

Technical Service Information

NAVISTAR[®]

TSI-12-08-01

Date: April 2012

Subject File: ELECTRICAL

Subject: RE Bus Battery Cable, Transmission Cooler Hose, and Air Management Panel Area Maintenance

Model: RE School and Commercial Bus built prior to July 2007, with rear-mounted radiator cooling package and air-management panels

DESCRIPTION

This TSI article outlines the importance of proper inspections and maintenance related to the battery cables, harness, and transmission cooler hoses in the air-management panel area. Failure to perform required maintenance can result in vehicle down time if abrasions occur and are not addressed in a timely manner.

The figures below represent some typical rub points that can occur over time (see Figure 1, Figure 2, and Figure 3).



Figure 1 Battery Cable or Harness Conduit Abrasion

DESCRIPTION (CONT.)



Figure 2 Evidence of Contact (Cable/Harness/Hose) with Air Management Panel



Figure 3 Evidence of Transmission Cooler Hose Abrasion

SERVICE PROCEDURE – BATTERY CABLE, HARNESS, AND TRANSMISSION COOLER HOSE

 **WARNING** – To prevent vehicle damage, personal injury or death, park the vehicle on a flat, level surface. Make sure the engine ignition is in the off position, and the transmission is in neutral or in the park position, if the vehicle is equipped with an automatic transmission. Set the parking brake, block the wheels to prevent the vehicle from moving in both directions, and disconnect the batteries at the negative terminal before doing any service procedures on the vehicle.

 **WARNING** – To prevent personal injury or death, remove ground cable from negative terminal of main battery before disconnecting electrical components. Always connect ground cable last.

 **WARNING** – To prevent personal injury or death, always wear safe eye protection when performing vehicle maintenance.

 **WARNING** – To prevent personal injury or death, make sure that the engine has cooled before removing components.

 **WARNING** – To prevent personal injury or death, do not let engine fluids stay on your skin. Clean skin and nails using hand cleaner and wash with soap and water. Wash or discard clothing and rags contaminated with engine fluids.

Battery cable, harness, and fluid hose routing and clipping is designed to provide and maintain appropriate clearance to avoid damage due to abrasion. Time in service, route conditions, and repairs performed can result in movement of hoses, battery cables, and other circuits over time.

Battery cable, harness, and fluid hose inspections are to be performed during regularly scheduled maintenance to make sure no rubbing or chafing has occurred. At a minimum, inspection should be performed as part of the annual maintenance interval.

Many areas of the engine and air management panel area allow inspection of the battery cables, harness, and fluid hoses without further disassembly. Below are example areas which should be included in your overall inspection process. See Figure 4.

SERVICE PROCEDURE – BATTERY CABLE, HARNESS, AND TRANSMISSION COOLER HOSE (CONT.)



Figure 4 Areas Accessible from under the Unit Looking into the Air Management Panel Area

Battery cable, harness, and fluid hose inspection and maintenance should not be limited to the areas outlined above. Routine maintenance practices should include a total vehicle inspection. If a suspect cable, circuit, or hose condition is observed during inspection, further actions may be required to access the suspect area for complete inspection or replacement. If chafing or damage are found during the inspection, replace the suspect cable, conduit, circuit, or hose. Take time to ensure that any item replaced has been properly routed and clipped to avoid future abrasion points.

Below are routing and clipping points to be aware of on an I6-equipped unit to ensure proper securing of the battery cables, harness, and transmission cooler hoses (see Figure 5 and Figure 6).

SERVICE PROCEDURE – BATTERY CABLE, HARNESS, AND TRANSMISSION COOLER HOSE (CONT.)

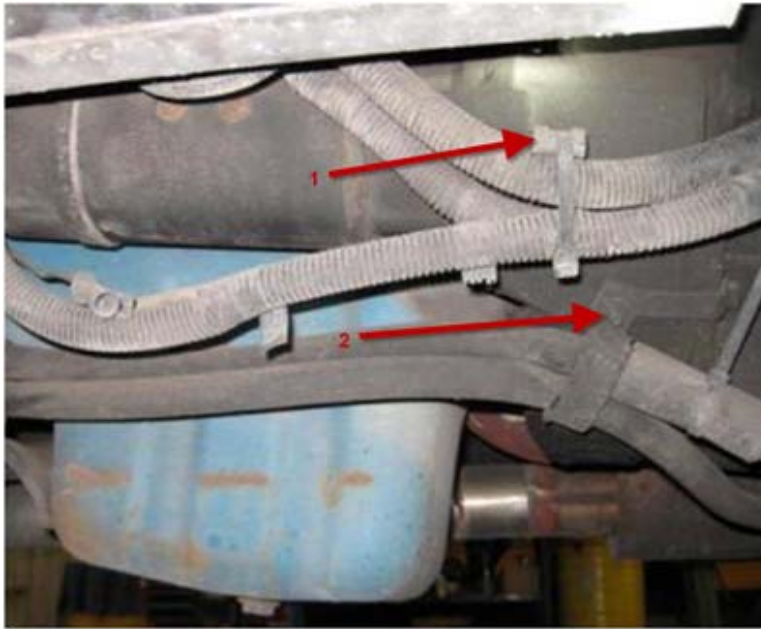


Figure 5 Routing and Clipping Points to be Aware of on an I6-Equipped Unit

1. Battery Cable and Harness Saddle and Tie-Strap at Starter Mounting Point
2. Transmission Cooler Hose P-Clamp at Bell Housing



Figure 6 Routing and Clipping Points to be Aware of on an I6-Equipped Unit

1. Battery Cable and Harness Frame Rail-Mounted Standoff Bracket, Saddle and Tie-Strap, Located Between Exit of Battery Box and Starter Mounting Point

SERVICE PROCEDURE – AIR MANAGEMENT PANELS

Air management panels are designed to reduce the amount of dirt, dust, and other road debris entering the engine compartment area (see Figure 7). Operating a unit with damaged or missing air management panels can result in an increase of required radiator cooling package maintenance to ensure engine cooling system efficiency. Failure to maintain the cooling system can result in increased wear and tear and failure of engine components.

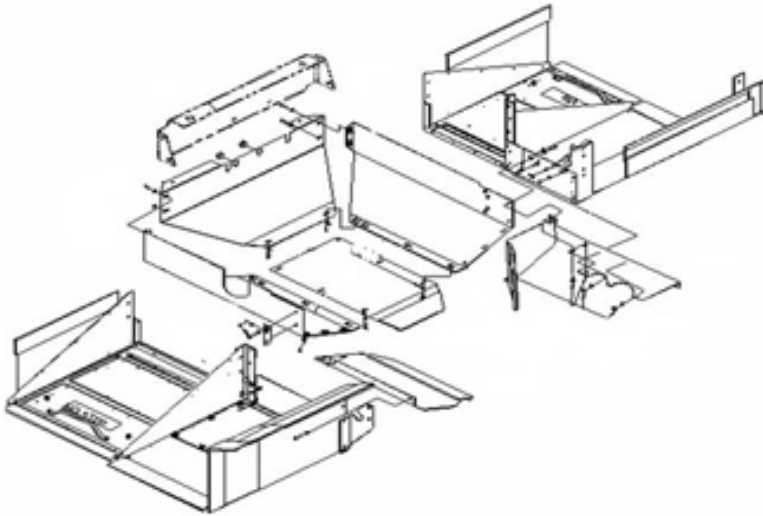


Figure 7 Air Management Panels

Air management panels should be inspected during regularly scheduled maintenance. At a minimum, air management panels should be inspected as part of the annual maintenance interval.

Maintenance should include, but is not limited to, making sure the panels are in place, the seals are in good condition, and the engine access door area folding panels are in the closed position after service is performed.

Maintenance information is available in the operator manuals supplied with the unit, and is also available from your local authorized IC Bus service facility.