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2012 FORD C-Max OEM Service and Repair Workshop Manual

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NOTE

The radiator support must be replaced at the factory seams. No sectioning procedure is approved or permitted.

NOTE

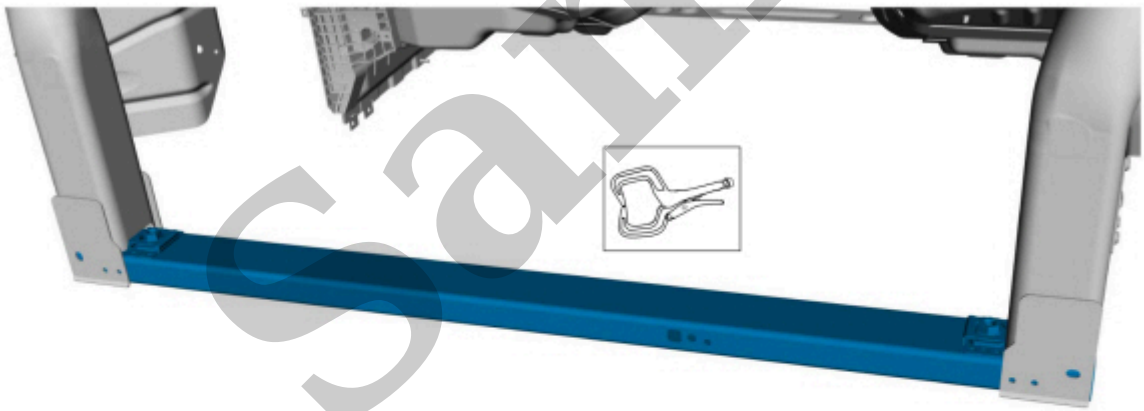
Do not install SPR (self-piercing rivet) fasteners directly in old SPR (self-piercing rivet) fastener location. SPR (self-piercing rivet) fasteners must be installed adjacent to the original location matching original quantity.

NOTE

Solid rivets or blind rivet fasteners may be used in place of SPR (self-piercing rivet) fasteners after enlarging existing holes to 6.5 mm.

1. Install, properly position and clamp the lower radiator support.

   Use the General Equipment: Locking Pliers



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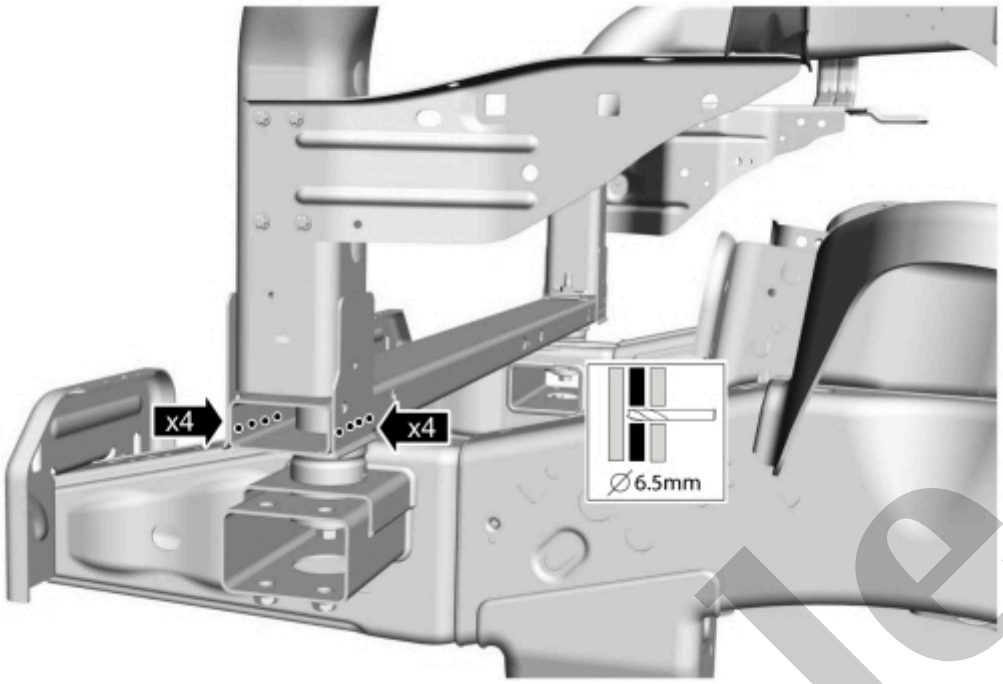
Click here to learn about symbols, color coding, and icons used in this manual.

2. On Both Sides:



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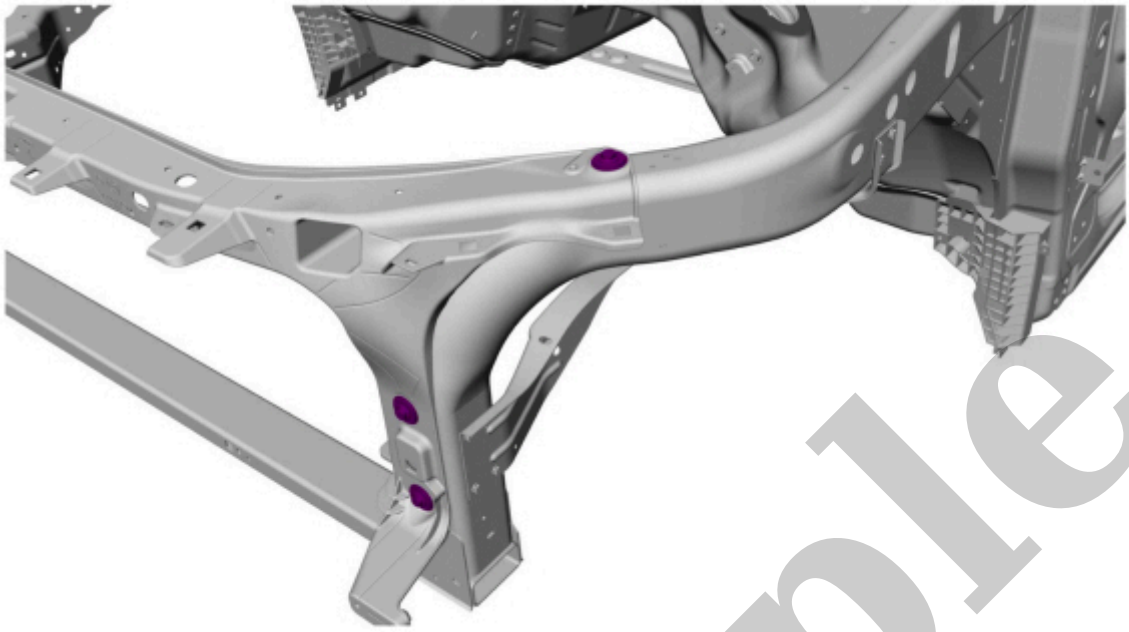
4. Install blind rivet fasteners.

Item	SPR (self-piercing rivet) Number	SPR (self-piercing rivet) Code	Henrob®, Car-OLiner®, CMO®, Chief®, Spanesi®, Wielander and Schill® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	-	-	-	-	W708777-S900C	-	-

Use the General Equipment: Blind Rivet Gun

Install the bolts.

Torque : 22 lb.ft (30 Nm)



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7. Install the cooling module.

   Refer to: Cooling Module(303-03A Engine Cooling - 2.7L EcoBoost (238kW/324PS), Removal and Installation).

   Refer to: Cooling Module(303-03B Engine Cooling - 3.3L Duratec-V6, Removal and Installation).

   Refer to: Cooling Module(303-03C Engine Cooling - 3.5L EcoBoost (BM), Removal and Installation).

8. Install the fenders.

   Refer to: Fender(501-02 Front End Body Panels, Removal and Installation).

9. Install the front bumper.

   Refer to: Front Bumper(501-19 Bumpers, Removal and Installation).

10. Repower the SRS (supplemental restraint system) .

    Refer to: Supplemental Restraint System (SRS) Repowering(501-20B Supplemental Restraint System, General Procedures).

2	PCM (powertrain control module)
3	BCM (body control module)
4	Ignition Switch
5	GWM (gateway module A)
6	Memory SET Switch
7	Driver Seat Control Switch
8	DSM (driver front seat module)
9	DDM (driver door module)
10	Position Sensors
11	Motors

Network Message Chart - Memory Seat

DSM (driver front seat module) Network Input Messages

Broadcast Message	Originating Module	Message Purpose
Key-in-ignition status	BCM (body control module)	Provides the ignition position. This input is used for the easy entry/exit feature.
Personality recall	BCM (body control module)	When the personality recall command is received from the BCM (body control module) , the DSM (driver front seat module) stores or recalls the associated memory seat position (1, 2 or 3). If a RKE (remote keyless entry) transmitter has been programmed to a memory position, this input is used to recall the associated memory seat position.
Memory seat switch status	DDM (driver door module)	When the memory set switch (1, 2 or 3) is activated, the DDM (driver door module) sends this message to the DSM (driver front seat module) , which then stores or recalls the associated memory seat position.

11	Cushion Temp Sensor **Comment:** Passenger Seat
12	Cushion and Backrest Blower Motors **Comment:** Passenger Seat

Network Message Chart - Heated/Ventilated Seats

DSM (driver front seat module) Network Input Messages

Broadcast Message	Originating Module	Message Purpose
Climate control requests	HVAC (heating, ventilation and air conditioning) module	The climate control requests message contains the heated/ventilated seat request information.

HVAC (heating, ventilation and air conditioning) Module Network Input Messages

Broadcast Message	Originating Module	Message Purpose
Climate control button status	DSM (driver front seat module)	The SCME (front seat climate control module) provides this message to the HVAC (heating, ventilation and air conditioning) module for the purpose of updating the displayed status of the heated/ventilated seat buttons on the HVAC (heating, ventilation and air conditioning) module.

System Diagram - Multi-Contour Front Seats

Multi-contour seat switch status	SCMG (driver multi-contour seat module) / SCMH (passenger multi-contour seat module)	The SCMG (driver multi-contour seat module) / SCMH (passenger multi-contour seat module) provides this message to the FDIM (front display interface module) for the purpose of updating the displayed status of the multi-contour seat buttons on the FDIM (front display interface module) (touchscreen).
Driver/passenger multi-contour seat position data	SCMG (driver multi-contour seat module) / SCMH (passenger multi-contour seat module)	The SCMG (driver multi-contour seat module) and SCMH (passenger multi-contour seat module) provide this message to the FDIM (front display interface module) for the purpose of updating the displayed pressure of the multi-contour seat bladders and bolster pairs on the FDIM (front display interface module) (touchscreen).

SCMG (driver multi-contour seat module) / SCMH (passenger multi-contour seat module) Network Input Messages

Broadcast Message	Originating Module	Message Purpose
Multi-contour seat request	FDIM (front display interface module)	The multi-contour seat request message contains the requested multi-contour function(s) from the touchscreen.

Memory Seat Operation

The driver memory seat is equipped with the following motors:

- Front height motor (serviced with seat track assembly)
- Rear height motor (serviced with seat track assembly)
- Horizontal motor (serviced separately from the seat track assembly)
- Recliner motor (serviced with seat backrest assembly)
- Lumbar motor (serviced with power lumbar assembly)

The DSM (driver front seat module) soft stops must be set/reset any time a new DSM (driver front seat module) , driver seat track or driver seat backrest is installed.

The driver seat control switch provides a voltage signal to the DSM (driver front seat module) only when activated. This voltage signal causes the DSM (driver front seat module) to power the appropriate motor until

command is received by the DSM (driver front seat module) . A memory position recall using the memory set switch also overrides the easy exit operation.

The easy entry/exit feature can be enabled/disabled. For information on programming vehicle settings, refer to the Owner's Literature.

Power Seat Operation - Passenger and Driver (Without Memory)

The driver seat can be equipped with either an 8-way or 10-way power seat.

The 8-way driver power seat is equipped with the following motors:

- Front height motor (serviced with seat track assembly)
- Rear height motor (serviced with seat track assembly)
- Horizontal motor (serviced separately from the seat track assembly)
- Lumbar motor (serviced with power lumbar assembly)

The 10-way driver power seat is equipped with the following motors:

- Front height motor (serviced with seat track assembly)
- Rear height motor (serviced with seat track assembly)
- Horizontal motor (serviced separately from the seat track assembly)
- Recliner motor (serviced with seat backrest assembly)
- Lumbar motor (serviced with power lumbar assembly)

The passenger power seat can be equipped with a 8-way power seat.

The 8-way passenger power seat is equipped with the following motors:

- Rear height motor (serviced with seat track assembly)
- Horizontal motor (serviced separately from the seat track assembly)
- Recliner motor (serviced with seat backrest assembly)
- Lumbar motor (serviced with power lumbar assembly)
- H point lift sensor (if equipped with max recline, serviced separately from the seat track)

If equipped with max recline, the passenger seat backrest can be adjusted to be fully flat. Before moving the seat backrest fully flat, make sure the vehicle is stationary. Store the rear seat cushion in the upright position and remove any objects that may obstruct the movement of the seat to the flat position. If the passenger seat backrest is in the fully flat position and the vehicle is in motion, a warning chime will sound and message

and deflation of the lumbar and cushion bladders to simulate a massage motion.

NOTE

Refer to the Owner's Literature for information how to select the various modes using the seat control switch or touchscreen buttons.

When in Adjust mode:

- Each tap of the up or down buttons cycles through the following bladders: Upper lumbar, middle lumbar and lower lumbar.
- When the inflate/deflate buttons are pressed (or held), the pressure increases or decreases for the currently selected bladder.
- Pressing the mode select button toggles the seat to massage mode. The ignition must be on for massage mode to function.

When in Massage mode:

- Each tap of the up or down buttons cycles between backrest and cushion massage modes.
- Each tap of the inflate/deflate buttons cycles between the intensity levels of massage (off, low and high).
- Pressing the mode select button toggles the seat to adjust mode. Middle lumbar bladder will be selected automatically.

Each multi-contour seat can be restored to the original factory settings by pressing and holding the select button greater than 30 seconds. This resets all the adjust and massage settings (including any multi-contour driver seat settings associated to memory personality 1, 2 or 3).

Heated Seat Operation

The heated seat system consists of the following components:

- Seat cushion heater mat
- Seat backrest heater mat
- HVAC (heating, ventilation and air conditioning) module (includes heated seat switches)

The driver and passenger heated seat control buttons and indicators are located on the HVAC (heating, ventilation and air conditioning) module. The heated seat system functions independently of the vehicle's climate control system. Each time the heated seat button is pressed, the system decreases one setting (the sequence is high, med, low, off, high, etc.).

When activated, the HVAC (heating, ventilation and air conditioning) module supplies voltage to the selected seat heater circuit. Each seat cushion heater mat and backrest heater mat is connected in a series circuit to

temperature by cycling the heater circuits on/off. The heated seat remains ON until the heated seat switch button is pressed to cycle the DSM (driver front seat module) OFF or the ignition is set to OFF.

Ventilation Operation

- The seat cushion and backrest are each equipped with a blower motor assembly. Each blower motor draws air through the surface of the cushion and backrest through the foam. Once the system is activated, the DSM (driver front seat module) controls the blower speed dependant on the heated/ventilated seat settings.
- The system control settings are based on the 3 indicators next to each heated/ventilated seat switch button. The first setting is HIGH (3 indicators), the second setting is MED (2 indicators) and the third is LOW (1 indicator) then OFF (no indicators).

Remote Start Climate Operation

Different climate control modes/preferences can be selected when the vehicle is started using the remote start feature. This can be accessed through the message center. For additional information on how to set the remote start preferences, refer to the Owner's Literature. When the driver seat and/or passenger seat is set to AUTO mode, the driver/passenger heated seat activates in heat mode in cold weather, and full cool mode (heated/ventilated seats only) in hot weather any time the vehicle is started using the remote start feature. No heated/ventilated seat adjustments are recognized during remote start operation. Once the ignition is cycled ON, the heated/ventilated seat turns off.

Component Description

Seat Control Switch - Without Memory

The seat control switch contains normally closed contacts (which are grounded). When a specific adjustment position is selected, an individual circuit is switched to voltage.

Seat Control Switch - With Memory

The seat control switch is hard-wired to the DSM (driver front seat module) , which controls seat operation. When a specific seat adjustment position is selected, an individual circuit is switched to voltage.

Seat Control Switch - With Multi-Contour Seats

The driver seat control switch is hard-wired to the DSM (driver front seat module) , which controls seat operation. When a specific seat adjustment position is selected, an individual circuit is switched to voltage.

The driver and passenger seat control switches each contain a 5 position momentary contact switch which provides an analog signal (stepped resistance) to the SCMG (driver multi-contour seat module) or SCMH (passenger multi-contour seat module) . The resistance range for each multi-contour button is as follows:

Multi-Contour Switch	Resistance
Select	26 to 54 ohms