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MERITOR WABCO

Installation Guide

OnLane™ Lane Departure Warning (LDW) System Installation Guide

Freightliner M2 Only

Con-way

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.

How to Obtain Additional Maintenance, Service and Product Information

Refer to Maintenance Manual MM-1291, OnLane™ Lane Departure Warning System; and User Guide SP-1335, OnLane™ Driver Tips. If you have any questions about the material covered in these publications, or for more information about the Meritor WABCO product line, please contact the Meritor OnTrac™ Customer Call Center at 866-OnTrac1 (668-7221) or visit our website: meritorwabco.com

How to Obtain Parts and Kits

Contact Meritor's Commercial Vehicle Aftermarket at 888-725-9355.

Kit Parts List

Locate and verify that the kit is complete prior to beginning the installation of this kit.

- OnLane™ bracket
- OnLane™ camera module
- OnLane™ switch
- Set of 2 audio switches
- Wiring harness
- Hardware kit
- MCS-1411 installation document

Description

OnLane™ Lane Departure Warning (LDW) System with SafeTraK technology by Takata is a camera-based warning system that utilizes a camera mounted near the top center of the vehicle's windshield to monitor and calculate the vehicle's position within the lane. When OnLane™ detects the vehicle crossing lane markings without the turn signal being activated, the system sounds an audible warning through a set of speakers. OnLane™ identifies intentional lane changes by monitoring the turn signals, brake switch and vehicle speed.

The following conditions may impact system performance:

- Dirty or damaged windshield
- Poor lighting conditions caused by inoperable headlamp(s) or severe road glare
- Poor weather conditions such as snow, ice, heavy fog or heavy rain
- Poor pavement conditions such as broken road surface, ice, snow, sand, dirt or gravel covering the road surface
- Missing, worn, faded, damaged or covered lane markers

When the system cannot provide assistance, the vehicle's amber indicator is turned ON. The system resumes normal operation when the environmental factors causing the interference are resolved and the amber indicator will turn OFF.

Installation Procedures

Camera and Bracket Installation

The procedure for installing a new OnLane™ system will vary depending on the vehicle in which the unit is being installed. Each vehicle may have slightly different routing and wiring requirements. Figure 1.

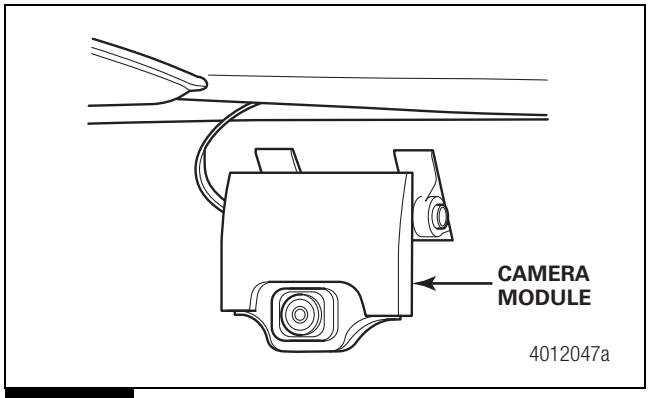

Figure 1

Before securing the bracket to the windshield, note that the locations of the mounting screws on the bracket are not tapped. We recommend that you install the bracket to the camera module before installing it in the vehicle. Use the self-tapping mounting screws of the camera module to start the threads for the mounting screws on the bracket. This action will allow for easier installation of the camera module to the bracket, once the bracket is installed to the windshield. Unscrew the bracket from the camera module before you begin installing the bracket to the windshield.

The OnLane™ system should only be installed on a windshield when the glass temperature is within the recommended range between 70-100°F (21-37°C). Do not apply the bracket if the windshield temperature is below 60°F (15°C).

1. Loosen the headliner and A-pillar trim panels as outlined in the vehicle service manual to allow room to route the wiring behind the header panel and down the A-pillar.
2. Clean the windshield mounting surface with IPA wipe (50/50 mix of isopropyl alcohol and water) or equivalent cleaner.
3. Allow the mounting surface to dry completely before proceeding to the next step. The windshield surface must be free of all oil, moisture and dirt for correct mounting bracket adhesion.

   NOTE: To download mounting bracket installation templates, visit the OnLane™ literature web page at meritorwabco.com. **The templates must be printed to actual size (11x17 paper); any modification to the template's size will result in an incorrect installation of your system.**

4. Align the template so that the markings on the template are square to the centerline markings and the frit/trim line markings at the top of the windshield. Figure 2. The template shown is an example only.

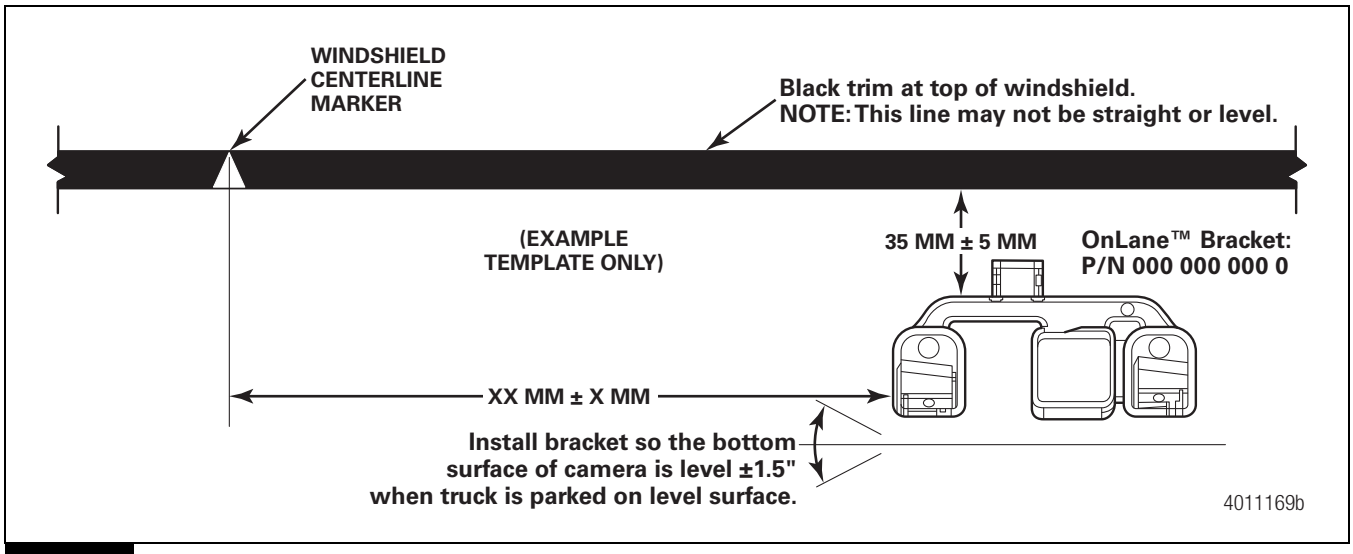

Figure 2

5. Remove the liners from the adhesive pads on the bracket. Figure 3.

Figure 3

6. Hold the bottom of the bracket slightly away from the glass and align the top of the bracket to the top of the template cutout.
7. Bring the bottom of the bracket adhesive pads into contact with the glass and press the bracket firmly against the glass. Maintain a minimum of 45 pounds of force for 30 seconds. Wait 15-30 minutes for the mounting bracket adhesive to set.
8. Remove the yellow lens cap from the new LDW unit and position the LDW unit onto the mounting bracket in a slightly swung up position to align the upper tab. Align the two lower tabs on the LDW unit by rotating the unit downward with the lower tabs on the mounting bracket. Figure 4.

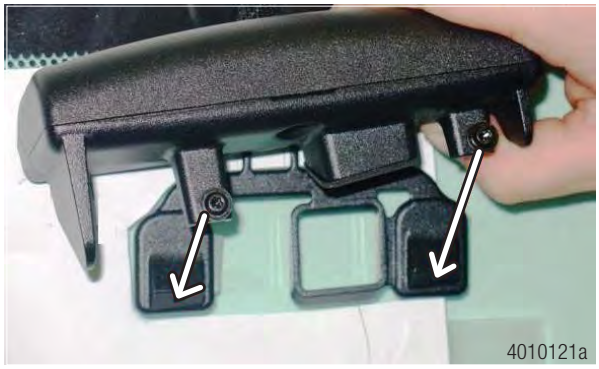

Figure 4

9. Install the two T15 torx head screws holding the LDW to the mounting bracket. Tighten the screws to 2.5 +/- 0.4 N•m (22 +/- 3.5 ft-lb). DO NOT OVERTIGHTEN.

OnLane™ Switch Installation

1. Locate a blank opening in the dashboard to accommodate the OnLane™ switch (rocker switch). If one is not available, make an opening in the dash to accommodate the switch.
2. Pull the switch connector to the back of the opening and connect to the switch. Figure 5.

OnLane™ SWITCH

Figure 5

OnLane™ Audio Switch Installation

1. Identify the location in the truck where the OnLane™ audio switches will be mounted (under the dash near each speaker). Break the connection to the speakers. Wire the connectors in the kit.
2. Route OnLane™ wires and ground. Plug the new connector into the switch (extend the high/low and ground). This step needs to be done for both the driver and passenger side speakers.
3. Connect to the J1939 network and using ServiceLink, access the Bulk Head Module. Add the following two features:
   - 26-01048-001 (turn signal)
   - 26-01028-002 (brake lamp)
4. Use the CAN to verify the installation.

OnLane™ Wiring Harness Installation

1. Install the system wiring harness as shown. Make sure that you do not pinch or cut the cables or wiring during installation of the harness and trim panel or trim panel attaching screws. Figure 6.

   Use zip ties or straps as necessary to secure the harness to prevent movement that may cause vibrations or compromise harness integrity. Be careful to ensure that the wiring harness is clear of all screw locations, including headliner and visor locations. This prevents intrusions that may affect the integrity of the wiring harness.

   Most connections to the vehicle wiring are made on the passenger side of the vehicle, so routing the wiring harness to the passenger side A-pillar is recommended.

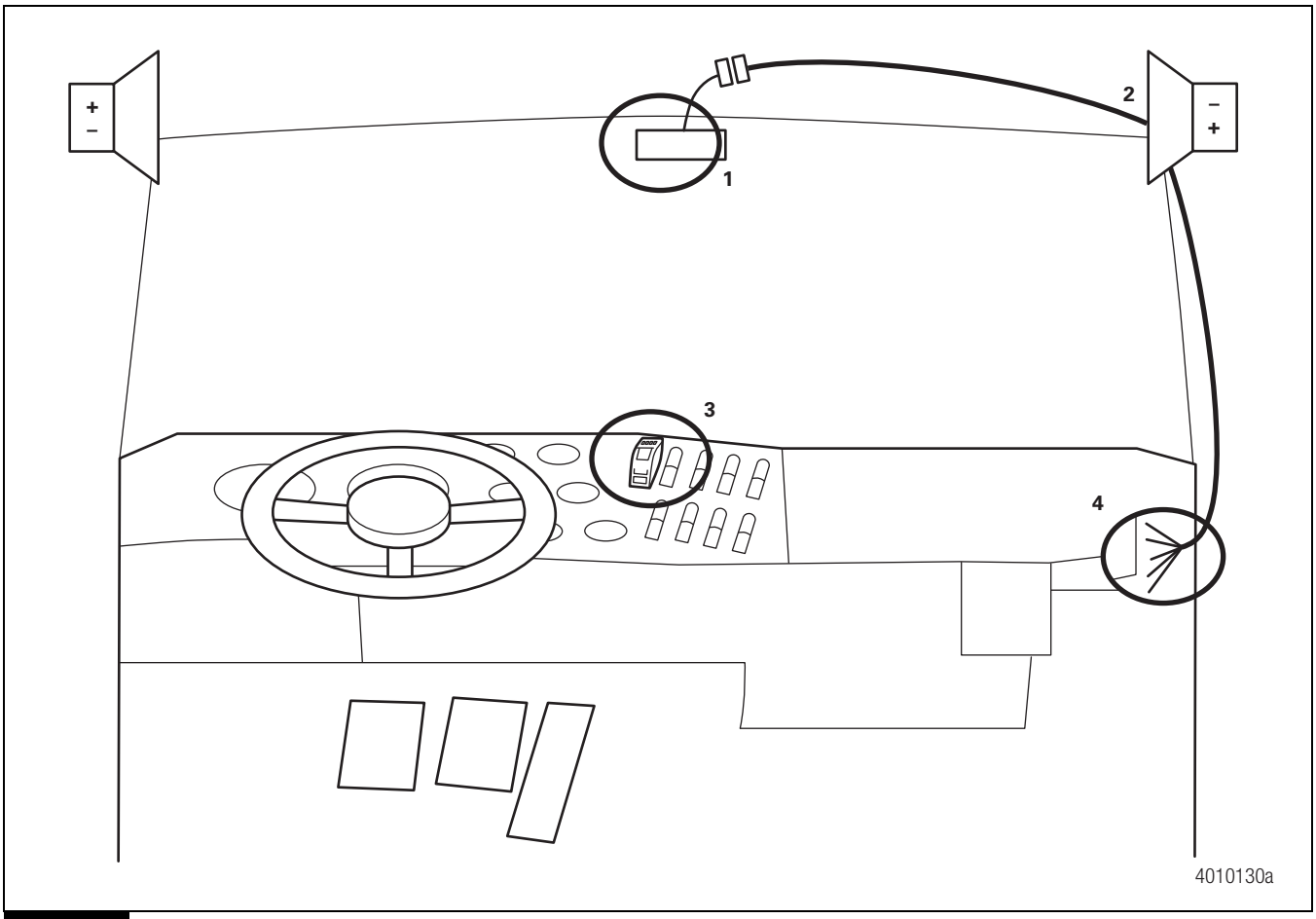

Figure 6

2. Route the camera harness up the A-pillar and along the vehicle headliner. Make sure that enough harness is present to allow connect/disconnect of the camera connector without stressing the harness or the connector.
3. Tuck the camera harness inside the headliner to mate with the wiring harness connector from the A-pillar.
4. Route the OnLane™ switch connector behind the dash to the desired location for the switch. If there is no opening on the dash panel that can accommodate the switch, one should be made. Figure 7.

CONNECTOR ROUTED BEHIND THE DASH PANEL

Figure 7

5. The remaining wires can be routed under the instrument panel for connection to the vehicle wiring. Figure 8.

WIRES ROUTED UNDER INSTRUMENT PANEL TO VEHICLE WIRING

Figure 8

Connect the Wiring Harness to the Vehicle Wiring

⚠ CAUTION

Disconnect vehicle battery before proceeding.

The installation package includes a wiring harness that must be connected to the vehicle wiring. Brake and turn signal inputs must provide a transition from 0V to +12VDC when the turn signal and brake lights are activated.

1. Assemble the OEM truck wiring diagrams and the OEM truck service/repair manual information necessary to correctly route the wire harness into the headliner and behind the dashboard and to locate and identify all circuits involved.
2. Connect +12VDC to a switched ignition power source that is only powered when vehicle ignition is on to avoid draining the vehicle battery.
3. Securely connect the wire harness connector to the OnLane™ module and switch. BE CAREFUL NOT TO PINCH OR DAMAGE WIRES DURING ROUTING. Ensure that you do not hold the camera away from the cable so you do not pull the wires inside the camera.
4. Splice the flying leads from the harness to the various circuits of the vehicle harness. Always follow the correct circuit splicing procedures as outlined in the OEM truck service/repair manual.

   The seven flying leads listed may not all be required. Consult the installation information for your particular vehicle application, or contact Customer Service.

   - Red – 12VDC Ignition power
   - Black – Vehicle ground
   - Green – J1939 CAN low
   - Yellow – J1939 CAN high
5. After wiring is complete, cut and tape off any of the unused flying leads of the OnLane™ wiring harness.

   Replace the headliner and any trim that may have been removed during installation.

Verifying Correct System Operation

Confirm that the OnLane™ System is installed and operating correctly by verifying the following.

- When the vehicle ignition is turned on, the system issues a trial warning tone from each speaker (left then right) and illuminates the green and amber lights on the OnLane™ switch.
- When the vehicle has reached approximately 42 mph (67.6 kph) on a well-marked road, the amber LDW Not Available indicator goes out, indicating the system is tracking and ready to issue warnings.
- The system does not issue warnings when the brakes are applied or either turn signal is activated.
- The operator can silence any alerts for 10-15 minutes (depending on OEM settings) by pressing the OnLane™ switch. Pressing the switch again should clear the mute mode and allow warning alerts to sound.
- Verify continuity and correct circuit function by performing the Circuit Mode test.

OnLane™ Circuit Mode Test

1. Turn ignition key to power-up cab. During start up, the amber LDW Not Available indicator and green LDW Enabled indicator on the OnLane™ rocker switch are turned on.
2. Wait for the audible start-up tones to complete. If the indicators do not light or there are no start-up tones, check the OnLane™ power and ground connections, the switch connections and the speaker connections.
3. Enter test mode by depressing the OnLane™ rocker switch at least seven times within two seconds after the audible start-up tones are complete. The system indicates that it is in test mode by giving a short tone through the left speaker followed by one through the right speaker. In a single speaker system, both tones come through that speaker. While in test mode, the green LDW Enabled indicator is turned off and the amber LDW Not Available indicator flashes.

   This test mode times out in 10 minutes. Turning off the vehicle also causes the test mode to close.

   If the amber LDW Not Available indicator is ON and the green LDW Enabled indicator is OFF, this indicates that a system fault is present. The system identifies the fault by flashing the green LDW Enabled indicator.

If the green indicator flashes, and the brake is not being applied during test mode, it is identifying a fault.

4. Briefly activate the left turn signal and verify that a tone is heard through the left speaker and the green LDW Enabled indicator flashes. If a warning tone is not heard, check the left turn signal connection.
5. Briefly activate the right turn signal and verify that a tone is heard through the right speaker and the green LDW Enabled indicator flashes. If a warning tone is not heard, check the right turn signal connection.
6. Activate the brake and verify that the green LDW Enabled indicator is turned on. If it is not turned on, check the brake connection.
7. Turn the ignition key off to power down and exit the test mode.

   If the self tests have not completed successfully, the vehicle's green indicator begins to flash to identify the fault.

OnLane™ Test Mode Faults

Read the fault code by counting the series of green LDW Enabled indicator flashes. For example, if the fault code is 2, 3, the system will flash ON two times for the first digit 2, pause for 3 seconds and then flash ON 3 more times for the second digit 3, to indicate a 2, 3 fault code.

When the code display is complete, the green LDW Enabled indicator switches OFF.

Redisplay the fault code by pressing and releasing the OnLane™ switch one time or connecting with TOOLBOX™ 11 (or later version) software. Refer to the fault codes in the OnLane™ Maintenance Manual MM-1291.

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