



SAFE AIR ENTRY ASSEMBLIES WITH DM SERIES C VALVES



PRODUCT CATALOG

Safe Air Entry Assemblies with DM¹ & DM²® Series C

Product Overview

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



Illustration example.

Air entry system via a manual Lockout L-O-X® valve, air preparation FRL combinations, and an DM¹ or DM²® Series C Safe Exhaust double valve. 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.

- Custom designs available, consult ROSS
- Explosion proof solenoid pilot available, for more information consult ROSS

ASSEMBLY COMPONENTS & FEATURES

Energy Isolation Lockout L-O-X® Valve 15 Series	• 3/2 valve • Classic 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 • Visual pop-up indicator for pressure verification included • High flow, clog resistant silencers included
Filter and Regulator Integrated Filter/Regulator, and Lubricator Filter, Regulator, and Lubricator MD3™, MD4™, and High-Capacity Series	• Filter, Integrated Filter/Regulator, and Lubricator with metal bowls • 5-micron filter element • Automatic drain • Analog gauge
Control Reliable Safe Exhaust Double Valve DM ¹ or DM ² ® Series C	• 3/2 valve • Self-contained dynamic monitoring system requires no further valve monitoring controls • Status indicator (mechanical pressure switch) for valve condition (ready-to-run) feedback • DM¹ Series C – Automatic reset • DM²® Series C – Dynamic memory of abnormal function prevents unintentional reset with removal and or reapplication of air or electricity – Electrical solenoid reset
Mounting	Mounting plate assembly design
SISTEMA Library	Available for download

DM ¹ & DM ² ® SERIES C VALVE PRODUCT CREDENTIALS					
Performance Level Per ISO 13849-1:2015 	Safety Integrity Level Per IEC 2061:2001 	DGUV 		Declaration of Conformity  	Certificate of Compliance 

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 DM¹ Series C Valve

RC 3 08 - 06 W

Port Thread	
NPT	
(Leave Blank)	
G	D

Safe Exhaust Valve
DM ¹ Series C
Valve with Automatic Reset

Safe Exhaust Valve Port Size		
In-Out	Exhaust *	
1/4	3/4	04
3/8	3/4	06
1/2	1	08
3/4	1	12
1	1	16

* Silencer Included.

Connection Type	Description	Voltage	
DIN EN 175301-803 Form A	Solenoids (connectors sold separately)*	AC or DC	
Leave Blank			
M12	Solenoids (connectors included)*	24 V DC only	005
Adapter DIN EN to M12	Mechanical Pressure Switch when selected (connector included)*		

* See options for connectors or wiring kits.

Current	Voltage *	
DC	24 V	W
AC	110 V, 50 Hz	Z
	120 V, 50/60 Hz	
	230 V, 50/60 Hz	C**

* For other voltages consult ROSS.

** 230 V AC not available in the U.S. (OSHA regulations limit press control voltage to no more than 120 V AC).

Filter, Regulator, Lubricator		Port Size	Series/Model	
Filter – Regulator (Leave Blank)	Integrated Filter/Regulator	1/4 & 3/8	MD3	L
	Filter and Regulator	1/2 & 3/4	MD4	
		1	High-Capacity	
Integrated Filter/Regulator and Lubricator		1/4 & 3/8	MD3	
		1/2 & 3/4	MD4	
Filter, Regulator and Lubricator		1	High-Capacity	

Lockout Valve Port Size *		Lockout Valve Model	
In-Out	Exhaust		
1/4	3/4	Modular L-O-X®	09
3/8			
1/2	3/4	Classic L-O-X®	06
3/4			
1	1-1/4		

* Inlet Port Size determined by Safe Exhaust Valve Inlet Port Size.

** Silencer Included.

Model Number examples: RC308L-06W, DRC304-09Z005.

Ordering Information

MODEL NUMBER CONFIGURATOR

with DM²® Series C Valve

RC **4** **08** **—** **06** **W**

Series

Port Thread

NPT
(Leave Blank)

G

D

Safe Exhaust Valve

DM²® Series C

Valve with Electrical Reset

Safe Exhaust Valve Port Size

In	Out	Exhaust *	
1/4	1/4	3/4	04
3/8	3/8	3/4	06
1/2	1/2	1	08
3/4	3/4	1	12
1	1	1	16
1	1	1-1/2	16HF
1-1/2	2	2-1/2	32

* Silencer Included.

Filter, Regulator, Lubricator		Port Size	Series/Model	
Filter – Regulator (Leave Blank)	Integrated Filter/Regulator	1/4 & 3/8	MD3	L
	Filter and Regulator	1/2 & 3/4	MD4	
		1 & 1-1/2	High-Capacity	
Integrated Filter/Regulator and Lubricator		1/4 & 3/8	MD3	
		1/2 & 3/4	MD4	
Filter, Regulator and Lubricator		1 & 1-1/2	High-Capacity	

Connection Type	Description	Voltage	
DIN EN 175301-803 Form A Leave Blank	Solenoids (connectors sold separately)*	AC or DC	
M12 Adapter DIN EN to M12	Solenoids (connectors included)*	24 V DC only	005
	Mechanical Pressure Switch when selected (connector included)*		

* See accessories, for connectors or wiring kits.

Current	Voltage*	
DC	24 V	W
AC	110 V, 50 Hz 120 V, 50/60 Hz	Z
	230 V, 50/60 Hz	C**

* For other voltages consult ROSS.

** 230 V AC not available in the U.S. (OSHA regulations limit press control voltage to no more than 120 V AC).

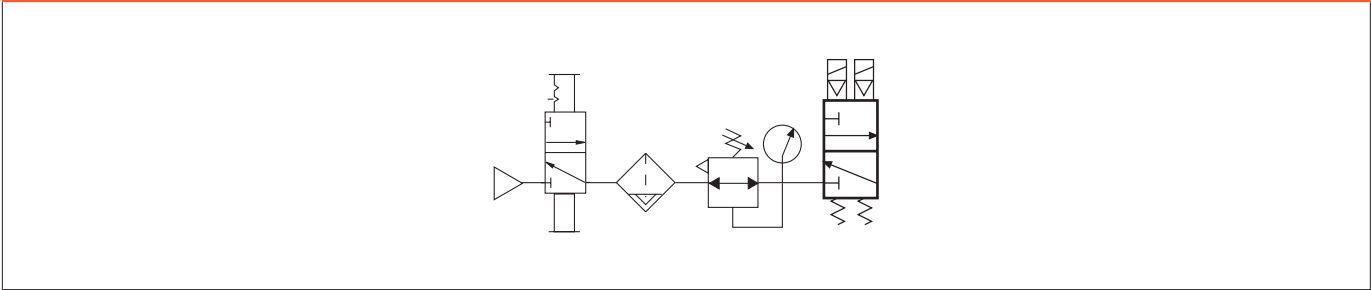
Lockout Valve Port Size*		Lockout Valve Model	
In-Out	Exhaust **		
1/4	3/4	Modular L-O-X®	09
3/8			
1/2	3/4	Classic L-O-X®	06
3/4			
1	1-1/4	High-Capacity L-O-X®	
1-1/2	2		

* Inlet Port Size determined by Safe Exhaust Valve Inlet Port Size.

** Silencer Included.

Model Number examples: RC432L-06W, DRC404-09Z005.

Assembly Schematic



Solenoid & Pressure Switch Pinouts

DIN EN 175301-803 Form A		M12	
Solenoid	1 - Positive 2 - Negative 4 - Ground	3 - Positive 4 - Negative	
DIN EN 175301-803 Form A		M12	
Pressure Switch	1 - Common 2 - Normally Closed 3 - Normally Open 4 - Ground	1, 2, 3, 4 - Pin PNP - Switched Positive NO - Normally Open NC - Normally Closed	

Technical Data

Dimensions							
Port Size			FRL Combination	Assembly Model Number Identification	Dimensions inches (mm)		
In	Out	Exhaust			Mounting Plate		Unit Depth
					Length	Width	
1/4	1/4	3/4	Integrated Filter/Regulator	DRC304-09*** DRC404-09***	13.00 (330.2)	13.00 (330.2)	5.50 (139.7)
			Filter, Regulator, and Lubricator	DRC304L-09*** DRC404L-09***	17.00 (431.8)	14.50 (368.3)	
3/8	3/8	3/4	Integrated Filter/Regulator	DRC306-09*** DRC406-09***	13.00 (330.2)	13.00 (330.2)	5.50 (139.7)
			Filter, Regulator, and Lubricator	DRC306L-09*** DRC406L-09***	17.00 (431.8)	14.50 (368.3)	
1/2	1/2	1	Filter and Regulator	DRC308-06*** DRC408-06***	24.00 (609.6)	17.00 (43.2)	7.50 (190.5)
			Integrated Filter/Regulator, and Lubricator	DRC308L-06*** DRC408L-06***			
3/4	3/4	1	Filter and Regulator	DRC312-06*** DRC412-06***	24.00 (609.6)	17.00 (431.8)	8.50 (215.9)
			Integrated Filter/Regulator, and Lubricator	DRC312L-06*** DRC412L-06***			
1	1	1	Filter and Regulator	DRC316-06*** DRC416-06***	27.00 (685.8)	18.00 (457.2)	9.00 (228.6)
			Filter, Regulator, and Lubricator	DRC316L-06*** DRC416L-06***	30.00 (762.0)	20.00 (508.0)	
1	1	1-1/2	Filter and Regulator	DRC316HF-06*** DRC416HF-06***	30.00 (762.0)	20.00 (508.0)	10.00 (254.0)
			Filter, Regulator, and Lubricator	DRC316HFL-06*** DRC416HFL-06***	34.00 (863.6)		
1-1/2	2	2-1/2	Filter and Regulator	DRC432-06***	32.00 (812.8)	23.00 (584.2)	12.50 (317.5)
			Filter, Regulator, and Lubricator	DRC432L-06***	37.00 (939.8)		

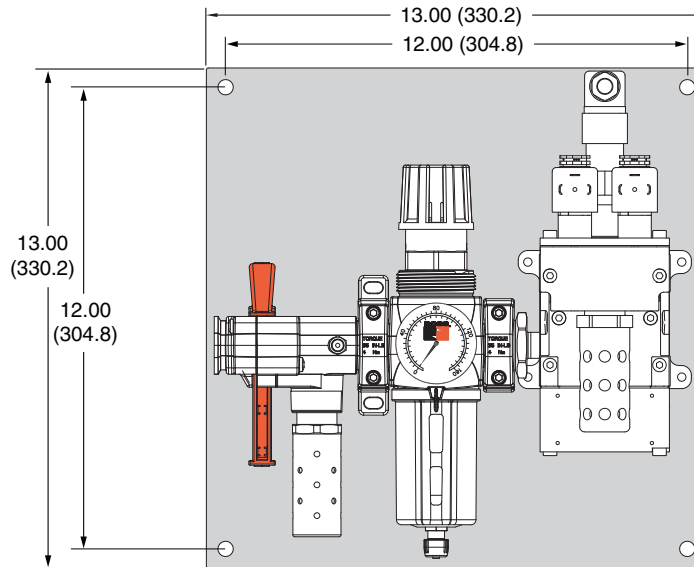
Models with Modular Lockout L-O-X® Valve

ASSEMBLY COMBINATION EXAMPLES

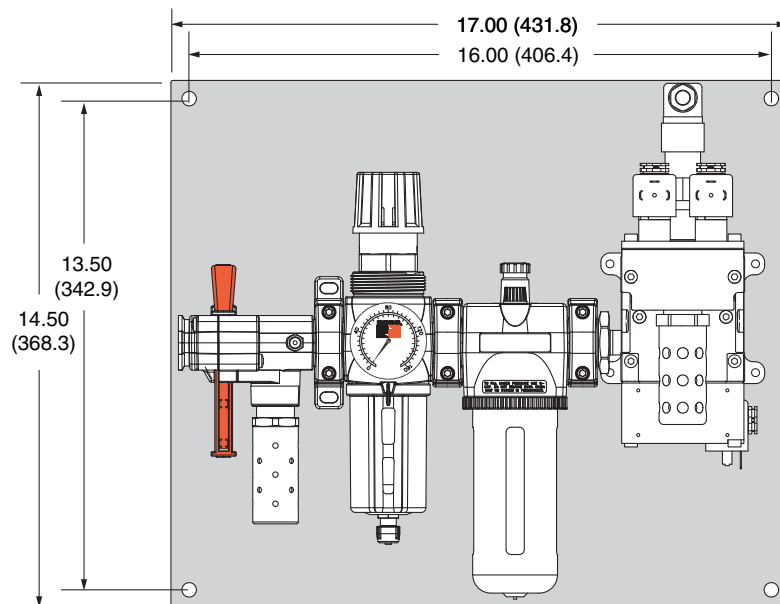
DIMENSIONS – Inches (mm)

Port Size 1/4 or 3/8"

with DM1 Series C & MD3™ Integrated Filter/Regulator option



with DM2® Series C & MD3™ Integrated Filter/Regulator and Lubricator option



Combination example.

Downloadable CAD models available.

Models with Classic Lockout L-O-X® Valve	
ASSEMBLY COMBINATION EXAMPLES	DIMENSIONS – Inches (mm)
Port Size 1/2"	
with DM²® Series C & MD4™ Filter and Regulator option	
with DM²® Series C & MD4™ Integrated Filter/Regulator and Lubricator option	
Combination example.	
Downloadable CAD models available.	

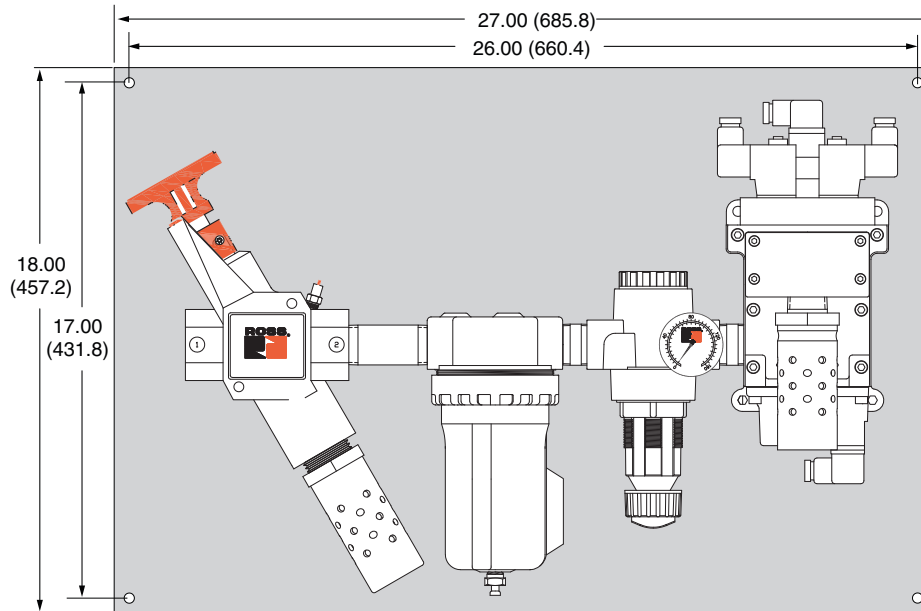
Models with Classic Lockout L-O-X® Valve

ASSEMBLY COMBINATION EXAMPLES

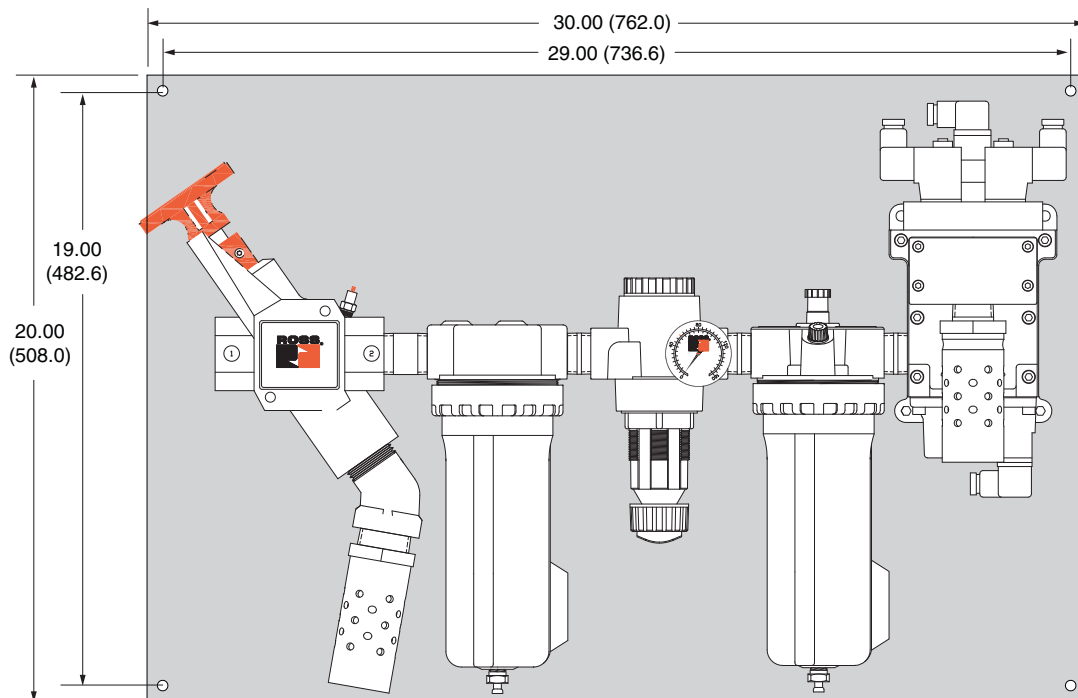
DIMENSIONS – Inches (mm)

Port Size 1"

with DM²® Series C & High-Capacity Filter and Regulator option



with DM² Series C & High-Capacity Filter, Regulator and Lubricator option



Combination example.

Downloadable CAD models available.

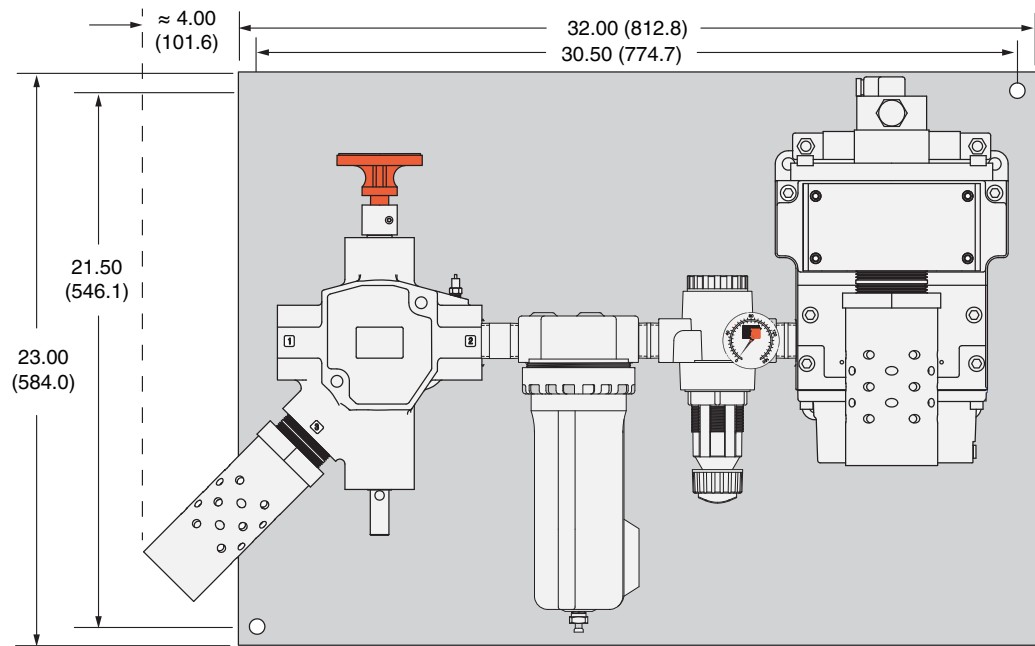
Models with High-Capacity Lockout L-O-X® Valve

ASSEMBLY COMBINATION EXAMPLES

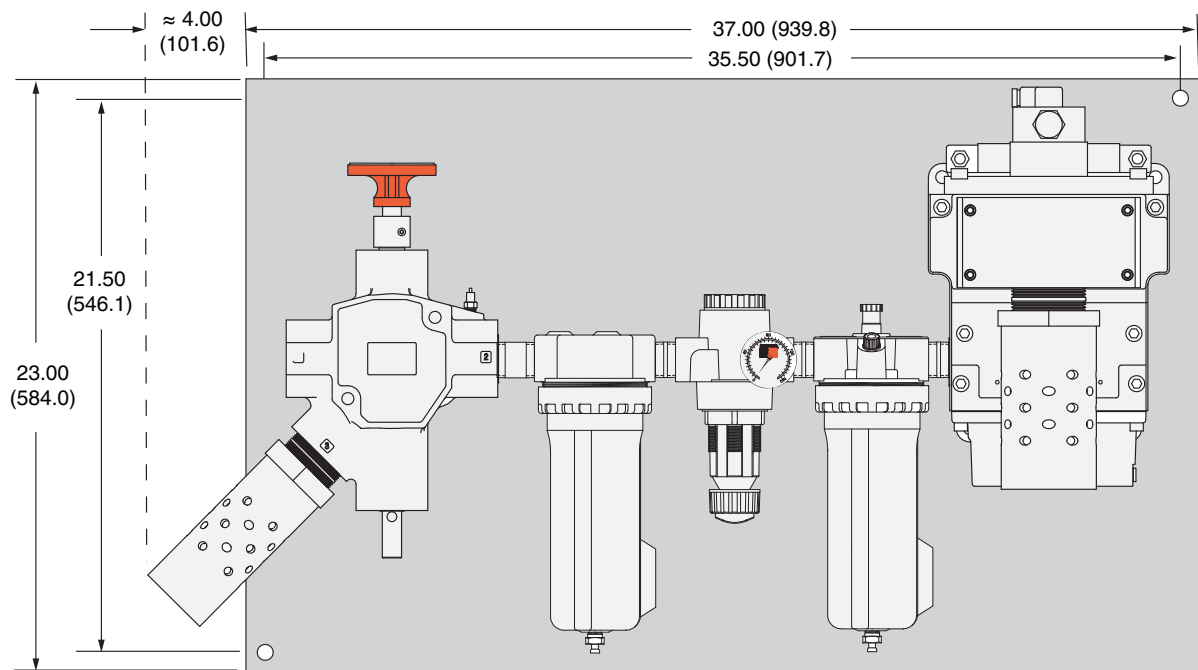
DIMENSIONS – Inches (mm)

Port Size 1-12"

with DM²® Series C & High-Capacity Filter and Regulator option



with DM²® Series C & High-Capacity Filter, Regulator and Lubricator option



Combination example.

Downloadable CAD models available.

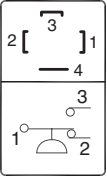
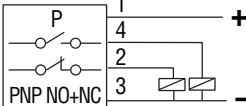
ELECTRICAL STATUS INDICATION

Pressure Switch	Pressure Sensor
	

Illustration examples.

Pressure Switches for Status Indicator	Indicator Type	Connector Type	Model Number	Port Thread	Factory Preset psi (bar)
	Mechanical Pressure Switch	DIN EN 175301-803 Form A	1104A30	M10x1	22 (1.5) falling
		M12	1153A30		
	Solid State Pressure Sensor	M12	1335B30W	M10x1	17 (1.2) falling

Status Indicator Assemblies	Indicator Type	Connector Type	Model Number	Factory Preset psi (bar)
	Mechanical Pressure Switch	DIN EN 175301-803 Form A	Y670B94	22 (1.5) falling
	Solid State Pressure Sensor	M12	Y766B94	17 (1.2) falling

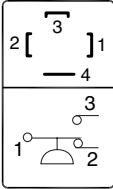
Pinouts		
Mechanical Pressure Switch		Solid State Pressure Sensor
DIN EN 175301-803 Form A	M12	M12
 1 - Common 2 - Normally Closed 3 - Normally Open 4 - Ground (Not Used)	 1 - Common 2 - Normally Closed 3 - Not Used 4 - Normally Open	  1, 2, 3, 4 - Pin PNP - Switched Positive NO - Normally Open NC - Normally Closed

ENERGY RELEASE VERIFICATION

Pressure Switch	Redundant Pressure Switch Assembly
	

Illustration examples.

Pressure Switch	Verification Type	Installation Location	Connector Type	Model Number	Port Thread	Factory Preset psi (bar)
	Electrical	Pressure Sensing Port or Downstream	DIN EN 175301-803 Form A	586A86	1/8 NPT	5 (0.3) falling
Redundant Pressure Switch Assembly	Verification Type	Installation Location	Connector Type	Model Number	Port Thread	Factory Preset psi (bar)
	Electrical (Dual)	Downstream	DIN EN 175301-803 Form A	RC026-13	3/8 NPT	5 (0.3) falling

Pinout	
DIN EN 175301-803 Form A	
	1 - Common 2 - Normally Closed 3 - Normally Open 4 - Ground (Not Used)

PREWIRED ELECTRICAL CONNECTOR KITS

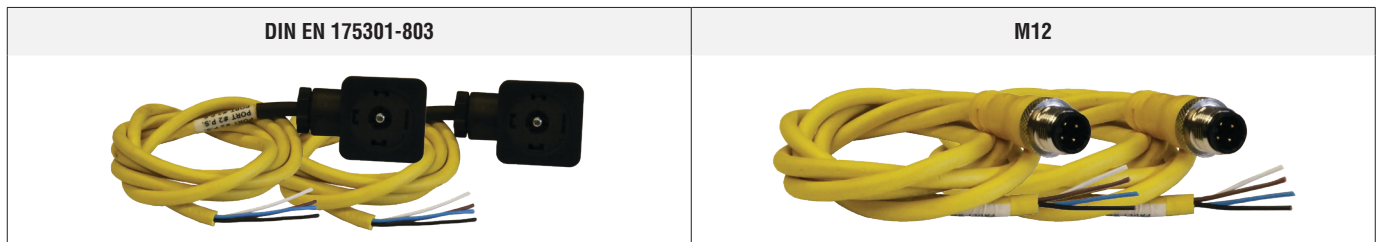


Illustration examples.

Prewired Connector Kits for DM ¹ Series C Valves	Cable						Kit Number
	End 1	End 2	Length meters (feet)	Connection	Quantity Included	Cord Diameter mm	Without Light
	Connector	Cord					
	DIN EN 175301-803 Form A	Flying leads	5 (16.4)	Solenoid	2	6	2243H77
			10 (32.8)	Solenoid	2	6	2244H77
	M12 5-pin, Female	Flying leads	5 (16.4)	Solenoid	2	6	2245H77
			10 (32.8)	Solenoid	2	6	2246H77

Prewired Connector Kits for DM ^{2®} Series C Valves	Cable						Kit Number			
	End 1	End 2	Length meters (feet)	Connection	Quantity Included	Cord Diameter mm	Without Light	Lighted Connector		
	Connector	Cord						24 V DC	120 V AC	230 V AC
	DIN EN 175301-803 Form A	Flying leads	5 (16.4)	Solenoid	3	6	2283H77	2532H77-W	2532H77-Z	2532H77-Y
				Status Indicator	1					
			10 (32.8)	Solenoid	3	6	2284H77	2533H77-W	2533H77-Z	2533H77-Y
				Status Indicator	1					
M12 5-pin, Female	Flying leads	5 (16.4)	Solenoid	3	6	2288H77	—	—	—	
			Status Indicator	1						
		10 (32.8)	Solenoid	3	6	2289H77	—	—	—	
			Status Indicator	1						

Connector Pinouts			
Solenoid		Status Indicator	
DIN EN 175301-803	M12	DIN EN 175301-803	M12
1 - Black 2 - Black 3 - Green/Yellow (Ground) 4 - Blue	1 - Blue 2 - Black 3 - Black 4 - Green/Yellow (Ground) 5 - Grey	1 - Brown 2 - Grey 3 - Black 4 - Green/Yellow (Ground)	1 - Brown 2 - White 3 - Blue 4 - Black 5 - Grey

PREWIRED ELECTRICAL CONNECTORS

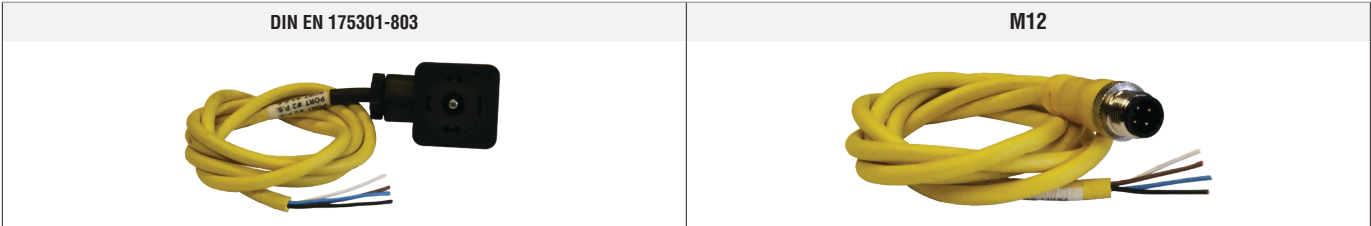
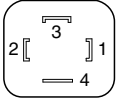
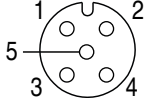
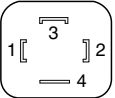
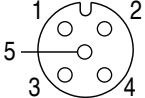


Illustration examples.

Prewired Connectors for DM¹ Series C Valves	Cable						Model Number			
	End 1	End 2	Connection	Quantity Included	Length meters (feet)	Cord Diameter mm	Without Light	Lighted Connector		
	Connector	Cord						24 V DC	120 V AC	230 V AC
	DIN EN 175301-803 Form A	Flying leads	Solenoid	1	2 (6.5)	6	721K77	720K77-W	720K77-Z	720K77-Y
				1		10	371K77	383K77-W	383K77-Z	383K77-Y
	DIN EN 175301-803 Form A	Flying leads	Status Indicator	1	5 (16.4)	—	2247H77	—	—	—
				1	10 (32.8)	—	2248H77	—	—	—
	M12 5-pin, Female	Flying leads		1	5 (16.4)	—	2266H77	—	—	—
1				10 (32.8)	—	2267H77	—	—	—	

Prewired Connectors for DM ^{2®} Series C Valves	Cable						Model Number			
	End 1	End 2	Connection	Quantity Included	Length meters (feet)	Cord Diameter mm	Without Light	Lighted Connector		
	Connector	Cord						24 V DC	120 V AC	230 V AC
	DIN EN 175301-803 Form A	Flying leads	Solenoid	1	2 (6.5)	6	721K77	720K77-W	720K77-Z	720K77-Y
				1	2 (6.5)	10	371K77	383K77-W	383K77-Z	383K77-Y
	M12 5-pin, Female	Flying leads	Status Indicator	1	5 (16.4)	6	2241H77	—	—	—
				1	10 (32.8)	6	2242H77	—	—	—

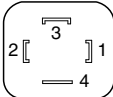
Connector Pinouts			
Solenoid		Status Indicator	
DIN EN 175301-803	M12	DIN EN 175301-803	M12
 1 - Black 2 - Black 3 - Black 4 - Green/Yellow (Ground)	 3 - Blue 4 - Black	 1 - Brown 2 - Grey 3 - Black 4 - Green/Yellow (Ground)	 1 - Brown 2 - White 3 - Blue 4 - Black 5 - Grey

ELECTRICAL CONNECTORS

Cable Grip	
Without Light	With Light
	

Illustration examples.

Connectors	Connector					Model Number			
	Type	Connection	Fitting Connection	Quantity Included	Cord Diameter mm	Without Light	Lighted Connector		
							24 V DC	120 V AC	230 V AC
DIN EN 175301-803 Form A	Solenoid		Cable grip	1	8 to 10	937K87	936K87-W	936K87-Z	936K87-Y
			1/2" NPT conduit	1	—	723K77	724K77-W	724K77-Z	724K77-Y

Connector Pinout	
DIN EN 175301-803	
	1 - Black 2 - Black 4 - Green/Yellow (Ground)

JUNCTION BOX OPTIONS

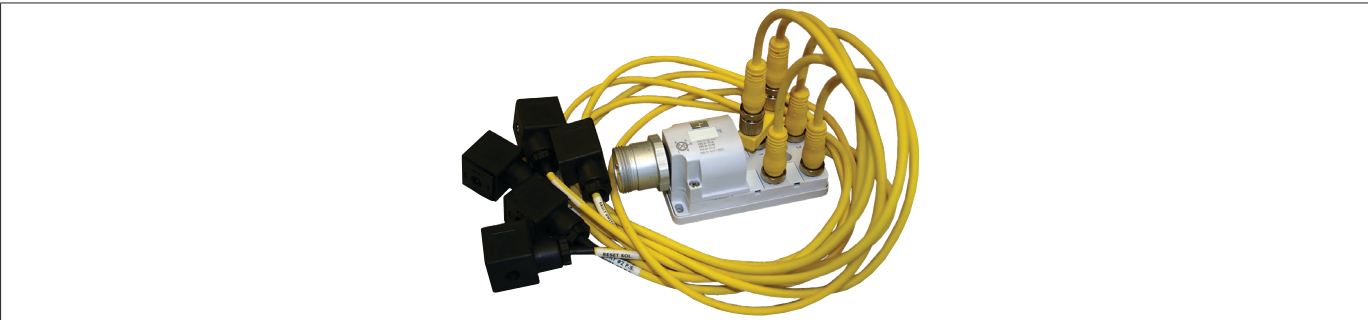


Illustration example.

Wiring Kits with J-Box	J-Box			Cable				Kit Number
	Connection		J-Box Quantity	Connector Type		Quantity Included	Length feet (meters)	
	Control System	Solenoids / Status Indicator		End 1	End 2			
	10-pin Mini	M12 (5-pin)	1	M12	DIN EN 175301-803 Form A	4	3.3 (1)	
1			M12	M12	4	3.3 (1)	2250H77	

Connectors Pinout and Wiring Diagram

J-Box Wiring

Dimmensions: Inches (mm)

10 Pin Pin #	Port 1 Pin #	Port 2 Pin #	Port 3 Pin #	Port 4 Pin #
(V+) 1	1	1	1	1
(V-) 2	3	3	3	3
3	2			
4	4			
5		4		
6			2	
7			4	
8		2		
9				2
10				4

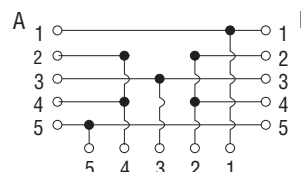
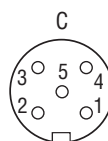
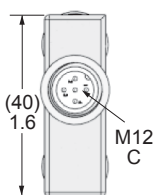
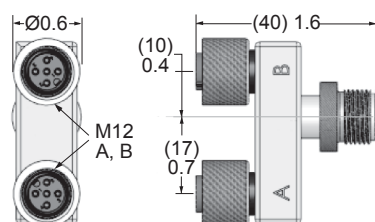
JUNCTION BOX OPTIONS

10-Pin MINI Cables	Connection	Cable					Kit Number
		End 1	End 2	Conductors Type	Quantity Included	Length feet (meters)	
	J-Box to Control System	10-pin Mini	Flying leads	18-gauge wire	1	12 (3.7)	2253H77
					1	20 (6.1)	2254H77
					1	30 (9.1)	2255H77
					1	50 (15.2)	2256H77

Outlet Port Pressure Monitoring Wiring Kit	Port Splitter			Cable				Kit Number
	Port Connectors	Number of Ports	Splitter Quantity	End 1 Connector	End 2 Connector	Quantity Included	Length feet (meters)	
	M12	3	1	M12	DIN EN 175301-803 Form A	1	3.3 (1)	2251H77

10-Pin MINI Cable				
PIN #	Wire Colors	PIN #	Wire Colors	
1 +24 V DC	Orange	6 -	Orange w/Black	
2 Common V DC	Blue	7 Remote Reset	Red	
3 -	White w/Black	8 -	Green/Yellow	
4 Solenoid A	Red w/Black	9 Remote Valve Fault Light	Black	
5 Solenoid B	Green w/Black	10 Remote System OK Light	White	

Outlet Port Pressure Monitoring – Port Splitter



A & B Female
C Male

Accessories

LOCKOUT DEVICE

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

HIGH FLOW NOISE REDUCTION SILENCER KITS

Silencers	Pressure Range psig (bar)	
	0-125 (0-8.6) maximum	
Reduces the Exponentially Perceived Noise (EPNdB), Impact noise reduction in the 17–25 dB range. Kits include all plumbing required for installation.		

DM Valve Basic Size	Model Number		Flow scfm (L/s)	Dimensions inches (mm)			
	NPT Thread	R/Rp Thread		Width	Height (NPT)	Height (R/Rp)	Depth
2	2323H77	2328H77	800 (380)	4.96 (126.1)	14.24 (361.7)	16.05 (407.7)	5.73 (145.5)
4	2324H77	2329H77	800 (380)	4.34 (110.2)	19.06 (484.1)	21.40 (543.6)	7.27 (184.7)
8	2325H77	2329H77	800 (380)	5.41 (137.4)	21.18 (538.0)	23.52 (597.4)	8.41 (213.6)
12	2326H77	2330H77	2100 (980)	6.74 (117.2)	25.85 (656.6)	28.20 (716.3)	10.66 (270.8)
30	2327H77	2331H77	7200 (3400)	9.85 (250.2)	41.55 (1055.4)	41.55 (1055.4)	13.47 (342.1)

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.

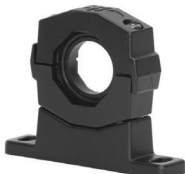
Bracket, Screw, Clamp and Mounting Adapter	Clamp	Bracket, Screw, and Clamp
		
Extra Port Blocks	Female End Ports	Male End Ports
		

Illustration examples.

Mounting Brackets & Clamp for Module Connections	Options		Model Number	
	Bracket, Screw, Clamp and Mounting Adapter		2737K77	
	Clamp only		R-A118-105	
	Bracket, Screw, and Clamp		R-A118-105M	
Port Block and End Ports	Options	Port Size	Model Number	
			NPTF Thread	G Thread
	Extra Port Blocks	1/4	R-118-106-2	R-118-106-2W
		3/8	R-118-106-3	R-118-106-3W
		1/2	R-118-106-4	R-118-106-4W
	Female End Ports	1/2	R-118-100-4	R-118-100-4W
		3/4	R-118-100-6	R-118-100-6W
	Male End Ports	1/2	R-118-109-4F	R-118-109-4FW
		3/4	R-118-109-6F	R-118-109-6FW

REPLACEMENT FILTER ELEMENTS

Polyethylene	Sintered Bronze
	

Illustration examples.

Filter Elements	Series	Bowl Type	Element Rating	Element Material	Model Number
	MD3™	Standard	5-µm	Polyethylene	R-A60F-03PE5
				Sintered Bronze	R-A60F-03E5
			20-µm	Sintered Bronze	R-A60F-03E4
			40-µm	Sintered Bronze	R-A60F-03E3
	MD4™	Standard	5-µm	Polyethylene	R-A115-106PE5
				Sintered Bronze	R-A115-106E5
			20-µm	Sintered Bronze	R-A115-106E4
			40-µm	Polyethylene	R-A115-106PE3
	HIGH-CAPACITY Flow to 660 scfm	Standard	5-µm	Sintered Bronze	1656K77
			40-µm	Sintered Bronze	R-A114-106E3

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	Perchlorethylene
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.

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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