

# **ONSIDE® UNIVERSAL KIT INSTALLATION GUIDE**

**FAIRING MOUNT**

## **INSTALLATION PROCEDURES**

**TP18046**

**WABCO**



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# 1 General Information

### Symbols used in this document

#### **DANGER**

Description of an immediate situation which will result in irreversible injury or death if the warning is ignored.

#### **WARNING**

Description of a possible situation which may result in irreversible injury or death if the warning is ignored.

#### **CAUTION**

Description of a possible situation which may result in irreversible injury if the warning is ignored.

#### **NOTICE**

Description of a possible situation which may result in material damage if the warning is ignored.



Important information, notes and/or tips



Reference to information on the internet

#### 1. Action step

- Action step
- ⇒ Consequence of an action

#### ■ List

- List

#### Note on the use of a tool/WABCO tool

## General Information

### How to Obtain Additional Maintenance, Service and Product Information

If you have any questions about the material covered in this publication, or for more information about the WABCO product line, please contact WABCO Customer Care Center at 855-228-3203 (United States and Canada); 800-953-0248 (Mexico); by email at [wnacustomercenter@wabco-auto.com](mailto:wnacustomercenter@wabco-auto.com); or visit our website: [www.wabco-na.com](http://www.wabco-na.com).

Refer to the Society of Automotive Engineers (SAE) website to find all current SAE documents and standards applicable to WABCO products (such as SAE J447 and SAE J908 at [www.sae.org](http://www.sae.org)).

Refer to the National Highway Traffic Safety Administration (NHTSA) website to find all current documents referenced in the manual at [www.nhtsa.gov](http://www.nhtsa.gov).

### WABCO Academy



<https://www.wabco-academy.com/home/>

### WABCO online product catalog



<https://www.wabco-customercenter.com>

### Your direct contact to WABCO

**WABCO North America LLC**  
**WABCO USA LLC**  
**1220 Pacific Drive**  
**Auburn Hills, MI 48326**  
**Customer Care Center: (855) 228-3203**  
**[www.wabco-na.com](http://www.wabco-na.com)**

# 2 Safety Information

### Provisions for a safe work environment

- Only trained and qualified auto technicians and automotive mechanics may carry out work on the vehicle.
- Read this publication carefully.
- Follow all warnings, notices and instructions to avoid personal injury and property damage.
- Always abide by the vehicle manufacturer's specifications and instructions.
- Observe all accident regulations of the respective company as well as regional and national regulations.
- The workplace should be dry, sufficiently lit and ventilated.
- Use personal protective equipment if required (safety shoes, protective goggles, respiratory protection and ear protectors).

Read and observe all Danger, 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**

The OnSide Blind Spot Detection System is an Advanced Driver Assistance System and will not prevent contact with other vehicles, persons or objects. The system is not intended as a substitute for proper lane change procedures. Drivers must remain aware of their surroundings by using all available mirrors before changing lanes. Never rely solely on the system.

#### **WARNING**

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

#### **WARNING**

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.

#### **WARNING**

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.

#### **WARNING**

Verify and diagnose all active faults in the system prior to replacing OnSide components. When diagnosing OnSide, TOOLBOX™ Software (12.7 or higher) must be used. Be aware that diagnostic devices must be connected prior to keying on the unit to minimize possible OnSide faults during diagnosis.

### 3 OnSide Blind Spot Detection (BSD) Upgrade Kit

This technical bulletin provides procedures for installing parts included in the OnSide Blind Spot Detection upgrade kit.

The following parts are included in the kit:

- Radar Sensor
- OnSide Blind Spot Light Indicator
- Wiring Harness
- Radar Metal Bracket
- Radar Wedge Housing
- Angle Change Shims
- Radar M6 Lock Nuts
- Radar M6 x 20 mm Bolts
- M8 Lock nut
- Radar Fascia
- Oversized Washers

# 4 Installation Procedures

## 4.1 Radar Sensor and Mounting Bracket Installation



Installation will vary due to different vehicle fairing designs on each truck model.

### WARNING

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

### WARNING

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.

1. Wear safe eye protection. Park the vehicle on a level surface. Apply the parking brake. Ensure that the ignition is turned OFF.
2. Block the rear wheels to prevent the vehicle from moving.
3. Locate the passenger side fairing under the cab (Figure 1).

Fig. 1



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## Installation Procedures

4. Locate a clear area between 10 feet and 14 feet from the front bumper mounting zone (Figure 2). The center of the radar should be as close to 23.4 inches (600 mm) from the ground as possible but may be mounted as high as 31 inches (800 mm) or as low as 20 inches (500 mm).

Fig. 2



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5. Using the metal radar bracket as a template, mark the center point of the two M6 screw holes and the access opening for the radar harness (Figure 3). Note that the correct position of the bracket has the cable access hole toward the rear of the vehicle.

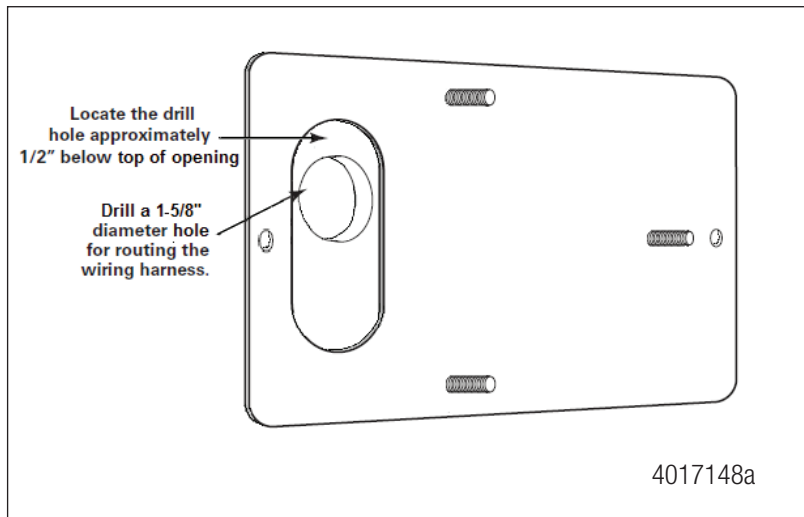
Fig. 3



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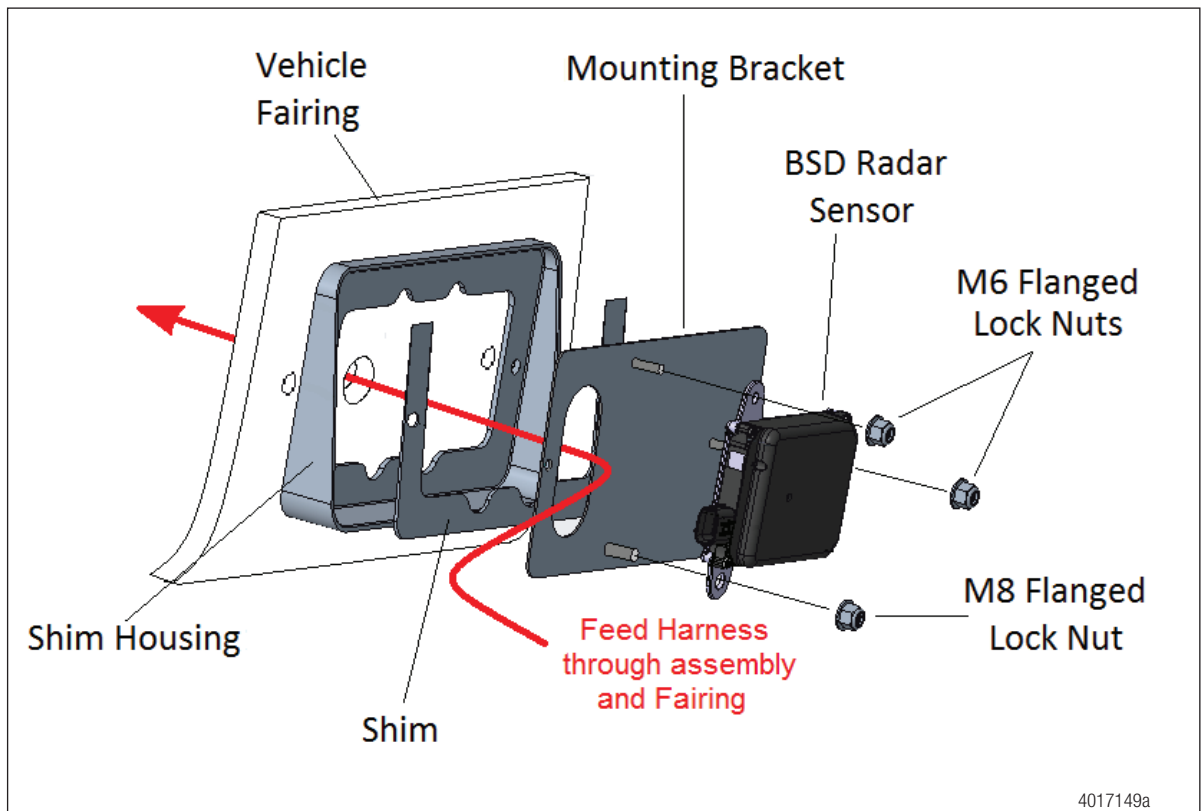
6. On the marked positions, drill the fairing for the two M6 screws and a 1-5/8" (41 mm) hole for the radar harness (Figure 4).

Fig. 4



7. Fasten the radar unit to the metal bracket using two M6 and one M8 lock nuts (Figure 5). Tighten the M8 flanged lock nut to 61-75 in-lb (6.9-8.4 Nm) and then tighten the M6 flanged lock nuts to 61-75 in-lb (6.9-8.4 Nm).

Fig. 5

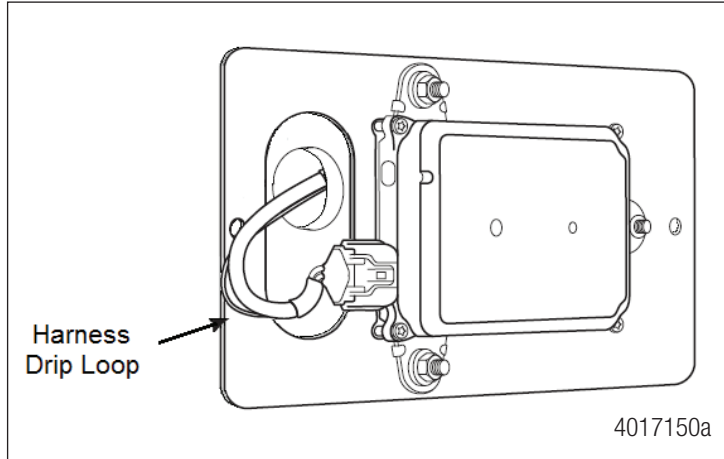


8. Prior to mounting the assembly to the vehicle, place the plastic shims on the plastic shim housing, orienting the wedge/shim housing so that the wide side is closest to the ground when installed (Figure 5). Carefully hold the wedge/shim housing, shims and radar assembly together against the fairing and align the mounting holes, hold the assembly in place and measure the angle. The final angle of the radar should be  $-2.5^\circ$  (slightly facing below). Add, remove or invert shims as needed.

## Installation Procedures

9. Once the correct number of shims has been determined, remove the assembly from the vehicle and connect the harness to the radar. Thread the other end of the harness through the mounting bracket, shim housing and fairing harness hole as indicated in Figure 5. Be sure to leave enough slack to add a drip loop in the harness near the radar connector (Figure 6).

Fig. 6



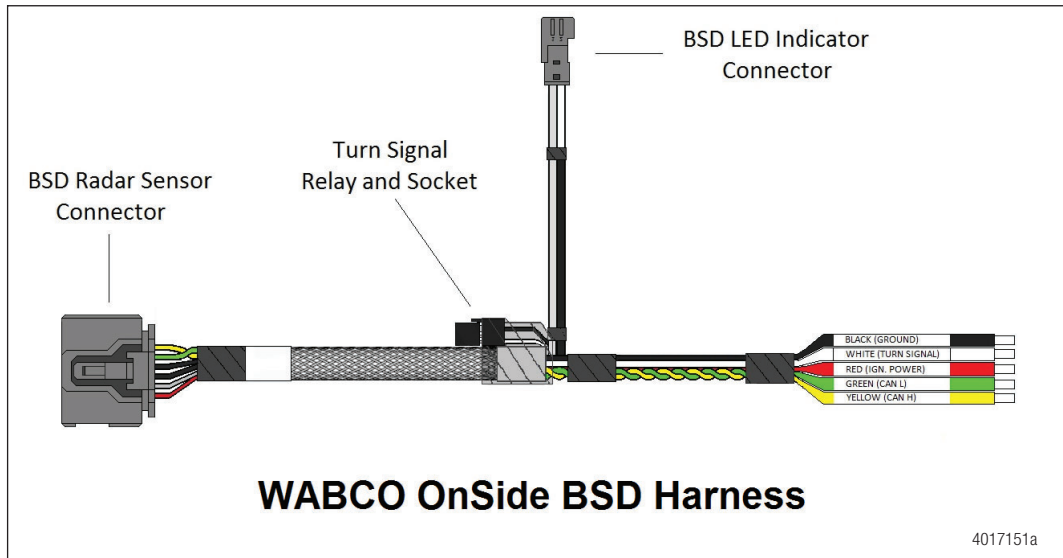
10. Place the shim housing, shims, radar and cover against the fairing (Figure 7) and align the mounting holes. Use the two M6 screws to attach the assembly to the fairing. On the back side of the fairing, place the oversized washers on the M6 screws and tighten them using the M6 nuts to 92 in-lb (10.4 Nm).

Fig. 7



### 4.2 OnSide Radar Wiring Harness

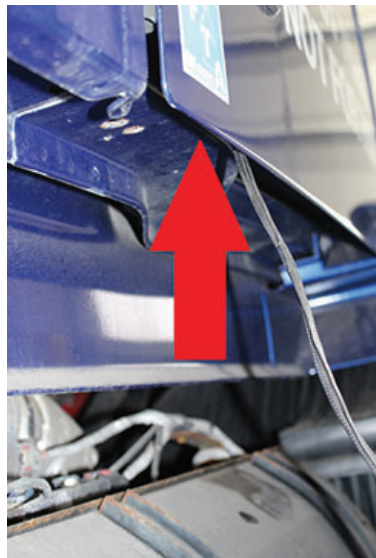
Fig. 8



The wiring harness provided in the kit is 16 feet (4.8 m) in length. If additional length is required, please contact the WABCO Customer Care Center at 855-228-3203.

1. Starting at the radar connection, route the harness along the vehicle's body. Avoid heat sources such as engine and exhaust components as well as abrasion areas. Secure the cable every 12 inches (304.8 mm) when possible with tie wraps.
2. The harness has to enter the cab for the remaining connections. Drill a 1-5/8" (41 mm) hole or locate an existing grommet and feed the wiring harness through it (Figure 9). The remaining length can be routed to the OnSide Blind Spot Light Indicator, the vehicle connections and turn signal output, if needed.

Fig. 9



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## Installation Procedures

3. Locate the SAM cab distribution module in the glove box. Connect the red (POWER) wire of the OnSide harness to pin 14 of the X2 connector (Figure 10, Figure 11 and Figure 12).

Fig. 10

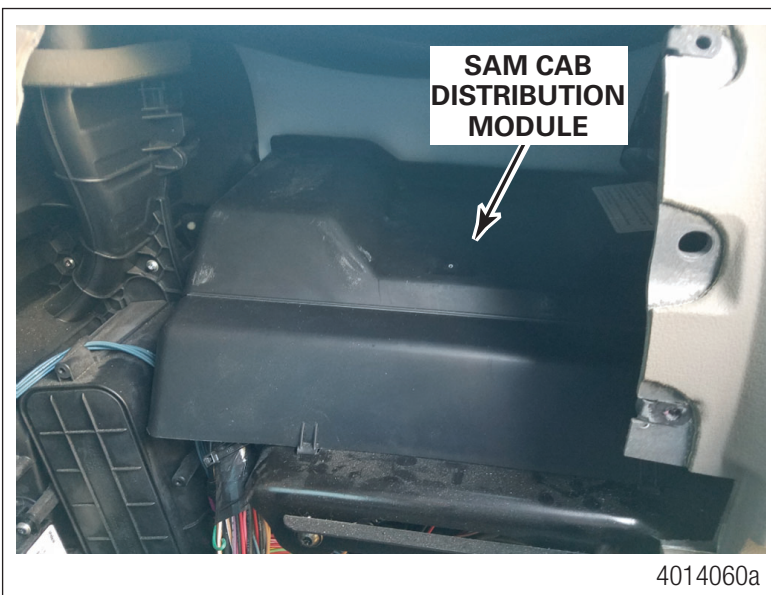


Fig. 11

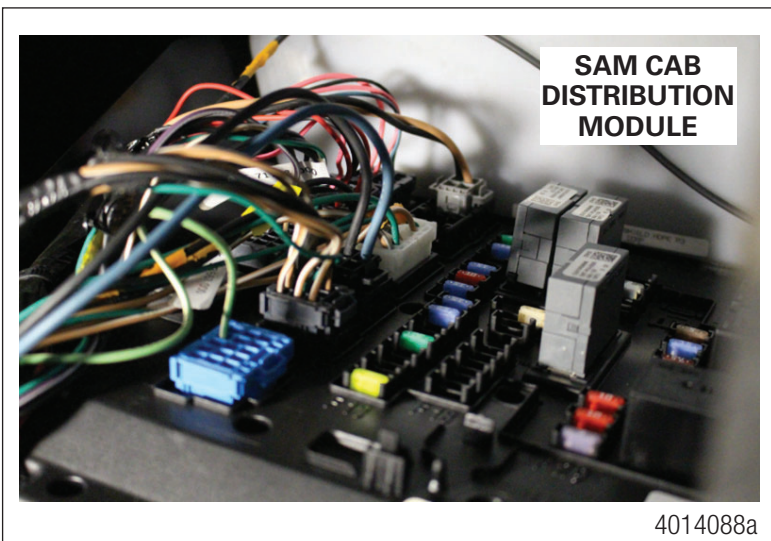
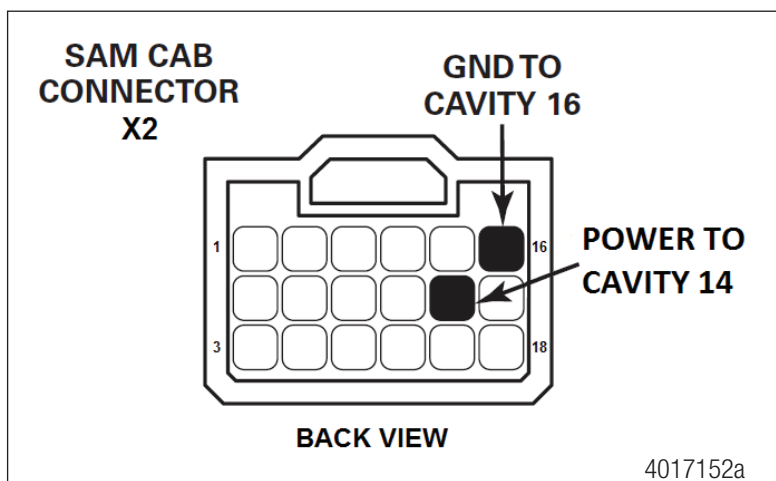


Fig. 12

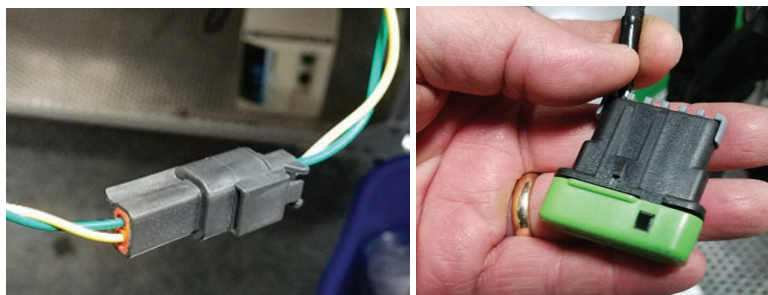




If the pin shown here is used, find an alternative ignition power source.

4. Connect the black (GND5) wire to pin 16 of the X2 connector (Figure 10, Figure 11 and Figure 12).
5. Connect both the green (CAN LO) and yellow (CAN HI) wires to the vehicle J1939 circuit. Locations to easily access the J1939 circuit are usually found under the dash on the passenger side. (See Figure 13 for common points of access.) Tap into the J1939 circuit according to OEM guidelines. Review OEM reference materials if necessary.

Fig. 13



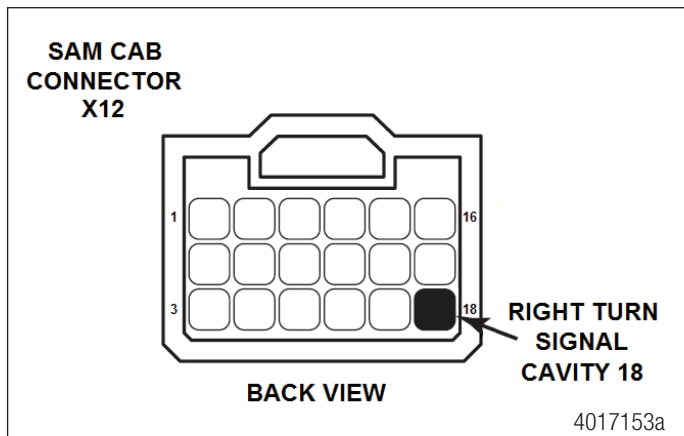
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If the vehicle has OnGuard and uses the WABCO dash display, the white turn signal wire may be connected to the vehicle; this can provide additional OnLane audible and visual warnings through the OnGuard display. If this feature is desired, the OnGuard display software will need to be updated. Please review the display software update procedure in OnSide Maintenance Manual MM16167. The OnSide Maintenance Manual and display update software (TP18054) are both available at our website: [www.wabco-na.com/literature](http://www.wabco-na.com/literature).

If the vehicle does not use the OnGuard dash display, you may disregard connecting the white turn signal wire. (The white wire may be sealed and tucked back into the harness.)

6. Connect the white turn signal wire from the OnSide harness into the right turn signal wire from the SAM CAB X12 connector cavity 18 (Figure 14), at a convenient location. Make the splice according to OEM guidelines. Review OEM reference materials if necessary.

Fig. 14



7. Leave the remaining two wires (gray and black) to be installed after the OnSide Blind Spot Light Indicator is mounted to the A-pillar.



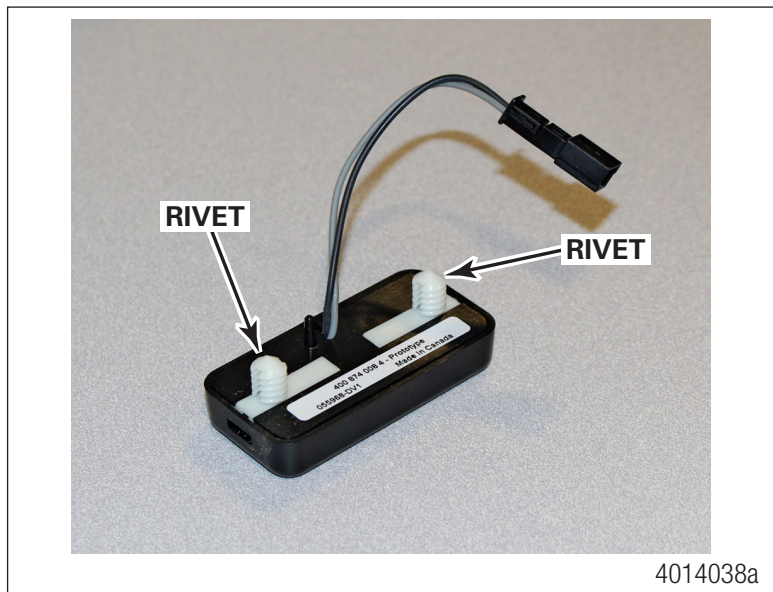
### 4.3 OnSide Blind Spot Light Indicator Installation

1. Locate a position within the vehicle driver's field of view to mount the indicator. The recommended location is the passenger side windshield A-pillar. This will allow the driver to see the indicator light every time they look at the side mirror before a lane change.



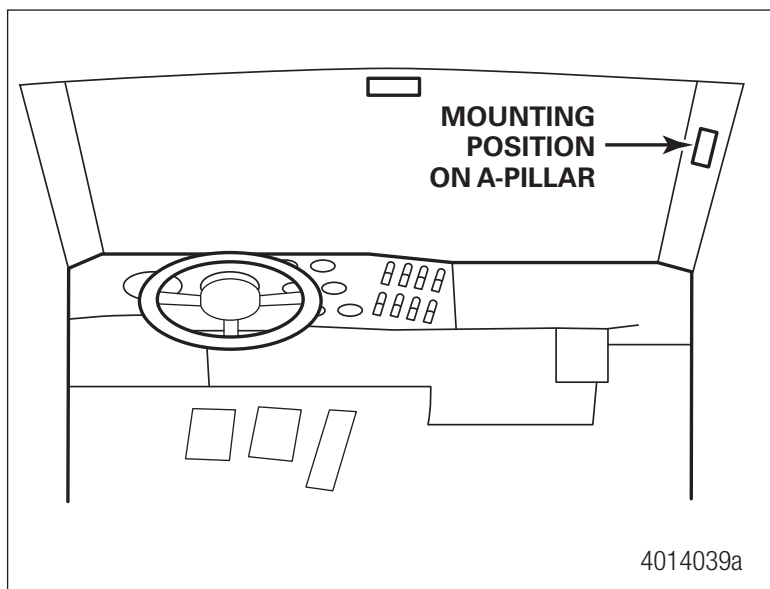
The OnSide Blind Spot Light Indicator has push-in rivets in the back to make it easier to install on the vehicle's A-pillar plastic cover (Figure 15). To keep the indicator from moving after installation, use a 3M VHB tape on one of the inner edges of the light indicator before installation.

Fig. 15



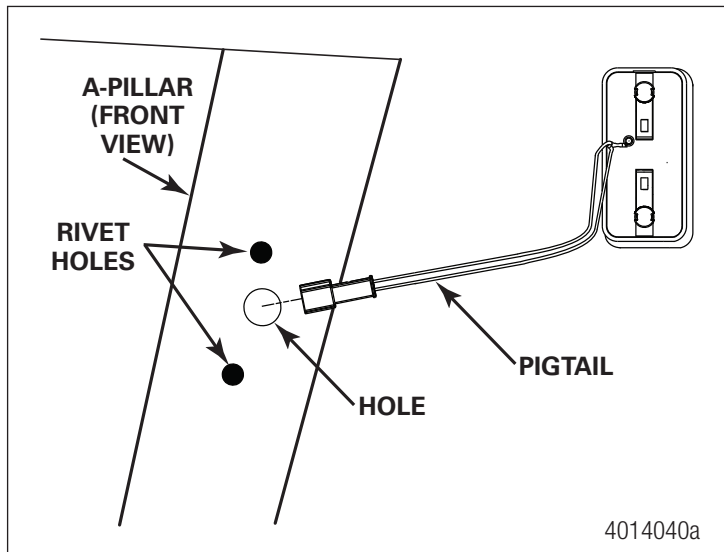
2. Remove the A-pillar plastic cover and locate the desired mounting position. Print out the template (Figure 20) near the end of this publication in the Appendix. Make sure the size is 100% to scale. Place the template in the desired mounting position and drill the holes (Figure 16).

Fig. 16



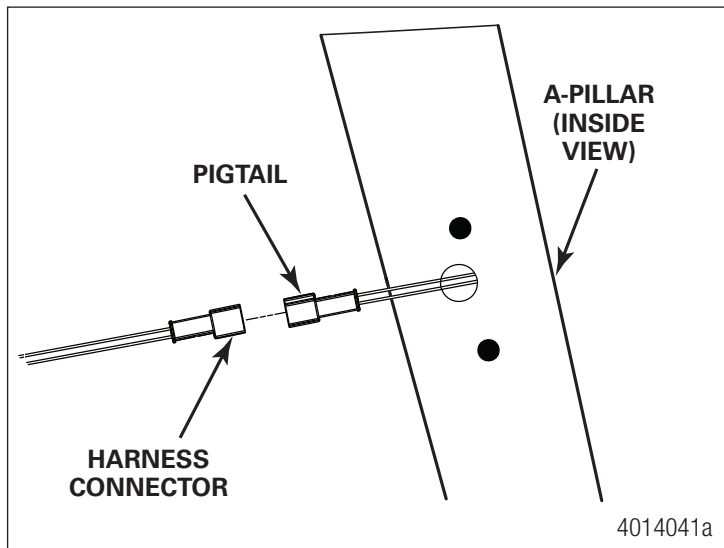
3. Route the indicator pig tail to the center hole and install the indicator push-in rivets as shown (Figure 17).

Fig. 17



4. Connect the indicator pig tail to the harness connector while installing the cover back on the A-pillar (Figure 18).

Fig. 18

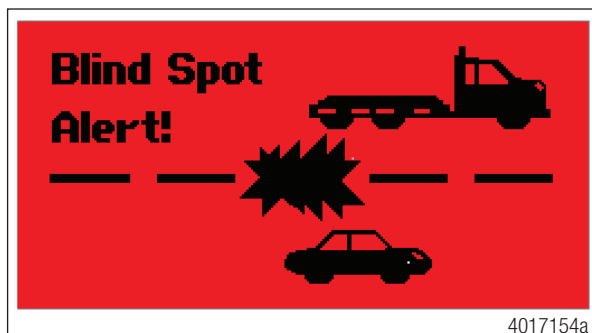




### 4.4 OnGuard® Display

If the vehicle has OnGuard and uses the WABCO Dash Display, the OnSide system can be integrated into the WABCO display system to provide additional OnSide audible (beeping) and visual warnings (Figure 19).

Fig. 19



If this feature is desired, the white turn signal wire from the OnSide harness will need to be connected to the vehicle (refer to Section 4.2) and the OnGuard display software will need to be updated. Please review the display software update procedure in OnSide Maintenance Manual MM16167. The OnSide Maintenance Manual and display update software (TP18054) are both available at our website: [www.wabco-na.com/literature](http://www.wabco-na.com/literature).

### 4.5 Verifying Correct System Operation

Confirm that the OnSide System is installed and operating correctly by verifying the following:

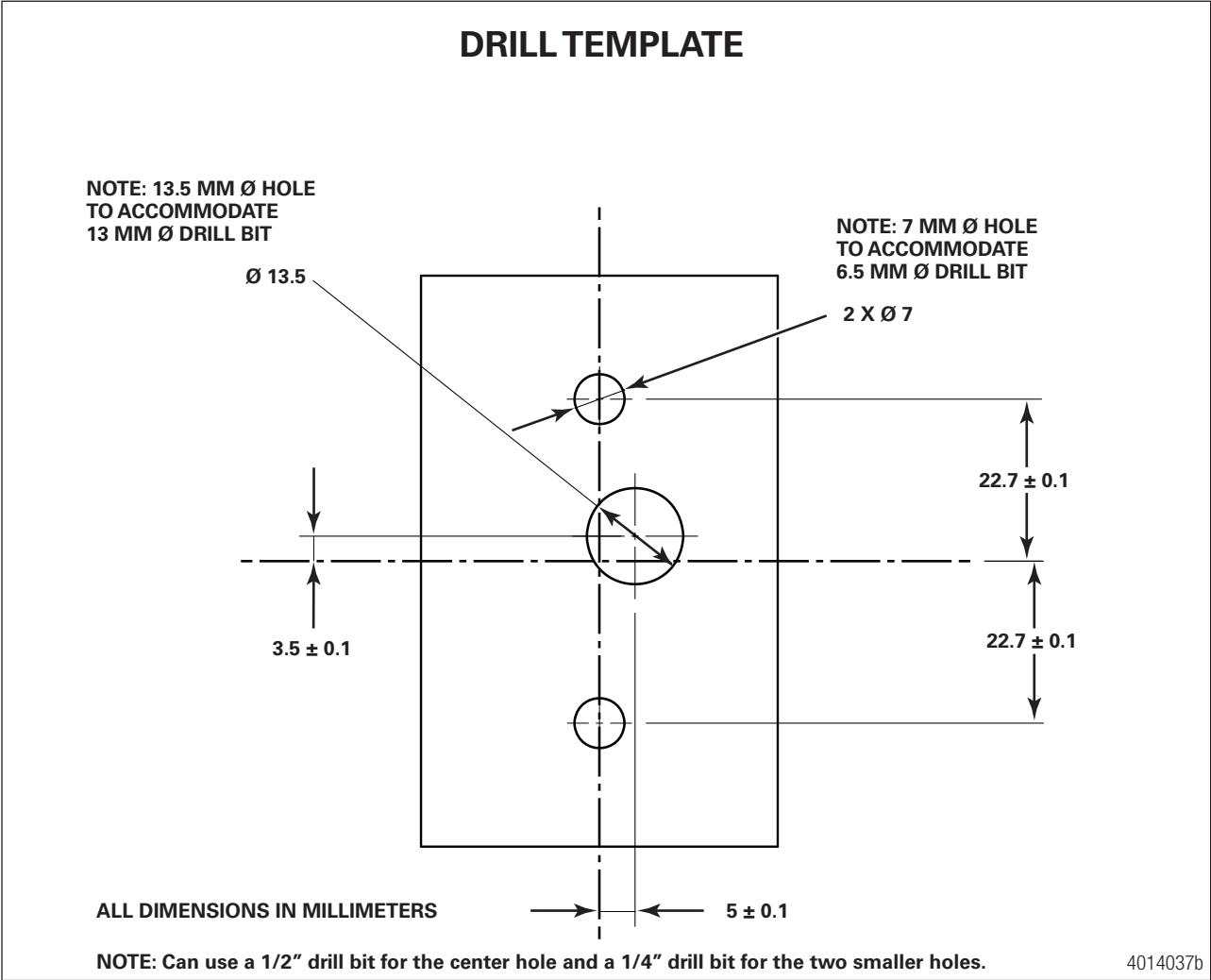
1. When the vehicle ignition is turned on, the system issues a trial warning on the OnSide Blind Spot Light Indicator.
2. Drive the vehicle above 15 mph (24 kph) with a moving vehicle in your blind spot. Confirm the OnSide Blind Spot Indicator Light turns on and off when a car passes on your side. **Note that parked cars or stationary objects will not activate the light.**
3. If the vehicle is equipped with an OnGuard display, activate the right turn signal when a vehicle is in your blind spot. The indicator light should illuminate and the OnGuard® display should beep.



For further information regarding OnSide system operation, diagnostics and repair, please see the OnSide Maintenance Manual (MM16167) which may be obtained from our website [www.wabco-na.com/literature](http://www.wabco-na.com/literature).

5 Appendix

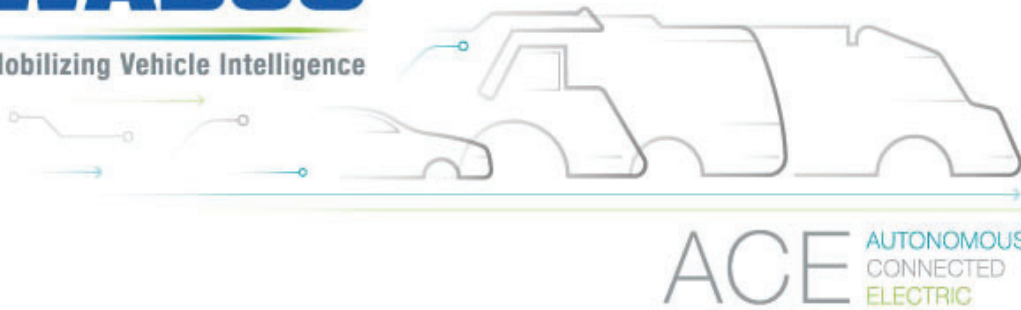
Fig. 20





# WABCO

Mobilizing Vehicle Intelligence



## About WABCO

WABCO (NYSE: WBC) is the leading global supplier of braking control systems and other advanced technologies that improve the safety, efficiency and connectivity of commercial vehicles. Originating from the Westinghouse Air Brake Company founded 150 years ago, WABCO is powerfully “Mobilizing Vehicle Intelligence” to support the increasingly autonomous, connected and electric future of the commercial vehicle industry. WABCO continues to pioneer innovations to address key technology milestones in autonomous mobility and apply its extensive expertise to integrate the complex control and fail-safe systems required to efficiently and safely govern vehicle dynamics at every stage of a vehicle’s journey – on the highway, in the city and at the depot. Today, leading truck, bus and trailer brands worldwide rely on WABCO’s differentiating technologies. Powered by its vision for accident-free driving and greener transportation solutions, WABCO is also at the forefront of advanced fleet management systems and digital services that contribute to commercial fleet efficiency. In 2019, WABCO reported sales of over \$3.4 billion and has almost 14,000 employees in 40 countries. For more information, visit [www.wabco-na.com](http://www.wabco-na.com).

# WABCO