

**INSTALLATION AND OPERATING INSTRUCTIONS  
FOR  
MODEL DS100-D AND MODEL DS100-P INSTALLATION KIT  
FOR THE MC100-02 SPEAKER**

**SAFETY MESSAGE TO INSTALLERS OF SIREN  
SPEAKERS**

**▲ WARNING**

**The lives of people depend on your proper installation and servicing 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:**

*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. 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 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 to be sure 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 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.
- 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 which 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.
- 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 air bag sensors.
- Installation of two speakers requires wiring speakers in phase.
- Never attempt to install aftermarket equipment, which connects to the vehicle wiring, without reviewing a vehicle wiring diagram - 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 air bag.
- 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 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.**

**A. GENERAL.**

This installation kit includes brackets and hardware for installation of a pair of MC100 speakers on a 2007/2008 Dodge F1500 bumper mount.

**B. UNPACKING.**

After unpacking the unit inspect it for damage that may have occurred in transit. If the unit has been damaged, do not attempt to install or operate it. File a clam immediately with the carrier, stating the extent of damage. Carefully check all envelopes, shipping labels and tags before removing or destroying them. Included in the packing carton is a connector kit. Ensure that all parts in the KIT CONTENTS LIST have been included.

**C. KIT CONTENTS LIST.**

Qty.	Description
1	MC100-02 (100W S.S. MC Speaker)
1	“Z”-shaped brackets
1	Driver side “C”-shaped bracket (With Model DS100-D)
1	Passenger side “C”-shaped bracket (With Model DS100-P)
1	3/8” x 1” carriage bolts
2	3/8” x 1-3/8” carriage bolts
2	5/16” flat washer
3	3/8” lockwasher
3	3/8” hex nut
4	1/4” – 20 x 3/4” bolt
1	1/4” – 20 x 1-3/4” bolt
1	1/4” flat washer
5	1/4” lockwasher
1	1/4” hex nut

**D. INSTALLATION.**

1. The speaker brackets will be attached to the support brackets located on both sides of and behind the front bumper near the fog light areas.
2. See Figure 1. One “Z”-shaped bracket along with the Driver side “C”-shaped bracket are attached

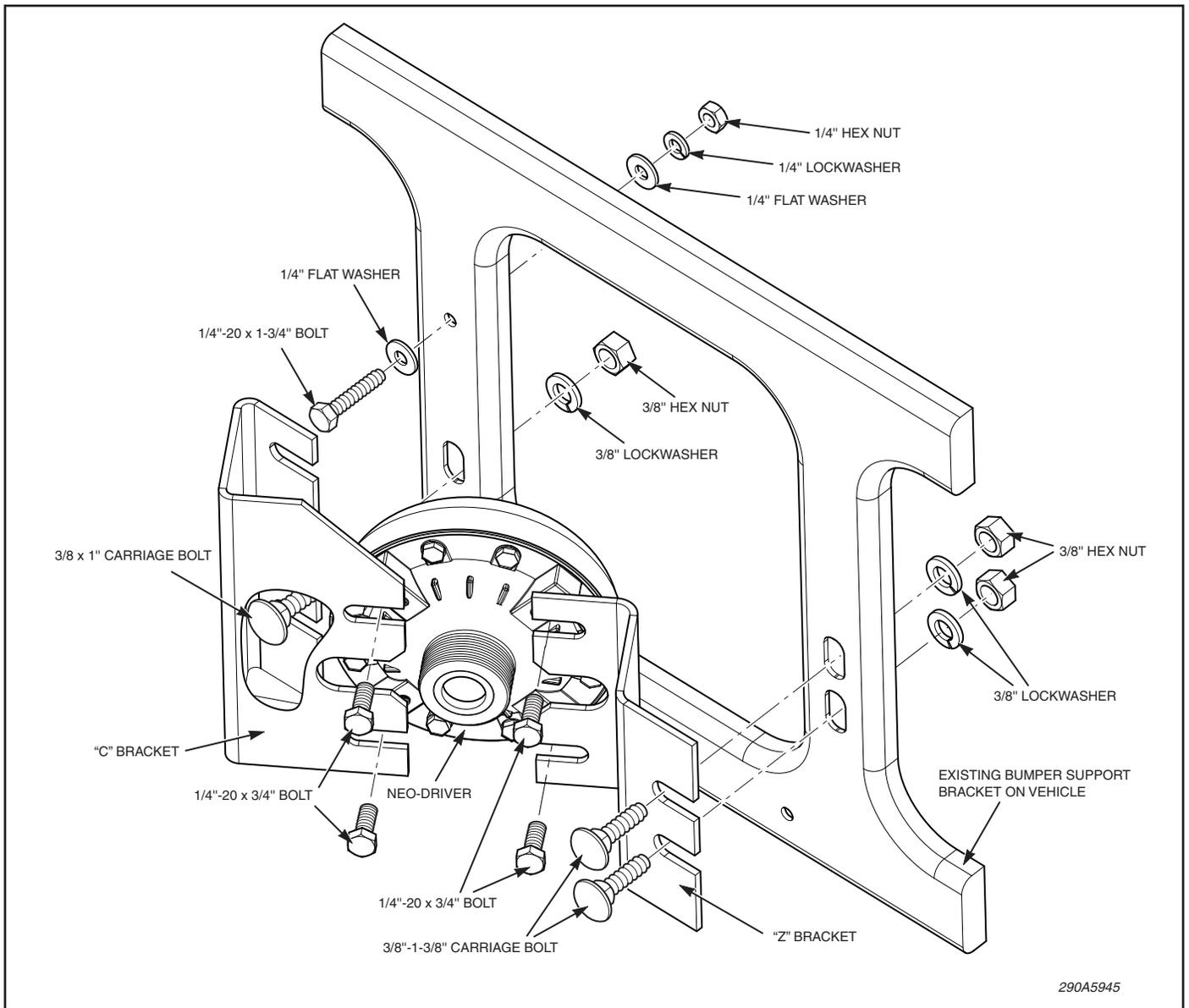


Figure 1.

to the rear of the driver side of the bumper in the fog light area opening. The “Z”-shaped bracket is attached to the side of the support bracket that has two oval slots. Secure the “Z”-bracket in position using two 3/8” x 1” carriage bolts, two 3/8” lock washers and two 3/8” hex nuts.

3. See Figure 1. The “C”-shaped bracket is attached to the side of the support bracket that has an oval slot and a 5/16” dia. hole. (The driver side “C”-shaped bracket will have a large 45° chamfer on the top left side of the bracket when properly mounted.) Secure the “C”-shaped bracket in position using one 3/8” x 1-3/8” carriage bolt, 3/8” lock washer, and 3/8” hex nut to the lower oval slot, and one 1/4”-20 x 1-1/4” bolt, one 1/4” lockwasher, and one 1/4” hex nut to the top 5/16” dia. hole.

4. Unscrew the projector cone from the neo-driver assembly. When removing projector cone the fiber and steel washers will become loose and also come off with the stainless steel projector. The rubber boot that fits between the neo-driver and steel projector will also have to be removed. Fingertighten four 1/4”-20 x 3/4” bolts in the outer holes of the neo-driver assembly as shown in Figure 2.

5. See figure 3. Make sure the arrow on the neo-driver assembly arrow is pointing down perpendicular to the ground to ensure the drain hole is at the bottom of the assembly. Slide the neo-driver assembly with bolts, lock washers and flat washers into the slots of the “C”-shaped and “Z”-shaped brackets that are secured to the bumper bracket.

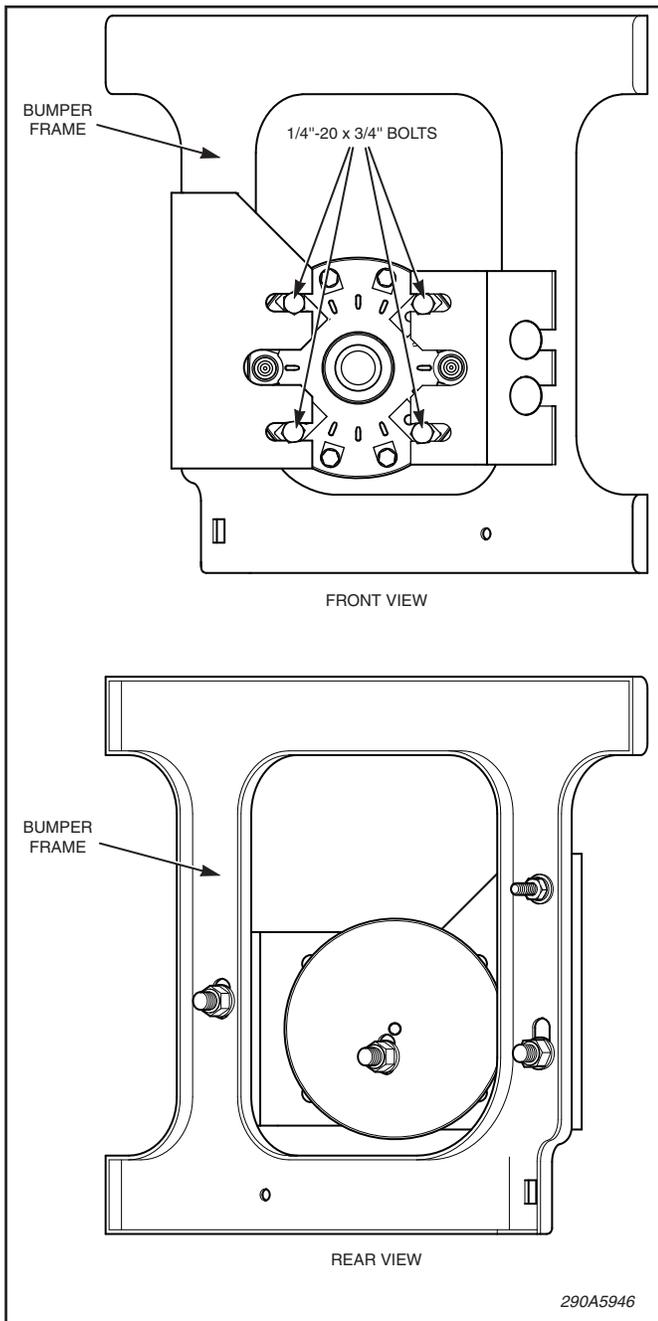


Figure 2.

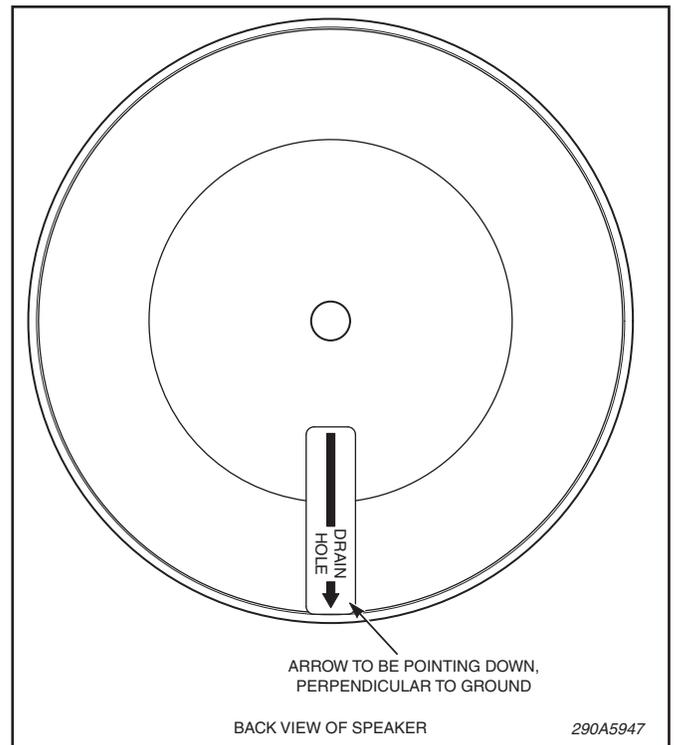


Figure 3.

Center the neo-driver in the slots of both brackets and tighten the 1/4"-20 x 3/4" bolts.

6. See Figure 4. Reassemble the stainless steel projector and projector cone along with the fiber and steel washers in their proper assembly order. See Figure 4.

7. The passenger side installation is the same as the driver side except for the "C"-brackets. The passenger side "C"-shaped bracket will have a large 45° chamfer on the top right side of the bracket when properly mounted.

4. Test the speaker(s) for proper operation.

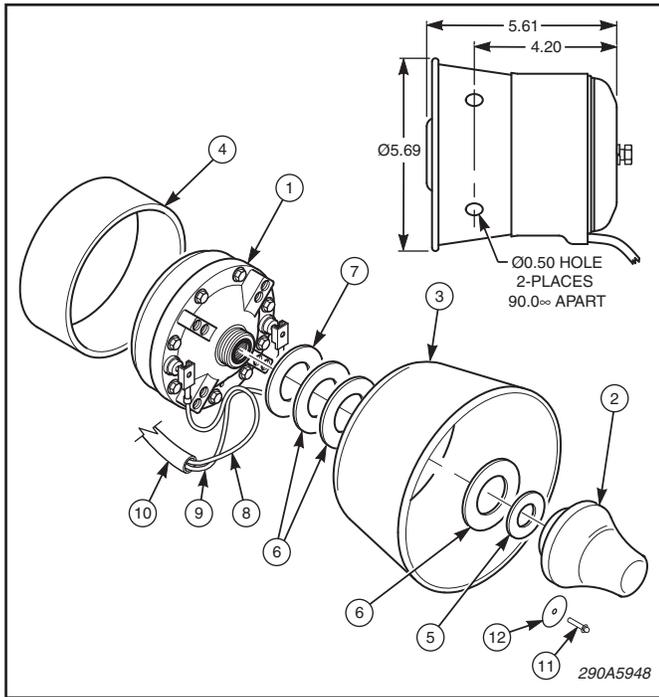


Figure 4.

**E. SERVICE PARTS LIST.**

Part Number	Description
MC100-02	100W S.S. MC Speaker
82831067	Universal "Z" Bracket
82831068	Passenger Side Bracket
82831069	Driver Side Bracket
7004A024-16	3/8" x 1 Carriage bolt
7004A024-24	3/8" x 1-3/8" Carriage bolt
7072A031	5/16 Flat Washer
7074A046	3/8 Lock Washer
7059A063	3/8 Hex Nut
7002A000-12	1/4" - 20 x 3/4"
7002A000-20	1/4" - 20 x 1-1/4" bolt
7074A016	1/4 Lock Washer
7072A028	1/4 Flat Washer
7059A020	1/4 Hex Nut

## F. OPERATION.

Refer to the instructions packed with the electronic siren for operation.

### 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.

#### *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 to you, to passengers, or to others.**

## F. MAINTENANCE.

### SAFETY MESSAGE TO PERSONNEL SERVICING FEDERAL SIGNAL SIREN SPEAKERS

 **WARNING**

**The lives of people depend on your proper servicing of Federal products. It is important to read and follow all instructions shipped with the products. In addition, 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 short circuits 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. You should verify or test your combination to make sure the system works together properly and 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.**

**Copyright 2008 Federal Signal Corporation**