

# INSTALLATION MANUAL FOR GATE OR MOVABLE BARRIER DEVICE (Type "A" OR "B" Gate)



Full Revolution Press  
with Type "A" Gate Open



Full Revolution Press  
with Type "A" Gate Closed

**IMPORTANT: PLEASE REVIEW THIS ENTIRE PUBLICATION BEFORE INSTALLING, OPERATING, OR MAINTAINING THE GATE SYSTEM.**

# TABLE OF CONTENTS

## Gate or Movable Barrier Device (Type “A” or “B” Gate)

<b>SECTION 1—IN GENERAL</b> .....	<b>3 - 5</b>
<b>SECTION 2—INTRODUCTION</b> .....	<b>6</b>
<b>SECTION 3—INSTALLATION OF COMPONENTS</b> .....	<b>7 - 13</b>
Literature Folder.....	7 - 8
Air Cylinder .....	9
Gate Limit Switch.....	10
Proximity Switch.....	10
Dump Valve .....	11
Solenoid Valve.....	12
Regulator and Gauge .....	13
Type “A” Gate Remote Station .....	13
<b>SECTION 4—OPERATING CONSIDERATIONS</b> .....	<b>14</b>
<b>SECTION 5—GATE SIZES AND REPLACEMENT PARTS</b> .....	<b>14</b>
<b>SECTION 6—RETURN MATERIALS AUTHORIZATION FORM</b> .....	<b>15</b>
<b>SECTION 7—ORDER FORM FOR SIGNS AND LITERATURE</b> .....	<b>16</b>
<b>PHOTOS AND FIGURES</b>	
<b>Photo 3.1</b> Unpacking the Gate Assembly .....	9
<b>Photo 3.2</b> Laying Out the Gate Assembly .....	9
<b>Photo 3.3</b> Gate Assembly Mounted to Side Guards .....	9
<b>Photo 3.4</b> Gate Swung Open at Front Left Panel .....	10
<b>Photo 3.5</b> Gate Swung Open at Left Rear Side Guard .....	10
<b>Photo 3.6</b> Gate Limit Switch .....	10
<b>Photo 3.7</b> Front Panel Contacts Actuator .....	10
<b>Photo 3.8</b> Proximity Switch.....	10
<b>Photo 3.9</b> Solenoid Valve and Muffler.....	12
<b>Photo 3.10</b> Type “A” Gate Remote Station .....	13
<b>Photo 5.1</b> Gate with Air Cylinder .....	14
<b>Figure 3.1</b> Top Bracket Attachment on Air Cylinder .....	9
<b>Figure 3.2</b> Rod Yoke Attachment on Air Cylinder .....	9
<b>Figure 3.3</b> Dump Valve.....	11
<b>Figure 3.4</b> Pneumatic Diagram.....	11
<b>Figure 3.5</b> Regulator and Gauge Assembly.....	13

## 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 and a thorough safety training program for all machine personnel. This program should include instruction on the proper operation of the machine, instruction on 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 and instructed and unless you 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 OEMs (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.

# SECTION 1—IN GENERAL

Gate or Movable Barrier Device (Type "A" or "B" Gate)

## 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-Transmission 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 Publications

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

"Concepts and Techniques of Machine Safeguarding," OSHA 3067, Revised 1992

These publications 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](http://www.gpo.gov)

### ANSI SAFETY STANDARDS FOR MACHINES

The most complete safety standards for machine tools are published in the ANSI (American National Standards Institute) B11 series. The following is a list of each ANSI B11 Standard available at the printing of this publication.

- B11.1 Mechanical Power Presses
- B11.2 Hydraulic Presses
- B11.3 Power Press Brakes
- B11.4 Shears
- B11.5 Iron Workers
- B11.6 Lathes
- B11.7 Cold Headers and Cold Formers
- B11.8 Drilling, Milling and Boring
- B11.9 Grinding Machines
- B11.10 Sawing Machines
- B11.11 Gear Cutting Machines
- B11.12 Roll Forming and Roll Bending
- B11.13 Automatic Screw/Bar and Chucking
- B11.14 Coil Slitting Machines
- B11.15 Pipe, Tube and Shape Bending
- B11.16 Metal Powder Compacting Presses
- B11.17 Horizontal Hydraulic Extrusion Presses
- B11.18 Coil Processing Systems
- B11.19 Performance Criteria for the Design, Construction, Care and Operation of Safeguards as Referenced in the Other B11 Machine Tool Safety Standards
- B11.20 Safety Requirements for Manufacturing Systems/Cells
- B11.21 Lasers
- B11.22 CNC Turning Machines
- B11.23 Machining Centers
- B11/TR1 Ergonomic Considerations for the Design, Installation and Use of Machine Tools
- B11/TR2 Mist Control
- B11/TR3 Hazard ID and Control
- B11/TR4 Control Reliability
- R15.06 Robotic Safeguarding

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](http://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](http://www.mfgtech.org)

(Continued on next page.)

Rockford Systems, LLC.  
Call: 1-800-922-7533 (USA)

# SECTION 1—IN GENERAL

Gate or Movable Barrier Device (Type “A” or “B” Gate)

## NATIONAL SAFETY COUNCIL SAFETY MANUALS AND DATA SHEETS

Other good references for safety on machine tools are the National Safety Council’s Safety Manuals and Data Sheets. These manuals and data sheets are written by various committees including the Power Press, Forging and Fabricating Executive Committee. Copies of the following publications are available from their library:

### Manuals

Power Press Safety Manual - 4th Edition  
Safeguarding Concept Illustrations - 6th Edition  
Forging Safety Manual

### Data Sheets

Bench and Pedestal Grinding Wheel Operations 12304-0705  
Boring Mills, Horizontal Metal 12304-0269  
Boring Mills, Vertical 12304-0347  
Coated Abrasives 12304-0452  
Cold Shearing Billets and Bars in the Forging Industry ..... 12304-0739  
Degreasing (Liquid), Small Metal Parts 12304-0537  
Dies, Setup and Removal of Forging Hammer 12304-0716  
Drill Presses, Metalworking 12304-0335  
Drills, Portable Reamer 12304-0497  
Drop Hammers, Steam 12304-0720  
Electrical Controls for Mechanical Power Presses 12304-0624  
Forging Hammer Dies, Setup and Removal of 12304-0716  
Forging Presses, Mechanical 12304-0728  
Gear-Hobbing Machines 12304-0362  
Handling Materials in the Forging Industry 12304-0551  
Kick (Foot) Presses 12304-0363  
Lathes, Engine 12304-0264  
Milling Machines, Metalworking 12304-0364  
Planers, Metal 12304-0383  
Power Press (Mechanical) Point-of-Operation ..... Safeguarding, Concepts of 12304-0710  
Power Press Point-of-Operation Safeguarding: Two-Hand ..... Control and Two-Hand Tripping Devices 12304-0714  
Power Press Point-of-Operation Safeguarding: Type A ..... and B Movable Barrier Devices 12304-0712  
Power Press Point-of-Operation Safeguarding: ..... Point-of-Operation Guards 12304-0715

Power Press Point-of-Operation Safeguarding: ..... Presence Sensing Devices 12304-0711  
Power Press Point-of-Operation Safeguarding: ..... Pullbacks and Restraint Devices 12304-0713  
Power Presses (Mechanical), Inspection and ..... Maintenance of 12304-0603  
Power Presses (Mechanical), Removing Pieceparts ..... from Dies in 12304-0534  
Power Press, Setting Up and Removing Dies 12304-0211  
Press Brakes 12304-0419  
Robots 12304-0717  
Saws, Metal (Cold Working) 12304-0584  
Shapers, Metal 12304-0216  
Shears, Alligator 12304-0213  
Shears, Squaring, Metal 12304-0328  
Upsetters, 12304-0721

Copies of these manuals and data sheets can be obtained by contacting:

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

### OTHER SAFETY SOURCES

National Institute of Occupational Safety and Health (NIOSH)  
4676 Columbia Parkway  
Cincinnati, OH 45226  
Robotic Industries Association (RIA)  
P.O. Box 3724  
Ann Arbor, MI 48106  
Phone: (313) 994-6088

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.

## Warranty, Disclaimer and Limitation of Liability

### WARRANTY

Rockford Systems, LLC warrants that this product will be free from defects in material and workmanship for a period of 12 months from the date of shipment thereof. ROCKFORD SYSTEMS LLC’S OBLIGATION UNDER THIS WARRANTY IS EXPRESSLY AND EXCLUSIVELY LIMITED to repairing or replacing such products which are returned to it within the warranty period with shipping charges prepaid and which will be disclosed as defective upon examination by Rockford Systems, LLC This warranty will not apply to any product which will have been subject to misuse, negligence, accident, restriction and use not in accordance with Rockford Systems, LLC’s instructions or which will have been altered or repaired by persons other than the authorized agent or employees of Rockford Systems, LLC Rockford Systems, LLC’s warranties as to any component part is expressly limited to that of the manufacturer of the component part.

### DISCLAIMER

The foregoing Warranty is made in lieu of all other warranties, expressed or implied, and of all other liabilities and obligations on the part of Rockford Systems, LLC, including any liability for negligence, strict liability, or otherwise, and any implied warranty of merchantability or fitness for a particular purpose is expressly disclaimed.

### LIMITATION OF LIABILITY

Under no circumstances, including any claim of negligence, strict liability, or otherwise, shall Rockford Systems, LLC be liable for any incidental or consequential damages, or any loss or damage resulting from a defect in the product of Rockford Systems, LLC

## **SECTION 2—INTRODUCTION**

*Gate or Movable Barrier Device (Type “A” or “B” Gate)*

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### **General Description of Components in the System**

A complete gate assembly includes the following:

1. Literature folder (see pages 7 and 8) containing installation manuals, “Operator Safety Precaution” Pamphlet, danger sign(s), and electrical control schematics
2. Gate assembly consisting of frame, polycarbonate front panel with either a limit switch or proximity switch
3. Gate air cylinder assembly including mounting bracket
4. Two quick dump valves with mufflers (Provides quicker exhausting of trapped air from the air cylinder to the atmosphere)
5. Two solenoid air valve assemblies with mufflers
6. Regulator-gauge assembly with mounting bracket (Adjusts the air pressure to the proper setting needed for the operation of the gate air cylinder)
7. Remote two-position “off/on” key-operated station (if required)

Individual packages may vary in contents. However, a packing list is always enclosed showing exactly what material was shipped on this order. Please check the components actually received against this packing list immediately. This gate assembly is often furnished with a full revolution or part revolution clutch control for mechanical power presses. Please refer to the clutch control schematics for proper interfacing.

### **Preliminary Steps Before Installation**

Before proceeding with the installation of the enclosed equipment, you should undertake the following preliminary steps.

1. Read and make sure you understand this entire Installation Manual.
2. Refer to the front cover, other line drawings, and photos, found in this manual. Next, make a rough sketch of your installation to plan the location of the enclosed equipment on the machine.
3. **Please make sure the machine is in first-class condition.** Before starting any installation, it is essential that the machine is thoroughly inspected. Be sure that all mechanical components and all collateral equipment are in first-class operating condition. Your inspection should be done according to the machine manufacturer’s installation and maintenance instruction manual. Special attention must be given to the machine clutch and brake. The clutch and brake must be maintained in an operating condition which is within the specifications set by the machine manufacturer. If you have any doubts or questions concerning the condition of the machine, contact the machine manufacturer for assistance. **Repair or replace all parts not operating properly before proceeding.**



**Inspection and maintenance programs must be established and implemented to keep machines in first-class condition. Programs must include thorough inspections of each machine on a weekly basis and records kept of these inspections. Any part of the machine that is worn, damaged or is not operating properly must be replaced immediately or repaired before the machine is used.**

4. Verify that the machine is in first-class condition and operating properly; shut off all power to the machine. Padlock the electrical, pneumatic or hydraulic energy disconnecting means in the “off” position. Do not actuate the machine again until the installation of all package components has been completed. Lockout/tagout energy isolation procedures must always be practiced and enforced.

# SECTION 3—INSTALLATION OF COMPONENTS

Gate or Movable Barrier Device (Type “A” or “B” Gate)

## Introduction

The following materials are also required to install the equipment in this shipment.

1. Wire: Size and type will depend on local ordinances or plant practices. We recommend stranded machine tool wire with appropriate color coding. **Never use solid wire**—the vibration caused by these machines precludes the successful use of solid wire for these installations.
2. Numbered Wire Markers: Made of suitable material to resist oil, grease, etc. and remain firmly attached to the wire.
3. Conduit: Use Sealtite or any other suitable tubular connecting means which complies with National Standards or local ordinances and provides adequate mechanical protection for the wires. Most electrical components are supplied in an oil-tight construction and we strongly recommend the use of oil-tight wiring components and practices in order to produce a successful installation.
4. Miscellaneous wiring components such as electrical tape, wire connectors, and terminals, as required.
5. Flexible air line hose can be made of rubber or plastic; make sure they are cut to the proper length.

## Installation of Components

### LITERATURE FOLDER

Included with every shipment is a literature folder. This includes installation manuals, “Operator Safety Precaution” Pamphlet (Part No. KSC-000), danger sign(s), and electrical schematics. These publications must be available and fully understood by all appropriate personnel, before any retrofit installation begins. Please notify Rockford Systems, LLC immediately if there are any questions about the components received.

### Operator Safety Precaution Pamphlet—attachment for anyone operating this machine



Front



Accompanying this equipment is an 8-1/2” x 11” operator safety precaution pamphlet, Part No. KSC-000, for anyone operating the machine where this equipment will be installed. This precaution pamphlet is to be given to all operators, including setup people, maintenance personnel and supervisors.



Attach it to the machine, readily accessible and visible to the operator. (A hole in the corner is provided for attaching purposes.) Additional copies of this precaution are available. Please call, write, fax, e-mail or use the order form found on a later page in this manual.



When a language barrier or insufficient education prevents a person from reading or understanding the contents of this pamphlet, you should either translate this information or have it read or interpreted to the person. Make sure that the person understands the information. To order this pamphlet in Spanish, use Part No. KSC-000S; in French, use Part No. KSC-000F.



This precaution pamphlet must be reviewed daily.

(Continued on next page.)

# SECTION 3—INSTALLATION OF COMPONENTS

Gate or Movable Barrier Device (Type “A” or “B” Gate)

## Installation of Components (continued)

### Danger Sign (Standard) - Part No. KSC-054

This 5” x 6” polyethylene danger sign is supplied and **must be permanently mounted in a prominent location** on the machine where this equipment is installed. It must be in a location that is **easily visible** to the operator, setup person, or other personnel who work on or around this machine. **Always** mount this sign with screws or rivets. Other suggested mounting instructions are shown on the reverse side of this sign. This sign must be the first thing mounted to prevent any possibility that it might be overlooked. If this sign becomes destroyed or unreadable, it must be replaced immediately. Contact factory for replacement and do not operate the machine until the danger sign is in place.

### Foot Switch Danger Sign - Part No. KSC-055

If a foot switch is ordered, a 5” x 6” polyethylene danger sign is furnished. This sign must also be mounted according to the above instructions.



**Never operate this machine unless the danger sign(s) is in place. Also make sure the sign(s) is read and understood before operating the machine.**

**Part No. KSC-054** Danger Sign - Standard  
**Part No. KSC-054S** - Spanish  
**Part No. KSC-054F** - French

**Part No. KSC-055** Danger Sign (Foot) - Standard  
**Part No. KSC-055S** - Spanish  
**Part No. KSC-055F** - French

**Front Side** (Left): **DANGER** Closing Ram and Die. Will result in loss of fingers or limbs if placed in machine. Never place your hands or any part of your body in this machine. DO NOT REMOVE OR COVER THIS SIGN - SEE BACK FOR MOUNTING INSTRUCTIONS.

**Front Side** (Right): **DANGER** CLOSING RAM AND DIE, MOVING PARTS, OR MACHINE COMPONENTS. Do not remove or cover this sign. See back for mounting instructions.

**Reverse Side** (Bottom Left): **SUGGESTED PROCEDURE FOR MOUNTING THIS SIGN**. THE PURPOSE OF THIS SIGN IS TO ADEQUATELY WARN ALL PERSONNEL OF THE DANGER OF BODILY INJURY OR DEATH. To accomplish this purpose, ALWAYS mount this sign in the following manner:  
(1) Clearly visible to the operator and other personnel  
(2) At or near eye level  
(3) PERMANENTLY fastened with bolts or rivets  
**NEVER OPERATE MACHINE WITHOUT THIS DANGER SIGN VISIBLE TO ALL PERSONNEL.**

See page 7 for details on this pamphlet.

### “Mechanical Power Press Safety” Booklet

A copy of Booklet No. MPSS (“Mechanical Power Press Safety”) is available upon request. This booklet is copied verbatim from the CFR (Code of Federal Regulations) and contains all relevant sections of the OSHA Regulations concerning power presses with which an employer (user) must comply. The enclosed equipment must be installed, used and maintained to meet these regulations. Specifically, any time a foot switch is used, a suitable **point-of-operation safeguard or device must be used** to prevent bodily injury. In addition, **every press must be provided with a point-of-operation safeguard!** Please review this booklet and the appropriate ANSI (American National Standards Institute) Safety Standard before installing the enclosed equipment. If you are unfamiliar with these detailed safety regulations, which include regulations on safeguarding the point of operation properly, you may want to attend our regularly scheduled machine safeguarding seminar. To obtain detailed information about this training seminar, please call, fax, write, or check our web site. Our address, telephone, fax number, and web site address are on the front cover of this manual.



(Continued on next page.)



# SECTION 3—INSTALLATION OF COMPONENTS

Gate or Movable Barrier Device (Type “A” or “B” Gate)

## Installation of Components (continued)

### AIR CYLINDER AND GATE ASSEMBLY INSTALLATION

Photo 3.1



Photo 3.2



Figure 3.1

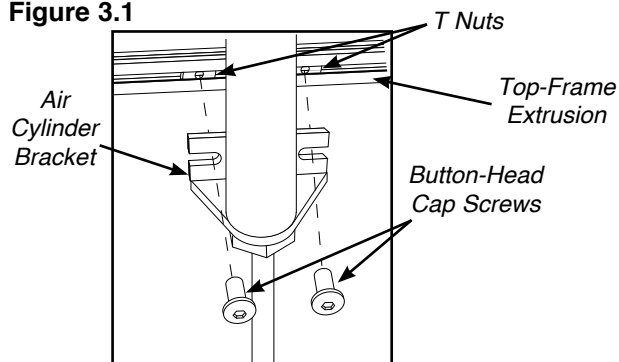


Figure 3.2

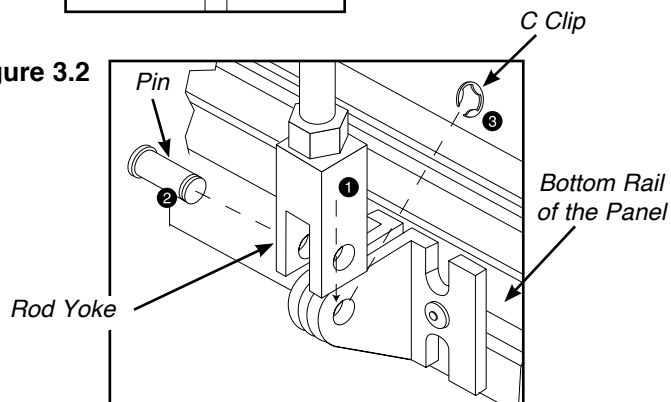
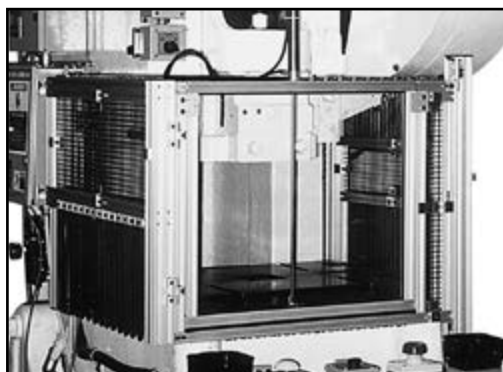


Photo 3.3



**1. Unpack the gate assembly shipment (Photo 3.1).**

- Open all component packages before proceeding.
- Make sure all components are included according to the packing list sent with your shipment.

**2. Lay out the gate assembly on a work bench or the floor (Photo 3.2).**

**3. Locate the air cylinder and attach this cylinder to the gate assembly.**

- Locate the top-frame extrusion which has the T nuts in it. Fasten the air cylinder to the inside rail of the top-frame extrusion. To do this, remove the two button-head cap screws which are attached to the T nuts inside the channel of the extrusion. Reattach the cap screws through the bracket. Tighten both cap screws to the T nuts. Refer to Figure 3.1.

- Attach the cylinder rod yoke to the bracket attached to the bottom rail of the panel. To do this, remove one C clip from one end of the pin located in the yoke then remove the pin. Slide the yoke over the bracket on the bottom rail of the panel (1). Reinsert the pin into the yoke (2). Slide the C clip back into the groove on the end of the pin (3). Refer to Figure 3.2.

- Make sure the threaded inlet and outlet ports are accessible for the best hose routing.
- Make sure the gate is in the full down position when it bottoms out on the rubber bumper.

**4. Select the mounting location for the gate assembly and measure or spot holes on the machine.**

- Mount the gate assembly to the machine with the furnished mounting brackets, **OR**
- Mount the gate assembly to side guards (Photo 3.3), **OR**
- Mount the gate assembly to a special fabricated bracket (customer to furnish).

*Note: Some machines, mainly OBI presses, may have irregular mounting surfaces. A special mounting plate may need to be fabricated to provide a sturdy mounting surface.*

*If the gate is large, additional support from the top of the gate to the machine may also need to be fabricated to provide sturdier mounting.*

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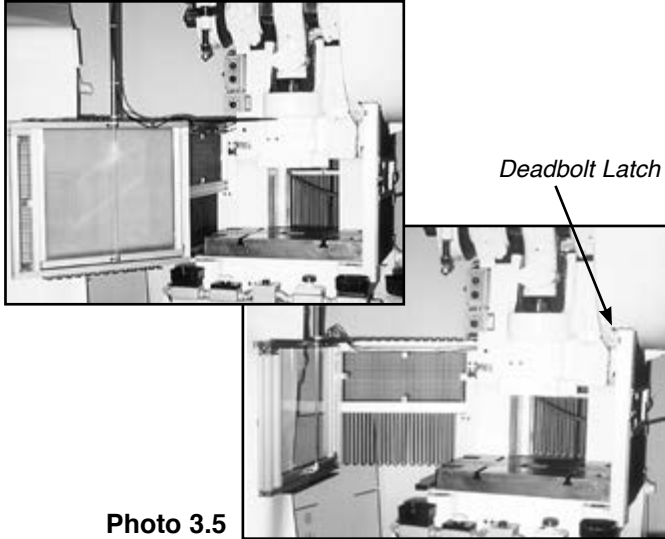
# SECTION 3—INSTALLATION OF COMPONENTS

Gate or Movable Barrier Device (Type “A” or “B” Gate)

## Installation of Components (continued)

### HINGING FEATURE

Photo 3.4



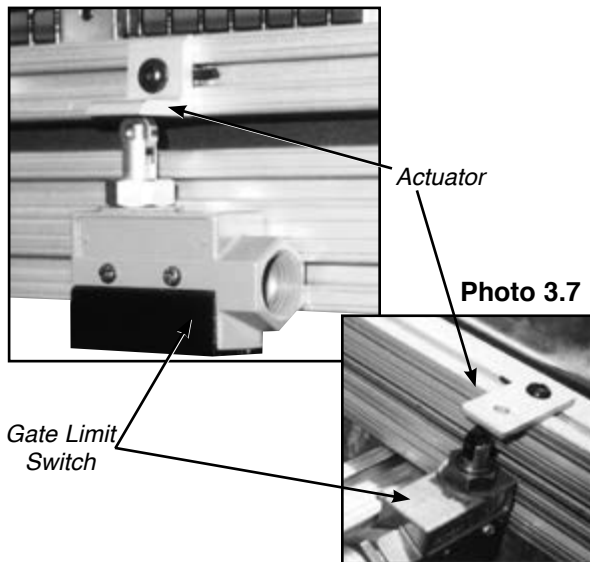
The standard gate assembly is furnished with hinges to swing open the gate assembly. Loosen the button head cap screw from the locking plate (located on the top left extrusion). The gate will swing open to the left when die changing or maintenance is required. See Photo 3.4.

If the gate assembly is furnished with side guarding from the factory, the gate can be swung open to the left. To do this, release the deadbolt latch which is located on the top of the right extrusion. The gate and left side guard may also be swung open at the left rear panel, depending on the application requirements. See Photo 3.5.

Photo 3.5

### GATE LIMIT SWITCH INSTALLATION (for relay-logic control when furnished)

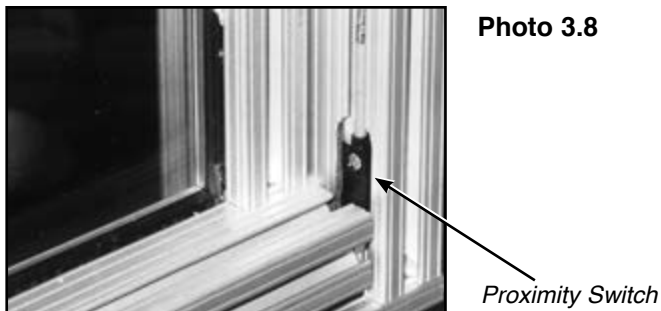
Photo 3.6



#### Locate the gate limit switch (Photo 3.6).

- The “gate-down” limit switch is attached to the gate. Verify that the front panel makes contact with the actuator when the gate is in the down position when installed on the machine (Photo 3.7).
- Refer to the electrical diagrams furnished with your order for gate limit switch wiring instructions.

### PROXIMITY SWITCH INSTALLATION (for solid-state control when furnished)



The “gate-down” proximity switch has been installed in the inside channel of the side rail of the frame (Photo 3.8).

Refer to the electrical diagrams furnished with your order for proximity limit switch wiring instructions.

(Continued on next page.)

# SECTION 3—INSTALLATION OF COMPONENTS

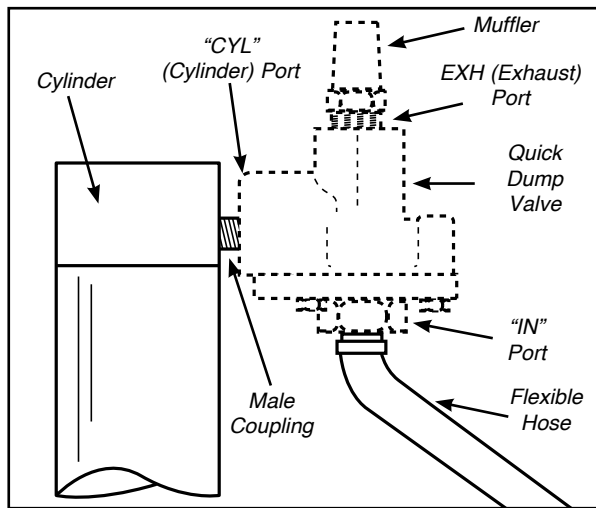
Gate or Movable Barrier Device (Type “A” or “B” Gate)

## Installation of Components (continued)

### DUMP VALVE INSTALLATION (OPTIONAL)

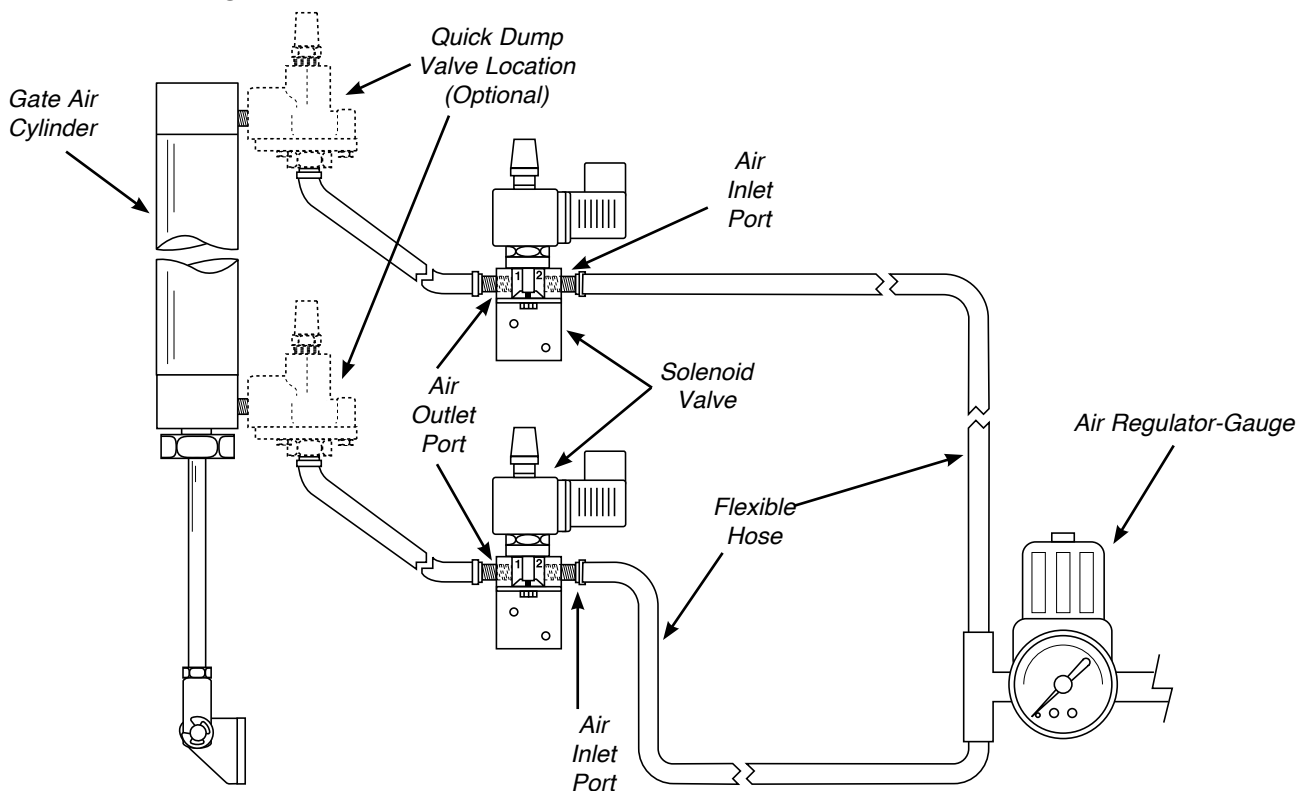
Note: Two dump valves are recommended to ensure fast and smooth operation of the gate.

Figure 3.3



1. Locate the two dump valves and the two threaded mufflers.
2. Thread one muffler into the dump valve port marked EXH (exhaust). Repeat this procedure for the second muffler. Refer to Figure 3.3.
3. Connect the quick dump valves to the air cylinders. Refer to Figures 3.3 and 3.4.
  - With a male coupling, connect the dump valve port marked **CYL** (cylinder) on one dump valve to the top threaded inlet port of the air cylinder.
  - With a male coupling, connect the dump valve port marked **CYL** (cylinder) on the second dump valve to the bottom threaded inlet port of the air cylinder.

Figure 3.4  
Pneumatic Installation Diagram



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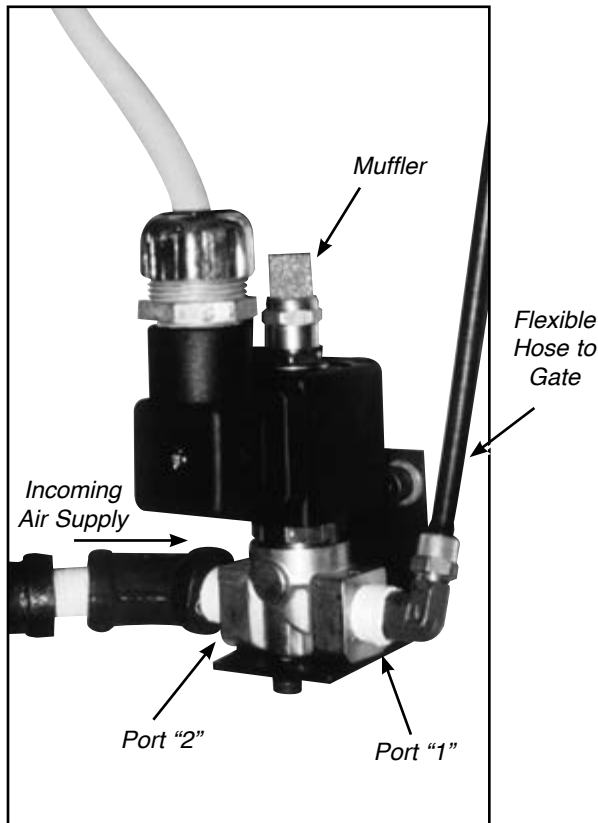
## SECTION 3—INSTALLATION OF COMPONENTS

Gate or Movable Barrier Device (Type “A” or “B” Gate)

### Installation of Components (continued)

#### SOLENOID VALVE INSTALLATION

Photo 3.9



1. **Locate the two solenoid valves and mufflers.**
2. **Attach each muffler on the threaded fitting located on the top of each valve (Photo 3.9).**
3. **Select the mounting location on the machine for both solenoid valves.**
  - Refer to the installation diagram on page 11, and to your layout sketch for placement of the solenoid valves on the machine.
  - The valves should be mounted in a vertical position for optimum performance.
  - Mount both solenoids so the outlet port (marked “1” on the valve body) points toward the air cylinder. Port “1” is the cylinder connection. Port “2” is for the incoming air (Photo 3.9).
4. **Using flexible hose (rubber or plastic), connect Port “1” of one solenoid valve to the IN port of one dump valve. Repeat this procedure for the second solenoid and dump valve. Refer to Figures 3.3 and 3.4 on page 11).**
5. **Refer to the electrical diagrams furnished with your order for solenoid valve wiring instructions.**
  - The solenoid valve that connects to the top port of the air cylinder is only energized after the gate has closed and holds the gate closed during the hazardous portion of the machine cycle.
  - The solenoid valve that connects to the bottom port of the air cylinder (when energized) lifts the gate up and holds the gate up until the next cycle begins.
  - If the controls are arranged for a Type “A” gate, the top solenoid will stay energized until the machine cycle has stopped. If the controls are arranged for a Type “B” gate, the solenoid will deenergize just after the hazardous portion of the machine cycle (bottom dead center on mechanical power presses).

(Continued on next page.)

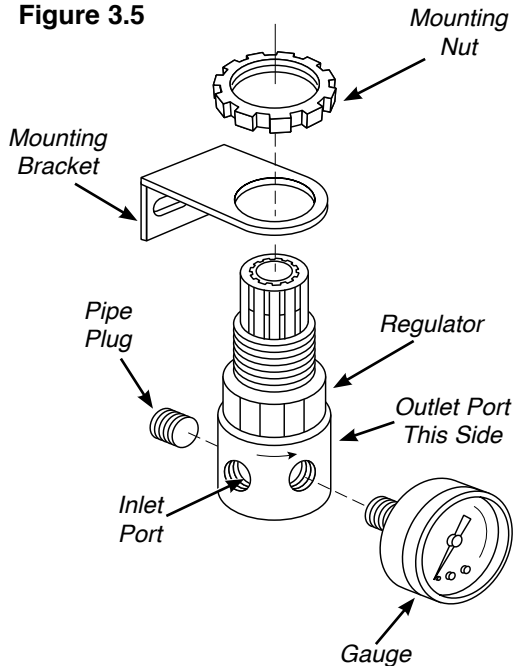
## SECTION 3—INSTALLATION OF COMPONENTS

Gate or Movable Barrier Device (Type “A” or “B” Gate)

### Installation of Components (continued)

#### REGULATOR AND GAUGE INSTALLATION

Figure 3.5



#### 1. Assemble the regulator and gauge

(Figure 3.5).

- Pipe incoming air from a connection made in the main air supply to the regulator inlet port.
- Locate the inlet port (indicated by the tail of the air flow arrow) and orient the unit so that the outlet port points toward the solenoid valve
- Install the pipe plug in the port that is located against the mounting surface.
- Install the gauge in the port opposite the pipe plug.
- Pipe air from the regulator outlet Port to port “2” of both solenoid valves.

#### 2. Adjust the gate regulator to provide $45 \pm 5$ PSI to the gate for initial operation.

- This may need to be increased or decreased depending on the size of the gate. Adjust the air to optimum pressure.

### Other Components That May Be Required

#### TYPE “A” GATE REMOTE STATION

Photo 3.10



#### 1. Select a mounting location which is

**convenient for the operator. Measure or spot the holes for the remote station on the machine (Photo 3.10).**

- Make sure the location of the remote station is not in the way of the “up” and “down” movement of the gate.

#### 2. Wire the remote station to the control box.

- Refer to the electrical diagrams furnished with your order for wiring instructions.

## SECTION 4—OPERATING CONSIDERATIONS

Gate or Movable Barrier Device (Type “A” or “B” Gate)

### Wiring

Refer to the wiring schematics furnished with your order for proper wiring of the Type “A” or Type “B” Gate. Be sure to use stranded wire.

### Machine Limit Switch (Customer to Furnish)

Control of the gate requires a signal from the machine at “top of stroke.” This signal is normally obtained from a limit switch operated from a cam located at “top-dead-center” in the machine cycle. This switch should be mounted firmly on a suitable bracket and adjusted so that the switch will be operated by the cam at the top of the stroke. Actuation of the limit switch is accomplished by the rotation of the crankshaft, or any other member of the machine which makes one revolution or oscillates one direction per stroke. The limit switch should be held actuated when the ram is at the top of the stroke.

### Gate Operation

The gate assembly has been tested at the factory, but the following procedure should be used to check and align the gate assembly.

Raise the gate by hand and allow it to drop by gravity. When properly adjusted, it should drop smoothly without binding or hesitation. Should difficulty be encountered in the gate operation, verify that the air cylinder bracket is centered on the polycarbonate panel.

*Note: Excessive air pressure may cause serious damage to the gate. Most gates will operate satisfactorily in the 45-50 PSI max. range. Only the largest sizes may require more pressure for suitable operation. However, these should not exceed 60-70 PSI max.*

On some larger gates, it may be necessary to install a flow control valve in the appropriate air line to obtain satisfactory operation. Proper adjustment of these valves, when installed, will provide simple control for proper operating speed in either the raise or lower cycle, or both. Flow control valves can be purchased from local air suppliers.

## SECTION 5—GATE SIZES AND REPLACEMENT PARTS

Gate or Movable Barrier Device (Type “A” or “B” Gate)

GATE ASSEMBLY* DIMENSIONS					
GATE ASSEMBLY PART NUMBER AND SIZE	GATE OPENING		OUTSIDE DIMENSIONS		PANEL SIZE (H X L)
	WIDTH	HEIGHT	WIDTH	HEIGHT	
KYT-076	12"	12"	14"	15"	12" x 12"
KYT-077	18"	12"	20"	15"	12" x 18"
KYT-078	18"	18"	20"	21"	21" x 18"
KYT-079	24"	18"	26"	21"	24" x 21"
KYT-080	30"	18"	32"	21"	30" x 21"

\*The gate assembly includes the following components:

REPLACEMENT PARTS		
PART NUMBER	DESCRIPTION	QUANTITY
FKT-720	Air Cylinder (12")	1
FKT-721	Air Cylinder (18")	1
RCD-022	Solenoid Air Valve with Muffler	2
RCL-510	Quick Dump Valve with Muffler	2
RCL-048	Air Regulator-Gauge with Bracket	1
FKT-723	Proximity Switch (for solid-state control)	1
CMC-009	Gate Limit Switch (for relay-logic control)	1
LLD-403	Remote Key-Operated Station	1
FKT-015	Rubber Bumper	1

- Gate Frame Assembly
- Polycarbonate Front Panel
- Limit Switch or Proximity Switch
- Air Cylinder
- Quick Dump Valve (2)
- Solenoid Valve (2)
- Regulator-Gauge and Mounting Bracket

Special gate assembly sizes are available. Please consult factory for details.

# SECTION 6—RETURN MATERIALS AUTHORIZATION FORM

Gate or Movable Barrier Device (Type "A" or "B" Gate)

To return material for any reason contact the sales department in our organization at 1-800-922-7533 for an R.M.A. Number. All returned materials shipments must be prepaid. Complete this form and send with material to 5795 Logistics Parkway, Rockford, IL 61109. Make sure the R.M.A. Number is plainly identified on the outside of the shipping container.

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

Contact Name \_\_\_\_\_ E-mail Address \_\_\_\_\_

Items Authorized To Return on R.M.A. No. \_\_\_\_\_ Original Invoice No. \_\_\_\_\_ Date \_\_\_\_\_

Part No.	Serial No.	Description
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Service Requested  Full Credit  25% Restocking  Repair & Return  Warranty Replacement

Reason for return (describe in detail):

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Return Materials Authorized by \_\_\_\_\_ Date \_\_\_\_\_

# **SECTION 7—ORDER FORM FOR SIGNS AND LITERATURE**

*Gate or Movable Barrier Device (Type "A" or "B" Gate)*

This instruction manual references signs and literature available for your machines. This order form is for your convenience to order additional signs and/or literature as needed. (This order form is part of your installation manual so please make a copy of it when ordering.)

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

Name \_\_\_\_\_ Purchase Order No. \_\_\_\_\_ Date \_\_\_\_\_

<b>Part No.</b>	<b>Description</b>	<b>Quantity Required</b>
KSL-061	Installation Manual	_____
KSC-000	Precaution Pamphlet (English)	_____
KSC-000S	Precaution Pamphlet (Spanish)	_____
KSC-000F	Precaution Pamphlet (French)	_____
KSC-054	Danger Sign 5" x 6" (English)	_____
KSC-054S	Danger Sign 5" x 6" (Spanish)	_____
KSC-054F	Danger Sign 5" x 6" (French)	_____
KSC-055	Danger Sign (Foot Switch) 5" x 6" (English)	_____
KSC-055S	Danger Sign (Foot Switch) 5" x 6" (Spanish)	_____
KSC-055F	Danger Sign (Foot Switch) 5" x 6" (French)	_____
KSL-051	Booklet - "Mechanical Power Press Safety" (MPPS)	_____
FAB	Catalog - "Safeguarding Fabricating Machines"	_____
SFM	Catalog - "Shields for Machinery"	_____

For prices and delivery, please use address, phone or fax number listed on the front cover of this manual.

Your Signature \_\_\_\_\_ Date \_\_\_\_\_