

INSTRUCTION SHEET FOR ULTRASTAR® STROBE BEACON

SAFETY MESSAGE TO INSTALLERS



People's lives depend on your safe installation of our products. It is important to read, understand and follow all instructions shipped with the products. In addition, listed below are some other important safety instructions and precautions you should follow:

- To properly install this warning light: you must have a good understanding of automotive electrical procedures and systems, along with proficiency in the installation and use of safety warning equipment.
- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged.
- DO NOT install equipment or route wiring or cord in the deployment path of an air bag.
- You should frequently inspect the light to ensure that it is operating properly and securely attached.

Failure to follow all safety precautions and instructions may result in property damage, serious injury or death to you or others.

A. UNPACKING.

After unpacking the unit, inspect it for damage that may have occurred in transit. If the unit has been damaged, file a claim immediately with the carrier, stating the extent of damage. Carefully check all envelopes, shipping labels, and tags before removing or destroying them. Ensure that the parts listed in the KIT CONTENTS LIST are in the package.

B. KIT CONTENTS LIST.

Qty.	Description	
1	Light Shield	(All Except Model 250721)
1	Phillips Truss Head Screw	(Permanent/Pipe Mount Models Only)
1	Mounting Template	(Permanent/Pipe Mount Models Only)
3	Phillips Pan Head Screw	(Permanent/Pipe Mount Models Only)
1	Mounting Gasket	(Permanent/Pipe Mount Models Only)
1	Fuse holder	(Model 250721 Only)
1	Fuse ,5 A 3ag 250v	(Model 250721 Only)
1	Quick Connect Terminal, .187"	(Model 250721 Only)

C. INSTALLATION.

1. *Permanent Mount.* (see figure 1).

NOTE (Models 250721, 252600, and 250741 Only)

For proper operation of the automatic sensor, ensure that the top of the dome is free of opaque objects that prevent ambient light from reaching the sensor.



High voltages generated by the light's power supply may cause property damage, serious injury or death to you or others. Ensure that power to the light is disconnected and wait at least 5 minutes before working on the light.

- a. Using the supplied template, scribe the location of the three base mounting holes and the bushing and lead wire clearance hole.



To avoid damage when drilling, ensure that both sides of mounting surface are clear of any parts or wires.

- b. Drill one 0.375" (10 mm) hole at the previously scribed position of the bushing and lead wire clearance hole. Drill three 0.147" (#26 drill) (3.8 mm) holes at the previously scribed base mounting holes positions. Remove all burrs and sharp edges from the holes.
- c. Align the gasket over the four previously drilled holes. Route the red and black wires through the gasket and wiring routing hole as shown in figure 1.
- d. Secure the base to the mounting surface with the #10 Phillips pan head thread-forming screws as shown in figure 1.



To avoid damage to the light, ensure that the input voltage is the same as the voltage rating of the light. Ensure that correct polarity is observed. Also, ensure that unit is properly fused.

- e. Connect one terminal of a user-supplied switch (current capacity of at least 5- amperes) to the red (+) wire of the light. Additional wire may be added if required. For lengths up to 15-feet (5m), use 18 gauge (1mm²) wire; for lengths over 15-feet (5m), use 16 gauge (1.5mm²) wire.
- f. Using 18 gauge (1 mm²) or larger wire, connect the remaining switch terminal to one end of the fuse holder (supplied with Models 250721 and 252600, user supplied for all other models.)
- g. Connect the other end of the fuse holder to the positive (+) terminal of the voltage source.
- h. Connect the black (-) wire from the light assembly to a known good vehicle ground as close to light as practical.
- i. Install the appropriate fuse into the fuse holder installed at f. above (see below) and test the unit for proper operation.

Model	Fuse
250721, 252600	5 Amperes slow blow (supplied)
All other models	5 Amperes

2. *Pipe Mount* (see figure 2).

NOTE (Models 250721, 252600, and 250741 Only)

For proper operation of the automatic sensor, ensure that the top of the dome is free of opaque objects that prevent ambient light from reaching the sensor.



High voltage generated by the light's power supply may cause property damage, serious injury or death to you or others. Ensure that power to the light is disconnected and wait at least 5 minutes before working on the light.

- a. The base is intended to be installed on the end of a threaded 1" (25.4 mm) NPT pipe.

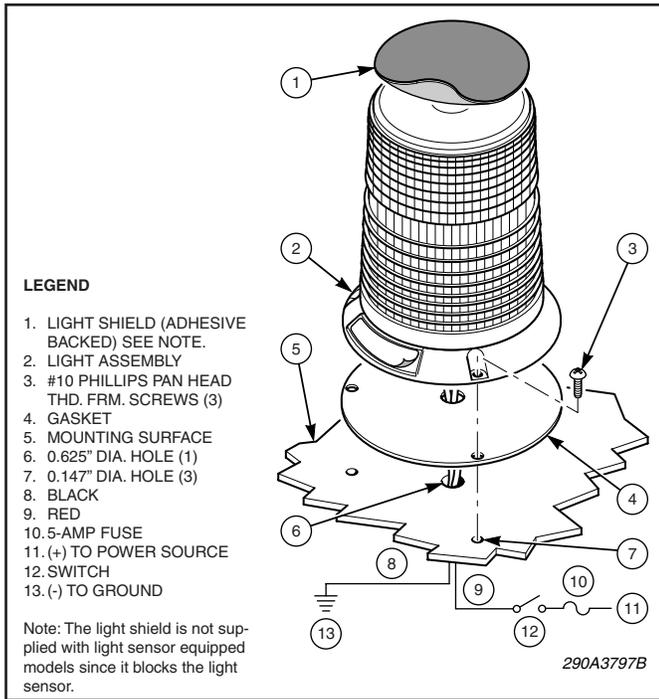


Figure 1.

- Determine the length of wires needed for the installation. For lengths up to 15-feet (5m), use 18 gauge (1mm²) wire; for lengths over 15-feet (5m), use 16 gauge (1.5mm²) wire.
- Using user-supplied insulated butt connectors, connect the user-supplied red and black wires to the light's red and black wires. Ensure that the connectors are securely crimped and properly insulated.
- Route the wires through the pipe to the location of the user-supplied switch.
- Screw the light assembly onto the pipe. Ensure that the wires are not pinched inside the pipe.

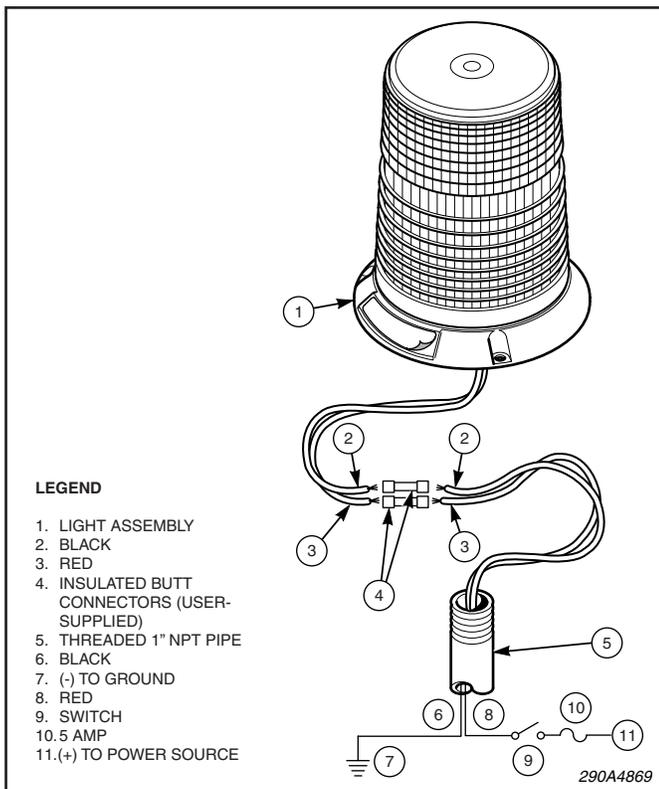


Figure 2.

- Connect one terminal of the user-supplied switch (current capacity of at least 5- amperes) to the red (+) wire of the light.
- Using appropriate gauge wire, connect the remaining switch terminal to one end of the fuse holder (supplied with Model 250721, user supplied for all other models.)
- Connect the other end of the fuse holder to the positive (+) terminal of the voltage source.
- Connect the black (-) wire from the light assembly to a known good vehicle ground as close to the light as practical.
- Install the appropriate fuse into the fuse holder installed at g. above (see below) and test the unit for proper operation.

Model	Fuse
250721, 252600	5 Amperes slow blow (supplied)
All other models	5 Amperes

3. Magnetic Mount.



Because vehicle roof construction and driving conditions vary, Federal does not recommend driving a vehicle with a magnetically mounted warning light installed. The light could fly off the vehicle causing injury and damage. Repair of damage incurred because of ignoring this warning shall be the sole responsibility of the user.

The holding power of magnetic mounting systems is dependent upon the surface finish, flatness, and thickness of the steel mounting surface. Therefore, to promote proper magnetic mounting:

- Mounting surface and magnets must be kept clean, dry, and free of foreign particles that prevent good surface contact.
- Ensure that mounting surface is flat.
- To prevent sliding of light assembly on mounting surface, quick acceleration and hard stops should be avoided.
- If the light is to be held directly to the roof by the magnet, ensure that the power cable is not under the magnet.

Place the light on a level steel surface.

4. Manual Override Option (Models 250721, 252600, and 250741 only).

The UltraStar Premium incorporates a dimming feature that includes an automatic sensor that adjusts the light output for day or night conditions (see figure 3). Additional installation is not necessary for automatic operation.

NOTE

For proper operation of the automatic sensor, ensure that the top of the dome is free of opaque objects that prevent ambient light from reaching the sensor.



Enabling the Low Power Mode on the beacon will cause its light output to fall below current light output standards and guidelines for emergency warning lights. Use extreme caution when using this mode. Ensure that the ambient light conditions are low enough that you are seen and that the reduction of glare from the beacon is safer than full light output in the situation. Failure to heed this warning may result in serious injury or death to you or others in your vicinity.

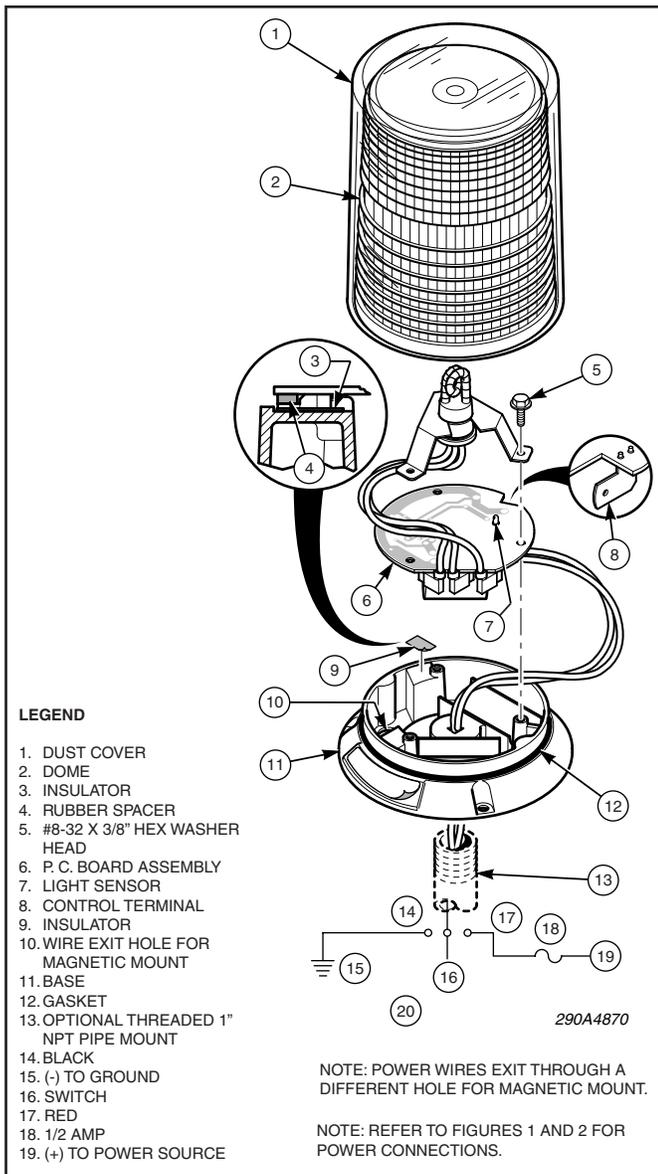


Figure 3.

Installation of the manual override requires an additional user supplied wire, a fuse holder, and a three-position SPDT switch. To install the manual override, proceed as follows:

- a. Disconnect battery power.



High voltages generated by the light's power supply may cause property damage, serious injury or death to you or others. Ensure that power to the light is disconnected and wait at least 5 minutes before working on the light.

- b. Remove the dome and dust cover by pushing down on the dust cover while turning the dust cover counterclockwise. Retain the dome and dust cover, and the gasket.
- c. See figure 3. Locate the notch on the edge of the circuit board. The manual override control terminal is located under the notch. Determine the length of wire needed for the installation. For the pot-tered Model 252600, locate the gray control wire at the power exit and proceed to paragraph C.4.j.
- d. Terminate one end of a user-supplied 22 gauge (1/2mm²) control wire with the supplied right angle quick-connect terminal.

- e. Connect the terminated end of the wire to the override control terminal on the printed circuit board.

- f. See figure 3. Remove and retain the three screws that secure the bracket and PC board to the base. Retain the insulator and rubber spacer. Carefully lift the PC board assembly.



Service life of the strobe tube will be shortened if the glass portion is touched. If the glass has been handled, clean it carefully with a grease solvent.

- g. Route the control wire through the power wires' exit hole.

- h. Carefully position the PC board in the base. Ensure that the insulator is properly positioned and that the rubber spacer is pressing the transistor on the insulator. Secure the PC board and bracket with the previously removed screws.

NOTE

Ensure that the wires will not shield the top of light sensor from the ambient light. Also, ensure that wires are not pinched between the PC board and the base.

- i. Inspect the gasket and replace if defective. Reattach the dome and ensure that wires are not pinched between the dome and other parts.

- j. Connect the control wire to the center (wiper) terminal of the user-supplied SPDT switch.

- k. Connect one of the remaining switch terminals to a vehicle ground as close to the switch as practical.

- l. Connect the remaining switch terminal to one end of a user supplied fuse holder. Connect the other end of the fuse holder to the closest battery positive (+) connection. Install a fuse no larger than 1/2A in the fuse holder.

- m. Check all connections. Reconnect battery power. Apply power to the light and check for proper operation.

NOTE

Since even the low light output level is very bright, check the light output level by observing the light reflections on nearby objects.

When the override switch is in the "off" position, the automatic sensor will select the light output level depending on the ambient light. The automatic mode can be checked by shining a flashlight through the top of the dome in dim ambient light conditions, or by covering the dome top with an opaque object in daylight conditions.

When the override switch supplies ground to the control wire, the light output level remains high. When the override switch supplies battery positive to the control wire, the light output level remains low.

Label the switch positions "HIGH", "LOW", and "AUTO" after determining that the unit is operating properly.

D. MAINTENANCE.



High voltage generated by the light's power supply may cause property damage, serious injury or death to you or others. Ensure that power to the light is disconnected and wait at least 5 minutes before working on the light.

The flash tube is the only user serviceable component. Do not attempt to repair any other component. To replace the flash tube, proceed as follows:

CAUTION

Service life of the strobe tube will be shortened if the glass portion is touched. If the glass has been handled, clean it carefully with a grease solvent.

1. Remove the dome (and dust cover if installed) by pushing down on the dome while turning the dome counterclockwise. Retain the dome, dust cover (if installed), and the gasket.

2. Using long nose pliers, disconnect the strobe tube's red, white, and black wires at the edge of the PCB (potted models, figure 4) or at the wire terminal connections (unpotted models, figure 5).

3. See appropriate figure. Gently push the silicone rubber base of the strobe tube down toward the PC board, and then carefully slide it out through the slot in the metal bracket.

4. See appropriate figure. Slide the new tube through the slot into the round center of the bracket, and then push the tube up into its position by pressing the rubber base from the bottom.

5. Connect the red, white, and black wires to the appropriate terminals. Ensure that the wires are looped to the left as shown in the figures.

6. Inspect the gasket and replace it if it is defective. Install the gasket. Reinstall the dome and dust cover.

E. DUST COVER INSTALLATION AND REMOVAL (OPTIONAL).

1. Installation.

a. Place the dust cover over the dome and align the four slots in the dust cover with the four posts on the exterior of the dome.

b. While pushing down firmly on the dust cover, rotate the dust cover clockwise until the four posts on the dome exterior snap into the pockets on the interior surface of the dust cover. An audible click may be heard when the dust cover is correctly seated. With the dust cover installed, the dust cover and dome will be removed as a single unit. To disengage the dust cover from the dome for cleaning or replacement, proceed as follows:

2. Removal.

While pushing down firmly on the dust cover, rotate the dust cover counterclockwise until the four posts on the dome exterior snap

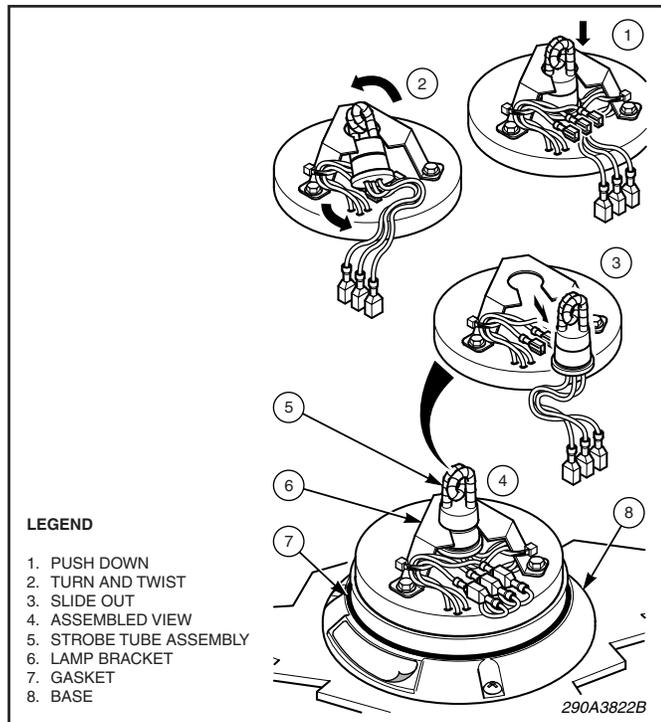
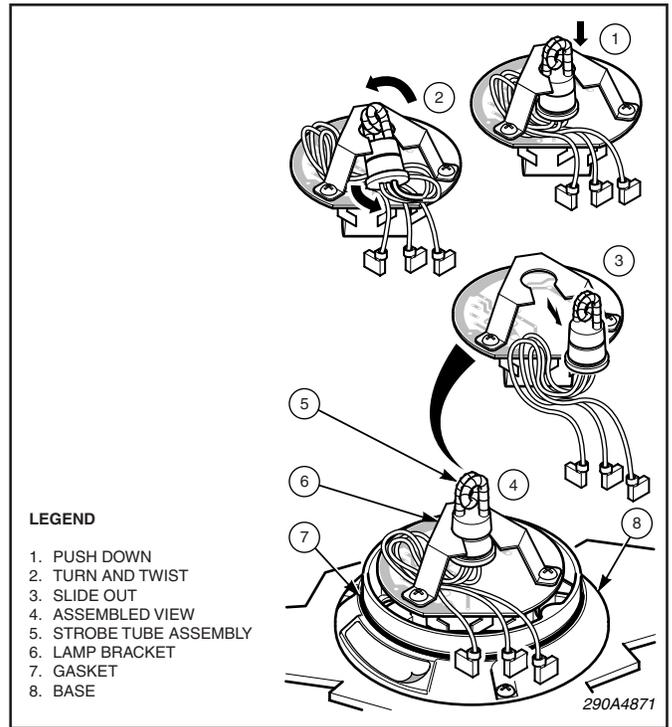


Figure 4.



LEGEND

1. PUSH DOWN
2. TURN AND TWIST
3. SLIDE OUT
4. ASSEMBLED VIEW
5. STROBE TUBE ASSEMBLY
6. LAMP BRACKET
7. GASKET
8. BASE

Figure 5.

out of the pockets on the interior surface of the dust cover. The dome will disengage from the base before the dust cover disengages from the dome. Continue pushing down firmly and rotating the dust cover counterclockwise until the dust cover disengages from the dome. An audible click may be heard when the dust cover has been released.

F. INSTALLATION OF TAMPER RESISTANT DOME/DUST COVER SCREW.

The truss head screw provided in the accessory kit can be used to secure the dome (and dust cover, if installed) to the base, requiring a tool (Phillips screwdriver) to remove the dome (and dust cover, if installed). A hole is provided in the dome near one of the internal attachment slots on the dome and clearance holes are also provided in the dust cover to receive this screw.

G. REPLACEMENT PARTS.

Description	Part No.
Dome, Amber , Tall	Z8444372-03
Dome, Blue , Tall	Z8444372-04
Dome, Red , Tall	Z8444372-02
Dome, Clear , Tall	Z8444372-01
Dome, Green , Tall	Z8444372-05
Dome, Amber , Short	Z8444374-03
Dome, Blue , Short	Z8444374-04
Dome, Red , Short	Z8444374-02
Dome, Clear , Short	Z8444374-01
Dome, Green , Short	Z8444374-05
Gasket, Dome	Z8444376
Dust Cover, Amber, Tall	Z8444373-03
Dust Cover, Blue, Tall	Z8444373-04
Dust Cover, Red, Tall	Z8444373-02
Dust Cover, Clear, Tall	Z8444373-01
Dust Cover, Green, Tall	Z8444373-05
Dust Cover, Amber, Short	Z8444375-03
Dust Cover, Blue, Short	Z8444375-04
Dust Cover, Red, Short	Z8444375-02
Dust Cover, Clear, Short	Z8444375-01
Dust Cover, Green, Short	Z8444375-05
Cord, Straight	Z8444299 (Magnetic Mount Models)
Strobe Tube Assembly	Z8444308B (Unpotted Models)
Strobe Tube Assembly	Z8575272 (Potted Models)
Mylar Magnet Cover	439374 (Magnetic Mount Models)
Magnet Assembly	Z8550A012-02 (Magnetic Mount Models)