

2562553B REV. B 312

## **Safety Message to Installers of Siren Speakers**

### **⚠ 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. Listed below are some other important safety instructions and precautions you should follow:

### **Before Installation**

#### **Qualifications**

- To properly install an electronic siren, you must have a good understanding of automotive electrical procedures and systems, along with proficiency in the installation and service of safety warning equipment. Always refer to the vehicle's service manuals when installing equipment on a vehicle.

#### **Sound Hazards**

- Your hearing and the hearing of others, in or near your emergency vehicle, could be damaged by loud sounds. This can occur from short exposures to very loud sounds, or from longer exposures to moderately loud sounds. For hearing conservation guidance, refer to federal, state, or local recommendations. OSHA Standard 1910.95 offers guidance on "Permissible Noise Exposure."
- All effective sirens and horns produce loud sounds (120 dB) that may cause permanent hearing loss. Always minimize your exposure to the sound of the siren or horn and wear hearing protection. Do not sound the siren or horn indoors or in enclosed areas where you and others will be exposed to the sound.
- Federal Signal siren amplifiers and speakers are designed to work together as a system. Combining a siren and speaker from different manufacturers may reduce the warning effectiveness of the siren system and may damage the components. You should verify or test your combination to make sure the system works together properly and meets federal, state and local standards or guidelines.

### **During Installation**

- DO NOT get metal shavings inside the product. Metal shavings can cause the system to fail. If drilling must be done near the unit, place an ESD-approved cover over the unit to prevent metal shavings from entering the unit. Inspect the unit after mounting to be sure there are no shavings present in or near the unit.
- To avoid a battery explosion, always disconnect the negative battery cable first and reconnect it last. Avoid causing a spark when connecting near or to the battery. The gases produced by a battery can cause a battery explosion that could result in vehicle damage and serious injury.
- DO NOT connect this system to the vehicle battery until ALL other electrical connections are made, mounting of all components is complete, and you have verified that no shorts exist. If wiring is shorted to vehicle frame, high current conductors can cause hazardous sparks resulting in electrical fires or flying molten metal.
- Be sure the siren amplifier and speaker(s) in your installation have compatible wattage ratings.
- In order for the electronic siren to function properly, the ground connection must be made to the NEGATIVE battery terminal.

## ***Mounting Instructions for the Rumbler® Speaker***

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- Sound output will be severely reduced if any objects are in front of the speaker. If maximum sound output is required for your application, you should ensure that the front of the speaker is clear of any obstructions.
- Install the speaker(s) as far forward on the vehicle as possible, in a location that provides maximum signaling effectiveness while minimizing the sound reaching the vehicle's occupants. Refer to the National Institute of Justice guide 500-00 for further information.
- Mounting the speakers behind the grille will reduce the sound output and warning effectiveness of the siren system. Before mounting speakers behind the grille, make sure the vehicle operators are trained and understand that this type of installation is less effective for warning others.
- Sound propagation and warning effectiveness will be severely reduced if the speaker is not facing forward. Carefully follow the installation instructions and always install the speaker with the projector facing forward.
- DO NOT install the speaker(s) or route the speaker wires where they may interfere with the operation of airbag sensors.
- If a vehicle seat is temporarily removed, verify with the vehicle manufacturer if the seat needs to be recalibrated for proper airbag deployment.
- Installation of two speakers requires that you wire the speakers in parallel and in phase.
- Never attempt to install aftermarket equipment, which connects to the vehicle wiring, without reviewing a vehicle wiring diagram, which is available from the vehicle manufacturer. Insure that your installation will not affect vehicle operation and safety functions or circuits. Always check vehicle for proper operation after installation.
- DO NOT install equipment or route wiring or cord in the deployment path of an airbag.
- Locate the control head so the vehicle, controls, and microphone can be operated safely.
- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged.

### **After Installation**

- After installation, test the siren system and light system to ensure that it is operating properly.
- Test all vehicle functions, including horn operation, vehicle safety functions and vehicle light systems, to ensure proper operation. Ensure that installation has not affected vehicle operation or changed any vehicle safety function or circuit.
- After testing is complete, provide a copy of these instructions to the instructional staff and all operating personnel.
- File these instructions in a safe place and refer to them when maintaining or reinstalling the product.

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

## Product Overview

The Model RB-IMP08 is a mounting kit for use with the Federal Signal Rumbler® low-frequency signaling system. This kit mounts one speaker in the front driver-side wheel well and one speaker near the rear bumper of a 2008 and newer Chevrolet® Impala.

### **⚠ WARNING**

**USE ONLY WITH RUMBLER AMPLIFIER**—This speaker is designed to only be used with the Rumbler Amplifier. Do not connect this speaker directly to a standard electronic siren. Connecting this speaker directly to a standard electronic siren will greatly reduce the effectiveness of the siren signal. When installing this speaker, always refer to the Rumbler low frequency amplifier installation and operating instructions (part no. 2562420) for more detailed information about the siren system and how to install, service and operate the system safely. Instruction manuals are available for viewing or download at [www.fedsig.com](http://www.fedsig.com).

## Unpacking the Kit

After unpacking the product, 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 are included in the package. If you are missing any parts, contact Customer Support at 1-800-264-3578, 7 a.m. to 5 p.m., Monday through Friday (CT).

**Table 1** Kit contents

Qty.	Description	Part Number	Qty.	Description	Part Number
1	Bracket, Outside, Front	82831098	2	Bolt, 5/16"-18 x 1.50"	7002A005-24
1	Bracket, Inside, Front	82831100	2	Bolt, 5/16"-18 x 2.00"	7002A005-32
1	Bracket, Small, Rear	82831101	4	Nut, Hex, 5/16"	7057A027
1	Bracket, Large, Rear	82831102	8	Lockwasher, Split, 5/16"	7074A020
1	Block, Rear	82831103	2	Flat Washer 5/16"	7072A031
4	Bolt, 5/16"-18 x 1.25"	7002A005-20			

## Mounting the Speaker in the Front of the Vehicle

### **⚠ WARNING**

**INSTALLATION PRECAUTION**—Do not install the speaker near the fuel tank or fuel lines. Installing the speaker too close to fuel line/tank areas may cause fuel leakage or fire during a vehicle collision, causing personal injury or death.

To mount the front speaker:

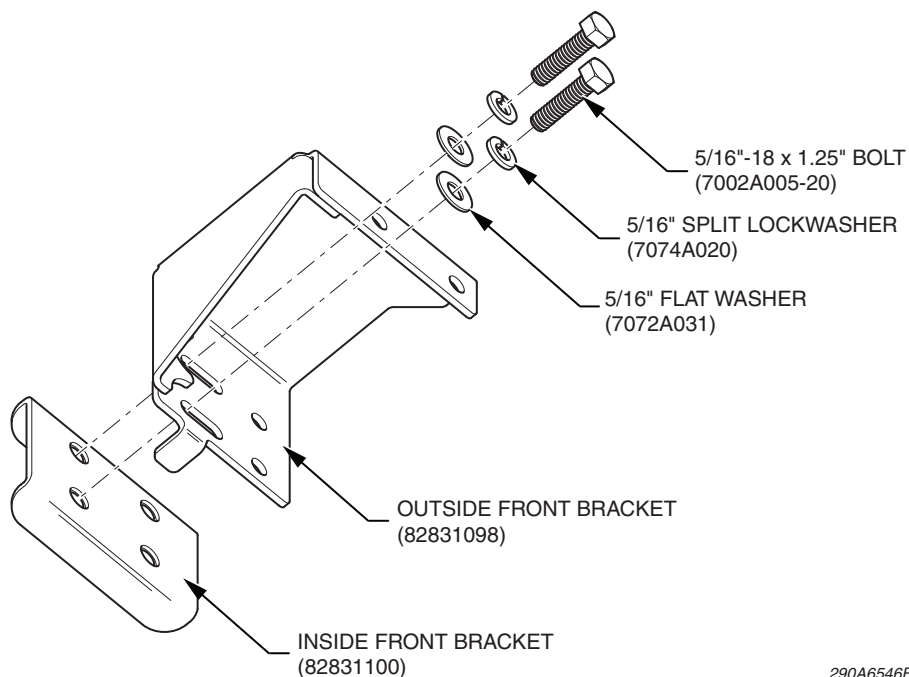
1. Remove the gravel shield from the vehicle and set it aside.
2. See Figure 1 on page 4. Locate the frame member on the driver side of the vehicle under the headlight.

**Figure 1** Area used for mounting the speaker (bumper removed for clarity)



3. See Figure 2. Loosely assemble the inside and outside front brackets using the 5/16" hardware.

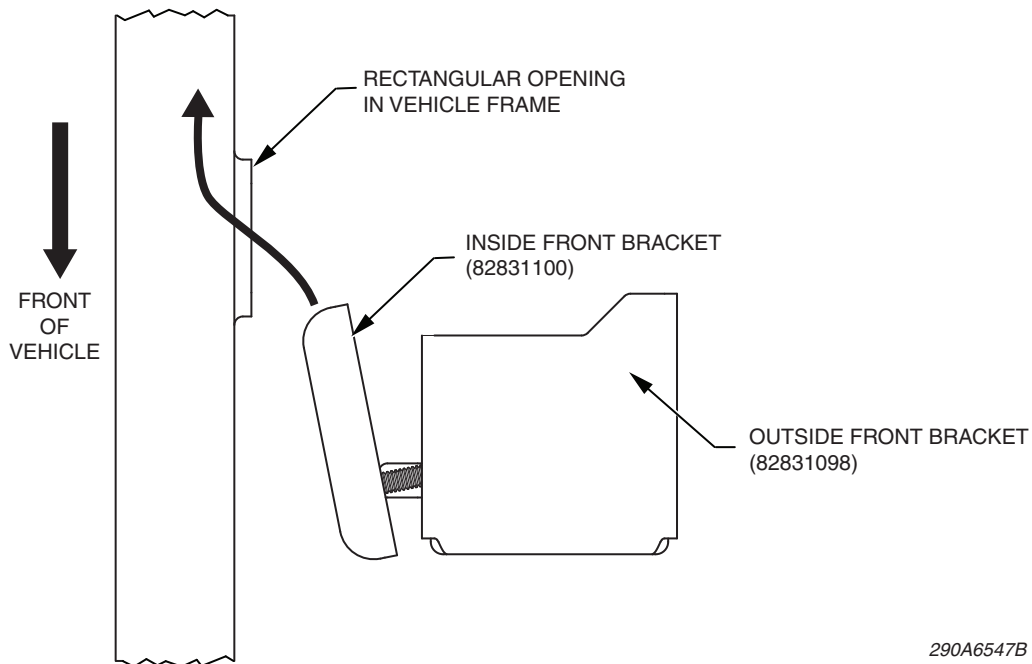
**Figure 2** Inside and outside front bracket assembly



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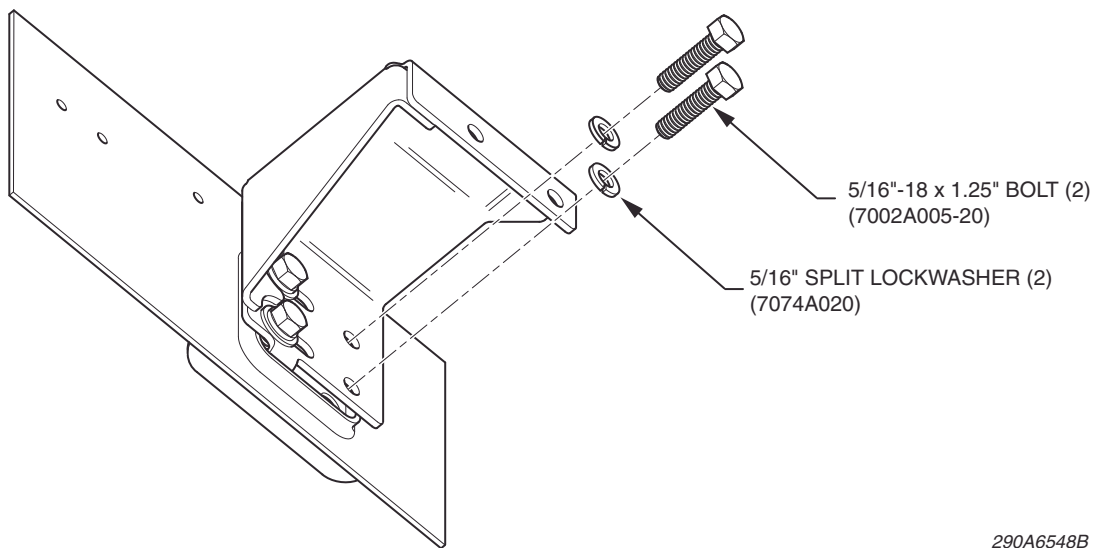
4. See Figure 3 on page 5. Slide the front bracket assembly rearward into the large rectangular opening in the vehicle frame.
5. Slide the bracket assembly forward to allow the bracket assembly to clamp onto the frame.

**Figure 3** Path of inside front bracket in frame opening



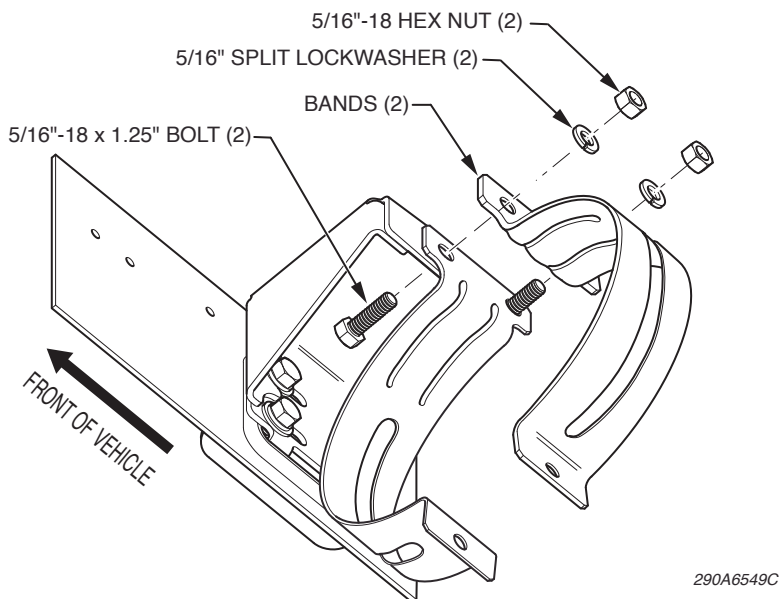
6. See Figure 4. Insert the remaining 5/16" hardware and tighten all hardware.

**Figure 4** Final assembly of front brackets into vehicle frame



7. See Figure 5. Use the hardware supplied with the speaker to attach the bands.

**Figure 5** Bands secured to outside front bracket

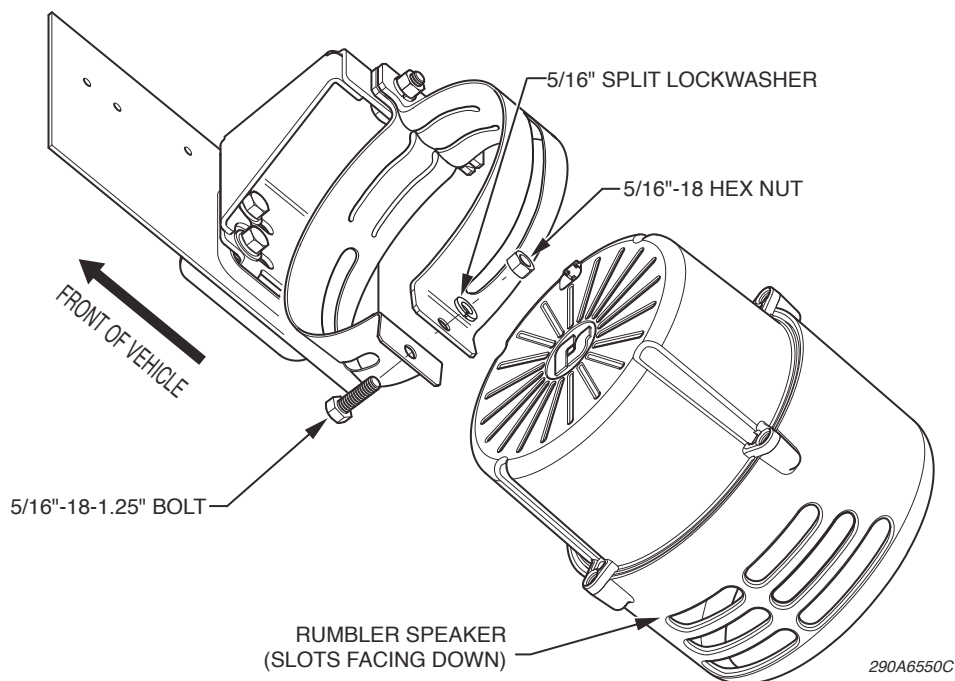


**⚠ WARNING**

**MOUNTING PRECAUTION**—To avoid reduction of sound output and damage to the speaker, ensure that the speaker is mounted with the slots facing the ground.

8. See Figure 6. Slide the speaker into the bands and tighten the bands with the 5/16" hardware supplied with the speaker.
9. After connecting and testing the speaker as described on page 9, reinstall the gravel shield.

**Figure 6** Insertion of Rumbler speaker into bands



## Mounting the Speaker in the Rear of the Vehicle

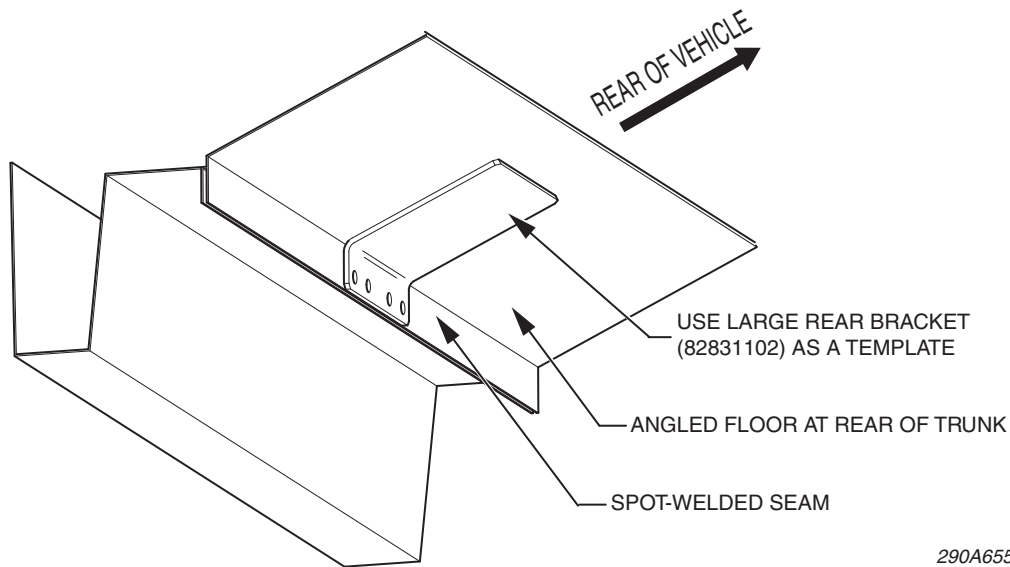
### **⚠ WARNING**

**INSTALLATION PRECAUTION—Do not install the speaker near the fuel tank or fuel lines. Installing the speaker too close to fuel line/tank areas may cause fuel leakage or fire during a vehicle collision, causing personal injury or death.**

To mount the rear speaker:

1. See Figure 7. Place the large rear bracket against the angled floor at the rear of the trunk with the bolt holes in the bracket flat against the spot-welded seam.

**Figure 7** Large rear bracket in position as template for bolt holes



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2. Use the bracket as a template to mark the locations of the four bolt holes.

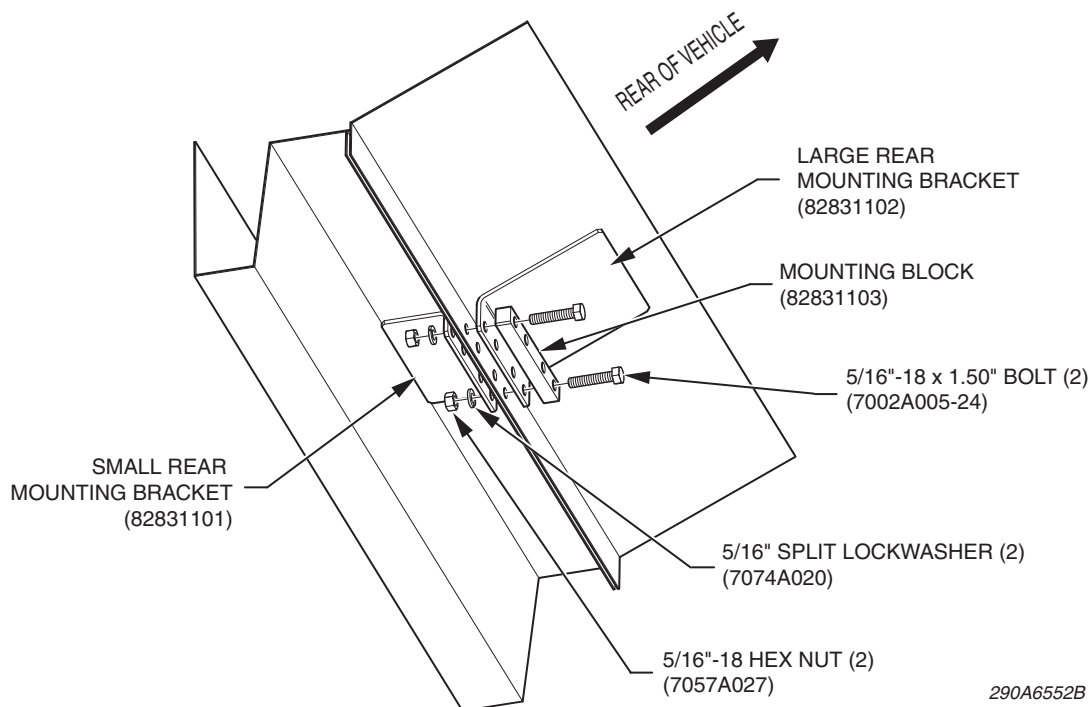
### **⚠ WARNING**

**DRILLING PRECAUTIONS—When drilling holes, check the area you are drilling into to be sure you do not damage vehicle components while drilling. All drilled holes should be de-burred and all sharp edges should be smoothed. All wire routings going through drilled holes should be protected by a grommet or convolute/split loom tubing.**

3. Use a “Q” (0.332”) drill bit to drill four holes through the seam.
4. See Figure 8 on page 8. Slide the 5/16-18 x 1.5” bolts through the outer holes of the mounting block, then through the outer holes of the large rear bracket, the seam, and then the outer holes of the small rear bracket. Secure the brackets and mounting block with the 5/16” lock washers and hex nuts.

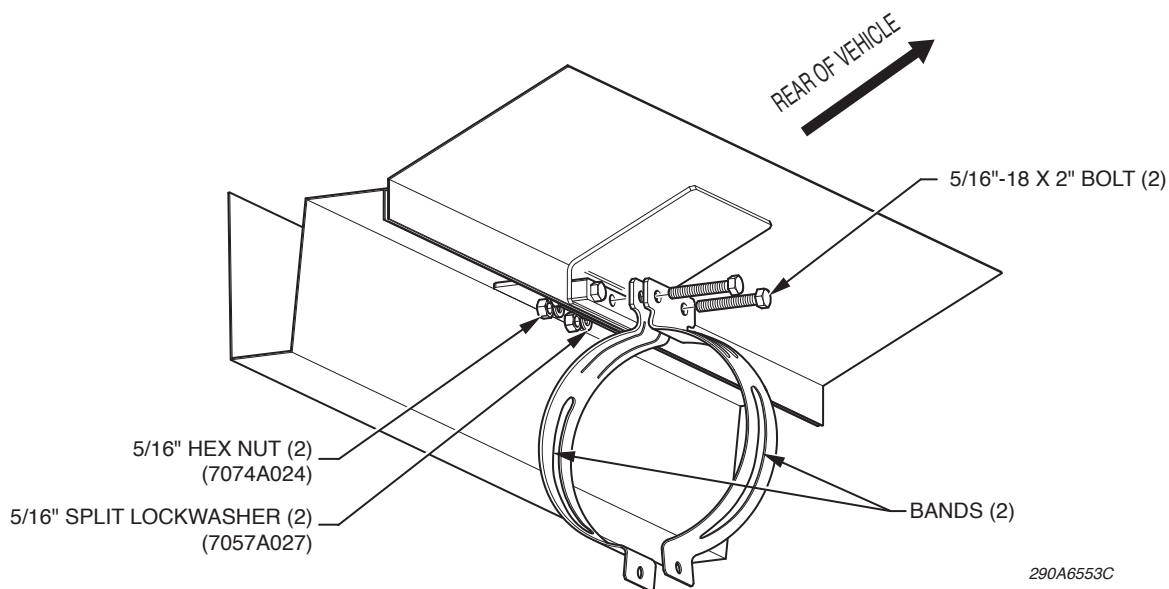


**Figure 8** Mounting block secured to large rear bracket on welded seam



5. See Figure 9. Slide the 5/16-18 x 2" bolts through the bands, then the center holes of the mounting block, the large bracket and seam, and finally the small bracket. Secure the entire assembly in place with the 5/16" lock washers and hex nuts.

**Figure 9** Bands secured to mounting block



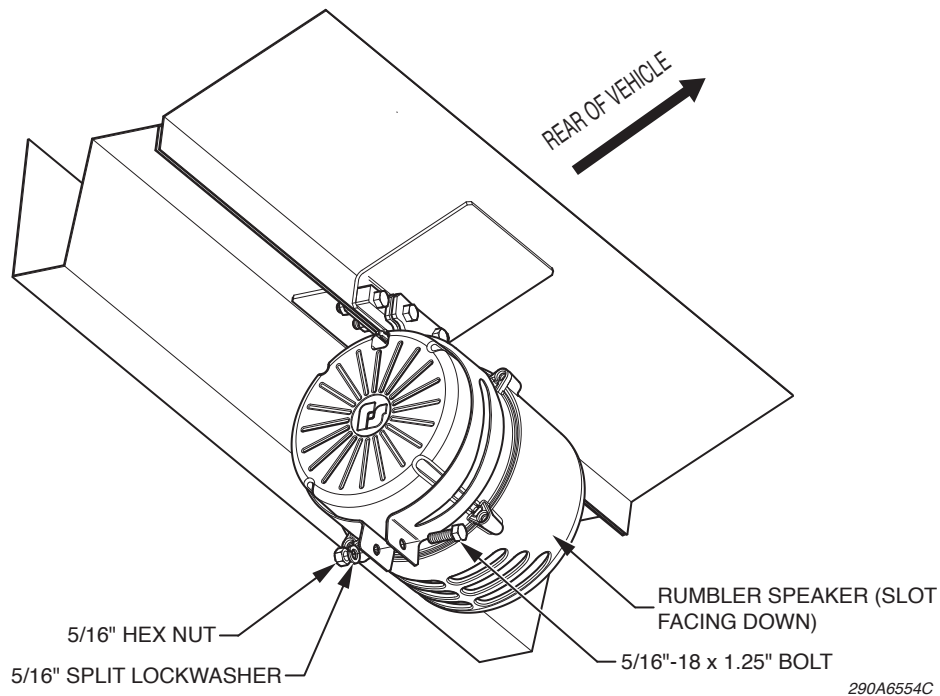


**⚠ WARNING**

**MOUNTING PRECAUTION**—To avoid reduction of sound output and damage to the speaker, ensure that the speaker is mounted with the slots facing the ground.

6. See Figure 10. Slide the speaker into the bands and tighten the bands with the 5/16" hardware supplied with the speaker.

**Figure 10** Speaker secured in bands



## Wiring the Speakers

Two speakers must be wired in parallel and in phase.

To wire the speakers:

1. Connect the wire harness from the siren amplifier to the speaker wires. Refer to the installation instructions provided with the amplifier for further details.
2. Plug the speaker wire connector into the back of the speaker.
3. Test the speakers for proper operation as well as the emergency warning system to ensure that it is operating properly. Refer to the safety instructions on page 11.

## **Getting Technical Support and Service**

For technical support and service, please contact:

Federal Signal Corporation  
Service Department  
Public Safety Systems  
Phone: 1-800-433-9132  
Fax: 1-800-343-9706  
Email: [empserviceinfo@fedsig.com](mailto:empserviceinfo@fedsig.com)

## **Returning a Product to Federal Signal**

Before returning a product to Federal Signal, call 800-264-3578 (Mobile Systems) or 800-433-9132 (Service) to obtain a Returned Merchandise Authorization number (RMA number). To expedite the process please be prepared with the following information:

- Your Federal Signal customer or account number
- The purchase order number under which the items were purchased
- The shipping method
- The model or part number of the product being returned
- The quantity of products being returned
- Drop ship information as needed
- Any estimate required

When you receive your RMA Number:

- Write the RMA number on the outside of the box of returned items
- Reference the RMA number on your paperwork inside of the box
- Write the RMA number down, so that you can easily check on status of the returned equipment.

Send all material with the issued RMA Number to:

Federal Signal Corporation  
Public Safety Systems  
2645 Federal Signal Drive  
University Park, IL 60484-3167  
Attn: Service Department  
RMA: # \_\_\_\_\_  
800-433-9132  
800-343-9706 (fax)  
[www.fedsig.com](http://www.fedsig.com)

## Safety Message to Operators of Federal Signal Electronic Sirens and Light/Sound Systems

### **WARNING**

The lives of people depend on your safe operation of Federal products. It is important to read and follow all instructions shipped with the products. In addition, listed below are some other important safety instructions and precautions you should follow:

#### *Qualifications*

- To properly use an electronic siren and speaker(s), you must have a good understanding of general vehicle operation, a high proficiency in the use of safety warning equipment, and thorough knowledge of state and federal UNIFORM TRAFFIC CODES.

#### *Sound Hazards*

- Your hearing and the hearing of others, in or close to your emergency vehicle, could be damaged by loud sounds. This can occur from short exposures to very loud sounds, or from longer exposures to moderately loud sounds. For hearing conservation guidance, refer to federal, state, or local recommendations. OSHA Standard 1910.95 offers guidance on “Permissible Noise Exposure.”
- All effective sirens and horns produce loud sounds (120 dB) that may cause permanent hearing loss. Always minimize your exposure to siren sound, roll up your windows and wear hearing protection. Do not sound the siren indoors or in enclosed areas where you and others will be exposed to the sound. Only use the siren for emergency response situations.

#### *Sound Limitations*

- Before using the vehicle, check to see if the siren speakers are concealed from view. If the siren speaker is not in clear view on the front of the vehicle, use extra caution when operating the vehicle. A concealed siren speaker installation is less effective at warning others.
- Maximum sound output will be severely reduced if any objects are in front of the speaker. If your installation has obstructions in front of the speaker, drive even more cautiously.
- Frequently inspect the speaker to ensure that it is clear of any obstruction, such as mud or snow, which will reduce maximum sound output.

#### *Light Hazard*

- To be an effective warning device, an emergency warning system produces bright light that can be hazardous at close range. Do not stare directly into the lights at close range or permanent damage to your eyesight may occur.

#### *Signaling Limitations*

- Be aware that the use of your visual and audible signaling devices does not give you the right to force your way through traffic. Your emergency lights, siren, and actions are REQUESTING the right-of-way.
- Although your warning system is operating properly, it may not alert everyone. People may not hear, see, or heed your warning signal. You must recognize this fact and continue driving cautiously.
- Situations may occur which obstruct your warning signal when natural or man-made objects are between your vehicle and others. This can also occur when you raise your hood or trunk lid. If these situations occur, be especially careful.

### *Driving Limitations*

- At the start of your shift, you should ensure that the light/sound system is securely attached to the vehicle and operating properly.
- If the unique combination of emergency vehicle equipment installed in your vehicle has resulted in the siren controls being installed in a position that does not allow you to operate them by touch only, **OPERATE CONTROLS ONLY WHILE YOUR VEHICLE IS STOPPED.**
- If driving conditions require your full attention, you should avoid operating the siren controls while the vehicle is in motion.

### *Continuing Education*

- File these instructions in a safe place and refer to them periodically. Give a copy of these instructions to new recruits and trainees.

Failure to follow these safety precautions may result in property damage, serious injury, or death.



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