31 Series and 36 Series Manual Valves

Thank You!

You have purchased a premium-quality ROSS® pneumatic valve. It is a hand-or-foot operated poppet valve built to the highest standards.

With care in its installation and maintenance you can expect it to have a long and economical service life. So before you go any further, please take a few minutes to look over the information in this folder. Then save it for future reference and for the useful service information it contains.

VALVE INSTALLATION

Please read and make sure you understand all installation instructions before proceeding with the installation.

If you have any questions about installation or servicing your valve, please contact ROSS or your authorized ROSS distributor, see contact information listed at the back of this document, or visit www.rosscontrols.com to find your distributor.

Pneumatic equipment should be installed only by persons trained and experienced in such installation.

Air Lines: Before installing a valve in a new or an existing system, the air lines must be blown clean of all contaminants. It is recommended that an air filter be installed in the inlet line close to the valve.

Valve Inlet (Port 1): Be sure that the supply line is of adequate size and does not restrict the air supply because of a crimp in the line, sharp bends, or a clogged filter element.

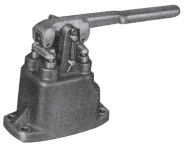
Valve Outlets (Ports 2 & 4): For faster pressurizing and exhausting of the mechanism being operated by the valve, locate the valve as close as possible to the mechanism. The lines must be of adequate size and be free of crimps and sharp bends.

Valve Exhaust (Port 3): Do not restrict exhaust air flow as this can adversely affect valve performance. However, to reduce noise use an efficient silencer. ROSS silencers reduce impact noise by as much as 25 dB, and produce little back pressure.

Operating Pressures and Temperatures: Allowable ranges for pressure and temperatures are given in the *Valve Specifications* on page 2. Exceeding the values shown can shorten valve life.

Pipe Installation: To install pipe in valve or base ports, engage pipe one turn, apply pipe thread sealant (tape not recommended), and tighten pipe. This procedure will prevent sealant from entering and contaminating the valve.

31 SERIES



4/3 VALVES

Port sizes: 3/8 to 1¼.

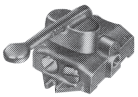
Horizontal or vertical lever.

4 Ports; located on bottom of valve.

3-Position control; detented or non-detented.

Center position: Outlet ports in models ending in 07, 08, 09, or 12 are open to exhaust; models ending in 10, 11, 13, or 14 are closed to exhaust.

36 SERIES



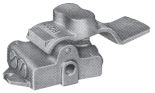
3/2 VALVES

Port size: 1/4.

Horizontal lever, vertical lever, pedal, or treadle.

3 Ports; located on sides of valve.

2-Position control; detented or spring return.



4/2 VALVES

Port size: 1/4.

Horizontal lever, vertical lever, pedal, or treadle.

4 Ports; located on sides of valve.

2-Position control; detented or spring return.

VALVE MAINTENANCE

Pneumatic equipment should be maintained only by persons trained and experienced in the maintenance of such equipment.

Supply Clean Air. Foreign material lodging in valves is a major cause of breakdowns. The use of an air filter located close to the valve as possible is strongly recommended. The filter bowl should be drained regularly, and if the filter's location makes draining difficult, the filter should be equipped with an automatic drain.

Check Lubricator Supply Rate. A lubricator should put a fine oil mist into the air line in direct proportion to the rate of air flow. Excessive lubrication can cause puddling in the valve and lead to malfunctions. For most applications an oil flow rate in the lubricator of one drop per minute is adequate.

(Note that your ROSS valve does not itself require air line lubrication.) See next column for a partial list of lubricants that are compatible with ROSS valves and are suitable for use in compressed air systems.

Compatible Lubricants. Although this valve does not require air line lubrication, it may be used with lubricated air being supplied to other mechanisms. Some oils contain additives that can harm seals or other valve components and thereby cause the valve to malfunction. The best oils to use are those specifically compounded for air line lubricator service. These are generally 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.
A few of the compatible lubricants on the market are listed above at the right.

COMPATIBLE LUBRICANTS

Maker	Brand Name
Amoco	American Industrial Oil 32
	Amoco Spindle Oil C, Amolite 32
Citgo	Pacemaker 32
Exxon	Spinesstic 22, Teresstic 32
Mobil	Velocite 10
Non-Fluid Oil	Air Lube 10H/NR
Shell	Turbo T32
Sun	Sunvis 11, Sunvis 722
Texaco	Regal R&O 32
Union	Union Turbine Oil

Cleaning the Valve. If the air supplied to the valve has not been well filtered, the interior of the valve may accumulate dirt and varnish which can affect the valve's performance. Although ROSS poppet valves are very tolerant of dirty air, cleaning may sometimes be needed.
To clean the valve use any good commercial solvent or kerosene. Do not use a chlorinated solvent or abrasive materials. The former damages seals, and abrasives can do permanent damage to metal parts.

Before reassembling the valve lubricate all sliding surfaces with a grease equivalent to Mobil Grease 28 lubricant.

Replace Worn Components. After long usage the poppets may show signs of wear. The valve can be reconditioned with the use of ROSS service kits. See page 3 for information about such kits.

VALVE SPECIFICATIONS

31 Series Valves

Construction: Poppet.
Mounting Type: Bottom mounting flanges.
Ambient/Media Temperature: 40° to 175°F (4° to 80 °C).
Flow Media: Filtered air.
Inlet Pressure: 5 to 150 psig (0.3 to 10 bar) .

36 Series Valves

Construction: Poppet design.
Mounting Type: Line mounting.
Ambient/Media Temperature: 40° to 175°F (4° to 80 °C).
Flow Media: Filtered air; 5 micron recommended.
Inlet Pressure: 5 to 125 psig (0.3 to 8.5 bar).

IMPORTANT NOTE: *Please read carefully and thoroughly all the* ***CAUTIONS*** *and* ***WARNINGS*** *on page 4.*

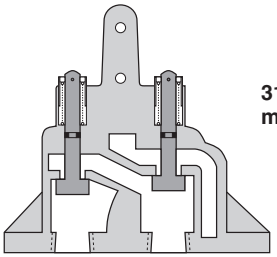
VALVE SERVICE

Valve Body Service Kits: These kits contain all of the internal parts needed to recondition a valve body. Included are poppet and stem assemblies, springs and retainers, gaskets and seals, plus instructions for use.

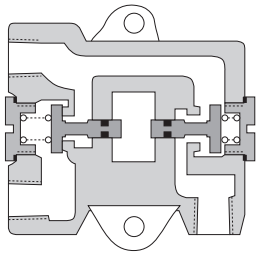
Locking Rocker Kits: Contain rocker and associated hardware for models with detented action (model numbers ending in 07, 09, 10, or 13).

Spring & Retainer Kits: Contain four poppet springs and retaining hardware. These parts are already included in valve body service kits.

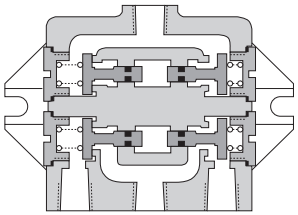
VALVE BODY CROSS SECTIONS



31 Series models



36 Series 3/2 models



36 Series 4/2 models

If you have any questions about installing or servicing your valve, call ROSS *Technical Services* at your nearest ROSS location (see page 4) or in the U.S.A. at: **1-888-TEK-ROSS(835-7677)**.

Valve Model Number	Valve Body Service Kit	Locking Rocker Kit	Spring & Retainer Kit
3126A3007	829K77	919K87	376K77
3126A3008	829K77	1012 1/2	376K77
3126A3009	829K77	919K87	376K77
3126A3010	690K87	919K87	376K77
3126A3011	690K87	1012 1/2	376K77
3126A3012	829K77	1012 1/2	376K77
3126A3013	690K87	919K87	376K77
3126A3014	690K87	1012 1/2	376K77
3126A4007	830K77	920K87	377K77
3126A4008	830K77	1032 1/2	377K77
3126A4009	830K77	920K87	377K77
3126A4010	691K87	920K87	377K77
3126A4011	691K87	1032 1/2	377K77
3126A4012	830K77	1032 1/2	377K77
3126A4013	691K87	920K87	377K77
3126A4014	691K87	1032 1/2	377K77
3126A5007	692K87	921K87	378K77
3126A5008	692K87	1052 1/2	378K77
3126A5009	692K87	921K87	378K77
3126A5010	692K87	921K87	378K77
3126A5011	692K87	1052 1/2	378K77
3126A5012	692K87	1052 1/2	378K77
3126A5013	692K87	921K87	378K77
3126A5014	692K87	1052 1/2	378K77
3126A6007	693K87	922K87	379K77
3126A6008	693K87	1072 1/2	379K77
3126A6009	693K87	922K87	379K77
3126A6010	693K87	922K87	379K77
3126A6011	693K87	1072 1/2	379K77
3126A6012	693K87	1072 1/2	379K77
3126A6013	693K87	922K87	379K77
3126A6014	693K87	1072 1/2	379K77
3126A7007	694K87	922K87	380K77
3126A7008	694K87	1072 1/2	380K77
3126A7009	694K87	922K87	380K77
3126A7010	694K87	922K87	380K77
3126A7011	694K87	1072 1/2	380K77
3126A7012	694K87	1072 1/2	380K77
3126A7013	694K87	922K87	380K77
3126A7014	694K87	1072 1/2	380K77
3623A2003	683K87	—	—
3623A2004	683K87	—	—
3623A2005	683K87	—	—
3623A2006	683K87	—	—
3626A2003	684K87	—	—
3626A2004	684K87	—	—
3626A2005	684K87	—	—
3626A2006	684K87	—	—
3643A2001	683K87	—	—
3643A2002	683K87	—	—
3646A2001	684K87	—	—
3646A2002	684K87	—	—

CAUTIONS And WARNINGS

PRE-INSTALLATION or SERVICE

1. Before servicing a valve or other pneumatic component, be sure that all sources of energy are turned off, the entire pneumatic system is shut off and exhausted, and all power sources are locked out (ref: OSHA 1910.147, EN 1037).

2. All ROSS® products, including service kits and parts, should be installed and/or serviced only by persons having training and experience with pneumatic equipment. Because any installation can be tampered with or need servicing after installation, persons responsible for the safety of others or the care of equipment must check every installation on a regular basis and perform all necessary maintenance.

3. All applicable instructions should be read and complied with before using any fluid power system in order 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 location listed in the table below.

4. Each ROSS product should be used within its specification limits. In addition, use only ROSS parts to repair ROSS products.

WARNINGS: Failure to follow these directions can adversely affect the performance of the product or result in the potential for human injury or damage to property.

FILTRATION and LUBRICATION

5. 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. ROSS recommends a filter with a 5-micron rating for normal applications.

6. All standard ROSS filters and lubricators with polycarbonate plastic bowls are designed for compressed air applications only. Do *not* fail to 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, hazardous leakage, and the potential for human injury or damage to property. Immediately replace a crazed, cracked, or deteriorated bowl. When bowl gets dirty, replace it or wipe it with a clean dry cloth.

7. Only use lubricants which are compatible with materials used in the valves and other components in the system. Normally, compatible lubricants are petroleum based 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 human injury, and/or damage to property.

AVOID INTAKE/EXHAUST RESTRICTION

8. Do not restrict the air flow in the supply line. To do so could reduce the pressure of the supply air below the minimum requirements for the valve and thereby cause erratic action.

9. 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:

ROSS expressly disclaims all warranties and responsibility for any unsatisfactory performance or injuries caused by the use of the wrong type, wrong size, or an inadequately maintained silencer installed with a ROSS product.

POWER PRESSES

10. 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.

ENERGY ISOLATION/EMERGENCY STOP

11. Per specifications and regulations, ROSS **L-O-X®** valves and **L-O-X®** valves with **EEZ-ON®** operation are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

STANDARD WARRANTY

All products sold by ROSS CONTROLS are warranted for a one-year period [with the exception of all Filters, Regulators and Lubricators ("FRLs") which are warranted for a period of seven years] from the date of purchase to be free of defects in material and workmanship. ROSS' obligation under this warranty is limited to repair or replacement of the product or refund of the purchase price paid solely at the discretion of ROSS and provided such product is returned to ROSS freight prepaid and upon examination by ROSS is found to be defective. This warranty becomes void in the event that product has been subject to misuse, misapplication, improper maintenance, modification or tampering.

THE WARRANTY EXPRESSED ABOVE IS IN LIEU OF AND EXCLUSIVE OF ALL OTHER WARRANTIES AND ROSS EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED WITH RESPECT TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ROSS 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 ROSS 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 ROSS MAY EXTEND THE LIABILITY OF ROSS AS SET FORTH HEREIN.

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ROSS SOUTH AMERICA Ltda.	Brazil	Tel: 55-11-4335-2200	email: vendas@rosscontrols.com
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ROSS CONTROLS (CHINA) Ltd.	China	Tel: 86-21-6915-7961	web site: www: rosscontrolschina.com
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