



SAFE AIR ENTRY ASSEMBLIES WITH M35 SERIES VALVES

PRODUCT CATALOG



Safe Air Entry Assemblies with M35 Series Double Valves

Product Overview

Air entry assembly for Pneumatic Control and Air Dump/Release applications.

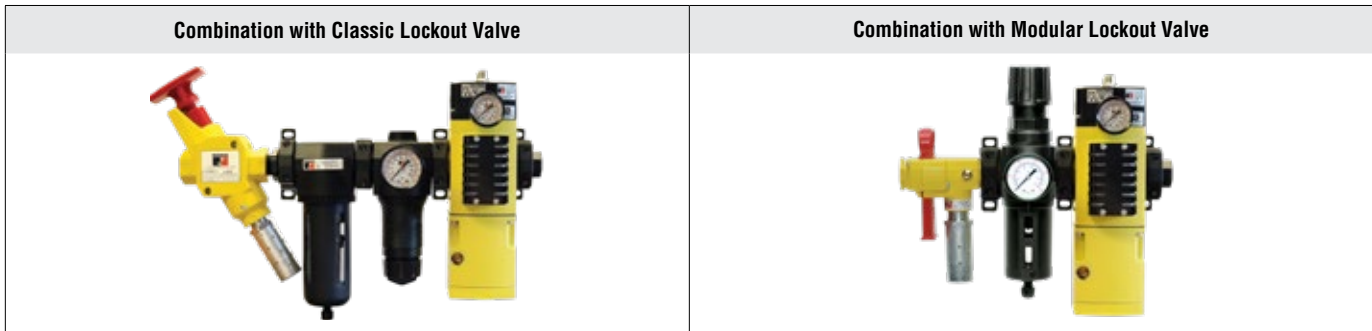


Illustration examples.

Air entry system via a manual Lockout L-O-X® valve, air preparation FRL combinations, and an M35 Series Safe Exhaust double valve with or without Soft-Start function.

ROSS systems have the same quality that you have come to expect from ROSS components. Units are fully configurable, tested, and ready for quick and easy installation at the job site.

Mounting accessories are used for modular connection to ROSS MD Series Filter-Regulator units. Bracket, Screw, Clamp and Mounting Adapter required for mounting.

ASSEMBLY COMPONENTS & FEATURES

Energy Isolation Lockout L-O-X® Valve 15 Series

- 3/2 valve
- Classic L-O-X® or Modular L-O-X®
- Lockable only in the OFF position
- Has a full size exhaust port (equal to or larger than supply)
- Simple push/pull of the large handle provides positive direct manual operation
- Fluorocarbon slipper seals for easy shifting, even after long periods of inactivity
- Integrated sensing port for pressure verification or visual indicator
- High flow, clog resistant; silencers included

Integrated Filter/Regulator Filter/Regulator, and Lubricator MD4™ Series

- Lubricator with metal bowl
- Integrated Filter/Regulator (Filter and Pressure Regulator combined into a single unit) with high-strength polycarbonate plastic bowl
- 5-micron filter element
- Automatic filter drain
- Self relieving regulator
- Analog gauge

Control Reliable Safe Exhaust Double Valve M35 Series

- 3/2 valve
- Valve have both modular receptacles, and female threaded ports, which allows either modular connection or direct piping
- Pressure sensors - for external monitoring of valve state
- Integrated EEZ-ON® (Soft-Start) module option, allows slower build-up of pressure during start-up
- LED indicators - aid troubleshooting
- Built-in silencer








Mounting

Modular or inline

SISTEMA Library

Available for download at rosscontrols.com

M35 SERIES VALVE PRODUCT CREDENTIALS

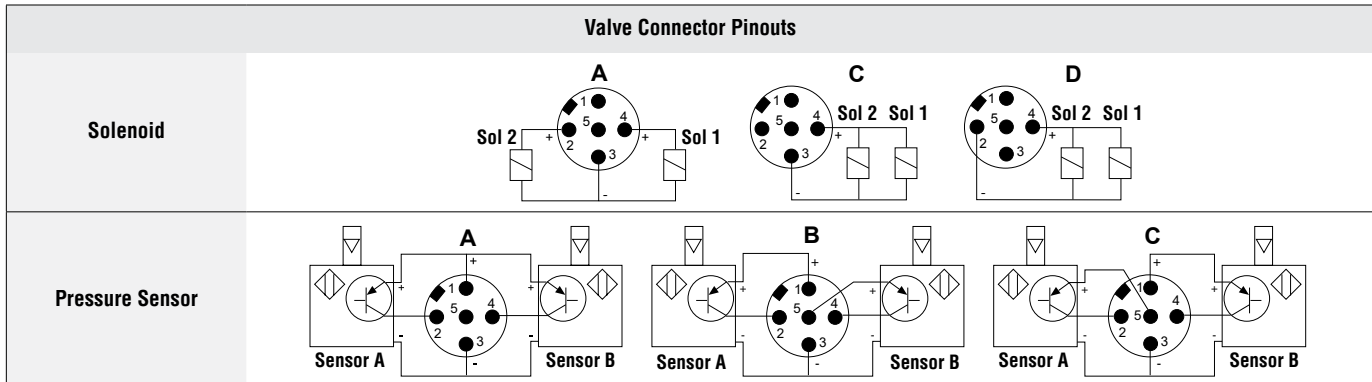
| Safety Category | DGUV (German Social Accident Insurance) | Declaration of Conformity | | | ISO Standard | CSA Certificate of Compliance | CRN Certification |
|---|---|---|---|---|---------------------|---|---|
| | | CE | UKCA | EAC | | | |
|   |  |  |  |  | ISO 13849-1:2015 |  | Available for appropriately tested valves |

NOTE: Per specifications and regulations, lockout L-O-X® products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES. These valve assemblies are not designed for controlling clutch/brake mechanisms on mechanical power presses.

MODEL NUMBER CONFIGURATOR with 3-Way 2-Position Valves

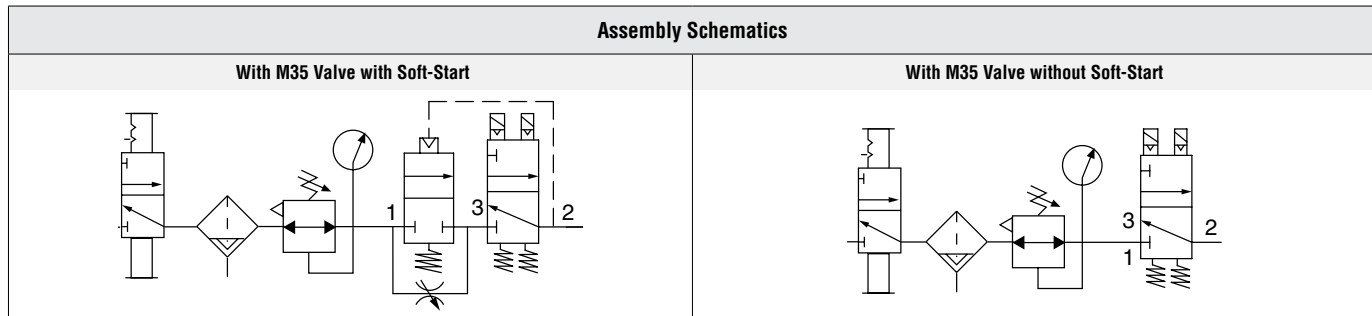
| | | | | | | | | | | | | | | |
|--|----------|----------------------|--|-----------|--|----------|-----------|-----------------------------|----------------------------------|-----------------------------|---|----------|----|----|
| M35 | S | L | F | 2U | 40 | G | A | E | X | AA | G | A | | |
| Series | | | | | | | Voltage | Communication | | | Revision Level | | | |
| M35 Series Valve Soft-Start Option | | Lockout Valve* | | | | | 24 V DC | None | | | Pressure Measuring Device (for M35 Series valve) | | | |
| With Soft-Start | S | Classic L-O-X® | L | | | | | | | | Analog Gauge | G | | |
| Without Soft-Start | X | Modular L-O-X® | M | | | | | | | | Digital Transducer | T | | |
| | | None | X | | | | | | | | None (plugged port) | X | | |
| | | * Silencer Included. | | | | | | | | | | | | |
| Filter, Regulator, Lubricator | | | Extra Port Block (in relation to M35 valve) | | Extra Port Block (in relation to M35 valve) | | Port Size | | M35 Series Valve Exhaust Type | | Pin Configuration Combinations | | | |
| Integrated Filter/Regulator | F | Location | Size | Location | Size | In-Out | Exhaust | Exhaust Type | Exhaust Type | Solenoïd | Sensor | | | |
| Filter and Regulator | R | Upstream | 1/4 | 2U | Both | 1/4 | - | Built-in Silencer | 40 | A | A | AA | | |
| Integrated Filter/Regulator, and Lubricator | L | | 3/8 | 3U | | 3/8 | 3B | 3/4 | - | Built-in Silencer | 50 | A | B | AB |
| | | | 1/2 | 4U | | 1/2 | 4B | 1/2 | 1 | Threaded Exhaust Flange* | 46 | A | C | AC |
| | | Downstream | 1/4 | 2D | None | NA | XX | Threaded Exhaust Flange* | 56 | C | C | CC | | |
| | | | 3/8 | 3D | | | 3/4 | 1 | Threaded Exhaust Flange* | | D | B | DB | |
| | | | 1/2 | 4D | | | | | | | D | C | DC | |

* Silencer not included but recommended, see accessories.



M35 Series Valve

| Port Size | | Basic Size | Soft-Start | with Built-in Silencer | | with Threaded Exhaust Flange | |
|-----------|---|------------|------------|------------------------|-----|------------------------------|------|
| | | | | Flow Cv | | Flow Cv | |
| 1, 2 | 3 | | | 1-2 | 2-3 | 1-2 | 2-3 |
| 1/2 & 3/4 | Built-in Silencer or 1" Threaded Exhaust Flange | 8 | With | 4.1 | 7.5 | 4.1 | 7.57 |
| | | | Without | 4.3 | 7.5 | 4.3 | 7.57 |



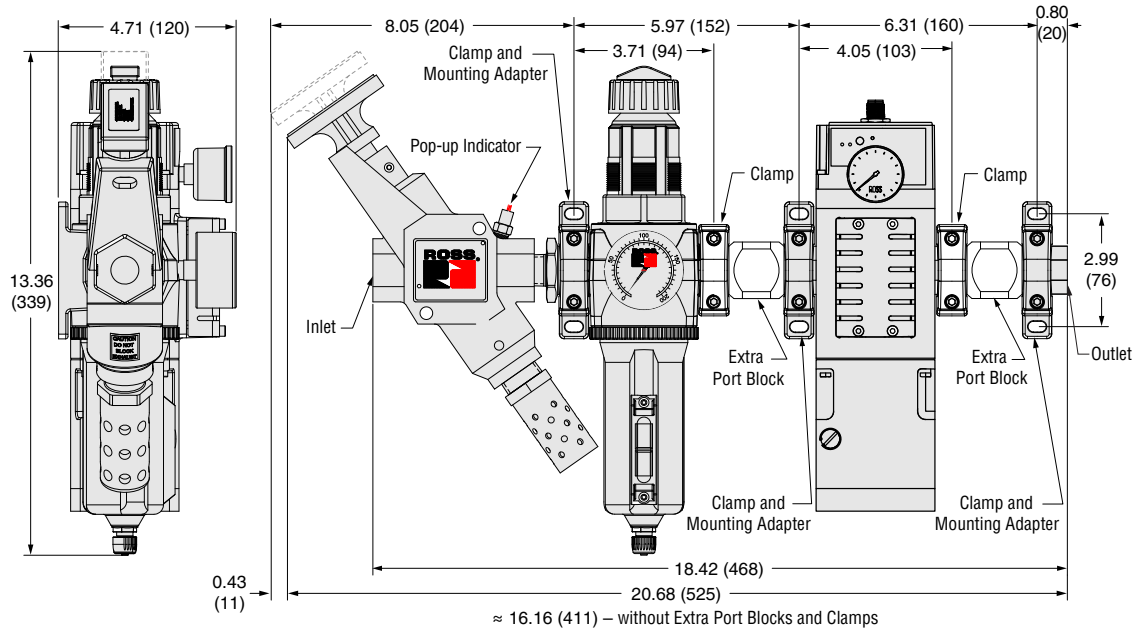
Technical Data

Models with Classic Lockout L-O-X® Valve

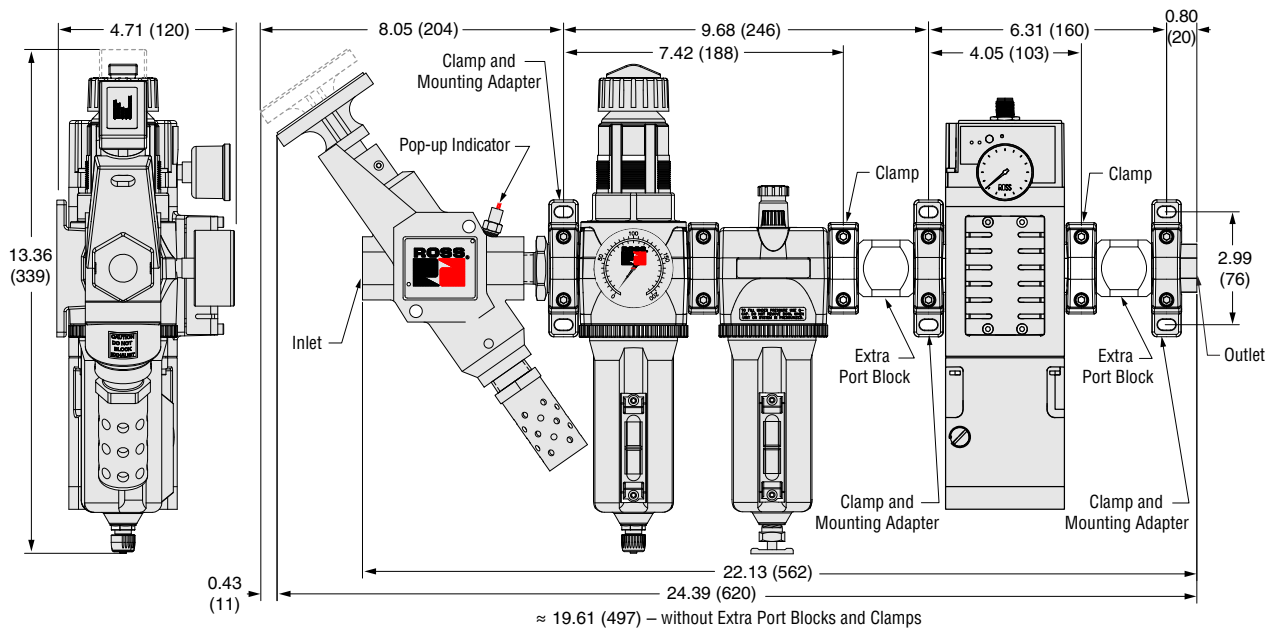
DIMENSIONS

Inches (mm)

with MD4™ Integrated Filter/Regulator option, with or without Extra Port Blocks



with MD4™ Integrated Filter/Regulator and Lubricator option, with or without Extra Port Blocks



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

An Integration Guide for the M35 Series valves is available from ROSS to provide information such as operation & monitoring, and validation test procedure for valve operation and external monitoring logic.

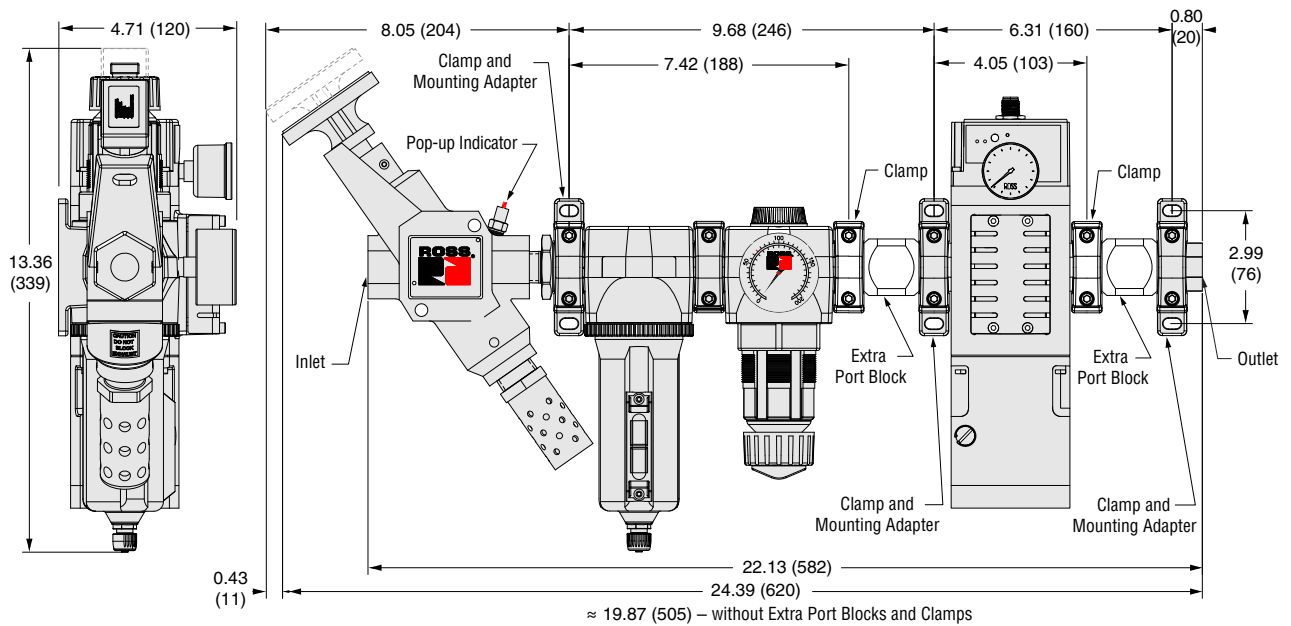
[Integration Guide - M35 Series Safe Exhaust Double Valves](#)

Models with Classic Lockout L-O-X® Valve

DIMENSIONS

Inches (mm)

with MD4™ Filter and Regulator option, with or without Extra Port Blocks



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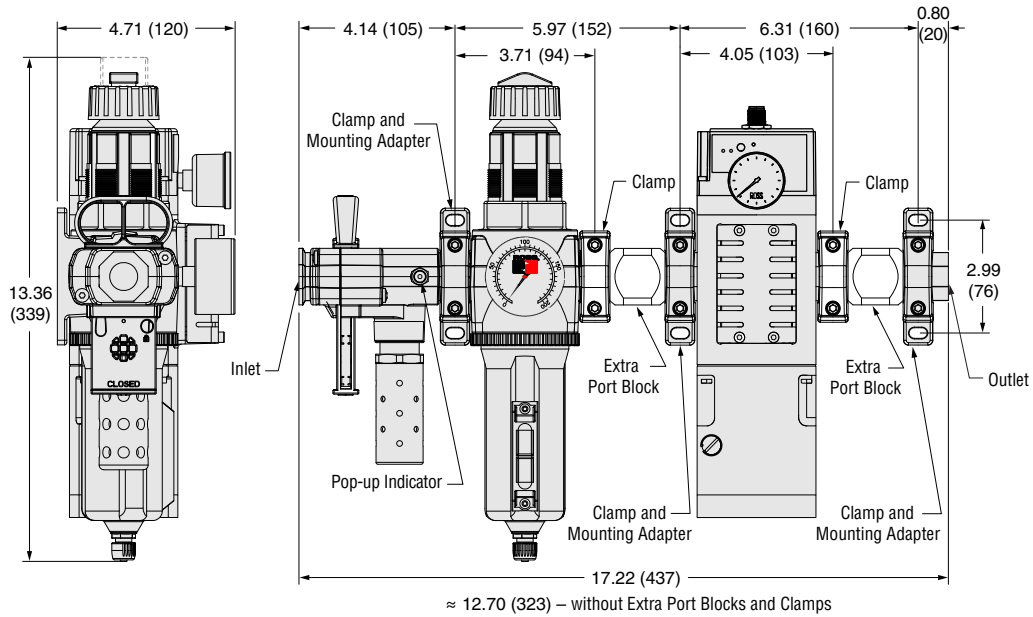
Assembly Technical Data

Models with Modular Lockout L-O-X® Valve

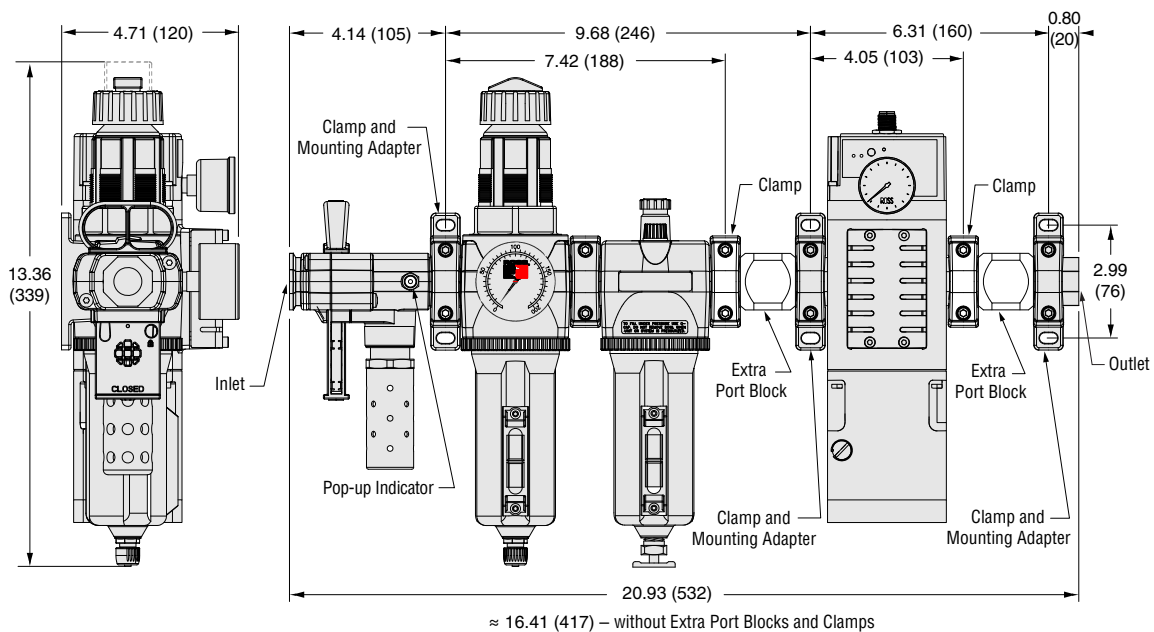
DIMENSIONS

Inches (mm)

with MD4™ Integrated Filter/Regulator option, with or without Extra Port Blocks



with MD4™ Integrated Filter/Regulator and Lubricator option, with or without Extra Port Blocks



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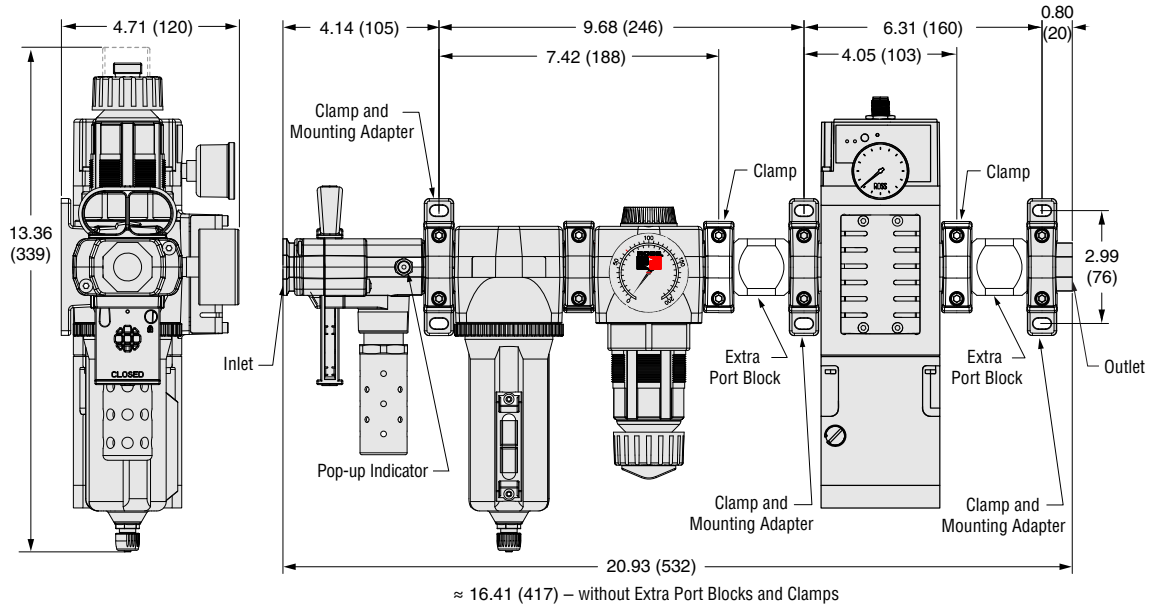
[Integration Guide - M35 Series Safe Exhaust Double Valves](#)

Models with Modular Lockout L-O-X® Valve

DIMENSIONS

Inches (mm)

with MD4™ Filter and Regulator option, with or without Extra Port Blocks



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[Integration Guide - M35 Series Safe Exhaust Double Valves](#)

Air Entry Assemblies with M35 Series Double Valves and Drip Leg Option

Product Overview

Air entry assembly for Pneumatic Control and Air Dump/Release applications.

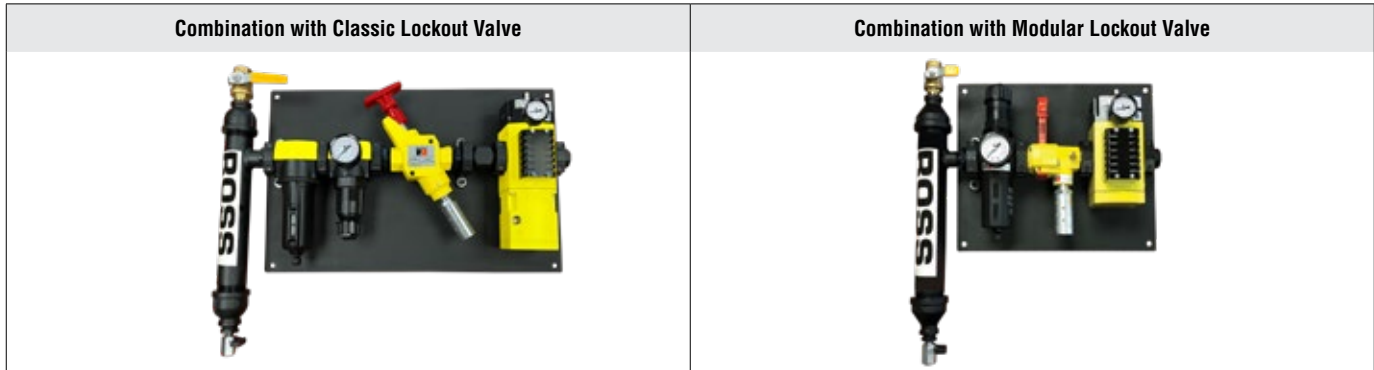


Illustration examples.

Air entry system via an optional drip leg, with integrated filter/regulator “F/R” or an air filter and pressure regulator “FR”, manual Lockout L-O-X® valve, and an M35 Series Safe Exhaust double valve with or without Soft-Start function.

ROSS systems have the same quality that you have come to expect from ROSS components. Units are fully configurable, tested, and ready for quick and easy installation at the job site.

Two types of Lockout Valve - Air Preparation combinations offered:

Type C – with Classic Lockout L-O-X® valve, and filter (with metal bowl) and pressure regulator “FR”

Type M – with Modular Lockout L-O-X® valve, and integrated filter/regulator “F/R” with high-strength polycarbonate plastic bowl.

ASSEMBLY COMPONENTS & FEATURES

Drip Leg

- Inlet and Drain equipped with Ball Valves

Filter and Regulator

MD4™ Series

Filter/Regulator, and Lubricator

MD3™ Series

- Filter with metal bowl
- Integrated Filter/Regulator (Filter and Pressure Regulator combined into a single unit) with high-strength polycarbonate plastic bowl
- 5-micron filter element
- Automatic filter drain
- Self relieving regulator
- Analog gauge

Energy Isolation Lockout L-O-X® Valve

15 Series

- 3/2 valve
- Classic L-O-X® or Modular L-O-X®
- Lockable only in the OFF position
- Has a full size exhaust port (equal to or larger than supply)
- Simple push/pull of the large handle provides positive direct manual operation
- Fluorocarbon slipper seals for easy shifting, even after long periods of inactivity
- Integrated sensing port for pressure verification or visual indicator; Pop-Up indicator included
- High flow, clog resistant; silencers included

Control Reliable Safe Exhaust Double Valve

M35 Series

- 3/2 valve
- Pressure sensors - for external monitoring of valve state
- Integrated EEZ-ON® (Soft-Start) module option, allows slower build-up of during start-up
- LED indicators - aid troubleshooting
- Built-in silencer








Mounting

Modular, inline, or plate mounted assembly option

SISTEMA Library

Available for download at rosscontrols.com.

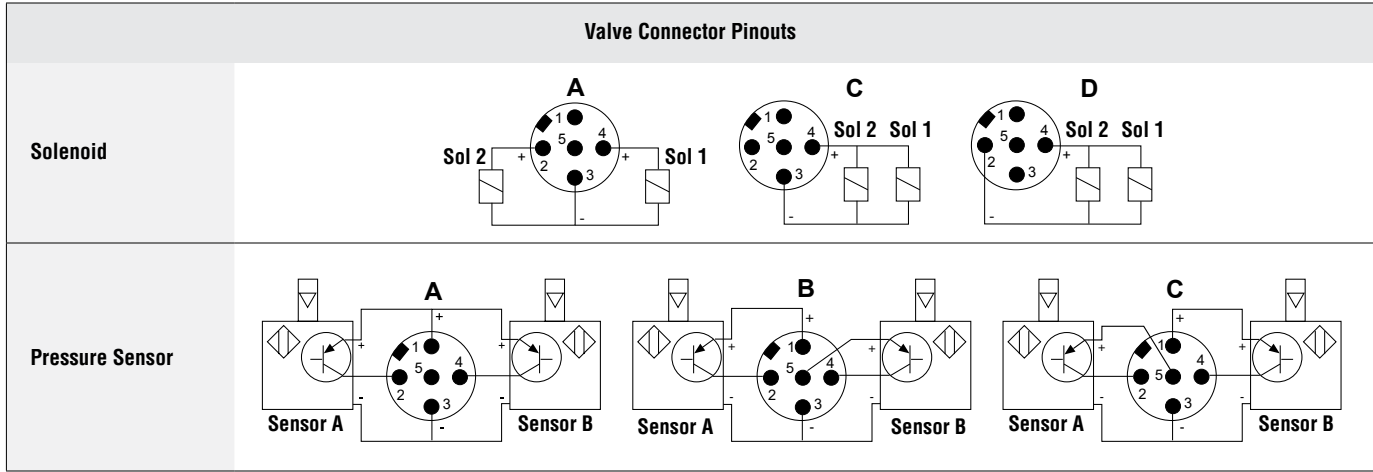
M35 SERIES VALVE PRODUCT CREDENTIALS

| Safety Category | DGUV (German Social Accident Insurance) | Declaration of Conformity | | | ISO Standard | CSA Certificate of Compliance | CRN Certification |
|---|---|---|---|---|---------------------|---|---|
| | | CE | UKCA | EAC | | | |
|   |  |  |  |  | ISO 13849-1:2015 |  | Available for appropriately tested valves |

NOTE: Per specifications and regulations, lockout L-O-X® products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES. These valve assemblies are not designed for controlling clutch/brake mechanisms on mechanical power presses.

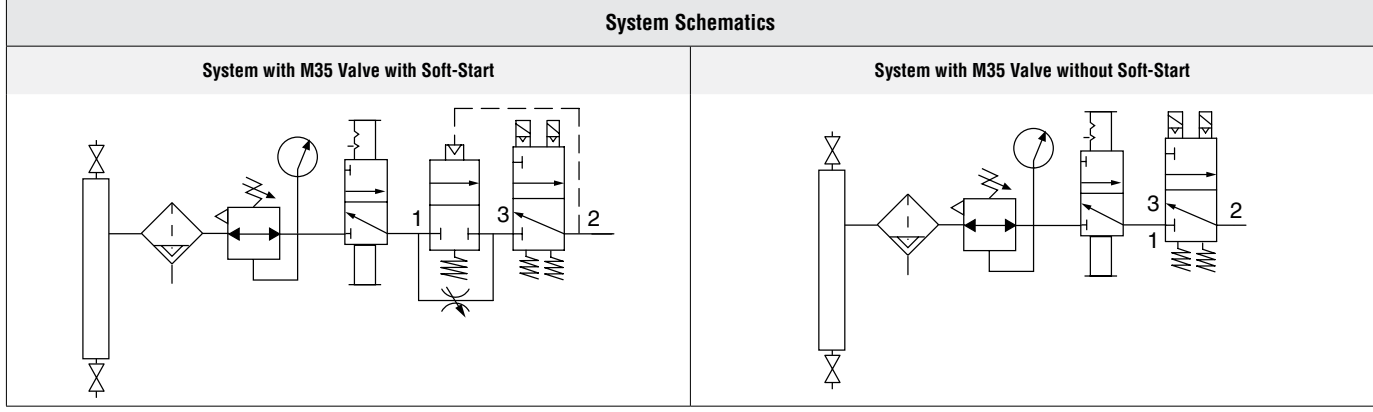
MODEL NUMBER CONFIGURATOR with 3-Way 2-Position Valves

| RCM35 | S | 4 | G | P | D | C | AA | A | | | | | | | | | | | | | | | | | | | | | | |
|--|----------|--|----------|---|----------|--|----------------|--|--|----------|--------|--|---|---|-----------|---|---|-----------|---|---|-----------|---|---|-----------|---|---|-----------|---|---|-----------|
| Series | | | | | | | Revision Level | | | | | | | | | | | | | | | | | | | | | | | |
| M35 Series Valve Soft-Start Option With Soft-Start S Without Soft-Start X | | Port Size 1/2 4 3/4 5 | | Plate With P Without X | | Lockout L-O-X® Valve Classic Filter and Regulator C Modular Integrated Filter/Regulator M | | Pin Configuration Combinations* | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | Drip Leg With D Without X | | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Solenoid</th> <th>Sensor</th> <th></th> </tr> </thead> <tbody> <tr><td>A</td><td>A</td><td>AA</td></tr> <tr><td>A</td><td>B</td><td>AB</td></tr> <tr><td>A</td><td>C</td><td>AC</td></tr> <tr><td>C</td><td>C</td><td>CC</td></tr> <tr><td>D</td><td>B</td><td>DB</td></tr> <tr><td>D</td><td>C</td><td>DC</td></tr> </tbody> </table> | | Solenoid | Sensor | | A | A | AA | A | B | AB | A | C | AC | C | C | CC | D | B | DB | D | C | DC |
| Solenoid | Sensor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | A | AA | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | AB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | C | AC | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | C | CC | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | B | DB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | C | DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Port Thread G G NPT N | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



M35 Series Valve

| Port Size | | Basic Size | Soft-Start | with Built-in Silencer | | with Threaded Exhaust Flange | |
|-----------|---|------------|------------|------------------------|-----|------------------------------|------|
| | | | | Flow Cv | | Flow Cv | |
| 1, 2 | 3 | 8 | With | 1-2 | 2-3 | 1-2 | 2-3 |
| 1/2 & 3/4 | Built-in Silencer or 1" Threaded Exhaust Flange | | Without | 4.1 | 7.5 | 4.1 | 7.57 |
| | | | Without | 4.3 | 7.5 | 4.3 | 7.57 |

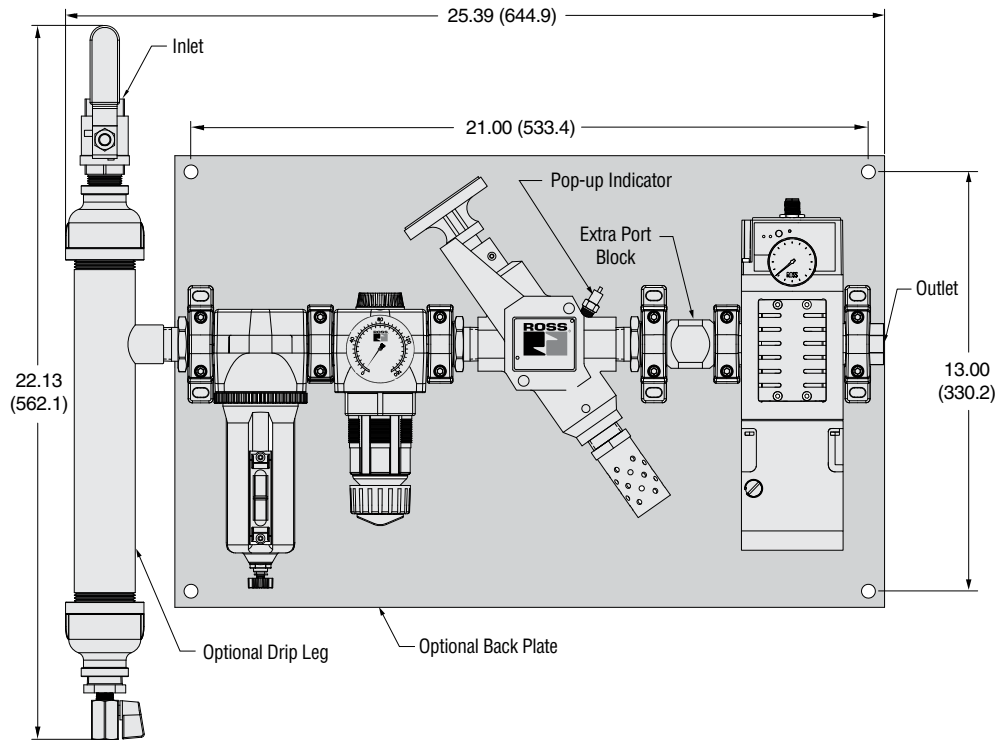


Technical Data

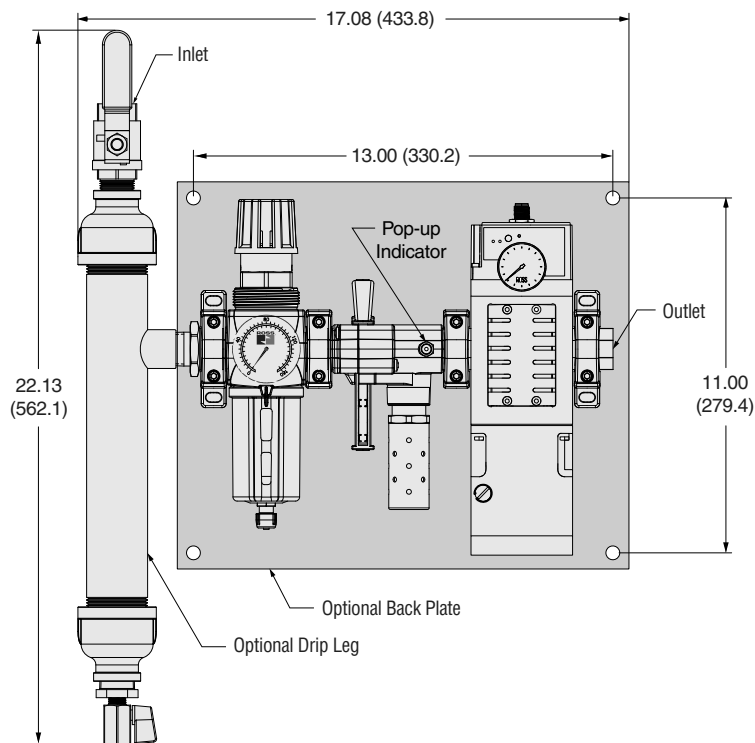
DIMENSIONS

Inches (mm)

Model with Filter and Regulator and Classic Lockout L-O-X® Valve option



Model with Integrated Filter/Regulator and Modular Lockout L-O-X® Valve option



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Integration Guide - M35 Series Safe Exhaust Double Valves

PRESSURE GAUGE

| Analog Pressure Gauge | Mounting | Port Size | Thread Type | Model Number | Pressure Range psig (bar) | Case Diameter inches (mm) |
|-----------------------|-------------|-----------|-------------|--------------|------------------------------|------------------------------|
| | Center Back | 1/8 | Male | 5400A1002 | 0-160 (0-11) | 1.5 (38) |

ENERGY RELEASE VERIFICATION

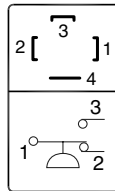
| Visual Pressure Indicator | Verification Type | Installation Location | Indicator Type | Model Number | Port Thread |
|---------------------------|-------------------|-----------------------|-------------------|--------------|-------------|
| | Pneumatic | Pressure Sensing Port | Visual Pop-up Pin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

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

| Redundant Pressure Switch Assembly | Verification Type | Installation Location | Connector Type | Model Number | Factory Preset psi (bar) | Port Size |
|------------------------------------|-------------------|-----------------------|--------------------------|--------------|-----------------------------|-----------|
| | Electrical (Dual) | Downstream | DIN EN 175301-803 Form A | RC026-13 | 5 (0.3) falling | 3/8 NPT |

Pressure Switch Pinout

DIN EN 175301-803 Form A



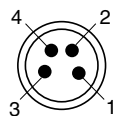
- 1 - Common
- 2 - Normally Closed
- 3 - Normally Open
- 4 - Ground (Not Used)

PRESSURE TRANSDUCERS

| Digital Pressure Transducers | Monitoring Type | Electrical Connection | Electrical Output | Model Number | | Pressure Port Size | Pressure Range psig (bar) | Weight lb (Kg) |
|--|-----------------|----------------------------|-------------------|--------------|------------|--------------------|------------------------------|-------------------|
| | | | | G Thread | NPT Thread | | | |
| Electrical | M8, 4 Pin | (1) PNP with (1) 4-20ma | D760B94 | 760B94 | 1/8 | 0 to 145 (0 to 10) | 0.099 (0.045) | |
| For Digital Pressure Readout, Analog 4-20mA Output, and Transistor Switching Output. | | | | | | | | |

Connector Pinout

Sensor Pinout with Analog Output



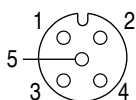
- 1 - Brown - 24 VDC
- 2 - White - 4 to 20mA
- 3 - Blue - 0 VDC
- 4 - Black PNP Open Collector Output 1

Accessories

PREWIRED ELECTRICAL CONNECTORS

| Prewired Connector Kits | Cable | | | | | | Kit Number |
|--|----------------|------------------|-------------------------|------------|----------------------|---------------------|---------------|
| | End 1 | End 2 | Length meters (feet) | Connection | Quantity Included | Cord Diameter mm | Without Light |
| | Connector | Cord / Connector | | | | | |
| M12, Female 5-pin straight A-coded | Flying Leads | 5 (16.4) | Solenoid | 1 | 6 | 2644B77 | |
| | | | Sensor | 1 | 6 | | |
| | | 10 (32.8) | Solenoid | 1 | 6 | 2370B77 | |
| | | | Sensor | 1 | 6 | | |
| | Male Connector | 5 (16.4) | Solenoid | 1 | 6 | 2645B77 | |
| | | | Sensor | 1 | 6 | | |
| | | 10 (32.8) | Solenoid | 1 | 6 | 2371B77 | |
| | | | Sensor | 1 | 6 | | |

Connector Pinout



- 1 - Brown
- 2 - White
- 3 - Blue
- 4 - Black
- 5 - Grey

LOCKOUT DEVICE

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

EXHAUST SILENCERS

| Silencers for Threaded Exhaust Flange Option | Port Size | Thread Type | Model Number | | Flow Avg. C _v |
|--|-----------|-------------|--------------|------------|-----------------------------|
| | | | R/Rp Thread | NPT Thread | |
| | 1 | Male | D5500A6003 | 5500A6003 | 14.6 |

MODULAR CONNECTION

M35 Series valves have both modular receptacles for piping and female threaded ports inside receptacles, which allows either modular connection or direct piping. Mounting accessories listed below are used for modular connection to ROSS MD Series filter-regulator units.

| Mounting Brackets & Clamp for Module Connections | Options | | Model Number | |
|--|---------------------------|--|--------------|--|
| | Clamp only | | R-A118-105 | |
| | Bracket, Screw, and Clamp | | R-A118-105M | |

| Port Block and End Ports | Options | Port Size | Model Number | |
|--------------------------|-------------------|---------------|--------------|-------------|
| | | | G Thread | NPTF Thread |
| | Extra Port Blocks | 1/2 | R-118-106-4W | R-118-106-4 |
| | Female End Ports | 1/2 | R-118-100-4W | R-118-100-4 |
| | | 3/4 | R-118-100-6W | R-118-100-6 |
| Male End Ports | 1/2 | R-118-109-4FW | R-118-109-4F | |
| | 3/4 | R-118-109-6FW | R-118-109-6F | |

REPLACEMENT FILTER ELEMENTS

| Filter Elements | Filter Series | Bowl Type | Element Material | Model Number | | |
|-----------------|---------------|-----------------|------------------|----------------|---------------|--------------|
| | | | | Element Rating | | |
| | | | | 5-µm | 20-µm | 40-µm |
| | | | | MD3™ | Standard | Polyethylene |
| Sintered Bronze | R-A60F-03E5 | R-A60F-03E4 | R-A60F-03E3 | | | |
| MD4™ | Standard | Polyethylene | R-A115-106PE5 | – | – | |
| | | Sintered Bronze | R-A115-106E5 | R-A115-106E4 | R-A115-106PE3 | |

LUBRICANTS, POLYCARBONATE BOWL CAUTIONS

COMPATIBLE LUBRICANTS

Although air line lubrication is not required for most ROSS valves, other mechanisms in the system may need such lubrication. When a lubricator is used, it should be supplied only with oils which are compatible with the materials used in the valves for seals and poppets. Generally speaking, these are petroleum base oils with oxidation inhibitors, and aniline point between 180°F (82°C) and 220°F (104°C) and an ISO 32, or lighter, viscosity. Oils with phosphate type additives, such as zinc dithiophosphate, must be avoided because they can harm polyurethane valve components. The best oils to use in pneumatic systems are those specifically compounded for air line lubricator service.

CAUTIONS ON THE USE OF POLYCARBONATE BOWLS

Use Only with Compressed Air. Filters and lubricators with polycarbonate bowls are specifically designed for compressed air service, and their use with any other fluid (liquid or gas) is a misapplication. The use with or injection of certain hazardous fluids in the system (e.g., alcohol or liquefied petroleum gas) could be harmful to the polycarbonate bowl or result in a combustible condition or hazardous leakage. Before using with a fluid other than air, or for nonindustrial applications, or for life support systems, consult ROSS.

Use Metal Bowl Guard When Supplied. A metal bowl guard is supplied with all but the smallest bowls, and must always be used to minimize danger from fragmentation in the event of failure of a polycarbonate bowl.

Avoid Harmful Substances. Some compressor oils, chemical cleaners, solvents, paints, and fumes will attack polycarbonate bowls and can cause bowl failure. Do not use with or near these materials. When a bowl becomes dirty, replace the bowl or wipe it with a clean dry cloth. Immediately replace any polycarbonate bowl which is crazed, cracked, or deteriorated.

SUBSTANCES HARMFUL TO POLYCARBONATE BOWLS

| | | | |
|--------------------------------|-------------------------|----------------------------------|-------------------------|
| Acetaldehyde | Carbon disulfide | Ethylene dichloride | Phosphorous trichloride |
| Acetic acid | Carbon tetrachloride | Ethylene glycol | Propionic acid |
| Acetone | Caustic potash solution | Formic acid | Pyridine |
| Acrylonitrile | Caustic soda solution | Freon (refrigerant & propellant) | Sodium hydroxide |
| Ammonia | Chlorobenzene | Gasoline (high aromatic) | Sodium sulfide |
| Ammonium fluoride | Chloroform | Hydrazine | Styrene |
| Ammonium hydroxide | Cresol | Hydrochloric acid | Sulfuric acid |
| Ammonium sulfide | Cyclohexanol | Lacquer thinner | Sulfural chloride |
| Anaerobic adhesives & sealants | Cyclohexanone | Methyl alcohol | Tetrahydronaphthalene |
| Antifreeze | Cyclohexene | Methylene chloride | Thiophene |
| Benzene | Dimethyl formamide | Methylene salicylate | Toluene |
| Benzoic acid | Dioxane | Milk of lime (CaOH) | Turpentine |
| Benzyl alcohol | Ethane tetrachloride | Nitric acid | Xylene |
| Brake fluids | Ethyl acetate | Nitrobenzene | Perchloroethylene |
| Bromobenzene | Ethyl ether | Nitrocellulose lacquer | |
| Butyric acid | Ethylamine | Phenol | |
| Carbolic acid | Ethylene chlorohydrin | Phosphorous hydroxyl chloride | |

TRADE NAMES OF SUBSTANCES HARMFUL TO POLYCARBONATE BOWLS

| | | |
|--|------------------------------|------------------------------------|
| Atlas Perma-Guard | Loctite Threadlocker Red 271 | Pydraul AC |
| Buna-N | Loctite Threadlocker 290 | Sears Regular Motor Oil |
| Cellulube #150 & #220 | Loctite 601 | Sinclair oil "Lily White" |
| Crylex #5 cement | Loctite Teflon sealant | Stauffer Chemical FYRQUEL 150 |
| Eastman 910 | Marvel Mystery Oil | Stillman #SR 269-75 (polyurethane) |
| Garlock #98403 (polyurethane) | Minnesota Rubber 366Y | Stillman #SR 513-70 (neoprene) |
| Haskel #568-023 | National Compound #N11 | Tannergas |
| Hilgard Company's Hil-Phene | Nylock VC-3 | Telar |
| Houghton & Co. oil #1120, #1130, #1055 | Parco #1306 Neoprene | Tenneco Anderol 495 & 500 oils |
| Houtosafe 1000 | Permabond 910 | Titon |
| Kano Kroil | Petron PD287 | Vibra-TITE |
| Keystone penetrating oil #2 | Prestone | Valvolin ZEREX |

CAUTIONS, WARNINGS And STANDARD WARRANTY



ROSS OPERATING VALVE, ROSS CONTROLS®, ROSS DECCO®, and AUTOMATIC VALVE INDUSTRIAL, collectively the “ROSS Group”.

PRE-INSTALLATION or SERVICE

1. Before servicing a valve or other pneumatic component, be sure all sources of energy are turned off, the entire pneumatic system is shut down and exhausted, and all power sources are locked out (ref: OSHA 1910.147, EN 1037).
2. All ROSS Group Products, including service kits and parts, should be installed and/or serviced only by persons having training and experience with pneumatic equipment. Because any product can be tampered with and/or need servicing after installation, persons responsible for the safety of others or the care of equipment must check ROSS Group Products on a regular basis and perform all necessary maintenance to ensure safe operating conditions.
3. All applicable instructions should be read and complied with before using any fluid power system to prevent harm to persons or equipment. In addition, overhauled or serviced valves must be functionally tested prior to installation and use. If you have any questions, call your nearest ROSS Group location.
4. Each ROSS Group Product should be used within its specification limits. In addition, use only ROSS Group components to repair ROSS Group Products.

WARNINGS:

Failure to follow these instructions can result in personal injury and/or property damage.

FILTRATION and LUBRICATION

1. Dirt, scale, moisture, etc., are present in virtually every air system. Although some valves are more tolerant of these contaminants than others, best performance will be realized if a filter is installed to clean the air supply, thus preventing contaminants from interfering with the proper performance of the equipment. The ROSS Group recommends a filter with a 5-micron rating for normal applications.
2. All standard ROSS Group filters and lubricators with polycarbonate plastic bowls are designed for compressed air applications only. Use the metal bowl guard, where provided, to minimize danger from high pressure fragmentation in the event of bowl failure. Do not expose these products to certain fluids, such as alcohol or liquefied petroleum gas, as they can cause bowls to rupture, creating a combustible condition and hazardous leakage. Immediately replace crazed, cracked, or deteriorated bowls.
3. Only use lubricants which are compatible with materials used in the valves and other components in the system. Normally, compatible lubricants are petroleum base oils with oxidation inhibitors, an aniline point between 180°F (82°C) and 220°F (104°C), and an ISO 32, or lighter, viscosity. Avoid oils with

phosphate type additives which can harm polyurethane components, potentially leading to valve failure which risks personal injury, and/or damage to property.

WARNINGS:

Failure to follow these instructions can result in personal injury and/or property damage.

AVOID INTAKE/EXHAUST RESTRICTION

1. Do not restrict air flow in the supply line. To do so could reduce the pressure of the supply air below minimum requirements for the valve and thereby causing erratic action.
2. Do not restrict a valve's exhaust port as this can adversely affect its operation. Exhaust silencers must be resistant to clogging and must have flow capacities at least as great as the exhaust capacities of the valves. Contamination of the silencer can result in reduced flow and increased back pressure.

WARNINGS: Failure to follow these instructions can result in personal injury and/or property damage.

SAFETY APPLICATIONS

1. Mechanical Power Presses and other potentially hazardous machinery using a pneumatically controlled clutch and brake mechanism must use a press control double valve with a monitoring device. A double valve without a self-contained monitoring device should be used only in conjunction with a control system which assures monitoring of the valve. All double valve installations involving hazardous applications should incorporate a monitoring system which inhibits further operation of the valve and machine in the event of a failure within the valve mechanism.
2. Safe Exhaust (dump) valves without a self-contained monitoring device should be used only in conjunction with a control system which assures monitoring of the valve. All Safe Exhaust valve installations should incorporate a monitoring system which inhibits further operation of the valve and machine in the event of a failure within the valve mechanism.
3. Per specifications and regulations, the ROSS L-O-X® and L-O-X® with EEZ-ON®, N06 and N16 Series operation products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

WARNINGS:

Failure to follow these instructions can result in personal injury and/or property damage.

STANDARD WARRANTY

All products sold by the ROSS Group are warranted for a one-year period [with the exception of Filters, Regulators and Lubricators (“FRLs”) which are warranted for a period of seven (7) years] from the date of purchase. All products are, during their respective warranty periods, warranted to be free of defects in material and workmanship. The ROSS Group's obligation under this warranty is limited to repair, replacement or refund of the purchase price paid for products which the ROSS Group has determined, in its sole discretion, are defective. All warranties become void if a product has been subject to misuse, misapplication, improper maintenance, modification or tampering. Products for which warranty protection is sought must be returned to the ROSS Group freight prepaid.

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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 fluid power 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 www.rosscontrols.com.