

2562414E REV. E1 0220

Safety Message to Installers of Federal Signal 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 other, 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 ensure that 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 the vehicle frame, high current conductors can cause hazardous sparks resulting in electrical fires or flying molten metal.
- Make sure the siren amplifier and speaker(s) in your installation have compatible wattage ratings.

Mounting Instructions for the Rumbler® Speaker

- In order for the electronic siren to function properly, the ground connection must be made to the NEGATIVE battery terminal.
- Sound output will be severely reduced if any objects are in front of the speaker. If maximum sound output is required for your application, 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 that connects to the vehicle wiring without reviewing a vehicle wiring diagram, which is available from the vehicle manufacturer. Ensure that your installation will not affect vehicle operation and safety functions or circuits. Always check the 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, ensure 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 they are 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 Rumbler 82831072 is a low-frequency warning speaker. The speaker has a high-impact resistant housing, a weather resistant driver, and stainless steel hardware. Included in the kit are two bands for mounting the speaker.

⚠ 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.

Unpacking the Kit

After unpacking the product, inspect it for damage that may have occurred in transit. If it has been damaged or is missing a part, do not attempt to install or operate it. File a claim immediately with the carrier, stating the extent of the damage. Carefully check all envelopes, shipping labels and tags before removing or destroying them. Ensure that all parts in Table 1 have been included. 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
1	Speaker Assembly	82831059
3	5/16-18 Hex Hd. Screw	7002A005-20
3	5/16 Lockwasher	7074A020
3	5/16-18 Hex Nut	7057A027
1	Wire Assembly.	1461809
2	Band	828300071

Installing the Rumbler on Most Vehicles

For instructions on installing the Rumbler speaker on a 2008 Ford E-Series chassis, see page 4.

⚠ WARNING

FIRE HAZARD: 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 a fire during a vehicle collision, causing personal injury or death.

⚠ WARNING

SOUND REDUCTION: To avoid reduction of sound output and damage to the speaker, ensure that the speaker is mounted with the slots facing the ground.

NOTICE

DRILLING PRECAUTIONS: When drilling holes, check the area you are drilling into to ensure that 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.

Mounting Instructions for the Rumbler® Speaker

To install the speaker on most vehicles:

1. Select an appropriate mounting location that provides both adequate support and sufficient clearance for the speaker assembly. The mounting location should provide maximum signaling effectiveness while minimizing the sound reaching the vehicle's occupants.

NOTE: Because of the variety of vehicles and possible mounting arrangements, installation details and bracket fabrication must be determined by the installer. (Mounting kits are available for select vehicles. Contact your dealer/distributor or Federal Signal at 1-800-264-3578 for additional details.)

⚠ WARNING

FIRE HAZARD: *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 a fire during a vehicle collision, causing personal injury or death.*

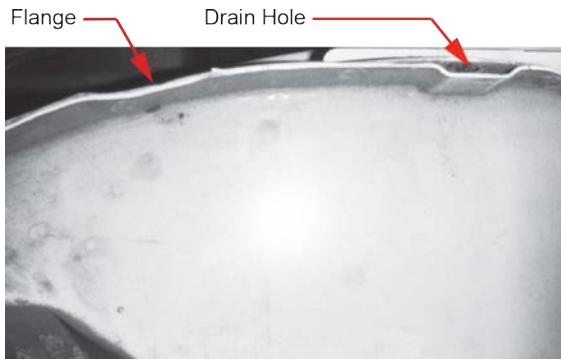
⚠ WARNING

SOUND REDUCTION: *To avoid reduction of sound output and damage to the speaker, ensure that the speaker is mounted with the slots facing the ground.*

To install the speaker on a 2008 Ford E-Series Chassis:

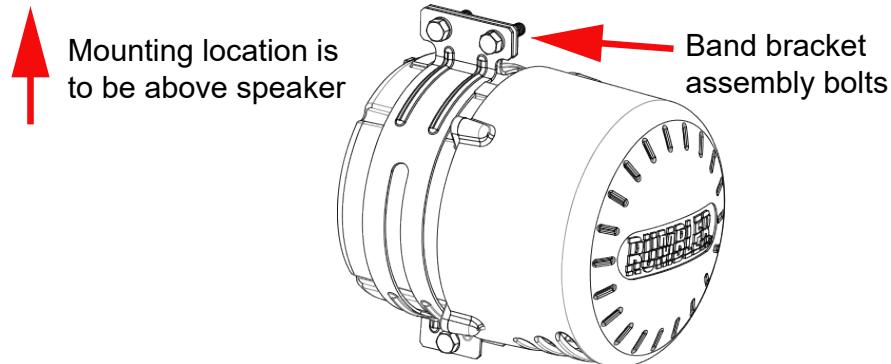
The mounting surface is on the underside of the vertical weld-seam flange in front of the driver-side front wheel well. To get access to the area, turn the front wheels. See Figure 1.

Figure 1 Mounting area on vertical



2. Mount the speaker with the bands in a vertical position as shown in the Figure 2. The two band bracket assembly bolts should be at the top of the Rumbler assembly when mounting onto the vehicle.

Figure 2 Vehicle location described in Step 2



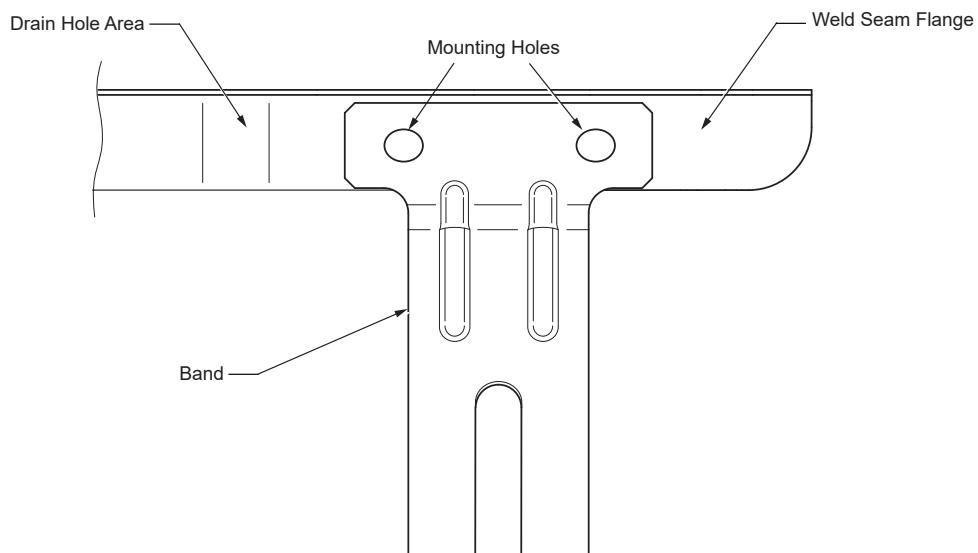
3. Use the band as a template to scribe two mounting holes in the vertical weld-seam flange. See Figure 3.

NOTICE

DRILLING PRECAUTIONS: When drilling holes, check the area you are drilling into to ensure that 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.

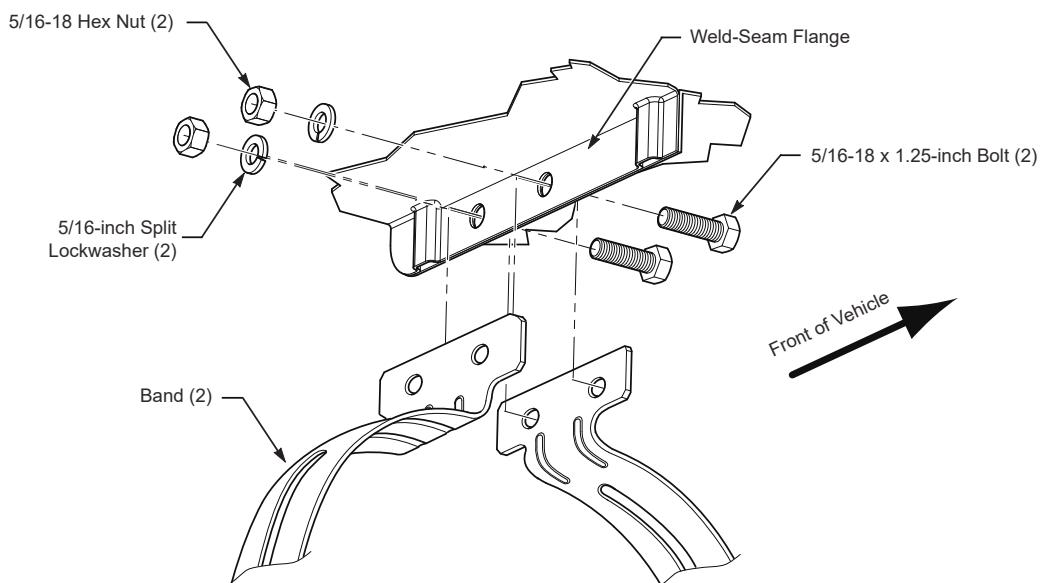
4. Drill two 3/8-inch holes at the scribed drill-position marks. Remove any burrs to ensure that the speaker's reinforcement plate and mounting hardware fit properly.

Figure 3 Mounting area on vertical weld-seam flange



5. Fasten both bands to the vertical weld-seam flange with the two 5/16-18 by 1.25-inch bolts, the two 5/16-inch split lockwashers, and the two 5/16-18 hex nuts. See Figure 4.

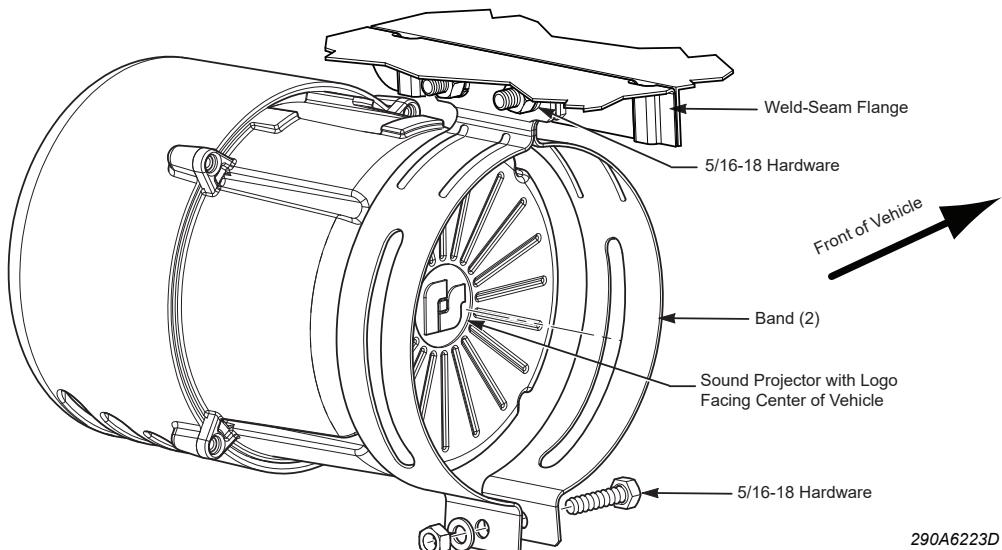
Figure 4 Bands attached to weld-seam flange



Mounting Instructions for the Rumbler® Speaker

6. Spread the bands apart and insert the speaker into them with its slots facing the ground and its sound projector (with Rumbler insignia) facing the center of the vehicle. See Figure 5.

Figure 5 Band with 5/16-18 hardware



7. Tighten the bands around the speaker using the 5/16-18 hardware.

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 8.

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

⚠ WARNING

People's lives depend on your safe operation of Federal products. It is important to read and follow all instructions shipped with the products. 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. Use the siren only 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 to drive cautiously.
- Situations may occur that 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, ensure that the siren 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, 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.

Mounting Instructions for the Rumbler® Speaker

Getting Technical Support

For technical support, please contact:

Federal Signal Corporation
Service Department
Phone: 1-800-433-9132
Email: empserviceinfo@fedsig.com

Getting Repair Service

The Federal Signal factory provides technical assistance with any problems that cannot be handled locally. Any product returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization (RMA). Obtain a RMA from a local Distributor or Manufacturer's Representative. Provide a brief explanation of the service requested, or the nature of the malfunction.

Address all communications and shipments to the following:

Federal Signal Corporation
Service Department
2645 Federal Signal Dr.
University Park, IL 60484-3167

Limited Warranty

This product is subject to and covered by a limited warranty, a copy of which can be found at www.fedsig.com/SSG-Warranty. A copy of this limited warranty can also be obtained by written request to Federal Signal Corporation, 2645 Federal Signal Drive, University Park, IL 60484, email to info@fedsig.com or call +1 708-534-3400.

This limited warranty is in lieu of all other warranties, express or implied, contractual or statutory, including, but not limited to the warranty of merchantability, warranty of fitness for a particular purpose and any warranty against failure of its essential purpose.



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