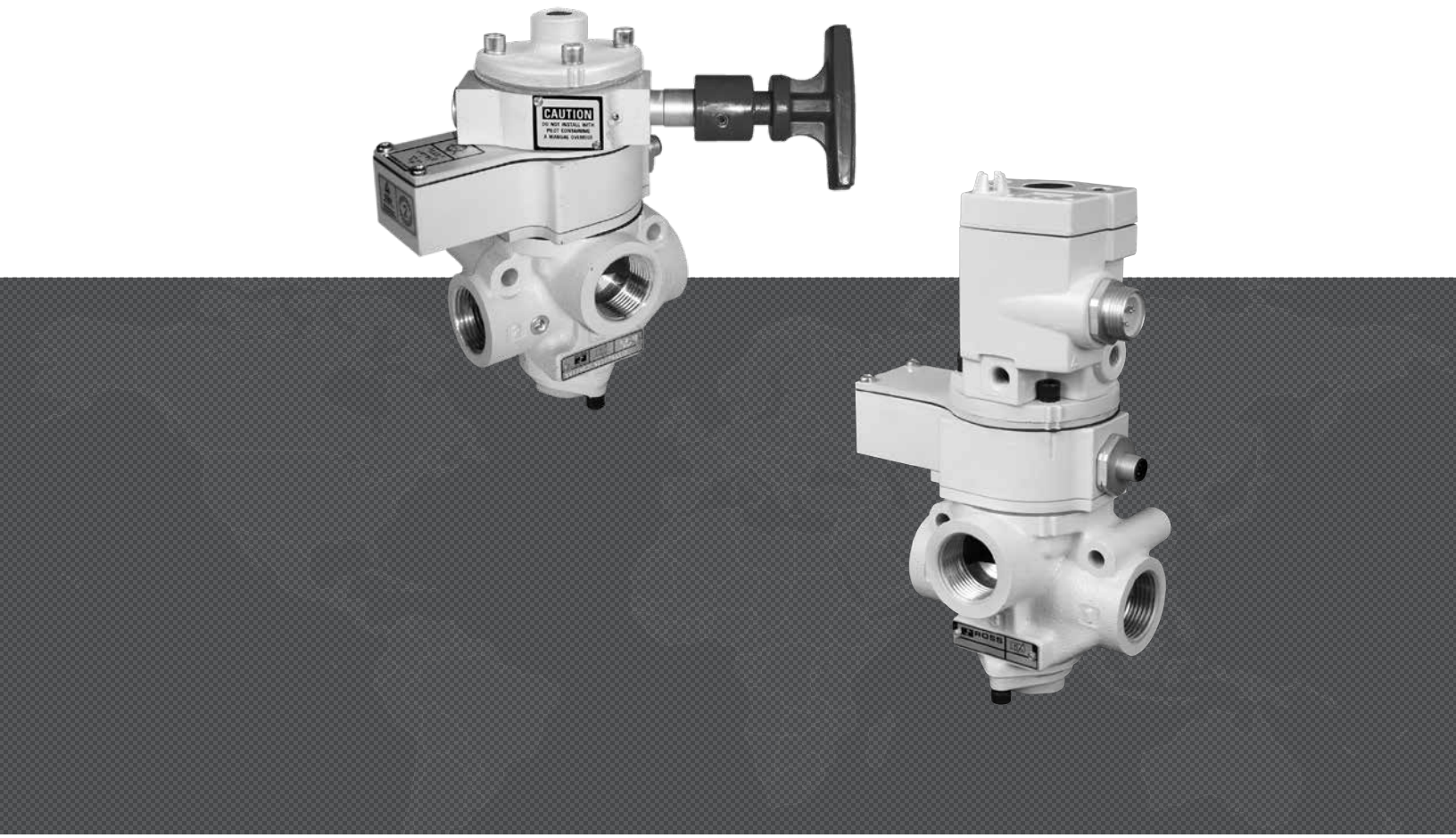
SAFETY EXHAUST

SENSING VALVES FOR EXTERNAL MONITORING



ROSS CONTROLS

SENSING VALVES – KEY FEATURES

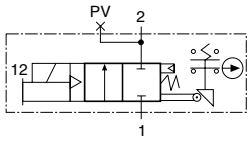
- Senses internal position & state
- Electrical feedback via DPST switch (Double-Pole Single-Throw)
- Directly operated safety-rated force-guided positive-break status switch (DPST)
- Poppet construction for near zero leakage & dirt tolerance
- A diagnostic coverage (DC) of 90% can be obtained by monitoring 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	2/2	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	
2/2 SV27 Series		■				■	■	■	■	■			■									29	■	■	A2.3 - A2.6
3/2 SV27 Series		■				■	■	■	■	■	■	■		■								71	■	■	A2.4 - A2.7
SV27 Series with Lockout Valve		■				■	■	■	■	■				■								32	■	■	A2.8 - A2.9
Air Entry Assemblies																									A2.10

2-Way 2-Position Valves

Cat. 2 PL c

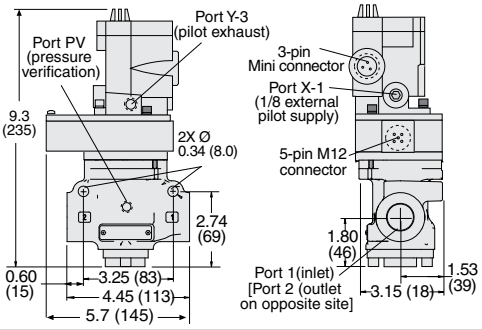
Port Size 1, 2	Body Size	Valve Model Number# NPT Threads	Valve Model Number# G Threads	C_v 1-2	Weight lb (kg)
1/2	3/4	SV27NC105407PSAA1D	SV27DC105407PSAA1D	7.7	4.6 (2.1)
3/4	3/4	SV27NC105507PSAA1D	SV27DC105507PSAA1D	9	4.6 (2.1)
1	3/4	SV27NC105607PSAA1D	SV27DC105607PSAA1D	9	4.6 (2.1)
1	1¼	SV27NC107607PSAA1D	SV27DC107607PSAA1D	24	8.1 (3.7)
1¼	1¼	SV27NC107707PSAA1D	SV27DC107707PSAA1D	29	8.1 (3.7)
1½	1¼	SV27NC107807PSAA1D	SV27DC107807PSAA1D	29	8.1 (3.7)



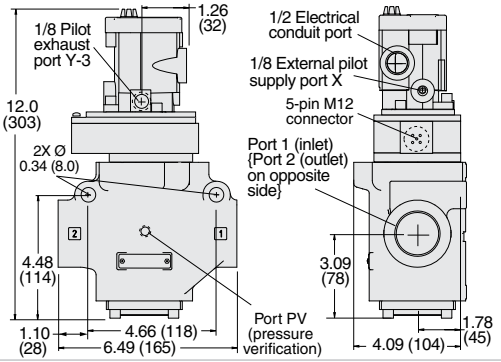
 # Voltage: 1D=24 VDC; 1A=110-120 VAC, 50/60 Hz, e.g., SV27NC105407PSAA1A. For other voltages, consult ROSS.

Valve Dimensions – inches (mm)

Body Size 3/4



Body Size 1¼



Accessories & Options

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

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

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

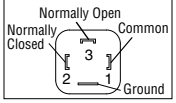
Manual Override Kits

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

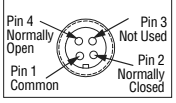
Indicator Light Kits

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

EN Connector Pinout



M12 Connector Pinout

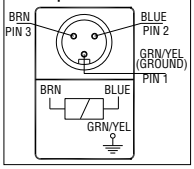


Preassembled Wiring Kits

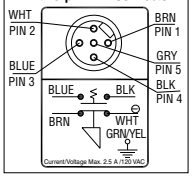
Kit Number*	Length meters (feet)	Description
2239H77	4 (13.1)	These kits include two cables with a cord grip on each cable. One cable has a 3-pin MINI connector for the solenoid, and one has a 5-pin M12 (Micro) connector for the sensing switch.
2240H77	10 (32.8)	

* Cable has one connector.

Solenoid Cable with 3-pin MINI Connector

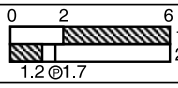


Sensing Switch Cable with 5-pin M12 Connector



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 Design	Poppet
Mounting Type	In-line
Solenoids	AC or DC power; Rated for continuous duty
Voltage	24 volts DC; 110-120 volts AC, 50/60 Hz
Power Consumption	14 watts on DC; 87 VA inrush, 30 VA holding on 50 or 60 Hz
Temperature	**Ambient:** 40° to 120°F (4° to 50°C) **Media:** 40° to 175°F (4° to 80°C)
Flow Media	Filtered air
Pilot Supply	Internal or External
Operating Pressure	40 to 150 psig (2.8 to 10.3 bar) **Pilot Supply** - *When external pilot supply, pressure must be equal to or greater than inlet pressure.*

Switch Current/Voltage	**Maximum:** 2.5 A/120 volts AC **Minimum:** 50 mA/24 volts DC *NOTE: Electrical life of switch varies with conditions and voltage; rated in excess of 15 million cycles.*
Construction Material	**Valve Body:** Cast Aluminum **Poppet:** Acetal and Stainless Steel **Seals:** Buna-N
Manual Override	Flush; rubber, non-locking
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.	
Functional Safety Data - Category 2, PL d; B_{10D}: Valve - 20,000,000, Switch – 2,000,000; PFH_D: 2.35x10^{-7}; $MTTF_D$: 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.

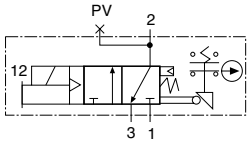
A

A3

3-Way 2-Position Valves

Cat. 2
PL c

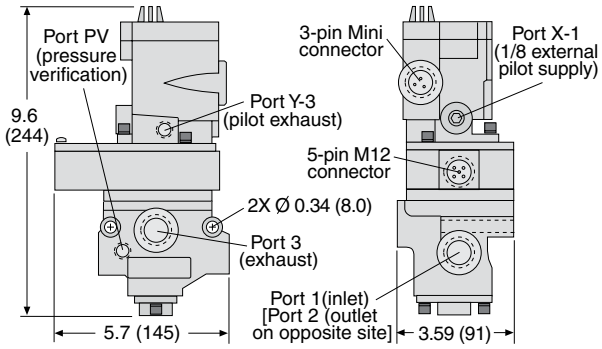
Port Size 1, 2	Port Size 3	Body Size	Valve Model Number# NPT Threads	Valve Model Number# G Threads	C_v 1-2	C_v 2-3	Weight lb (kg)
1/2	1	3/4	SV27NC305407PSAA1D	SV27DC305407PSAA1D	6.3	9.2	4.5 (2.0)
3/4	1	3/4	SV27NC305507PSAA1D	SV27DC305507PSAA1D	7.7	11	4.5 (2.0)
1	1	3/4	SV27NC305607PSAA1D	SV27DC305607PSAA1D	8	12	4.5 (2.0)
1	1½	1¼	SV27NC307607PSAA1D	SV27DC307607PSAA1D	23	34	7.8 (3.5)
1¼	1½	1¼	SV27NC307707PSAA1D	SV27DC307707PSAA1D	30	32	7.8 (3.5)
1½	1½	1¼	SV27NC307807PSAA1D	SV27DC307807PSAA1D	30	31	7.8 (3.5)
1½	2½	2	SV27NC309807PSAA1D	SV27DC309807PSAA1D	68	70	18.1 (8.2)
2	2½	2	SV27NC309907PSAA1D	SV27DC309907PSAA1D	70	70	18.1 (8.2)
2½	2½	2	SV27NC309957PSAA1D	SV27DC309957PSAA1D	70	71	18.1 (8.2)



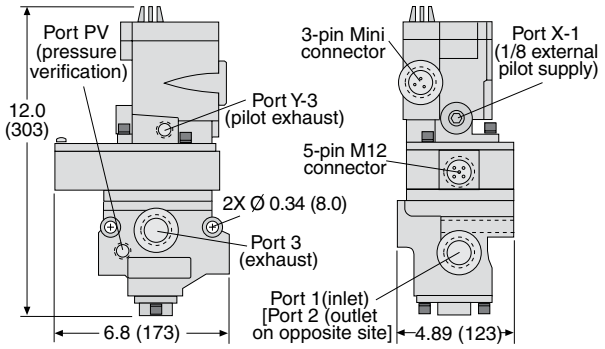
 # Voltage: 1D=24 VDC; 1A=110-120 VAC, 50/60 Hz, e.g., SV27NC305407PSAA1A. For other voltages, consult ROSS.

Valve Dimensions – inches (mm)

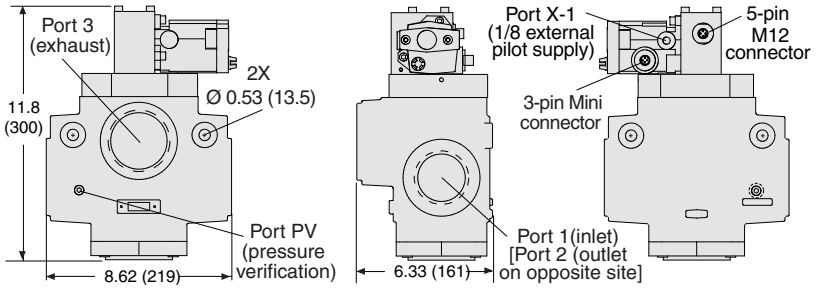
Body Size 3/4



Body Size 1¼



Body Size 2



STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet
Mounting Type	In-line
Solenoids	AC or DC power; Rated for continuous duty
Voltage	24 volts DC; 110-120 volts AC, 50/60 Hz
Power Consumption	14 watts on DC; 87 VA inrush, 30 VA holding on 50 or 60 Hz
Temperature	**Ambient:** 40° to 120°F (4° to 50°C)
	Media: 40° to 175°F (4° to 80°C)
Flow Media	Filtered air
Pilot Supply	Internal or External
Operating Pressure	40 to 150 psig (2.8 to 10.3 bar)
	Pilot Supply - *When external pilot supply, pressure must be equal to or greater than inlet pressure.*

Switch Current/Voltage	**Maximum:** 2.5 A/120 volts AC
	Minimum: 50 mA/24 volts DC
	NOTE: Electrical life of switch varies with conditions and voltage; rated in excess of 15 million cycles.
Construction Material	**Valve Body:** Cast Aluminum **Poppet:** Acetal and Stainless Steel **Seals:** Buna-N
Manual Override	Flush; rubber, non-locking
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.	
Functional Safety Data - Category 2, PL d; B_{10D}: Valve - 20,000,000, Switch – 2,000,000; PFH_D: 2.35x10^{-7}; $MTTF_D$: 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.

Accessories & Options

Silencers

Port Size	Thread Type	Model Number		Avg. C_V
		NPT Threads	R/Rp Threads	
1	Male	5500A6003	D5500A6003	14.6
1½	Female	5500A8001	D5500A8001	29.9
2½	Female	5500A9002	D5500A9002	103.7

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

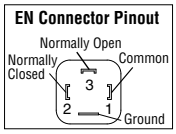
Port size 1 thru 1½

Port size 2½

Pressure Switches

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

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

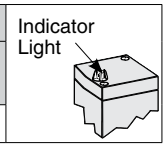


Pop-Up Indicator

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

Indicator Light Kits

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

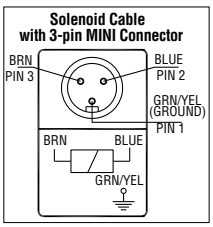


Manual Override Kits

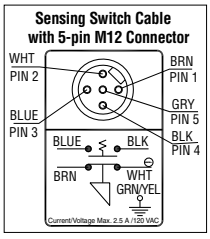
Flush Button		Extended Button		Extended Button with Palm	
Locking Type	Kit Number	Locking Type	Kit Number	Locking Type	Kit Number
Non-Locking	790K87	Non-Locking	791K87	Non-Locking	984H87
Locking	792K87	Locking	–	Locking	–

Preassembled Wiring Kits

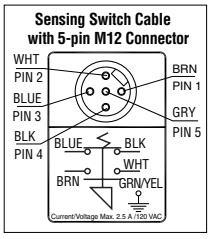
Kit Number*	Length meters (feet)	Description
2239H77	4 (13.1)	These kits include two cables with a cord grip on each cable. One cable has a 3-pin MINI connector for the solenoid, and one has a 5-pin M12 (Micro) connector for the sensing switch.
2240H77	10 (32.8)	
* Cable has one connector.		



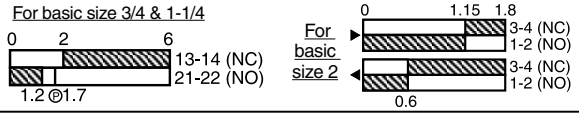
for valves basic size 3/4 &1¼



for valves basic size 2



Integrated Double-Pole Single-Throw Switch (DPST) Switch States
Contact conditions during switch travel (0 to 6 mm).

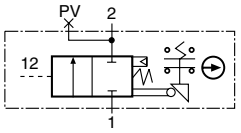


For valves basic size 3/4 & 1-1/4, the DPST switch is actuated whenever the valve is not in the normal home position.
For valves basic size 2, the DPST switch is only actuated whenever the valve is in the normal home position.

2-Way 2-Position Valves

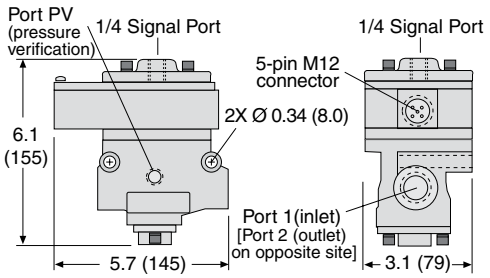
Cat. 2 PL c

Port Size 1, 2	Body Size	Valve Model Number		C_v 1-2	Weight lb (kg)
		NPT Threads	G Threads		
1/2	3/4	SV27NC105405ASAA	SV27DC105405ASAA	7.7	3.4 (1.6)
3/4	3/4	SV27NC105505ASAA	SV27DC105505ASAA	9	3.4 (1.6)
1	3/4	SV27NC105605ASAA	SV27DC105605ASAA	9	3.4 (1.6)
1	1¼	SV27NC107605ASAA	SV27DC107605ASAA	24	6.7 (3.0)
1¼	1¼	SV27NC107705ASAA	SV27DC107705ASAA	29	6.7 (3.0)
1½	1¼	SV27NC107805ASAA	SV27DC107805ASAA	29	6.7 (3.0)

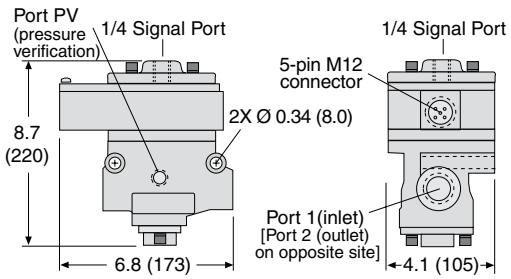


Valve Dimensions – inches (mm)

Body Size 3/4



Body Size 1¼

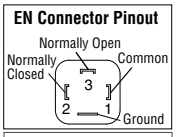


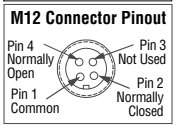
Not intended as a pressure trapping device; Please see Pilot Operated Check Sensing Valves, pages F4.13-F4.16.

Accessories & Options

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

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

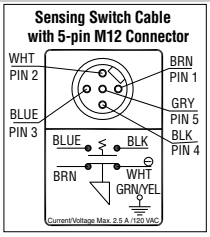




Pop-Up Indicator	**Model Number****	988A30
	** 1/8 NPT port threads.	

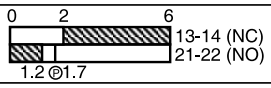
Preassembled Wiring Kits

Kit Number	Length meters (feet)	Description
2241H77	5 (16.4)	These kits include one cable with a cord grip. Cable has a 5-pin M12 (Micro) connector for the sensing switch.
2242H77	10 (32.8)	
* Cable has one 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 Design	Poppet
Mounting Type	In-line
Temperature	**Ambient:** 40° to 120°F (4° to 50°C)
	Media: 40° to 175°F (4° to 80°C)
Flow Media	Filtered air
Pilot Supply	External
Operating Pressure	40 to 150 psig (2.8 to 10.3 bar)
	Pilot supply pressure must be equal to or greater than inlet pressure.
Switch Current/Voltage	**Maximum:** 2.5 A/120 volts AC
	Minimum: 50 mA/24 volts DC
	NOTE: Electrical life of switch varies with conditions and voltage; rated in excess of 15 million cycles.

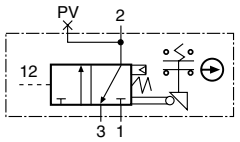
Construction Material	**Valve Body:** Cast Aluminum **Poppet:** Acetal and Stainless Steel **Seals:** Buna-N
Safety Integrity Level (SIL) - Certified by TÜV Rheinland in accordance to IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT≥1, for details see certificate.	
Functional Safety Data - Category 2, PL d; B_{10D}: Valve - 20,000,000, Switch – 2,000,000; PFH_D: 2.35x10^{-7}; $MTTF_D$: 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.

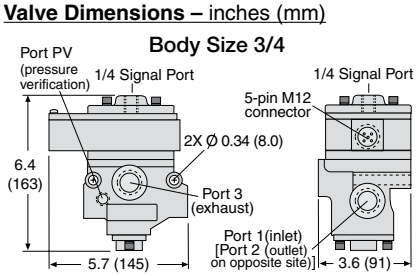
Cat. 2
PL c

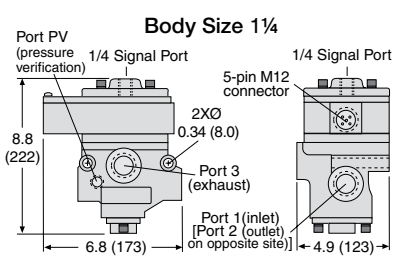
3-Way 2-PositioN Valves

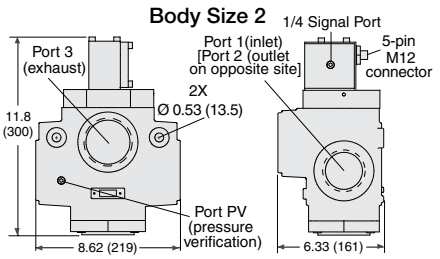
Port Size 1, 2	Port Size 3	Body Size	Valve Model Number NPT Threads	Valve Model Number G Threads	C_v 1-2	C_v 2-3	Weight lb (kg)
1/2	1	3/4	SV27NC305405ASAA	SV27DC305405ASAA	6.3	9.2	3.3 (1.5)
3/4	1	3/4	SV27NC305505ASAA	SV27DC305505ASAA	7.7	11	3.3 (1.5)
1	1	3/4	SV27NC305605ASAA	SV27DC305605ASAA	8	12	3.3 (1.5)
1	1½	1¼	SV27NC307605ASAA	SV27DC307605ASAA	23	34	6.4 (2.9)
1¼	1½	1¼	SV27NC307705ASAA	SV27DC307705ASAA	30	32	6.4 (2.9)
1½	1½	1¼	SV27NC307805ASAA	SV27DC307805ASAA	30	31	6.4 (2.9)
1½	2½	2	SV27NC309805ASAA	SV27DC309805ASAA	68	70	17.2 (7.8)
2	2½	2	SV27NC309905ASAA	SV27DC309905ASAA	70	70	17.2 (7.8)
2½	2½	2	SV27NC309955ASAA	SV27DC309955ASAA	70	71	17.2 (7.8)



Valve Dimensions – inches (mm)







Accessories & Options

Silencers

Port Size	Thread Type	Model Number* NPT Threads	Model Number* R/Rp Threads	Avg. C_v
1	Male	5500A6003	D5500A6003	14.6
1½	Female	5500A8001	D5500A8001	29.9
2½	Female	5500A9002	D5500A9002	103.7

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

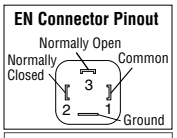
Port size 1 & 1½

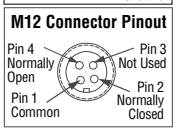
Port size 2½

Pressure Switches

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

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





Pop-Up Indicator

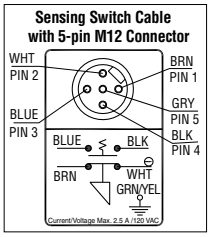
Model Number**	988A30

** 1/8 NPT port threads.

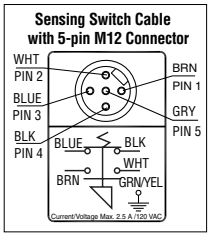
Preassembled Wiring Kits

Kit Number	Length meters (feet)	Description
2241H77	5 (16.4)	These kits include one cable with a cord grip. Cable has a 5-pin M12 (Micro) connector for the sensing switch.
2242H77	10 (32.8)	
* Cable has one connector.		

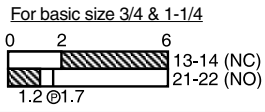
for valves basic size 3/4 &1¼

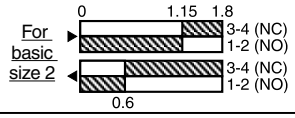


for valves basic size 2



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.
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 Design	Poppet
Mounting Type	In-line
Temperature	**Ambient:** 40° to 120°F (4° to 50°C)
	Media: 40° to 175°F (4° to 80°C)
Flow Media	Filtered air
Pilot Supply	External
Operating Pressure	40 to 150 psig (2.8 to 10.3 bar)
	Pilot supply pressure must be equal to or greater than inlet pressure.
Switch Current/Voltage	**Maximum:** 2.5 A/120 volts AC
	Minimum: 50 mA/24 volts DC
	NOTE: Electrical life of switch varies with conditions and voltage; rated in excess of 15 million cycles.

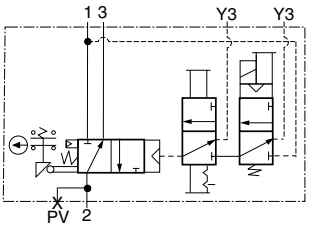
Construction Material	**Valve Body:** Cast Aluminum **Poppet:** Acetal and Stainless Steel **Seals:** Buna-N
Safety Integrity Level (SIL) - Certified by TÜV Rheinland in accordance to IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT≥1, for details see certificate.	
Functional Safety Data - Category 2, PL d; B_{10D}: Valve - 20,000,000, Switch – 2,000,000; PFH_D: 2.35x10^{-7}; $MTTF_D$: 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.

3-Way 2-Position Valves

Cat. 2 PL c

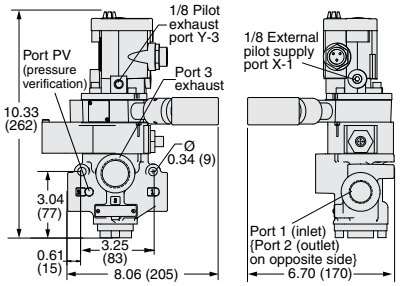
Port Size 1, 2	Port Size 3	Body Size	Valve Model Number# NPT Threads	Valve Model Number# G Threads	C_v 1-2	C_v 2-3	Weight lb (kg)
1/2	1	3/4	SV27NC3L5407PSAA1D	SV27DC3L5407PSAA1D	6.3	9.2	5.5 (2.5)
3/4	1	3/4	SV27NC3L5507PSAA1D	SV27DC3L5507PSAA1D	7.7	11	5.5 (2.5)
1	1	3/4	SV27NC3L5607PSAA1D	SV27DC3L5607PSAA1D	8	12	5.5 (2.5)
1	1½	1¼	SV27NC3L7607PSAA1D	SV27DC3L7607PSAA1D	23	34	9.0 (4.0)
1¼	1½	1¼	SV27NC3L7707PSAA1D	SV27DC3L7707PSAA1D	30	32	9.0 (4.0)
1½	1½	1¼	SV27NC3L7807PSAA1D	SV27DC3L7807PSAA1D	30	32	9.0 (4.0)



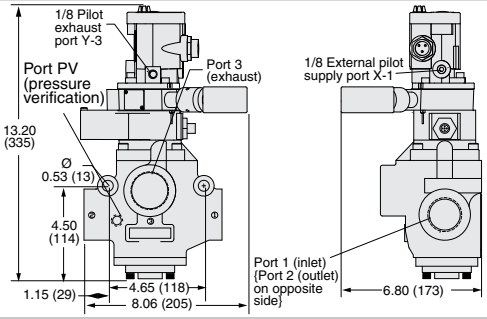
 # Voltage: 1D=24 VDC; 1A=110-120 VAC, 50/60 Hz, e.g., SV27NC3L5407PSAA1A. For other voltages, consult ROSS.

Valve Dimensions – inches (mm)

Body Size 3/4



Body Size 1¼



Accessories & Options

Silencers

Port Size	Thread Type	Model Number* NPT Threads	Model Number* R/Rp Threads	Avg. C_v
1	Male	5500A6003	D5500A6003	14.6
1½	Female	5500A8001	D5500A8001	29.9
2½	Female	5500A9002	D5500A9002	103.7

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

Port size 2½

Pressure Switches

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

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

Multiple Lockout Device

Model Number: 356A30

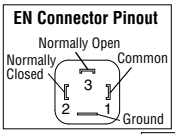
Indicator Light Kits

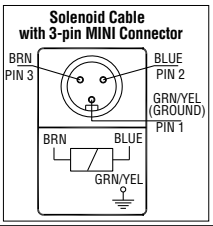
Kit Number 24 V DC	Kit Number 110-120 V AC 50-60 Hz
862K87-W	862K87-Z

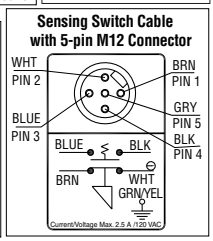
Pop-Up Indicator

Model Number** 988A30

** 1/8 NPT port threads.







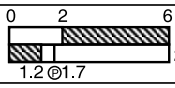
Preassembled Wiring Kits

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

* Cable has one 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 Design	Poppet
Mounting Type	In-line
Solenoids	AC or DC power; Rated for continuous duty
Voltage	24 volts DC; 110-120 volts AC, 50/60 Hz
Power Consumption	14 watts on DC; 87 VA inrush, 30 VA holding on 50 or 60 Hz
Temperature	**Ambient:** 40° to 120°F (4° to 50°C) **Media:** 40° to 175°F (4° to 80°C)
Flow Media	Filtered air
Pilot Supply	Internal or External
Operating Pressure	40 to 150 psig (2.8 to 10.3 bar) **Pilot Supply** - *When external pilot supply, pressure must be equal to or greater than inlet pressure.*

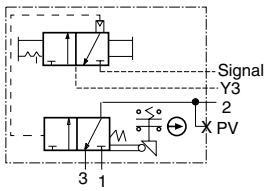
NOTE: Per specifications and regulations, these products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

Switch Current/Voltage	**Maximum:** 2.5 A/120 volts AC **Minimum:** 50 mA/24 volts DC *NOTE: Electrical life of switch varies with conditions and voltage; rated in excess of 15 million cycles.*
Construction Material	**Valve Body:** Cast Aluminum **Poppet:** Acetal and Stainless Steel **Seals:** Buna-N; Fluorocarbon
Manual Override	Flush; rubber, non-locking
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.	
Functional Safety Data - Category 2, PL d; B_{10D}: Valve - 20,000,000, Switch – 2,000,000; PFH_D: 2.35x10^{-7}; $MTTF_D$: 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.

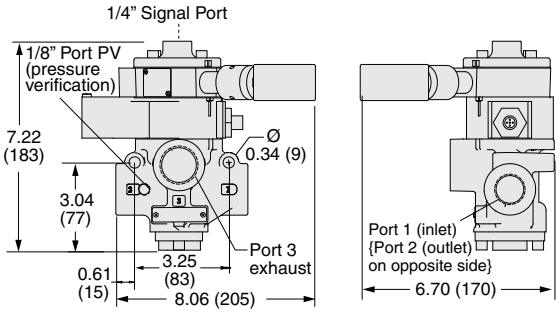
3-Way 2-Position Valves

Port Size 1, 2	Port Size 3	Body Size	Valve Model Number NPT Threads	Valve Model Number G Threads	C_v 1-2	C_v 2-3	Weight lb (kg)
1/2	1	3/4	SV27NC3L5405ASAA	SV27DC3L5405ASAA	6.3	9.2	4.3 (2.0)
3/4	1	3/4	SV27NC3L5505ASAA	SV27DC3L5505ASAA	7.7	11	4.3 (2.0)
1	1	3/4	SV27NC3L5605ASAA	SV27DC3L5605ASAA	8	12	4.3 (2.0)
1	1½	1¼	SV27NC3L7605ASAA	SV27DC3L7605ASAA	23	34	7.4 (3.4)
1¼	1½	1¼	SV27NC3L7705ASAA	SV27DC3L7705ASAA	30	32	7.4 (3.4)
1½	1½	1¼	SV27NC3L7805ASAA	SV27DC3L7805ASAA	30	32	7.4 (3.4)

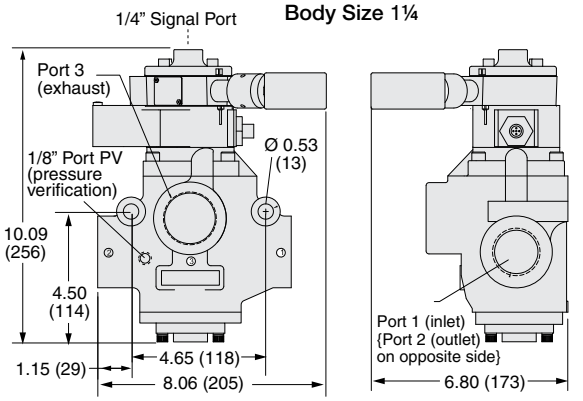


Valve Dimensions – inches (mm)

Body Size 3/4



Body Size 1¼



Accessories & Options

Silencers

Port Size	Thread Type	Model Number* NPT Threads	Model Number* R/Rp Threads	Avg. C_v
1	Male	5500A6003	D5500A6003	14.6
1½	Female	5500A8001	D5500A8001	29.9

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

Pressure Switches

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

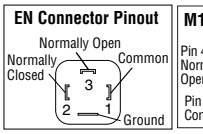
*Pressure switch closes on falling pressure of 5 psig (0.34 bar).

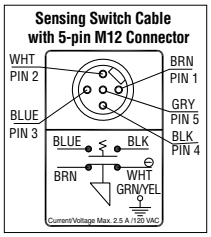
Multiple Lockout Device

Model Number	356A30

Pop-Up Indicator

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



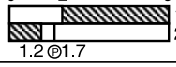


Preassembled Wiring Kits

Kit Number	Length meters (feet)	Description
2241H77	5 (16.4)	These kits include one cable with a cord grip. Cable has a 5-pin M12 (Micro) connector for the sensing switch.
2242H77	10 (32.8)	
* Cable has one 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 Design	Poppet
Mounting Type	In-line
Temperature	**Ambient:** 40° to 120°F (4° to 50°C)
	Media: 40° to 175°F (4° to 80°C)
Flow Media	Filtered air
Pilot Supply	External
Operating Pressure	40 to 150 psig (2.8 to 10.3 bar)
	Pilot supply pressure must be equal to or greater than inlet pressure.
Switch Current/Voltage	**Maximum:** 2.5 A/120 volts AC
	Minimum: 50 mA/24 volts DC
	NOTE: Electrical life of switch varies with conditions and voltage; rated in excess of 15 million cycles.

Construction Material	**Valve Body:** Cast Aluminum **Poppet:** Acetal and Stainless Steel **Seals:** Buna-N; Fluorocarbon
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.	
Functional Safety Data - Category 2, PL d; B_{10D}: Valve - 20,000,000, Switch – 2,000,000; PFH_D: $2.35x10^{-7}$; $MTTF_D$: 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	

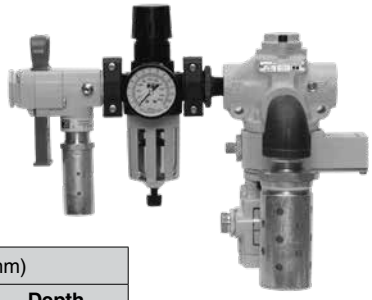
NOTE: Per specifications and regulations, these products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

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

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

Cat. 2 PL c

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 Assemblies	Port Size		Model Number#	Air Entry Type	C_v		Dimensions inches (mm)		
	1, 2	3	NPT Threads		1-2	2-3	Length	Width	Depth
CAT-2 with SV27	1/2	1	RC208-09W	FR	6.3	9.2	14.80 (374.9)	11.00 (279.0)	6.60 (167.7)
			RC208L-09W	FRL	6.3	9.2	14.80 (374.9)	11.00 (279.0)	6.60 (167.7)

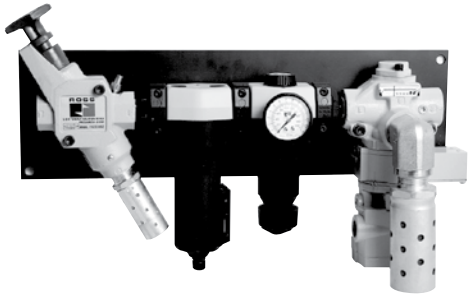
 # Voltage: W=24 VDC; Z=110-120 VAC, 50/60 Hz, e.g., RC208-09Z.
M12 connectors available, consult ROSS.
Silencers included. Standard Air Entry Assemblies supplied with metal bowl and automatic drain.

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

Cat. 2 PL c

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

 # Voltage: W=24 VDC; Z=110-120 VAC, 50/60 Hz, e.g., RC208-06Z.
M12 connectors available, consult ROSS.
Silencers included. Standard Air Entry Assemblies supplied with metal bowl and automatic drain.

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.

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. Safety 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 safety 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.

THE WARRANTY EXPRESSED ABOVE IS IN LIEU OF AND EXCLUSIVE OF ALL OTHER WARRANTIES AND THE ROSS GROUP EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED WITH RESPECT TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE ROSS GROUP 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 THE ROSS GROUP 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 THE ROSS GROUP MAY EXTEND THE LIABILITY OF THE ROSS GROUP AS SET FORTH HEREIN.

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Full-Service Global Locations

There are ROSS Distributors Throughout the World

To meet your requirements across the globe, ROSS distributors are located throughout the world. Through ROSS or its distributors, guidance is available for the selection of ROSS products, both for those using pneumatic components for the first time and those designing complex systems.

Other literature is available for engineering, maintenance, and service requirements.

If you need products or specifications not shown in this catalog, please visit ROSS' website, contact ROSS or your ROSS distributor. The ROSS Support Team will be happy to assist you in selecting the best product for your application.

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