

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





# Manual Lockout L-O-X<sup>®</sup> Valves 15 Series Product Overview



#### **Energy Isolation Safety Function**

The Lockout L-O-X<sup> $\otimes$ </sup> 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.



ROSS manual L-O-X<sup>®</sup> (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.

		SU		
Slim Line	Modular	Classic	High-Capacity	Stainless Steel

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					
-	Function			3/2 Valve	
GENERAL	Construction Design			Spool	
	Actuation			Manual	
	Mounting	Туре	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	
		Slim Line Modular	Ambient		
	Temperature	Classic High-Capacity	Media	- 40° to 175°F (4° to 80°C)	
	-		Ambient		
OPERATING		Stainless Steel	Media	- 30° to 175°F (-1° to 80°C)	
CONDITIONS	Flow Media			Filtered air	
		Slim Line		0 to 145 psig (0 to 10 bar)	
		Modular		0 to 200 psig (0 to 14 bar)	
	Operating Pressure	Classic High Capacity Stainless Steel		0 to 300 psig (0 to 20.7 bar)	
	Slim Line Modular	Diameter	All Sizes	0.27 inch (7.0 mm)	
	Classic High-Capacity	Length of <mark>Ho</mark> le	All Sizes	0.43 inch (10.9 mm)	
LOCK HOLE MEASURES		Diameter	All Sizes	0.34 inch (8.64 mm)	
	Stainlass Steel	ricts	Port Size 1/4	0.44 in (11.17 mm)	
	Stalliess Steel	Length of Hole	Port Size 1/2	0.47 in (11.93 mm)	
	151		Port Size 1 and 2	0.55 inch (13.97 mm)	
CONSTRUCTION	Valve Body	Slim Line Modular Classic High-Capacity		Cast Aluminum	
MATERIAL		Stainless Steel		316 Stainless Steel	
	Spool			Stainless Steel	
	Seals			Fluorocarbon	
	IMPORTANT NOTE: Ple	ase read carefully a	nd 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<sup>®</sup> valves with EEZ-ON<sup>®</sup> operation.

PRODUCT CREDENTIALS					
Safety Category	EAC Conformity Declaration	Canadian Registration Number (CRN)			
Cat. 1 PL b	ERC	Available for appropriately tested valves			



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# **Ordering Information**

### MANUAL LOCKOUT L-O-X® VALVES

MANUAL LOCKOUT L	MANUAL LOCKOUT L-O-X® VALVES 3-Way 2-Position Valves					
Valve Style	Port	Size	Body Size	Valve Mod	del 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	
	1/4	3/4	3/4	YD1523A2003	Y1523A2003	
Modular	3/8	3/4	3/4	YD1523A3003	Y1523A3003	
Modular	1/2	3/4	3/4	YD1523A4003	Y1523A4003	
	3/4	3/4	3/4	YD1523A5013	Y1523A5013	
	3/8	3/4	1/2	YD1523C3002	Y1523C3002	
	1/2	3/4	1/2	YD1523C4002	Y1523C4002	
Classia	3/4	3/4	1/2	YD1523C5012	Y1523C5012	
Classic		1-1/4	1	YD1523C5002	Y1523C5002	
	1	1-1/4	1	YD1523C6002	Y1523C6002	
	1-1/4	1-1/4	1	YD1523C7012	Y1523C7012	
High Consoity	1-1/2	2	2	YD1523C8002	Y1523C8002	
піуп-сарасну	2	2	2	YD1523C9012	Y1523C9012	
	1/4	1/4	1/4	D1523B2004	1523B2004	
	3/8	1/2	1/2	D1523B3004	1523B3004	
	1/2	1/2	1/2	D1523B4004	1523B4004	
Stainless Steel	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	FI	Flow $\mathrm{C}_{\mathrm{v}}$		
	1, 2	3		1-2	2-3	а (кд)	
Slim Lino	1/4	3/8	3/8	1.8	1.8	8 2 (2 8)	
Shin Line	3/8	3/8	3/8	2.6	2.6	0.3 (3.0)	
	1/4	3/4	3/4	3.7	7.8	17(08)	
Modular	3/8	3/4	3/4	5.1	8.3	1.7 (0.0)	
mouulai	1/2	3/4	3/4	5.5	8.6	1.8 (0.8)	
	3/4	3/4	3/4	5.6	8.1	1.0 (0.0)	
	3/8	3/4	1/2	4.7	3.6		
	1/2	3/4	1/2	7.1	4.0	2.0 (0.9)	
Classic	2/4	3/4	1/2	8.3	4.1		
0103310	5/4	1-1/4	1	13	9.0		
	1	1-1/4	1	17	9.5	3.0 (1.4)	
	1-1/4	1-1/4	1	19	9.7		
High-Canacity	1-1/2	2	2	36	51	8.3 (3.7)	
Ingir-oapacity	2	2	2	40	52		
	1/4	1/4	1/4	2.1	2.1	3.8 (1.7)	
	3/8	1/2	1/2	5.8	6.2	60(27)	
Stainless Steel	1/2	1/2	1/2	5.8	6.2	0.0 (2.7)	
	3/4	1	1	14.3	17	13.0 (5.0)	
	1	1	1	14.3	17	10.0 (0.9)	
	1-1/2	2	2	39	45	35.0 (15.9)	
	2	2	2	39	45	00.0 (10.0)	

# **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<sup>®</sup> 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			2 3
High-Capacity			
Stainless Steel			

# **Valve Technical Data**



## **Valve Technical Data**

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or 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.



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# Valves with Manual Lockout L-O-X<sup>®</sup> Control 27 Series Product Overview



# The manual L-O-X+ values. Valve Schematics Body Size Solenoid Manual Lockout Controlled 3/8 thru 2 Image: Colspan="2">Image: Colspan="2" Image: Colspan="2

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<sup>®</sup> handle is in the outward position. Air flows only if the L-O-X<sup>®</sup> handle is outward and the solenoid pilot is energized. When the L-O-X<sup>®</sup> 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 <sup>®</sup> 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.

#### **Energy Isolation Safety Function**

The **Lockout L-O-X**<sup>®</sup> 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<sup>®</sup> valve is the same as that of the manual L-O-X<sup>®</sup> valves.

# **Specifications**



	STANDARD SPECIFICATIONS					
	Function			3/2 Valve		
GENERAL	Construction Design			Poppet and Spool		
	Actuation			Electrical - Solenoid Manual Lockout Controlled Pneumatic -Internal Pressure Manual Lockout Controlled		
	Туре			Inline		
	wounting	Orientation		Any, preferably vertical; easy access to to the handle		
	Connection			Threaded; G, NPT		
	Minimum Operation Fr	requency		Once per month, to ensure proper function		
		Solenoid Manual Lockout	Ambient	40° to 120°F (4° to 50°C)		
		Controlled Valves	Media	40° to 175°F (4° to 80°C)		
	Temperature	Manual Lockout Controlled	Ambient			
		Valves	Media	40° to 175°F (4° to 80°C)		
OPERATING CONDITIONS	Flow Media			Filtered air		
CONDITIONS	Operating Pressure	Valve	3/8 through 1-1/2	15 to 150 psig (1 to 10 bar)		
		Body Size	2&3	30 to 150 psig (2 to 10 bar)		
	External Pilot Supply (solenoid and manual	lockout controlled only)	in	Must be equal to or greater than inlet pressure		
	Solenoids	í C	91	AC or DC power; rated for continuous duty		
ELECTRICAL DATA For Solenoid Pilot	Operating Voltage	UP		24 volts DC 110-120 volts AC, 50/60 Hz 230 volts AC, 50/60 Hz		
	Power Consumption (each solenoid)	JA FE		24 V DC – 14 watts 110-120 V AC, 230 V AC – 87 VA inrush, 30 VA holding		
	Valve Body		-	Cast Aluminum		
	Poppet			Acetal and Stainless Steel		
CONSTRUCTION	Spool (Lockout Valve)			Stainless Steel		
MATERIAL		Valve	3/8 through 2	Buna-N		
	Seals	Body Size	3	Fluorocarbon		
SAFETY DATA	AFETY DATASafety 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 NO	TE: Please read carefully and	thoroughly all of t	he CAUTIONS, WARNINGS on the inside back cover.		
lf a s	ystem requires gra	idual buildup of downstr	eam pressure,	see Manual L-O-X <sup>®</sup> valves with EEZ-ON <sup>®</sup> operation.		





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# **Ordering Information**

SOLENOID AND MANUAL LOCKOUT CONTROLLED VALVES 3-Way 2-Position Valves									
Port	Size	Dedu		Valve Model Number					
101	0126	Size		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	
1/0	1/2	3/8	YD2773A4082W	YD2773A4082Z	YD2773A4082Y	Y2773A4082W	Y2773A4082Z	Y2773A4082Y	
1/2	1	3/4	YD2773A4072W	YD2773A4072Z	YD2773A4072Y	Y2773A4072W	Y2773A4072Z	Y2773A4072Y	
3/4	1	3/4	YD2773A5072W	YD2773A5072Z	YD2773A5072Y	Y2773A5072W	Y2773A5072Z	Y2773A5072Y	
4	1	3/4	YD2773A6082W	YD2773A6082Z	YD2773A6082Y	Y2773A6082W	Y2773A6082Z	Y2773A6082Y	
I	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 1/0	1-1/2	1-1/4	YD2773A8082W	YD2773A8082Z	YD2773A8082Y	Y2773A8082W	Y2773A8082Z	Y2773A8082Y	
1-1/2	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, co	onsult ROSS	S.					·	

P	ort Size	Flow C <sub>v</sub>		Weight	
1, 2	3		1-2	2-3	lb (kg)
1/4	1/2	3/8	2.5	3.1	
3/8	1/2	3/8	3.6	5.3	3.5 (1.6)
1/0	1/2	3/8	3.3	5.3	
1/2	1	3/4	6.3	9.2	
3/4	1	3/4	7.7	11	4.3 (1.9)
4	1	3/4	8.0	12	
1	1-1/2	1-1/4	23	34	
1-1/4	1-1/2	1-1/4	30	32	8.0 (3.6)
1.1/0	1-1/2	1-1/4	30	31	
1-1/2	2-1/2	2	68	70	
2	2-1/2	2	70	70	17.5 (7.9)
2-1/2	2-1/2	2	70	71	
3	2-1/2	3	140	71	115.0 (53.0)

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# **Ordering Information**

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3-Way 2-Position Valves

#### MANUAL LOCKOUT CONTROLLED VALVES

Port Size		Body Size		Valve Model Number		
In-Out	Exhaust	body 0120	G Th	read	NPT Thread	
1	1-1/2	1-1/4	YD278	3A6006	Y2783A6006	
1-1/4	1-1/2	1-1/4	YD278	3A7006	Y2783A7006	
1.1/0	1-1/2	1-1/4	YD278	3A8016	Y2783A8016	
1-1/2	2-1/2	2	YD278	3A8006	Y2783A8006	
2	2-1/2	2	YD278	3A9006	Y2783A9006	
2-1/2	2-1/2	2	YD2783A9016		Y2783A9016	
3	2-1/2	3	-		Y3900A0829	
Port Size		De de Oler	Flow $C_v$		Weight	
1, 2	3	bouy Size	1-2 2-3		lb (kg)	
1	1-1/2	1-1/4	23	34		
1-1/4	1-1/2	1-1/4	30	32	7.0 (3.2)	
1.1/0	1-1/2	1-1/4	30	31		
1-1/2	2-1/2	2	68	70	1	
2	2-1/2	2	70	70	15.3 (6.9)	
2-1/2	2-1/2	2	70	71		
3	2-1/2	3	140	71	115.0 (53.0)	

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#### **Solenoid and Manual Lockout Controlled Valves**

#### **Pilot De-energized**

With the solenoid pilot de-energized (regardless of the position of the L-O-X<sup> $\otimes$ </sup> 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 $^{\odot}$  control in the open position, air can flow from inlet to outlet port. The exhaust port is closed.



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With the handle pushed inward, the L-O-X<sup>®</sup> 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.



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# ROSS

#### **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<sup>®</sup> 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<sup>®</sup> 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.

Manual Lockout Exhaust Port 1/8" Pressure Verification Port Outlet Port Outlet Port Outlet Port Outlet Port Utlet Port

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# **Valve Technical Data**

#### **Solenoid and Manual Lockout Controlled Valves**



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#### Manual Lockout Controlled Valves



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# **Accessories & Options**

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ENERGY RELEASE VERIFICATION													
Visual Pressure	Verification Type	Valve Type	Indicator Type	Model Number		Port Thread							
Indicator	Draumatia	Lockout L-O-X®	Visual Pop-up Pin	988A30		- 1/8 NPT							
	Pheumatic	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							
	Licotrical	Stainless Steel L-O-X®	M12	1162A30	5 (0.0) failing								
Connectors Pinout													
DIN EN 175301-803 Form A		M12											
2   3   1 - Common     2 - Normally Closed   2 - Normally Closed     3 - Normally Open   6 - Ground		1   -   2   1 - Circuit 1, Red/White   1 - Common     2   -   All Red   2 - Normally Close     3   3 - Green   3 - Green   3 - Normally Open     4   -   5 - Red/Black   2 - Normally Close     6   6 - Red Blue   -   -											

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# **Accessories & Options**



SILENCERS												
	Valve Model	Material	Port Size	Thread Type	Model Number		Flow	Pressure Range				
					R/Rp Thread	NPT Thread	Avg. C <sub>v</sub>	psig (bar)				
	Lockout L-0-X®	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					
Silencers					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 Lockout L-O-X®	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					
		Material	Port Size	Thread Type	Model Number		Flow	Pressure Range				
					G Thread	NPT Thread	Avg. C <sub>v</sub>	psig (bar)				
		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					
			LOCK	OUT DEVIC	E							
Lockout Hasp	Valve Model Use			Model Number								
	Lockout L-O-X <sup>®</sup> Classic Style			356A30								
SOLENOID PILOT OPTIONS												
Indicator Light Kits	Kit Number											
	2	4 V DC		110-120 V AC, 50-60 Hz			230 V AC, 50-60 Hz					
	86		862K87-Z			862K87-Y						



**บริษัท ฟลูเทค จำกัด** 845/3-4 หมู่ 3 ถ.เทพารักษ์ ต.เทพารักษ์ อ.เมือง จ.สมุทรปราการ 10270