

Q-222R1



SVE BULLETIN

SPECIAL VEHICLE ENGINEERING – BODY BUILDERS ADVISORY SERVICE

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QVM Bulletin: Q-222R1

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Revision	Update	Revision Date
Q-222R1	• Applicable to 2017 and later Super Duty • Added grounding recommendations	20 July, 2016

Attaching Accessories to Aluminum Panels and Structure

Models Affected: 2015 MY and later F-150, 2017 and Later F-Series Super Duty

Background: The high-strength aluminum alloy in the all-new F-Series Super Duty and F-150 trucks does not produce red rust like steel. We have gone to great lengths to develop coatings to inhibit corrosion. However, customers should take note that when installing aftermarket equipment, aluminum can still corrode if the aluminum is attached to dissimilar metals. This type of corrosion is called "galvanic corrosion" and it occurs where there is contact between different metals, like steel or stainless steel fasteners.

Protecting against galvanic corrosion

When installing aftermarket equipment, it is necessary that the installer pay special attention when drilling or clamping dissimilar metals to the aluminum body.

- Anytime the factory paint is damaged, it is recommended that the paint be repaired with a suitable coating prior to installing aftermarket equipment (i.e. splash guards, bug shields, tool boxes, etc.)
- When installing fasteners into the mounting hole the fastener should not have contact or have an interference fit with the sheet metal
- For zinc coated steel bolts and screws, an aluminum washer should be used
- For further protection, an isolation layer should be used between the two dissimilar metals
- When clamping onto the truck, a polypropylene or urethane tape can be used as the isolating layer

Paint, Isolator, and Fastener Recommendations

We have tested many combinations of fasteners and coatings that are widely used in the aftermarket and have provided a list of approved products to help ensure durability, strength and quality.

** For small repair of factory paints around mounting hole. Follow manufacturer's directions for use.

Approved Anti-Corrosion Coatings**

- ✓ Motorcraft PM13-A
- ✓ NOX-Rust 7703-W
- ✓ Zinc Rich Primer

Recommended Acrylic Lacquer Touch-up Paints**

- ✓ Motorcraft
- ✓ Duplicolor
- ✓ Rustoleum

Approved Fasteners

- ✓ Aluminum Clamps
- ✓ Aluminum Pop Rivets
- ✓ Zinc coated steel fasteners used with an aluminum washer
- ✓ Plastic Scrivets
- ✓ Plastic Push Pins
- ✓ Aluminum Rivnuts

Isolator Recommendations

- ✓ Aluminum washer
- ✓ Urethane tape
- ✓ Polypropylene tape

Examples

In this section we illustrate some best practices to isolate steel from coming in contact with aluminum. Using the previously listed fasteners and coatings in addition to good isolation techniques will help ensure durability, strength and quality of your new Ford Truck.

Note: The following illustrations are not vehicle specific and are intended for reference only.

Figure 1 shows a plastic accessory attached to the aluminum sheet metal and the fastener properly isolated from contact with the aluminum sheet metal.

Figure 2 shows a steel accessory and steel fastener properly isolated from contact with the aluminum sheet metal.

Note: both figures show the fastener using an aluminum washer and having an oversize hole providing an air gap to the aluminum sheet metal.

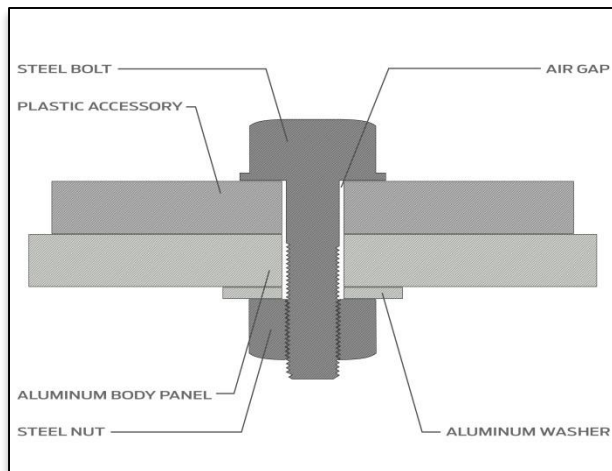


Figure 1

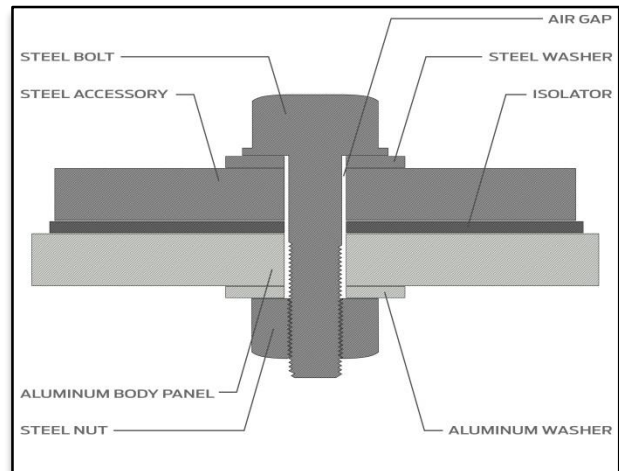


Figure 2

Important: Fasteners or coatings that should be avoided

The items listed below can accelerate galvanic corrosion in aluminum and should be avoided. If a steel fastener must be used it is necessary to properly isolate from contact with the aluminum.

- ✗ self-tapping screws
- ✗ steel rivnut
- ✗ steel pop rivets
- ✗ steel spring clips
- ✗ RTV silicone
- ✗ stainless steel fastener

Precautions when adding accessories in and around the rear pickup truck bed

Repairs or modifications that disrupt the “box to frame” or “cab to frame” interface are not permitted. (Figure 4)

Electrical Grounding

When adding accessories that require an electrical ground to the chassis it is important follow the recommended guidelines.

- ✓ Only add ground cables to the **sides of frame rails** (Figure 3)
- ✗ Do not ground on the attachment points between the box and the frame. (Figure 4)
- ✗ Do not add grounds to the Aluminum sheet metal; this will avoid issues with galvanic corrosion.

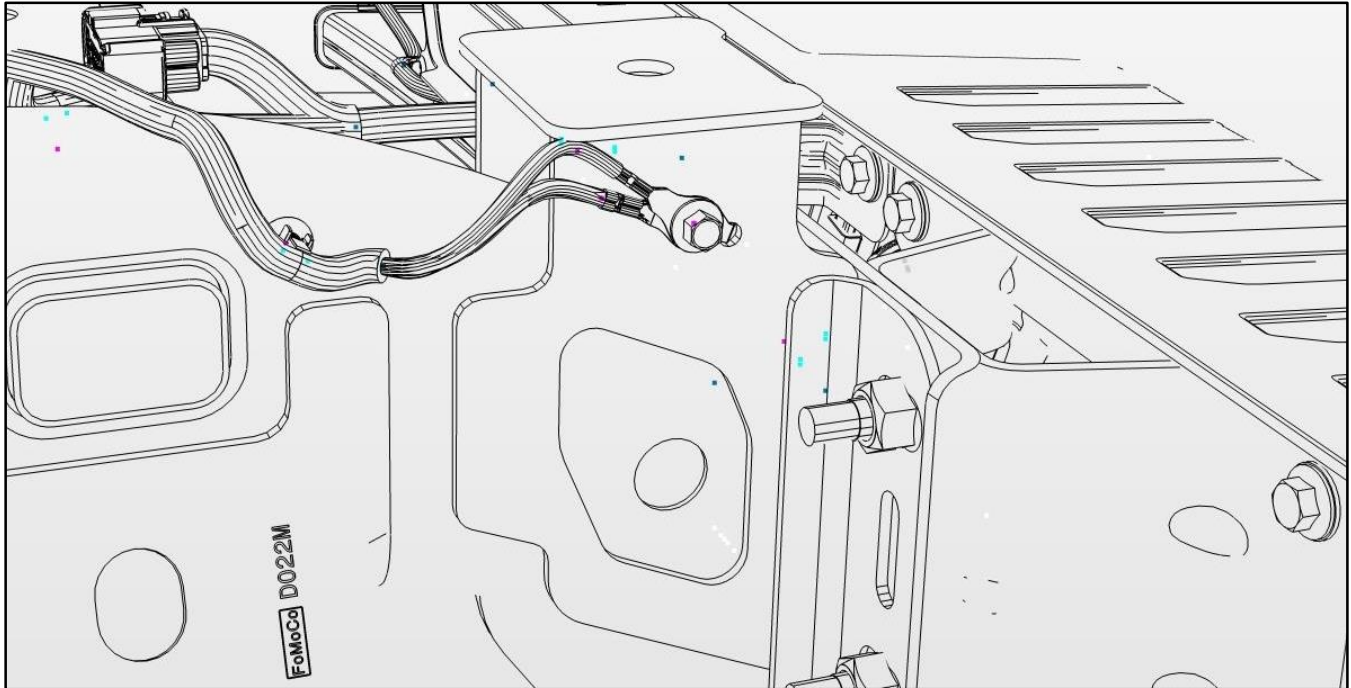


Figure 3: Ground added to the side of the Frame (F150 shown Super Duty similar)

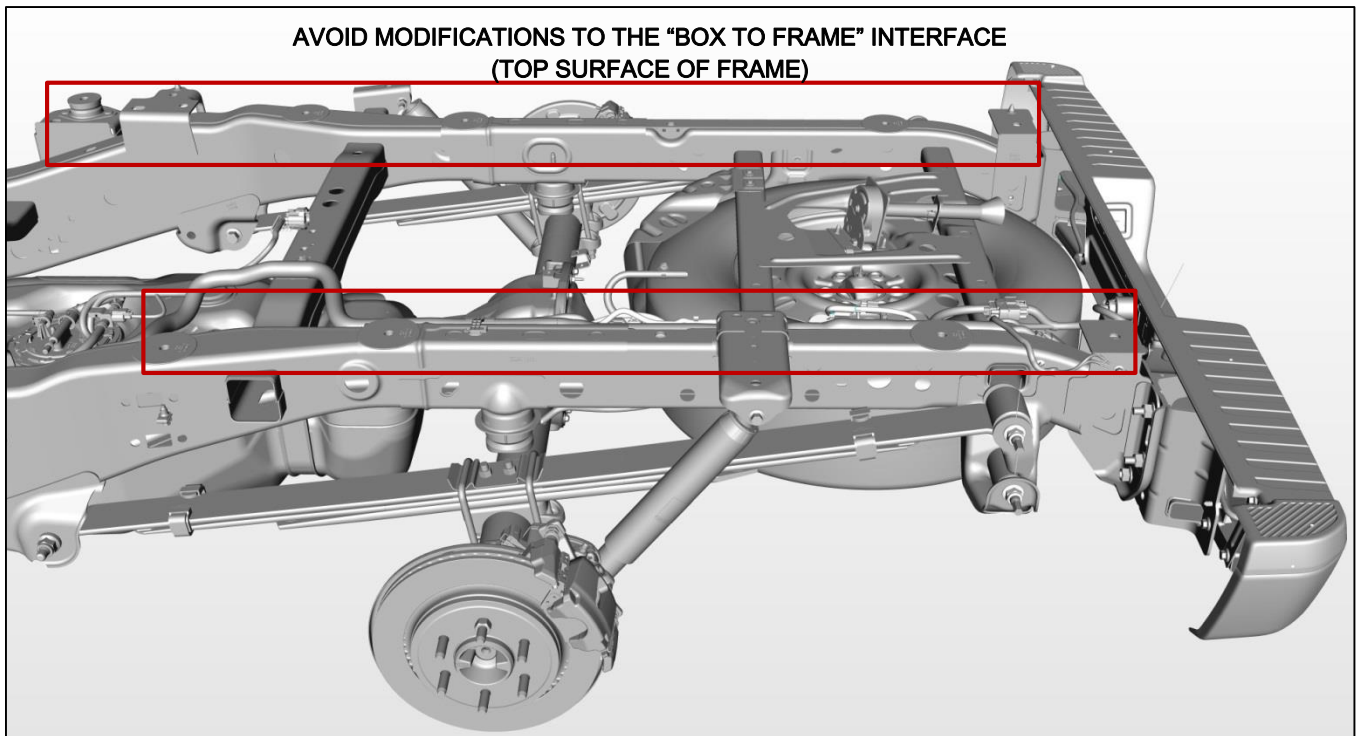


Figure 4: Rear Frame Section (F150 shown Super Duty similar)