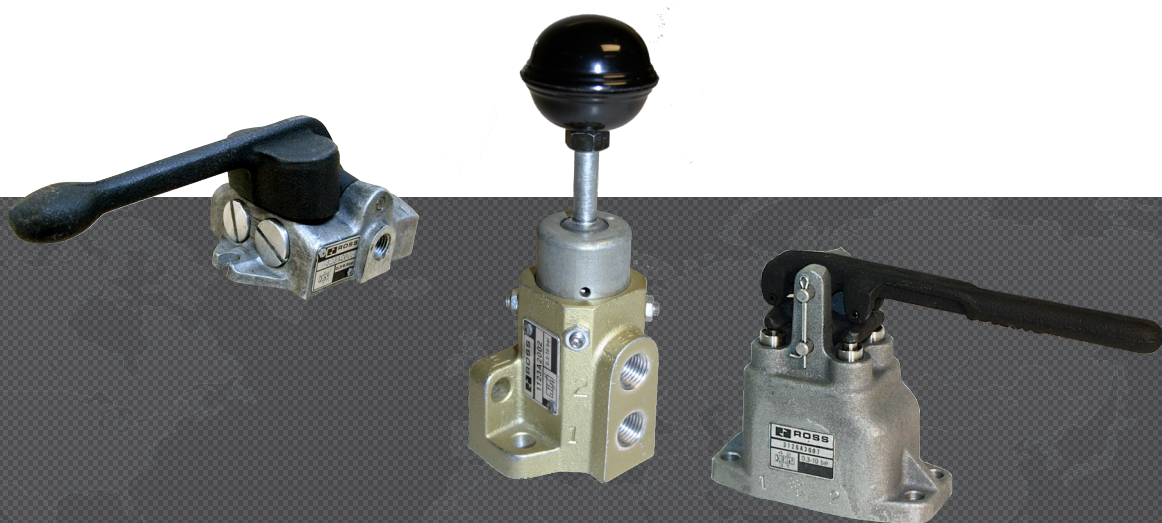




MANUAL LEVER VALVES 11 & 12 SERIES

PRODUCT CATALOG



Button Valves

Product Overview

Mechanical Valves Function

ROSS mechanical valves are especially suited to serve as remote pilots to pass operating signals to other pressure actuated valves. Valves are widely used in automation for harnessing a mechanical action automatically to open or close and air circuit.

Manual Toggle Lever	Manual Lever	Manual Hand Lever
		

Illustration examples.

VALVE FEATURES

Design	Reliable poppet or spool and sleeve construction
Heavy Duty	Provides quiet operation
Dual Mounting Flanges	Offer flexible and easy installation options
Rugged Construction	Made with corrosion-resistant materials

STANDARD SPECIFICATIONS					
GENERAL	Function		2/2 Valves	Normally Closed	
			3/2 Valves		
			4/3 Valves		
	Construction Design		Poppet		
	Actuation		Pneumatic	Manual	
	Mounting	Manual Toggle	Side and bottom mounting flanges		
		Lever Valves			
		Manual Hand Lever	Bottom mounting flanges		
Connection		Threaded Ports	NPT		
			G		
OPERATING CONDITIONS	Temperature	Manual Toggle	Ambient	-10° to 175°F (-23° to 80°C)	
			Media		
			For temperatures below 40°F (4°C) air must be free of water vapor to prevent formation of ice.		
			For temperatures below -10°F (-23°C), consult ROSS.		
		Lever Valves	Ambient	-30° to 175°F (-34° to 80°C)	
			Media		
			For temperatures below 40°F (4°C) air must be free of water vapor to prevent formation of ice.		
			For temperatures below -30°F (-34°C), consult ROSS.		
		Manual Hand Lever	Ambient	-40° to 175°F (-40° to 80°C)	
			Media		
			For temperatures below 40°F (4°C) air must be free of water vapor to prevent formation of ice.		
			For temperatures below -40°F (-40°C), consult ROSS.		
	Flow Media		Filtered air		
	Operating Pressure		5 to 150 psi (0.3 to 10 bar)		
	Operating Distance for Medium-Duty Valves		Valid	0.22 inches (5.5 mm)	
			Invalid	0.04 inches (1.0 mm)	
	Pressure for Valid/Invalid Operation		Medium-Duty Valves	7.7 lb (3.5 Kg)	
CONSTRUCTION MATERIAL	Valve Body		Cast Aluminum		
	Lever	Manual Toggle	Glass filled Nylon		
		Manual & Manual Hand	Cast Aluminum		
	Seals		Buna-N		
IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS, WARNINGS on the inside back cover.					

Ordering Information

2/2 Heavy Duty Toggle Lever Valves, 11 Series

TOGGLE LEVER VALVES

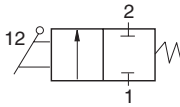
2-Way 2-Position Valves

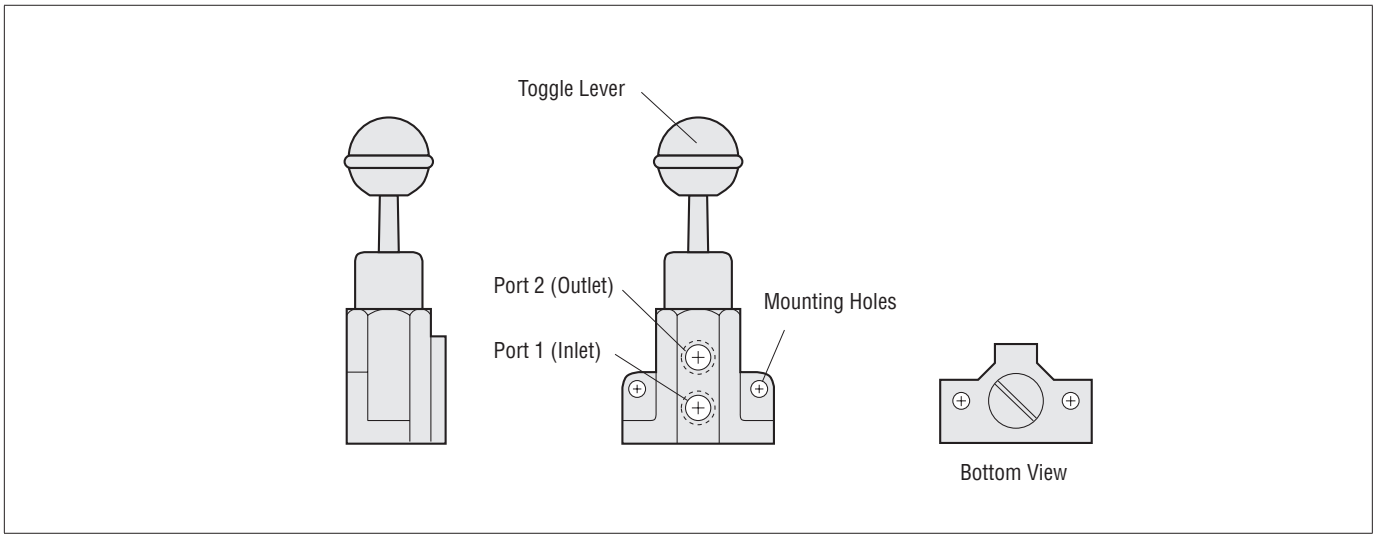
Port Size	Valve Model Number	
	NPT Thread	G Thread
1/4	1121A2002	D1121A2002

Port Size	Flow Cv (NI/min)	Average Response Constants*	Weight lb (kg)
		F	
		1-2	
1/4	0.5 (490)	2.5	1.0 (0.5)

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. F values are given in the chart above. M values for manually operated valves depend on the speed of actuation, and may be taken as zero for most practical applications.

Valve Schematic



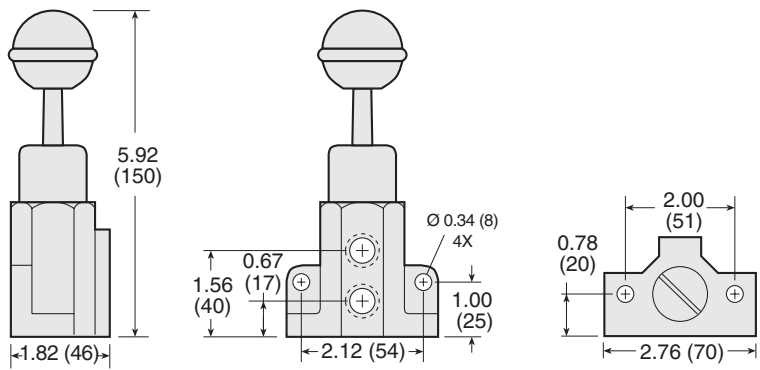


2/2 Heavy Duty Toggle Lever Valves, 11 Series

DIMENSIONS

Inches (mm)

Toggle Lever



Downloadable CAD models available.

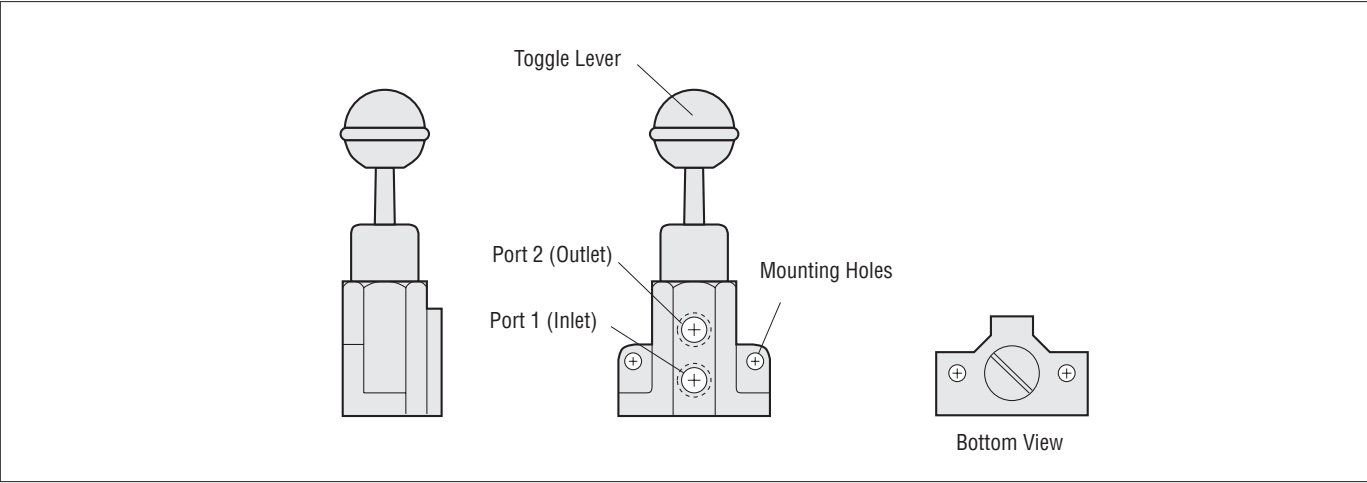
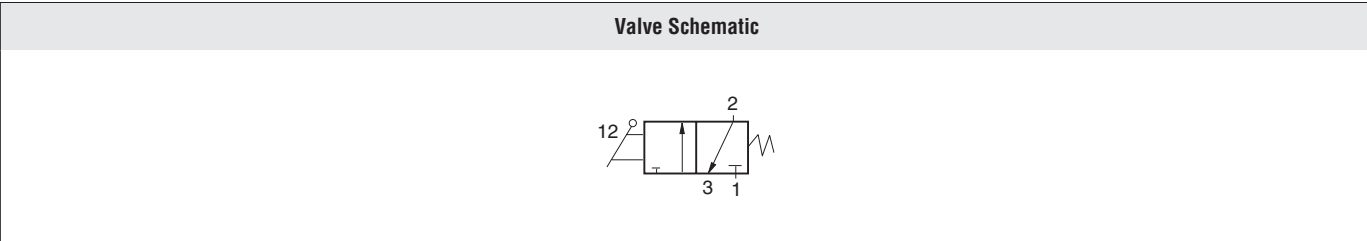
3/2 Heavy Duty Toggle Lever Valves, 11 Series

TOGGLE LEVER VALVES2-Way 2-Position Valves

Port Size	Valve Model Number	
	NPT Thread	G Thread
1/4	1123A2002	D1123A2002

Port Size	Flow C _v (NI/min)	Average Response Constants*		Weight lb (kg)
		F		
		1-2	2-3	
1/4	0.5 (490)	2.5	3.2	1.0 (0.5)

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. F values are given in the chart above. M values for manually operated valves depend on the speed of actuation, and may be taken as zero for most practical applications.

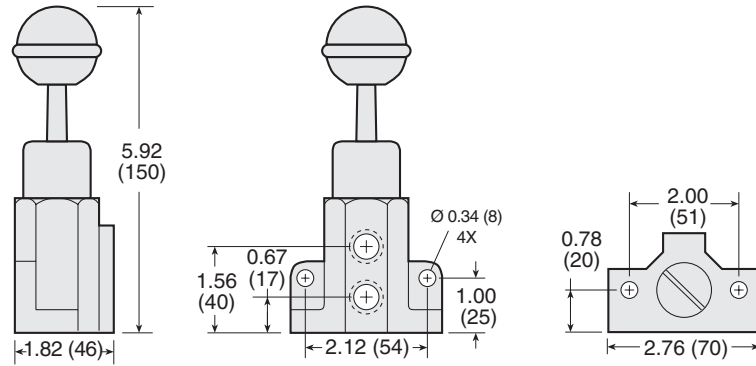


3/2 Heavy Duty Toggle Lever Valves, 11 Series

DIMENSIONS

Inches (mm)

Toggle Lever



Downloadable CAD models available.

Ordering Information

3/2 Heavy Duty Lever Valves, 36 Series

TOGGLE LEVER VALVES

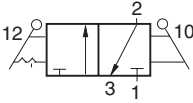
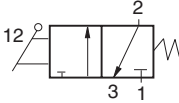
2-Way 2-Position Valves

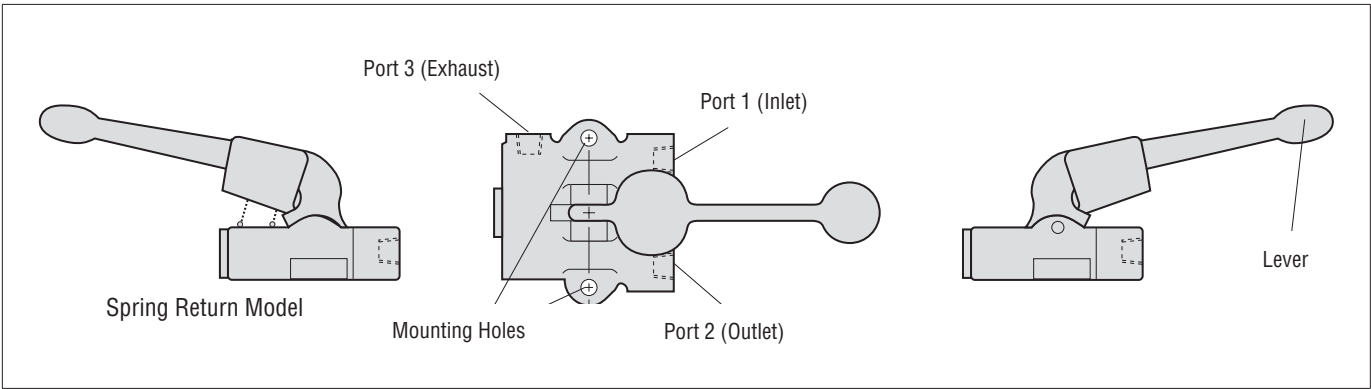
Port Size	Operators	Valve Model Number	
		NPT Thread	G Thread
1/4	Detented	3623A2003	D3623A2003
	Spring Return	3623A2004	D3623A2004

Port Size	Flow C _v (NI/min)	Average Response Constants*		Weight lb (kg)
		F		
		1-2	2-3	
1/4	1.2 (1200)	1.66	1.43	1.3 (0.6)

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. F values are given in the chart above. M values for manually operated valves depend on the speed of actuation, and may be taken as zero for most practical applications.

For models with vertical handle, consult ROSS.

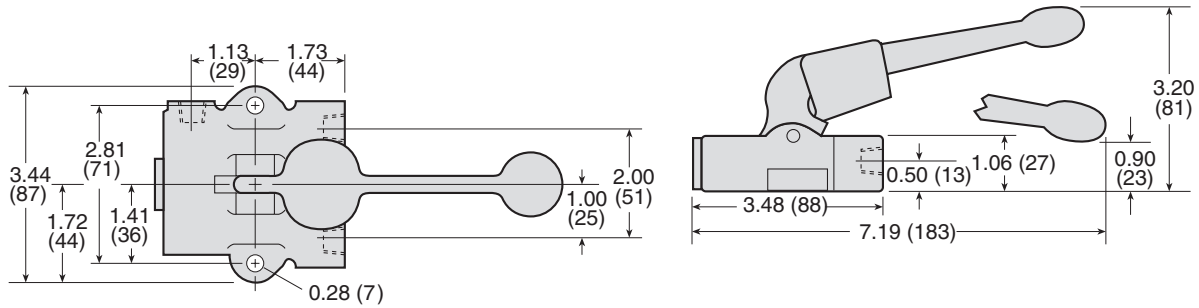
Valve Schematics	
Detented	Closed Center
	



3/2 Heavy Duty Toggle Lever Valves, 11 Series

DIMENSIONS

Inches (mm)



Downloadable CAD models available.

Ordering Information

4/2 Heavy Duty Lever Valves, 36 Series

TOGGLE LEVER VALVES

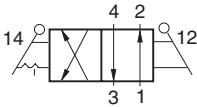
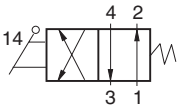
2-Way 2-Position Valves

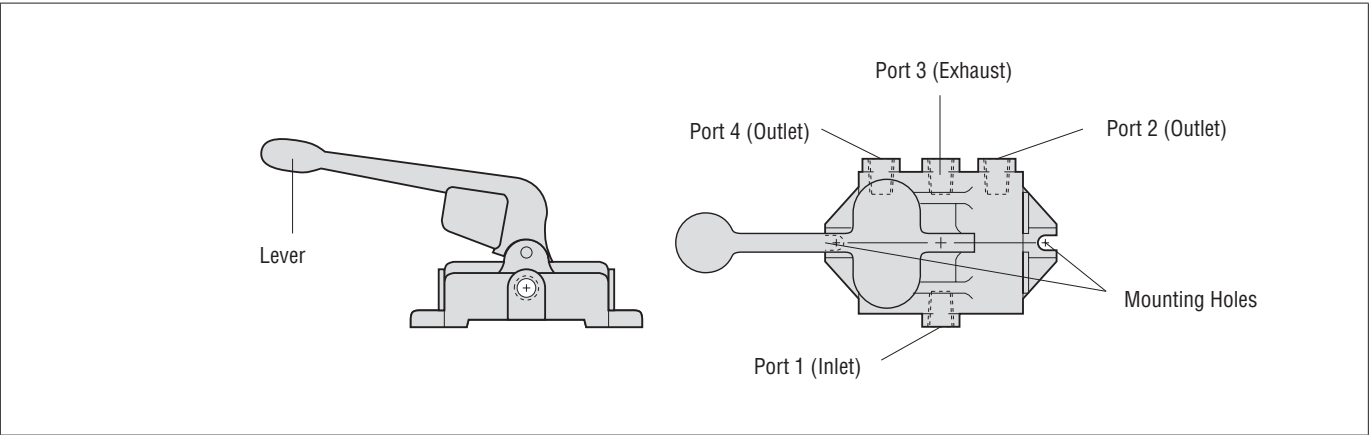
Port Size	Operators	Valve Model Number	
		NPT Thread	G Thread
1/4	Detented	3626A2003	D3626A2003
	Spring Return	3626A2004	D3626A2004

Port Size	Flow C _v (NI/min)	Average Response Constants*		Weight lb (kg)
		F		
		1-2, 1-4	4-3, 2-3	
1/4	1.2 (1200)	1.66	1.43	2.5 (1.1)

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. F values are given in the chart above. M values for manually operated valves depend on the speed of actuation, and may be taken as zero for most practical applications.

For models with vertical handle, consult ROSS.

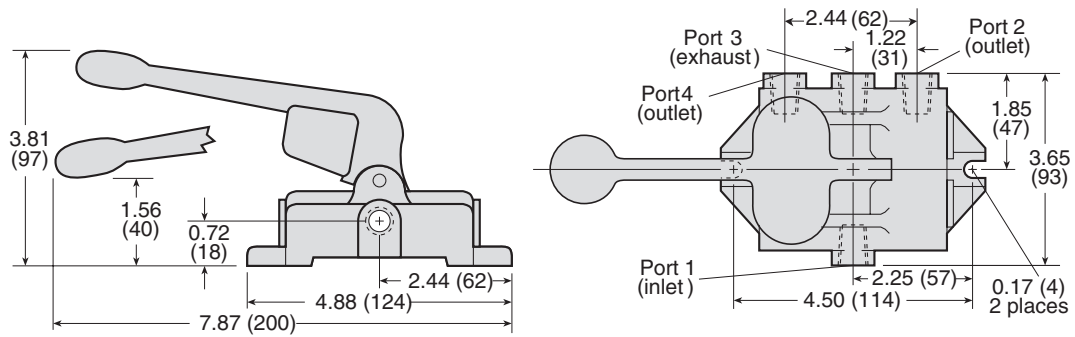
Valve Schematic	
Detented	Closed Center
	



4/2 Heavy Duty Toggle Lever Valves, 11 Series

DIMENSIONS

Inches (mm)



Downloadable CAD models available.

Ordering Information

4/3 Heavy-Duty Hand Lever Valves

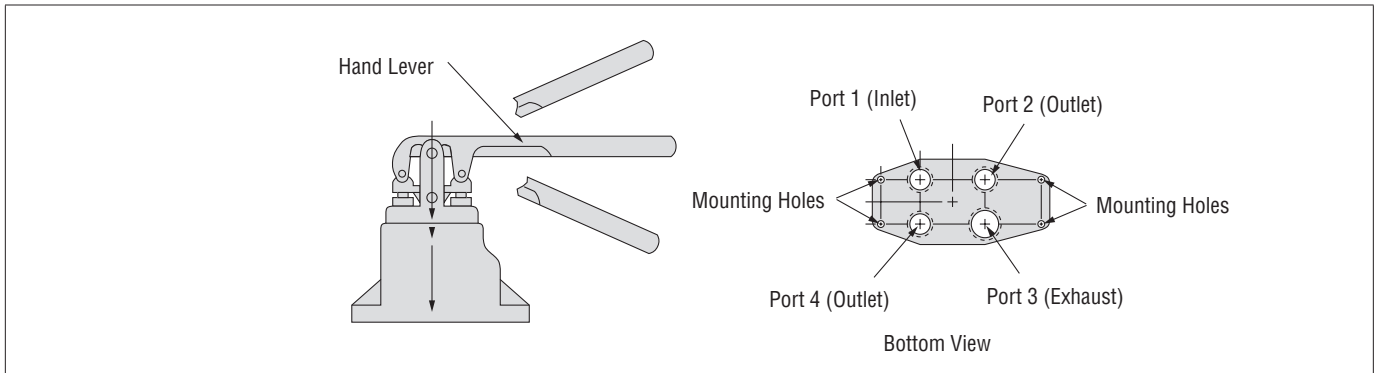
HAND LEVER VALVES4-Way 3-Position Valves

Hand Lever Position	Port Size		Center Position	Valve Model Number	
	In-Out	Exhaust		NPT Thread	G Thread
Horizontal	3/8	1/2	Open	3126A3007	D3126A3007
			Closed	3126A3010	D3126A3010
	1/2	3/4	Open	3126A4007	D3126A4007
			Closed	3126A4010	D3126A4010
	3/4	1	Open	3126A5007	D3126A5007
			Closed	3126A5010	D3126A5010
	1	1-1/4	Open	3126A6007	D3126A6007
			Closed	3126A6010	D3126A6010
	1-1/4	1-1/2	Open	3126A7007	D3126A7007
			Closed	3126A7010	D3126A7010

Hand Lever Position	Size		Flow C _v (NI/min)		Average Response Constants*		Weight lb (kg)
	Port 1, 2, 4	Port 3	1-2	2-3	1-2	2-3	
Horizontal	3/8	1/2	1.7 (1700)	1.4 (1400)	1.26	1.43	2.0 (0.9)
	1/2	3/4	2.8 (2800)	2.3 (2300)	0.87	1.01	3.8 (1.7)
	3/4	1	5.0 (4900)	4.2 (4100)	0.55	0.63	5.0 (2.3)
	1	1-1/4	10 (9800)	7.5 (7400)	0.30	0.39	10 (4.5)
	1-1/4	1-1/2	14 (1400)	9.6 (9400)	0.23	0.32	11 (5.0)

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. F values are given in the chart above. M values for manually operated valves depend on the speed of actuation, and may be taken as zero for most practical applications.

Valve Schematics	
Open Center	Closed Center



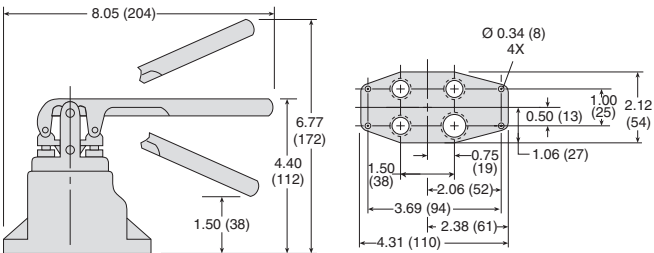
Valve Technical Data

4/3 Heavy-Duty Hand Lever Valves

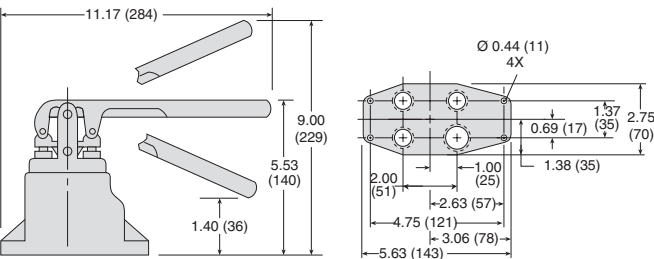
DIMENSIONS

Inches (mm)

Port Size 3/8

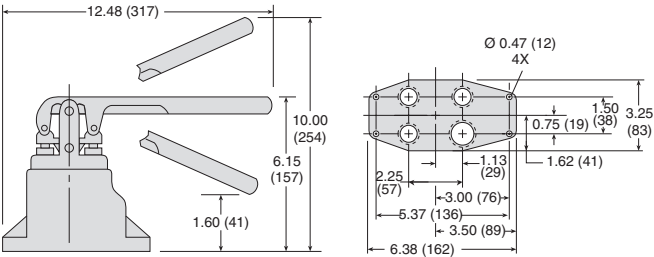


Port Size 1/2

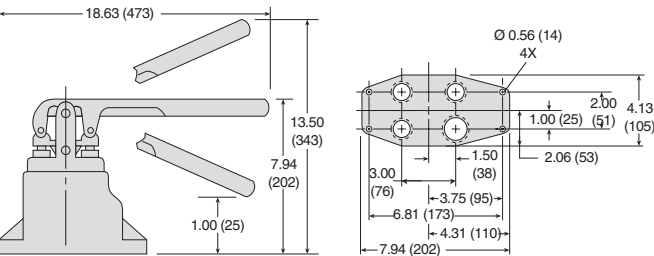


Hand Lever Horizontal

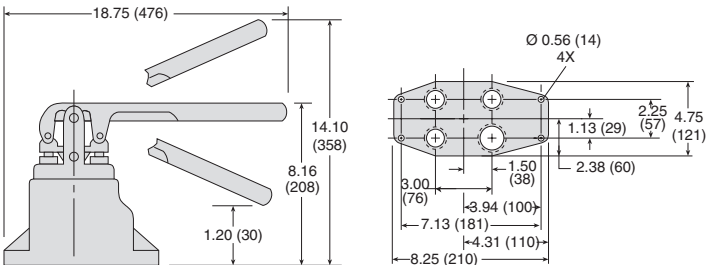
Port Size 3/4



Port Size 1



Port Size 1-1/4



Downloadable CAD models available.

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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		Canada	ROSS CANADA	Tel: +1-416-251-7677	www.rosscanada.com
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www.masterpneumatic.com



www.pneumatrol.com



www.manufactis.net



www.ubsafe.ca

Full-Service Global Locations

There are ROSS Distributors Throughout the World

To meet your requirements across the globe, ROSS is located throughout the world.

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.