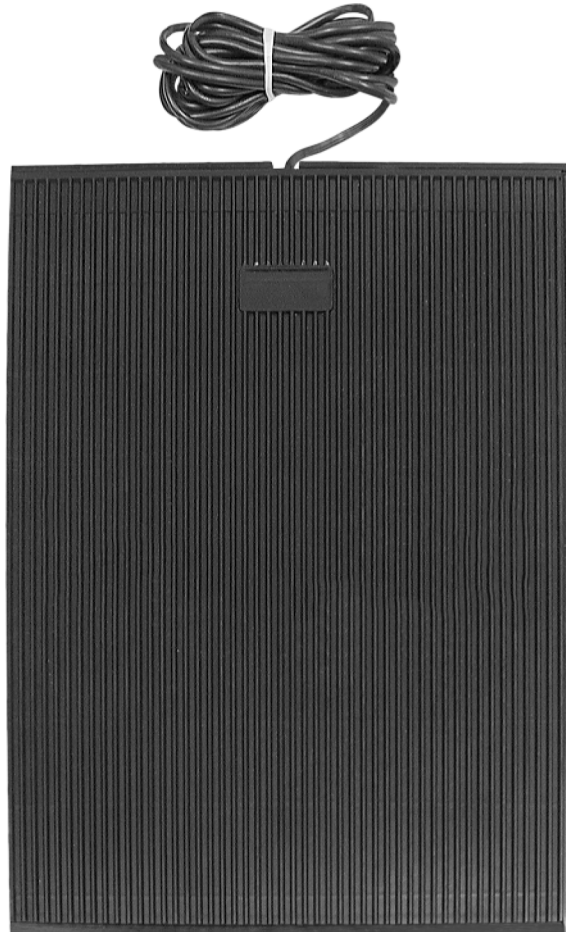




# INSTALLATION MANUAL FOR SAFETY MAT SYSTEMS



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

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Manual No. KSL262




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## SECTION 1—IN GENERAL







### Safety Precautions

  	<p><b>DANGER</b> indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.</p> <p>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.</p> <p><b>CAUTION</b> used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.</p>
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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 in to your program include:

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

-  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 it 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 if 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.

### Safety References

#### OSHA 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. U.S. Government—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 29 CFR Sections that an employer (user) must comply with include:**

- 1910.211 Definitions.
- 1910.212 General requirements for all machines.
- 1910.217 Mechanical power presses.
- 1910.219 Mechanical power-transmission apparatus.

**3. OSHA 29 CFR 1910.147 The control of hazardous energy (lockout/tagout).**

**4. OSHA Publication**

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

This publication can be obtained by contacting:

U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
Phone: (202) 512-1800  
<http://bookstore.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.

#### APPLICABLE STANDARDS

- B11.19 Performance Requirements for Risk Reduction Measures: Safeguarding and other Means of Reducing Risk

These standards can be purchased by contacting:

ANSI—American National Standards Institute  
25 West 43rd Street, 4th Floor  
New York, New York 10036  
Phone: (212) 642-4900  
[www.ansi.org](http://www.ansi.org)

(Continued on next page.)

# **SECTION 1—IN GENERAL**

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## *Pressure-Sensitive Safety Mat Systems*

### **NATIONAL SAFETY COUNCIL SAFETY MANUALS**

Other good references for safety on machine tools and data sheets are the National Safety Council's Safety Manuals.

#### **APPLICABLE MANUALS**

- Safeguarding Concepts Illustrated - 7th Edition

These manuals can be obtained by contacting:

National Safety Council  
1121 Spring Lake Drive  
Itasca, IL 60143-3201  
1-800-621-7615  
[www.nsc.org](http://www.nsc.org)

#### **OTHER SAFETY SOURCES**

National Institute of Occupational Safety and Health (NIOSH)

4676 Columbia Parkway  
Cincinnati, OH 45226  
Toll-Free: 1-800-35-NIOSH (1-800-356-4674)  
Phone: (513) 533-8328  
[www.cdc.gov/niosh](http://www.cdc.gov/niosh)

#### **OTHER SAFETY SOURCES (CONTINUED)**

Robotic Industries Association (RIA)  
900 Victors Way, Suite 140  
P.O. Box 3724  
Ann Arbor, MI 48106  
Phone: (734) 994-6088  
[www.roboticonline.com](http://www.roboticonline.com)

NEMA (National Electrical Manufacturers Association)  
1300 North 17th Street, Suite 1847  
Rosslyn, VA 22209  
Phone: (703) 841-3200  
[www.nema.org](http://www.nema.org)

NFPA (National Fire Protection Association)  
1 Batterymarch Park  
Quincy, MA 02269-9101  
Phone: (617) 770-3000  
[www.nfpa.org](http://www.nfpa.org)

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

### 9. Limited Warrantie

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

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.

### Important Safety Message

These safety mat systems are general-purpose presence-sensing devices designed to help protect personnel working around moving machinery. As with any device of this type, the user must comply with applicable local and national codes and regulations.

There are several organizations that publish information regarding the proper use of safety devices in machine guarding applications. In particular, the American National Standards Institute (ANSI) publishes a number of standards containing information on proper selection, application, installation, maintenance, operation, training and responsibility for safety systems use.

These safety mat systems are designed to allow product users to easily comply with these standards. Even though these standards are voluntary in nature, it is common for regulating organizations, such as the Occupational Safety & Health Administration (OSHA), to refer to ANSI standards in the course of compliance checking.



**These mats are designed for low-voltage (24 V) control circuits.**



**Usage of safety mats and safety mat devices is governed by each user's local codes and applicable industry standards. Improper usage of these devices could result in severe injuries. Applications must be limited to machines that can be stopped consistently and immediately at any point during the hazardous portion of the cycle or stroke. In the event that these safety mats do not prevent all access to the hazardous operation, the unprotected access must be guarded by other appropriate safeguarding devices or barriers.**

### Getting Started

Please read through this installation manual, review any installation drawings specific to your application and familiarize yourself with the planned installation before opening any cartons.

This manual will help guide you through a logical installation sequence beginning with site preparation and installation, continuing through testing and ending with use and maintenance.

Instructions for other components of the overall safety system, such as a mat control box or zone monitor safety control interface, contain their own specific set of instructions and will be used in conjunction with this manual (if applicable). Be sure to follow all appropriate instructions relative to the particular component of the system, as well as instructions and safety information from the manufacturers of any tools used during the installation process.

# SECTION 1—IN GENERAL

## Pressure-Sensitive Safety Mat Systems

### Required Tools

The following table contains a list of typical tools and their uses in the installation of safety mat systems. Your installation may not require the use of every tool listed, as certain options available from the factory would eliminate the need for some on-site operations. For example, aluminum trim kits typically used to anchor the mats in place can be fabricated on site from stock length extrusions or can be purchased from the factory completely machined and ready to install.

<i>Tool</i>	<i>Use</i>
<b>For All Installations</b>	
Razor Knife	Trimming away vinyl edges of mats IF instructed to do so
Wire Stripper	Stripping wire insulation to make electrical connections
Shop Vacuum or Broom	Cleaning the safety mat mounting surface
Ohmmeter	Testing the safety mats if shipping damage is suspected
Personal Protective Wear	Safety glasses, gloves, hearing protection, etc.
<b>For Screw and Anchor-Type Installations With Aluminum Mounting Trim</b>	
Drill & Drill Bits	Drilling anchor holes in the mounting surface
Phillips Screw Driver	Fastening trim screws
Lightweight Hammer	Tapping screw anchors into pre-drilled holes
Aluminum Saw	Cutting cord exits in aluminum trim
Aluminum File	Removing sharp edges around cord exits on aluminum trim
<b>For Fabricating Aluminum Mounting Trim on the Job Site</b>	
Chop Saw or Miter Box	Cutting aluminum profiles to the correct size/shape
Drill & Drill Bits	Drilling and countersinking screw holes in aluminum trim
Tape Measure	Measuring the correct profile dimensions prior to cutting

### Mounting Surfaces and Preparation

Inspect the mounting surface where the mat(s) will be installed. The surface should be relatively flat, smooth and free of debris.

Protrusions in the mounting surface higher than approximately  $\frac{1}{8}$ " (3 mm) could affect mat performance and should be removed prior to installation. An alternative to this procedure would be to use an underlayment like plywood to provide a smooth surface, especially where the mounting surface is in very poor condition.

Avoid uneven adjacent surfaces, such as metal diamond tread floor plates. They do not present a problem in themselves, but the uneven surface created where two plates meet can affect mat performance. A difference in elevation from one surface to the other, greater than approximately  $\frac{1}{8}$ " (3 mm) should be corrected prior to installation of the safety mats.

Openings in the mounting surface, such as those found in walkway grating, should not affect the mat performance unless they are larger than 3" (76 mm) square.

# SECTION 2—PRE-INSTALLATION GUIDELINES

## Pressure-Sensitive Safety Mat Systems

### Unpacking and Handling

**Do not cut safety mat cartons open with a razor knife**, as accidental cutting of the mat and/or mat cord can occur. Remove the staples along one side where they attach to the wooden frame until you can grab the cardboard and tear it away from the wooden frame. Be careful, as staples may fly as you pull the cardboard away from the wooden frame. Wear safety glasses.

Once installed, the safety mat is extremely durable and damage resistant. The most vulnerable time for a safety mat is during unpacking and installation. If a mat is larger than 24" x 36" (610 x 914 mm), use additional help in lifting, carrying and positioning the mat. Dropping a mat on its corner can damage the mat (and its internal electrode) beyond repair.

The proper way to handle a mat is to grasp the long edges and lift while causing a slight bow downward along its length (refer to Figure 1). This method prevents the mat from bending across its width, which could cause a kink or bend in the internal electrode assembly.

When unpacking aluminum trim kits and extrusions, be aware that they may have sharp edges and points where angles are formed. Protect yourself from injury when handling, and protect the ends of the trim from being bent or deformed.

### Visual Inspection

Visually inspect each mat after it has been removed from its shipping carton. Make sure there are no bends, dents, kinks or obvious damage. Pay particular attention to the corners and cord.

### Electrical Inspection

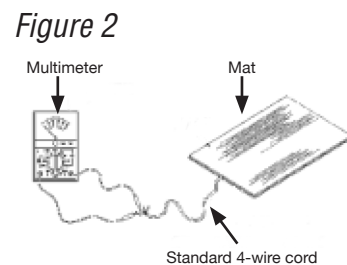
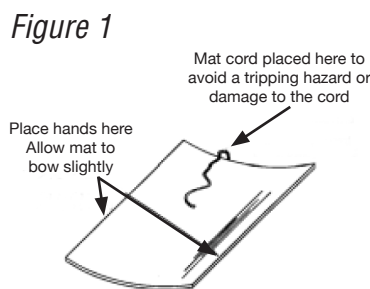
It is good practice to inspect the mats electrically prior to installation, especially if shipping and handling damage is suspected. Use an ohmmeter to check each mat after it has been removed from its carton and placed on a flat surface.

For the purposes of this test, a closed circuit is defined as less than 10 ohms and an open circuit as at least one million ohms. There are four wires housed in a single jacketed cord attached to each mat. Two of the wires are black and two of the wires are white.

First, with no one standing on the mat (no pressure applied), test to ensure that there is a closed circuit between any like colored wires (white to white and black to black).

Next, with no one standing on the mat (no pressure applied), test to ensure that there is an open circuit between any black and white wire combinations.

Last, while standing on the mat (pressure applied), test to ensure that there is a closed circuit between any black and white wire combinations (refer to Figure 2).



# SECTION 3—POSITIONING MAT

## Pressure-Sensitive Safety Mat Systems

Clean the area where the mats are to be installed, removing all debris. Place the mat(s) in the area where they are to be installed. For installations with adjoining mats, dry fit the supplied joining trim between adjacent mats to set the proper distance between them. Do not drill any holes at this time.

### Joining Trim and Cord Routing

There are two types of joining trim. The first is the active joiner shown in Figure 3, which fits under adjacent mats when wire clearance is not necessary. **The active joiner requires removal of the lock lip on the edge of the mat where the active joiner is used.** The active joiner is held in place by the weight of the mats and any perimeter trim used on the outside edges of the mats.

**CAUTION** Be sure of your mat placement before removing the lock lip on the edges of the mats to be joined. The lock lip cannot be replaced once removed.

Using a sharp razor knife and straight edge, carefully remove the lock lip only on the mat edges that will be joined together using the active joiner. (See Figures 3 and 4).

The second type of joining trim is active threshold, shown in Figure 5, which bridges adjacent mats and provides a gap between the mats for wiring.

Route the cords for each mat to the mat control device. Typically, cords are routed around the edges of the mat(s) and under the perimeter trim until they reach the desired exit point, or they exit the trim immediately and are routed through a wire raceway to protect the cords from damage.

**Note:** To aid with wire management, small drops of instant adhesive may be used to secure the cord to the edge of the mat at appropriate intervals.

### Perimeter Trim and Cord Clearance

**Note:** The following instructions apply to those installations using the traditional method of physically anchoring the mat(s) in place with screws and anchors through extruded aluminum mounting trim. Some applications do not require the trim, such as those where the mat is mechanically “trapped” in place.

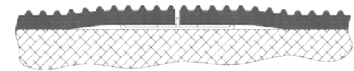
If your installation was ordered without mounting trim, or with a different mounting method, refer to the specific installation instructions enclosed with the product and then skip to electrical connections on page 10.

There are several types of perimeter trim depending on the application, but they all fit into one of two categories. The first is trim that fits into the lock lip of a mat, as shown in Figures 6 and 7, and the second is active threshold type trim that fits onto the active edge of a mat as shown in Figures 8 and 9.

The difference in the mat edge style for the two different categories of trim is very obvious as shown in the following figures.

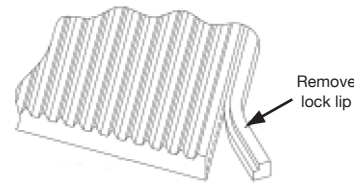
Many different combinations of trim can be used in an application to accomplish the necessary result.

Figure 3



Active joiner joining two mats

Figure 4



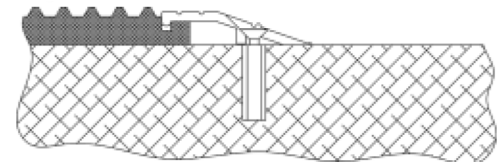
Removal of lock lip prior to active joiner application

Figure 5



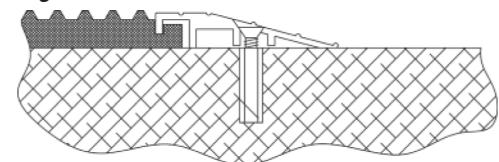
Active threshold joining two mats

Figure 6



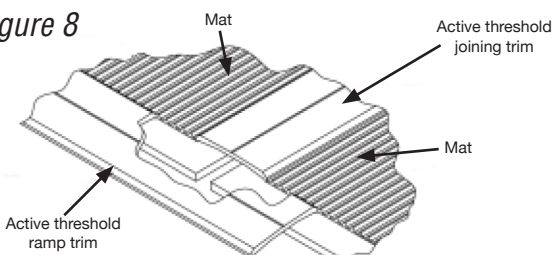
2" ramp trim

Figure 7



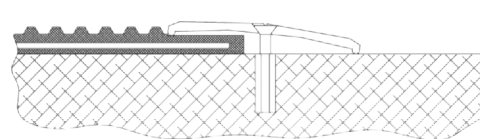
2 1/2" ramp trim

Figure 8



Active threshold as ramp and joining trim

Figure 9



Active threshold ramp trim

(continued on next page)

## SECTION 3—POSITIONING MAT

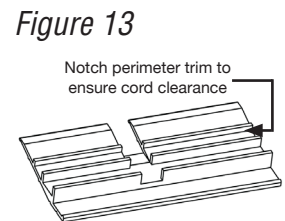
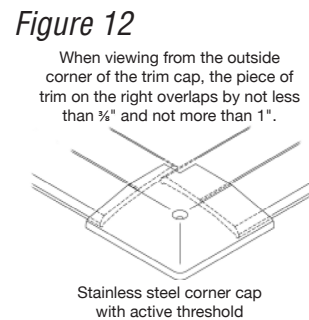
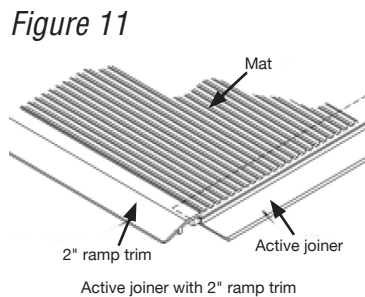
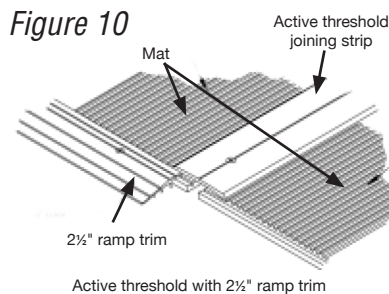
### Pressure-Sensitive Safety Mat Systems

**NOTE:** If your installation contains many mats and/or the mats form a specific pattern, you should have received a drawing specific to your installation. Refer to it when laying the mats in place.

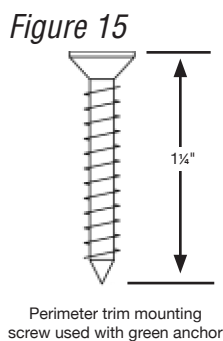
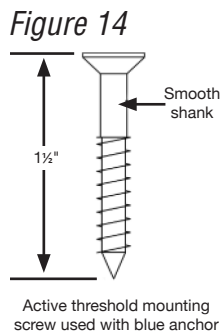
See Figures 6–9 (previous page) and Figures 10–12 (below) for examples of the various applications of perimeter trim.

Dry fit the balance of the trim pieces in their proper position. If cord exits were predetermined at the time of ordering, the trim kits may have been ordered with machined notches where the mat wire(s) exits the perimeter trim.

If wire exit notches are not present, they should be created now. Use a metal saw and file to create and smooth the necessary notches allowing the cord to exit the trim without being cut or crushed (refer to Figure 13).



## SECTION 4—SECURING MATS IN PLACE



Depending on the type of extrusion used, there are two possible sizes of mounting screws and anchor. The first is a smooth shank #12 screw, used for all active threshold extrusions (Figure 14). This screw uses the blue colored anchor and requires a ½" (7 mm) hole. The use of this screw with the active threshold type extrusion is critical for proper operation, as the smooth shank allows the threshold to move up and down to activate the mat(s) as pressure is applied and removed.

The second size is a #10 screw, used for all other drilled extrusions (Figure 15). This screw uses the green-colored anchor and requires a ¼" (6 mm) hole.

**Note:** If your application is to be mounted on steel plate, machine screws should have been supplied with your order and require no anchors.

Once satisfied with the alignment of all of the mats and trim, use the drilled extrusion as a template for drilling the mounting holes. Hold the trim in place securely and drill through the center of the pre-drilled and countersunk holes with the appropriate drill bit, being careful not to damage any mat cords that may be present. Drill 1"-deep (25 mm) holes for the screw anchors as straight and vertical as possible into the mounting surface.

Depending on the length of trim and number of holes, you may choose to drill one or two holes at each end of the extrusion and fasten them with the screws and anchors to help hold the extrusion from moving while the balance of the mounting holes are drilled.

A shop vacuum works well to remove the drilling debris. Clean out the holes and tap the appropriately colored (green or blue) plastic anchors into each hole. Insert the screw through the holes in the extrusion and start the screws into the anchors **but do not tighten completely when using the active threshold type trim.**

**CAUTION** Do not over-tighten active threshold screws. The active threshold bridges the active surface of the mat and can cause continuous activation if it is pulled down too tightly by the screws. The proper method for adjusting active threshold screws is to tighten the screws until the screw head just makes contact with the extrusion, and then back off ¼ turn.

For all other types of perimeter trim, go ahead and snug down the screws.

**NOTE:** Remember to use the blue anchor and the smooth shank screw for active threshold installations.

## **SECTION 5—ELECTRICAL CONNECTIONS**

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### *Pressure-Sensitive Safety Mat Systems*

With all the mats anchored in their proper position, the electrical connections from the mats to the control system can be made. Please read the general instructions below and then refer to any specific wiring instructions that may have been included with your safety mat control device.

**Maintain fluid-tight connections especially in wet applications**—The mat is built to be immune to fluid-intense environments. It is the installer's responsibility to maintain the fluid-tight integrity of the electrical connections to eliminate fluid-related nuisance problems during operation.

We recommend that all electrical connections be made inside of a fluid-tight enclosure, such as the zone monitor or junction box for 5 or 10 mats.

If you must make electrical connections outside of a fluid-tight enclosure, be sure to choose a connection method that maintains a dry connection.

**Protect the wires from damage especially in traffic areas**—Don't leave wires exposed where they could become worn or damaged. Use appropriate conduits or wire raceways to protect the wires.

## **SECTION 6—PERIODIC MAT SYSTEM TESTING**

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### **Testing Intervals**

With the installation phase complete, perform final testing of the overall system. As with all safety related equipment, periodic testing to verify functionality must be performed per the equipment manufacturers recommendations.

We recommend that safety mats be tested at the beginning of each shift and more often under severe conditions. Examples of severe conditions would include frequent or constant submersion in fluid and continuous forklift traffic.

### **Mat Design Characteristics**

Electrically, the safety mat itself is a relatively simple device that, for testing purposes, can be compared to a single pole single throw normally open switch. When no pressure is applied to the mat, the switch should be open. When pressure is applied to the mat, the switch should be closed. The typical safety mat has two white wires internally attached to one of the contacts, and two black wires attached to the other contact.

With this arrangement there should always be continuity between like-colored wires. In its open state (no pressure applied), there should be no continuity between either black and either white wire and conversely, there should be continuity between black and white wires when the mat is in a closed (pressure applied) state.

Before testing, ensure the safety of the individual performing the test by neutralizing the hazard. The safety mat control device, such as the zone monitor will provide a visual indication of the mat status (open or closed) while performing the test. Refer to the specific instructions included with your control device for appropriate control reactions to mat activation and de-activation. If a zone monitor is not being used, an open circuit is defined in resistive terms as one million ohms or more and a closed circuit as ten ohms or less.

Typical mat installations include an aluminum extrusion around the perimeter of the mat or group of mats, which serves as a ramp up to the mat surface and also as a method for securing the mat(s) to the mounting surface. This extrusion **is not** considered part of the active area of the mat. If the installation consists of multiple mats, there may be extrusion at the area where two mats meet. This extrusion **is** considered part of the active area, and, when pressure is applied, should activate one or both of the mats that it joins.

### **Testing Activation and De-Activation**

Test for mat activation by stepping on the mat surfaces and verifying that activation (contact closure) takes place whenever pressure is applied. Don't limit the test to only one area of the mat(s). Extend the test to the edges, corners, and all across the mat surface.

The instructions included with the control system will also include methods for testing reactions to a disconnected mat or broken mat wire. Be certain of proper operation before putting the equipment into use. Contact your supplier immediately if there is any suspicion of improper operation.

# **SECTION 7—USE AND PERIODIC MAINTENANCE**

## *Pressure-Sensitive Safety Mat Systems*

The safety mat was designed for the industrial environment. The mats are extremely durable and moisture-proof. The outer shell of the mat is made from PVC and provides the protection for the inner switch assembly. They are very resistant to impacts, unaffected by most chemicals and in most applications you need not treat the mats any differently than the floor that they are mounted on.

Normal housekeeping, like sweeping up debris and cleaning up spills, are all that's needed once the mat system is properly installed.

Visually inspect the mat(s) at the beginning of each work shift to verify their condition. Look for obvious problems, like mat cord damage, loose or missing trim pieces, and repair or replace promptly before they lead to functional problems.

### **Recommended Cleaners**

- Most good quality industrial cleaners/degreasers are acceptable. NOTE: cleaning solutions that contain phosphates, chlorine, organic solvents or mineral spirits should NOT be used.

### **Pressure Washing**

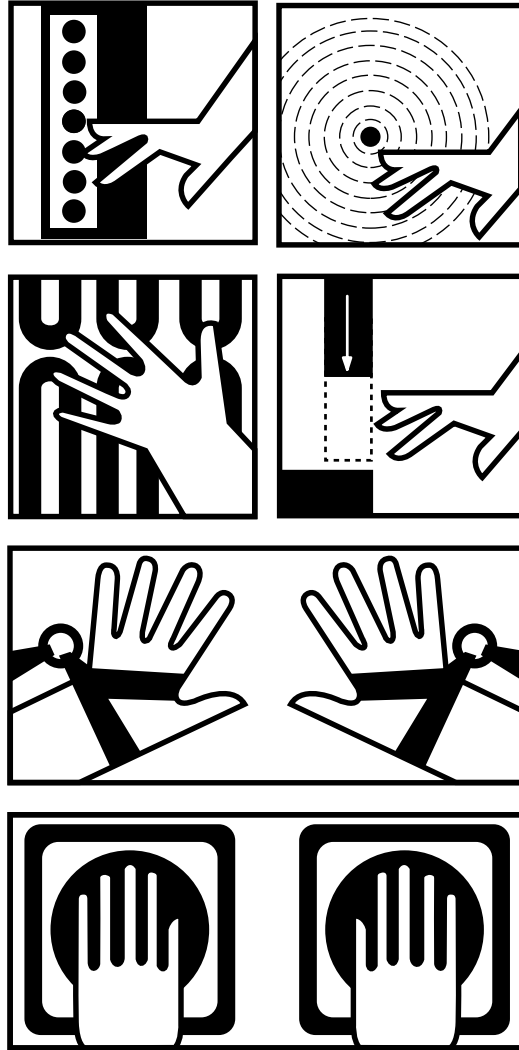
- Remove any loose debris from the mat surface before beginning the cleaning process.
- Use a flat fan spray nozzle with a pattern angle of 15 degrees or larger.
- Keep spray distance 12 inches (305 mm) or more away from the mat surface.
- Spray pressure should not exceed 1,500 psi (103.4 Bar)
- Water temperature should not exceed 190° F (88° C)
- Keep the spray pattern moving; do not concentrate it in one location for an extended period of time.
- Heavily soiled mats should be pre-soaked for 10 minutes with the mixed cleaning solution. Areas can be brushed with a hand utility brush.
- When cleaning is completed, rinse with clean water.

### **Steam Cleaning**

- Use the same recommendations listed in the pressure washing cleaning section above



**Be sure to maintain fluid-tight electrical connections. Refer to Section 5 on the previous page.**



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