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Safety Message to Installers of Siren Speakers

People's lives depend on your proper installation and servicing 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.

WARNING

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 performing equipment installations on a vehicle.

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 and wear hearing protection. Do not sound the siren 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. 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 in the product 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 ensure that there are no shavings present in or near the unit.
- 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.
- Ensure that 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.
- 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 and minimizes the sound reaching the vehicle's occupants. Refer to the National Institute of Justice guide 500-00 for further information.

Installing the TS100-N Siren Speakers

- Mounting the speakers behind the grille will reduce the sound output and warning effectiveness of the siren system. Before mounting speakers behind the grille, ensure that 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 air bag sensors.
- Installation of two speakers requires wiring the speakers 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 vehicle for proper operation after installation.
- DO NOT install equipment or route wiring or cord in the deployment path of an air bag.
- 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 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.

Installing the Speaker

The supplied bracket is designed for mounting directly on a surface that has been determined to be suitable for speaker installation. It may be used to install the speaker on an adapter bracket fabricated by the installer.

Because of the variety of vehicles and possible mounting arrangements, the installer must determine installation details and mounting bracket fabrication.

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

NOTICE

DRAINAGE: The speaker assembly must be mounted with the drain hole oriented toward the bottom. Failure to observe this caution will result in possible speaker damage. If disassembly and reassembly is required, ensure that washer stack-up is maintained. Failure to maintain proper washer stack-up may result in decreased speaker output.

- Using the bracket as a template, scribe four drill position marks at the selected mounting location.

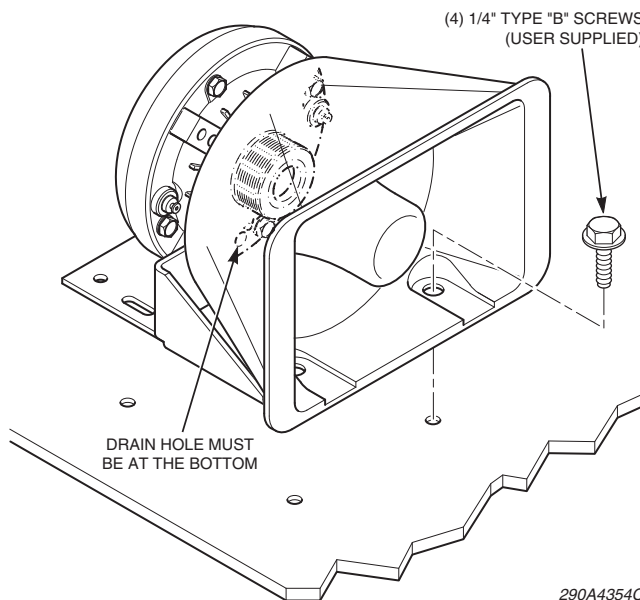
NOTICE

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.

- Drill mounting holes at the position marks.
- Secure the speaker assembly to the mounting surface using user-supplied 1/4-inch type B screws. See Figure 1.

Figure 1 Securing the speaker

CAUTION:
MUST BE MOUNTED IN HORIZONTAL
POSITION FOR PROPER DRAINAGE



- Connect the speaker to the electronic siren as described in the instructions supplied with the electronic siren.

WARNING

SOUND HAZARD: The sound output of speakers is capable of causing permanent hearing damage. Use adequate hearing protection and avoid excessive exposure. To prevent the speakers from sounding, remove any DC power being supplied before inspecting or maintaining the speakers.

Safety Message to Personnel Servicing Federal Signal Siren Speakers

⚠ WARNING

People's lives depend on your proper servicing of Federal products. It is important to read and follow all instructions shipped with the products. Listed below are some other safety instructions and precautions you should follow:

- Read and understand all instructions in this manual before servicing the electronic siren or speaker.
- To properly service an electronic siren or speaker, 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 performing service on a vehicle.
- Electronic circuit and speaker repairs must be performed by a qualified and competent electronic technician.
- 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 and wear hearing protection. Do not sound the siren indoors or in enclosed areas where you and others will be exposed to the sound.
- DO NOT connect this system to the positive terminal of the battery until servicing is complete and you have verified that there are no shortcircuits to ground.
- In order for the electronic siren to function properly, the ground connection must be made to the NEGATIVE battery terminal.
- After repair, test the electronic siren and speaker system to ensure that it is operating properly.
- 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. Verify or test your combination to ensure that the components work together properly and that the system meets both federal, state and local standards or guidelines.

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



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