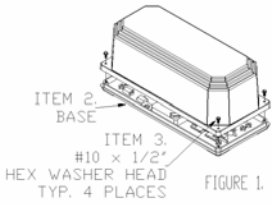


INSTALLATION INSTRUCTIONS

5000 SERIES MINI-BAR LIGHTS



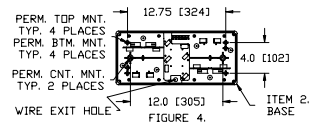
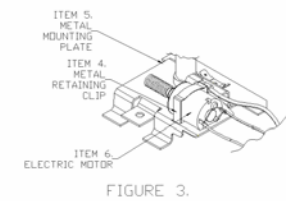
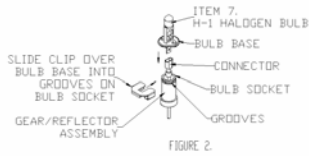
DANGER: WAIT FIVE (5) MINUTES BEFORE REMOVING THE STROBE LIGHT LENS IF THE STROBE LIGHT HAS BEEN OPERATED. THE POWER SUPPLY CONTAINS VOLTAGES, THAT MAY CAUSE DEATH, WHICH MUST DISCHARGE.

CONTENTS:

Quantity	Description
1	5000 Series Mini-Bar Light
1	Hardware Kit (grommet, screws & splices; not included with vacuum magnetic mount mini-bars)
2	BT4000 (included with 5100 series mini-bar only)

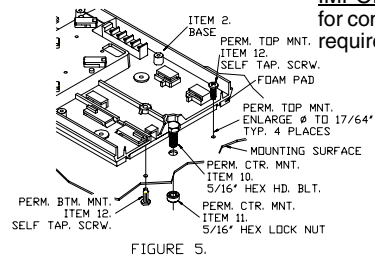
PARTS SHOWN IN DRAWINGS:

Item	Description	Kit No.
1	Outer Cover (Amber, Blue, Clear, Green & Red)	OC5000A, OC5000B, OC5000C, OC5000G & OC5000R
2	Base	(1 each)
3	#10 x 1/2" Hex Washer Head Screw	(4 each)
4	Motor Mounting Clip	(2 each)
5	Motor Mounting Plate	(2 each)
6	Electric Motor	MT5211, MT5212, MT5213 or MT5214
7	Halogen Bulb	BB5211 or BB5212
8	Wire Grommet	(1 each)
9	Wire Splice Terminal	(2 each)
10	5/16"-18 Hex Head Bolt (optional; not included)	(2 each)
11	5/16"-18 Hex Lock Nut (optional; not included)	(2 each)
12	1/4" x 1" Self Tapping Screw	(4 each)
13	MA5100	(2 each)
14	#6 x 5/16" Phillips Plastic Thread Cutting Screw	(4 each)
15	#6 x 1/2" Combination Drive Plastic Thread Cutting Screw	(8 each)
16	Strobe Flash-Tube Assembly	FT4660
17	Polycarbonate Lens	LA4660, LB4660, LC4660, LG4660 & LR4660



MINI-BAR LIGHT INSTALLATION:

IMPORTANT: Please read all of these installation instructions before installing your new safety light product. The light is intended for commercial use and should be installed and maintained by qualified personnel. Position the unit to avoid damage and protect as required. Ensure the location provides for function as intended and does not interfere with operator's safe operation of the vehicle.



INSTALLATION TOOLS:

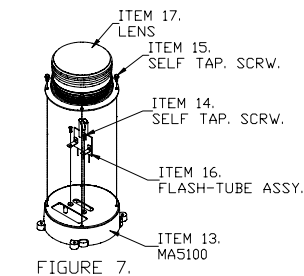
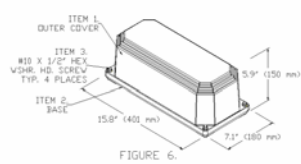
Description
Phillips Screwdriver
1/4" & 1/2" Hex Driver or Wrench
Crimping Pliers
Drill
13/64", 17/64", 9/32", 3/8" & 1/2" Drill Bits

PERMANENT TOP MOUNT

- Remove the outer cover mounting screws (Item 3) and remove the outer cover (Item 1).
- Use the base (Item 2) as a template (or Figure 4 as a guide) to mark the mounting surface and drill four 13/64" diameter holes for the mounting screws (Item 12) and one 1/2" diameter hole in the center for the grommet (Item 8).
- Enlarge four holes in base (Item 2) via 17/64" drill bit..
- Route wires (18 AWG min.; 16 AWG preferred), in a protected fashion, in accordance with the vehicle manufacturer's instructions, to the light mounting location. It is recommended to install a 12 A fuse in-line for wire run protection. (Note: For runs over 20 feet, consult local electrical codes.)
- Install the grommet (Item 8) into the 1/2" hole in the mounting surface. Apply silicon sealant around the grommet (Item 8) to prevent leakage.
- Route wires through the grommet (Item 8). Apply silicon sealant around the wires to prevent leakage.
- Connect the light to the wire run using the terminals (Item 9) provided. The red wire to positive and the black wire to negative (ground).
- Test the light operation before proceeding.
- Locate the base (Item 2) to the mounting surface and install the self-tapping screws (Item 12).
- Re-install outer cover (Item 1) and tighten mounting screws (Item 3).

PERMANENT BOTTOM MOUNT

- Using Figure 4 as a guide, mark the mounting surface and drill four 9/32" diameter holes for the mounting screws (Item 12) and one 1/2" diameter hole in the center for the grommet (Item 8).
- Route wires (18 AWG min.; 16 AWG preferred), in a protected fashion, in accordance with the vehicle manufacturer's instructions, to the light mounting location. It is recommended to install a 12 A fuse in-line for wire run protection. (Note: For runs over 20 feet, consult local electrical codes.)
- Install the grommet (Item 8) into the 1/2" hole in the mounting surface. Apply silicon sealant around the grommet (Item 8) to prevent leakage.
- Route wires through the grommet (Item 8). Apply silicon sealant around the wires to prevent leakage.
- Connect the light to the wire run using the terminals (Item 9) provided. The red wire to positive and the black wire to negative (ground).



6. Test the light operation before proceeding.
7. Locate the base (Item 2) on the mounting surface and install the self-tapping screws (Item 12).

PERMANENT CENTER MOUNT

1. Remove the outer cover mounting screws (Item 3) and remove the outer cover (Item 1).
2. Use the base (Item 2) as a template (or Figure 4 as a guide) to mark the mounting surface and drill two 3/8" diameter holes for the mounting bolts (Item 10) and one 1/2" diameter hole in the center for the grommet (Item 8).
3. Route wires (18 AWG min.; 16 AWG preferred), in a protected fashion, in accordance with the vehicle manufacturer's instructions, to the light mounting location. It is recommended to install a 12 A fuse in-line for wire run protection. (Note: For runs over 20 feet, consult local electrical codes.)
4. Install the grommet (Item 8) into the 1/2" hole in the mounting surface. Apply silicon sealant around the grommet (Item 8) to prevent leakage.
5. Route wires through the grommet (Item 8). Apply silicon sealant around the wires to prevent leakage.
6. Connect the light to the wire run using the terminals (Item 9) provided. The red wire to positive and the black wire to negative (ground).
7. Test the light operation before proceeding.
8. Tighten both 5/16" hex nuts (Item 11) to draw bolt head into the press-fit pocket. Remove and retain the hex nuts (Item 11).
9. Locate the base (Item 2) on the mounting surface and tighten the 5/16" hex nuts (Item 11).

VACUUM MAGNETIC MOUNT

1. Place safety light product at appropriate location to provide maximum signal effectiveness. Mounting surface must be a ferrous metal. Mounting surface must be clean and free of debris. Mounting surface must be horizontal, i.e. mounting surface plane must be parallel to the plane of the horizon.
2. Plug cigarette adapter cord into vehicle's cigarette outlet. Check light for proper operation before using vehicle.

WARNING: Care should be taken when handling strong magnetic products. If not handled carefully, magnetic mounts can cause painful pinching injuries.

WARNING: Holding power of vacuum magnetic mount is dependent on mounting surface finish, mounting surface material (ferrous), mounting surface flatness, mounting surface thickness and mounting surface cleanliness. Therefore, mounting surface and rubber suction cup must be kept clean, dry and free of debris that prevents good surface contact. Mounting surface must be flat and horizontal. Vacuum magnetic mount should not be used on vinyl surfaces.

WARNING: Because vehicle roof construction and driving conditions vary, manufacturer does not recommend driving a vehicle with magnetically mounted safety light products installed. Magnetic mount safety light products can dislodge from vehicle during motion causing injury or damage.

MINI-BAR LIGHT MAINTENANCE:

Safety light products should be listed on daily maintenance report. Units on operating vehicles must be tested each day prior to vehicle's operation. A record of test is to be recorded in maintenance file. Check safety light product for proper operation daily and log in maintenance record.

It may be necessary for the installer to seal the mounting holes and wire run hole in the mounting surface for a weatherproof seal. Proper fastener sealing will help prevent moisture from entering the vehicle through the mounting holes. Alternatively, in extremely humid climates, leaving the wire exit hole unsealed may keep the inside of the unit drier than if the hole is completely sealed.

IN CASE OF TROUBLE:

If the light stops operating suddenly, first ensure it is getting power, 9.8 VDC to 15.0 VDC for 5211/5213 series, 19.5 VDC to 32.0 VDC for 5212/5214 series and 9.8 VDC to 58.0 VDC for 5100 series. If the power to the light is correct, then the external user supplied fuse may be blown. Alternatively, the halogen bulbs or strobe flash-tubes may need replacement. To check the bulbs, remove the outer cover (Item 1) and inspect the bulbs (Item 7). If any burned areas are visible or if extremely corroded areas are visible or if the bulb is not functioning, replace the bulb (Item 7). Do not grasp the glass portion of the bulb (Item 7). Re-assemble light. To check the flash-tubes, remove electrical power from mini-bar light and **WAIT FIVE (5) MINUTES**. Remove the outer cover (Item 1) and polycarbonate lens (Item 17) and set aside. Inspect the Flash-Tube Assembly (Item 16). The glass portion of the Flash-Tube Assembly (Item 16) will darken with operation and eventually need replacement. If any burned areas are visible or if extremely corroded areas are visible or if the flash-tube is not functioning or if excessive darkening (over 1/2 the 1.5 turn Xenon flash-tube length) is visible, replace the Flash-Tube Assembly (Item 16). Do not grasp the glass portion of the Flash-Tube Assembly (Item 16). Re-assemble light.

REPLACEMENT OF HALOGEN BULB:

The bulb (Item 7) may eventually need replacement. Turn OFF the light. Remove the outer cover (Item 1). Do not grasp the glass portion of the bulb (Item 7). Forced rotation of the reflector may cause damage to the worm gear. Rotate the reflector via the motor shaft. Rotate the motor shaft until the C-clip can be removed. Reference Figure 2. The C-clip is located at the base of the bulb. Remove the C-clip by sliding it away from the reflector. Note the bulb orientation and replace the bulb with the straight edge of the bulb base toward the reflector. Re-assemble light.

REPLACEMENT OF MOTOR:

Turn OFF the light. Remove the outer cover (Item 1). Note the wire connection locations and trim wire leads. Reference Figure 3. Remove metal retaining clip. Remove motor (Item 6) from metal mounting plate. Install new motor (Item 6) onto metal mounting plate. Install metal retaining clip. Re-solder wire leads to noted locations on motor (Item 6). Re-assemble light.

REPLACEMENT OF FLASH-TUBE ASSEMBLY:

The glass portion of the Flash-Tube Assembly (Item 16) will darken with operation and eventually need replacement. Remove electrical power from mini-bar light and **WAIT FIVE (5) MINUTES**. Remove the Outer Cover (Item 1) and Polycarbonate Lens (Item 17) and set aside. Remove the Flash-Tube Assembly mounting screws (Item 14). Remove the Flash-Tube Assembly (Item 16). Do not grasp the glass portion of the Flash-Tube Assembly (Item 16). Inspect the Flash-Tube Assembly sockets and power supply pins for corrosion, clean with isopropyl alcohol if necessary. If the corrosion is extreme, replace the entire mini-bar light. Plug a new Flash-Tube Assembly (Item 16) into the power supply. Note the Flash-Tube Assembly (Item 16) is polarized and may only be inserted in one direction. Clean

the inside of the Polycarbonate Lens (Item 17). Allow parts to dry completely and reassemble ensuring the Outer Cover (Item 1) and Polycarbonate Lens (Item 17) are assembled tightly and fit correctly.

PRECO MINI-BAR LIGHT SPECIFICATIONS

MODEL: 5211A, 5212A, 5211B, 5212B, 5211C, 5212C, 5211G, 5212G, 5211R, 5212R, 5213A, 5214A, 5213B, 5214B, 5213C, 5214C, 5213G, 5214G, 5213R, 5214R, 5111CAA, 5111ACC, 5121CAA, 5121ACC, 5112CAA, 5112ACC, 5122CAA & 5122ACC.

1.0 Introduction

The Preco 5000 Series mini-bar lights are mounted on a durable polycarbonate base with a removable outer cover and field-replaceable halogen bulbs or flash-tube assemblies. The 5211/5213 are designed for 12 Volt systems, the 5212/5214 are designed for 24 Volt systems and the 5100 Series are designed for 12 – 48 Volt systems. The 5000 Series Mini-Bars are 5.9" high, 7.1" wide and 15.8" long. Amber (Yellow), Clear (White), Red, Green and Blue (SAE Signal Blue) outer cover and lens colors are available.

2.0 Physical Specifications:

See Figure 6.

- 2.1 Base: Polycarbonate.
- 2.2 Cover: Polycarbonate.
- 2.3 Weight: 5210 Series, 4.0 lb. (1.8 kg); 5120 Series, 7.8 lb. (3.5 kg).
- 2.4 Size: 5210 Series, 5.9" (150 mm) High x 7.1" (179 mm) Wide x 15.8" (401 mm) Long.
- 2.5 Mounting: Four 0.2" (5 mm) holes on a 12.8" (324 mm) x 4.0" (102 mm) mounting configuration. Top and bottom mount mounting hardware is included. Alternative center mount mounting configuration. Center mount mounting hardware not included. Alternative vacuum magnetic mount mounting configuration.

3.0 Electrical Specifications:

- 3.1 Input Voltage: For output specified in para. 4.0, 9.8 - 15.0 VDC for 5211/5213, 19.5 - 32.0 VDC for 5212/5214 and 9.8 - 58.0 VDC for 5100 Series.
- 3.2 Input Current: +12.0VDC: 6.6 for 5100 Series, 8.7 for 5211 & 9.8 for 5213 (Amps average). +24.0VDC: 5.0 for 5212 & 5.3 for 5214 (Amps average).
- 3.3 Connection: Red positive, black negative (ground) 18 AWG 12" wires. Connection hardware is included.
- 3.4 Fuse Protection: External customer supplied 15 Ampere fuse. 15 Ampere in-line glass fuse included integral within cigarette adapter plug on vacuum magnetic mount equipped mini-bars.

4.0 Output Specifications:

- 4.1 SAE J845 May97 or SAE J1318 May98: Amber (Yellow); Class 1 360°, 200 Cd-Sec min. req. Zone Total.
Blue (SAE Signal Blue); Class 1 360°, 100 Cd-Sec. min. req. Zone Total.
Clear (White); Class 1 360°, 400 Cd-Sec. min. req. Zone Total.
Red; Class 1 360°, 100 Cd-Sec. min. req. Zone Total.
 - 4.2 SAE J578 Jun95: Amber (Yellow), Blue (SAE Signal Blue), Clear (White), Green and Red outer covers and lenses conform to recommended practice.
 - 4.3 Halogen Bulb Power per Bulb: 5211 - 55 Watts @ 12 Volts; 5212 - 70 Watts @ 24 Volts.
 - 4.4 Flash-Tube Input Energy per Flash-Tube: 5121 – 17 Joules per double-flash; 5122 – 21 Joules per quad-flash.
 - 4.5 Flash Rate: 80 flashes per minute per rotator; 240 flashes per minute per mini-bar; 80 double or quad-flashes per minute per strobe.
- 5.0 Additional Specifications:**
- 5.1 Warranty: 24 months limited warranty. Halogen Bulb and Flash-Tube Assembly 6 months limited warranty.
 - 5.1 Operating Temperature Range: -30°C (-22°F) to +50°C (122°F).
 - 5.2 Cleaning: Unit may be exposed to spray wash.
 - 5.4 Flash-Tube Assembly, Halogen Bulb and Electric Motor are field replaceable.

PRECO ELECTRONICS, INC. LIMITED WARRANTY AND LIMITATION OF LIABILITY

Preco warrants that on the Date of Purchase this Product will conform to Preco's published specifications for the product, which are available from Preco on request, and Preco warrants that the product is free from defects in materials and workmanship. This Limited Warranty extends for twenty four (24) months from the date of manufacture. Preco will, at its option, repair or replace any product found by Preco to be defective and subject to this Limited Warranty.

This Limited Warranty does not apply to parts or products that are misused; abused; modified; damaged by accident, fire or other hazard; improperly installed or operated; or not maintained in accordance with the maintenance procedures set forth in Preco's Installation and Operating Instructions.

To obtain warranty service you must call Preco Customer Service at 800-453-1141 or 208-323-1010, or fax your request to 208-323-7105. Customer Service will issue warranty authorization and further instructions.

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Any oral statements or representations about the product which may have been made by salesmen or Preco representatives do not constitute warranties. This Limited Warranty may not be amended, modified or enlarged, except by a written agreement signed by an authorized official of Preco which expressly refers to this Limited Warranty.