

# WHELEN<sup>®</sup>

## ENGINEERING COMPANY INC.

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Installation Guide:  
Micro Edge Freedom<sup>®</sup> Lightbar

### Warnings to Installers

Whelen's emergency vehicle warning devices must be properly mounted and wired in order to be effective and safe. Read and follow all of Whelen's written instructions when installing or using this device. Emergency vehicles are often operated under high speed stressful conditions which must be accounted for when installing all emergency warning devices. Controls should be placed within convenient reach of the operator so that they can operate the system without taking their eyes off the roadway. Emergency warning devices can 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 vehicle damage, including fire. Many electronic devices used in emergency vehicles can create or be affected by electromagnetic interference. Therefore, after installation of any electronic device it is necessary to test all electronic equipment simultaneously to insure that they operate free of interference from other components within the vehicle. Never power emergency warning equipment from the same circuit or share the same grounding circuit with radio communication equipment. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) will affect the way equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device mounted in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving; sudden braking or collision. Failure to follow instructions can result in personal injury. Whelen assumes no liability for any loss resulting from the use of this warning device. **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.**

### Warnings to Users

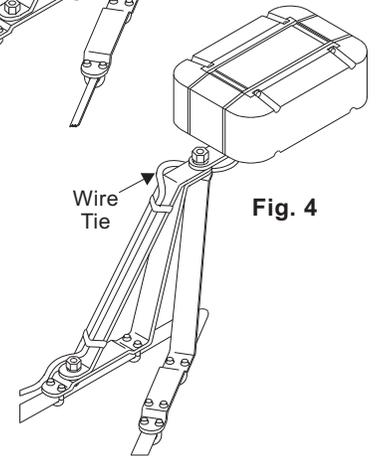
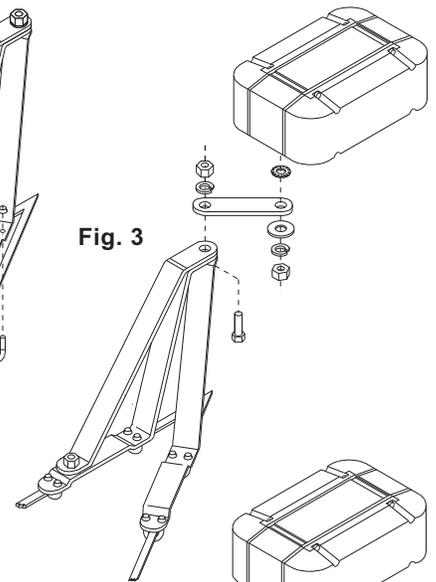
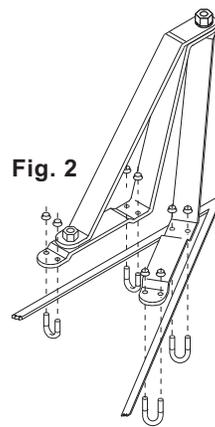
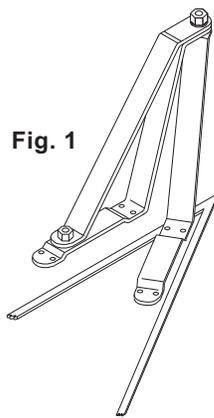
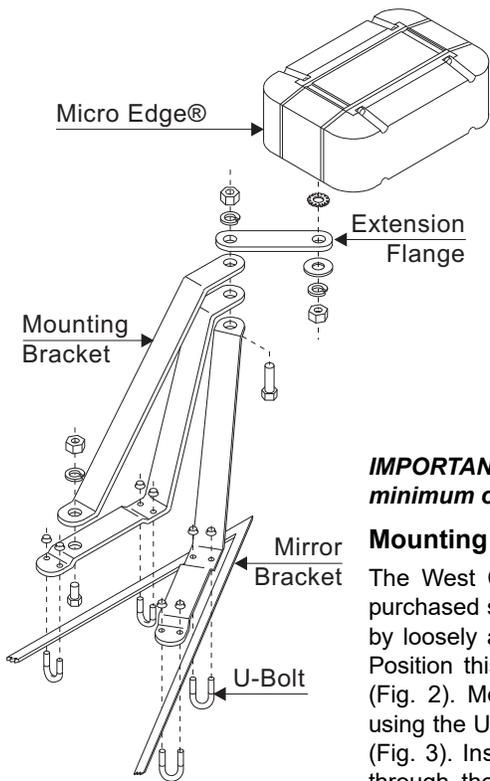
Whelen's emergency vehicle warning devices are intended to alert other operators and pedestrians to the presence and operation of emergency vehicles and personnel. However, the use of this or any other Whelen emergency warning device does not guarantee that you will have the right-of-way or that other drivers and pedestrians will properly heed an emergency warning signal. Never assume you have the right-of-way. It is your responsibility to proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes. Emergency vehicle warning devices should be tested on a daily basis to ensure that they operate properly. When in actual use, the operator must ensure that both visual and audible warnings are not blocked by vehicle components (i.e.: open trunks or compartment doors), people, vehicles, or other obstructions. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should be familiar with all applicable laws and regulations prior to the use of any emergency vehicle warning device. Whelen's audible warning devices are designed to project sound in a forward direction away from the vehicle occupants. However, because sustained periodic exposure to loud sounds can cause hearing loss, all audible warning devices should be installed and operated in accordance with the standards established by the National Fire Protection Association.

### Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

**⚠ WARNING:** This product can expose you to chemicals including Methylene Chloride which is known to the State of California to cause cancer, and Bisphenol A, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

- **Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.**
- **Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.**
- **Any holes, either created or utilized by this product, should be made both air- and watertight using a sealant recommended by your vehicle manufacturer.**
- **Failure to use specified installation parts and/or hardware will void the product warranty.**
- **If mounting this product requires drilling holes, the installer MUST be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr the holes and remove any metal shards or remnants. Install grommets into all wire passage holes.**
- **If this manual states that this product may be mounted with suction cups, magnets, tape or Velcro<sup>®</sup>, clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.**
- **Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owner's manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.**
- **For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post (this does not include products that use cigar power cords).**
- **If this product uses a remote device for activation or control, make sure that this device is located in an area that allows both the vehicle and the device to be operated safely in any driving condition.**
- **Do not attempt to activate or control this device in a hazardous driving situation.**
- **This product contains either strobe light(s), halogen light(s), high-intensity LEDs or a combination of these lights. Do not stare directly into these lights. Momentary blindness and/or eye damage could result.**
- **Use only soap and water to clean the outer lens. Use of other chemicals could result in premature lens cracking (crazing) and discoloration. Lenses in this condition have significantly reduced effectiveness and should be replaced immediately. Inspect and operate this product regularly to confirm its proper operation and mounting condition. Do not use a pressure washer to clean this product.**
- **It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.**
- **FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**



**IMPORTANT! The lightbar should be located a minimum of 16" from any radio antennas!**

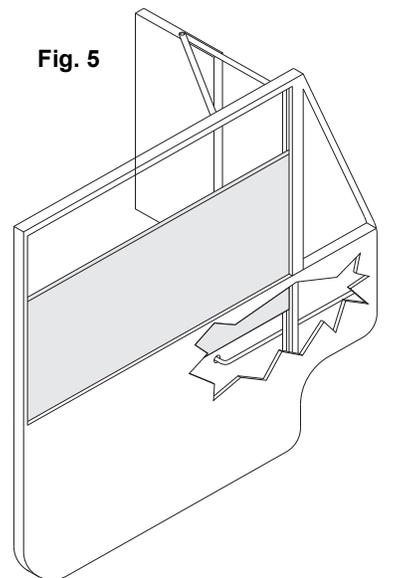
**Mounting the Micro Edge®:**

The West Coast mirror mount brackets shown are purchased separately. Begin the mounting procedure by loosely assembling the mounting bracket (Fig.1). Position this partial assembly on the mirror bracket (Fig. 2). Mount the assembly to the mirror bracket using the U-Bolt hardware supplied with the brackets (Fig. 3). Insert the mounting bolt on the Micro Edge through the hole provided in the extension flange. Secure as shown in Fig. 3. Adjust the bracket assembly until the Micro Edge is properly aligned and tighten the bracket bolts firmly. Repeat procedure for remaining door. **NOTE:** There is also a mirror mount bracket available for the 2002 International 7400 Series Navistar® truck not shown here (sSee parts list).

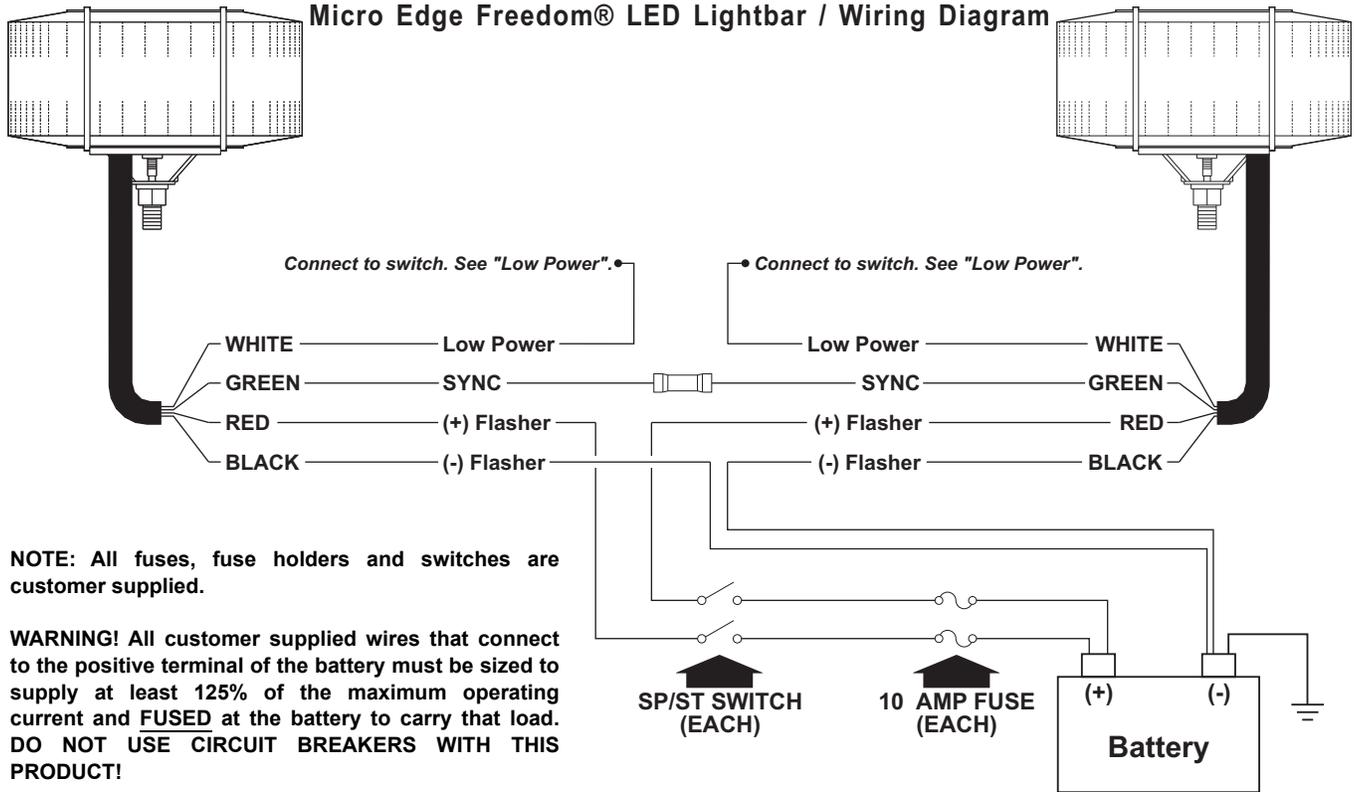
**Wiring the Micro Edge:**

The Micro Edge harness cable(s) must now be routed to the battery. The path the cables follow will vary, depending upon where the power supply has been mounted. If the power supply has been mounted against the rear cab wall, the path would be:

1. Secure harness cable to Micro Edge mounting bracket with ties (Fig. 4).
2. Now have the harness cable follow the factory mirror bracket to the point where the bracket meets the vehicle door. Secure the cable with heavy-duty wire ties.
3. Remove the interior door panel. When you are sure that no door components will be damaged, drill a hole in the door just below the point where the factory mirror bracket connects to the door. Insert a rubber grommet to prevent water leakage.
4. Insert the harness cable through the hole and route it towards the door's hinge panel. Drill a hole in the hinge panel and insert the harness cable. *Be sure the cable does not interfere with the movement of any door or window components* (Fig. 5).
5. Route the cable into the cab through the kick panel and then under the rocker panel molding. Make sure that the harness cable does not bind up when the door is opened and closed.
6. Extend the wires to their destinations as shown in the wiring diagram. Be sure to use the proper size wires (see wire size warning).



## Micro Edge Freedom® LED Lightbar / Wiring Diagram



**NOTE:** All fuses, fuse holders and switches are customer supplied.

**WARNING!** All customer supplied wires that connect to the positive terminal of the battery must be sized to supply at least 125% of the maximum operating current and FUSED at the battery to carry that load. **DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!**

### **White (Low Power):**

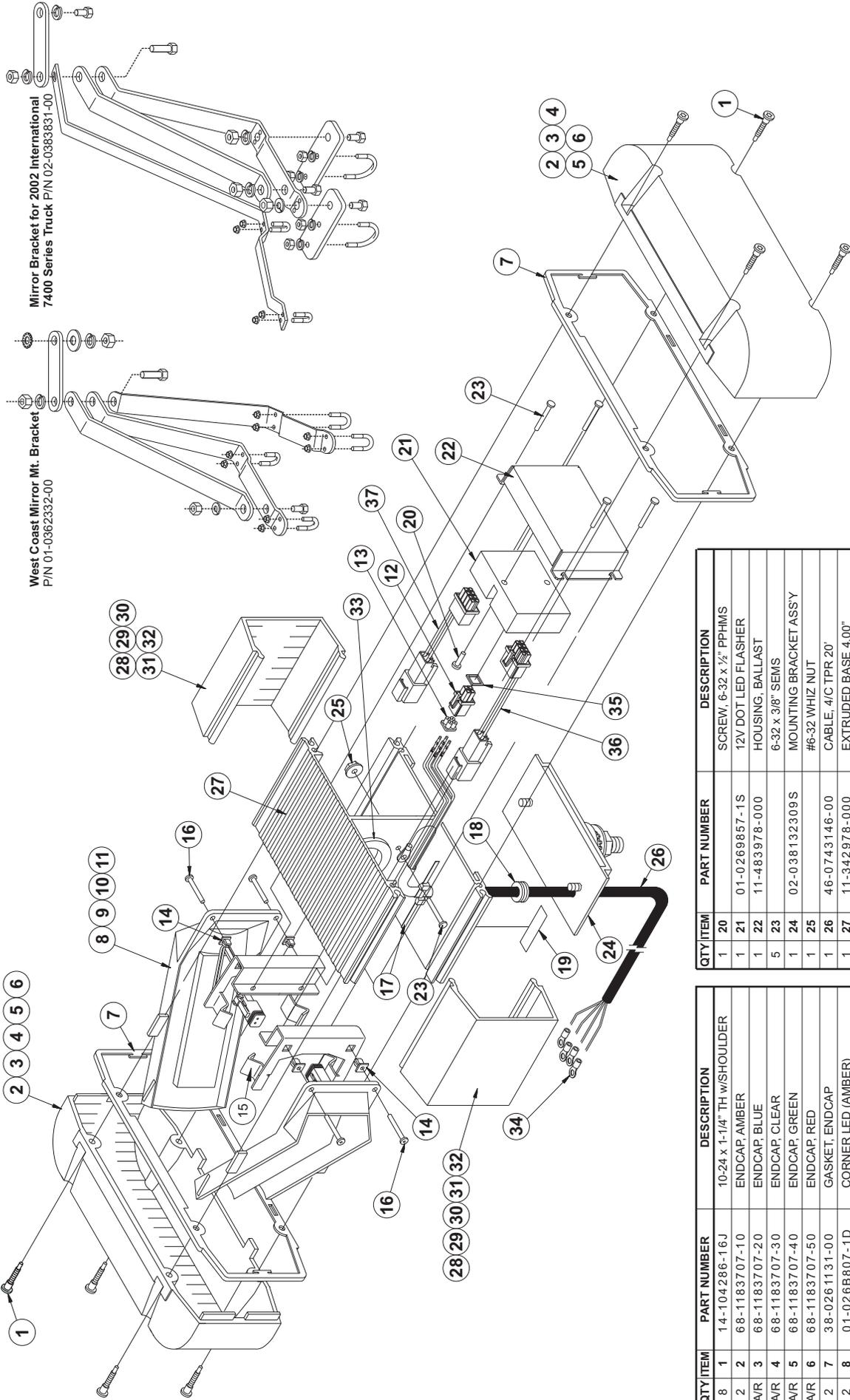
The type of switch used depends on how the operator wishes the Hi/Low feature to function:

**Latching Mode:** By applying +12VDC to the WHITE wire for less than 1 second, the power supply is "latched" into low power. The unit must be turned off and then back on to restore normal Hi power operation. A momentary switch is typically used here.

**Level Mode:** Applying +12VDC to the WHITE wire for more than 1 second holds the power supply in low power mode until voltage is removed. A toggle switch is typically used here.

### **Green (SYNC):**

When you connect the GREEN wires together from both lightheads, the lightheads will flash simultaneously with each other.



Mirror Bracket for 2002 International  
7400 Series Truck P/N 02-0383831-00

West Coast Mirror Mt. Bracket  
P/N 01-0362332-00

QTY	ITEM	PART NUMBER	DESCRIPTION
1	20		SCREW, 6-32 x 1/2" PPHMS
1	21	01-0269857-1 S	12V DOT LED FLASHER
1	22	11-483978-000	HOUSING, BALLAST
5	23		6-32 x 3/8" SEMS
1	24	02-038132309 S	MOUNTING BRACKET ASSY
1	25		#6-32 WHIZ NUT
1	26	46-0743146-00	CABLE, 4/C TPR 20"
1	27	11-342978-000	EXTRUDED BASE 4.00"
2	28	68-1183491A16	LENS, AMBER 4.00"
A/R	29	68-1183491B16	LENS, BLUE 4.00"
A/R	30	68-1183491C16	LENS, CLEAR 4.00"
A/R	31	68-1183491G16	LENS, GREEN 4.00"
A/R	32	68-1183491R16	LENS, RED 4.00"
1	33	21-11263204-0	GROMMET, 1"
4	34	25-0145521-05	RING TERMINAL
1	35	39-2H17429-04	SEAL, INTERFACE 4 POS MINI
1	36	46-0769852-01	HARNESS, OUTPUT 1
1	37	46-0769853-01	HARNESS, OUTPUT 2

QTY	ITEM	PART NUMBER	DESCRIPTION
8	1	14-104286-16J	10-24 x 1-1/4" TH w/SHOULDER
2	2	68-1183707-10	ENDCAP, AMBER
A/R	3	68-1183707-20	ENDCAP, BLUE
A/R	4	68-1183707-30	ENDCAP, CLEAR
A/R	5	68-1183707-40	ENDCAP, GREEN
A/R	6	68-1183707-50	ENDCAP, RED
2	7	38-0261131-00	GASKET, ENDCAP
2	8	01-026B807-1D	CORNER LED (AMBER)
A/R	9	01-026B807-2D	CORNER LED (BLUE)
A/R	10	01-026B807-3D	CORNER LED (WHITE)
A/R	11	01-026B807-5D	CORNER LED (RED)
1	12	39-0917425-04	HOUSING, PLUG 2x2 POS
1	13	39-2H17430-04	SEAL, GANG 4 POS
4	14	13-062C40-16J	#6 FASTEX® SCREW GROMMET
2	15	07-26C112-000	BRACKET, CORNER
4	16	15-065419-080	SCREW, #6 x 1/2" PLASTI-LOK
2	17		8" TY WRAP
1	18		1/2" GROMMET
1	19		LABEL