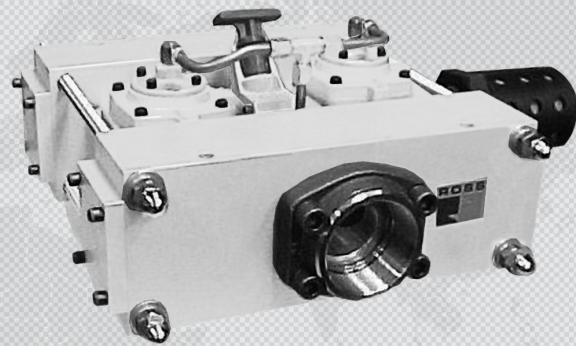




PRODUCT INFORMATION

PILOTED VALVES WITH LOCKOUT CONTROL

WITH L-O-X[®] 27 & 39 SERIES

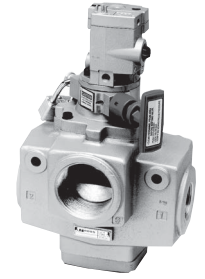


ROSS CONTROLS

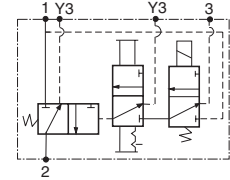
3-Way 2-Position Valve								
Port Size		Body Size	Valve Model Number		C _v		Weight lb (kg)	
1, 2	3		NPT Threads	G Threads	1-2	2-3		
1/4	1/2	3/8	Y2773A2072W	YD2773A2072W	2.5	3.1	3.5 (1.6)	
3/8	1/2	3/8	Y2773A3072W	YD2773A3072W	3.6	5.3	3.5 (1.6)	
1/2	1/2	3/8	Y2773A4082W	YD2773A4082W	3.3	5.3	3.5 (1.6)	
1/2	1	3/4	Y2773A4072W	YD2773A4072W	6.3	9.2	4.3 (1.9)	
3/4	1	3/4	Y2773A5072W	YD2773A5072W	7.7	11	4.3 (1.9)	
1	1	3/4	Y2773A6082W	YD2773A6082W	8	12	4.3 (1.9)	
1	1½	1¼	Y2773A6072W	YD2773A6072W	23	34	8.0 (3.6)	
1¼	1½	1¼	Y2773A7072W	YD2773A7072W	30	32	8.0 (3.6)	
1½	1½	1¼	Y2773A8082W	YD2773A8082W	30	31	8.0 (3.6)	
1½	2½	2	Y2773A8072W	YD2773A8072W	68	70	17.5 (7.9)	
2	2½	2	Y2773A9072W	YD2773A9072W	70	70	17.5 (7.9)	
2½	2½	2	Y2773A9082W	YD2773A9082W	70	71	17.5 (7.9)	

Voltage: W=24 VDC; Z=110-120 VAC, 50/60 Hz, e.g., Y2773A2072Z. For other voltages, consult ROSS.

Cat. 1
PL b



F1



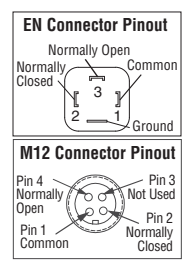
ACCESSORIES & OPTIONS

Silencers				
Port Size	Thread Type	Model Number		Avg. C _v
		NPT Threads	R Threads	
1/2	Male	5500A4003	D5500A4003	4.7
1	Male	5500A6003	D5500A6003	14.6
1½	Female	5500A8001	D5500A8001	29.9
2½	Female	5500A9002	D5500A9002	103.7

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

Pressure Switches		
Connection Type	Model Number*	Port Threads
EN 175301-803 Form A	586A86	1/8 NPT
M12	1153A30	1/8 NPT

*Pressure switch closes on falling pressure of 5 psig (0.34 bar).



Pop-Up Indicator	Model Number**	988A30
** 1/8 NPT port threads.		



Indicator Light Kits		Indicator Light
Kit Number		
24 volts DC	110-120 volts AC 50-60 Hz	
862K87-W	862K87-Z	

Multiple Lockout Device	Model Number	356A30
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STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Flow Media	Filtered air
Mounting Type	In-line	Operating Pressure	Body Size 3/8 & 1½: 15 to 150 psig (1 to 10 bar) Body Size 2: 30 to 150 psig (2 to 10 bar)
Solenoids	AC or DC power; Rated for continuous duty	Construction Material	Valve Body: Cast Aluminum Poppet: Acetal and Stainless Steel Seals: Buna-N; Fluorocarbon
Voltage	24 volts DC; 110-120 volts AC, 50/60 Hz	Safety Integrity Level (SIL) - Certified by TÜV Rheinland in accordance to IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT≥1, for details see certificate.	
Power Consumption (each solenoid)	14 watts on DC; 87 VA inrush, 30 VA holding on 50 or 60 Hz		
Temperature	Ambient: 40° to 120°F (4° to 50°C) Media: 40° to 175°F (4° to 80°C)		

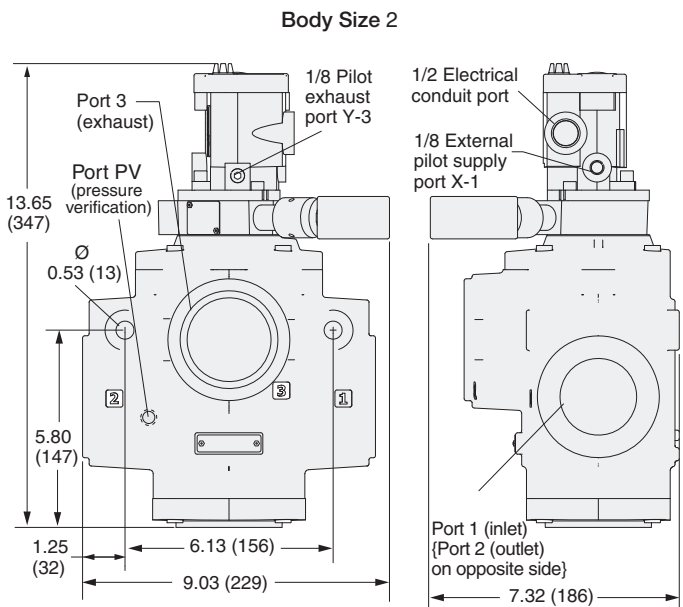
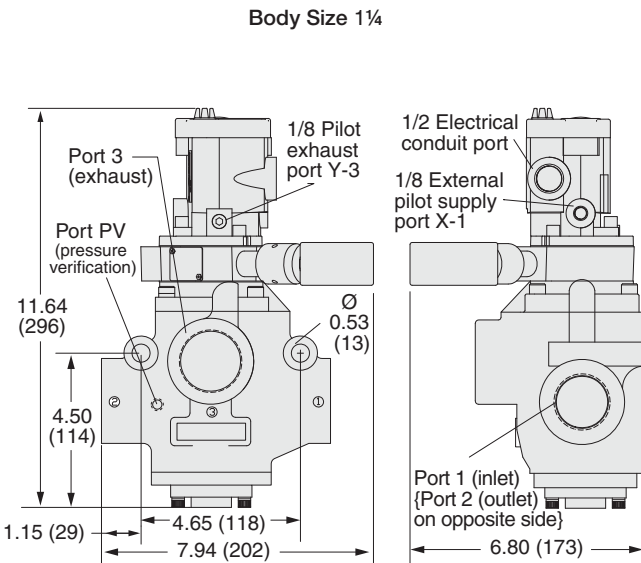
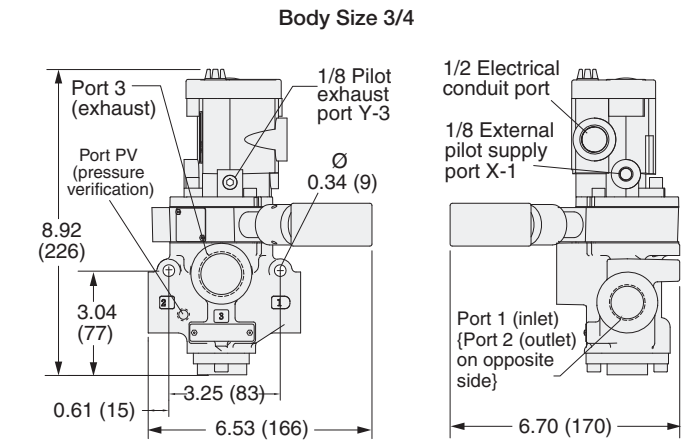
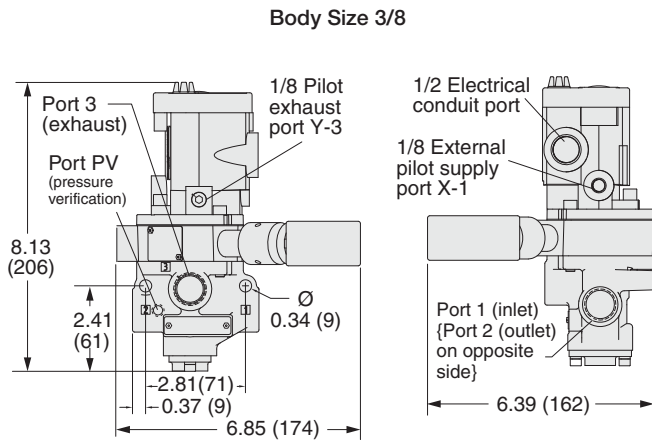
NOTE: Per specifications and regulations, these products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

Piloted Valves with Manual Lockout L-O-X® Control Solenoid Pilot Controlled

Energy Isolation 27 Series

Valve Dimensions – inches (mm)

F1

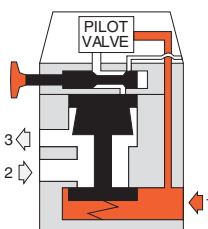


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VALVE OPERATION

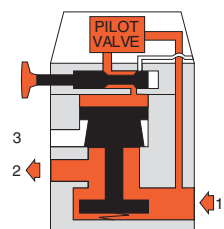
Pilot De-energized

With the solenoid pilot de-energized (regardless of the position of the L-O-X® handle) the inlet poppet remains closed. The outlet port is connected to the exhaust port so that pressure in the downstream lines is vented to atmosphere.



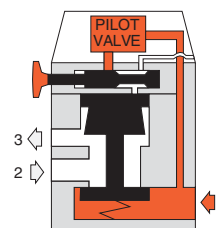
Pilot Energized

With the solenoid pilot energized and the L-O-X® control in the open position, air can flow from inlet to outlet port. The exhaust port is closed.

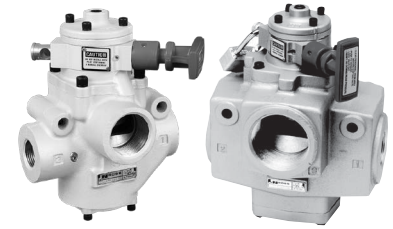
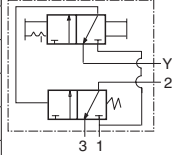


L-O-X® Valve Closed

With the handle pushed inward, the L-O-X® control is closed, and air to the valve piston is cut off. This allows the inlet poppet to be closed by its spring and the pressure of the inlet air. The outlet is connected to exhaust so downstream pressure is vented.

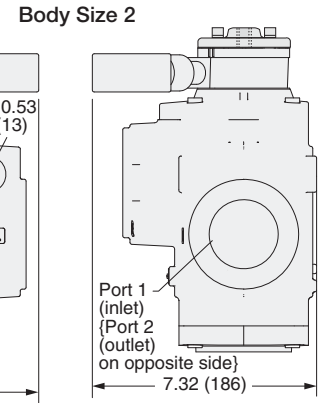
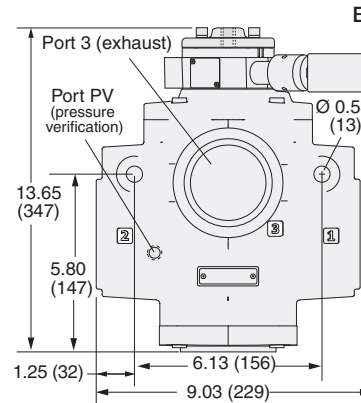
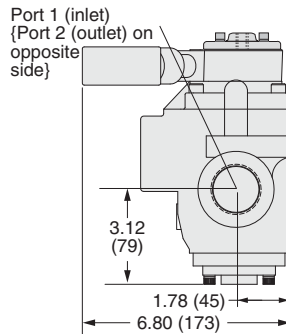
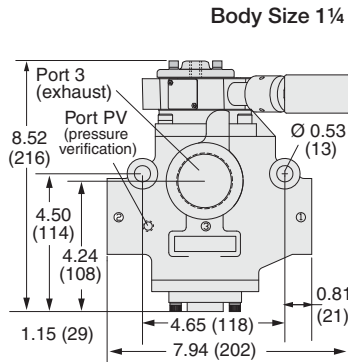


3-Way 2-Position Valve, Internal Pressure Controlled							
Port Size	Body		Valve Model Number		C _v		Weight lb (kg)
	1, 2	3	NPT Threads	G Threads	1-2	2-3	
1	1½	1¼	Y2783A6006	YD2783A6006	23	34	7.0 (3.2)
1¼	1½	1¼	Y2783A7006	YD2783A7006	30	32	7.0 (3.2)
1½	1½	1¼	Y2783A8016	YD2783A8016	30	31	7.0 (3.2)
1½	2½	2	Y2783A8006	YD2783A8006	68	70	15.3 (6.9)
2	2½	2	Y2783A9006	YD2783A9006	70	70	15.3 (6.9)
2½	2½	2	Y2783A9016	YD2783A9016	70	71	15.3 (6.9)



F1

Valve Dimensions – inches (mm)



ACCESSORIES & OPTIONS

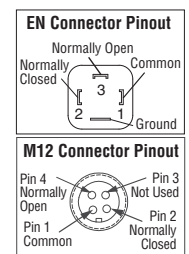
Silencers				
Port Size	Thread Type	Model Number		Avg. C _v
		NPT Threads	R Threads	
1½	Female	5500A8001	D5500A8001	29.9
2½	Female	5500A9002	D5500A9002	103.7

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



Pressure Switches		
Connection Type	Model Number*	Port Threads
EN 175301-803 Form A	586A86	1/8 NPT
M12	1153A30	1/8 NPT

*Pressure switch closes on falling pressure of 5 psig (0.34 bar).



Pop-Up Indicator	Model Number**	988A30
	** 1/8 NPT port threads.	



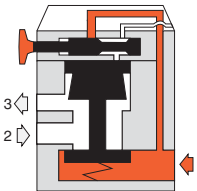
Multiple Lockout Device	Model Number	356A30
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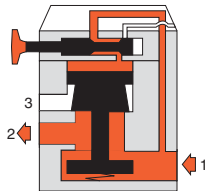
F

VALVE OPERATION

Valve Closed With a short push of the red handle inward the flow of supply air is blocked and downstream air is exhausted via the exhaust port. Air pressure on the inlet and exhaust poppets produces a large closing force. The L-O-X[®] valve should be padlocked in this position to prevent the handle from being pulled outward inadvertently when potential for human injury exists or servicing machinery.



Valve Open With the red handle pulled out, pilot air flows to the top of the actuating piston, causing it to open the inlet poppet. Supply air then flows freely from inlet to outlet, and the exhaust port is blocked. A detent keeps the L-O-X[®] handle in the open position. The handle is designed not to be locked in the open position, thereby allowing for quick shut-off when necessary.



STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Valve Body: Cast Aluminum
Mounting Type	In-line	Poppet: Acetal and Stainless Steel
Temperature	40° to 175°F (4° to 80°C)	Seals: Buna-N; Fluorocarbon
Flow Media	Filtered air	Safety Integrity Level (SIL) - Certified by TÜV Rheinland in accordance with IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT ≥ 1, for details see certificate.
Operating Pressure	Body Size 1¼: 15 to 150 psig (1 to 10 bar) Body Size 2: 30 to 150 psig (2 to 10 bar)	

NOTE: Per specifications and regulations, these products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

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



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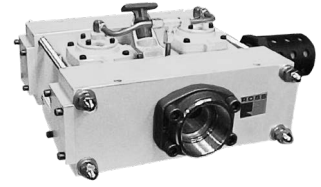
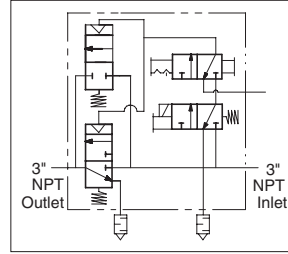
F1

3 Inch L-O-X® Valve for Lockout

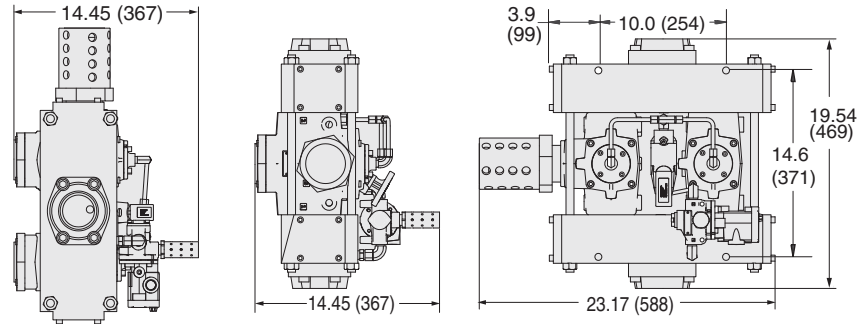
3-Way 2-Position Valve

Port Size		Valve Model Number#	C _v		Weight lb (kg)
1, 2	3	NPT Threads	1-2	2-3	
3	2½	Y3900A0896W	140	71	115 (53.0)

Voltage: W=24 VDC; Z=110-120 VAC, 50/60 Hz, e.g., Y3900A0896Z.
For other voltages, consult ROSS.



Valve Dimensions – inches (mm)



OPTIONS

Multiple Lockout Device

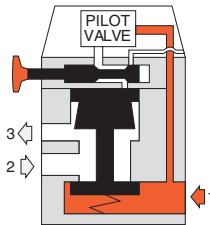
Model Number 356A30



VALVE OPERATION

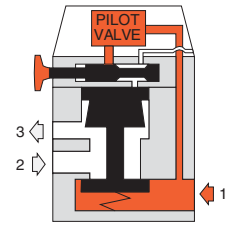
Pilot De-energized

With the solenoid pilot de-energized (regardless of the position of the L-O-X® handle) the inlet poppet remains closed. The outlet port is connected to the exhaust port so that pressure in the downstream lines is vented to atmosphere.



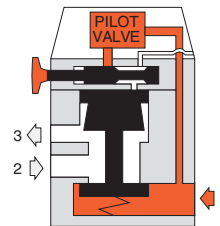
Pilot Energized

With the solenoid pilot energized and the L-O-X® control in the open position, air can flow from inlet to outlet port. The exhaust port is closed.



L-O-X® Valve Closed

With the handle pushed inward, the L-O-X® control is closed, and air to the valve piston is cut off. This allows the inlet poppet to be closed by its spring and the pressure of the inlet air. The outlet is connected to exhaust so downstream pressure is vented.



STANDARD SPECIFICATIONS (for valves on this page):

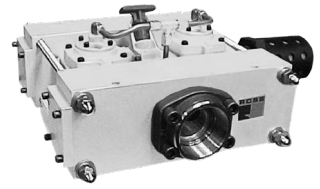
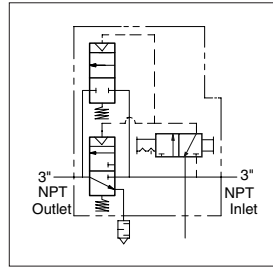
Construction Design	Spool	Flow Media	Filtered air
Mounting Type	In-line	Operating Pressure	30 to 150 psig (2 to 10 bar)
Solenoids	AC or DC power; Rated for continuous duty	Construction Material	Valve Body: Cast Aluminum Spool: 316 Stainless Steel Seals: Fluorocarbon
Voltage	24 volts DC; 110-120 volts AC, 50/60 Hz	Safety Integrity Level (SIL) - Certified by TÜV Rheinland in accordance with IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT ≥ 1, for details see certificate.	
Power Consumption (each solenoid)	14 watts on DC; 87 VA inrush, 30 VA holding on 50 or 60 Hz		
Temperature	Ambient: 40° to 120°F (4° to 50°C) Media: 40° to 175°F (4° to 80°C)		

NOTE: Per specifications and regulations, these products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

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

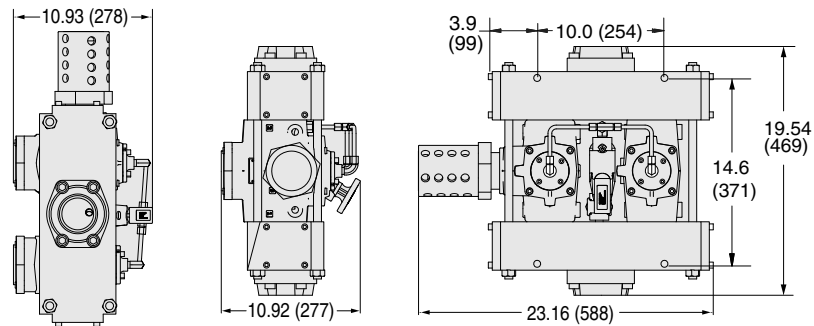
3 Inch L-O-X® Valve for Lockout

3-Way 2-Position Valve					
Port Size		Valve Model Number	C _v		Weight lb (kg)
1, 2	3	NPT Threads	1-2	2-3	
3	2½	Y3900A0829	140	71	110 (49.9)



F1

Valve Dimensions – inches (mm)



OPTIONS

Multiple Lockout Device

Model Number 356A30

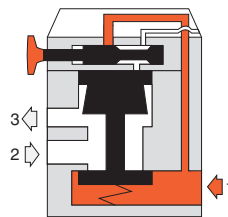


VALVE OPERATION

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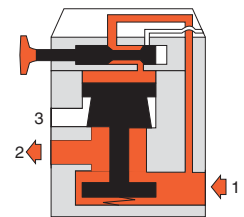
Valve Closed

With a short push of the red handle inward the flow of supply air is blocked and downstream air is exhausted via the exhaust port. Air pressure on the inlet and exhaust poppets produces a large closing force. The L-O-X® valve should be padlocked in this position to prevent the handle from being pulled outward inadvertently when potential for human injury exists or servicing machinery.



Valve Open

With the red handle pulled out, pilot air flows to the top of the actuating piston, causing it to open the inlet poppet. Supply air then flows freely from inlet to outlet, and the exhaust port is blocked. A detent keeps the L-O-X® handle in the open position. The handle is designed not to be locked in the open position, thereby allowing for quick shut-off when necessary.



STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Spool	Construction Material	Valve Body: Cast Aluminum Spool: 316 Stainless Steel Seals: Fluorocarbon
Mounting Type	In-line	Safety Integrity Level (SIL) - Certified by TÜV Rheinland in accordance to IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT ≥ 1, for details see certificate.	
Temperature	40° to 175°F (4° to 80°C)		
Flow Media	Filtered air		
Operating Pressure	30 to 150 psig (2 to 10 bar)		

NOTE: Per specifications and regulations, these products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

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



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General Information

Standard Specifications

The standard specifications for the products on each page of this catalog are given on the same page or referenced. For solenoid pilot valves, models with internal pilot supply are listed. Most models are also available for use with external pilot supply or have a built-in pilot supply selector valve.

The products in this catalog are intended for use in industrial pneumatic systems. Most products are adaptable to other uses and conditions not covered by the standard specifications given in this catalog. Weights shown are approximate and are subject to change. Dimensions given, unless otherwise noted, are envelope dimensions (not for mounting). Consult ROSS for further information.

Port Threads

Ports of valves and bases described in this catalog have NPT (ANSI B2.1) threads. Other thread types can be specified by putting an appropriate prefix letter on the model number when ordering.

Thread Types by Model Prefix Letter

Pneumatic Port Threads	Prefix Letter	Threaded Electrical Opening
NPT (ANSI B2.1)	None	NPT
ISO 228 - DIN 259 Parallel, BSPP [#]	C*	—
ISO 228 - DIN 259 Parallel, BSPP [#]	D	G
ISO 228 - JIS B0203 Tapered [#]	J	ISO
SAE 1926- ISO 11926	S	NPT

* Used only for filters, regulators, lubricators.

[#] ISO 228 threads supersedes BSPP, G and JIS thread types.

Flow Ratings

Flow ratings are expressed as C_v where $C_v = 1$ corresponds to a steady state air flow of approximately 32 scfm under the following conditions:

Inlet pressure = 100 psig (6.7 bar)
Pressure drop = 10 psi (0.69 bar)
Air temperature = 68°F (20°C)
Relative humidity = 36%

Note: Because widely differing test standards are used to measure C_v values, the figures given in this catalog should not be used to compare ROSS valves with those of other makers. The C_v ratings given here are intended only for use with performance charts published by ROSS. The C_v ratings are averages for the various flow paths through the valve and are for steady flow conditions.

Approvals and Certifications

ROSS products are designed to meet a number of industrial standards, including the Canadian Standards Association (C.S.A.) guidelines. For more information on specific product approvals, contact your local distributor or ROSS.

Solenoids

All ROSS standard solenoids are rated for continuous duty (unless noted otherwise) and will operate the valve within the air pressure range specified in this catalog.

Explosion-Proof Solenoid Pilot available, for more information consult ROSS.

Voltage & Hertz

When ordering a solenoid valve, also specify the desired solenoid voltage and hertz.

Voltage Types by Model Suffix Letter

Voltage	Suffix Letter
120 volts AC	Z
220 volts AC	Y
12 volts DC	H
24 volts DC	W
48 volts DC	M
90 volts DC	K
110 volts DC	P
125 volts DC	C

Recommended Solenoid Voltages: 100-110 volts AC, 50 Hz; 100-120 volts AC, 60 Hz; 24 volts DC; 110 volts DC.

In addition, the following voltages are available:

200, 220 volts AC, 50 Hz
200, 240, 480 volts AC, 60 Hz
24, 48, 220 volts AC, 50 Hz
240 volts AC, 60 Hz
200, 220 volts AC, 50 Hz
200, 240 volts AC, 60 Hz.

For example: Model 2773B5001, 120 volts AC, 60 Hz.
Model W6076B2401, 220 volts AC, 50 Hz.

Please note that not all configurations are available for all models.

For additional information or help with voltage configuration, please contact your local distributor or ROSS.

Port Identification

Valve symbols in this catalog conform to the ISO 1219-1:1991 standard of the International Organization for Standardization (ISO) and the SAE J2051 standard of the Society of Automotive Engineers (SAE) respectively.

Information or Technical Assistance

For additional information or application assistance concerning ROSS products, consult ROSS or your local ROSS distributor (see contact information on the back cover).

Order Placement

For order placement, consult ROSS or your local ROSS distributor.

For a current list of countries and local distributors, visit ROSS' website at rosscontrols.com.

CAUTIONS, WARNINGS and STANDARD WARRANTY

PRE-INSTALLATION or SERVICE

1. Before servicing a valve or other pneumatic component, be sure that all sources of energy are turned off, the entire pneumatic system is shut off and exhausted, and all power sources are locked out (ref: OSHA 1910.147, EN 1037).
2. All ROSS products, including service kits and parts, should be installed and/or serviced only by persons having training and experience with pneumatic equipment. Because any installation can be tampered with or need servicing after installation, persons responsible for the safety of others or the care of equipment must check every installation on a regular basis and perform all necessary maintenance.
3. All applicable instructions should be read and complied with before using any fluid power system in order 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 location listed on the cover of this document.
4. Each ROSS product should be used within its specification limits. In addition, use only ROSS parts to repair ROSS products.

WARNING: *Failure to follow these directions can adversely affect the performance of the product or result in the potential for human injury or damage to property.*

FILTRATION and LUBRICATION

5. 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. ROSS recommends a filter with a 5-micron rating for normal applications.
6. All standard ROSS filters and lubricators with polycarbonate plastic bowls are designed for compressed air applications only. Do *not* fail to 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, hazardous leakage, and the potential for human injury or damage to property. Immediately replace a crazed, cracked, or deteriorated bowl. When bowl gets dirty, replace it or wipe it with a clean dry cloth.

7. Only use lubricants which are compatible with materials used in the valves and other components in the system. Normally, compatible lubricants are petroleum based 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 human injury, and/or damage to property.

AVOID INTAKE/EXHAUST RESTRICTION

8. Do not restrict the air flow in the supply line. To do so could reduce the pressure of the supply air below the minimum requirements for the valve and thereby cause erratic action.
9. 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.

WARNING: *ROSS expressly disclaims all warranties and responsibility for any unsatisfactory performance or injuries caused by the use of the wrong type, wrong size, or an inadequately maintained silencer installed with a ROSS product.*

POWER PRESSES

10. 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.

ENERGY ISOLATION/EMERGENCY STOP

11. Per specifications and regulations, ROSS L-O-X® and L-O-X® with EEZ-ON® operation products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

STANDARD WARRANTY

limited to repair or replacement of the product or refund of the purchase price paid solely at the discretion of ROSS and provided such product is returned to ROSS freight prepaid and upon examination by ROSS is found to be defective. This warranty becomes void in the event that product has been subject to misuse, misapplication, improper maintenance, modification or tampering.

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All products sold by ROSS CONTROLS are warranted for a one-year period [with the exception of all Filters, Regulators and Lubricators ("FRLs") which are warranted for a period of seven years] from the date of purchase to be free of defects in material and workmanship. ROSS' obligation under this warranty is





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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 rosscontrols.com.