Energy Isolation L-O-X® Valves
15 & 27 Series

Product Catalog

ROSS™
a global family

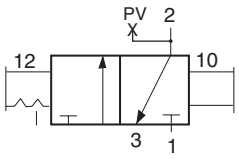
Manual Lockout L-O-X® Valves 15 Series
Product Overview

Energy Isolation for Lockout/Tagout (LOTO)

The Lockout L-O-X® valve is used to block the supply and remove the downstream pressure from the circuit or machine and allow the employee to lockout the pneumatic energy for safe machine access.

Slim Line	Modular	Classic	High-Capacity	Stainless Steel
				

Valve Schematic



ROSS manual L-O-X® (lockout & exhaust) valves are energy isolation valves and are generally used as the first valve in a line supplying compressed air to equipment.

OSHA and ISO 14118 compliance requires that the valve be padlocked in the closed position to prevent handle from being pulled out inadvertently during maintenance and/or servicing.

VALVE FEATURES

Unique Appearance	Easily identifiable with a yellow body and a red handle to control ON/OFF positions (non-Stainless Steel)
Quick Energy Dump	Full size exhaust ports (equal to or larger than supply) provide rapid exhaust of downstream air and are threaded for silencers or remote exhaust lines
Locking Protection	Design only allows the valve to be lockable in the OFF (closed) position
PTFE Seals	Fluorocarbon slipper seals for easy shifting, even after long periods of inactivity
Visible Pressure Indication Option	Includes integrated sensing port for pressure verification with either a visual pop-up indicator or electrical pressure switch
Mounting	Inline or Surface

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

Specifications

STANDARD SPECIFICATIONS

GENERAL	Function			3/2 Valve
	Construction Design			Spool
	Actuation			Manual
	Mounting	Type	Slim Line Classic High-Capacity Stainless Steel	Inline or Surface
			Modular	Inline
		Orientation		Any, preferably vertical; easy access to the handle
	Connection			Threaded; G, NPT
	Minimum Operation Frequency			Once per month, to ensure proper function
OPERATING CONDITIONS	Temperature	Slim Line Modular Classic High-Capacity	Ambient	40° to 175°F (4° to 80°C)
			Media	
		Stainless Steel	Ambient	30° to 175°F (-1° to 80°C)
			Media	
	Flow Media			Filtered air
	Operating Pressure	Slim Line		0 to 145 psig (0 to 10 bar)
		Modular		0 to 200 psig (0 to 14 bar)
		Classic High Capacity Stainless Steel		0 to 300 psig (0 to 20.7 bar)
LOCK HOLE MEASURES	Slim Line Modular Classic High-Capacity	Diameter	All Sizes	0.27 inch (7.0 mm)
		Length of Hole	All Sizes	0.43 inch (10.9 mm)
	Stainless Steel	Diameter	All Sizes	0.34 inch (8.64 mm)
		Length of Hole	Port Size 1/4	0.44 inch (11.17 mm)
			Port Size 1/2	0.47 inch (11.93 mm)
			Port Size 1 and 2	0.55 inch (13.97 mm)
CONSTRUCTION MATERIAL	Valve Body	Slim Line Modular Classic High-Capacity		Cast Aluminum
		Stainless Steel		316 Stainless Steel
	Spool			Stainless Steel
	Seals			Fluorocarbon

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

If a system requires gradual buildup of downstream pressure, see manual L-O-X® valves with EEZ-ON® operation.

PRODUCT CREDENTIALS

Safety Category	EAC Declaration of Conformity	Canadian Registration Number (CRN)
Cat. 1 PL c	EAC	Available for appropriately tested valves

Ordering Information

MANUAL LOCKOUT L-O-X® VALVES — 3-Way 2-Position Valves

Valve Style	Port Size		Body Size	Valve Model Number	
	In-Out	Exhaust		G Thread	NPT Thread
Slim Line	1/4	3/8	3/8	YD1523D2002	Y1523D2002
	3/8	3/8	3/8	YD1523D3012	Y1523D3012
Modular	1/4	3/4	3/4	YD1523A2003	Y1523A2003
	3/8	3/4	3/4	YD1523A3003	Y1523A3003
	1/2	3/4	3/4	YD1523A4003	Y1523A4003
	3/4	3/4	3/4	YD1523A5013	Y1523A5013
Classic	3/8	3/4	1/2	YD1523C3002	Y1523C3002
	1/2	3/4	1/2	YD1523C4002	Y1523C4002
	3/4	3/4	1/2	YD1523C5012	Y1523C5012
		1-1/4	1	YD1523C5002	Y1523C5002
	1	1-1/4	1	YD1523C6002	Y1523C6002
	1-1/4	1-1/4	1	YD1523C7012	Y1523C7012
High-Capacity	1-1/2	2	2	YD1523C8002	Y1523C8002
	2	2	2	YD1523C9012	Y1523C9012
Stainless Steel	1/4	1/4	1/4	D1523B2004	1523B2004
	3/8	1/2	1/2	D1523B3004	1523B3004
	1/2	1/2	1/2	D1523B4004	1523B4004
	3/4	1	1	D1523B5004	1523B5004
	1	1	1	D1523B6004	1523B6004
	1-1/2	2	2	D1523B8004	1523B8004
	2	2	2	D1523B9004	1523B9004

Valve Style	Port Size		Body Size	Flow C_v		Weight lb (kg)
	1, 2	3		1-2	2-3	
Slim Line	1/4	3/8	3/8	1.8	1.8	8.3 (3.8)
	3/8	3/8	3/8	2.6	2.6	
Modular	1/4	3/4	3/4	3.7	7.8	1.7 (0.8)
	3/8	3/4	3/4	5.1	8.3	
	1/2	3/4	3/4	5.5	8.6	1.8 (0.8)
	3/4	3/4	3/4	5.6	8.1	
Classic	3/8	3/4	1/2	4.7	3.6	2.0 (0.9)
	1/2	3/4	1/2	7.1	4.0	
	3/4	3/4	1/2	8.3	4.1	
		1-1/4	1	13	9.0	3.0 (1.4)
	1	1-1/4	1	17	9.5	
	1-1/4	1-1/4	1	19	9.7	
High-Capacity	1-1/2	2	2	36	51	8.3 (3.7)
	2	2	2	40	52	
Stainless Steel	1/4	1/4	1/4	2.1	2.1	3.8 (1.7)
	3/8	1/2	1/2	5.8	6.2	6.0 (2.7)
	1/2	1/2	1/2	5.8	6.2	
	3/4	1	1	14.3	17	13.0 (5.9)
	1	1	1	14.3	17	
	1-1/2	2	2	39	45	35.0 (15.9)
	2	2	2	39	45	

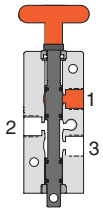
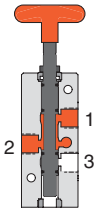
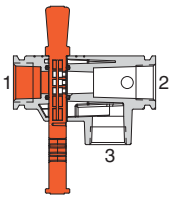
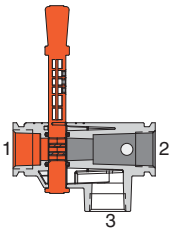
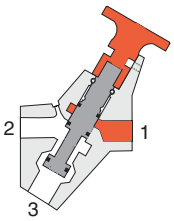
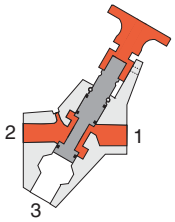
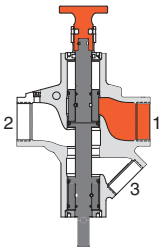
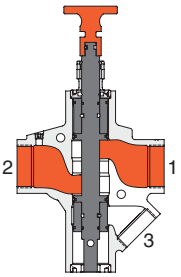
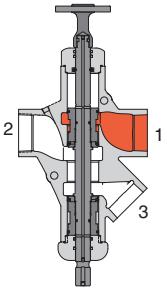
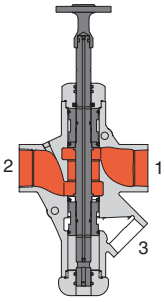
Valve Operation

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 at the bottom of the valve. The L-O-X® valve should be padlocked in this position to prevent the handle from being pulled outward inadvertently where potential for human injury exists or while servicing machinery.

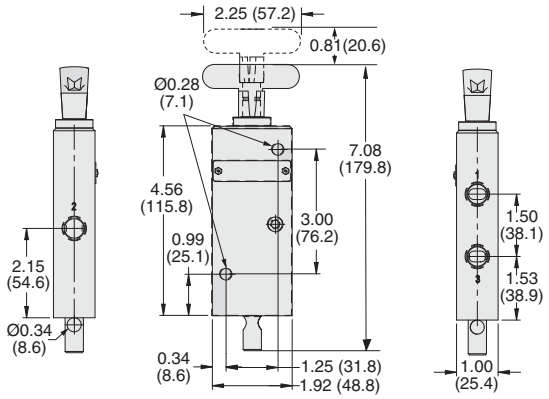
Valve Open

When the red handle is pulled out, supply air flows freely from inlet to outlet and flow to exhaust is blocked. A detent keeps the handle in the open position. The handle is not designed to be locked in this position, thereby providing for ready shut-off when necessary.

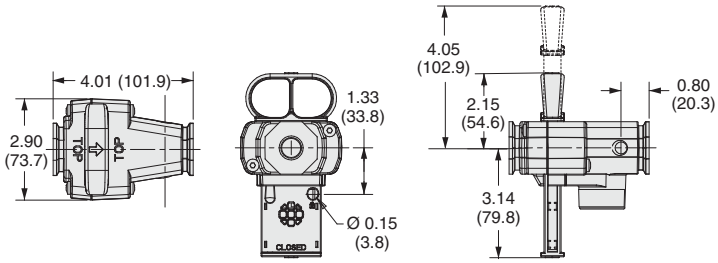
Valve Style		Valve Closed	Valve Open
Slim Line			
Modular			
Classic			
High-Capacity			
Stainless Steel			

DIMENSIONS — Inches (mm)

Slim Line

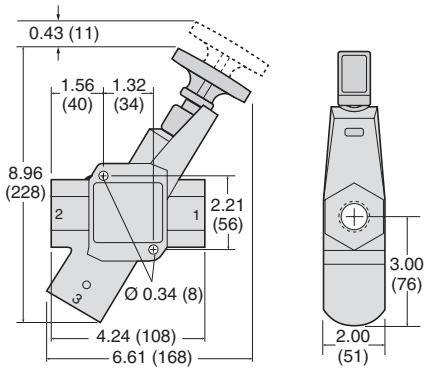


Modular

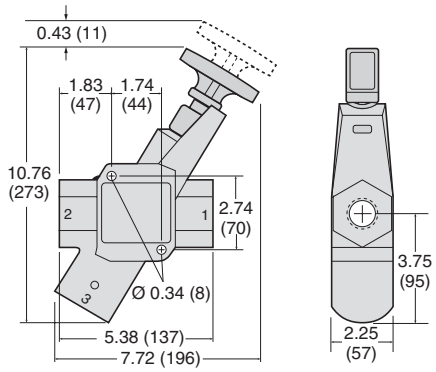


Classic

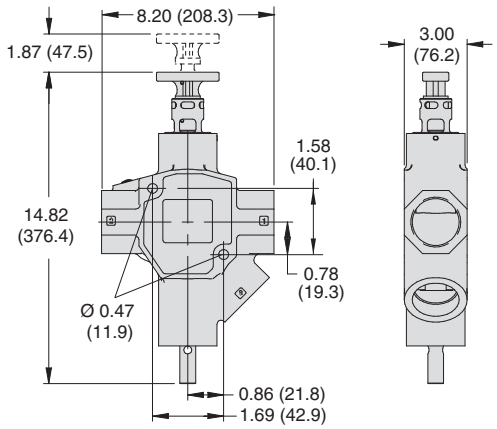
Body Size 1/2



Body Size 1



High-Capacity



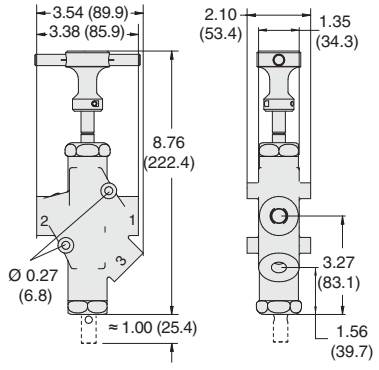
For additional information, and to assist you with piping and connectivity designs, our products are available in downloadable 2D drawings and 3D CAD models in a wide range of options including native formats, visit www.rosscontrols.com.

DIMENSIONS

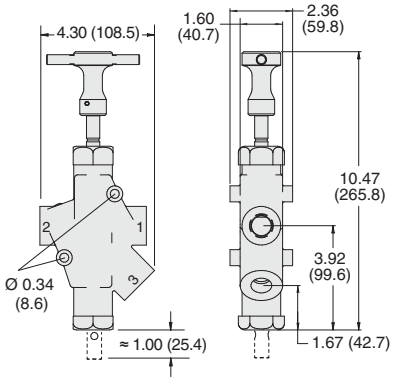
Inches (mm)

Stainless Steel

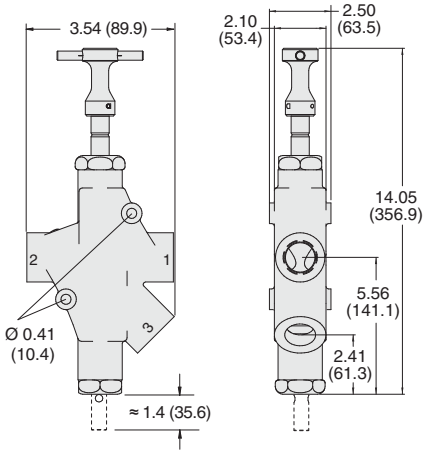
Body Size 1/4



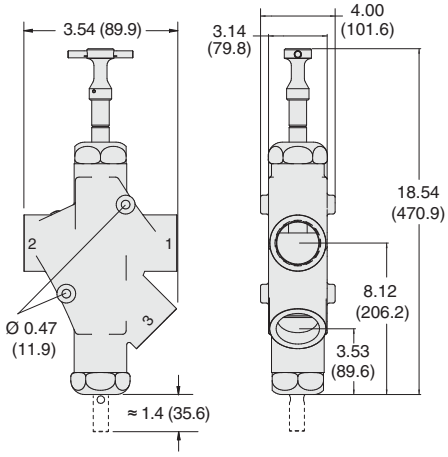
Body Size 1/2



Body Size 1



Body Size 2



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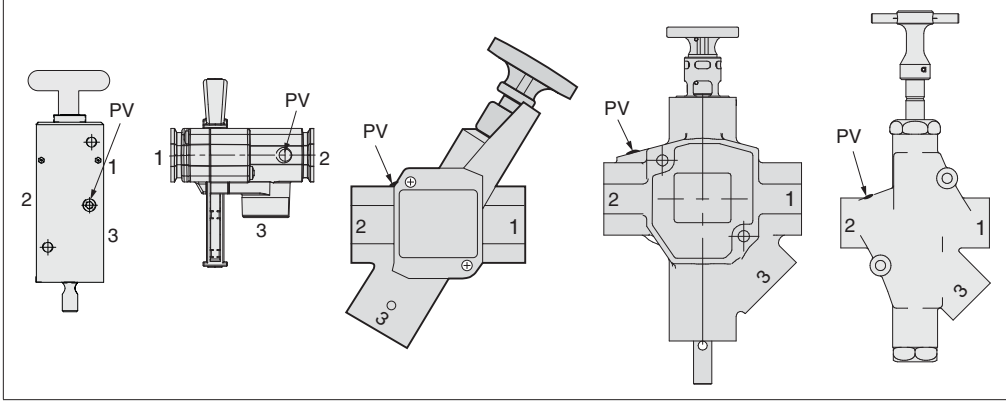


PV = 1/8" Pressure Verification Port
Port 1 (Inlet)
Port 2 (Outlet)
Port 3 (Exhaust)

Valves with Manual Lockout L-O-X® Control 27 Series
Product Overview

Energy Isolation for Lockout/Tagout (LOTO)

The **Lockout L-O-X®** valve is used to block the supply and remove the downstream pressure from the circuit or machine and allow the employee to lockout the pneumatic energy for safe machine access. The shut-off function of the solenoid pilot controlled L-O-X® valve is the same as that of the manual L-O-X® valves.

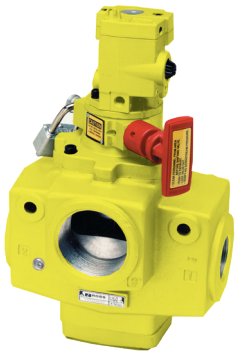
Solenoid Pilot Controlled – Body Size 2	Pressure Controlled – Body Size 3
	

Illustration examples.

The solenoid pilot and manual lockout controlled valve allows the air supply to be turned on or off by remote electrical control whenever the L-O-X® handle is in the outward position. Air flows only if the L-O-X® handle is outward and the solenoid pilot is energized. When the L-O-X® handle is pushed in, air will not flow regardless of the pilot being energized or not.

Because of the poppet construction of the main valve body, air pressure provides the forces both to open the valve and to close it. These are large forces so that quick response is ensured even after the valve has been on standby for a long time.

VALVE FEATURES	
Poppet Design	Dirt tolerant, wear compensating for quick response and high flow capacity
Manual Lockout Control	Operated like the manual lockout L-O-X® valve, the position of the red handle indicates instantaneous full flow pressurizing or exhausting capability
Solenoid Pilot	Allows the air supply to be turned on or off by remote electrical control when valve is not in the lockout position
Quick Energy Dump	Full size exhaust ports (equal to or larger than supply) provide rapid exhaust of downstream air and are threaded for silencers or remote exhaust lines
Locking Protection	Design only allows the valve to be lockable in the OFF position
PTFE Seals	Fluorocarbon slipper seals for easy shifting, even after long periods of inactivity
Visible Pressure Indication Option	Includes integrated sensor port for pressure verification with either a visual pop-up indicator or electrical pressure switch

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

Specifications

STANDARD SPECIFICATIONS

GENERAL	Function			3/2 Valve
	Construction Design			Poppet and Spool
	Actuation			Electrical - Solenoid Manual Lockout Controlled
				Pneumatic -Internal Pressure Manual Lockout Controlled
	Mounting	Type		Inline
		Orientation		Any, preferably vertical; easy access to the handle
	Connection			Threaded; G, NPT
	Minimum Operation Frequency			Once per month, to ensure proper function
OPERATING CONDITIONS	Temperature	Solenoid Manual Lockout Controlled Valves	Ambient	40° to 120°F (4° to 50°C)
			Media	40° to 175°F (4° to 80°C)
		Manual Lockout Controlled Valves	Ambient	40° to 175°F (4° to 80°C)
			Media	
	Flow Media			Filtered air
	Operating Pressure	Valve Body Size	3/8 through 1-1/2	15 to 150 psig (1 to 10 bar)
			2 & 3	30 to 150 psig (2 to 10 bar)
	External Pilot Supply (Solenoid and Manual Lockout Controlled only)			Must be equal to or greater than inlet pressure

ELECTRICAL DATA FOR SOLENOID PILOT VALVES	Solenoids	Operating Voltage	Power Consumption (each solenoid)
		24 volts DC	14 watts
		110-120 volts AC, 50/60 Hz 230 volts AC, 50/60 Hz	87 VA inrush, 30 VA holding
		Rated for continuous duty	

CONSTRUCTION MATERIAL	Valve Body			Cast Aluminum
	Poppet			Acetal and Stainless Steel
	Spool (Lockout Valve)			Stainless Steel
	Seals	Valve Body Size	3/8 through 2	Buna-N
			3	Fluorocarbon

SAFETY DATA	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.

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

If a system requires gradual buildup of downstream pressure, see Manual L-O-X® valves with EEZ-ON® operation.

PRODUCT CREDENTIALS

Safety Category	EAC Declaration of Conformity	ISO Standard	CSA Certificate of Compliance	Canadian Registration Number (CRN)
Cat. 1 PL c SIL 2 Functional Safety	EAC	ISO 13849-1:2015	C SP US Solenoid Pilot Valves	Available for appropriately tested valves

Ordering Information

SOLENOID AND MANUAL LOCKOUT CONTROLLED VALVES — 3-Way 2-Position Valves

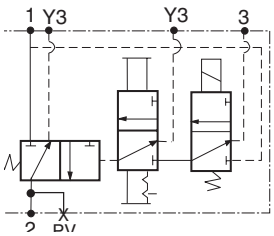
Port Size		Body Size	Valve Model Number					
			G Thread			NPT Thread		
In-Out	Exhaust		24 V DC	110-120 V AC	230 V AC	24 V DC	110-120 V AC	230 V AC
1/4	1/2	3/8	YD2773A2072W	YD2773A2072Z	YD2773A2072Y	Y2773A2072W	Y2773A2072Z	Y2773A2072Y
3/8	1/2	3/8	YD2773A3072W	YD2773A3072Z	YD2773A3072Y	Y2773A3072W	Y2773A3072Z	Y2773A3072Y
1/2	1/2	3/8	YD2773A4082W	YD2773A4082Z	YD2773A4082Y	Y2773A4082W	Y2773A4082Z	Y2773A4082Y
	1	3/4	YD2773A4072W	YD2773A4072Z	YD2773A4072Y	Y2773A4072W	Y2773A4072Z	Y2773A4072Y
3/4	1	3/4	YD2773A5072W	YD2773A5072Z	YD2773A5072Y	Y2773A5072W	Y2773A5072Z	Y2773A5072Y
1	1	3/4	YD2773A6082W	YD2773A6082Z	YD2773A6082Y	Y2773A6082W	Y2773A6082Z	Y2773A6082Y
	1-1/2	1-1/4	YD2773A6072W	YD2773A6072Z	YD2773A6072Y	Y2773A6072W	Y2773A6072Z	Y2773A6072Y
1-1/4	1-1/2	1-1/4	YD2773A7072W	YD2773A7072Z	YD2773A7072Y	Y2773A7072W	Y2773A7072Z	Y2773A7072Y
1-1/2	1-1/2	1-1/4	YD2773A8082W	YD2773A8082Z	YD2773A8082Y	Y2773A8082W	Y2773A8082Z	Y2773A8082Y
	2-1/2	2	YD2773A8072W	YD2773A8072Z	YD2773A8072Y	Y2773A8072W	Y2773A8072Z	Y2773A8072Y
2	2-1/2	2	YD2773A9072W	YD2773A9072Z	YD2773A9072Y	Y2773A9072W	Y2773A9072Z	Y2773A9072Y
2-1/2	2-1/2	2	YD2773A9082W	YD2773A9082Z	YD2773A9082Y	Y2773A9082W	Y2773A9082Z	Y2773A9082Y
3	2-1/2	3	–	–	–	Y3900A0896W	Y3900A0896Z	Y3900A0896Y

For other voltages, consult ROSS.

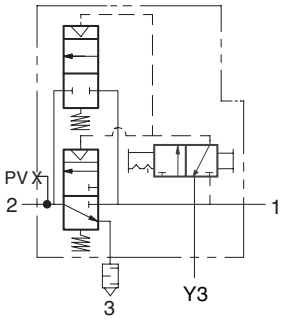
Port Size		Body Size	Flow C_v		Weight lb (kg)
1, 2	3		1-2	2-3	
1/4	1/2	3/8	2.5	3.1	3.5 (1.6)
3/8	1/2	3/8	3.6	5.3	
1/2	1/2	3/8	3.3	5.3	
	1	3/4	6.3	9.2	4.3 (1.9)
3/4	1	3/4	7.7	11	
1	1	3/4	8.0	12	
	1-1/2	1-1/4	23	34	8.0 (3.6)
1-1/4	1-1/2	1-1/4	30	32	
1-1/2	1-1/2	1-1/4	30	31	
	2-1/2	2	68	70	17.5 (7.9)
2	2-1/2	2	70	70	
2-1/2	2-1/2	2	70	71	
3	2-1/2	3	140	71	115.0 (53.0)

Valve Schematics

Body Size 3/8 through 2



Body Size 3



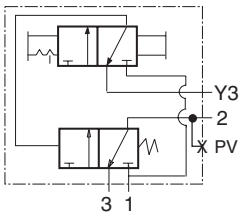
MANUAL LOCKOUT CONTROLLED VALVES — 3-Way 2-Position Valves

Port Size		Body Size	Valve Model Number	
In-Out	Exhaust		G Thread	NPT Thread
1	1-1/2	1-1/4	YD2783A6006	Y2783A6006
1-1/4	1-1/2	1-1/4	YD2783A7006	Y2783A7006
1-1/2	1-1/2	1-1/4	YD2783A8016	Y2783A8016
	2-1/2	2	YD2783A8006	Y2783A8006
2	2-1/2	2	YD2783A9006	Y2783A9006
2-1/2	2-1/2	2	YD2783A9016	Y2783A9016
3	2-1/2	3	–	Y3900A0829

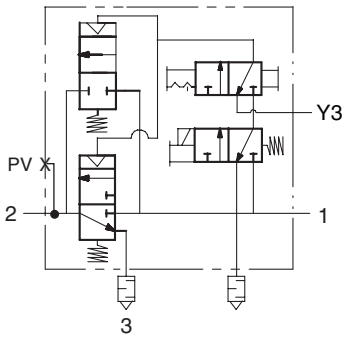
Port Size		Body Size	Flow C_v		Weight lb (kg)
1, 2	3		1-2	2-3	
1	1-1/2	1-1/4	23	34	7.0 (3.2)
1-1/4	1-1/2	1-1/4	30	32	
1-1/2	1-1/2	1-1/4	30	31	
	2-1/2	2	68	70	15.3 (6.9)
2	2-1/2	2	70	70	
2-1/2	2-1/2	2	70	71	
3	2-1/2	3	140	71	115.0 (53.0)

Valve Schematics

Body Size 3/8 through 2



Body Size 3

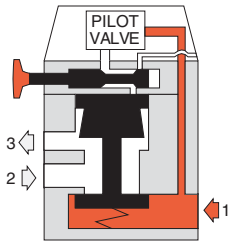


Valve Operation

Solenoid and Manual Lockout Controlled Valves

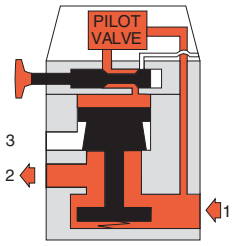
Pilot De-energized

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.



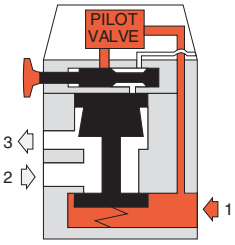
Pilot Energized

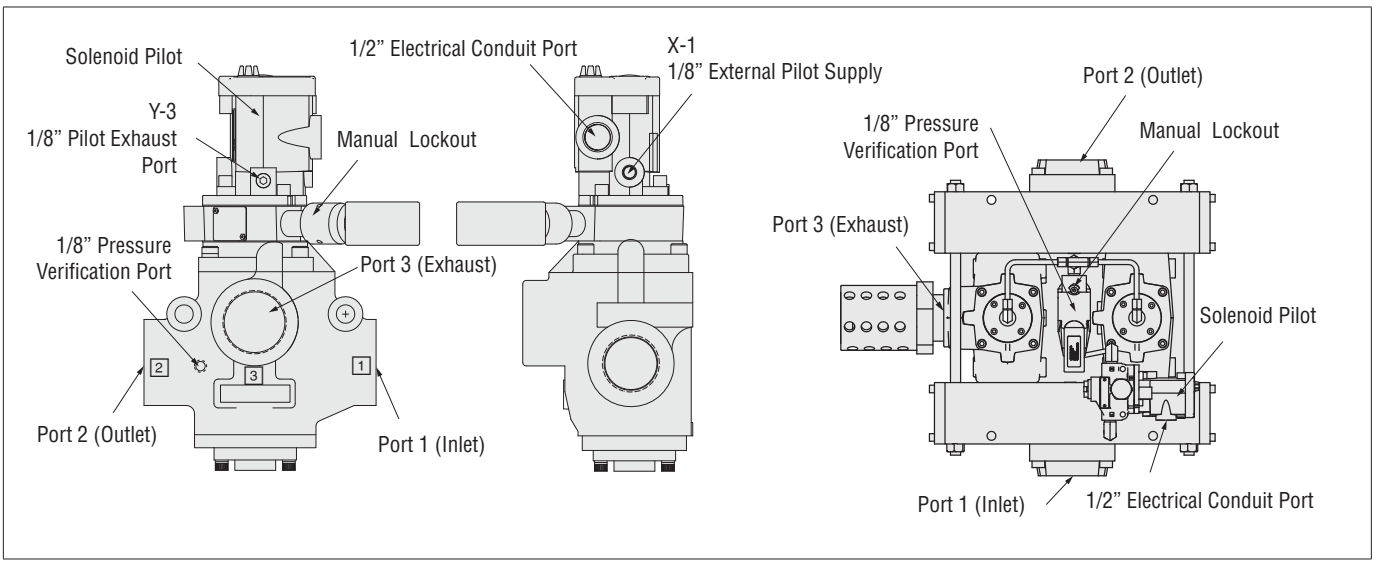
With the solenoid pilot energized and the L-O-X® control in the open position, air can flow from inlet to outlet port. The exhaust port is closed.



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.

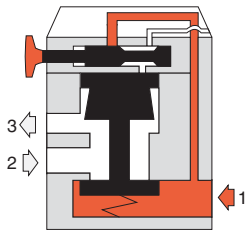




Manual Lockout Controlled Valves

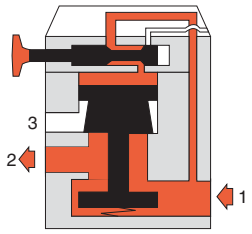
Valve Closed

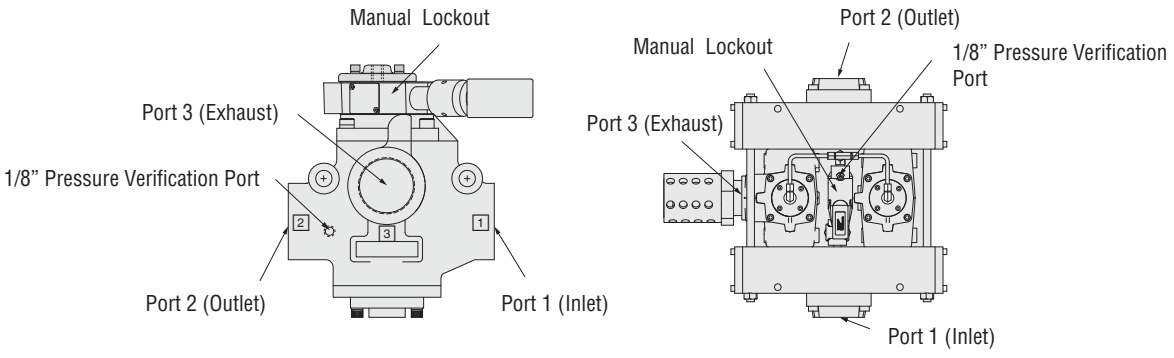
With a short push of the red handle inward the flow of supply air is blocked and downstream air is exhausted via the exhaust port. Air pressure on the inlet and exhaust poppets produces a large closing force. The L-O-X® valve should be padlocked in this position to prevent the handle from being pulled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

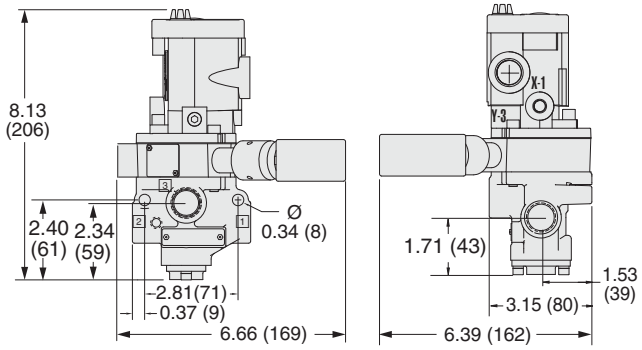




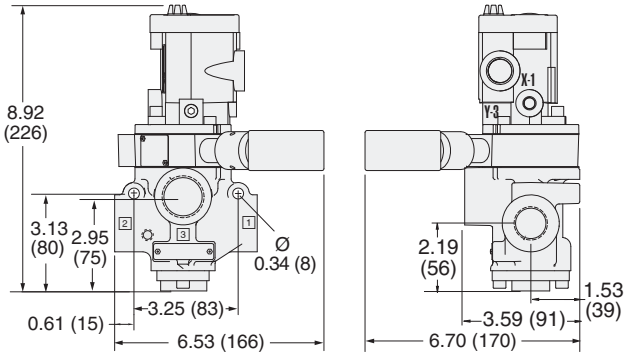
Solenoid and Manual Lockout Controlled Valves

DIMENSIONS — Inches (mm)

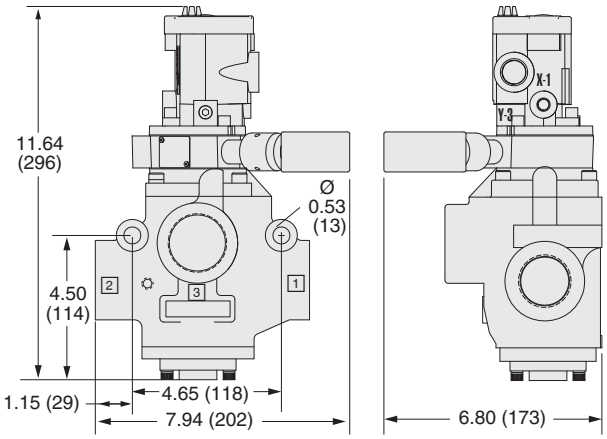
Body Size 3/8



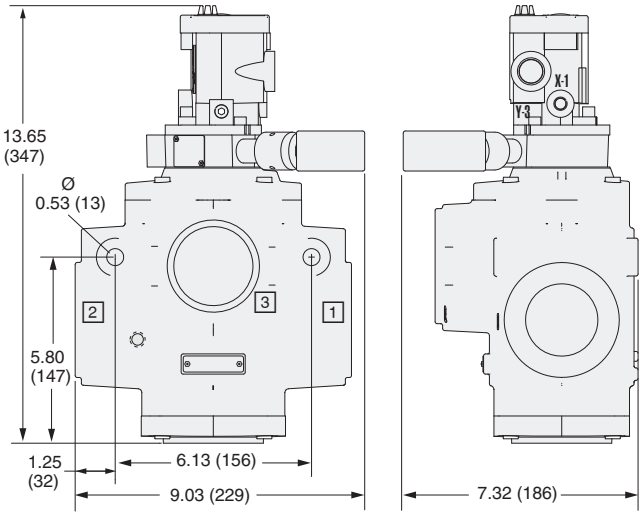
Body Size 3/4



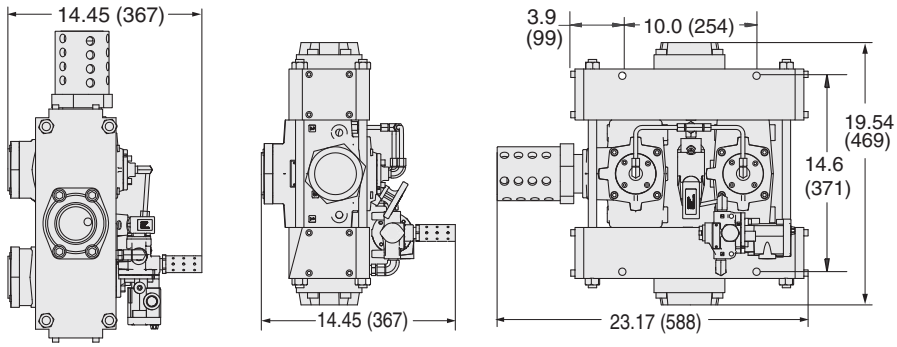
Body Size 1-1/4



Body Size 2



Body Size 3

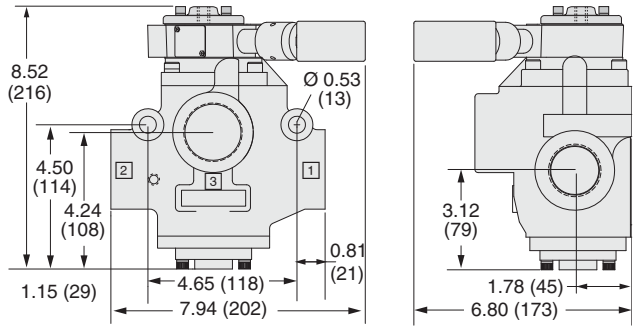


For additional information, and to assist you with piping and connectivity designs, our products are available in downloadable 2D drawings and 3D CAD models in a wide range of options including native formats, visit www.rosscontrols.com.

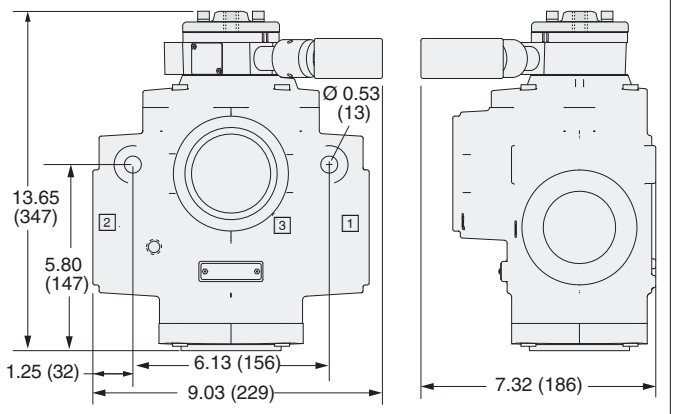
Manual Lockout Controlled Valves

DIMENSIONS — Inches (mm)

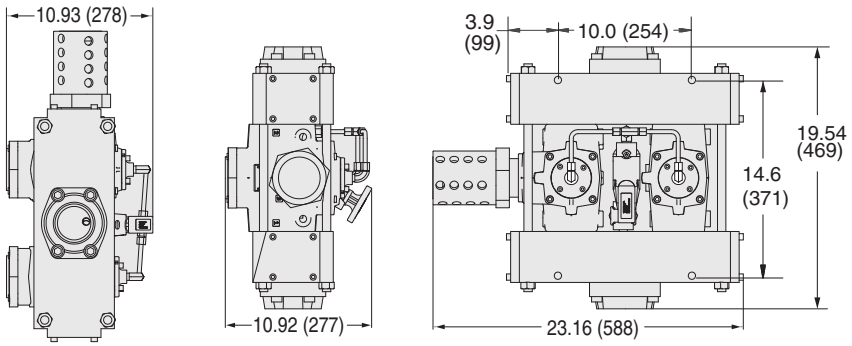
Body Size 1-1/4



Body Size 2



Body Size 3



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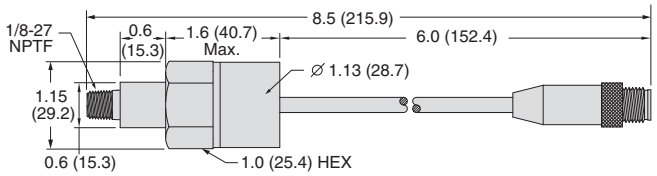
Accessories

ENERGY RELEASE VERIFICATION

	Verification Type	Valve Type	Indicator Type	Model Number	Port Thread
Visual Pressure Indicator	Pneumatic	Lockout L-O-X®	Visual Pop-up Pin	988A30	1/8 NPT
		Stainless Steel L-O-X®	Visual Pop-up	1155H30	

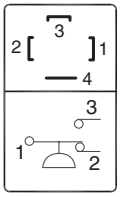
	Verification Type	Valve Type	Connector Type	Model Number	Factory Preset psi (bar)	Port Thread
Pressure Switches	Electrical	Lockout L-O-X®	DIN EN 175301-803 Form A	586A86	5 (0.3) falling	1/8 NPT
		Stainless Steel L-O-X®	M12	1162A30		

M12 Pressure Switch Dimensions– Inches (mm)



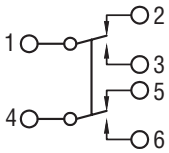
Pinout

DIN EN 175301-803 Form A

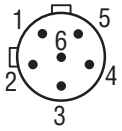


1 - Common
2 - Normally Closed
3 - Normally Open
4 - Ground (Not Used)

M12



1 - Circuit 1, Red/White
2 - All Red
3 - Green
4 - Circuit 2, Red/Yellow
5 - Red/Black
6 - Red Blue



1 - Common
2 - Normally Closed
3 - Normally Open
4 - Common
5 - Normally Closed
6 - Normally Open

EXHAUST SILENCERS

	Material	Port Size	Thread Type	Model Number		Flow Avg. C_v	Pressure Range psig (bar)
				R/Rp Thread	NPT Thread		
Silencers	Aluminum	1/8	Male	D5500A1003	5500A1003	1.2	0-290 (0-20) maximum
		1/4	Male	D5500A2003	5500A2003	2.1	
		3/8	Male	D5500A3013	5500A3013	2.7	
				D5500A3003	5500A3003	4.3	
		1/2	Male	D5500A4003	5500A4003	4.7	
		3/4	Male	D5500A5013	5500A5013	5.1	
				D5500A5003	5500A5003	12	
		1	Male	D5500A6003	5500A6003	15	
		1-1/4	Male	D5500A7013	5500A7013	16	
			Female	D5500A7001	5500A7001	24	
		1-1/2	Female	D5500A8001	5500A8001	30	
		2	Female	D5500B9001	5500B9001	34	
		2-1/2	Female	D5500A9002	5500A9002	104	
	Stainless Steel	1/4	Male	D5500B2004	5500B2004	1.4	0-175 (0-12.3) maximum
		1/2	Male	D5500B4004	5500B4004	3.0	
		1	Male	D5500B6004	5500B6004	10	
		2	Male	D5500A9004	5500A9004	28	
	316 Stainless Steel Sintered Element	1/4	Male	D5500A2005	5500A2005	1.5	0-125 (0-8.6)
		1/2	Male	D5500A4005	5500A4005	3.5	
		1	Male	D5500A6005	5500A6005	5.7	

FEMALE SILENCER CONNECTORS

	Material	Fitting Pipe Size	Thread Type	Model Number	
				BSPT Thread	NPT Thread
Hex Nipples	Steel	1-1/4	Male - Male	106J39	491J27
		1-1/2	Male - Male	122J39	488J27
		2	Male - Male	108J39	489J27
	Stainless Steel	2-1/2	Male - Male	123J39	490J27

LOCKOUT DEVICE

	Valve Model Use	Model Number
Lockout Hasp	Lockout L-O-X® Classic Style	356A30

SOLENOID PILOT OPTIONS

	Kit Number		
	24 V DC	110-120 V AC, 50-60 Hz	230 V AC, 50-60 Hz
Indicator Light Kits	862K87-W	862K87-Z	862K87-Y

Notes

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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	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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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.

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