

BODY—MAGNESIUM ALLOY RADIATOR CORE SUPPORT—UNIQUE HANDLING AND REPAIR PROCEDURES—SERVICE TIPS

**Article No.
04-2-5**

FORD: 2004 F-150

ISSUE

The 2004 F-150 has a Radiator Core Support made out of a Magnesium Alloy. There have been no changes regarding procedures for removal and reinstallation of the radiator core support. However, due to the part being made of magnesium alloy, there are unique handling and repair procedures that must be adhered to.

ACTION

Read and understand the SAFETY, WARNING and CAUTION information contained in this TSB before attempting repairs on components constructed of magnesium.

SERVICE TIPS

SAFETY

Providing that proper care and caution is exercised when working with a magnesium casting (large part), the likelihood of fire is minimal. This is due to magnesium's ability to dissipate heat quickly and the high temperature necessary to cause combustion. However if the entire mass of the casting reaches 427° C (800° F) there is a potential for fire.

Great care must be exercised when applying heat to a magnesium casting. While the casting will quickly transfer the heat away from the heat source, the ignition temperature of the casting is near the melting point. If the casting ignites the fire may be extinguished by individuals who have been trained in the use of either a CLASS "D" fire extinguisher, or through the use of a 1.5" diameter water hose. Note the following WARNING about applying water to a magnesium fire, but continued application of the water will extinguish the fire.

EXTINGUISHING A MAGNESIUM FIRE

A magnesium fire should be extinguished as soon as possible.

WARNING

USE ONLY CLASS "D" FIRE EXTINGUISHER. CLASS "A", "B" OR "C" EXTINGUISHERS ARE NOT DESIGNED FOR MAGNESIUM FIRES.

WARNING

WATER WILL CAUSE THE FIRE TO BURN FASTER, BUT IT ALSO COOLS THE MAGNESIUM AND OTHER MATERIALS AROUND THE FIRE TO ENSURE THEY DON'T IGNITE. CARE SHOULD BE TAKEN IF WATER IS THE ONLY OPTION.

WARNING

NEVER ATTEMPT TO MOVE BURNING MATERIAL.

1. Encircle the fire with dry extinguishing material (CLASS "D" EXTINGUISHING MATERIAL).
2. Sprinkle the extinguishing material on top of the fire (CLASS "D").
3. Leave the material untouched for 30 minutes or more until cool.

NOTE

DRY SAND AND DIRT CAN BE USED TO EXTINGUISH BURNING MAGNESIUM BY SMOTHERING THE FIRE. DO NOT MOVE THE SAND OR DIRT COVER FOR AT LEAST THIRTY MINUTES.

NOTE: The information in Technical Service Bulletins is intended for use by trained, professional technicians with the knowledge, tools, and equipment to do the job properly and safely. It informs these technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by "do-it-yourselfers". Do not assume that a condition described affects your car or truck. Contact a Ford, Lincoln, or Mercury dealership to determine whether the Bulletin applies to your vehicle. Warranty Policy and Extended Service Plan documentation determine Warranty and/or Extended Service Plan coverage unless stated otherwise in the TSB article. The information in this Technical Service Bulletin (TSB) was current at the time of printing. Ford Motor Company reserves the right to supersede this information with updates. The most recent information is available through Ford Motor Company's on-line technical resources.

CAUTIONS FOR WORKING WITH MAGNESIUM

- Avoid smoking or carrying an open flame near magnesium dust.
- Magnesium will burn if heated above 427° C (800° F).
- Magnesium burns with a brilliant white light.
- Small particles of magnesium are easily ignited, but may be extinguished by separating the pile with a steel shovel, or covering with DRY sand, and allowing to cool.
- Avoid contaminating magnesium dust or chips with other materials, especially iron dust.
- Remove all dust, chips, and turnings from the building at the end of the day. Do not use compressed air or any other compressed gas when cleaning magnesium chips. Place the dry dust in a dry covered non-combustible waste container located at least 31 meters (100') from any structure.
- The dust, chips, or casting may react with strong oxidizing agents (Bleach-Sodium Hypochlorite, Calcium Hypochlorite, Hydrogen Peroxide, Permanganate, Nitric Acid, Concentrated OXYGEN, or other Perchlorates).
- Do not grind on the magnesium casting.
- Avoid sanding through the powder coating and into the magnesium casting. Light sanding of the powder coating is permissible if required.
- Large magnesium parts, (example: Radiator Support) are not easily ignited, because the magnesium dissipates heat very quickly. Once ignited the initial application of water will cause a violent reaction.
- Do not subject magnesium to extreme heat (260° C) (500° F) or greater for extended periods of time.

CAUTIONS FOR STORING MAGNESIUM COMPONENTS

- Keep magnesium stored separate from large amounts of combustible materials.
- Do not store in an area where heat will exceed 260° C (500° F).

PAINT REPAIR

Painting is necessary on the bridging brackets when a radiator support is replaced (Figure 1). Painting of the support is required if the powder coating is scratched or damaged. Use PM-12-A Motorcraft Low Temperature Anti-Corrosion Coating for the repair.

BENT COMPONENT REPAIR

1. If any component of the radiator support is bent greater than 90 degrees, the component part must be replaced.
2. If any component is bent less than 90 degrees the part can be straightened. If any cracks occur during the straightening process, the component must be replaced.

TIPS FOR STRAIGHTENING BENT COMPONENTS

- Heat is not required to straighten the casting.
- Pry bars are suggested tool of choice to aid in straightening.
- If the paint coating is damaged, then the paint coating will have to be repaired. See PAINT REPAIR section of this TSB.

PART NUMBER	PART NAME
PM-12-A	Low Temperature Anti-Corrosion Coating

OTHER APPLICABLE ARTICLES: NONE

WARRANTY STATUS: Eligible Under Provisions Of
New Vehicle Limited
Warranty Coverage

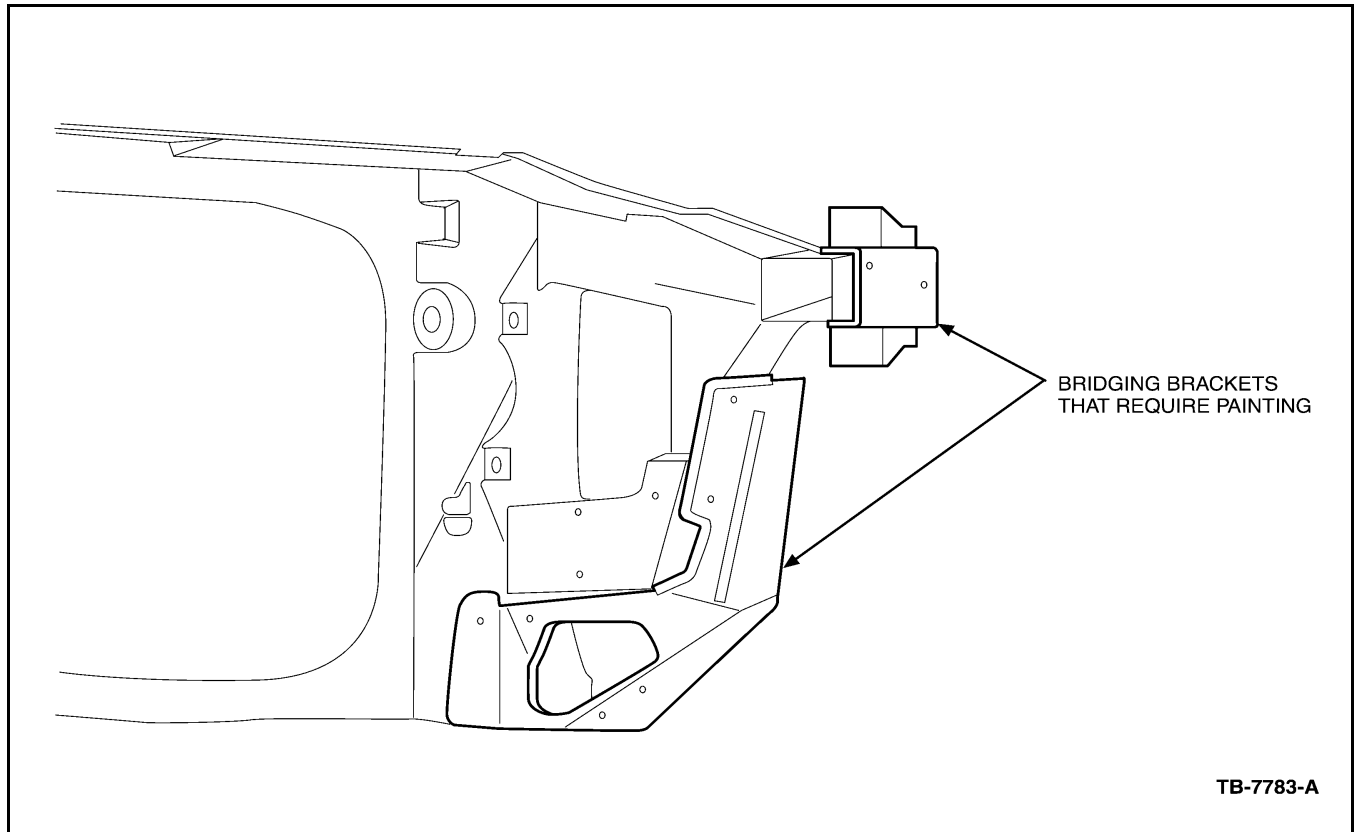


Figure 1 - Article 04-2-5