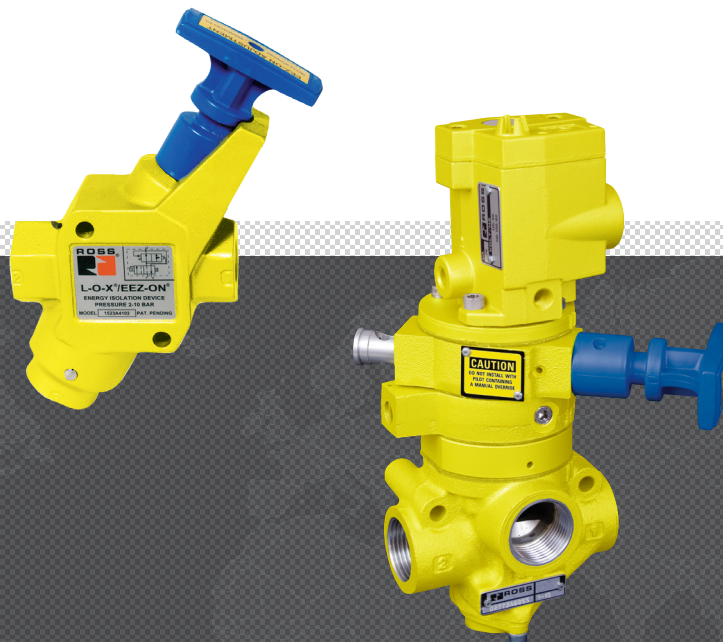




# ENERGY ISOLATION L-O-X<sup>®</sup> WITH EEZ-ON<sup>®</sup> VALVES 15 & 27 SERIES

## PRODUCT CATALOG



**FLU-TECH CO. LTD.**

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# Manual Lockout L-O-X® Valves with Soft Start EEZ-ON® 15 Series

## Product Overview

### Energy Isolation for Lockout/Tagout (LOTO) – Lockout with Soft-Start

The L-O-X® with EEZ-ON® operation valve combines shut-off certainty with gradual pressurization upon start-up.

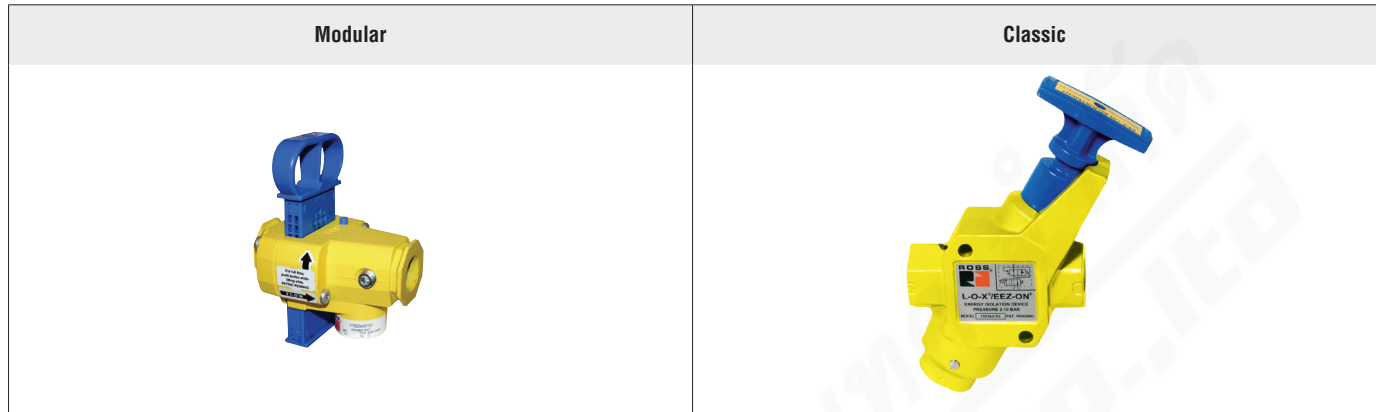


Illustration examples.

Combining two functions critical to safety concerns in any application, the ROSS L-O-X® valve with EEZ-ON® operation provides the shutdown and the gradual start-up (or, “Soft-Start”) capabilities today’s systems require. In addition, because the L-O-X® valve with EEZ-ON® operation is two units in one, you eliminate the need for multiple components.

The valve permits the gradual increase of downstream pressure in the pneumatic circuit that has just been actuated. The same unit also features a shut-off and lockout of system air to limit inadvertent actuation. Exhaust port is threaded for the installation of a silencer or a line for remote exhausting.

### VALVE FEATURES

<b>Unique Appearance</b>	Easily identifiable with a yellow body and a blue handle to control ON/OFF positions
<b>Soft-Start Function</b>	Gradual re-application of pneumatic pressure prevents rapid equipment movement at startup
<b>Quick Energy Dump</b>	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
<b>Locking Protection</b>	Design only allows the valve to be lockable in the OFF position
<b>PTFE Seals</b>	Fluorocarbon slipper seals for easy shifting, even after long periods of inactivity
<b>Visible Pressure Indication Option</b>	Includes integrated sensing port for pressure verification with either a visual pop-up indicator or electrical pressure switch
<b>Mounting</b>	Inline or Surface

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

## STANDARD SPECIFICATIONS

<b>GENERAL</b>	Function		3/2 Valve		
	Construction Design		Spool		
	Actuation		Pneumatic	Manual	
	Mounting	Type	Modular	Inline	
			Classic	Inline or Surface	
		Orientation	Any, preferably vertical; easy access to the handle		
	Connection		Threaded Port	NPT G	
Minimum Operation Frequency		Once per month, to ensure proper function			
<b>OPERATING CONDITIONS</b>	Temperature		Ambient	40° to 175°F (4° to 80°C)	
			Media		
	Flow Media		Filtered air		
	Operating Pressure	Valve Style	Modular	0 to 200 psig (0 to 14 bar)	
Classic			0 to 150 psig (0 to 10 bar)		
<b>LOCK HOLE MEASURES</b>	Diameter		0.27 inch (7.0 mm)		
	Length of Hole		0.43 inch (10.9 mm)		
<b>CONSTRUCTION MATERIAL</b>	Valve Body		Cast Aluminum		
	Spool		Stainless Steel		
	Seals		Fluorocarbon		

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

## PRODUCT CREDENTIALS

<p>Performance Level Per ISO 13849-1:2015</p>	<p>Declaration of Conformity</p>
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# Ordering Information

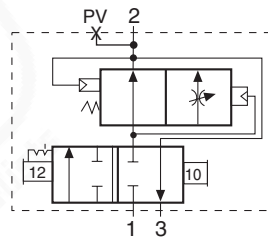
## MANUAL LOCKOUT L-O-X® VALVES WITH SOFT-START EEZ-ON®

## 3-Way 2-Position Valves

Valve Style	Body Size	Port Size		Valve Model Number	
		In-Out	Exhaust	NPT Thread	G Thread
Modular	3/4	1/4	3/4	Y1523A2103	YD1523A2103
		3/8	3/4	Y1523A3103	YD1523A3103
		1/2	3/4	Y1523A4103	YD1523A4103
		3/4	3/4	Y1523A5113	YD1523A5113
Classic	1/2	3/8	3/4	Y1523B3102	YD1523B3102
		1/2	3/4	Y1523B4102	YD1523B4102
		3/4	3/4	Y1523B5112	YD1523B5112
	1	3/4	1-1/4	Y1523B5102	YD1523B5102
		1	1-1/4	Y1523B6102	YD1523B6102
		1-1/4	1-1/4	Y1523B7112	YD1523B7112

Body	Size		Flow Cv (NI/min)		≈ Weight lb (kg)
	Port 1, 2	Port 3	1-2	2-3	
3/4	1/4	3/4	3.7 (3600)	7.8 (7700)	1.7 (0.8)
	3/8	3/4	5.1 (5000)	8.3 (8200)	
	1/2	3/4	5.5 (5400)	8.6 (8500)	1.8 (0.8)
	3/4	3/4	5.6 (5500)	8.1 (8000)	
1/2	3/8	3/4	3.6 (3500)	2.8 (2800)	2.0 (0.9)
	1/2	3/4	4.9 (4800)	3.5 (3400)	
	3/4	3/4	5.1 (5000)	2.9 (2900)	
1	3/4	1-1/4	10 (9800)	9.0 (8900)	3.0 (1.4)
	1	1-1/4	11 (11000)	9.0 (8900)	
	1-1/4	1-1/4	12 (12000)	9.0 (8900)	

### Valve Schematic



### Valve Closed

With a short push of the blue handle inward, the flow of supply is blocked and downstream air is exhausted via the exhaust port at the bottom of the valve. It is required by OSHA and ISO 14118 that the L-O-X® valves with EEZ-ON® operation be padlocked in this position to prevent the handle from being pulled outward inadvertently when potential for human injury exists or servicing machinery.

### Modular Style Valve

The blue handle will only shift part way due to a mechanical stop button allowing only partial flow from inlet to downstream causing the pressure to increase at a slower rate.

### EEZ-ON® Function

### Classic Style Valve

With the blue handle pulled out, the adjustable needle valve (accessed through top of handle) setting determines the rate of pressure buildup.


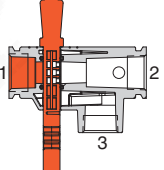
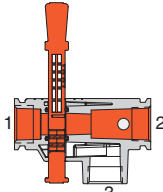
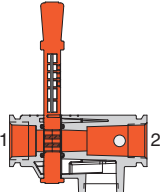

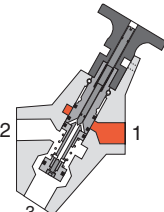
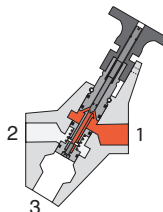
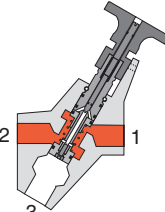
### Modular Style Valve

Pressing the mechanical stop button allows the blue handle to be shifted completely open allowing full flow from inlet to downstream.

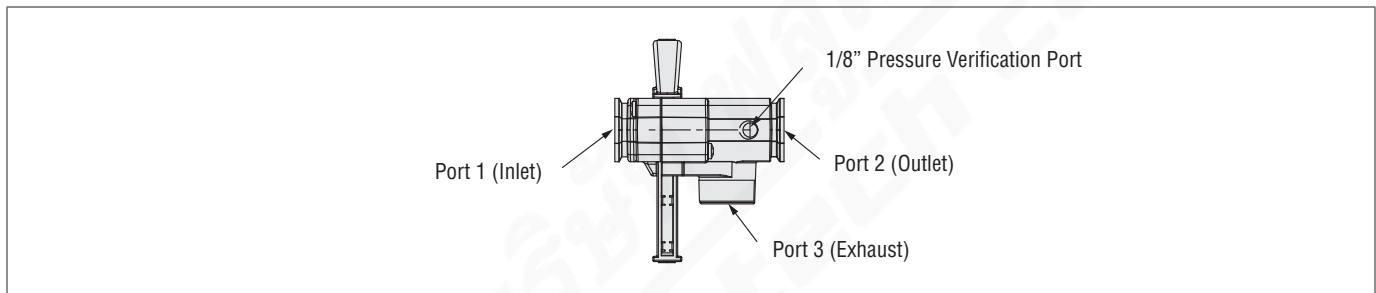
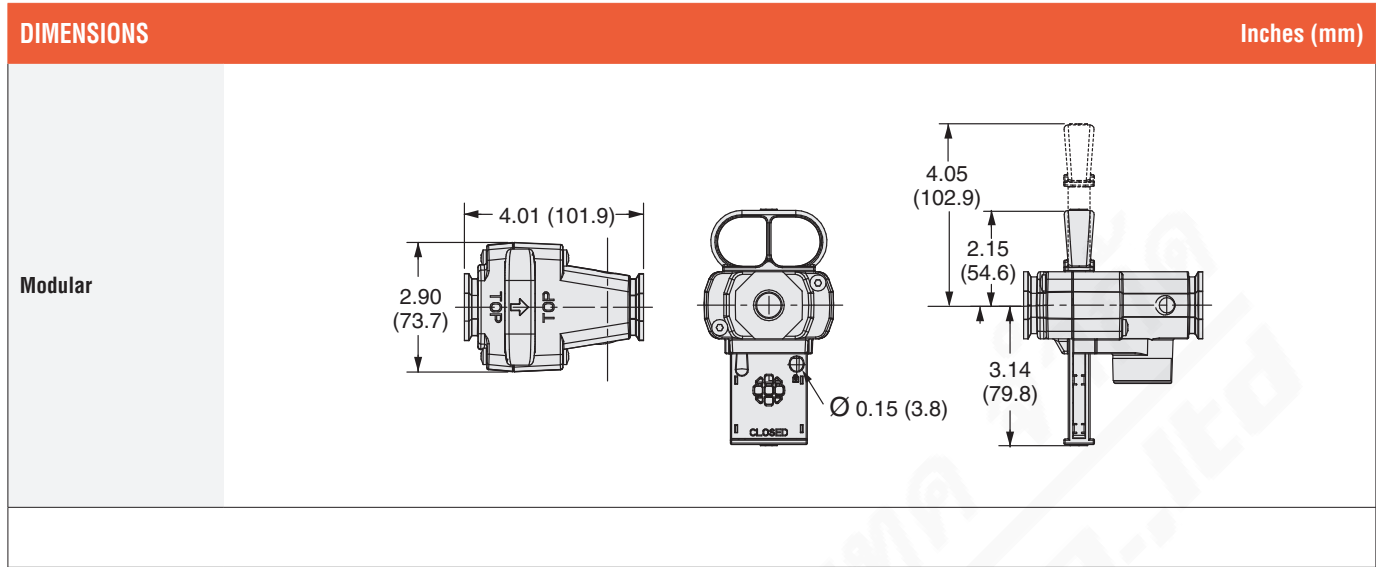
### Valve Open

### Classic Style Valve

After the blue handle is pulled out and pressure downstream has gradually increased, the valve automatically changes to a fully open state, allowing full flow from inlet to downstream. Full flow is achieved at approximately 50% of inlet pressure.

Valve Style	Valve Closed	EEZ-ON® Function	Valve Open
<b>Modular</b> 			
<b>Classic</b> 			

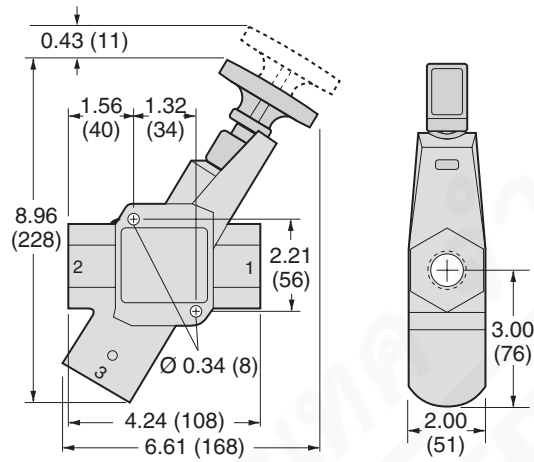
# Valve Technical Data



## DIMENSIONS

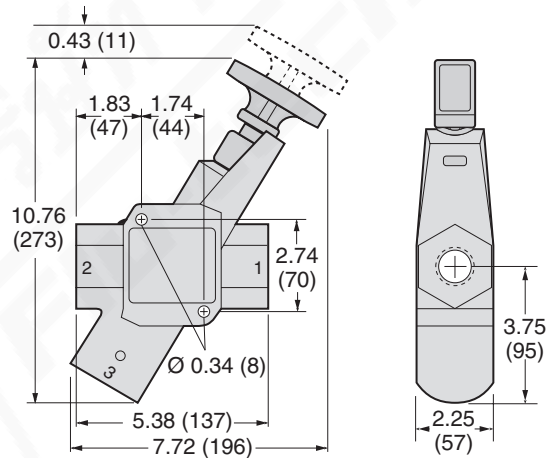
Inches (mm)

Body Size 1/2

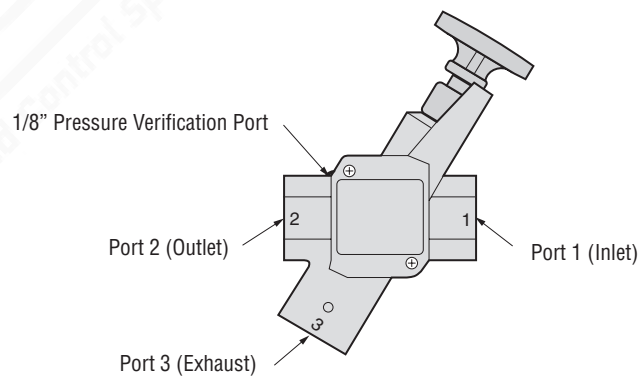


Classic

Body Size 1



Downloadable CAD models available.



# Valves with Manual Lockout L-O-X® Control with Soft-Start EEZ-ON® 27 Series Product Overview

## Energy Isolation for Lockout/Tagout (LOTO) – Lockout with Soft-Start

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.

The Soft-Start EEZ-ON® valve provides gradual re-application of pneumatic energy to prevent rapid equipment movement at startup.

Solenoid Pilot Controlled	Pressure Controlled
	

Illustration examples.

The solenoid pilot 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. As with all L-O-X® valves, the L-O-X® handle can be padlocked in the closed position. As a further precaution against inadvertent air flow, the solenoid pilot controlled has no manual override.

After energy isolation has been completed the rapid introduction of high pressure can cause motion and unnecessary machine wear or damage. The L-O-X® valve with soft-start EEZ-ON® function features all the advantages of the L-O-X® with the added benefit of causing the pressure to increase gradually allowing for a controlled motion to occur.

## VALVE FEATURES

<b>Poppet Design</b>	Dirt tolerant, wear compensating for quick response and high flow capacity
<b>Manual Lockout Control</b>	Operated like the manual lockout L-O-X® valve, the position of the blue handle indicates instantaneous full flow pressurizing or exhausting capability
<b>Solenoid Pilot</b>	Allows the air supply to be turned on or off by remote electrical control when valve is not in the lockout position
<b>Soft-Start Control</b>	An adjustable restriction within the EEZ-ON® valve determines the rate of downstream pressure buildup, and consequently the time delay for the full opening of the EEZ-ON® valve
<b>Quick Energy Dump</b>	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
<b>Locking Protection</b>	Design only allows the valve to be lockable in the OFF position

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



## STANDARD SPECIFICATIONS

GENERAL	Function		3/2 Valve	Normally Closed
	Construction Design		Poppet & Spool	
	Actuation		Electrical	Manual
			Pneumatic	
	Mounting	Type	Inline	
		Orientation	Any, preferably vertical; easy access to the handle	
Connection		Threaded Port	NPT G	
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		15 to 150 psig (1 to 10 bar)	
Pilot Supply Pressure (Solenoid and Manual Lockout Controlled valves only)		Internal	Must meet minimum operating pressure	
		External	Must be equal to or greater than inlet pressure, and meet minimum operating pressure	

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

CONSTRUCTION MATERIAL	Valve Body		Cast Aluminum
	Poppet		Acetal and Stainless Steel
	Spool (Lockout Valve)		Stainless Steel
	Seals		Buna-N; 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.
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**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

## PRODUCT CREDENTIALS

<b>Performance Level</b> Per ISO 13849-1:2015  	<b>Safety Integrity Level</b> Per IEC 2061:2001  	<b>Declaration of Conformity</b>  	<b>Certificate of Compliance</b>   Solenoid Pilot Valves
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# Ordering Information

## SOLENOID MANUAL LOCKOUT CONTROLLED VALVES WITH SOFT-START

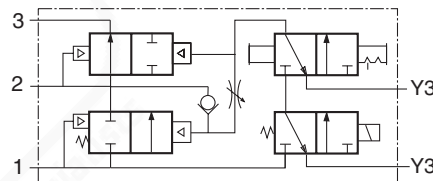
3-Way 2-Position Valves

Port Size		Body Size	Valve Model Number					
In-Out	Exhaust		NPT Thread			G Thread		
			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	Y2773B2075W	Y2773B2075Z	Y2773B2075Y	YD2773B2075W	YD2773B2075Z	YD2773B2075Y
3/8	1/2	3/8	Y2773B3075W	Y2773B3075Z	Y2773B3075Y	YD2773B3075W	YD2773B3075Z	YD2773B3075Y
1/2	1/2	3/8	Y2773B4085W	Y2773B4085Z	Y2773B4085Y	YD2773B4085W	YD2773B4085Z	YD2773B4085Y
	1	3/4	Y2773B4075W	Y2773B4075Z	Y2773B4075Y	YD2773B4075W	YD2773B4075Z	YD2773B4075Y
3/4	1	3/4	Y2773B5075W	Y2773B5075Z	Y2773B5075Y	YD2773B5075W	YD2773B5075Z	YD2773B5075Y
1	1	3/4	Y2773B6085W	Y2773B6085Z	Y2773B6085Y	YD2773B6085W	YD2773B6085Z	YD2773B6085Y
	1-1/2	1-1/4	Y2773B6075W	Y2773B6075Z	Y2773B6075Y	YD2773B6075W	YD2773B6075Z	YD2773B6075Y
1-1/4	1-1/2	1-1/4	Y2773B7075W	Y2773B7075Z	Y2773B7075Y	YD2773B7075W	YD2773B7075Z	YD2773B7075Y
1-1/2	1-1/2	1-1/4	Y2773B8085W	Y2773B8085Z	Y2773B8085Y	YD2773B8085W	YD2773B8085Z	YD2773B8085Y

For other voltages, consult ROSS.

Size			Flow Cv (l/min)		≈ Weight lb (kg)
Port 1, 2	Port 3	Body	1-2	2-3	
1/4	1/2	3/8	1.9 (1900)	3.3 (3200)	5.3 (2.4)
3/8	1/2	3/8	2.9 (2800)	4.4 (4300)	
1/2	1/2	3/8	3.8 (3800)	5.0 (4900)	
	1	3/4	6.2 (6100)	9.4 (9300)	6.0 (2.7)
3/4	1	3/4	8.2 (8100)	10 (9800)	
1	1	3/4	9.1 (9000)	12 (12000)	9.5 (4.3)
	1-1/2	1-1/4	21 (21000)	27 (27000)	
1-1/4	1-1/2	1-1/4	29 (29000)	29 (29000)	
1-1/2	1-1/2	1-1/4	30 (30000)	30 (30000)	

### Valve Schematic



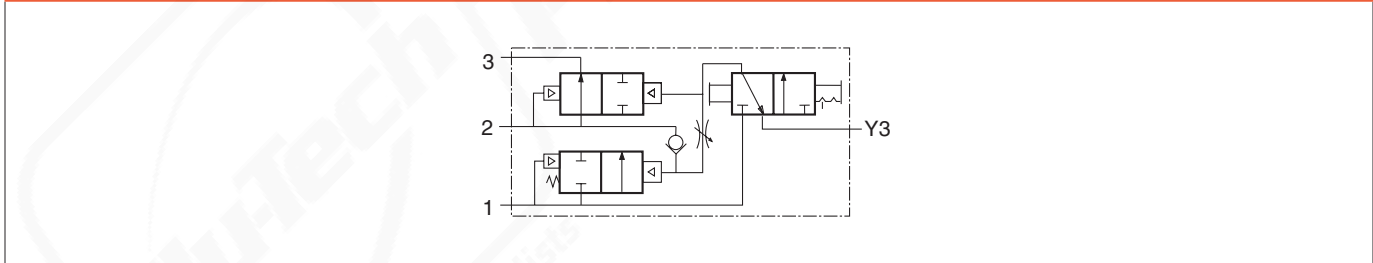
NOTE: Per specifications and regulations, these products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

## MANUAL LOCKOUT CONTROLLED VALVES WITH SOFT-START 3-Way 2-Position Valves

Port Size		Body Size	Valve Model Number	
In-Out	Exhaust		NPT Thread	G Thread
1/4	1/2	3/8	Y2783B2055	YD2783B2055
3/8	1/2	3/8	Y2783B3055	YD2783B3055
1/2	1/2	3/8	Y2783B4065	YD2783B4065
	1	3/4	Y2783B4055	YD2783B4055
3/4	1	3/4	Y2783B5055	YD2783B5055
1	1	3/4	Y2783B6065	YD2783B6065
	1-1/2	1-1/4	Y2783A6055	YD2783A6055
1-1/4	1-1/2	1-1/4	Y2783A7055	YD2783A7055
1-1/2	1-1/2	1-1/4	Y2783A8065	YD2783A8065

Size			Flow Cv (l/min)		≈ Weight lb (kg)
Port 1, 2	Port 3	Body	1-2	2-3	
1/4	1/2	3/8	1.9 (1900)	3.3 (3200)	4.3 (2.0)
3/8	1/2	3/8	2.9 (2800)	4.4 (4300)	
1/2	1/2	3/8	3.8 (3800)	5.0 (4900)	
	1	3/4	6.2 (6100)	9.4 (9300)	4.8 (2.2)
3/4	1	3/4	8.2 (8100)	10 (9800)	
1	1	3/4	9.1 (9000)	12 (12000)	7.9 (3.6)
	1-1/2	1-1/4	21 (21000)	27 (27000)	
1-1/4	1-1/2	1-1/4	29 (29000)	29 (29000)	
1-1/2	1-1/2	1-1/4	30 (30000)	30 (30000)	

### Valve Schematic



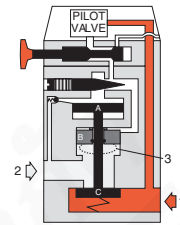
**NOTE:** Per specifications and regulations, these products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

# Valve Operation

## Solenoid Manual Lockout Controlled Valves with Soft-Start

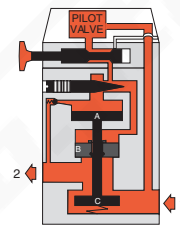
### L-O-X® Handle Open and Pilot Not Energized

Pilot air is blocked by the pilot. Any downstream pressure forces piston B (which slides on the valve stem) upward. This opens the exhaust port and vents the downstream line.



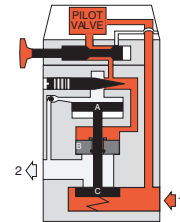
### Full Pressure

When the pressure on piston A reaches approximately 50 percent of inlet pressure, it is forced downward and opens inlet poppet C. Full inlet pressure now flows freely to the outlet port.



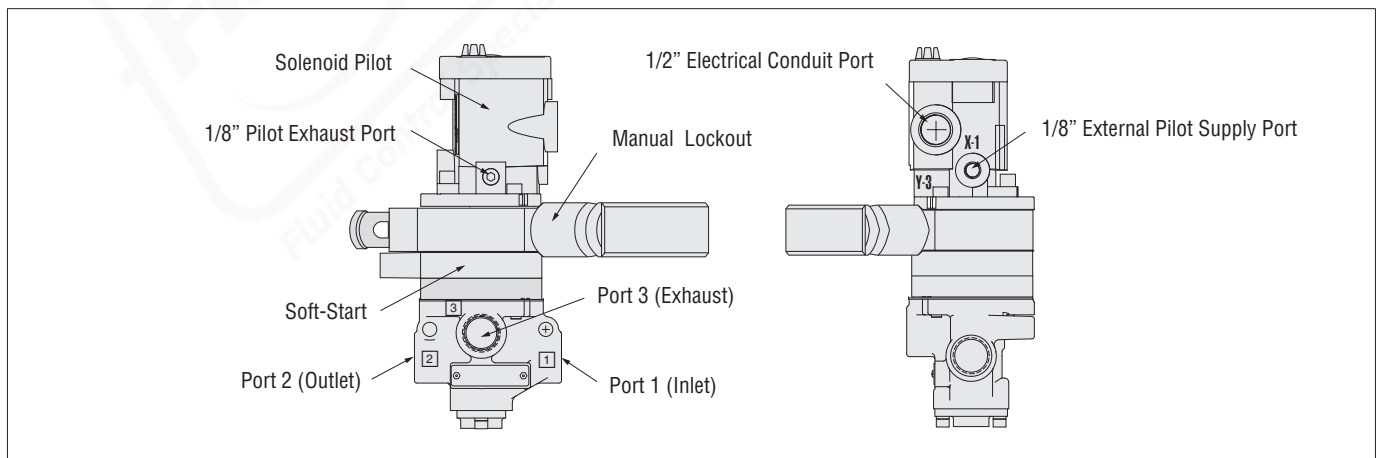
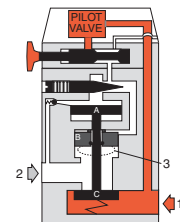
### L-O-X® Handle Open and Pilot Energized

Pilot air forces piston B downward to close the exhaust port. Pilot air flows past the adjusting needle, opens the ball check and begins slowly to pressurize the outlet line. At the same time, pressure is building up on piston A.



### L-O-X® Handle Closed

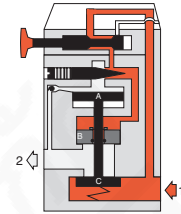
At any time the L-O-X® handle can be pushed inward, thereby closing off the flow of pilot air. Pilot air above pistons A and B is then vented to atmosphere. Piston A moves upward and closes inlet poppet C. Sliding piston B also moves upward to open the exhaust port and vents the downstream line.



## Manual Lockout Controlled Valves with Soft-Start

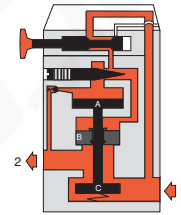
### L-O-X® Valve (Handle) Open

Pilot air forces piston B downward to close the exhaust port. Pilot air flows past the adjusting needle, opens the ball check and begins slowly to pressurize the outlet line. At the same time, pressure is building up on piston A.



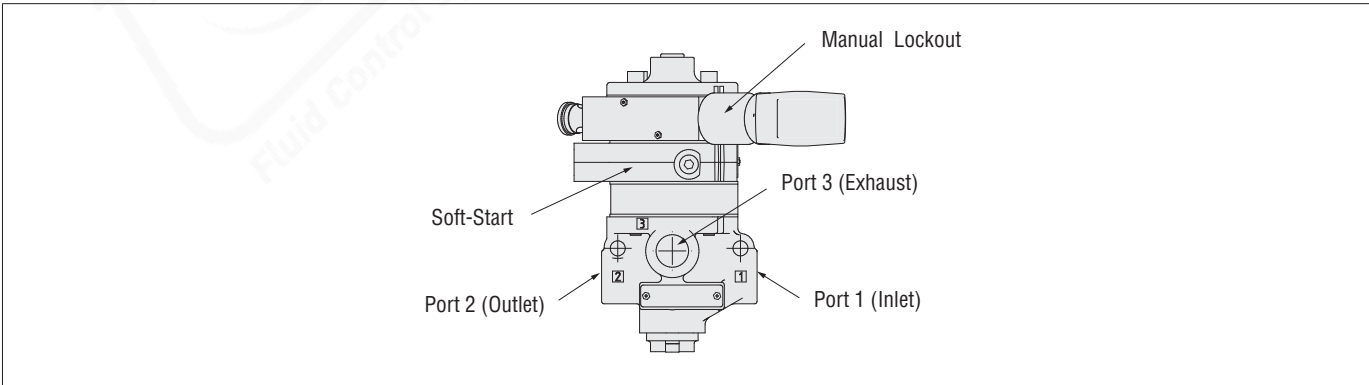
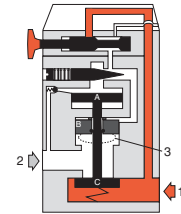
### Full Pressure

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.



### L-O-X® Valve (Handle) Closed

Pilot air forces piston B downward to close the exhaust port. Pilot air flows past the adjusting needle, opens the ball check and begins slowly to pressurize the outlet line. At the same time, pressure is building up on piston A.



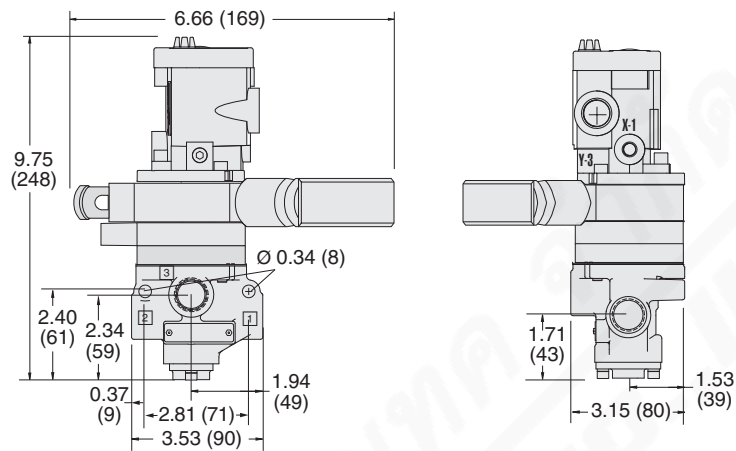
# Valve Technical Data

## Solenoid Manual Lockout Controlled Valves with Soft-Start

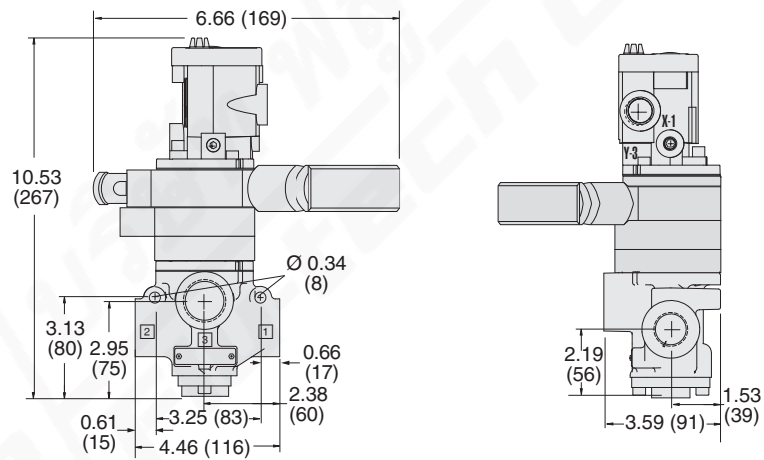
### DIMENSIONS

Inches (mm)

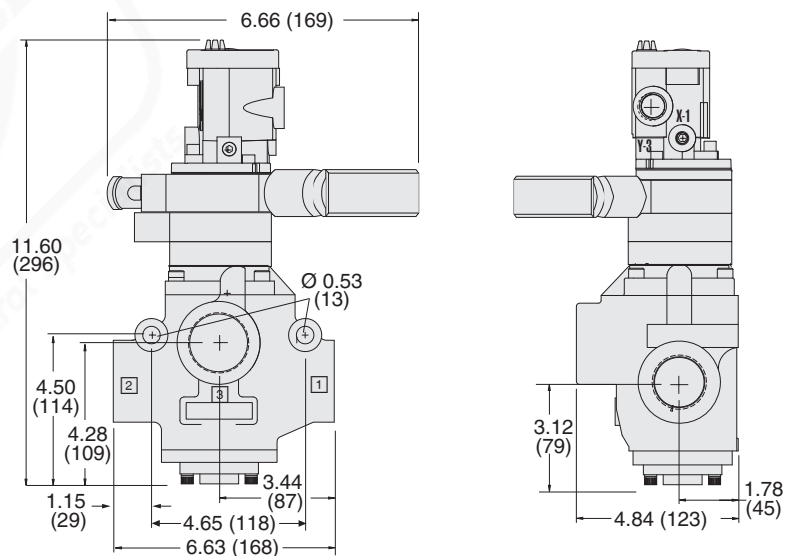
Body Size 3/8



Body Size 3/4



Body Size 1-1/4



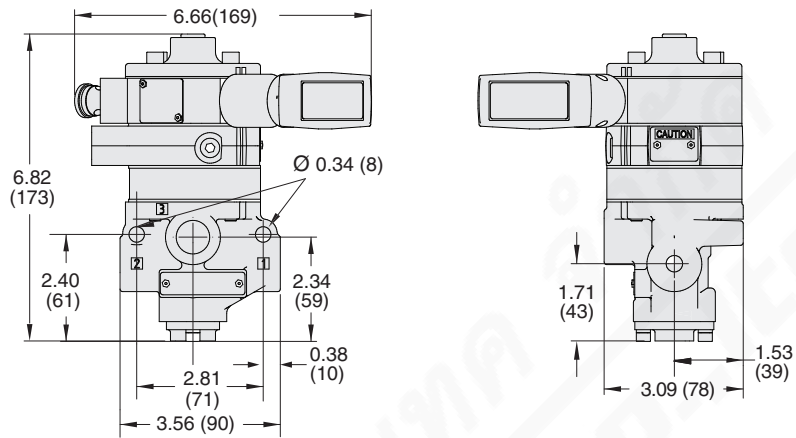
Downloadable CAD models available.

## Manual Lockout Controlled Valves with Soft-Start

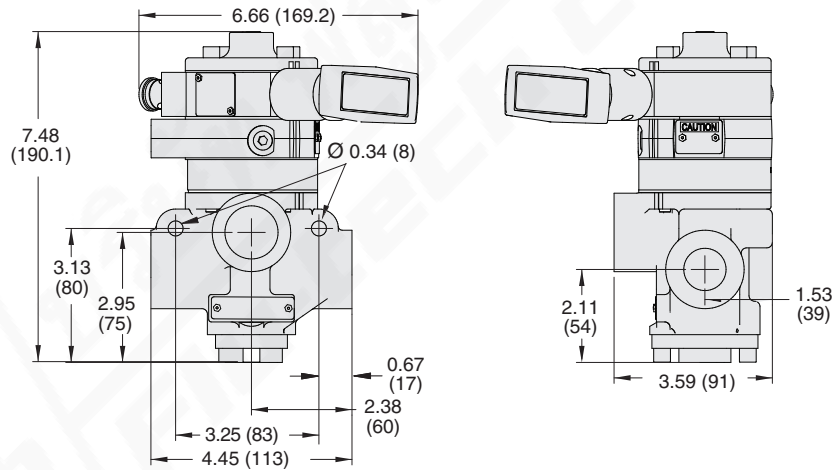
### DIMENSIONS

Inches (mm)

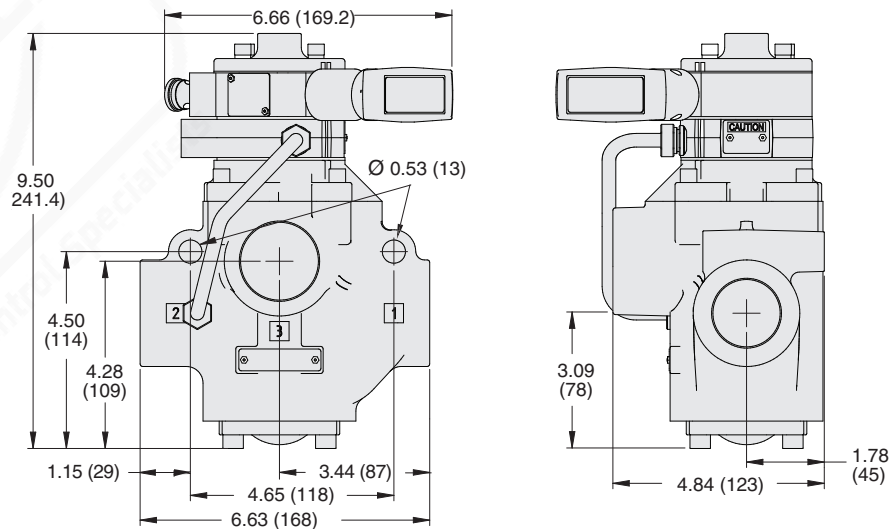
Body Size 3/8



Body Size 3/4



Body Size 1-1/4



Downloadable CAD models available.

## ENERGY RELEASE VERIFICATION



Visual Pressure Indicator	Pressure Switch
	

Illustration examples.

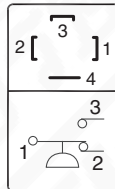
Visual Pressure Indicator	Verification Type	Installation Location	Indicator Type	Model Number	Port Thread
	Pneumatic	Pressure Sensing Port	Visual Pop-up Pin	988A30	1/8 NPT

Pressure Switch	Verification Type	Installation Location	Connector Type	Model Number	Port Thread	Factory Preset psi (bar)
	Electrical	Pressure Sensing Port or Downstream	DIN EN 175301-803 Form A	586A86	1/8 NPT	5 (0.3) falling

### Pinout

#### DIN EN 175301-803 Form A



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



**EXHAUST SILENCERS**

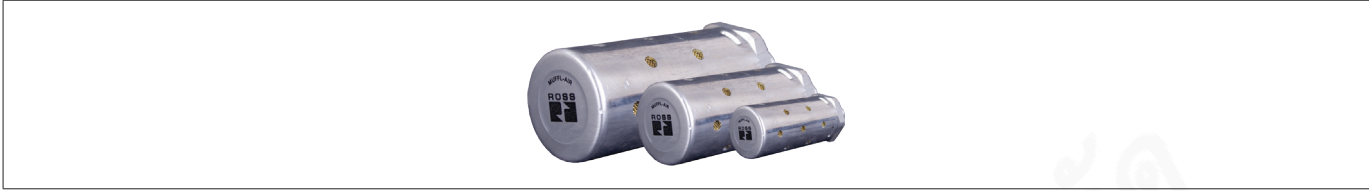


Illustration example.

SPECIFICATIONS	Silencer Material		Pressure Range psig (bar)		Schematic		
	Aluminum		0-290 (0-20) maximum				
Port Size	Thread Type	Flow C <sub>v</sub> (NI/min)	Model Number		Dimensions inches (mm)		≈ Weight lb (kg)
			NPT Thread	R/Rp Thread	Length	Hex Size (D)	
1/2	Male	6.8 (6700)	5500A4003	D5500A4003	3.6 (9)	1.25 (32)	0.2 (0.1)
3/4	Male	7.2 (7100)	5500A5013	D5500A5013	3.6 (9)	1.25 (32)	0.2 (0.1)
		15 (15000)	5500A5003	D5500A5003	5.3 (14)	2.0 (51)	0.9 (0.4)
1	Male	18 (18000)	5500A6003	D5500A6003	5.4 (14)	2.0 (51)	0.9 (0.4)
1-1/4	Male	24 (23000)	5500A7013	D5500A7013	5.5 (14)	2.0 (51)	0.9 (0.4)
	Female	42 (41000)	5500A7001	D5500A7001	5.7 (14)	2.5 (64)	1.4 (0.6)
1-1/2	Female	39 (38000)	5500A8001	D5500A8001	5.7 (14)	2.5 (64)	1.3 (0.6)


**FEMALE SILENCER CONNECTORS**

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

Illustration example.

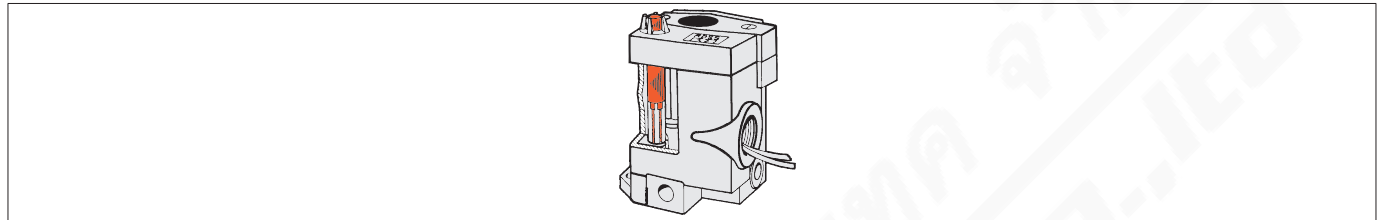
# Accessories

## LOCKOUT DEVICE

<b>Lockout Hasp</b>	<b>Valve Model Use</b>	<b>Model Number</b>	
	Lockout L-O-X® Classic Style	356A30	

*Illustration example.*

## SOLENOID PILOT INDICATOR LIGHT KITS



*Illustration example.*

<b>Indicator Light Kits</b>	<b>Kit Number</b>		
	<b>24 V DC</b>	<b>110-120 V AC, 50-60 Hz</b>	<b>230 V AC, 50-60 Hz</b>
	862K87-W	862K87-Z	862K87-Y
	<p>To visually verify valve operation, indicator light kits are available for single solenoid models. Indicator lights are standard on double solenoid valves. The indicator light is illuminated when the solenoid is energized.</p>		