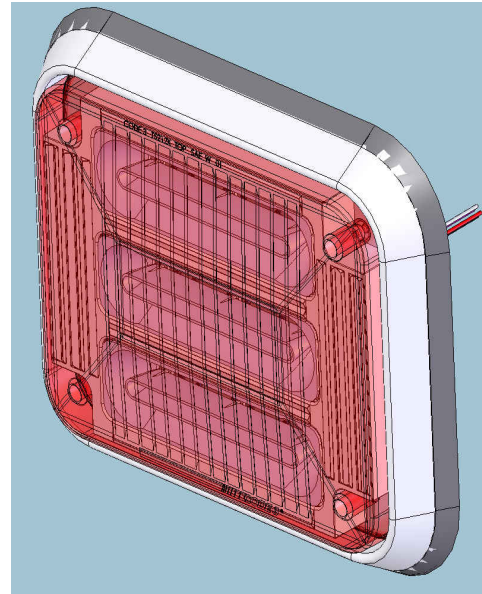


# INSTALLATION & OPERATION MANUAL

LED PriZm II Perimeter Lights  
with Rebel Technology



7x9 Shown

Code 3,® Inc., a subsidiary of  
Public Safety Equipment, Inc.



# LED PRIZM II PERIMETER LIGHTS

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## IMPORTANT:

Read all instructions and warnings before installing and using

**INSTALLER:** This manual must be delivered to the end user of this equipment.

# General Description


The PriZm II Perimeter lights are offered in sizes 3x7, 4x6 and 7x9. Both solid and multi-color are available. Multi-color lights are “split” horizontally (left/right). The outer lens will be field replaceable, and will provide a waterproof barrier via an interface with a field replaceable outer gasket. The units are surface-mounted, requiring no recesses to be cut in the vehicles for normal mounting. Only a hole for wiring and small holes for mounting screws will be required. The unit will be available with or without bezel, and they operate on 2 volts. The solid color lights are offered in the following colors: Red, Blue, Amber, White and Green. Multi-colored light are available in numerous configurations (refer to Table 3). Many flash patterns are offered, all between 75-150 fpm. The units also feature dimming, synchronization and independent on/off (certain models only).

# Specifications

	3x7	4x6	7x9
Size	1.5" x 4.75" x 9.0" (w/ bezel)	1.5" x 6.0" x 8.5" (w/ bezel)	1.5" x 9.0" x 11.0" (w/ bezel)
Weight	1.0 lbs	1.1 lbs	2.25 lbs
Operating Voltage	11-15 Volts		
Average Current Draw <sup>1</sup>	0.6 (8 LEDs), 0.7 (12 LEDs)		1.6 (24 LEDs), 1.9 (36 LEDs)
Peak Current Draw <sup>2</sup>	1.3 (8 LEDs), 1.6 (12 LEDs)		3.8 (24 LEDs), 4.6 (36 LEDs)

Note 1: At 12.8V, 78°F and using NFPA Quad Flash

Note 2: At 12.8V, 78°F



**WARNING**

The use of this or any warning device does not insure that all drivers can or will observe or react to an emergency warning signal. Never take the right-of-way for granted. It is your responsibility to be sure you can proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes.

The effectiveness of this warning device is highly dependent upon correct mounting and wiring. Read and follow the manufacturer’s instructions before installing or using this device. The vehicle operator should insure daily that all features of the device operate correctly. In use, the vehicle operator should insure the projection of the warning signal is not blocked by vehicle components (i.e. open trunks or compartment doors), people, vehicles, or other obstructions.

This equipment is intended for use by authorized personnel only. It is the user’s responsibility to understand and obey all laws regarding emergency warning devices. The user should check all applicable city, state and federal laws and regulations.

Public Safety Equipment, Inc., assumes no liability for any loss resulting from the use of this warning device. Proper installation is vital to the performance of this warning device and the safe operation of the emergency vehicle. It is important to recognize that the operator of the emergency vehicle is under psychological and physiological stress caused by the emergency situation. The warning device should be installed in such a manner as to: A) Not reduce the output performance of the system; B) Place the controls within convenient reach of the operator so that he can operate the system without losing eye contact with the roadway.

Emergency warning devices often require high electrical voltages and/or currents. Properly protect and use caution around live electrical connections. Grounding or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or severe vehicle damage, including fire. Wait 10 minutes after turning off the power from system before touching any internal components. Always wear hand and eye protection when handling electrical components.

**PROPER INSTALLATION COMBINED WITH OPERATOR TRAINING IN THE PROPER USE OF EMERGENCY WARNING DEVICES IS ESSENTIAL TO INSURE THE SAFETY OF EMERGENCY PERSONNEL AND THE PUBLIC.**

# Unpacking & Pre-Installation

Carefully remove the light head from its protective packaging. Inspect the unit for transit damage. Report any damage to the carrier and keep the shipping carton. Verify the contents of the package (refer to Table 3 and Figures 2 and 3). Test the lights before installation. To test, touch the black wire to ground and the red wire to 12 VDC. If a problem occurs, contact the factory.

# Installation & Mounting

1. Mark off and drill four 1/4" diameter mounting holes and the 1" wire hole on the vehicles mounting surface using the dimensions shown for the appropriate light (refer to Figures 4, 5 & 6). Verify free clearance exists behind the mounting surface for wires and fasteners before drilling.
2. Install customer supplied grommet in the 1" diameter wire hole. Install the four plastic grommets in the mounting holes (Code 3 supplied).
3. Route the vehicle power wires and allow a minimum of 3" of slack to protrude from the center opening at each light head location. Use 18 AWG for wires up to 40' length, 16 AWG for wires up to 70' length.
4. Refer to the section "Device Operation" prior to finalizing the electrical connections. Prepare the vehicle power wires and the light heads wires with terminations of the customer's choice (not supplied) as follows: Red: +12 VDC, Black: Ground, White: Program, Purple: Dim, Yellow: Sync, Green: Cutoff/Steady Burn (refer to Figure 1). Waterproof connectors are recommended.
5. Route the power wires through the center opening of the light gasket or bezel and bezel gasket (refer to Figures 2 and 3). Connect the light heads power wires (black and red) to the vehicle system's ground and positive (+12 VDC), respectively. **Seal or cap the end of the white wire and other unused wires to prevent inadvertent changes to the flash pattern or unexpected operation of the device.**
6. Verify proper light head operation by supplying electrical power to the system wires.
7. Push the assembled electrical connectors through the center opening and into the vehicle.
8. Install the lens gasket over the light head.
9. Place the light head onto the light gasket or bezel and bezel gasket. The bezel and all gaskets are marked with the word "Top". The light head is not, but should be installed such that the wire harness is located directly across from the hole in the vehicle body.
10. Install onto the light head the outer lens and secure to the vehicle using the four #6 x 1 1/4" screws.

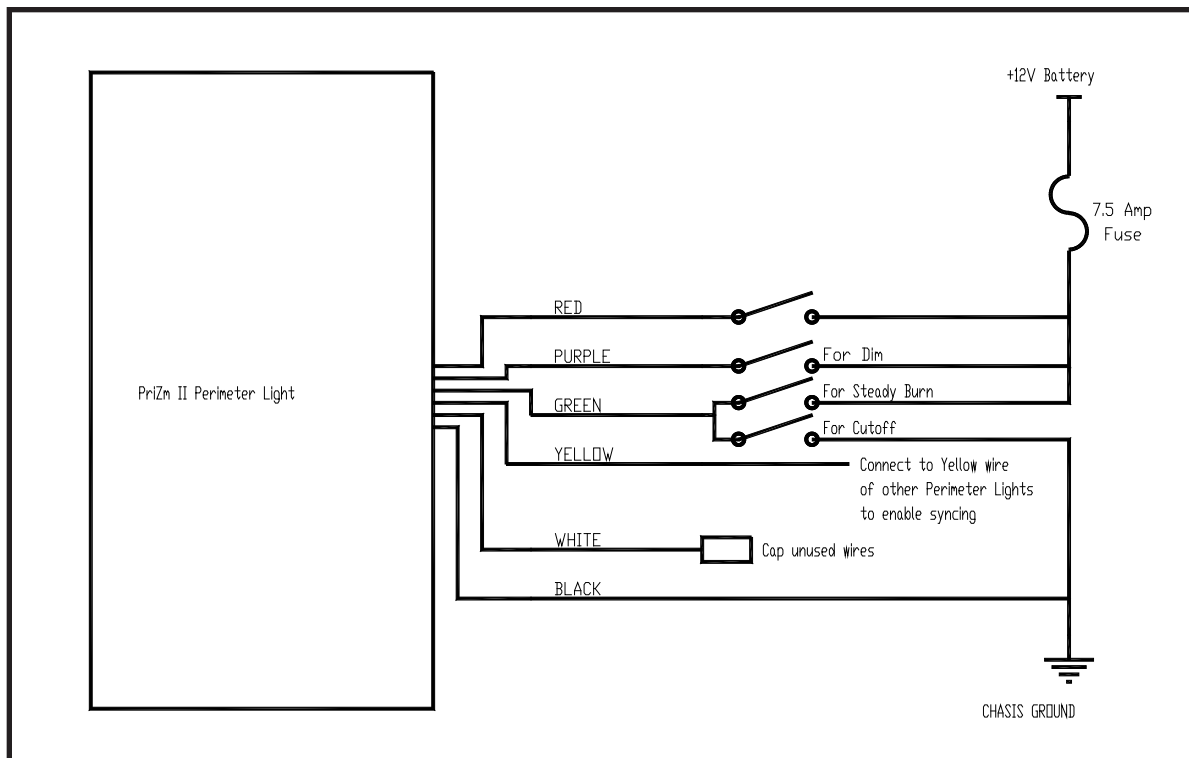


Figure 1 - Wiring Diagram.

## Device Operation

**Flash Pattern Selection** - To select a different flash pattern, apply +12 VDC to the red wire and connect the black wire to the power supply ground. Touching the white wire to power supply ground for less than 1 second will change to the next pattern, for 1-2 seconds will change to the last pattern, and over 2 seconds will reset to the default pattern (Pattern #1). During the programming process, the light head will turn certain lights on to indicate if it will go to the next, previous, or default pattern upon release of the white wire, See Table 2 for details. Cycle through the various patterns until the desired pattern is selected, Table 1 contains the available flash patterns. The unit will retain this pattern even when power is removed. For units that are flashed with an external control system such as a multiplexer or a flasher unit, the heads should be set to steady burn. It is suggested that all heads be set to the desired pattern at a workbench prior to installation.

	36-Up 7x9	24-Up 7x9	12-Up 4x6 or 3x7	8-Up 4x6 or 3x7
1	80FPM Quad Flash, Left/Right	80FPM Quad Flash, Phase 1	80FPM Quad Flash, Left/Right	80FPM Quad Flash, Phase 1
2	80FPM Quad Flash, Solid	80FPM Quad Flash, Phase 2	80FPM Quad Flash, Solid	80FPM Quad Flash, Phase 2
3	Steady Burn	Steady Burn	Steady Burn	Steady Burn
4	75FPM Single Flash, Left/Right	75FPM Single Flash, Phase 1	75FPM Single Flash, Left/Right	75FPM Single Flash, Phase 1
5	75FPM Single Flash, Solid	75FPM Single Flash, Phase 2	75FPM Single Flash, Solid	75FPM Single Flash, Phase 2
6	150FPM Single Flash, Left/Right	150FPM Single Flash, Phase 1	150FPM Single Flash, Left/Right	150FPM Single Flash, Phase 1
7	150FPM Single Flash, Solid	150FPM Single Flash, Phase 2	150FPM Single Flash, Solid	150FPM Single Flash, Phase 2
8	75FPM Double Flash, Left/Right	75FPM Double Flash, Phase 1	75FPM Double Flash, Left/Right	75FPM Double Flash, Phase 1
9	75FPM Double Flash, Solid	75FPM Double Flash, Phase 2	75FPM Double Flash, Solid	75FPM Double Flash, Phase 2
10	150FPM Double Flash, Left/Right	150FPM Double Flash, Phase 1	150FPM Double Flash, Left/Right	150FPM Double Flash, Phase 1
11	150FPM Double Flash, Solid	150FPM Double Flash, Phase 2	150FPM Double Flash, Solid	150FPM Double Flash, Phase 2
12	75FPM Triple Flash, Left/Right	75FPM Triple Flash, Phase 1	75FPM Triple Flash, Left/Right	75FPM Triple Flash, Phase 1
13	75FPM Triple Flash, Solid	75FPM Triple Flash, Phase 2	75FPM Triple Flash, Solid	75FPM Triple Flash, Phase 2
14	150FPM Triple Flash, Left/Right	150FPM Triple Flash, Phase 1	150FPM Triple Flash, Left/Right	150FPM Triple Flash, Phase 1
15	150FPM Triple Flash, Solid	150FPM Triple Flash, Phase 2	150FPM Triple Flash, Solid	150FPM Triple Flash, Phase 2
16	75FPM Triple Pop Flash, Left/Right	75FPM Triple Pop Flash, Phase 1	75FPM Triple Pop Flash, Left/Right	75FPM Triple Pop Flash, Phase 1
17	75FPM Triple Pop Flash, Solid	75FPM Triple Pop Flash, Phase 2	75FPM Triple Pop Flash, Solid	75FPM Triple Pop Flash, Phase 2
18	150FPM Triple Pop Flash, Left/Right	150FPM Triple Pop Flash, Phase 1	150FPM Triple Pop Flash, Left/Right	150FPM Triple Pop Flash, Phase 1
19	150FPM Triple Pop Flash, Solid	150FPM Triple Pop Flash, Phase 2	150FPM Triple Pop Flash, Solid	150FPM Triple Pop Flash, Phase 2
20	Modular Flash, Left/Right	Modular Flash, Phase 1	Modular Flash, Left/Right	Modular Flash, Phase 1
21	Modular Flash, Solid	Modular Flash, Phase 2	Modular Flash, Solid	Modular Flash, Phase 2
22	Modular Flash, Left/Right/Out/In	Modular Flash, Solid/Out/In	75FPM Cycle Flash, Left/Right	75FPM Cycle Flash, Phase 1
23	Quad Left/Right, Double Out/In	Quad Solid, Double Out/In	75FPM Cycle Flash, Solid	75FPM Cycle Flash, Phase 2
24	Quad L/R, Double O/I, Single Solid	Quad Solid, Double O/I, Single Solid	150FPM Cycle Flash, Left/Right	150FPM Cycle Flash, Phase 1
25	75FPM Cycle Flash, L/R/O/I	75FPM Cycle Flash, Solid/Out/In	150FPM Cycle Flash, Solid	150FPM Cycle Flash, Phase 2
26	150FPM Cycle Flash, L/R/O/I	150FPM Cycle Flash, Solid/Out/In	Demo Mode, Left/Right	Demo Mode, Phase 1
27	75FPM Cycle Flash, Left/Right	75FPM Cycle Flash, Phase 1	Demo Mode, Solid	Demo Mode, Phase 2
28	75FPM Cycle Flash, Solid	75FPM Cycle Flash, Phase 2		
29	150FPM Cycle Flash, Left/Right	150FPM Cycle Flash, Phase 1		
30	150FPM Cycle Flash, Solid	150FPM Cycle Flash, Phase 2		
31	Demo Mode, Left/Right	Demo Mode, Phase 1		
32	Demo Mode, Solid	Demo Mode, Phase 2		

**Table 1 - Flash Patterns.**

Light Head	Next Pattern Indication	Previous Pattern Indication	Default Pattern Indication
8-Up 3x7 or 4x6	All lights on	No lights on	All lights flash twice
12-Up 3x7 or 4x6	Right side on	Left side on	All lights flash twice
24-Up 7x9	Top third on	Bottom third on	All lights flash twice
36-Up 7x9	Right side on	Left side on	All lights flash twice

**Table 2 - Pattern Change Indication.**

**Flash Pattern Syncing** - The flash patterns of multiple light head may be synced together by simply connecting the yellow wires of all light heads to be synced. Up to 20 light heads may be synced in this fashion. All flash patterns that share the same flash rate may be synced together. For example, any 75 FPM flash pattern may be synced with any other 75 FPM flash pattern, etc. If this feature is not desired, the end of the yellow wire must be sealed or capped.

**Flash Pattern Dimming** - Flash patterns are dimmed when the purple wire is given a +12VDC signal. It is up to the installer to determine how to integrate this feature into their system. If this feature is not desired, the end of the purple wire must be sealed or capped.

**Cutoff and Steady Burn Override** - The green wire supports two different features, but only one may be used for a given light head. The green wire's default mode is Cutoff. To toggle between the two modes, connect the black and white wires to ground. Apply +12VDC to the red wire. The light head will flash once and remain off until the white wire is removed from ground. This indicates that the mode has been successfully changed. **NOTE:** These two features require a different signal to activate them. Cutoff is activated by a ground signal, and Steady Burn Override is activated by a +12VDC signal.

**Cutoff (Default)** allows a ground input signal to the green wire to cut off the right side of the light head on 36-up and 12-up light heads, and cut off the whole light on 24-up and 8-up light heads. This is useful for NFPA vehicles that need to cut off their white lights when blocking right-of-way. Upon removal of the ground signal, the current flash pattern will resume.

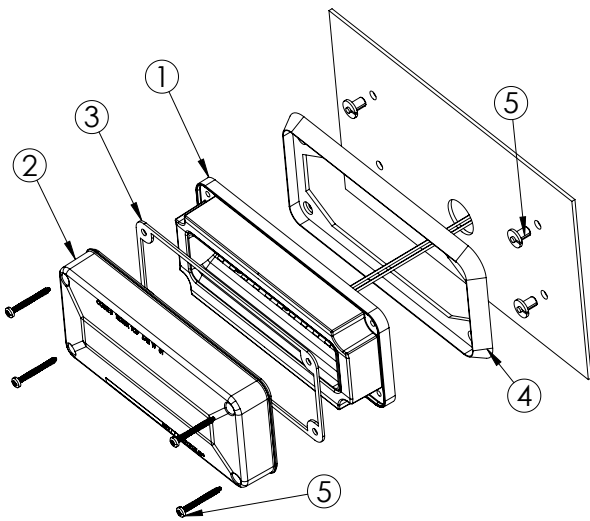
**Steady Burn Override** allows a +12VDC input signal to override the current flash pattern and put the light head into steady burn. Upon removal of the +12VDC signal, the current flash pattern will resume. **NOTE:** If steady burn is determined to be too bright, simply connect the purple and green wires together to the +12VDC input, so that dimming will be enabled when steady burn override is enabled.

It is up to the installer to determine how to integrate this feature into their system. If this feature is not desired, the end of the green wire must be sealed or capped.

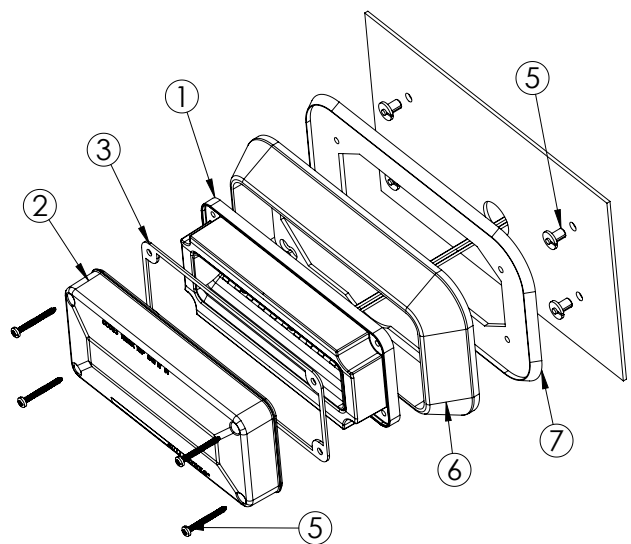
# Parts & Exploded View

Standard Unit (Figure 2)	Bezeled Unit (Figure 3)	1 Light Head	2 Outer Lens	3 Lens Gasket	4 Light Gasket	5 Parts Kit	6 Bezel	7 Bezel Gasket
3x7 Red		-----	T52112	T52007	T07919		T07916	T07922
3x7 Amber		-----	T52113					
3x7 Blue		-----	T52114					
3x7 Red, Amber, Blue or Multi-Color		-----	T52115	T52008	T07920	T52027	T07917	T07923
4x6 Red		-----	T52116					
4x6 Amber		-----	T52117					
4x6 Blue		-----	T52118	T52009	T07921		T07918	T07924
4x6 Red, Amber, Blue or Multi-Color		-----	T52119					
7x9 Red		-----	T52120					
7x9 Amber		-----	T52121					
7x9 Blue		-----	T52122					
7x9 Red, Amber, Blue or Multi-Color		-----	T52123					

**Table 3 - Part Numbers**

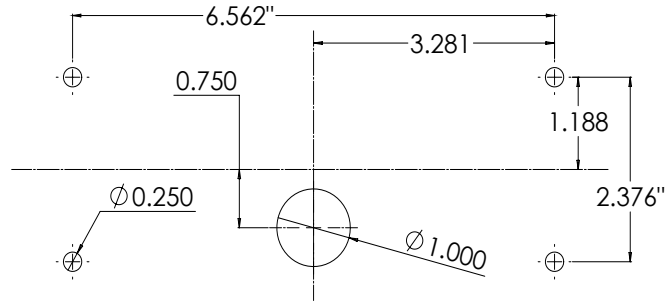


**Figure 2 - Standard Unit**

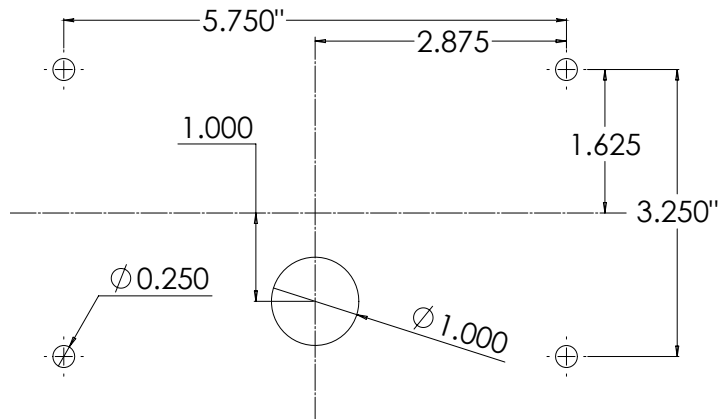


**Figure 3 - Bezeled Unit**

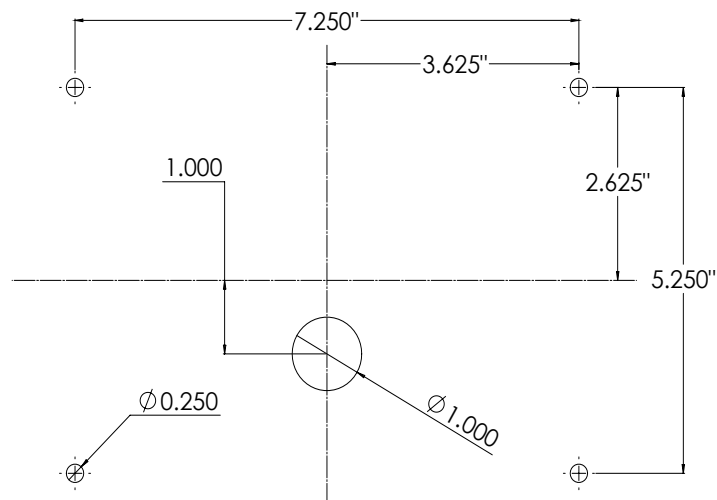
# Installation Template Dimensions



**Figure 4 - 3x7**



**Figure 5 - 4x6**



**Figure 6 - 7x9**

## Maintenance

The lens is field removable for cleaning and replacement. Remove the lens by unscrewing the four mounting screws. Use mild detergent, warm water and a soft cloth to clean both surfaces of the lens. Use of any other chemicals may void product warranty. Thoroughly dry before reinstalling.

# WARRANTY

Code 3®, Inc.'s emergency devices are tested and found to be operational at the time of manufacture. Provided they are installed and operated in accordance with manufacturer's recommendations, Code 3®, Inc. guarantees all parts and components except the lamps to a period of 1 year, LED Lighthouse modules to a period of 5 years (unless otherwise expressed) from the date of purchase or delivery, whichever is later. Units demonstrated to be defective within the warranty period will be repaired or replaced at the factory service center at no cost.

Use of lamp or other electrical load of a wattage higher than installed or recommended by the factory, or use of inappropriate or inadequate wiring or circuit protection causes this warranty to become void. Failure or destruction of the product resulting from abuse or unusual use and/or accidents is not covered by this warranty. Code 3®, Inc. shall in no way be liable for other damages including consequential, indirect or special damages whether loss is due to negligence or breach of warranty.

**CODE 3®, INC. MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY INCLUDING, WITHOUT LIMITATION, WARRANTIES OF FITNESS OR MERCHANTABILITY, WITH RESPECT TO THIS PRODUCT.**

# PRODUCT RETURNS

If a product must be returned for repair or replacement\*, please contact our factory to obtain a Return Goods Authorization Number (RGA number) before you ship the product to Code 3®, Inc. Write the RGA number clearly on the package near the mailing label. Be sure you use sufficient packing materials to avoid damage to the product being returned while in transit.

\*Code 3®, Inc. reserves the right to repair or replace at its discretion. Code 3®, Inc. assumes no responsibility or liability for expenses incurred for the removal and /or reinstallation of products requiring service and/or repair; nor for the packaging, handling, and shipping; nor for the handling of products returned to sender after the service has been rendered.

**Problems or Questions? Call The Technical Assistance HOTLINE - (314) 996-2800**



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