Installation Instructions for the 210960 Mounting Bar

438679B REV. B 811

Safety Message to Installers and Service Personnel of Warning Light Equipment

⚠ WARNING

People's lives depend on your proper installation and servicing of Federal Signal products. It is important to read and follow all instructions shipped with this product and the original product. In addition, listed below are some other important safety instructions and precautions you should follow:

- To properly install the lighting system, you must have a good understanding of automotive systems, along with proficiency in the installation and use of safety warning equipment.
- Do not install equipment or route wiring in the deployment path of an airbag.
- If a vehicle seat is temporarily removed, verify with the vehicle manufacturer if the seat needs to be recalibrated for proper airbag deployment.
- Do not stare into the lights at close range or permanent damage to your eyesight may occur,
- You should frequently inspect the light system to ensure that it is operating properly and that it is securely attached to the vehicle.
- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged.
- Refer to the instructions packed with related products for additional precautions and information.
- 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.

Overview

The 210960 mounting bar is a sturdy, lightweight, black anodized, aluminum mounting bar. Its design permits easy mounting for several different styles of light assemblies. To accommodate a wide variety of vehicles, it is available in a 46-inch length, a 54-inch length, and a 65-inch length. The mounting bar is designed for use ONLY with a separately purchased FS/TT mounting foot and hook kit.

Unpacking the Kit

After unpacking the kit, inspect it for damage that may have occurred in transit. If it has been damaged, do not attempt to install or operate it. 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 Table 1 on page 2 are included in the package.

Table 1 Kit contents

Qty.	Description	Part No.
1AR	Extrusion, Mounting Bar	438641 (46") 438641-02 (54") 438641-04 (65")
4	Screw, #6 Pan Hd. Phillips	438680
4	Bolt, Carriage, 1/4"-20 x 3/4"	7004A020-12
4	Nut, Hex, 1/4"-20	7059A020
4	Nut, Speed, U-Type	7060A015
4	Washer, Flat, 1/4"	7072A024
4	Washer, Split, 1/4"	7074A016
2	End Cap, Plastic	8542C175

Installing the Light Assembly on the Mounting Bar

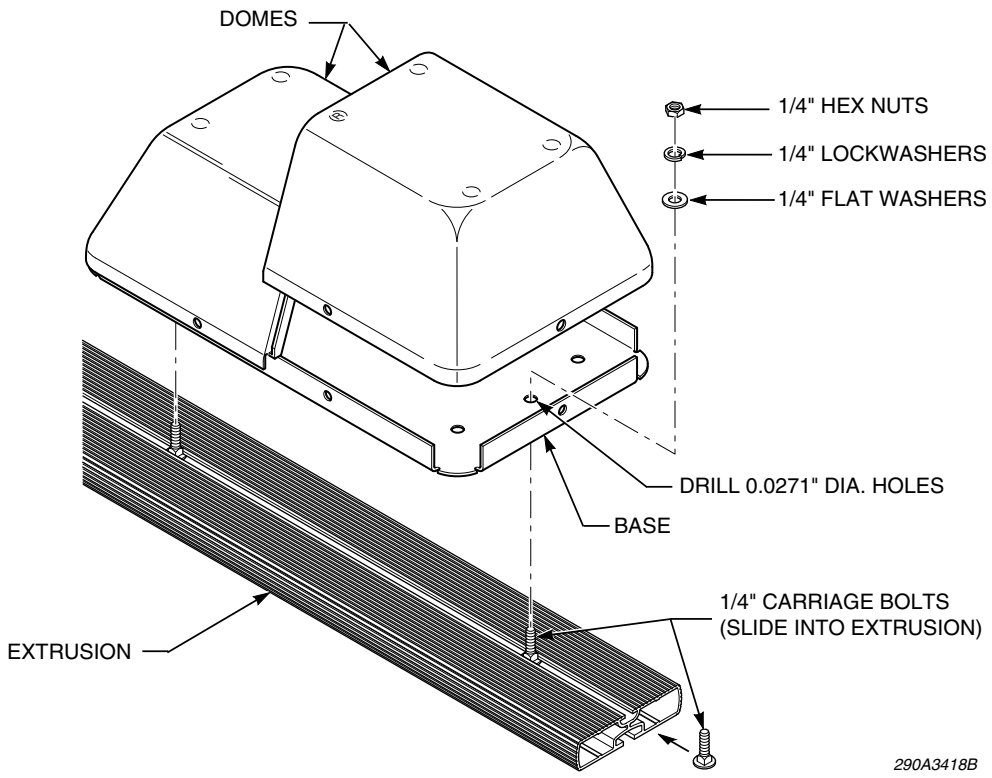
⚠ CAUTION ***HEAVY OBJECT—Use lifting aids and proper lifting techniques when removing or replacing the lightbar. Failure to follow this caution may cause personal injury.***

NOTICE ***DRILLING PRECAUTIONS—Before drilling holes, check the area into which you plan to drill to ensure you do not damage vehicle components. All drilled holes should be de-burred and all sharp edges should be smoothed. All wires going through drilled holes should be protected by a grommet or convolute/split-loom tubing.***

To install the light assembly on the mounting bar:

1. Determine the mounting location of the light assembly on the mounting bar.
2. Carefully remove the dome(s) from the light assembly.
3. Slide the 1/4"-20 x 3/4" carriage bolts (four supplied) in the smaller of the two channels on the top side of the mounting bar.
4. Before drilling holes, determine the routing of the cable/wires. Drill 0.0271" mounting holes, as required, in the bottom of the light assembly.
5. See Figure 1 on page 3. Secure the light assembly to the mounting bar using 1/4" carriage bolts, flat washers, lockwashers, and hex nuts.
6. Route the cable/wires through the center channel of the extrusion or drill a wire-routing hole through the extrusion near where the cable will enter the vehicle.
7. Replace the dome(s) on the light assembly.

Figure 1 Light assembly secured to mounting bar



Installing the Mounting Foot

The mounting bar can be hook mounted with the 500400 Universal Hook Kit or permanently mounted with the 500410 Universal Permanent Mount Kit. Both options require a separately purchased mounting kit that includes a mounting foot with mounting hardware.

Installing the 500400 Universal Hook Kit

To install the hook kit and mounting foot:

1. Carefully turn the light/mounting-bar assembly upside down on soft rags to avoid marring the dome(s).
2. Insert the two rubber mounting pads into each plastic mounting foot as shown in Figure 2 on page 4. To allow easy insertion of the rubber pads, wet the center nipple of the rubber mounting pad.
3. Assemble a hook bracket and a spacer to each mounting foot using the, 3/8" flat washers, 3/8" lockwashers, and 3/8"-16 hex nuts as shown in Figure 2. (The hook bracket should be placed between the spacer and mounting foot.) Do not tighten the hex nuts at this time.
4. Slide the two carriage bolts of a mounting foot assembly into the slot in the extrusion as shown in Figure 2. Repeat this step on the other side of the light assembly.
5. Place the light/mounting-bar assembly on the vehicle roof at the desired location. Usually the unit should be installed approximately over the driver's head. Before proceeding, refer to the instructions provided with the separately purchased mounting hook kit.

6. See Figure 3 on page 5. Adjust both mounting foot assemblies in or out until the rubber mounting pads rest near the edge of the roof or gutter where the roof is the most rigid.

Figure 2 Exploded view of lightbar secured to vehicle (500400 mounting foot)

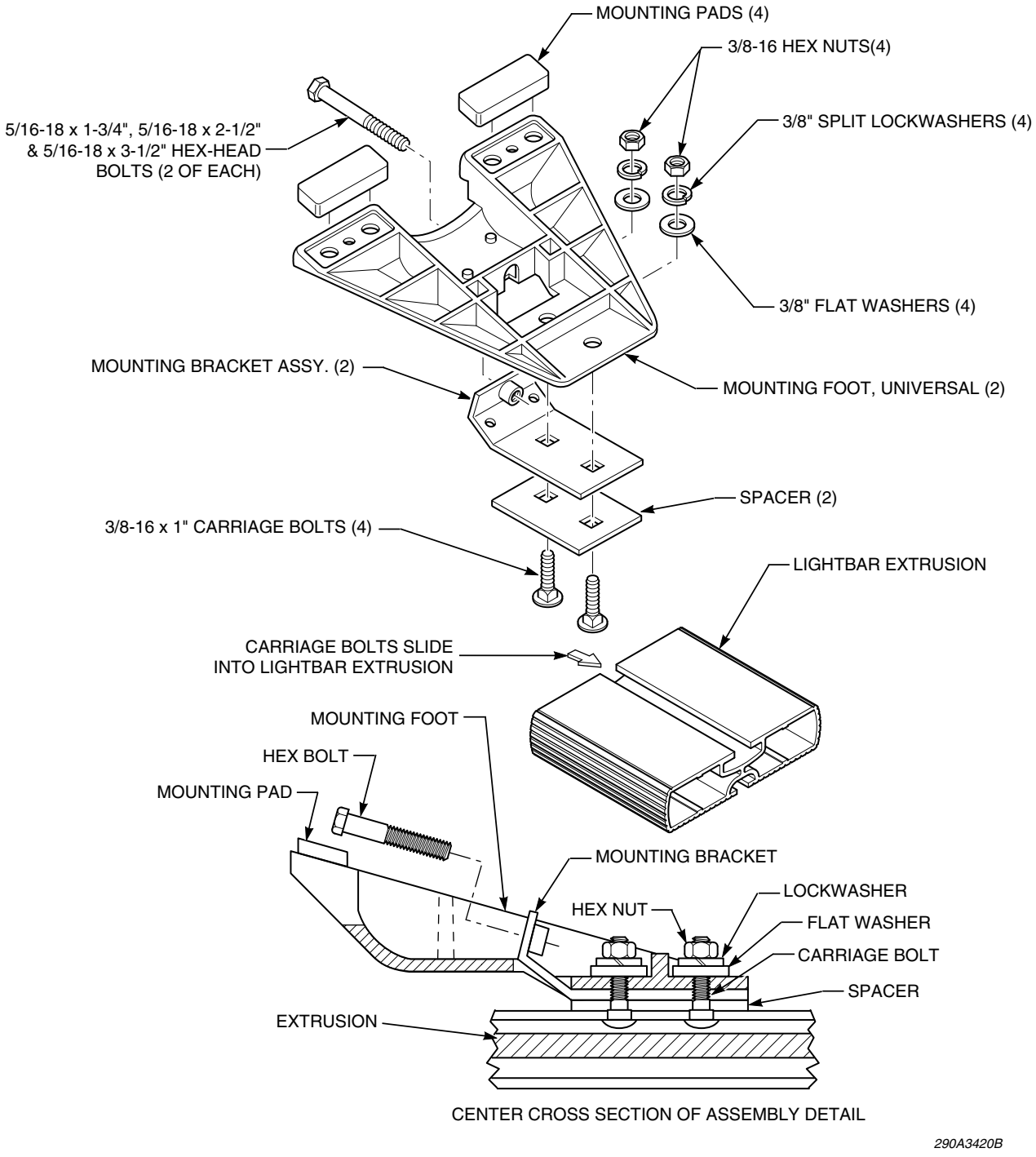
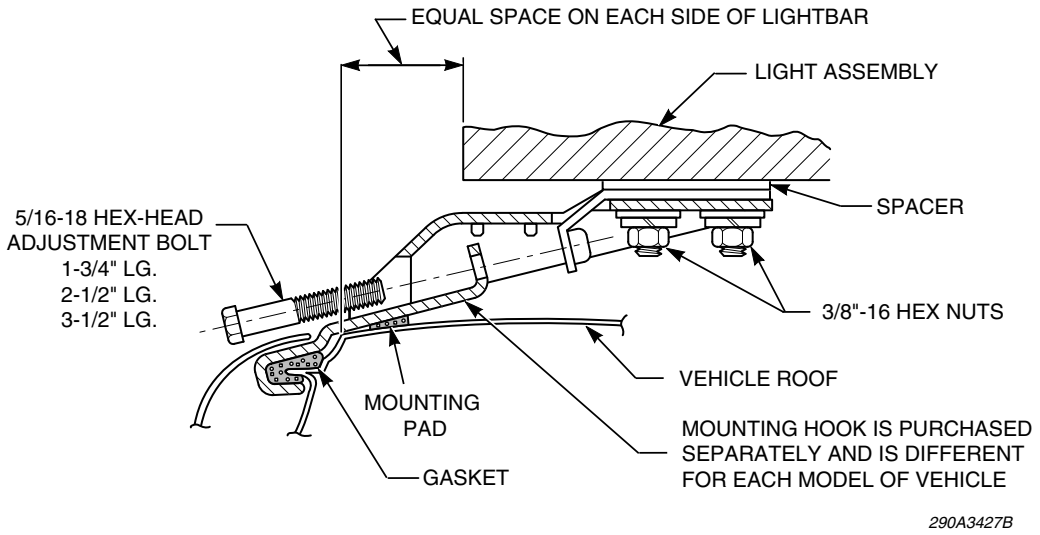


Figure 3 Light assembly hooked on and centered on vehicle roof



7. Center the unit so that the end of the light/mounting-bar assembly and edge of the roof are equally spaced on each side of the vehicle. Tighten the previously installed 3/8"-16 hex nuts (two on each mounting foot).

8. Insert the separately-purchased mounting hook into the opening in the center of the mounting bracket. Install and finger-tighten the 1-3/4" or 2-1/2" stainless steel adjusting bolt. Ensure that the hook does not interfere with the door or glass. Repeat this step on the other side of the light/mounting-bar assembly.

NOTE: 1-3/4" or 2-1/2" long bolts (2 each) are supplied. Use the length that best fits your vehicle.

NOTICE

DO NOT OVERTIGHTEN HOOK ADJUSTMENT BOLTS—Excessive tightening of the hook adjustment bolts can cause damage to the lightbar, mounting system, or vehicle roof.

9. Tighten each hook adjustment bolt to a maximum torque of 15 ft-lb to 18 ft-lb. Check to ensure that the light/mounting-bar assembly does not slide front-to-back when it pulls on the mounting feet.

10. Frequently inspect the light/mounting-bar assembly to ensure that all fasteners and brackets are tight.

Installing the 500410 Universal Permanent Mount Kit

To install the permanent mount kit and mounting foot:

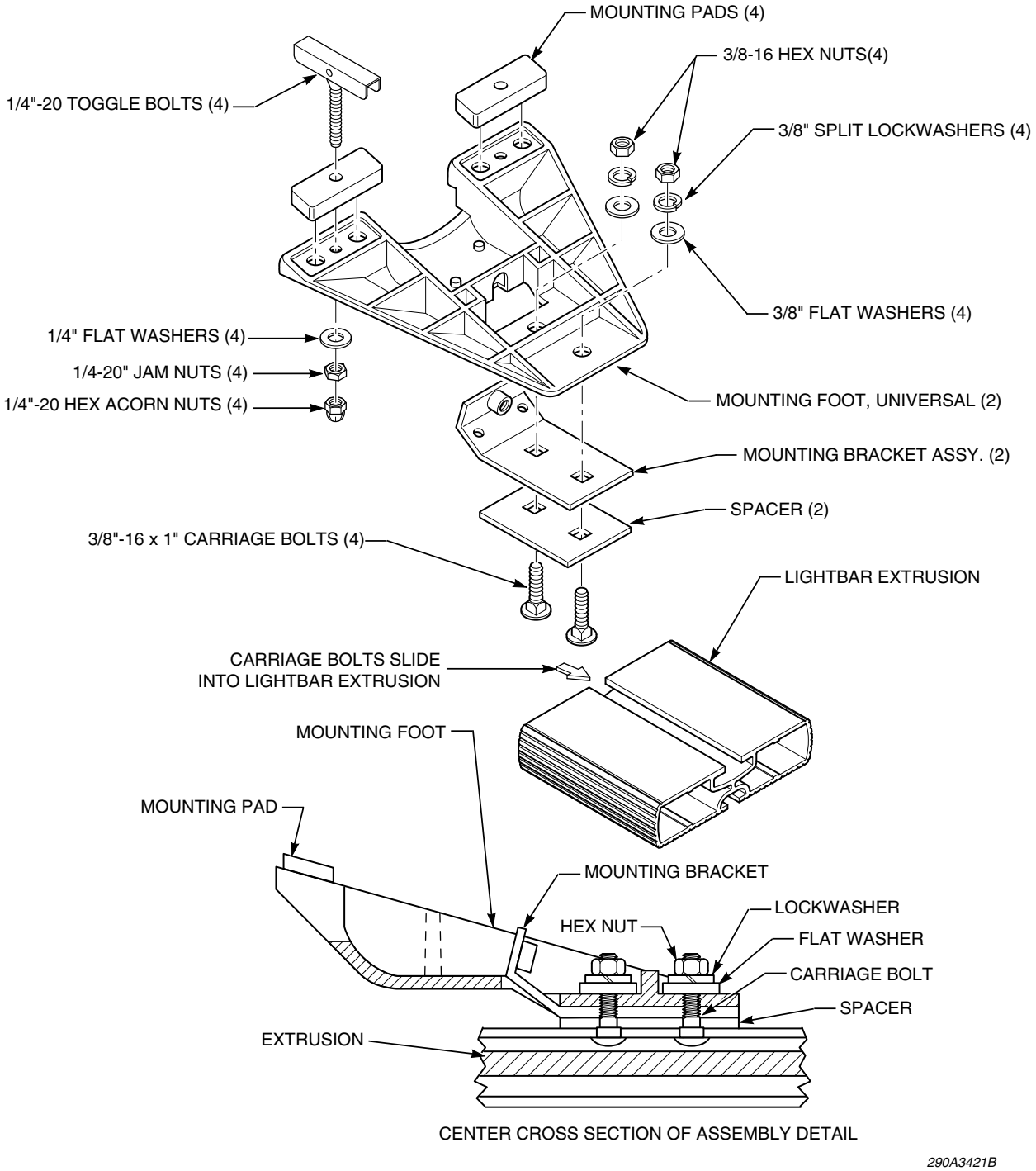
1. Carefully turn the light/mounting-bar assembly upside down on soft rags to avoid marring the domes.

2. Assemble a hook bracket and a spacer to each mounting foot using the, 3/8" flat washers, 3/8" lockwashers, and 3/8"-16 hex nuts as shown in Figure 4 on page 6. (The hook bracket should be placed between the spacer and mounting foot.) Do not tighten the hex nuts at this time.

3. Slide the two carriage bolts of a mounting foot assembly into the slot in the extrusion as shown in Figure 4. Repeat this step on the other side of the light/mounting-bar assembly.

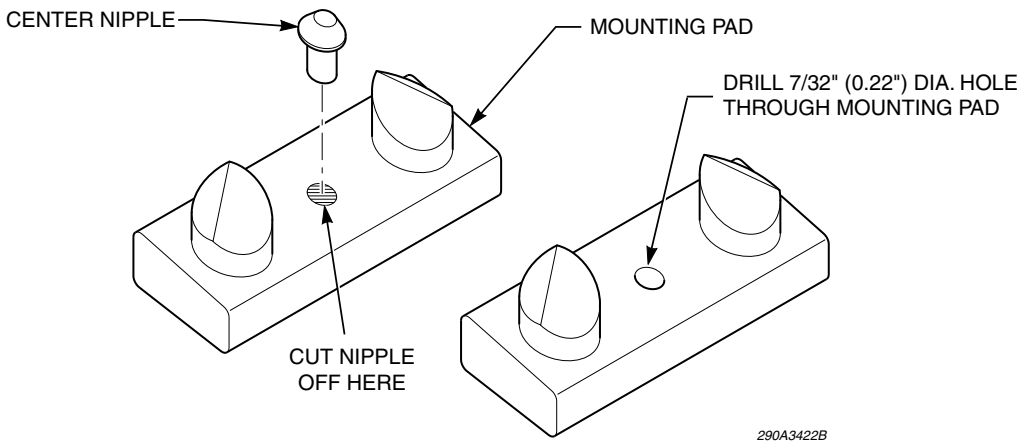
4. Cut off the center nipple on all four mounting pads (Figure 5 on page 7).

Figure 4 Exploded view of lightbar secured to vehicle (500410 mounting foot)



5. See Figure 5. Drill a 7/32" (0.22") hole in all four pads where you cut off the nipple.

Figure 5 Mounting pad alterations

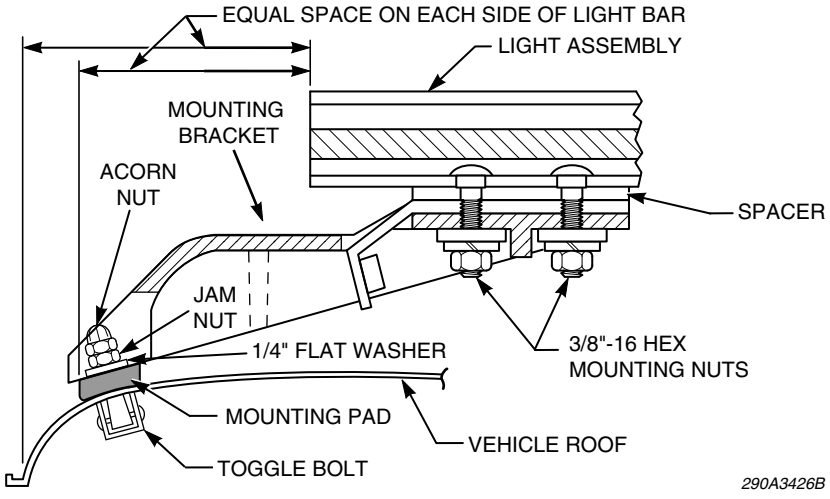


6. Place the mounting pad into the mounting feet as shown in Figure 4 on page 6.

7. Place the light/mounting-bar assembly on the vehicle roof at the selected location. Usually the assembly should be installed approximately over the driver's head.

8. See Figure 6. Adjust both mounting foot assemblies in or out until the rubber mounting pads rest near the edge of the roof or gutter where the roof is the most rigid.

Figure 6 Mounting foot adjustments



9. Center the unit so that the end of the light/mounting-bar assembly and edge of the roof are equally spaced on each side of the vehicle. Tighten the previously installed 3/8-16 hex nuts (two on each mounting foot).

10. Using the mounting brackets as a template, scribe two drill-position marks on each side of the light/mounting-bar assembly.

11. Before drilling, move the unit out of the way. Drill four 1/2-inch diameter holes at the scribed drill-position marks.

12. Insert a toggle bolt in each of the four holes drilled in step 11. Slide a rubber mounting pad over each bolt as it is installed as shown in Figure 4 on page 6. Use caution to avoid dropping the bolts through the holes before the rubber mounting pads are installed.

13. See Figure 6 on page 7. Place the mounting brackets down over the ends of the toggle bolts and secure with the nuts and screw-on the cap nuts. The unit should now be solidly anchored to the roof.

14. Frequently inspect the light assembly to ensure that all fasteners and brackets are tight.

Installing the End Caps

To install the end caps on the ends of the extrusion:

1. Install two U-type speed nuts on each end cap as shown in Figure 7.

2. Insert an end cap in the end of the mounting bar.

3. Secure the end cap in position using two #6 pan-head Phillips screws.

4. Repeat steps 1 through 3 on the other side of the mounting bar.

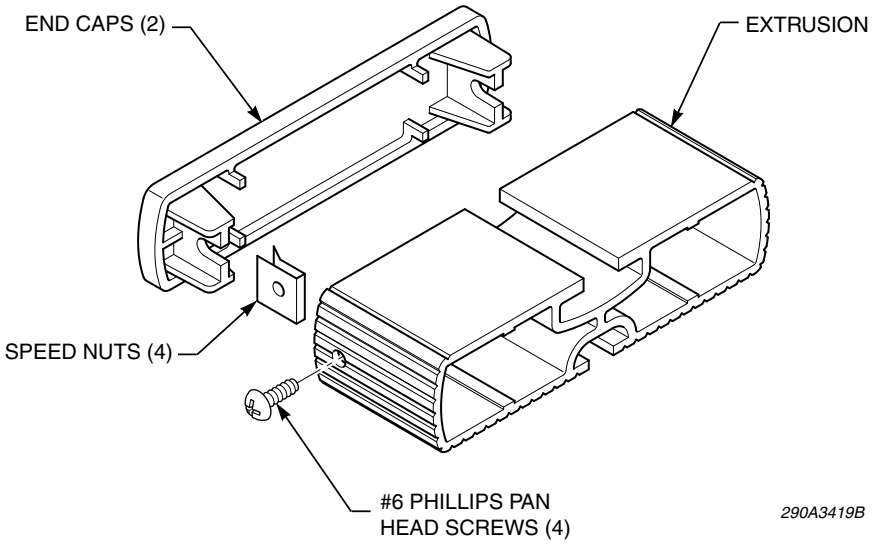



Figure 7 End cap installed on extrusion