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TABLE OF CONTENTS

Lockout Valve

SECTION 1—IN GENERAL	2 - 4
SECTION 2—LOCKOUT/TAGOUT	5 - 6
SECTION 3—SMALL LOCKOUT/TAGOUT VALVES.....	6
SECTION 4—LARGE LOCKOUT/TAGOUT VALVES	7
SECTION 5—ELECTRICAL	8
SECTION 6—MAINTENANCE AND INSPECTION.....	8

SECTION 1—IN GENERAL

Safety Precautions

“ ⚠ DANGER ” Danger is used to indicate the presence of a hazard which WILL cause SEVERE personal injury if the warning is ignored.

“ ⚠ ” THIS SAFETY ALERT SYMBOL IDENTIFIES IMPORTANT SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL ⚠, BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY, AND CAREFULLY READ THE MESSAGE THAT FOLLOWS.

Efficient and safe machine operation depends on the development, implementation and enforcement of a safety program. This program requires, among other things, the proper selection of point-of-operation guards and safety devices for each particular job or operation, a thorough safety training program for all machine personnel, that includes instruction on the proper operation of the machine, the point-of-operation guards and safety devices on the machine, and a regularly scheduled inspection and maintenance program.

Rules and procedures covering each aspect of your safety program should be developed and published both in an operator's safety manual, as well as in prominent places throughout the plant and on each machine. Some rules or instructions which must be conveyed to your personnel and incorporated into your program include:

⚠ DANGER Never place your hands or any part of your body in this machine.

⚠ DANGER Never operate this machine without proper eye, face and body protection.

⚠ Never operate this machine unless you are fully trained, instructed, and have read the instruction manual.

⚠ Never operate this machine if it is not working properly—stop operating and advise your supervisor immediately.

⚠ Never use a foot switch to operate this machine unless a point-of-operation guard or device is provided and properly maintained.

⚠ Never operate this machine unless two-hand trip, two-hand control or presence sensing device is installed at the proper safety distance. Consult your supervisor should you have any questions regarding the proper safety distance.

⚠ Never tamper with, rewire or bypass any control or component on this machine.

A company's safety program must involve everyone in the company, from top management to operators, since only as a group can any operational problems be identified and resolved. It is everyone's responsibility to implement and communicate the information and material contained in catalogs and instruction manuals to all persons involved in machine operation. If a language barrier or insufficient education would prevent a person from reading and understanding various literature available, it should be translated, read or interpreted to the person, with assurance that it is understood.

⚠ For maintenance and inspection always refer to the OEM's (Original Equipment Manufacturer's) maintenance manual or owner's manual. If you do not have an owner's manual, please contact the original equipment manufacturer.

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Rockford Systems LLC
Call: 1-800-922-7533

Safety References

OSHA'S ACT AND FEDERAL REGULATIONS

Since the enclosed equipment can never overcome a mechanical deficiency, defect or malfunction in the machine itself, OSHA (Occupational Safety and Health Administration) has established certain safety regulations that the employers (users) must comply with so that the machines used in their plants, factories or facilities are thoroughly inspected and are in first-class operating condition before any of the enclosed equipment is installed.

1. An Act – Public Law 91 - 596, 91st Congress, S. 2193, December 29, 1970

Duties:

Sec. 5. (a) Each employer —

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.
- (b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

2. OSHA's Code of Federal Regulations, Subpart O, that an employer (user) must comply with include:

Section 1910.211 Definitions

Section 1910.212 (a) General Requirements for all Machines

Section 1910.217 Mechanical Power Presses

Section 1910.219 (b)(1) Mechanical Power-Trans-mission Apparatus (Flywheel and Gear Covers)

3. OSHA's 29 Code of Federal Regulations, Subpart J 1910.147 The Control of Hazardous Energy (Lockout / Tagout)

4. OSHA's Publication

"General Industry Safety and Health Regulations Part 1910," Code of Federal Regulations, Subpart O

This publication can be obtained by contacting:

Superintendent of Documents
US Government Printing Office
P.O. Box 371954
Pittsburgh, PA 15250-7954
Phone: (202) 512-1800 • Fax: (202) 512-2250
www.gpo.gov

OTHER SAFETY SOURCES

This manual cannot cover all aspects or be considered all-inclusive of a safety program. There are many publications on the subject of safety. Some other publication sources for organizing and implementing a safety program for machines are as follows:

- 1.** The most complete safety standards for machine tools are published in the ANSI (American National Standards Institute) B11 series. These standards can be purchased by contacting:

American National Standards Institute, Inc.
11 West 42nd Street
New York, New York 10036
Phone: (212) 642-4900 • Fax: (212) 302-1286
www.ansi.org

OR

Association of Manufacturing Technology (AMT)
7901 Westpark Drive
McLean, Virginia 22102
Phone: (703) 827-5211 • Fax: (703) 893-1151
www.mfgtech.org

- 2.** National Safety Council
1121 Spring Lake Drive
Itasca, IL 60143-3201
1-800-621-7619 ext. 2199 • Fax: (630) 285-0797
www.nsc.org

- 3.** For additional safety information and assistance in devising, implementing or revising your safety program, please contact the machine manufacturer, your state and local safety councils, insurance carriers, national trade associations and your state's occupational safety and health administration.

SECTION 1—IN GENERAL

Lockout Valve

Warranty

9. Limited Warranties.

9.1. (i) Subject to Section 8.1(ii) below, Rockford Systems makes to Customer the following sole and exclusive warranties with respect to Goods:

(a) with respect to Goods that are manufactured based on Customer specifications, at the time of shipment by Rockford Systems, the Goods sold under the Agreement that are manufactured by Rockford Systems pursuant to such specifications conform to such specifications set forth in the applicable Order Documentation; and

(b) at the time of shipment by Rockford Systems, the Goods sold under the Agreement that are manufactured by Rockford Systems are free from defects in material and workmanship.

(c) Rockford Systems's warranty is for a period of 1 year, and begins from date of shipment from Rockford Systems to the original purchaser.

This warranty does not include accessories, parts or equipment sold hereunder that are manufactured by someone other than Rockford Systems.

(ii) Every claim by Customer against Rockford Systems for breach of warranty with respect to the Goods shall be deemed waived by Customer unless written notice thereof is received by Rockford Systems within fifteen (15) days after discovery.

9.2. If Rockford Systems breaches either of the warranties set forth in Section 8.1(i) above, and written notice thereof is received by Rockford Systems from Customer within the applicable time period specified in Section 8.1(ii) above, Customer's sole and exclusive remedy and Rockford Systems's only obligation shall be, as Rockford Systems in its sole and exclusive judgment shall determine, the replacement of the nonconforming Goods, or an adjustment to the purchase price for the nonconforming Goods or the repair of the nonconforming Goods. All transportation charges related to replacement or repair of Goods shipped to Rockford Systems's plant or facility (or other place at Rockford Systems's direction) shall be prepaid by Customer. Rockford Systems shall be responsible for reasonable transportation charges back to Customer for Goods that have been replaced or repaired by Rockford Systems. Any replacement Goods or repaired Goods shall be subject to these Terms and Conditions.

9.3. THE EXPRESS WARRANTIES SET FORTH HEREIN ARE THE ONLY WARRANTIES APPLICABLE TO THE SALE OF GOODS BY ROCKFORD SYSTEMS TO CUSTOMER PURSUANT TO THE AGREEMENT, AND THEY EXCLUDE ALL OTHER EXPRESS, ORAL OR WRITTEN WARRANTIES, AS WELL AS ANY WARRANTIES IMPLIED BY LAW WITH RESPECT TO THE GOODS, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PURPOSE, NOTWITHSTANDING ANY DISCLOSURE TO ROCKFORD SYSTEMS OF THE INTENDED USE OF THE GOODS.

9.4. Rockford Systems's warranties under Section 8.1(i) are void

if repairs or modifications of the Goods are made by anyone other than Rockford Systems. Without limitation of the foregoing, Rockford Systems assumes no responsibility for and shall have no obligations to Customer because defects in any materials furnished by, or any faulty workmanship provided by, any party other than Rockford Systems.

9.5. Rockford Systems reserves the right to improve its products through changes in design or material without being obligated to incorporate such changes into products of prior manufacture. Customer cannot rely on any such changes as proof of insufficiency or inadequacy of prior designs of the Goods or material contained in the Goods.

9.6. If Customer grants to an end user of the Goods (or any other customer of Customer) any warranty that is greater in scope or time than the warranty and claims period stated herein, Rockford Systems shall not be liable beyond the scope of the limited warranty, the claim period, the damages and the remedies provided for under this Section.

9.7. Solely to the extent transferable, Rockford Systems assigns and transfers to Customer the original manufacturer's warranty on Goods sold hereunder that are not manufactured by Rockford Systems.

INTRODUCTION TO LOCKOUT/TAGOUT

The OSHA (Occupational Safety and Health Act) regulation, under Subpart J, Section 1910.147, requires that all employers develop a complete hazardous energy control program. This regulation covers the servicing and maintenance of machines and equipment where the unexpected energization or start-up of the machines or equipment, or release of stored energy could cause injury to employees. The following should be included when establishing a program:

1. Use procedures for affixing lockout or tagout devices to energy isolating devices. Also, disable machines or equipment to prevent unexpected energization, start-up, or release of stored energy in order to prevent injury to employees.
2. Periodic inspection of the energy control procedure. This must be done at least annually.
3. Training of employees to ensure that the purpose and function of the energy control program is understood.

When establishing procedures for shutdown:

- Identify all energy sources.
- Know the hazards of the energy to be controlled.
- Determine the methods or means to control energy.

Hazardous energy sources associated with machinery are:

- Electrical
- Pneumatic
- Hydraulic
- Fluids and Gases
- Mechanical
- Thermal

The following methods and devices can be used to lockout or tagout the above energy sources.

ELECTRICAL

1. Unplug the machine and use an electrical plug lockout or use a disconnect switch with padlocks, lockouts, and tags.
2. Disconnect all power sources and ensure that they are locked or tagged out.
3. Stored electrical energy must be bled to obtain a zero energy state.
4. Use a testor to ensure that all circuits are dead.

PNEUMATIC

1. Release pressure and release all downstream air to reach a zero energy state.
2. Use energy isolation air valves, shut-off valves, padlocks, and lockouts to lockout the energy source.

HYDRAULIC

1. Release pressure to reach a zero energy state.
2. Use lockout valves, chains, padlocks, and lockouts to lockout the energy source.

FLUIDS AND GASES

1. Recognize all hazards.
2. Insert a blank or blind in the line.
3. Use valve lockouts, chains, padlocks, and lockouts at isolating source.

MECHANICAL

1. Release all stored mechanical energy or block the energy. Be aware of coasting stored energy, gravity, springs, tension, and other sources of energy that are not always obvious.
2. Use blocks to restrain energy.
3. Padlocks, lockouts, and tags should also be used to lockout and tagout mechanical energy.

THERMAL

1. Provide cooling procedures

For additional lockout/tagout products and training, contact Rockford Systems LLC. Please use address, phone, e-mail, or fax on the front cover of this manual.

(Continued on next page.)

SECTION 2—LOCKOUT/TAGOUT

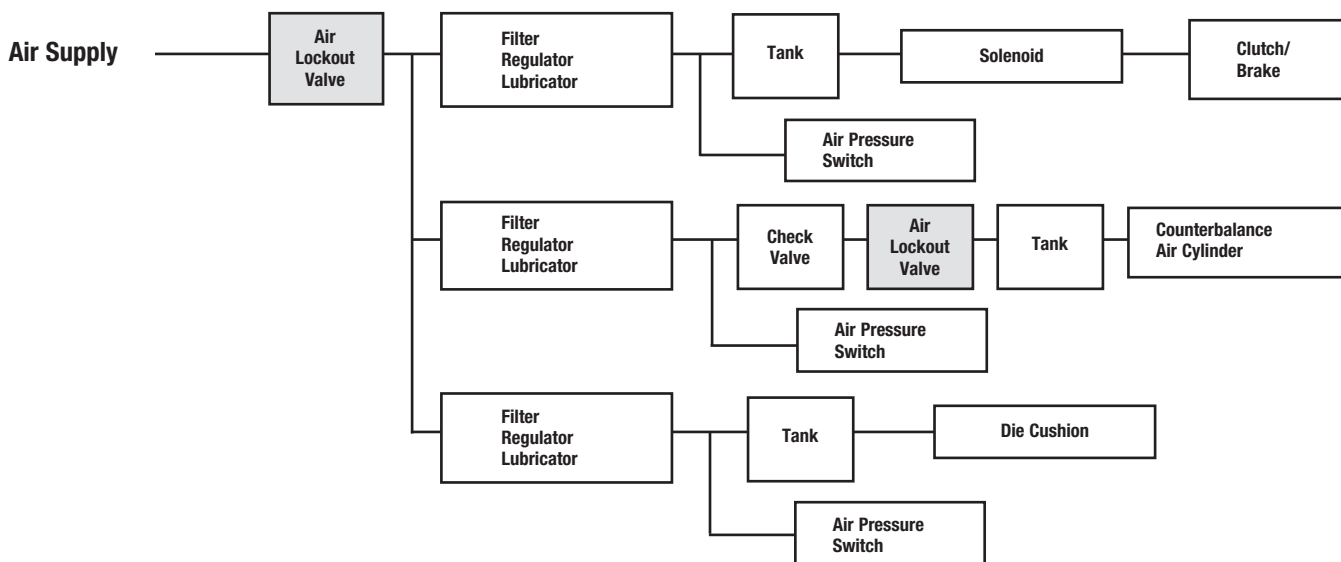
Lockout Valve

ILLUSTRATION EXAMPLES OF WHERE THE LOCKOUT AIR VALVE CAN BE LOCATED IN THE AIR LINE ON MECHANICAL POWER PRESSES

On full revolution clutch presses with trip controls



On part revolution clutch presses



SECTION 3—SMALL LOCKOUT/TAGOUT VALVES

Lockout Valve

SHUT-OFF AIR VALVE

This valve is usually attached to the air inlet of a machine. It is manually operated with a slide-type valve that opens and closes with a short one inch movement. When locking out, the downstream air is automatically exhausted. The valve slide can only be locked in the closed position. This is a three-way valve that exhausts air in the closed position. Valves are furnished in 1/4", 3/8", or 1/2" port sizes.

PART NO.	PORT SIZE
RCD071	1/4"
RCD072	3/8"
RCD073	1/2"

Photo 3.1
Part No. RCD071 (1/4")



SLIDE-OPERATED LOCKOUT VALVE

This three-way valve is manually operated with a slide-type valve that opens and closes with a short slide movement. It can only be locked out in the closed position. This valve has a larger body size for more air flow.

Part No.	Port Sizes	
	In-Out	Exh
RCD112	3/8"	3/4"
RCD113	1/2"	3/4"
RCD114	3/4"	3/4"

Photo 3.2
Part No. RCD112 (3/8")



(continued on next page.)

SECTION 4—LARGE LOCKOUT/TAGOUT VALVES

Lockout Valve

EEZ-ON LOCKOUT VALVE

This valve has two functions; it provides shutdown of the machine as well as gradual startup capabilities. This eliminates the need for extra components, which means easier installations and less cost. This valve is furnished with a muffler.



Photo 4.1 - EEZ On Valve

Part No.	Port Sizes	
	In-Out	Exh
RCD120	3/8"	3/4"
RCD121	1/2"	3/4"
RCD122	3/4"	3/4"

MANUAL VALVE

The manual valve shuts off the flow of air when a machine needs to be locked out. It is installed in the air line going to the machine. To exhaust air in the line the handle is pushed in. This causes the supply of air to be blocked and the downstream air in the line is exhausted through the exhaust port and muffler at the bottom of the valve. The valve can be padlocked in this position to prevent the handle from being pulled out. This valve is available in 3/4" and 1" port sizes



Photo 4.2 - Manual Valve

Part No.	Port Sizes	
	In-Out	Exh
RCD076	3/4"	1"
RCD077	1"	1"

MANUAL PILOT VALVE

This valve is used for air systems that are larger than those that can be used with the manual valve. They are available for port sizes of 1-1/2" and 2-1/2". This valve operates in a similar manner as the manual valve, but by pushing the handle in or out it controls pilot pressure to a piston which opens or closes the valve's inlet poppet. This valve is designed to be locked in the closed position only.

Note: When any of the valves on this page are manually or electrically closed, the downstream air is automatically drained, providing there is not a check valve or obstruction of some kind in the air line.

SPECIFICATIONS:

***VOLTAGES** 100, 110 Volts, 50 Hz

..... 100, 120 Volts, 60 Hz

***POWER CONSUMPTION**..... 87 VA Max inrush 30 VA

..... Max holding 50 or 60 Hz

TEMPERATURE Solenoid Valves:

..... 4°C - 50°C (40°F - 120°F)

FLOW MEDIA Filtered Air

PRESSURE RANGE..... up to 1-1/2 pipe sizes:

..... 15 to 150 psig for manual valves

..... 1-1/2 to 2-1/2 pipe sizes: 30 to 150 psig

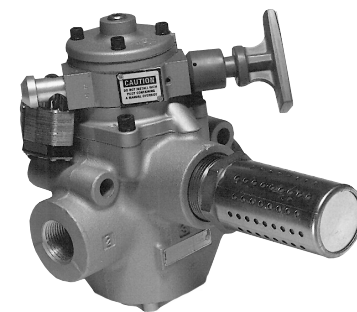


Photo 4.3 - Manual Pilot Valve

Part No.	Port Sizes	
	In-Out	Exh
RCD078	1-1/2"	1-1/2"
RCD079	2-1/2"	2-1/2"

(Continued on next page.)

SECTION 5—ELECTRICAL

Lockout Valve

INSTALLATION OF LOCKOUT VALVE

PIPING

The port size of the lockout valve should match the pipe size where it will be installed. If the port of the supplied valve is smaller than the pipe size, please consult factory for a larger valve. If the valve is too small, air flow will be restricted and may affect air-operated components on the machine.

When applying a lockout valve to any type of machine or equipment, select the most logical location for inserting it into the air line. For convenience, the lockout valve should be mounted so that it can be closed, opened, and tagged from the shop floor. If it is out of reach, personnel may be discouraged from using the valve. The lockout valve is designed to shut off the pressure going to the entire machine, or to a specific area of the machine, depending on the application. For examples of where lockout valves should be located in the air line, see the illustrations on page 5. If you are installing the valve on another type of machine, a schematic of the air system should be sketched, before installation, to determine the proper mounting location.

The lockout valve is also designed to bleed the downstream air into the atmosphere. Check the air line where the lockout valve will be inserted. Make sure a flow-check valve is not installed before the lockout valve in the air line. **ALWAYS** install the lockout valve **after** the check valve. When bleeding downstream air, use extreme caution because the release of air could cause unexpected movement from machine components or equipment which could result in injury.

WIRING

When wiring the solenoid operated portion of the valve, National Electrical Code (NEC) practices should be followed, especially color coding and the use of numbered wire markers on both ends of every wire. Color coding is Red for 120 VAC control circuits, White for current carrying ground (commonly referred to as the "right hand common") and Green for any equipment grounding conductor.

SECTION 6—MAINTENANCE AND INSPECTION

Lockout Valve

Inspection of the entire air system is dependent on the frequency of machine operation and the cleanliness of the plant air lines. Both free moisture and solids should be removed automatically by the filter/regulator. Drain the filter whenever water level in the sump reaches the lower baffle. To remove the filter element for cleaning, shut the air line down and exhaust secondary pressure.

Check lubricator for proper oil level and oil delivery adjustment.



All troubleshooting, as well as installation, must be performed by qualified and properly trained personnel. Furthermore, when a defective component is found, do not operate the machine until that component has been replaced.



After any maintenance, always operate the machine numerous times in all modes before allowing the operator to start production. Moreover, always make sure all point-of-operation safeguarding is in place, adjusted and operating properly for the job and the operator.

Remove dust covers from the valve port connections only when ready to install. Exercise care to avoid getting particles such as chips, sealing compounds or scale in the piping. This can cause valve failure and damage.