



COMPACT VALVES 16 SERIES



ROSS CONTROLS

Compact Valves Solenoid Pilot Controlled

16 Series



3-Way 2-Position Valves, Spring Return									
Port Size	Normally Closed		Normally Open		C _v		Average Response Constants**		Weight lb (kg)
	Valve Model Number#		Valve Model Number#						
1, 2, 3	NPT Threads	G Threads	NPT Threads	G Threads	NC	NO	M	F	
1/8	1613B1020W	D1613B1020W	1614B1020W	D1614B1020W	0.3	0.3	5	2.90	1.4 (0.6)
1/4	1613B2020W	D1613B2020W	1614B2020W	D1614B2020W	0.3	0.3	5	2.90	1.4 (0.6)



4-Way 2-Position Valves, Spring Return							
Port Size	Valve Model Number#		C _v		Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads	1-2	2-4	M	F	
1/4	1616C2020W	D1616C2020W	0.3	0.3	5	2.90	2.4 (1.1)

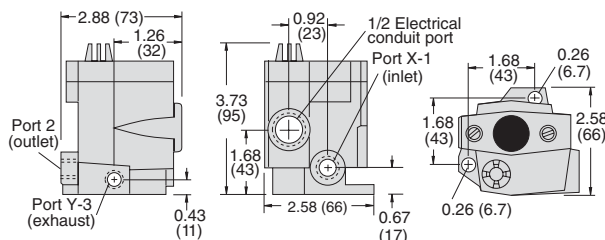


Voltage: W=24 VDC; Z=110-120 VAC, 50/60 Hz, e.g., 1613B1020Z. For other voltages, consult ROSS.

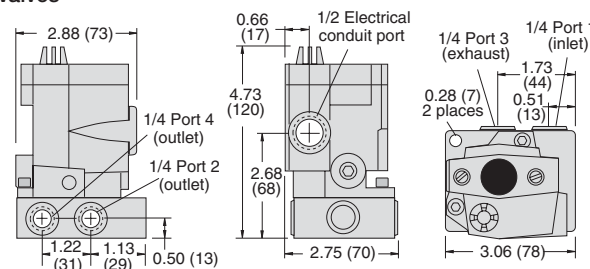
** Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

3/2 Valves



4/2 Valves



ACCESSORIES & OPTIONS

Silencers



Port Size	Thread Type	Model Number		Avg. C _v
		NPT Threads	R/Rp Threads	
1/8	Male	5500A1003	D5500A1003	1.2
1/4	Male	5500A2003	D5500A2003	2.1

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

Indicator Light Kits

The indicator light gives the option to visually verify valve operation, it extends through the solenoid or pilot cover and is illuminated when the solenoid is energized.

Kit Number		Indicator Light
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
Non-Locking	790K87	Non-Locking	791K87	Non-Locking
Locking	792K87			984H87

Buttons in the override kits are made of metal and are spring-returned. The locking type button, can be kept in the actuated position by turning the slot in the top of the button with a screwdriver.

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Flow Media	Filtered air
Mounting Type	In-line	Operating Pressure	3/2 Valves: 5 to 150 psig (0.3 to 10 bar) 4/2 Valves: 30 to 150 psig (2 to 10 bar)
Solenoids	Rated for continuous duty	Construction Material	Valve Body: Cast Aluminum Seals: Buna-N
Voltage	24 volts DC; 110-120 volts AC, 50/60 Hz	Manual Override	Flush; rubber, non-locking
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)		

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



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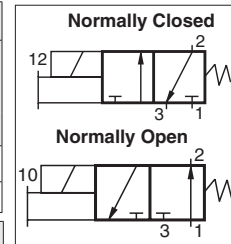
Compact Valves and Manifolds

Solenoid Pilot Controlled

16 Series

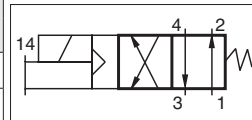
3-Way 2-Position Valves, Spring Return									
Port Size	Normally Closed		Normally Open		C _v		Average Response Constants**		Weight lb (kg)
	Valve Model Number#		Valve Model Number#						
1, 2, 3	NPT Threads	G Threads	NPT Threads	G Threads	NC	NO	M	F	
1/4	1613C2322W	D1613C2322W	1614B2322W	D1614B2322W	0.3	0.3	5	2.90	2.4 (1.1)

Manifold not included with the valve. Order manifold station model number **256B91**.



4-Way 2-Position Valves, Spring Return							
Port Size	Valve Model Number#		C _v		Average Response Constants**		Weight lb (kg)
	NPT Threads	G Threads	1-2	2-4	M	F	
1/4	1616C2322W	D1616C2322W	0.3	0.3	5	2.90	2.4 (1.1)

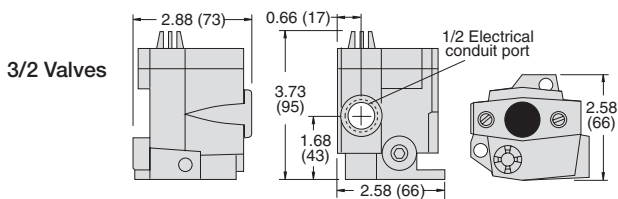
Manifold not included with the valve. Order manifold station model number **257B91**.



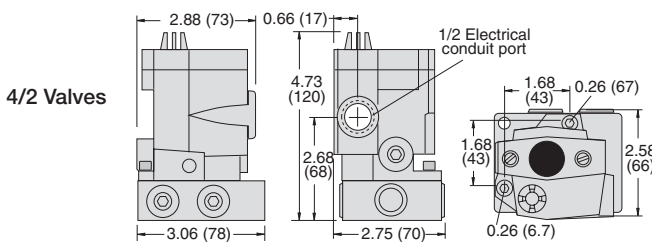
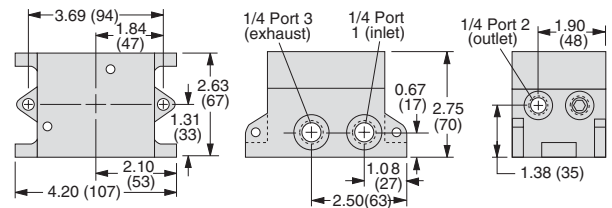
Voltage: W=24 VDC; Z=110-120 VAC, 50/60 Hz, e.g., 1613C2322Z. For other voltages, consult ROSS.

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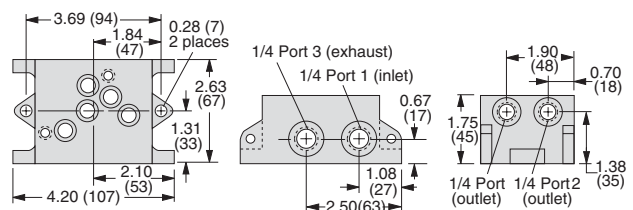
Dimensions – inches (mm)



3/2 Manifold Station



4/2 Manifold Station



ACCESSORIES & OPTIONS

Silencers



Port Size	Thread Type	Model Number		Avg. C _v
		NPT Threads	R/Rp Threads	
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Locking	792K87	

EXTENDED BUTTON		
Locking Type	Kit Number	
Non-Locking	791K87	

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

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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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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.