

Uniform Procedures For Collision Repair

CS11S—Radiator Core Support, Bolted-On

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v.2.3



1. Description

This procedure describes the repair and complete replacement of a bolted-on radiator core support. Inspection and evaluation requirements are also included.



2. Purpose

The purpose of this procedure is to provide industry-accepted requirements for performing high-quality repair of bolted-on radiator core supports. This procedure is intended for use by professionals who are qualified through training and experience.



3. Referenced Documents

The following documents are considered part of this procedure by reference.

3.1 Procedures

- CP01S Corrosion Protection
- EM01 Emission Label
- ME01 Three-Dimensional Measuring
- PS01 Personnel Safety
- RF01S Surface Preparation
- ST01S Stress Relieving Heat Limitations
- ST11 Multiple Pulls

3.2 Other Information

- Vehicle-specific repair information
- Vehicle-specific dimension specifications



4. Equipment And Material Requirements

4.1 Straightening And Measuring Equipment

Use straightening equipment as described in **ST11**.

Use measuring equipment as described in **ME01**.



5. Damage Analysis

5.1 General Damage

Inspect a bolted-on radiator core support for these types of damage:

- visible damage
- corrosion**
- improper previous repairs
- dimensional misalignment
- damage to mounting locations or fasteners

Determine whether the bolted-on radiator core support should be repaired or replaced. Verify the availability if replacement parts.



6. Personnel Safety

6.1 General Safety

General safety information is in **PS01**.

6.2 Pulling Safety

Pulling safety information is in **ST11**. Does not apply.



7. Environmental Safety

Does not apply.



8. Vehicle Protection

8.1 Stress-Relieving

If heat is used for **stress-relieving** steel, use temperature-measuring methods as described in **ST01S**.

Note: Some vehicle makers recommend against the use of heat for stress-relieving.

8.2 Electronic Parts

To protect computers and other sensitive parts from damage:

- Follow the vehicle maker's recommendations for recording and resetting **electronic memories**.
- Ensure that the ignition switch is in the LOCK position, and the key is removed.
- Disconnect and isolate the negative battery cable, and disarm the **passive restraint system**. Follow the vehicle maker's recommendations.
- Carefully remove computer modules when welding or heating within 300 mm (12"), or a greater distance when recommended by the vehicle maker.
- Protect computer modules, connectors, and wiring from dirt, heat, static electricity, and moisture.
- Loosen or remove any wiring harnesses or electrical parts that could be damaged during the repair process.

Remove the battery if it is near an area to be heated.



9. Repair Procedure

9.1 Straightening

To straighten a bolted-on radiator core support:

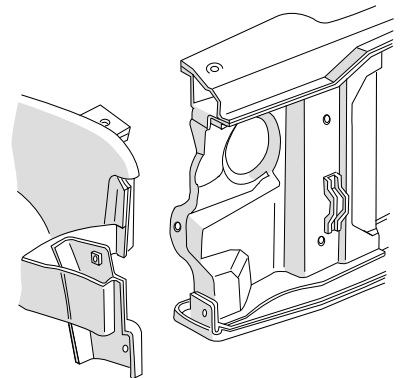
- ❑ 1. Make sure the vehicle is properly anchored to the straightening systems.
- ❑ 2. Make measurements to determine the location of the core support.
- ❑ 3. Locate airbag sensor mounting locations, as specified by the vehicle maker.
- ❑ 4. Use **multiple pulls** and stress-relieving to return the radiator core support to proper dimensions. Follow the **tolerance** recommendations of the vehicle maker. If no recommendations are given, use a tolerance of ± 3 mm ($1/8$ "). Use a **three-dimensional measuring system** and adjacent panels to verify that the part is properly aligned.
- ❑ 5. If heat is used for stress-relieving, follow the vehicle maker's temperature and time recommendations. If the part cannot be identified as **mild steel**, treat it like **high-strength steel (HSS)**. Note: Some vehicle makers recommend against the use of heat for stress-relieving.
- ❑ 6. Plan to replace any part that is **kinked**, has stress cracks, or develops cracks during straightening. If replacement is required, see **9.2** and **9.3**.
- ❑ 7. Apply corrosion-resistant **primer** to all interior and exterior surfaces damaged by the collision, repairs, or anchoring.
- ❑ 8. Apply **seam sealers**, as necessary, to seal the joints and restore the appearance. Reprime if required by the product maker.
- ❑ 9. Apply **anti-corrosion compounds** to all enclosed areas.
- ❑ 10. Refinish areas damaged by the collision, repairs, or anchoring, as required to restore the appearance. Refinish cosmetic surfaces after all body repairs are complete.
- ❑ 11. Continue vehicle reassembly.



9.2 Removal

To remove a bolted-on radiator core support:

- ❑ 1. Perform underhood and upperbody measurements and adjacent panel alignment and straightening. See **9.1**.
- ❑ 2. Remove the radiator core support mounting fasteners. Inspect all fasteners that will be reused.
- ❑ 3. Remove the radiator core support from the vehicle. Do not discard any labels until replacements are obtained.



(cont'd)



9. Repair Procedure (cont'd)

9.3 Installation

To install a bolted-on radiator core support:

- 1. Perform a trial fit of the replacement parts.
- 2. Apply corrosion-resistant primer to all interior and exterior surfaces damaged by the collision, repairs, or anchoring.
- 3. Apply seam sealers as necessary to seal the joints and restore the appearance. Reprime if required by the vehicle maker.
- 4. Refinish as required to restore the appearance.
- 5. Install any braces or brackets that are bolted to the inside of the radiator core support. Torque fasteners to the vehicle maker's recommendations.
- 6. Position the radiator core support on the vehicle.
- 7. Reinstall the mounting cushions and fasteners. Some vehicle makers may require the installation of new fasteners. Use shims as necessary to level the core support. Follow the vehicle maker's recommendations.
- 8. Use a three-dimensional measuring system and adjacent panels to verify that the part is properly aligned.
- 9. Torque fasteners to the vehicle maker's recommendations.
- 10. Use the three-dimensional measuring system and adjacent panels to verify that the part is still properly aligned.
- 11. Apply anti-corrosion compounds to all enclosed areas.
- 12. Install any labels previously removed.
- 13. Continue vehicle reassembly.



10. Use Of Recycled (Salvage) Parts

10.1 Condition Of **Salvage Parts**

Do not install a salvage bolted-on core support having any of these defects:

- unrepairable damage
- corrosion that has caused pitting
- improper previous repairs

(cont'd)



10. Use Of Recycled (Salvage) Parts (cont'd)

10.2 Preparation Of Salvage Parts

To prepare a salvage bolted-on radiator core support for installation:

- Clean the part to remove dirt, wax, grease, undercoating or corrosion.



11. Inspection And Testing

11.1 Inspection Of A Repaired Or Replaced Core Support

Inspect a repaired or replaced bolted-on radiator core support for these conditions:

- dimensional alignment
- proper alignment to adjacent panels
- fasteners torqued to the vehicle maker's recommendations
- proper finish appearance and film thickness
- proper application of corrosion protection
- proper installation of all labels