

MERITOR WABCO

Technical Bulletin

OnGuard™ System Retrofit Kit Installation Instructions

Hazard Alert Messages

Read and observe all Warning and Caution hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.

WARNING

To prevent serious eye injury, always wear safe eye protection when you perform vehicle maintenance or service.

Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Support the vehicle with safety stands. Do not work under a vehicle supported only by jacks. Jacks can slip and fall over. Serious personal injury and damage to components can result.

Release all air from the air systems before you remove any components. Pressurized air can cause serious personal injury. Refer to the vehicle manufacturer's service manual for instructions.

Verify and diagnose all active faults in the system prior to replacing OnGuard™ components. When diagnosing OnGuard™, TOOLBOX™ Software (11.0 or higher) must be used. Be aware that diagnostic devices must be connected prior to keying on the unit to minimize possible OnGuard™ faults during diagnosis.

 This symbol alerts you to tighten fasteners to a specified torque value.

How to Obtain Additional Maintenance, Service and Product Information

Refer to Maintenance Manual MM-1306, OnGuard™ Collision Mitigation System. To obtain this publication, visit Literature on Demand at meritor.com. Meritor WABCO publications are also available on our website:

www.meritorwabco.com

How to Obtain Parts and Kits

Contact Meritor's Commercial Vehicle Aftermarket at 888-721-5250.

OnGuard™ Collision Mitigation System (CMS) Kit

This technical bulletin provides procedures for removing existing OnGuard™ parts and installing parts included in the OnGuard™ Collision Mitigation System kit.

The following parts are included in the kit.

- Radar Sensor
- OnGuard™ Display
- Fascia
- Radar Adapter Harness
- Display Adapter Harness
- Radar Bracket
- Bracket Mounting Bolts
- Fascia M6 Bolts
- Radar M6 Nuts

NOTE: Care should be taken to verify the correct kit part number is being installed on the vehicle as all CMS radars look alike.

Radars Sensor Assembly and Mounting Bracket Removal

1. Wear safe eye protection. Park the vehicle on a level surface. Apply the parking brake. Ensure that the ignition is turned OFF.
2. Blocks the rear tires to prevent the vehicle from moving.

- Remove the bumper and accessories from the front of the tractor to gain clear access to the radar and bracket. Refer to the vehicle manufacturer's recommended procedures for removal of the bumper and accessories.
- Remove the two fascia mounting bolts and remove the fascia from the radar sensor. Figure 1.

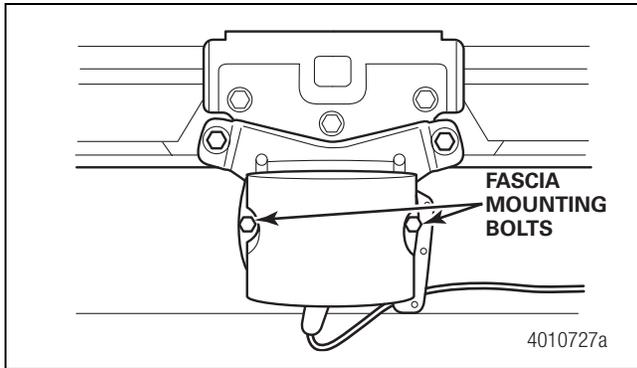


Figure 1

- Disconnect the radar sensor connector by depressing the lock tabs on both sides of the radar connector. It is not necessary to remove the radar sensor from the bracket. Push the cable clip out from the hole at the corner of the bracket.
- Remove the two 1/2-inch mounting bolts from the radar sensor bracket and remove the bracket. Figure 2.

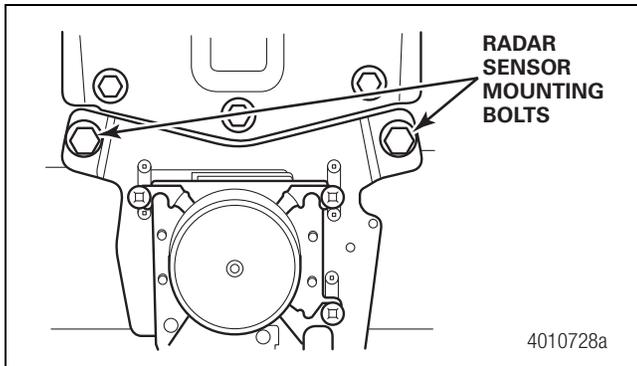


Figure 2

Radar Bracket Installation

NOTE: Care should be taken to verify the correct kit part number is being installed on the vehicle as all CMS radars look alike.

- Verify the mounting position of the radar sensor on the bracket. Figure 3 shows which holes are used for mounting the radar unit depending on what type of bumper is on the vehicle. (PLASTIC BUMPER ONLY or STEEL BUMPER ONLY). Figure 3.

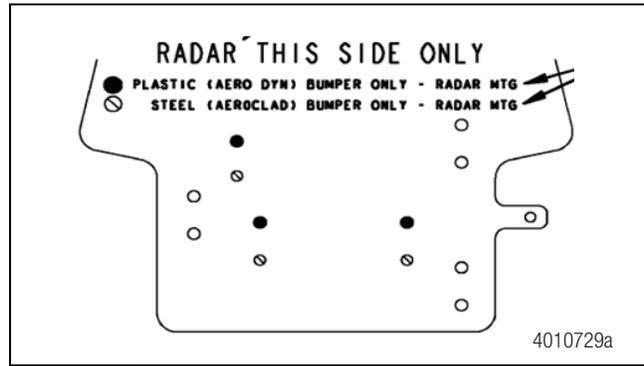


Figure 3

- Place the radar in position on the bracket. Install the M6 flange nuts provided in the kit and tighten to 61-75 in-lb (6.9-8.4 N•m). No movement should occur between the bracket and the radar sensor after the sensor has been correctly installed on the mounting bracket. Figure 4. 

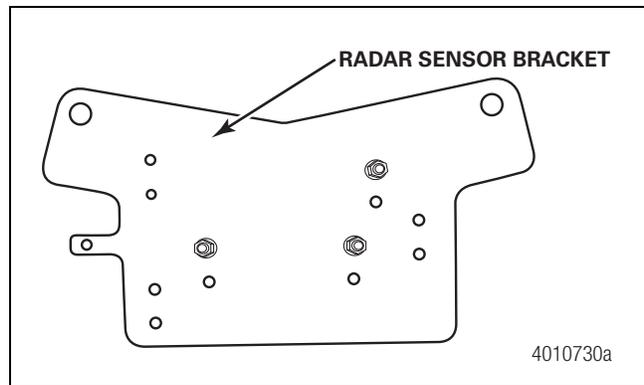


Figure 4

- Place the new radar sensor and bracket onto the tractor in the same position as the old bracket and radar sensor. Make sure the radar sensor and bracket are mounted with the radar sensor facing outward toward the front of the vehicle. Install the two 1/2" mounting bolts provided in the kit and dry tighten to 100 ft-lb (135 N•m). Figure 5. 

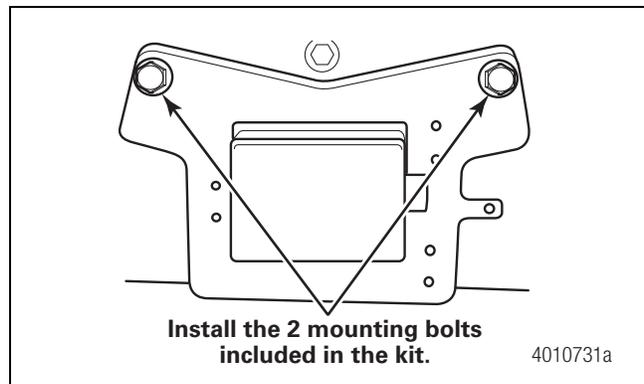


Figure 5

4. Install the radar adapter harness to the vehicle OEM radar connector by pushing on the adapter end until it snaps into the connector. Slide the rubber boot over the connector. Figure 6.

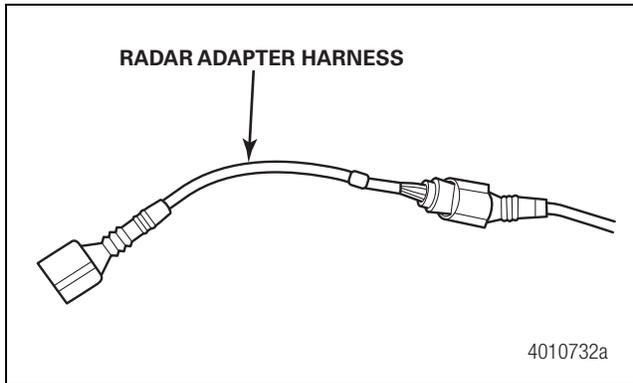


Figure 6

5. Reconnect the other end of the radar adapter harness to the new radar unit by pushing on the adapter connector until it snaps into the radar sensor. Slide the rubber boot over the connector until the connector is completely covered by the boot. If required, secure the harness using a snap clip or tie strap in the hole on the bracket. Make sure the harness is equipped with a drip loop and does not rub against any sharp edges. Figure 7.

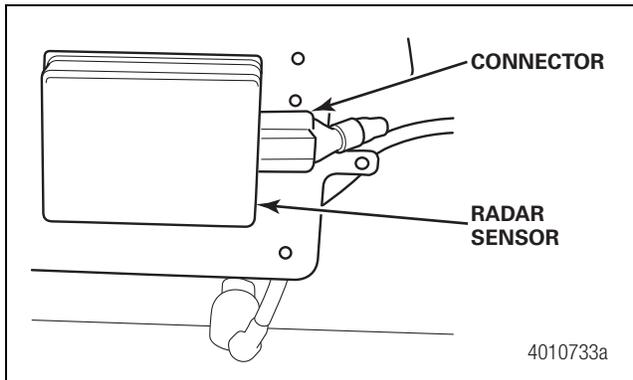


Figure 7

6. Install the bumper according to the vehicle manufacturer's recommended procedure.
7. Verify that there is at least 1/4-inch gap (6.35 mm) on all four sides of the radar fascia and the bumper. If there is not a 1/4-inch (6.35 mm) gap, contact the manufacturer for assistance in adjusting the bumper. This gap is critical to the correct operation of the OnGuard™ Collision Mitigation System.
8. Place the fascia in position over the radar sensor. Install the M6 x 35 mm flange-head bolts included in the kit and dry tighten to 91 in-lb (10.3 N•m). Figure 8. 

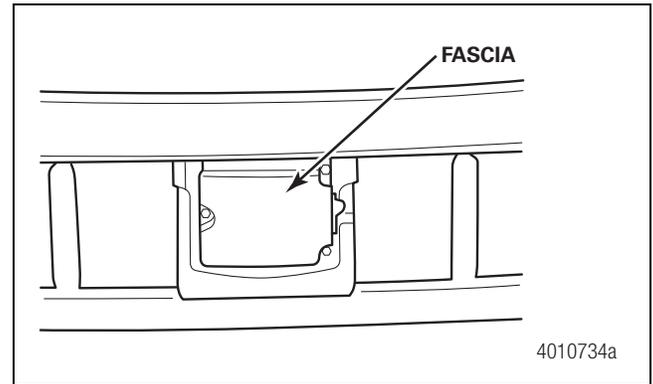


Figure 8

OnGuard™ Display Removal

1. Verify the ignition switch is in the OFF position.
2. In order to access the OnGuard™ display mounting screws, you must remove the instrument panel according to the vehicle manufacturer's recommended procedure.
3. Once the instrument panel is removed, unscrew and remove the OnGuard™ display screws, nuts and washers from the back of the panel. Save the nuts and washers for reuse during installation of the new display.
4. Disconnect the wiring connector from the OnGuard™ display.
5. Remove the OnGuard™ display from the instrument panel.

OnGuard™ Display Installation

1. Connect the OEM display connector to the display adapter harness by pushing on the connector end until it snaps into the connector. Figure 9.

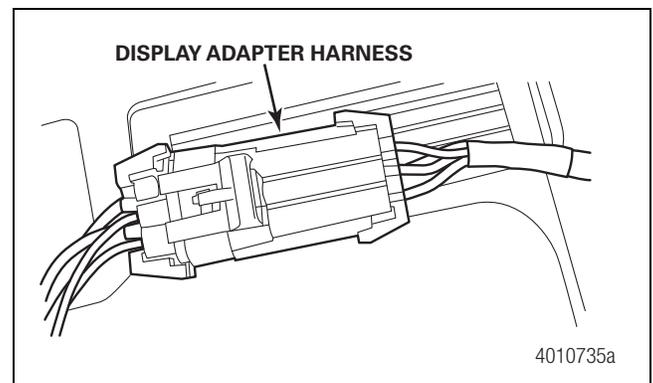


Figure 9

2. Install the new OnGuard™ display using the nuts and washers from previous display.
3. Connect the display adapter harness to the new OnGuard™ display. Figure 10.

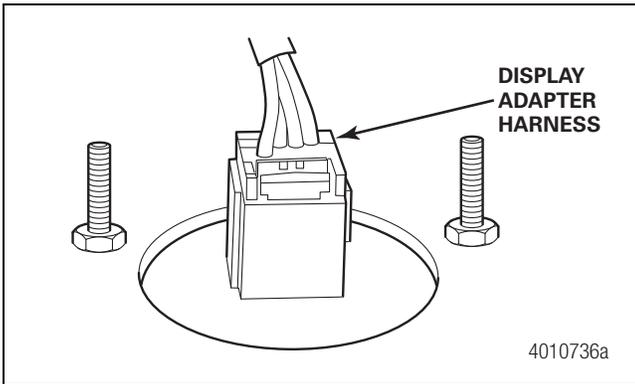


Figure 10

4. Reinstall the instrument panel according to the vehicle manufacturer's recommended procedure.
5. Turn the ignition to the ON position and perform the Radar Sensor Service Alignment procedure in this bulletin.

Radar Sensor Service Alignment

The Radar Not Aligned screen will be displayed as shown in Figure 11.

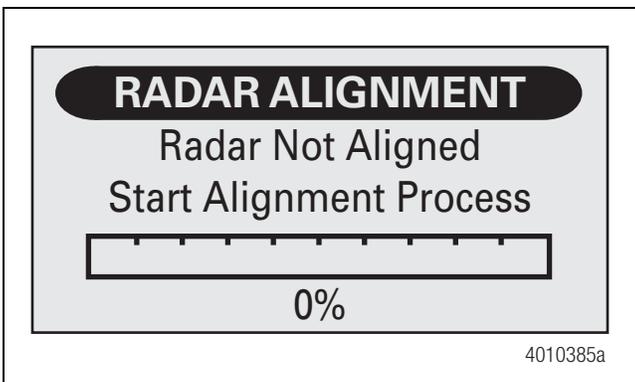


Figure 11

NOTE: While the OnGuard™ system is in Service Alignment mode, OnGuard™ will not track vehicles or operate until the Service Alignment procedure is completed.

1. Before starting the alignment procedure, visually verify that the radar sensor is not loose. To correctly inspect the integrity of the radar mounting hardware, hold on to the radar and wiggle it back and forth. There should not be any physical or visual movement or slack in the radar or radar mounting bracket. Ensure there is at least 1/4-inch (6.35 mm) of clearance between the radar sensor and the bumper in all directions. Contact between the radar sensor and bumper can cause damage to the radar sensor.

2. Drive the vehicle on a straight road above 30 mph (48 kph). The road should have telephone poles, signposts and other non-moving objects along the roadside. There must also be other traffic on the road, either on coming or lead vehicles at distances greater than 150 ft. Stopping the vehicle while traveling in traffic is acceptable but will increase the time needed to complete the alignment procedure. While in radar alignment mode, the OnGuard™ display will show the progress of the alignment process as shown in Figure 12.

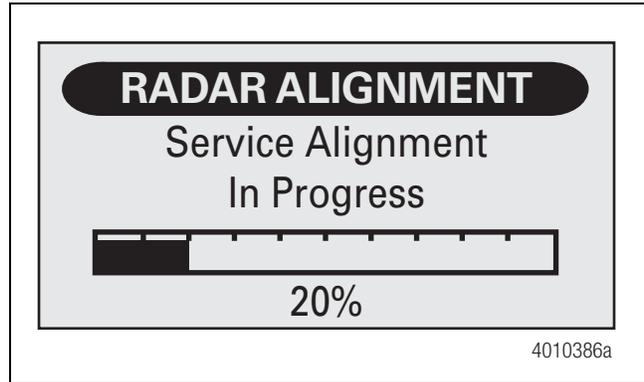


Figure 12

3. Wait until the Radar Aligned screen appears. Figure 13. This typically takes 10 to 30 minutes of driving time to complete.

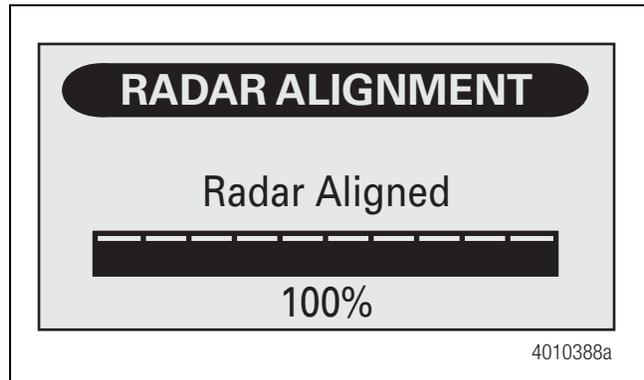


Figure 13

4. Once completed, the system will revert to one of the normal operating screens. This completes the Radar Sensor Service Alignment procedure. The OnGuard™ System should now be aligned.

NOTE: At the completion of the Service Alignment, the engine may have an active Diagnostic Trouble Code because Adaptive Cruise Control was inoperable during the alignment. Park the vehicles in a safe location and turn the ignition switch off for one minute to reset these trouble codes.

NOTE: If the radar alignment fails, a specific radar alignment error will appear that indicates the direction in which the sensor is incorrectly aimed. If this occurs, review the radar sensor installation, determine if the radar sensor needs to be repositioned (or in some way serviced) and then re-perform the Radar Sensor Service Alignment procedure. Contact OnTrac (866-668-7221) if the radar service alignment fault cannot be resolved.

NOTE: As the vehicle continues to be driven following the Radar Sensor Service Alignment, the OnGuard™ system performs continuous adjustments to the radar sensor alignment. Further service alignments will generally not be required unless the radar sensor mounting assembly is disturbed, becomes loose or the radar sensor requires replacement.

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