

## INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS FOR VISIBEAM® II REMOTE CONTROLLED SPOTLIGHT

### SAFETY MESSAGE TO INSTALLERS AND USERS

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 kit: you must have a good understanding of automotive electrical procedures and systems, along with proficiency in the installation and use of safety warning equipment.
- DO NOT install equipment or route wiring or cord in the deployment path of an air bag.
- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged.
- In order for the light to function properly, a separate ground connection must be made. If practical, it should be connected to the negative battery terminal. At a minimum, it may be attached to a solid metal body or chassis part that will provide an effective ground path as long as the light system is to be used.
- Locate light control so the VEHICLE and CONTROL can be operated safely under all driving conditions.
- Do not attempt to activate or deactivate light control while driving in a hazardous situation.
- You should frequently inspect the light to ensure that it is operating properly and that it is securely attached to the vehicle.
- File these instructions in a safe place and refer to them when maintaining and/or reinstalling the product.

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

### I. 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 appropriate KIT CONTENTS LIST are contained in the package.

### II. KIT CONTENTS LIST.

#### ALL SURFACE MOUNT MODELS

Qty. Description

4	Screw, #6
3	Screw, #10, Hex
3	Flat Washer, #10
1	Gasket, Mounting
1	Plate, Mounting
1	Velcro Loop
1	Velcro Hook

#### ALL PIPE MOUNT MODELS

Qty. Description

4	Screw, #6
1	Plate, Mounting
1	Velcro Loop
1	Velcro Hook

#### ALL MAGNETIC MOUNT MODELS

Qty. Description

1	Cover, Magnet
1	Label, Caution
4	Screw, #6
1	Plate, Mounting
1	Velcro Loop
1	Velcro Hook

### III. CONTROL INSTALLATION.

#### WARNING

When installing equipment inside air bag equipped vehicles, the installer **MUST** ensure that the equipment is installed **ONLY** in areas recommended by the vehicle manufacturer.

Failure to observe this warning will reduce the effectiveness of the air bag, damage the air bag, or potentially damage or dislodge the equipment, causing serious injury or death to you or others.

A. *Hook-and-Loop Mounting.*

#### NOTE

The hook-and-loop mounting method is intended for storing the control unit when it is not in use. The hook-and-loop material may not provide sufficient rigidity for proper control unit operation.

1. Locate a suitable mounting location for the control unit.

## NOTE

The hook-and-loop pads' mounting surfaces must be clean and dry for proper adhesion. If necessary, use isopropyl alcohol and water to clean the mounting surfaces.

2. Remove the paper backing from the hook pad and affix it to the back of the control unit.

3. Remove the paper backing from the loop pad and affix it to the mounting surface.

4. Place the control unit in position by mating the hook and loop surfaces.

### B. Snap Mounting (see figure 1).

1. Locate a suitable mounting location for the control unit.

## NOTE

Before marking the drill position marks, ensure that the mounting plate's orientation will allow the control to snap on the mounting plate in the desired position.

2. Using the control mounting plate as a template, scribe four drill position marks on the mounting surface.

## CAUTION

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

Also, when drilling any holes, ensure that holes are drilled only through sheet metal and not through upholstery.

3. Drill four 7/64" holes at the previously scribed drill position marks.

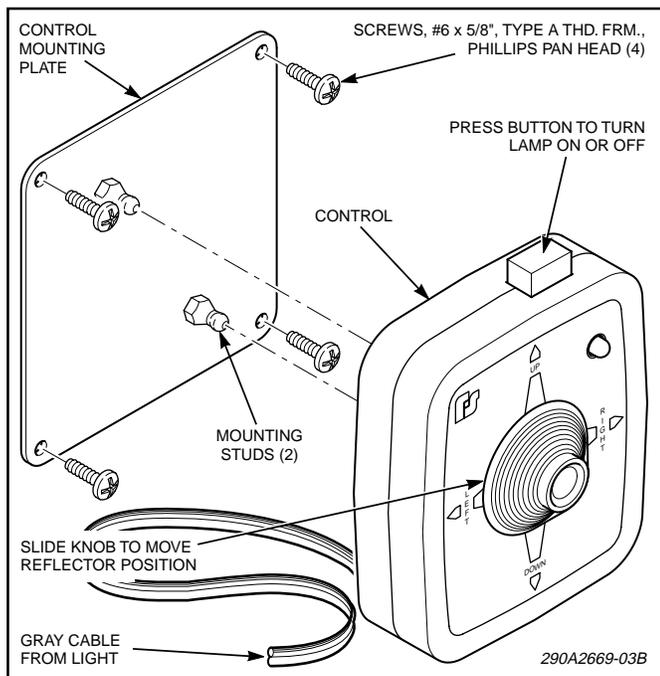


Figure 1.

4. Secure the mounting plate to the mounting surface using the #6 thread-forming phillips screws.

5. To attach the control unit to the mounting plate, align the mounting studs with the stud retainers and press the control unit until it snaps in position.

## IV. LIGHT INSTALLATION.

### A. Surface Mount Models.

To install the light, proceed as follows:

1. Push and hold the dome release button (located in the plastic base). Turn the dome counterclockwise and lift the dome off the base (see figure 2).

2. Position the vehicle on a level surface. Select a relatively flat mounting position which provides sufficient rigidity to support the light and prevent vibrations caused by the light when the vehicle is in motion.

## CAUTION

Turning reflector by hand may damage motor or worm gear. To rotate the reflector, connect to an appropriate power source.

3. Position the light with the dome release button toward the rear at the selected mounting location.

4. Use the base of the light as a template and scribe three mounting hole drill position marks on the mounting surface. Also, scribe one wire routing hole drill position mark at the center.

## CAUTION

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

Also, when drilling any holes, ensure that holes are drilled only through sheet metal and not through upholstery.

5. Drill one 5/8" (0.625) hole (wire routing hole) at the previously scribed center drill position mark. Drill three 9/64" (0.140) holes (mounting holes) at the previously scribed outer drill position marks.

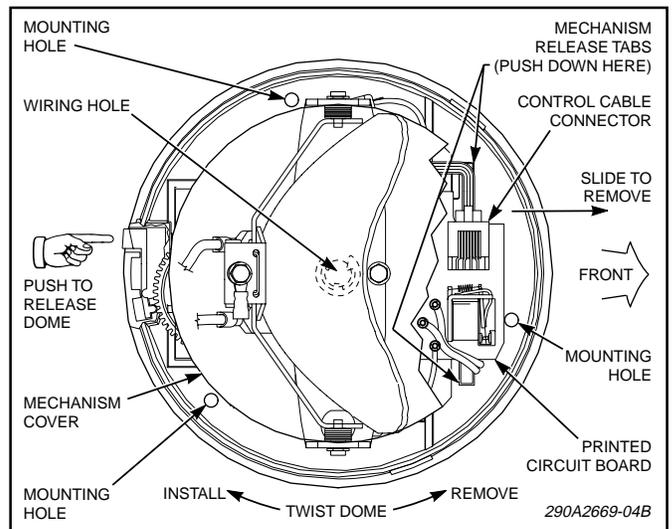


Figure 2.

6. To protect the wires from shorts, smooth the edges of the 5/8" wire routing hole. If desired, a user-supplied grommet can be installed in the 5/8" wire routing hole.

7. Align the holes in the mounting gasket with the appropriate holes in the base and apply the mounting gasket to the base of the light. Route the light's wires through the gasket's wire routing hole and through the mounting surface.

8. Apply a silicone sealing compound around the wires and grommet (if installed) where they pass through the mounting surface to prevent leakage.

9. See figure 3. Secure the base to the mounting surface with the three #10 thread-forming screws and flat washers.

10. Replace the dome.

11. Route the light's gray eight-conductor cable to the control unit. Insert the gray cable's connector into the receptacle on the bottom of the control unit.

12. Connect the light's black wire to a known good vehicle ground.

13. Connect the light's red wire to one side of a user-supplied fuseholder. Connect the other side of the fuseholder to the positive (+) terminal of the vehicle's battery. Install a six (6) ampere fuse in the fuseholder.

#### B. Pipe Mount Models.

1. Route the light's wires through the pipe that will be used for mounting the light.

2. Screw the flange mount light onto the pipe. Position the light with the dome release button toward the rear.

3. Route the light's gray eight-conductor cable to the control unit. Insert the gray cable's connector into the receptacle on the bottom of the control unit.

4. Connect the light's black wire to a known good vehicle ground.

5. Connect the light's red wire to one side of a user-supplied fuseholder. Connect the other side of the fuseholder to the positive (+) terminal of the vehicle's battery. Install a six (6) ampere fuse in the fuseholder.

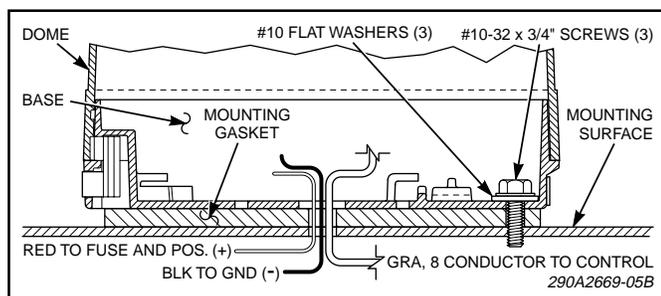


Figure 3.

#### C. Magnetic Mount Models.

Magnetic mounting provides a secure, temporary mounting method for most installations. However, it is not intended for use on the exterior of a moving vehicle.

#### WARNING

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 or damage. Repair of damage incurred because of ignoring this warning shall be the sole responsibility of the user.

Holding power of magnetic mounting systems is dependent upon surface finish, surface 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.
- Magnet mounting system should not be used on vehicles with vinyl tops.
- 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.

1. Place the light assembly on a level steel surface. Ensure that the light is placed to promote maximum coverage and range of the light's warning signal.

2. Insert the plug on the end of the power cord into the cigar lighter socket.

#### NOTE

When using the vehicle's cigar lighter socket as the light's power source, Federal recommends replacing the original lighter circuit fuse with an eight-ampere fuse. After the original fuse has been replaced, devices requiring more than eight amperes will cause failure of the lighter circuit fuse and therefore should not be plugged into the cigar lighter socket.

If direct connection to the power source (not utilizing the cigar lighter plug) is desired, a user-supplied in-line fuseholder and eight-ampere fuse must be installed in the power cord's ribbed (positive) lead.

3. Route the light's gray eight-conductor cable to the control unit. Insert the gray cable's connector into the receptacle on the bottom of the control unit.

## V. OPERATION.

A. See figure 1. To move the spotlight reflector, slide the round gray knob (located on the control's face) in the desired direction. It is not necessary to illuminate the lamp to move the reflector.

B. See figure 1. To illuminate or extinguish the lamp, press and release the gray button on the top of the control. The lamp indicator will illuminate when the spotlight's lamp is illuminated.

## VI. MAINTENANCE.

A. *General.*

### WARNING

Crazing (cracking) of domes will cause reduced effectiveness of the light. Do not use cleaning agents (which will cause crazing) such as strong detergents, solvents, or petroleum products. If crazing of dome does occur, reliability of light for emergency signalling purposes may be reduced until dome is replaced.

1. The dome can be cleaned using a non-abrasive, high quality, automotive paste wax and a soft cloth.

2. On magnetic mount lights, periodically inspect the magnet for dirt and metal shavings. Clean the magnet as necessary. Keep the area around the magnetic mount light free of dirt and metal shavings.

3. Apply a film of light grease to the gears when necessary.

B. *Lamp Replacement (see figure 4).*

### WARNING

A serious injury may result if lamp is touched when hot. Always allow lamp to cool before removing. Halogen lamps are pressurized and if broken can result in flying glass. Always wear gloves and eye protection when handling the lamps.

## CAUTION

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

1. Move the reflector until the back of the lamp is easily accessible.
2. Disconnect the lamp connector.
3. Release the lamp spring clip by pressing inward and to the side on the lamp spring clip ends.
4. Remove the lamp by pulling it away from the reflector and past the vertical motion cable and spring clip.
5. Replace the lamp by performing the above steps in reverse order.

C. *Mechanism Removal for Servicing (see figure 2).*

1. Disconnect power to the light.
2. Push and hold the dome release button (located in the plastic base). Turn the dome counterclockwise and lift the dome off the base.
3. Disconnect the positive and negative wires which exit the light. Disconnect the control cable from the printed circuit board connector.
4. Push down and hold both mechanism release tabs, and slide the mechanism over the release tabs. Lift the mechanism out of the base.
5. Replace the mechanism after servicing by performing the above steps in reverse order.

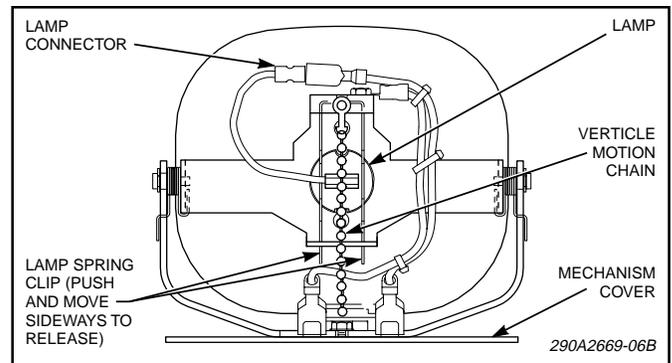


Figure 4.