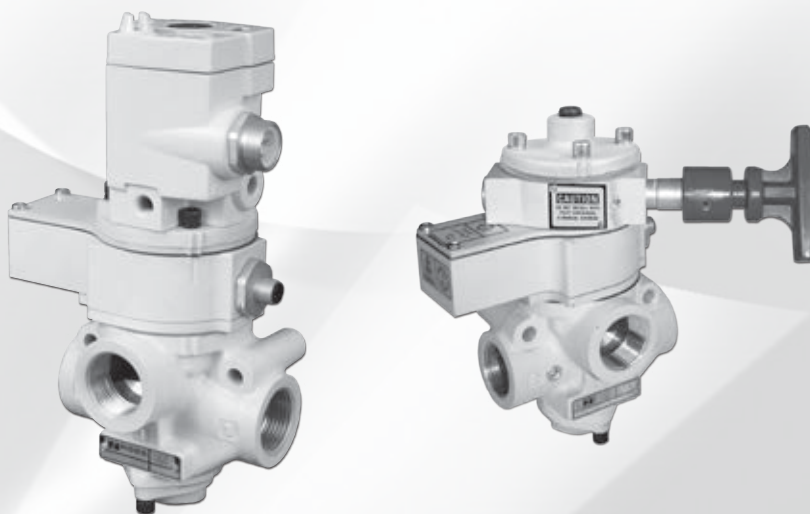


ROSS CONTROLS®



SENSING VALVES SV27 SERIES



SENSING VALVES – KEY FEATURES

- Senses internal position & state
- Electrical feedback via DPST switch (Double-Pole Single-Throw)
- Directly operated safety-rated force-guided positive-break status switch (DPST)
- Poppet construction for near zero leakage & dirt tolerance
- A diagnostic coverage (DC) of 90% can be obtained by monitoring the safety switch status
- *Explosion proof solenoid pilot available, for more information consult ROSS*

VALVE TYPE/SERIES	DESCRIPTION		AVAILABLE INLET PORT SIZES														FUNCTIONS								Page
	Spool & Sleeve	Poppet	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	2	2½	2½	3/2	3/4	4/2	5/2 Single	5/2 Double	5/3 Closed Center	5/3 Open Center	5/3 Pressure Center	Max Flow (Cv)	Solenoid Control	Pressure Controlled	
SV27 Series																						29			F2.3 - F2.6
SV27 Series																						71			F2.4 - F2.7
SV27 Series with Lockout Valve																						32			F2.8 - F2.9
Air Entry Packages																									F2.10

2-Way 2-Position Valves, Solenoid Pilot Controlled					
Port Size 1, 2	Body Size	Valve Model Number*	C _v 1-2	Weight lb (kg)	
1/2	3/4	SV27NC105407PSAA**	7.7	4.6 (2.1)	
3/4	3/4	SV27NC105507PSAA**	9.0	4.6 (2.1)	
1	3/4	SV27NC105607PSAA**	9.0	4.6 (2.1)	
1	1 1/4	SV27NC107607PSAA**	24	8.1 (3.7)	
1 1/4	1 1/4	SV27NC107707PSAA**	29	8.1 (3.7)	
1 1/2	1 1/4	SV27NC107807PSAA**	29	8.1 (3.7)	

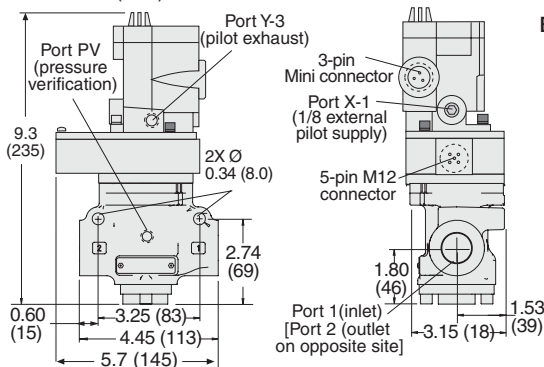
CONTROL
CATEGORY
2

* NPT port threads. For BSPP threads, replace "N" in the model number with a "D", e.g., SV27DC105407PSAA1A.

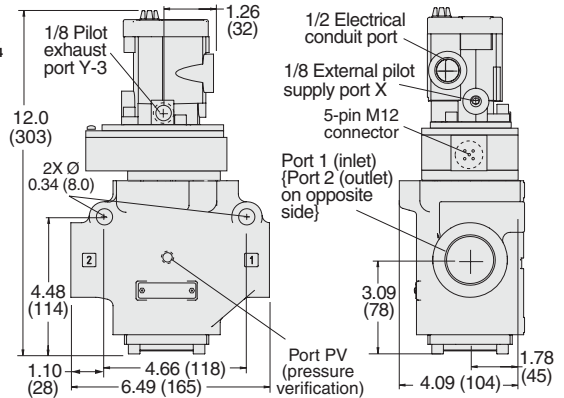
** Insert voltage code: "1A"=110-120 volts, 50/60 Hz; "1D"= 24 volts DC; .e.g., SV27NC105407PSAA1A. For other voltages, consult ROSS.

Valve Dimensions – inches (mm)

Body Size 3/4



Body Size 1 1/4

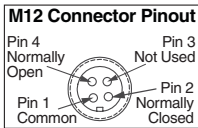
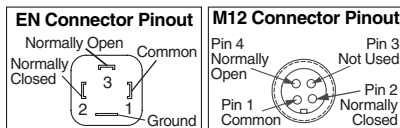


F2

ACCESSORIES & OPTIONS

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).



Indicator Light Kit

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

Pop-Up Indicator

Model Number**	988A30
** 1/8 NPT port threads.	



Manual Override Kits

BUTTON Type	Locking Type	Model Number*
FLUSH	Non-Locking	790K87
	Locking	792K87
EXTENDED	Non-Locking	791K87
EXTENDED with PALM	Non-Locking	984H87

F

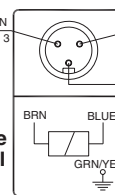
Preassembled Wiring Kits

Kit Number*	Length meters (feet)
2239H77	4 (13.1)
2240H77	10 (32.8)

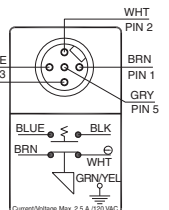
* Cable has one connector.

These kits include two cables with a cord grip on each cable. One cable has a 3-pin MINI connector for the solenoid, and one has a 5-pin M12 (Micro) connector for the sensing switch.

Solenoid Cable with 3-pin MINI Connector

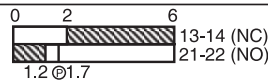


Sensing Switch Cable with 5-pin M12 Connector



Integrated Double-Pole Single-Throw Switch (DPST) Switch States

Contact conditions during switch travel (0 to 6 mm).



For valves basic size 3/4 & 1-1/4, the DPST switch is actuated whenever the valve is not in the normal home position.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.

Mounting Type: In-Line.

Solenoid Pilot: AC or DC power. Rated for continuous duty.

Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.

Power Consumption: 87 VA inrush, 30 VA holding on 50 or 60 Hz; 14 watts on DC.

Ambient Temperature: 40° to 120°F (4° to 50°C).

Media Temperature: 40° to 175°F (4° to 80°C).

Flow Media: Filtered air.

Inlet Pressure: 40 to 150 psig (2.8 to 10.3 bar).

Pilot Pressure: Must be equal to or greater than inlet pressure.

Switch Current/Voltage Max.: 2.5 A/120 volts AC.

Switch Current/Voltage Min.: 50 mA/24 volts DC.

NOTE: Electrical life of switch varies with conditions and voltage; rated in excess of 15 million cycles.

Functional Safety Data:

Category 2 PL d; B10d: Valve - 20,000,000, Switch - 2,000,000; PFHd: 2.35×10^{-7} ; MTTFd: 98.15 (n_{op} : 7360); DC (obtained by monitoring safety switch status): 90%; ROSS recommends testing the switch function and sealing for load holding valves every 8 hours.

Vibration/Impact Resistance: Calculated to BS EN 60068-2-27.

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



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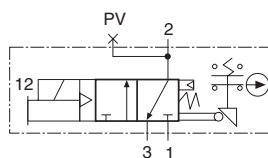
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F2.3

3-Way 2-Position Valve, Solenoid Pilot Controlled

Port Size		Body Size	Valve Model Number*	C _v		Weight lb (kg)
1, 2	3			1-2	2-3	
1/2	1	3/4	SV27NC305407PSAA**	6.3	9.2	4.5 (2.0)
3/4	1	3/4	SV27NC305507PSAA**	7.7	11	4.5 (2.0)
1	1	3/4	SV27NC305607PSAA**	8.0	12	4.5 (2.0)
1	1½	1¼	SV27NC307607PSAA**	23	34	7.8 (3.5)
1¼	1½	1¼	SV27NC307707PSAA**	30	32	7.8 (3.5)
1½	1½	1¼	SV27NC307807PSAA**	30	31	7.8 (3.5)
1½	2½	2	SV27NC309807PSAA**	68	70	18.1 (8.2)
2	2½	2	SV27NC309907PSAA**	70	70	18.1 (8.2)
2½	2½	2	SV27NC309957PSAA**	70	71	18.1 (8.2)

CONTROL
CATEGORY
2

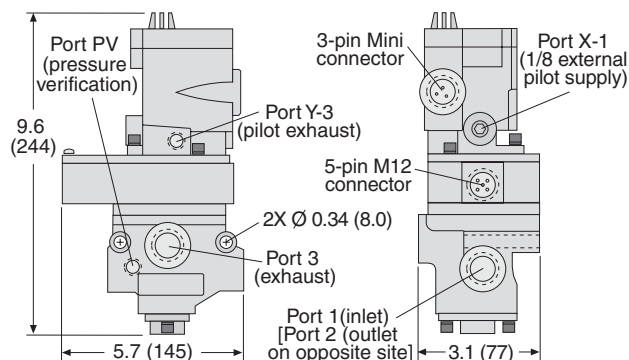


* NPT port threads. For BSPP threads, replace "N" in the model number with a "D", e.g., SV27DC305407PSAA1A.

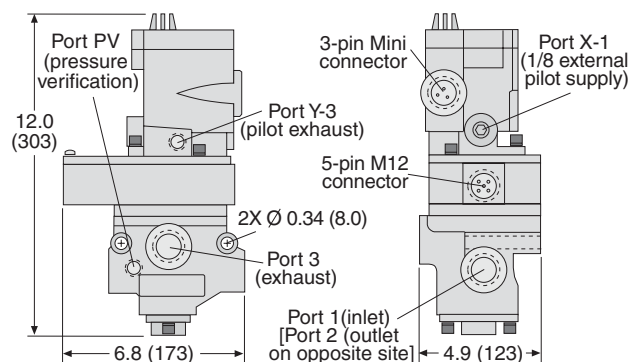
** Insert voltage code: "1A"=110-120 volts, 50/60 Hz; "1D"= 24 volts DC; e.g., SV27NC305407PSAA1A. For other voltages, consult ROSS.

Valve Dimensions – inches (mm)

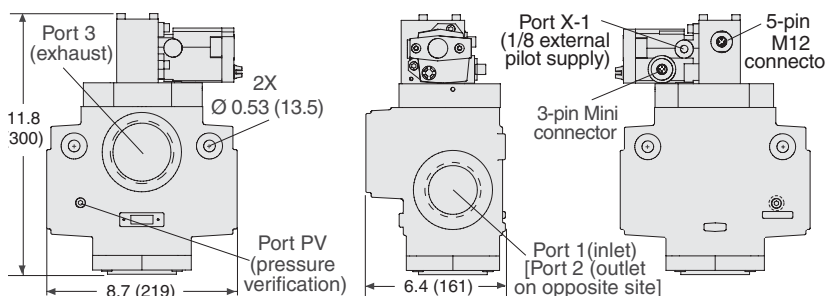
Body Size 3/4



Body Size 1¼



Body Size 2



STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.

Mounting Type: In-Line.

Solenoid Pilot: AC or DC power. Rated for continuous duty.

Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.

Power Consumption: 87 VA inrush, 30 VA holding on 50 or 60 Hz; 14 watts on DC.

Ambient Temperature: 40° to 120°F (4° to 50°C).

Media Temperature: 40° to 175°F (4° to 80°C).

Flow Media: Filtered air.

Inlet Pressure: 40 to 150 psig (2.8 to 10.3 bar).

Pilot Pressure: Must be equal to or greater than inlet pressure.

Switch Current/Voltage Max.: 2.5 A/120 volts AC.

Switch Current/Voltage Min.: 50 mA/24 volts DC.

NOTE: Electrical life of switch varies with conditions and voltage; rated in excess of 15 million cycles.

Functional Safety Data:

Category 2 PL d; B10d: Valve - 20,000,000, Switch - 2,000,000; PFHd: 2.35×10^{-7} ; MTTFd: 98.15 (n_{op} : 7360); DC (obtained by monitoring safety switch status): 99%; ROSS recommends testing the switch function and sealing for load holding valves every 8 hours.

Vibration/Impact Resistance: Calculated to BS EN 60068-2-27.

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

Silencers

Port Size	Thread Type	Model Number*		Avg. C _v
		NPT Threads	BSPT Threads	
1	Male	5500A6003	D5500A6003	14.6
1½	Female	5500A8001	D5500A8001	29.9
2½	Female	5500A9002	D5500A9002	103.7

Pressure Range: 0 to 150 psig (0 to 10.3 bar) maximum.
Flow Media: Filtered air.



Port size 1 thru 1½



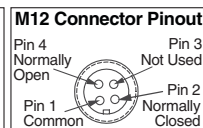
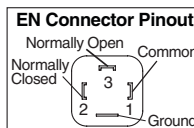
Port size 2½

F2

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 Kit

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

Manual Overrides

FLUSH BUTTON		
Locking Type	Kit Number	
Non-Locking	790K87	
Locking	792K87	

EXTENDED BUTTON		
Locking Type	Kit Number	
Non-Locking	791K87	

EXTENDED BUTTON with PALM		
Locking Type	Kit Number	
Non-Locking	984H87	

F

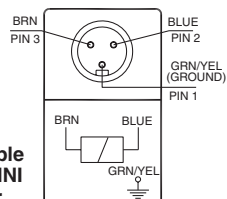
Preassembled Wiring Kits

These kits include two cables with a cord grip on each cable. One cable has a 3-pin MINI connector for the solenoid, and one has a 5-pin M12 (Micro) connector for the sensing switch.

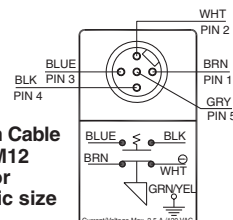
Kit Number*	Length meters (feet)
2239H77	4 (13.1)
2240H77	10 (32.8)

* Cable has one connector.

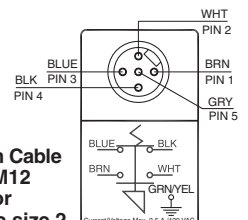
Solenoid Cable with 3-pin MINI Connector



Sensing Switch Cable with 5-pin M12 Connector for valves basic size 3/4 & 1¼



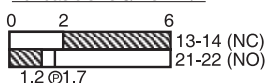
Sensing Switch Cable with 5-pin M12 Connector for valves basic size 2



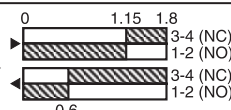
Integrated Double-Pole Single-Throw Switch (DPST) Switch States

Contact conditions during switch travel (0 to 6 mm).

For basic size 3/4 & 1-1/4



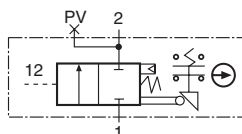
For basic size 2



For valves basic size 3/4 & 1-1/4, the DPST switch is actuated whenever the valve is not in the normal home position.
 For valves basic size 2, the DPST switch is only actuated whenever the valve is in the normal home position.

2-Way 2-Position Valves, Pressure Controlled

Port Size 1, 2	Body Size	Valve Model Number*	C _v 1-2	Weight lb (kg)
1/2	3/4	SV27NC105405ASAA	7.7	3.4 (1.6)
3/4	3/4	SV27NC105505ASAA	9.0	3.4 (1.6)
1	3/4	SV27NC105605ASAA	9.0	3.4 (1.6)
1	1 1/4	SV27NC107605ASAA	24	6.7 (3.0)
1 1/4	1 1/4	SV27NC107705ASAA	29	6.7 (3.0)
1 1/2	1 1/4	SV27NC107805ASAA	29	6.7 (3.0)

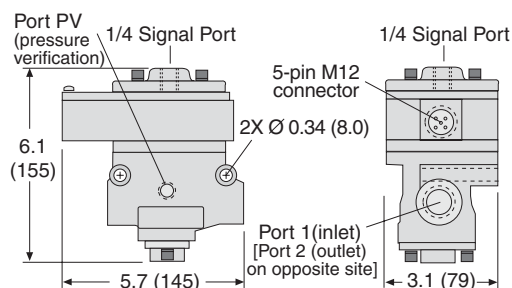


F2

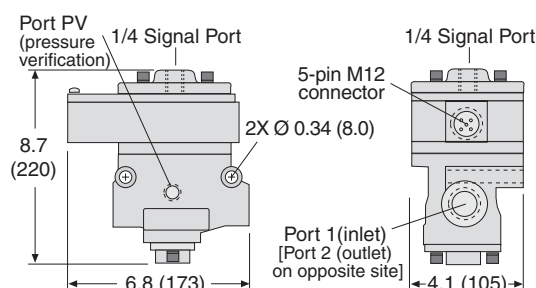
* NPT port threads. For BSPP threads, replace "N" in the model number with a "D", e.g., SV27ND105405ASAA.

Valve Dimensions – inches (mm)

Body Size 3/4



Body Size 1 1/4

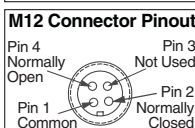
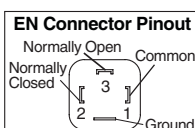


Not intended as a pressure trapping device; Please see Pilot Operated Check Sensing Valves, pages F4.13-F4.16.

ACCESSORIES & OPTIONS

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.	



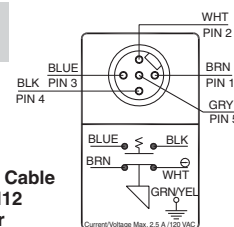
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Preassembled Wiring Kits

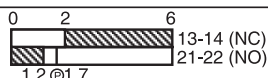
Kit Number*	Length meters (feet)
2241H77	4 (13.1)
2242H77	10 (32.8)

* Cable has one connector.

These kits include one cable with a cord grip. Cable has a 5-pin M12 (Micro) connector for the sensing switch.

Sensing Switch Cable
with 5-pin M12
ConnectorIntegrated Double-Pole
Single-Throw Switch (DPST)
Switch States

Contact conditions during
switch travel (0 to 6 mm).



For valves basic size 3/4 & 1-1/4, the DPST switch is actuated whenever the valve is not in the normal home position.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.

Mounting Type: In-Line.

Ambient Temperature: 40° to 120°F (4° to 50°C).

Media Temperature: 40° to 175°F (4° to 80°C).

Flow Media: Filtered air.

Inlet Pressure: 40 to 150 psig (2.8 to 10.3 bar).

Pilot Pressure: Must be equal to or greater than inlet pressure.

Switch Current/Voltage Max.: 2.5 A/120 volts AC.

Switch Current/Voltage Min.: 50 mA/24 volts DC.

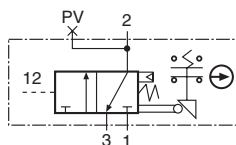
NOTE: Electrical life of switch varies with conditions and voltage; rated in excess of 15 million cycles.

Functional Safety Data: Category 2 PL d; B10d: Valve - 20,000,000, Switch - 2,000,000; PFHd: 2.35×10^{-7} ; MTTFd: 98.15 (n_{op} : 7360); DC (obtained by monitoring safety switch status): 90%; ROSS recommends testing the switch function and sealing for load holding valves every 8 hours.

Vibration/Impact Resistance: Calculated to BS EN 60068-2-27.

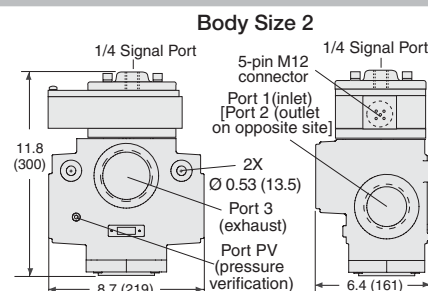
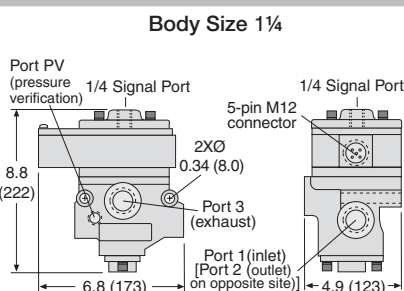
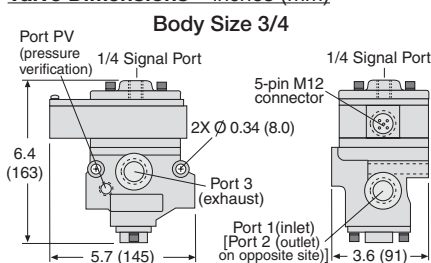
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

3-Way 2-Position Valve, Pressure Controlled						
Port Size		Body Size	Valve Model Number*	C _v		Weight lb (kg)
1, 2	3			1-2	2-3	
1/2	1	3/4	SV27NC305405ASAA	6.3	9.2	3.3 (1.5)
3/4	1	3/4	SV27NC305505ASAA	7.7	11	3.3 (1.5)
1	1	3/4	SV27NC305605ASAA	8.0	12	3.3 (1.5)
1	1½	1¼	SV27NC307605ASAA	23	34	6.4 (2.9)
1¼	1½	1¼	SV27NC307705ASAA	30	32	6.4 (2.9)
1½	1½	1¼	SV27NC307805ASAA	30	31	6.4 (2.9)
1½	2½	2	SV27NC309805ASAA	68	70	17.2 (7.8)
2	2½	2	SV27NC309905ASAA	70	70	17.2 (7.8)
2½	2½	2	SV27NC309955ASAA	70	71	17.2 (7.8)



* NPT port threads. For BSPP threads, replace "N" in the model number with a "D", e.g., SV27DC305405ASAA.

Valve Dimensions – inches (mm)



F2

ACCESSORIES & OPTIONS

Silencers

Port Size	Thread Type	Model Number*		Avg. C _v
		NPT Threads	BSPT Threads	
1	Male	5500A6003	D5500A6003	14.6
1½	Female	5500A8001	D5500A8001	29.9
2½	Female	5500A9002	D5500A9002	103.7

Pressure Range: 0 to 150 psig (0 to 10.3 bar) maximum. **Flow Media:** Filtered air.

Port size
1 & 1½



Port size 2½



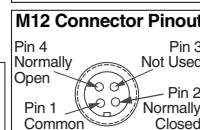
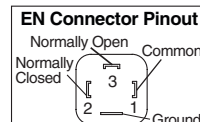
Pressure Switches

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.	



F

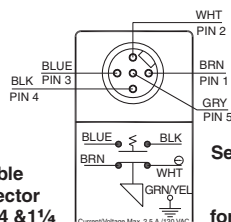
Preassembled Wiring Kits

Kit Number*	Length meters (feet)
2241H77	4 (13.1)
2242H77	10 (32.8)

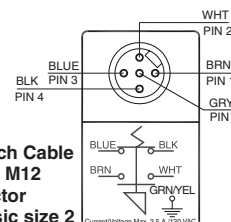
* Cable has one connector.

These kits include one cable with a cord grip. Cable has a 5-pin M12 (Micro) connector for the sensing switch.

Sensing Switch Cable with 5-pin M12 Connector for valves basic size 3/4 & 1¼



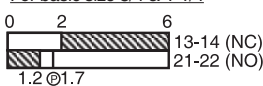
Sensing Switch Cable with 5-pin M12 Connector for valves basic size 2



Integrated Double-Pole Single-Throw Switch (DPST) Switch States

Contact conditions during switch travel (0 to 6 mm).

For basic size 3/4 & 1-1/4



For basic size 2



For valves basic size 3/4 & 1-1/4, the DPST switch is actuated whenever the valve is not in the normal home position. For valves basic size 2, the DPST switch is only actuated whenever the valve is in the normal home position.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.

Mounting Type: In-Line.

Ambient Temperature: 40° to 120°F (4° to 50°C).

Media Temperature: 40° to 175°F (4° to 80°C).

Flow Media: Filtered air.

Inlet Pressure: 40 to 150 psig (2.8 to 10.3 bar).

Pilot Pressure: Must be equal to or greater than inlet pressure.

Switch Current/Voltage Max.: 2.5 A/120 volts AC.

Switch Current/Voltage Min.: 50 mA/24 volts DC.

NOTE: Electrical life of switch varies with conditions and voltage; rated in excess of 15 million cycles.

Functional Safety Data:

Category 2 PL d; B10d: Valve - 20,000,000, Switch - 2,000,000; PFHd: 2.35x10⁻⁷; MTTFd: 98.15 (n_{op}: 7360); DC (obtained by monitoring safety switch status): 99%; ROSS recommends testing the switch function and sealing for load holding valves every 8 hours.

Vibration/Impact Resistance: Calculated to BS EN 60068-2-27.

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



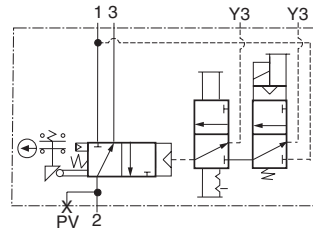
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Rev. 11/14/16

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F2.7

3-Way 2-Position Valve, Solenoid Pilot Controlled

Port Size		Body Size	Valve Model Number*	C _v		Weight lb (kg)
1, 2	3			1-2	2-3	
1/2	1	3/4	SV27NC3L5407PSAA**	6.3	9.2	5.5 (2.5)
3/4	1	3/4	SV27NC3L5507PSAA**	7.7	11	5.5 (2.5)
1	1	3/4	SV27NC3L5607PSAA**	8.0	12	5.5 (2.5)
1	1½	1¼	SV27NC3L7607PSAA**	23	34	9.0 (4.0)
1¼	1½	1¼	SV27NC3L7707PSAA**	30	32	9.0 (4.0)
1½	1½	1¼	SV27NC3L7807PSAA**	30	32	9.0 (4.0)



CONTROL
CATEGORY
2

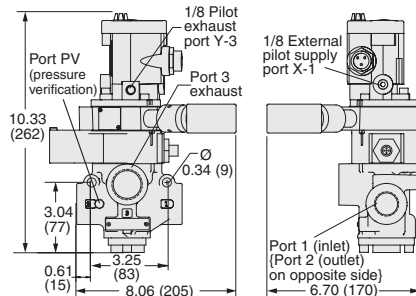


* NPT port threads. For BSPP threads, replace "N" in the model number with a "D", e.g., SV27DC3L5407PSAA1A.

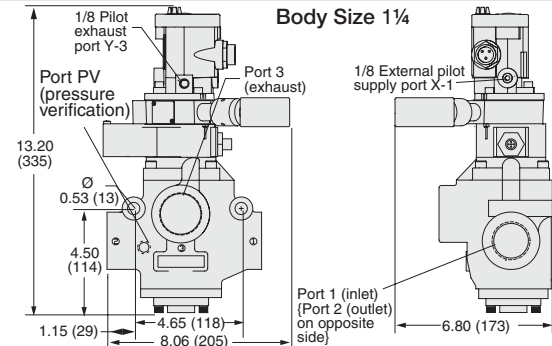
** Insert voltage code: "1A"=110-120 volts AC, 50/60 Hz; "1D" for 24 volts DC; e.g., SV27NC3L5407PSAA1A. For other voltages, consult ROSS.

Valve Dimensions – inches (mm)

Body Size 3/4



Body Size 1¼



ACCESSORIES & OPTIONS

Silencers

Port size
1 & 1½



Port size
2½



Port Size	Thread Type	Model Number*		Avg. C _v
		NPT Threads	BSPT Threads	
1	Male	5500A6003	D5500A6003	14.6
1½	Female	5500A8001	D5500A8001	29.9
2½	Female	5500A9002	D5500A9002	103.7

Pressure Range: 0 to 150 psig (0 to 10.3 bar) maximum. Flow Media: Filtered air.

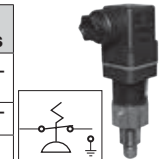
Indicator Light Kit

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

Pressure Switches

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

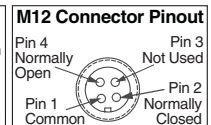
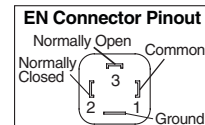
* Pressure switch closes on falling pressure of 5 psig (0.34 bar).



Pop-Up Indicator

Model Number** 988A30

** 1/8 NPT port threads.



Multiple Lock-out Device

Model Number	356A30
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Preassembled Wiring Kits

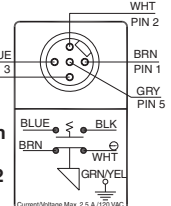
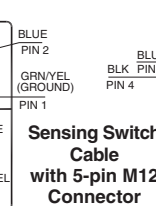
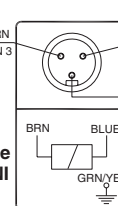
These kits include two cables with a cord grip on each cable. One cable has a 3-pin MINI connector for the solenoid, and one has a 5-pin M12 (Micro) connector for the sensing switch.

Kit Number*	Length meters (feet)
2239H77	4 (13.1)
2240H77	10 (32.8)

* Cable has one connector.

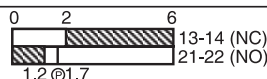


Solenoid Cable with 3-pin MINI Connector



Integrated Double-Pole Single-Throw Switch (DPST) Switch States

Contact conditions during switch travel (0 to 6 mm).



For valves basic size 3/4 & 1-1/4, the DPST switch is actuated whenever the valve is not in the normal home position.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: In-Line.
Solenoid Pilot: AC or DC power. Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption: 87 VA inrush, 30 VA holding on 50 or 60 Hz; 14 watts on DC.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air.
Inlet Pressure: 40 to 150 psig (2.8 to 10.3 bar).
Pilot Pressure: Must be equal to or greater than inlet pressure.

Switch Current/Voltage Max.: 2.5 A/120 volts AC.

Switch Current/Voltage Min.: 50 mA/24 volts DC.

Manual Override: Flush; rubber, non-locking.

NOTE: Electrical life of switch varies with conditions and voltage; rated in excess of 15 million cycles.

Functional Safety Data:

Category 2 PL d; B10d: Valve - 20,000,000, Switch - 2,000,000; PFHd: 2.35×10^{-7} ; MTTFd: 98.15 (n_{op} : 7360); DC (obtained by monitoring safety switch status): 99%; ROSS recommends testing the switch function and sealing for load holding valves every 8 hours.

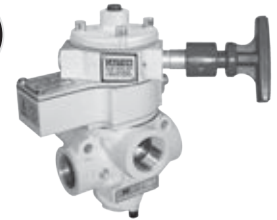
Vibration/Impact Resistance: Calculated to BS EN 60068-2-27.

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

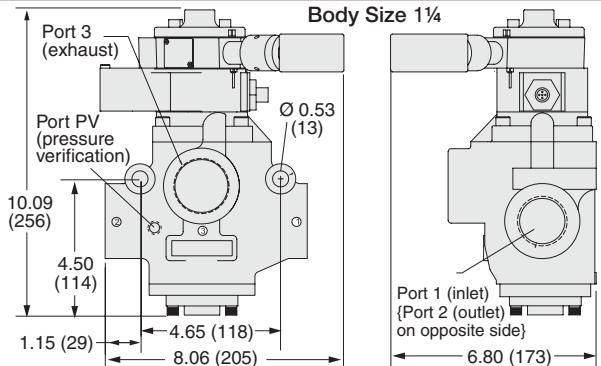
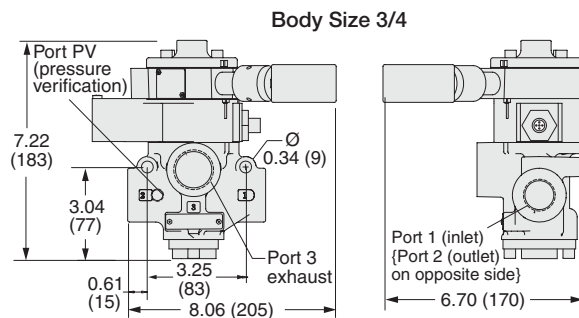
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

3-Way 2-Position Valve, Pressure Controlled						
Port Size		Body Size	Valve Model Number*	C _v		Weight lb (kg)
1, 2	3			1-2	2-3	
1/2	1	3/4	SV27NC3L5405ASAA	6.3	9.2	4.3 (2.0)
3/4	1	3/4	SV27NC3L5505ASAA	7.7	11	4.3 (2.0)
1	1	3/4	SV27NC3L5605ASAA	8.0	12	4.3 (2.0)
1	1½	1¼	SV27NC3L7605ASAA	23	34	7.4 (3.4)
1¼	1½	1¼	SV27NC3L7705ASAA	30	32	7.4 (3.4)
1½	1½	1¼	SV27NC3L7805ASAA	30	32	7.4 (3.4)

* NPT port threads. For BSP threads, replace "N" in the model number with a "D", e.g., SV27DC3L5405ASAA.



Valve Dimensions – inches (mm)



F2

ACCESSORIES & OPTIONS

Silencers



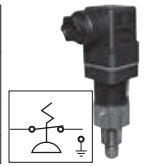
Port Size	Thread Type	Model Number*		Avg. C _v
		NPT Threads	BSP Threads	
1	Male	5500A6003	D5500A6003	14.6
1½	Female	5500A8001	D5500A8001	29.9

Pressure Range: 0 to 150 psig (0 to 10.3 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).



Multiple Lock-out Device

Model Number	356A30
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EN Connector Pinout	M12 Connector Pinout
Normally Open Normally Closed Common Ground	Pin 4 Normally Open Pin 3 Not Used Pin 1 Common Pin 2 Normally Closed

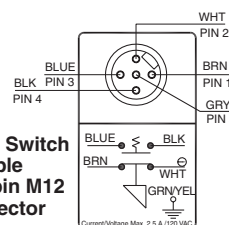
Preassembled Wiring Kits

Kit Number*	Length meters (feet)
2241H77	4 (13.1)
2242H77	10 (32.8)

* Cable has one connector.

These kits include one cable with a cord grip. Cable has a 5-pin M12 (Micro) connector for the sensing switch.

Sensing Switch Cable with 5-pin M12 Connector



Pop-Up Indicator

Model Number**	988A30
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** 1/8 NPT port threads.



F

Integrated Double-Pole Single-Throw Switch (DPST) Switch States

Contact conditions during switch travel (0 to 6 mm).



For valves basic size 3/4 & 1-1/4, the DPST switch is actuated whenever the valve is not in the normal home position.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: In-Line.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air.
Inlet Pressure: 40 to 150 psig (2.8 to 10.3 bar).
Pilot Pressure: Must be equal to or greater than inlet pressure.
Switch Current/Voltage Max.: 2.5 A/120 volts AC.
Switch Current/Voltage Min.: 50 mA/24 volts DC.

NOTE: Electrical life of switch varies with conditions and voltage; rated in excess of 15 million cycles.

Functional Safety Data:

Category 2 PL d; B10d: Valve - 20,000,000, Switch - 2,000,000; PFHd: 2.35x10⁻⁷; MTTFd: 98.15 (n_{op}: 7360); DC (obtained by monitoring safety switch status): 99%; ROSS recommends testing the switch function and sealing for load holding valves every 8 hours.

Vibration/Impact Resistance: Calculated to BS EN 60068-2-27.

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.



Online Version
Rev. 11/14/16

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F2.9

SV27 Sensing Valves, Manual Lockout L-O-X® Valves with Integrated Filter/Regulator



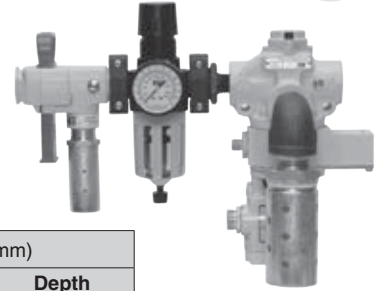
Pre-engineered panel-mounted design with air entry via filter and regulator “FR”, or filter, regulator, and lubricator “FRL”.

Includes 3/2 Normally Closed Sensing Valve which senses poppet position and state.

Electrical feedback via DPST switch (Double-Pole Single-Throw).

Applications include Air Dump and Trapped-Pressure Release.

Mounting plate included.



Air Entry Combination	Port Size		Model Number*	Air Entry Type	C _v		Dimensions inches (mm)		
	1, 2	3			1-2	2-3	Length	Width	Depth
Cat-2 with SV27	1/2	1	RC208-09**	FR	6.3	9.2	14.80 (374.9)	11.00 (279.0)	6.60 (167.7)
Cat-2 with SV27	1/2	1	RC208L-09**	FRL	6.3	9.2	14.80 (374.9)	11.00 (279.0)	6.60 (167.7)

* NPT pressure port threads.

** Specify voltage when ordering. Insert voltage code: “W” = 24 volts DC; “Z” = 110-120 volts AC, 50/60 Hz; e.g., RC208-09W. M12 connectors available, consult ROSS.

Standard Air Entry Packages supplied with metal bowl and manual drain. For automatic drain insert an “A” before the dash (-) in the model number, e.g., RC208A-09.

Custom designs available, consult ROSS.

Explosion proof solenoid pilot available, for more information consult ROSS.

SV27 Sensing Valves, Manual Lockout L-O-X® Valves with Filter and Regulator

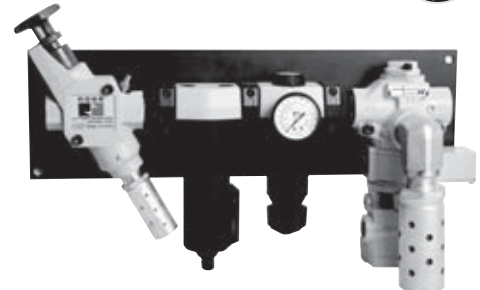


Pre-engineered panel-mounted design with air entry via filter and regulator “FR”, or filter, regulator, and lubricator “FRL”

Includes 3/2 Normally Closed Sensing Valve .

Applications include Air Dump and Trapped-Pressure Release.

Mounting plate included.



Air Entry Combination	Port Size		Model Number*	Air Entry Type	C _v		Dimensions inches (mm)		
	1, 2	3			1-2	2-3	Length	Width	Depth
Cat-2 with SV27	1/2	1/2	RC208-06**	FR	6.3	9.2	23.0 (585)	12.8 (326)	6.7 (171)
Cat-2 with SV27	1/2	1/2	RC208L-06**	FRL	7.7	11	23.0 (585)	12.8 (326)	6.7 (171)
Cat-2 with SV27	3/4	3/4	RC212-06**	FR	8.0	12	28.0 (712)	17.0 (432)	9.5 (242)
Cat-2 with SV27	3/4	3/4	RC212L-06**	FR	6.3	9.2	23.0 (585)	12.8 (326)	6.7 (171)
Cat-2 with SV27	1	1	RC216-06**	FRL	7.7	11	23.0 (585)	12.8 (326)	6.7 (171)
Cat-2 with SV27	1	1	RC216L-06**	FRL	8.0	12	31.8 (808)	17.0 (432)	9.5 (242)

* NPT pressure port threads.

** Specify voltage when ordering. Insert voltage code: “W” = 24 volts DC; “Z” = 110-120 volts AC, 50/60 Hz; e.g., RC208-06W. M12 connectors available, consult ROSS.

Standard Air Entry Packages supplied with metal bowl and manual drain. For automatic drain insert an “A” before the dash (-) in the model number, e.g., RC208A-06.

Custom designs available, consult ROSS.

Explosion proof solenoid pilot available, for more information consult ROSS.

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.

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 or part 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 www.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.

THE WARRANTY EXPRESSED ABOVE IS IN LIEU OF AND EXCLUSIVE OF ALL OTHER WARRANTIES AND ROSS EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED WITH RESPECT TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ROSS MAKES NO WARRANTY WITH RESPECT TO ITS PRODUCTS MEETING THE PROVISIONS OF ANY GOVERNMENTAL OCCUPATIONAL SAFETY AND/OR HEALTH LAWS OR REGULATIONS. IN NO EVENT IS ROSS LIABLE TO PURCHASER, USER, THEIR EMPLOYEES OR OTHERS FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM A BREACH OF THE WARRANTY DESCRIBED ABOVE OR THE USE OR MISUSE OF THE PRODUCTS. NO STATEMENT OF ANY REPRESENTATIVE OR EMPLOYEE OF ROSS MAY EXTEND THE LIABILITY OF ROSS AS SET FORTH HEREIN.

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

