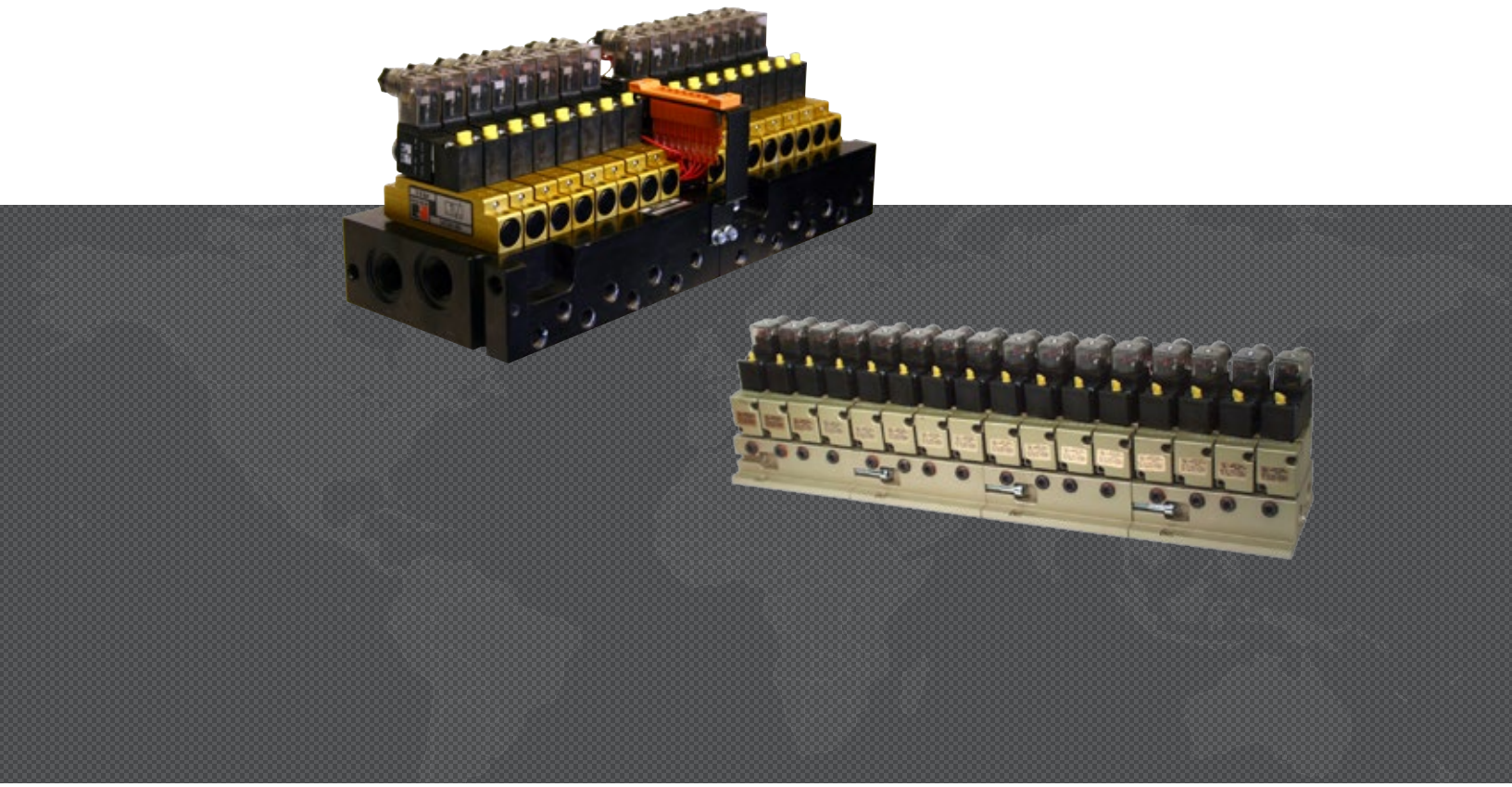
Directional Control Valves
PACK Series

Product Catalog



a global family

Solenoid Pilot Controlled Valves PACK Series
Product Overview

ROSS® solenoid pilot valves provide reliable pilot control for various process valves: butterfly, knife gate, ball, mixing, diverters and other pneumatically actuated devices

3-Way Valve Manifold	4-Way Valve Manifold
	

Illustration examples.

VALVE FEATURES	
Poppet Design	Positive sealing and self-compensating for wear; perpendicular poppet face seals
Mounting Options	Individual sub-base or manifold base mounting
Pilot Operation	Consistent actuation over the life of the valve; provides strong shifting forces with low power consumption
Easily Accessible Manual Override (Yellow)	Turn to actuate, no tools needed
Individual Valve Shut-off (Automatic)	Increases uptime for continuous processing
Quick Electrical Disconnect w/Indicator Light	Allows immediate troubleshooting of component/system issues in the field
Sure-Shifting and Self-Cleaning	Reliable performance in extreme conditions (dirt tolerant, high humidity, cold, heat, dust, debris returned from the field actuator, etc...)

Explosion Proof & Intrinsically Safe - options available, consult ROSS.

Specifications

STANDARD SPECIFICATIONS						
GENERAL	Function	3/2 and 5/2 Valve				
	Construction Design	Poppet				
	Actuation	Electrical	Solenoid Pilot Controlled			
	Mounting	Base Mounted				
	Connection	Threaded	NPT			
	Manual Override	Turn to actuate				
	Indicator Light	In connector				
OPERATING CONDITIONS	Temperature	Ambient	40° to 120°F (4° to 50°C)			
		Media	40° to 175°F (4° to 80°C)			
	Flow Media	Filtered air				
	Operating Pressure	30 to 150 psig (2 to 10 bar)				
ELECTRICAL DATA FOR SOLENOID PILOT	Solenoids	Valve Type	Current Flow	Power Consumption	Operating Voltage (each solenoid)	
		3/2 Valves	DC	24 volts	0.8 watts	
			AC	110 volts, 50 Hz 120 volts, 50/60 Hz	0.3 VA holding	
				230-240 volts		
		5/2 Valves	DC	24 volts	2.1 watts	
			AC	110 volts, 50 Hz 120 volts, 50/60 Hz	3.9 VA holding	
				230-240 volts		
		Rated for continuous duty				
	Enclosure Rating	IP65, IEC 60529				
	Electrical Connection	3/2 Valves	DIN EN 175301-803 Form C			
		5/2 Valves	DIN EN 175301-803 Form A			
CONSTRUCTION MATERIAL	Valve Body	Cast Aluminum				
	Seals	Buna-N				

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

PRODUCT CREDENTIALS

Certificate of Compliance	Declaration of Conformity	
CSA C US	CE	EAC

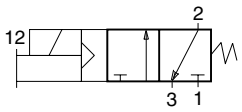
Ordering Information

3-Way Single Solenoid Pilot Controlled Pack Valves

SOLENOID PILOT CONTROLLED VALVES — **3-Way 2-Position Valves**

Valve/Manifold Assembly	Wiring Type	Valve Model Number*			Flow C_v (Nl/min)
		Voltage			
Number of Stations		24 V DC	110-120 V AC	230 V AC	
8	Flying Leads	3900A0713-1W	3900A0713-1Z	3900A0713-1Y	0.5 (4900)
	Central Wiring	3900A1055-1W	3900A1055-1Z	3900A1055-1Y	
16	Flying Leads	3900A0713-2W	3900A0713-2Z	3900A0713-2Y	
	Central Wiring	3900A1055-2W	3900A1055-2Z	3900A1055-2Y	
24 and over	Consult ROSS.				
For other voltages, consult ROSS.					

Valve Schematic

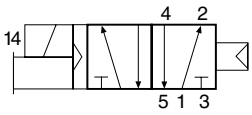


4-Way Single Solenoid Pilot Controlled Pack Valves

SOLENOID PILOT CONTROLLED VALVES — **5-Way 2-Position Valves**

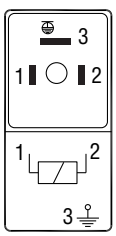
Valve/Manifold Assembly	Valve Model Number*			Flow C_v (Nl/min)
	Voltage			
Number of Stations	24 V DC	110-120 V AC	230 V AC	
4	3900A1052-1W	3900A1052-1Z	3900A1052-1Y	0.5 (4900)
8	3900A1052-2W	3900A1052-2Z	3900A1052-2Y	
12	3900A1052-3W	3900A1052-3Z	3900A1052-3Y	
16	3900A1052-4W	3900A1052-4Z	3900A1052-4Y	
20 and over	Consult ROSS.			
For other voltages, consult ROSS.				
4/2 Low-Power Solenoid Pilot Controlled Valves available, consult ROSS.				

Valve Schematic



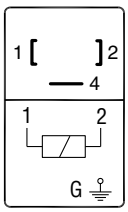
Solenoids Pinout

3/2 Valves – DIN EN 175301-803 Form A



1 - Positive
2 - Negative
3 - Ground

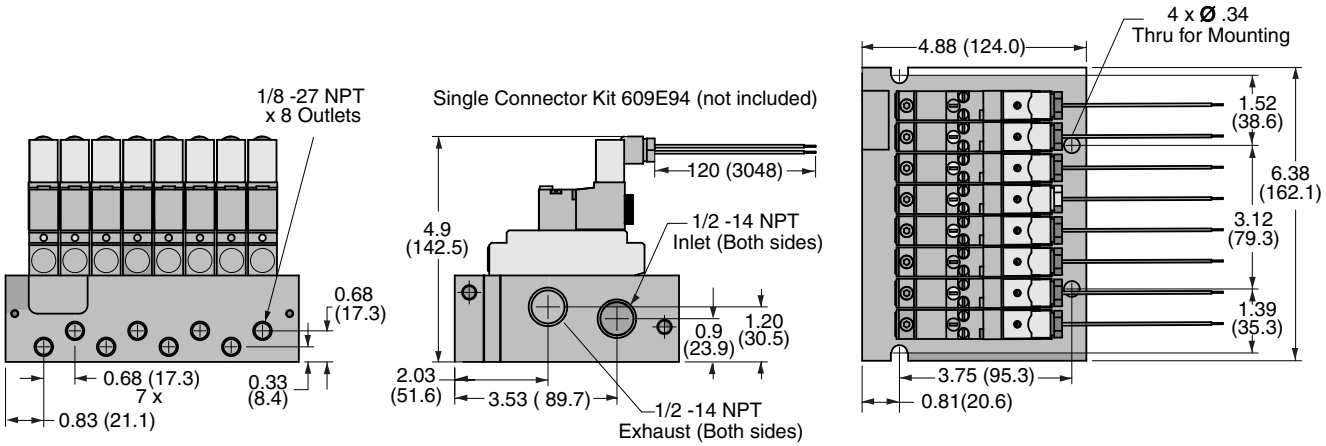
5/2 Valves – DIN EN 175301-803 Form C



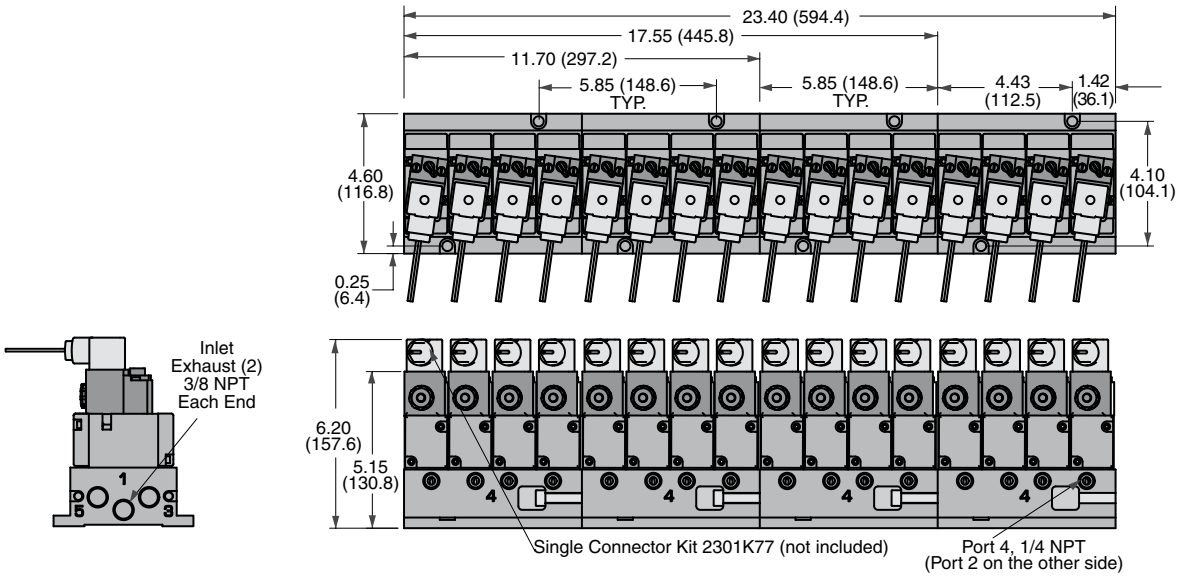
1 - Positive
2 - Negative
4 - Ground

DIMENSIONS — Inches (mm)

3/2 Valves



5/2 Valves



Downloadable CAD models available.

PREWIRED ELECTRICAL CONNECTORS

Illustration example.

	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
Prewired Connectors	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
	DIN EN 175301-803 Form C	Flying leads	Solenoid	1	3 (10)	8	2449K77	2450K77-W	2450K77-Z	2450K77-Y
					10 (32.8)	–	2448K77	–	–	–

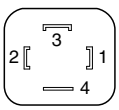
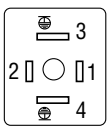
ELECTRICAL CONNECTORS

Cable Grip	
Without Light	**With Light**
	

Illustration examples.

	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
Connectors	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
	DIN EN 175301-803 Form C	Solenoid	Cable grip	1	8 to 10	2452K77	2453K77-W	2453K77-Z	2453K77-Y

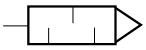
*Lights in connectors with a translucent housing can be used as indicator lights to show when solenoids are energized.

Connector Pinouts	
DIN EN 175301-803 Form A	**DIN EN 175301-803 Form C**
 1 - Black 2 - Black 4 - Green/Yellow (Ground)	 1 - Brown 2 - Blue 3 - Green/Yellow (Ground) 4 - Green/Yellow (Ground)

EXHAUST SILENCERS

Illustration example.

Silencers

SPECIFICATIONS	Silencer Material	Pressure Range psig (bar)	Schematic
	Aluminum	0-290 (0-20) maximum	

Port Size	Thread Type	Flow C_v (Nl/min)	Model Number		Dimensions inches (mm)		Weight lb (kg)
			NPT Thread	R/Rp Thread	Length	Hex Size (D)	
3/8	Male	9.0 (8900)	5500A3013	D5500A3013	2.2 (6)	0.81 (21)	0.07 (0.03)
1/2	Male	6.8 (6700)	5500A4003	D5500A4003	3.6 (9)	1.25 (32)	0.2 (0.1)

Notes

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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CAUTIONS, WARNINGS And STANDARD WARRANTY

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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.