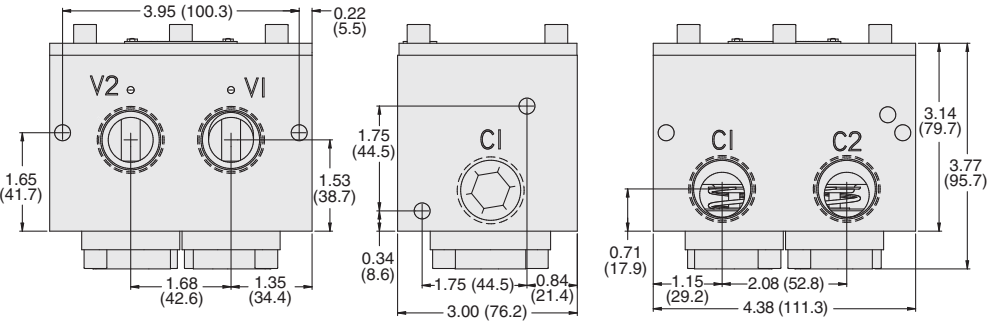
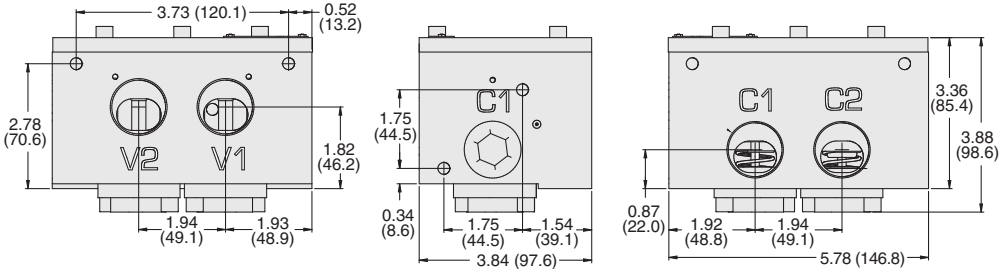
Body Size 3/8				
Port Size 1/2				
Port Size 3/4				

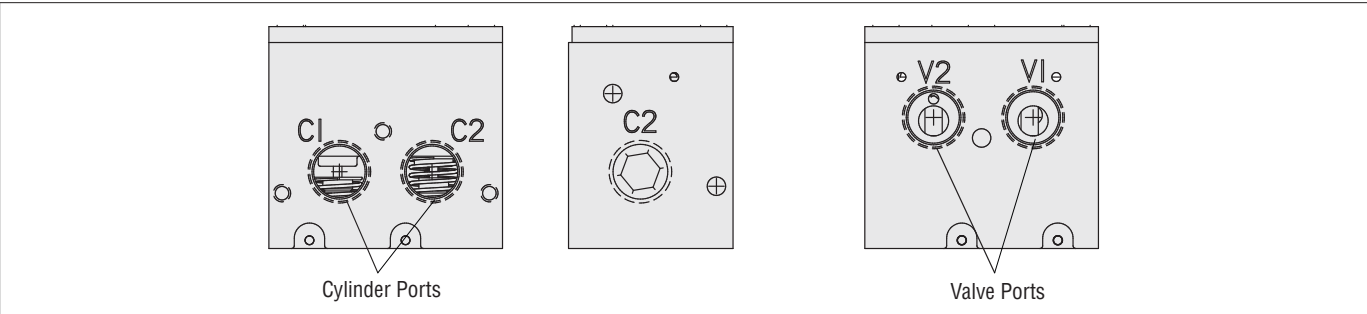
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# Valve Technical Data

## Pressure Controlled Valves – Dual PO Check without Trapped Pressure Relief

DIMENSIONS		Inches (mm)
Port Size 3/8		
Port Size 1/2		
Port Size 3/4		
Port Size 1		
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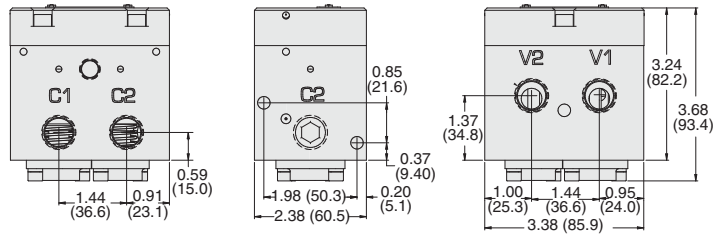


## Pressure Controlled Valves –Dual PO Check with Remote Trapped Pressure Relief

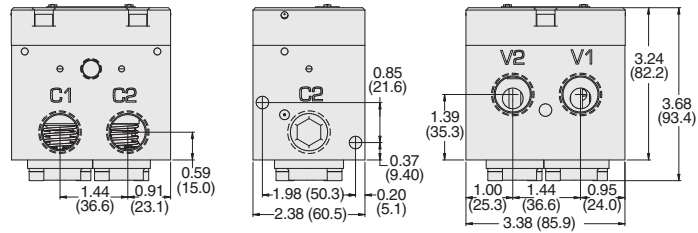
### DIMENSIONS

Inches (mm)

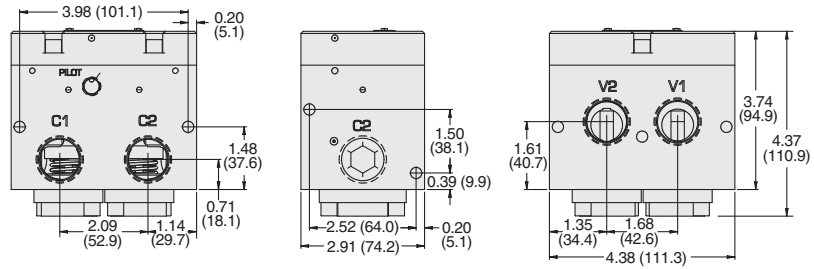
Port Size 3/8



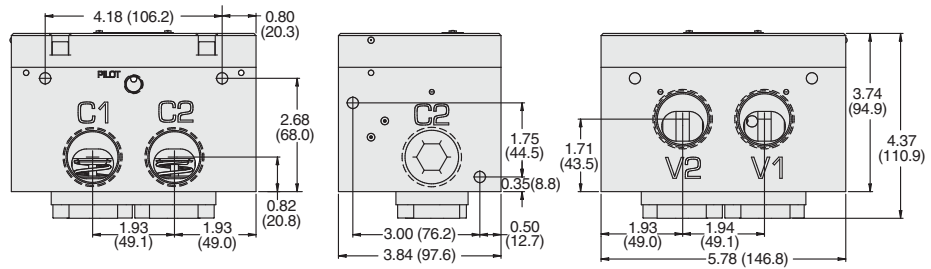
Port Size 1/2



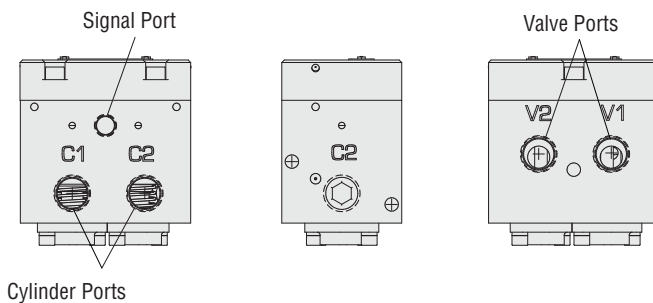
Port Size 3/4



Port Size 1

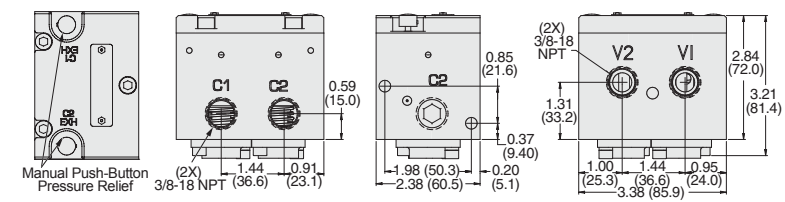
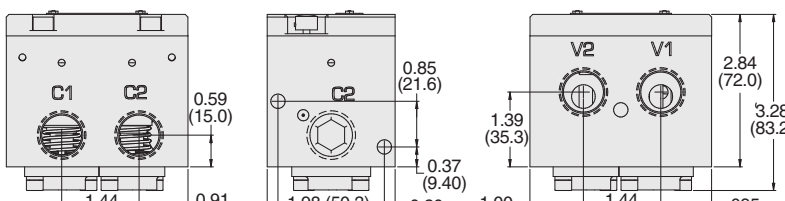
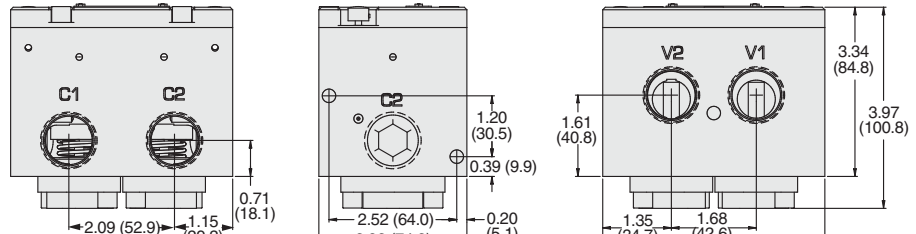
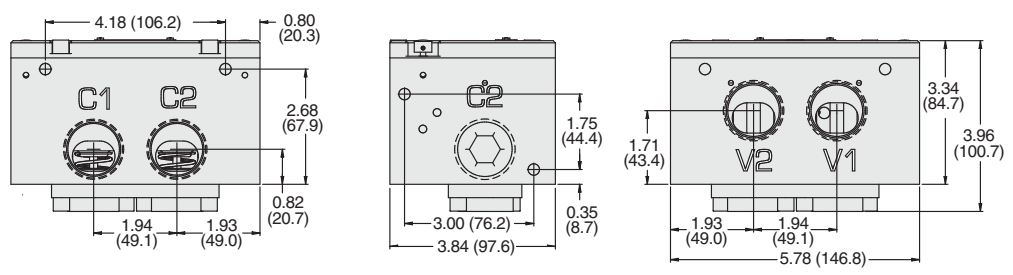


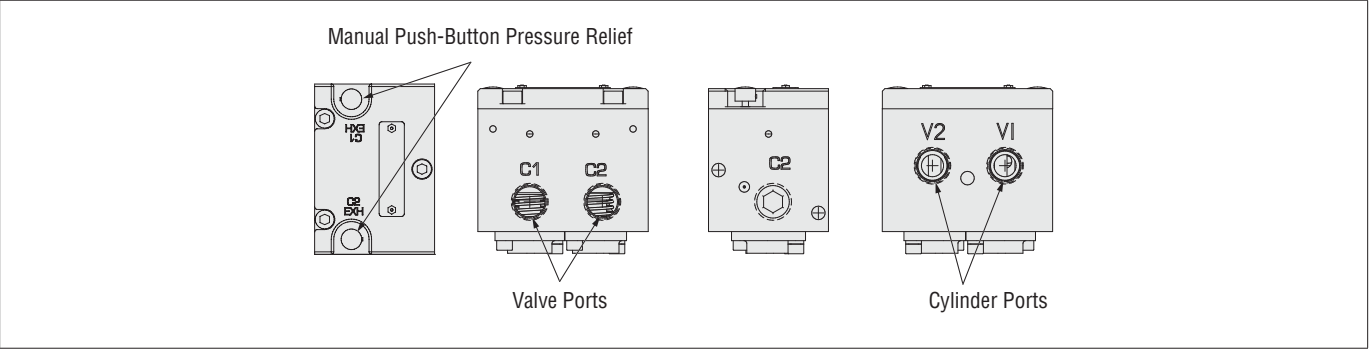
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# Valve Technical Data

## Pressure Controlled Valves – Dual PO Check with Manual Trapped Pressure Relief

DIMENSIONS	Inches (mm)
Port Size 3/8	 <p>Technical drawings for Port Size 3/8 valve showing front, side, and top views with dimensions. The front view shows two valve ports (C1, C2) and a manual push-button pressure relief port. The side view shows the valve body profile. The top view shows the cylinder ports (V2, V1). Dimensions are provided in inches and millimeters.</p>
Port Size 1/2	 <p>Technical drawings for Port Size 1/2 valve showing front, side, and top views with dimensions. The front view shows two valve ports (C1, C2) and a manual push-button pressure relief port. The side view shows the valve body profile. The top view shows the cylinder ports (V2, V1). Dimensions are provided in inches and millimeters.</p>
Port Size 3/4	 <p>Technical drawings for Port Size 3/4 valve showing front, side, and top views with dimensions. The front view shows two valve ports (C1, C2) and a manual push-button pressure relief port. The side view shows the valve body profile. The top view shows the cylinder ports (V2, V1). Dimensions are provided in inches and millimeters.</p>
Port Size 1	 <p>Technical drawings for Port Size 1 valve showing front, side, and top views with dimensions. The front view shows two valve ports (C1, C2) and a manual push-button pressure relief port. The side view shows the valve body profile. The top view shows the cylinder ports (V2, V1). Dimensions are provided in inches and millimeters.</p>
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## PREWIRED ELECTRICAL CONNECTORS

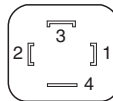
Prewired Connectors	Cable						Model Number			
	End 1	End 2	Connection	Quantity Included	Length meters (feet)	Cord Diameter mm	Without Light	Lighted Connector		
	Connector	Cord						24 V DC	120 V AC	230 V AC
	DIN EN 175301-803 Form A	Flying leads	Solenoid	1	2 (6.5)	6	721K77	720K77-W	720K77-Z	720K77-Y
				1	2 (6.5)	10	371K77	383K77-W	383K77-Z	383K77-Y

## ELECTRICAL CONNECTORS

Connectors	Connector					Model Number			
	Type	Connection	Fitting Connection	Quantity Included	Cord Diameter mm	Without Light	Lighted Connector		
	DIN EN 175301-803 Form A	Solenoid	Cable grip	1	8 to 10		24 V DC	120 V AC	230 V AC
			1/2" NPT conduit	1	—	723K77	724K77-W	724K77-Z	724K77-Y

### Connectors Pinout

#### DIN EN 175301-803 Form A



- 1 - Black
- 2 - Black
- 4 - Green/Yellow (Ground)









# 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. Safe 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 Safe 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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EUROPE	ROSS EUROPA GmbH	Germany	Tel: +49 (0)6103-7597-100	www.rosseuropa.com
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	ROSS ASIA K.K.	Japan	Tel: +81-42-778-7251	www.rossasia.co.jp
	AUTOMATIC VALVE INDUSTRIAL LLC	USA	Tel: +1-248-474-6700	www.automaticvalve.com
	ROSS DECCO COMPANY	USA	Tel: +1-248-764-1800	www.rossdecco.com
	ROSS PNEUMATROL Ltd.	United Kingdom	Tel: +44 (0)1254 872277	www.pneumatrol.com
	manufactIS GmbH	Germany	Tel: +49 (0)2013-16843-0	www.manufactis.net

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### There are ROSS Distributors Throughout the World

*To meet your requirements across the globe, ROSS distributors are located throughout the world. Through ROSS or its distributors, guidance is available for the selection of ROSS products, both for those using fluid power components for the first time and those designing complex systems.*

*Other literature is available for engineering, maintenance, and service requirements.*

*If you need products or specifications not shown in this catalog, please visit ROSS' website, contact ROSS or your ROSS distributor. The ROSS Support Team will be happy to assist you in selecting the best product for your application.*

*For a current list of countries and local distributors, visit ROSS' at [www.rosscontrols.com](http://www.rosscontrols.com).*