



Service Data

SD-61-5010

BENDIX™ BLINDSPOTTER® SIDE OBJECT DETECTION SYSTEM (REVISION 2)

DESCRIPTION

The Bendix™ BlindSpotter® Side Object Detection system (Rev. 2) is an aid to help professional drivers with vehicle blindspots, by alerting them to large metallic objects within the range of the radar sensor(s) mounted on the side(s) of the vehicle.

The Bendix BlindSpotter Rev. 2 system includes a radar that is an improved direct replacement of the previous generation BlindSpotter radar. The BlindSpotter Rev. 2 radar has the same fit and form as that of the BlindSpotter radar, except for the addition of the CAN (Controller Area Network) harness. It is fully backward compatible with the BlindSpotter mounting scheme and the ODU (Operator Display Unit).



Figure 1 - Bendix™ BlindSpotter® Radar Sensors and In-Cab Operator Display Unit (ODU)

Used in conjunction with mirrors and other instrumentation to maintain safe operation of the vehicle, the radar sensor(s) provide up to a ten foot by forty foot detection zone. See Figure 2.

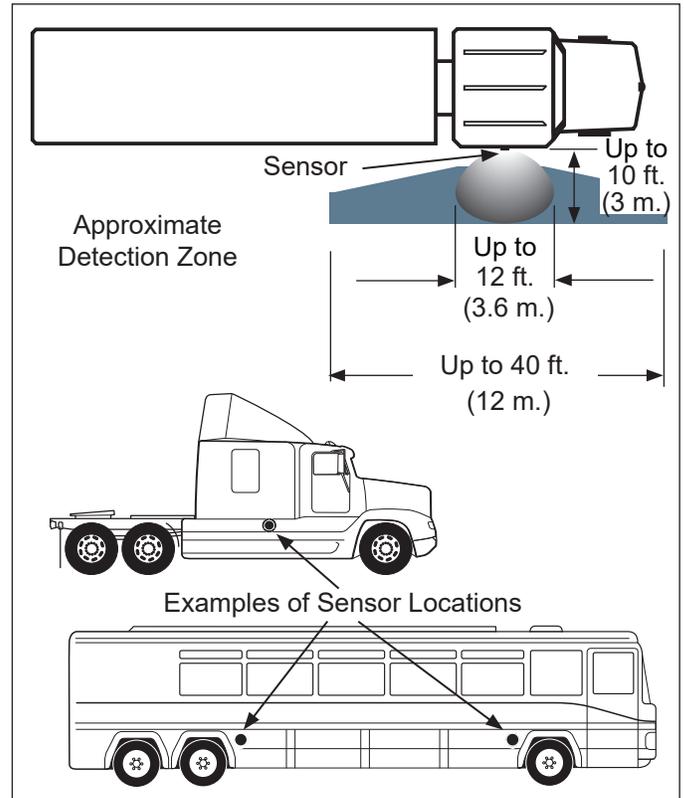


Figure 2 - Bendix BlindSpotter Radar Sensor Detection Zone and Example Locations

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 **WARNING**

The driver is always responsible for the control and safe operation of the vehicle at all times. The Bendix™ BlindSpotter® Rev. 2 radar system does not replace the need for a skilled, alert professional driver, reacting appropriately and in a timely manner, and using safe driving practices.

 **WARNING**

Improper use of the Bendix BlindSpotter Rev. 2 system could lead to a serious accident. Read this entire Service Data Sheet before operating the Bendix BlindSpotter Rev. 2 system. Pay particular attention to the safety messages below. This guide should be used in conjunction with proper training.

Limitations of Collision Warning Systems

The Bendix BlindSpotter Rev. 2 side object detection system is intended solely as an aid for an alert and conscientious professional driver. It is not to be used or relied upon to operate a vehicle. The system should be used in conjunction with mirrors and other instrumentation to maintain safe operation of the vehicle, ground personnel, and adjacent property. A vehicle equipped with the Bendix BlindSpotter Rev. 2 system should be operated in the same safe manner as if the system were not installed. The system is not a substitute for normal safe driving procedures. It will not compensate for any driver impairment, such as drugs, alcohol, or fatigue. Should the system become inoperative, it could jeopardize the safety or lives of those who depend on the system for safety.

 **WARNING**

The system will not sense objects if the sensor view is obstructed. Therefore, do not place objects in front of the system sensor. Remove heavy build-ups of mud, dirt, ice, and other materials.

Proper installation and placement is critical to correct operation of the system.

People operating this equipment **MUST** check for proper operation at the beginning of every shift or safety inspection period.

It is necessary to read, understand, and follow all instructions shipped with the product.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death.

The Bendix BlindSpotter Rev. 2 system is intended for commercial use. Proper installation of this system requires a good understanding of truck electrical systems and procedures, along with proficiency in the installation. Store these instructions in a safe place and refer to them when maintaining and/or reinstalling the product.

Some of the tests in this manual require the technician to use a test meter to measure the voltage and resistance of the vehicle's electrical circuits. If it becomes necessary to temporarily connect the test meter leads to wire harness terminals, be sure to:

- Never insert anything, including test lead probes, into the vehicle harness connector terminals, as this can distort or damage the wire terminals.
- Never pierce the wire insulation to test circuits, as this can result in damaged wires and wire corrosion.
- (When making resistance checks on circuits...) Make sure the vehicle ignition is off to prevent damage to test equipment and vehicle components.

Consult the vehicle operator's manual for any applicable details regarding the use and operation of this system.

Federal Communications Commission

This device complies with Part 15 of the FCC (Federal Communications Commission) rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) this device must be able to accept any interference received, including interference that may cause undesired operation. Any interference that may be caused should be reported to the local FCC field office or to the Federal Communications Commission; Enforcement Bureau; 445 12th Street S.W.; Room 7-C485; Washington, DC 20054.

Any changes or modifications made by the user to this equipment that are not expressly approved by Bendix Commercial Vehicle Systems LLC could void the user's authority to operate the equipment.

Every effort has been made to ensure the accuracy of all information in this SD Sheet. However, Bendix Commercial Vehicle Systems LLC makes no expressed or implied warranty or representation based on the enclosed information. Errors or omissions should be reported to:

Bendix Commercial Vehicle Systems LLC
35500 Chester Road Avon, Ohio 44011
or 1-800-AIR-BRAKE (1-800-247-2725).

GENERAL SAFETY GUIDELINES



WARNING! PLEASE READ AND FOLLOW THESE INSTRUCTIONS



TO AVOID PERSONAL INJURY OR DEATH:

When working on or around a vehicle, the following guidelines should be observed **AT ALL TIMES**:

- ▲ Park the vehicle on a level surface, apply the parking brakes, and always block the wheels. Always wear personal protection equipment.
- ▲ Stop the engine and remove the ignition key when working under or around the vehicle. When working in the engine compartment, the engine should be shut off and the ignition key should be removed. Where circumstances require that the engine be in operation, **EXTREME CAUTION** should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated, or electrically charged components.
- ▲ Do not attempt to install, remove, disassemble, or assemble a component until you have read, and thoroughly understand, the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.
- ▲ If the work is being performed on the vehicle's air brake system, or any auxiliary pressurized air systems, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle. If the vehicle is equipped with a Bendix® AD-IS® air dryer system, a Bendix® DRM™ dryer reservoir module, a Bendix® AD-9si®, AD-HF®, or AD-HFI™ air dryer, be sure to drain the purge reservoir.
- ▲ Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.
- ▲ Never exceed manufacturer's recommended pressures.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.
- ▲ Never connect or disconnect a hose or line containing pressure; it may whip and/or cause hazardous airborne dust and dirt particles. Wear eye protection. Slowly open connections with care, and verify that no pressure is present. Never remove a component or plug unless you are certain all system pressure has been depleted.
- ▲ Use only genuine Bendix® brand replacement parts, components, and kits. Replacement hardware, tubing, hose, fittings, wiring, etc. must be of equivalent size, type, and strength as original equipment and be designed specifically for such applications and systems.
- ▲ Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.
- ▲ Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.
- ▲ For vehicles with Automatic Traction Control (ATC), the ATC function must be disabled (ATC indicator lamp should be ON) prior to performing any vehicle maintenance where one or more wheels on a drive axle are lifted off the ground and moving.
- ▲ The power **MUST** be temporarily disconnected from the radar sensor whenever any tests **USING A DYNAMOMETER** are conducted on a vehicle equipped with a Bendix® Wingman® system.

The sensor has two modes of operation when connected to the CAN harness:

1. During high speed mode, when the vehicle is going above 20 mph, the detection zone is wider (up to 40 feet longitudinal).
2. During low speed mode, when the vehicle is going below 20 mph, the detection zone is narrower (up to 12 feet longitudinal).

If not connected to the CAN harness, the Bendix™ BlindSpotter® Rev. 2 sensor will operate similar to Bendix™ BlindSpotter® and will have a narrower detection zone (up to 12 feet longitudinal) like the low speed mode specified earlier. The BlindSpotter Rev. 2 side object detection system can be installed on one, or both, sides of the vehicle. The system is comprised of up to four (4) radar sensor(s) – located on one side of a vehicle along with a driver display unit, located on the windshield pillar on that side – to warn the driver when an object is detected.

1.0 OPERATION

OPERATOR DISPLAY UNIT

The Bendix™ BlindSpotter® Rev. 2 radar system assists the driver by giving audible and visual alerts.

- **A visual warning:** The side object display unit uses two (2) LED indicators to display the status of the side radar sensor. The yellow LED indicates the system is active, but no objects are detected. The red LED indicates the system is detecting an object. See Figure 3.

LED	Indication
Red Indicator	Object Detected
Yellow Indicator	No Object Detected
Red and Yellow (at power-up)	Self-Test
Red and Yellow (constant)	Sensor Diagnostic Trouble Code (DTC)

Figure 3 - Bendix™ BlindSpotter® Rev. 2 Driver Display Unit LED Indicators

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- **An audible warning:** When the vehicle’s turn signal is active and the sensor detects a large metallic object alongside the vehicle, the side sensor display emits an audible warning tone.
- **Volume Control:** This steps the volume level of the alerts between low, medium, and high (and back through the sequence). The most recent selection is stored in the memory.
- **An Ambient Light Detector:** This automatically adjusts the brightness of the LEDs.

If the system detects a failure and becomes inoperative, the display unit will warn the driver by continuously illuminating both the red and yellow LEDs at the same time.

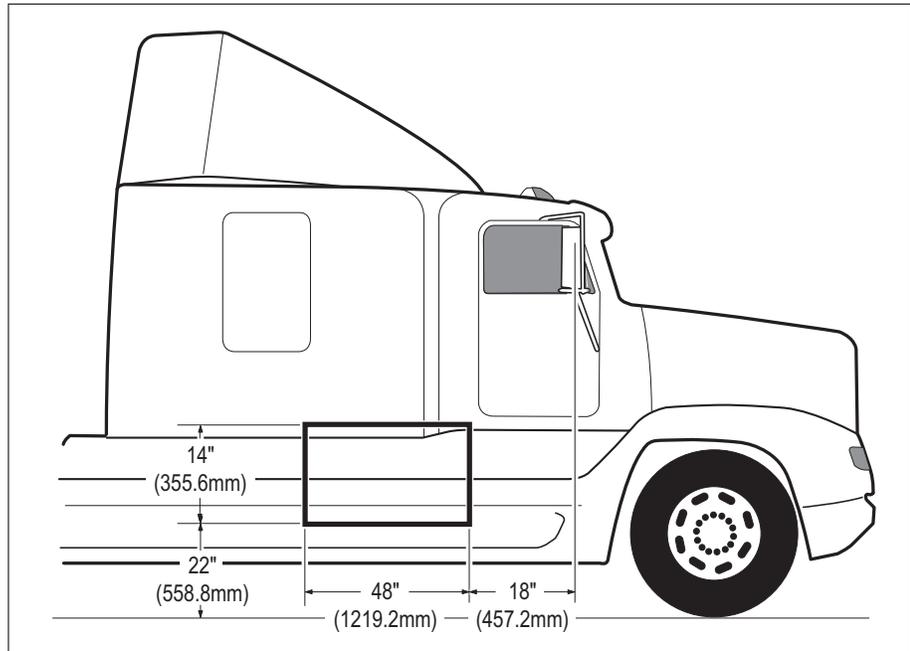


Figure 4 - Recommended Installation Location (Single Sensor Systems)

1.1 RANGE

The effective range is approximately ten (10) feet out from the vehicle, and the detection zone depends on the mode of operation of the sensor. See *Figure 2*.

Low Speed Mode: The range is up to 6 feet forward and backward of the sensor.

High Speed Mode: The range is up to 20 feet forward and backward of the sensor.

1.2 SENSOR LOCATION

The Bendix™ BlindSpotter® Rev. 2 Side Object Detection sensor must be mounted on the side of the vehicle, between 22 and 36 inches from the ground and at least 18 inches rear of the side view mirror. See *Figure 4*.

Note: To reduce the possibility of the sensor detecting objects mounted to the vehicle—like the steps or fuel tanks—make sure the face of the sensor extends out a minimum of 5/16 of an inch further than any other object within six (6) inches of the sensor’s body.

1.3 SENSOR ORIENTATION

The Bendix BlindSpotter Rev. 2 sensor should be mounted on a vertical surface and oriented so that the embossed logo is parallel to the ground—you may use the lower two mounting holes as a guide—see *Figure 5*. Orientation is crucial for proper operation due to the radar’s polarized beam profile.

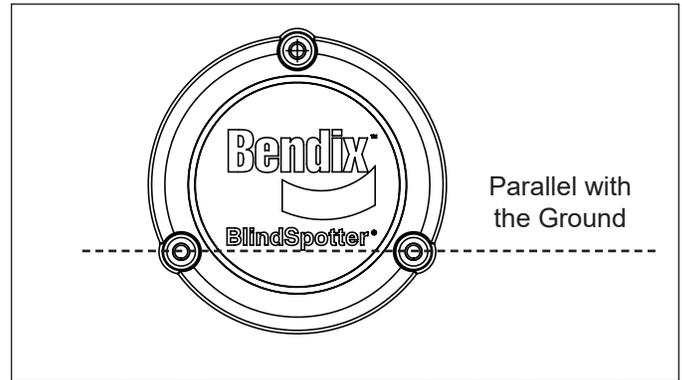


Figure 5 - Sensor Installation

1.4 OPERATOR DISPLAY UNIT MOUNTING

The Bendix BlindSpotter Rev. 2 Operator Display Unit (ODU) should be mounted on a windshield pillar for the side of the vehicle being monitored. See *Figure 6*.

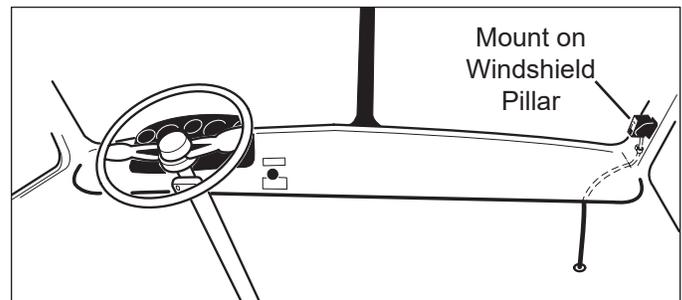


Figure 6 - ODU Installation

The Bendix BlindSpotter Rev. 2 ODU has a bracket that is designed to be bent up to fifteen (15) degrees in order to optimize the angle for the driver’s view.

1.5 WHAT TO EXPECT WHEN USING THE BENDIX™ BLINDSPOTTER® REV. 2 SYSTEM

Tables 1 and 2 illustrate what to expect from the Bendix™ BlindSpotter® Rev. 2 system in various driving situations.

POWER-UP TEST What to Expect at Vehicle Power-Up	
Situation	Typical System Indication/Alerts
At vehicle power-up (with no metal object within the sensor's detection zone).	<ol style="list-style-type: none"> 1. Both the red and yellow LEDs illuminate for a half-second as a system self-test, followed by; 2. The red LED remains on for a further 5 (five) seconds as a sensor self-test, followed by; 3. The yellow LED illuminates and stays ON. <p>(Note: if, instead, a metal object <i>is within the sensor's detection zone</i>, the yellow LED will extinguish, and the red LED will illuminate.)</p>

Table 1 - Power-Up Test Sequence

What to Expect During Vehicle Use		
Situation	Typical System Indication/Alerts	
	Yellow LED	Other Indicators
Normal driving (no other vehicle present alongside).	ON	None.
The driver passes a vehicle, or a vehicle enters the sensor detection zone alongside the vehicle.	OFF	The red LED will illuminate.
A guard-rail, or similar stationary object, is detected by the sensor.	OFF	The red LED will illuminate (Low Speed Mode; traveling < 20 mph or stationary host vehicle).
	ON	None (High-Speed Mode; traveling > 20 mph).
The driver activates the turn signal, and the sensor on the side of the vehicle detects a large metallic object. Note: The sensor is wired to the turn signal on the same side of the vehicle as the sensor is mounted.	OFF	The red LED will illuminate AND the alert tone will sound on the display unit. Note: An alert tone will sound only once each time a turn signal is activated.
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">  WARNING </div> <p>Any audible and/or visual alert by the system means that a sizable, radar-reflective object has been detected by the Bendix BlindSpotter Rev. 2 system and the driver must immediately act to potentially avoid, or lessen the severity of, a collision.</p>	
The driver activates the turn signal (towards a side of the vehicle with the Bendix BlindSpotter Rev. 2 system installed) with no vehicle in the detection zone on that side.	ON	None.
Both red and yellow LEDs remain illuminated.	ON	A Diagnostic Trouble Code (DTC) has been set. See <i>the Troubleshooting Section</i> .
Power supply disconnected from Bendix BlindSpotter Rev. 2.	OFF	None.

Table 2 - Operational Scenarios with the BlindSpotter System

NOTE: These are typical situations and responses that may occur when using the Bendix BlindSpotter Rev. 2 system. All possible situations and responses may not be covered in this table.

⚠ Due to inherent limitations of radar technology, the Bendix™ BlindSpotter® technology – on rare occasions – may not detect sizable, objects in the detection zone. Alerts or warnings may not occur.

1.6 ALERTS AND WARNINGS

The Bendix™ BlindSpotter® Rev. 2 system operates differently compared to other collision warning systems. It is important for **YOU** to fully understand the system's features, especially the driver alerts and warnings.

⚠ WARNING

Any audible and/or visual alert by the system means that a sizable, radar-reflective object has been detected by the Bendix BlindSpotter Rev. 2 system and the driver must immediately act to potentially avoid, or lessen the severity of, a collision.

1.7 BENDIX BLINDSPOTTER REV. 2 SYSTEM DIAGNOSTIC TROUBLE CODES (DTCs)

The Bendix BlindSpotter Rev. 2 system monitors itself and if any malfunction is detected, a DTC will be set and the driver will be alerted by the illumination of both the red and yellow LEDs. See section 3.1.

1.8 RADAR SENSOR REPLACEMENT

Sensors should only be replaced using like-for-like part numbers, or their direct replacements, as provided by the OEM or Bendix. Contact the Bendix Tech Team at 1-800-AIR-BRAKE (1-800-247-2725), option 2, for part number assistance.

⚠ WARNING

Do not interchange radar sensors without contacting Bendix first!

1.9 ALERT VOLUME

Bendix BlindSpotter Rev. 2 systems permit the audible alert level to be adjusted by pressing the top button on the Operator Display Unit. To adjust the volume, press the button and the unit will cycle between low, medium, and high, then back through the sequence.

1.10 POTENTIAL FALSE ALERTS

In certain unusual traffic or roadway conditions, the Bendix BlindSpotter Rev. 2 system may issue a false alert.

Drivers should take into account the road conditions, and any other factors they are encountering, as they choose how to react to any alerts they receive from the Bendix BlindSpotter Rev. 2 system.

1.11 RADAR CLEARANCE

⚠ CAUTION

Vehicle equipment, including trim, etc. must not infringe upon the zone used by the radar sensor to emit and receive radar waves. Failure to comply with this requirement will impair the function of the radar. Only vehicle OEM-approved covers, trim, and/or cover panels may be installed around, or directly in front of, the radar.

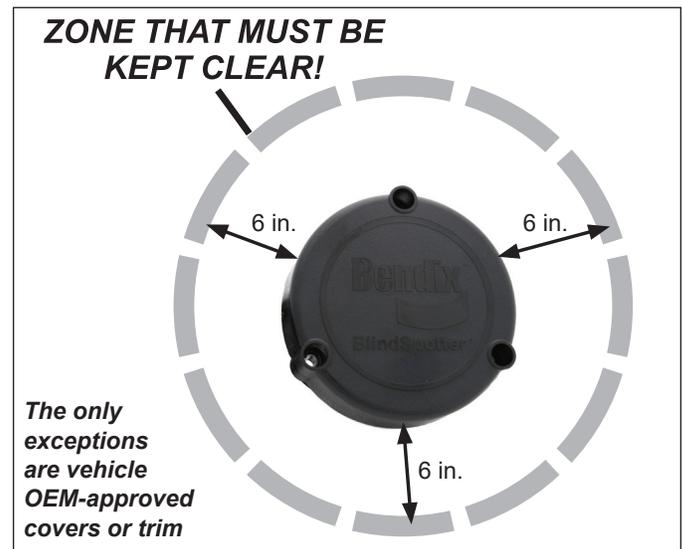


Figure 7 - Clearance Zone Around the Sensor

For proper operation of your Bendix BlindSpotter system, adhere to the following guidelines:

- The radar sensor assembly should be OEM-installed on the vehicle following all OEM specifications.
- The radar's field of view must NOT have interference from any other vehicle components such as hand rails, aftermarket lights, seasonal decorations, or any other commonly mounted vehicle components. The radar signal is emitted from the front of the sensor with a spreading beam. In order to ensure that no adverse interference is experienced from other nearby vehicle equipment, a suitable clearance must be maintained around the radar. This clearance must be maintained regardless if the vehicle is stationary or in motion. See *Figure 7* for a general guide to the zone required.
- To reduce the possibility of the sensor detecting objects mounted to the vehicle—like the steps or fuel tanks—make sure the face of the sensor extends out a minimum of 5/16 of an inch further than any other object within six (6) inches of the sensor's body. See *Figure 7*.

NOTE: Bendix does not certify, nor offer warranty on, Bendix BlindSpotter systems where system performance is affected by beam obstructions of any kind or unapproved post-production covers. This document gives general guidelines that will work for most vehicles; exceptions may exist.

2.0 MAINTENANCE

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2.1 EQUIPMENT MAINTENANCE

⚠ Importance of Maintenance - Optimal Bendix™ BlindSpotter® Rev. 2 system performance requires a properly maintained system, without any active Diagnostic Trouble Codes (DTCs). Have problems indicated by active DTCs repaired by a qualified technician.

⚠ System Problems - If a problem with the Bendix BlindSpotter Rev. 2 system is detected, either both the red and yellow LEDs will be illuminated, or—in the case of power supply problems—no LEDs will illuminate. The system should be serviced as soon as possible to restore full functionality.

2.2 PREVENTIVE MAINTENANCE

The Bendix BlindSpotter Rev. 2 system is relatively maintenance free. The key items to keep the system functioning properly include:

1. Keep the radar sensor clean and free of obstructions, mud, snow, bugs, etc... using OEM-approved cleaning products.
2. Inspect for any damage to the unit or the Bendix BlindSpotter Rev. 2 mounting surface or bracket. **Never use the radar unit as a step.**

NOTE: If the radar sensor was originally installed on a vehicle panel, check the panel for damage, etc... that may affect the radar's performance before reinstalling. Replace the panel, if necessary, with an original OEM-supplied panel. Do not paint over the radar.

ADDITIONAL SUPPORT AT BENDIX.COM/1-800-AIR-BRAKE (1-800-247-2725), OPTION 2

For direct telephone technical support, the Bendix Tech Team is available at 1-800-AIR-BRAKE (1-800-247-2725), option 2, Monday through Friday, 8:00 A.M. to 6:00 P.M. ET. Follow the instructions in the recorded message.

Email the Bendix Tech Team at: techteam@bendix.com for assistance.

⚠ WARNING

The driver is always responsible for the control and safe operation of the vehicle at all times. The Bendix™ BlindSpotter® Rev. 2 system does not replace the need for a skilled, alert professional driver, reacting appropriately and in a timely manner, and using safe driving practices.

⚠ Radar Inspection - The driver should inspect the radar and mounting bracket regularly and remove any mud, snow, ice build-up, or other obstructions. The installation of aftermarket vehicle guards—or similar potential obstructions—is not recommended, and could impair the operation of the radar.

⚠ Radar Damage/Tampering - In cases where the vehicle body and/or radar have sustained any damage, or if you suspect that the radar has been tampered with, consider disabling the Bendix BlindSpotter Rev. 2 until repairs can be made. An indicator on the dash typically will illuminate if the system detects any of these conditions. Consult your vehicle's operator's manual or contact Bendix for more information.

2.3 GENERAL SAFETY GUIDELINES

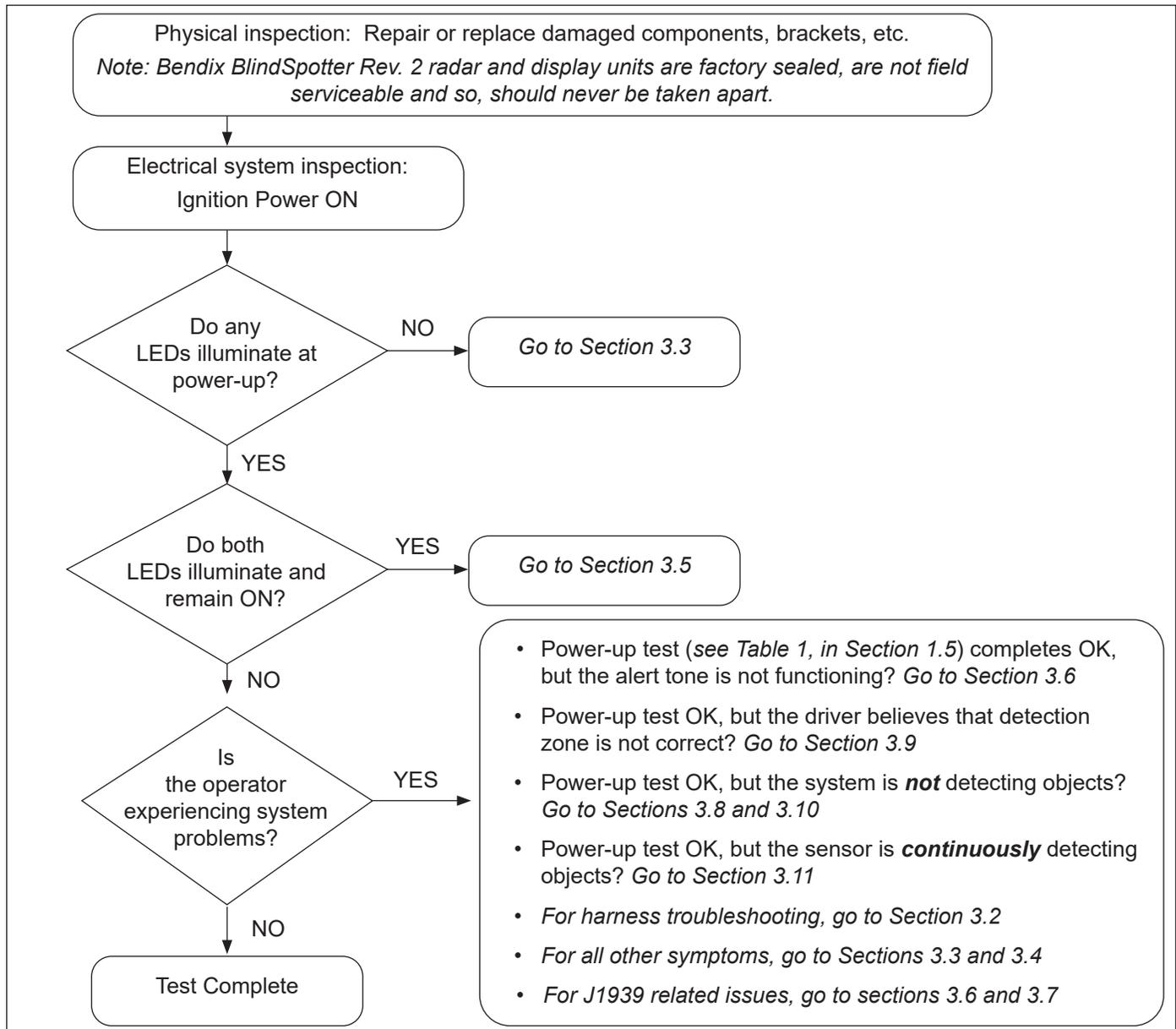
Follow the General Safety Guidelines on page 3 of this document.

3.0 INTRODUCTION TO TROUBLESHOOTING

This section introduces initial steps to accurately troubleshoot the Bendix™ BlindSpotter® Rev. 2 system. Bendix recommends reading the entire document before performing any troubleshooting.

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3.1 TROUBLESHOOTING OVERVIEW



3.2 TROUBLESHOOTING WIRING HARNESSSES

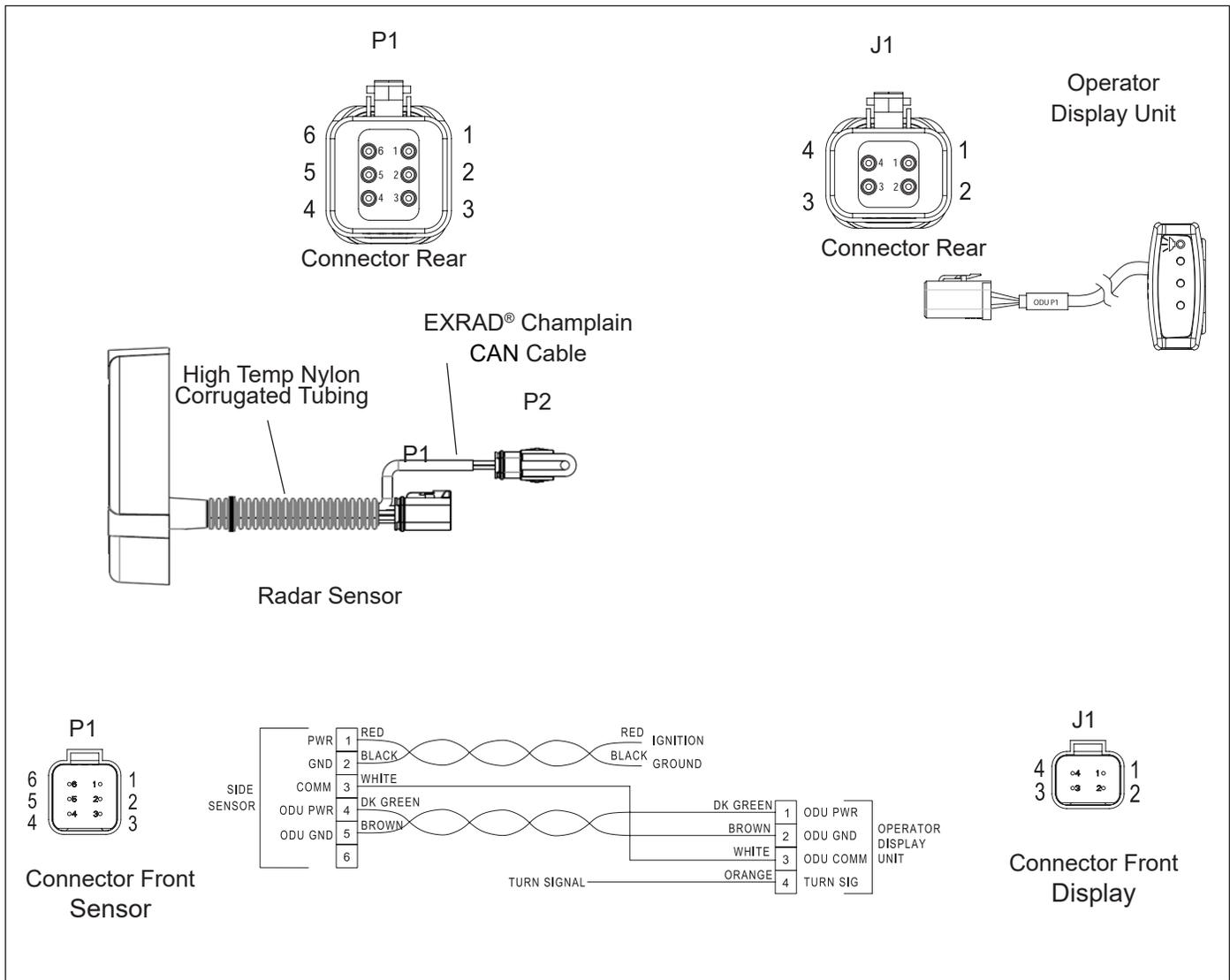
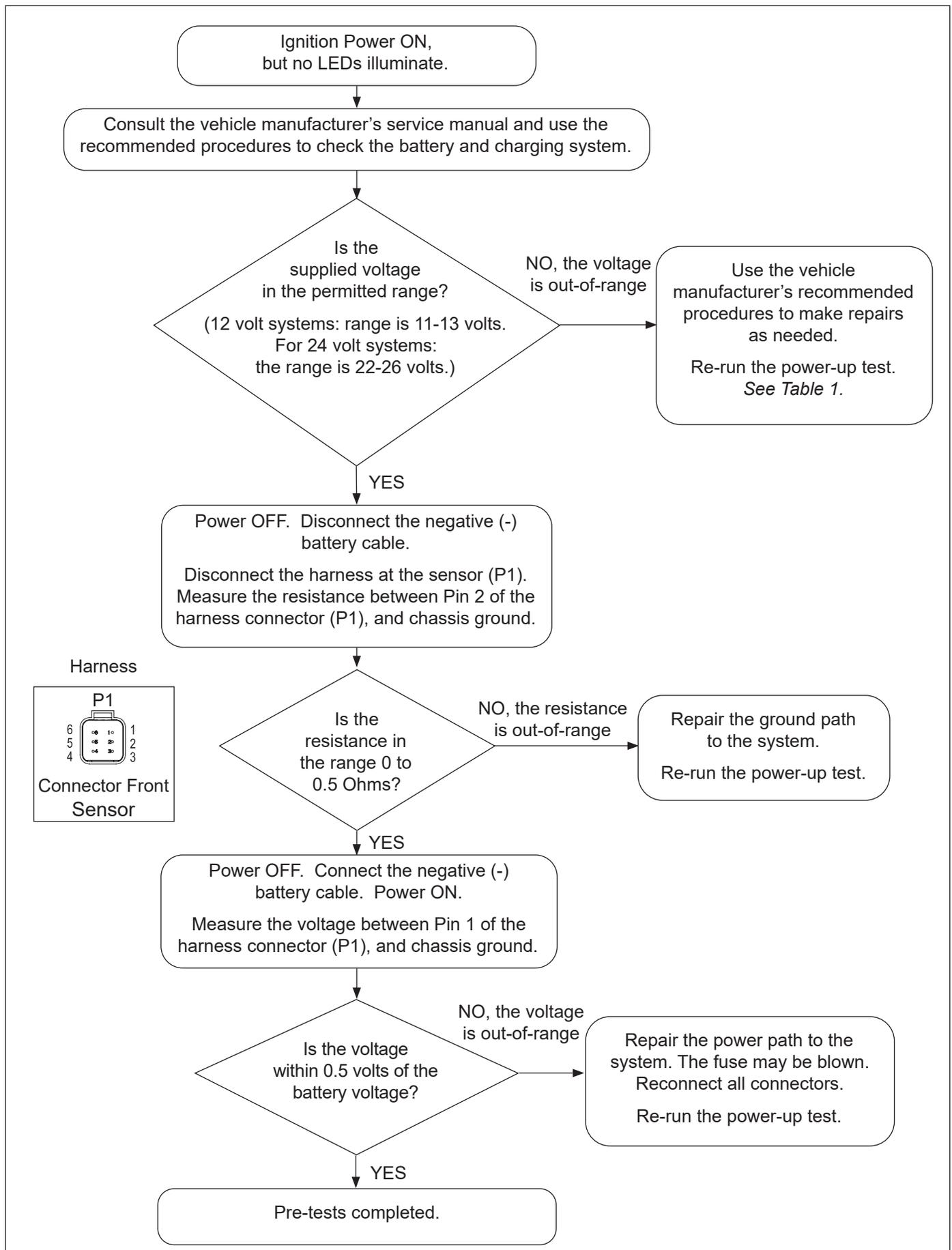


Figure 8 - Harness Electrical Diagram

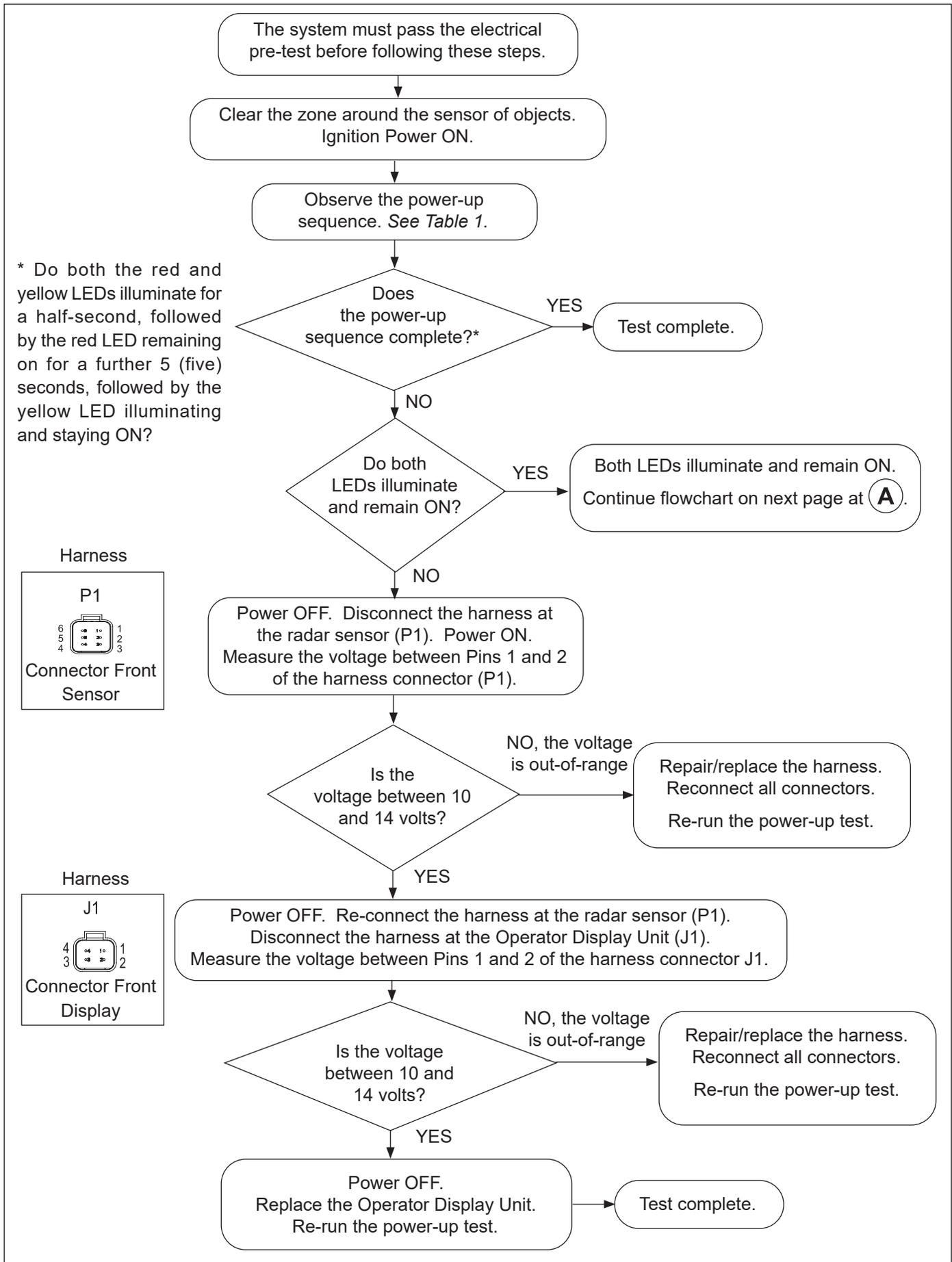
All wire harness connectors must be properly seated to maintain environmental seals. Push the mating connector until it seals with a click. When replacing a Bendix™ BlindSpotter® Rev. 2 radar sensor or Operator Display Unit, check that the wire harness connector is free of corrosion before plugging into the new device. Check for corroded or damaged wiring that may cause connector problems such as opens or shorts to voltage or ground.

If the connector terminals are corroded, this may be an indication of water intrusion into the wiring system and possibly into the radar sensor. Replacement of the entire harness is recommended. If any terminals are corroded, replacement is recommended.

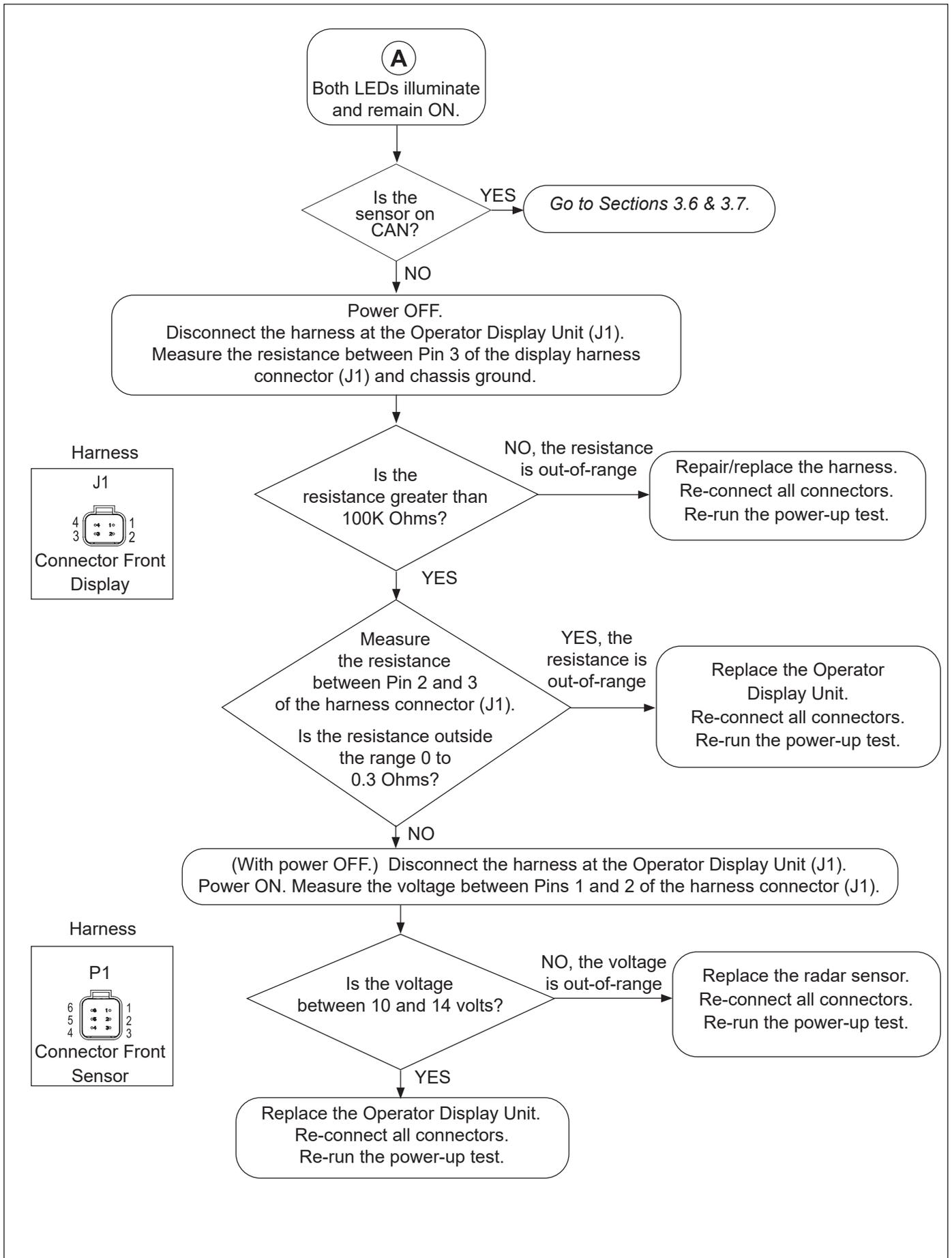
3.3 ELECTRICAL SUPPLY TROUBLESHOOTING: PRE-TESTS



3.4 ELECTRICAL SUPPLY TROUBLESHOOTING: POWER-UP SEQUENCE



3.5 TROUBLESHOOTING WHEN BOTH LEDs REMAIN ON



3.6 COMMUNICATIONS (J1939) TEST AND TROUBLESHOOTING PROCEDURES

The Bendix™ BlindSpotter® Rev. 2 sensor receives J1939 messages from various Electronic Control Units (ECUs). The sensor will set a Diagnostic Trouble Code (DTC) if one of the messages from one of the expected ECUs is not present. *Refer to the Service Data Sheet for the particular ECU for full troubleshooting information.*

1. Take all measurements at the harness connector unless otherwise indicated. Do not insert any probe into the pin on the mating connector of the sensor that is greater than the dimension of the mating connector. Damaged connector pins will require replacement of the harness.
2. Check for damaged or reversed J1939 wiring. If the J1939 HIGH or J1939 LOW wiring circuits are damaged (such as shorting together) then the entire J1939 link will not operate. The problem may be intermittent, enabling the J1939 link to operate normally sometimes. If this occurs, multiple DTCs will be logged in multiple engine and vehicle controllers. If the J1939 HIGH and J1939 LOW circuits are reversed then communication errors will occur, but will be localized to the device(s) with the reversed circuit.
3. Check for poorly-crimped, corroded, contaminated or damaged wiring connector problems such as opens or shorts to voltage or ground. If the connector terminals are corroded or damaged, this may be an indication of water intrusion into the wiring system and possibly into the sensor. Replacement of the entire harness is recommended. If the terminals of the sensor are corroded, replacement of the sensor is recommended.
4. Check for other J1939 devices which may be inhibiting J1939 communication. The service technician should consult the vehicle manufacturer for other J1939 troubleshooting procedures. The device's power should be removed and measurements made at the ECU pins for shorts to ground and power pins and resistance between the J1939 HIGH or J1939 LOW input circuits.
5. Unplug the sensor 2-pin (plug P2) harness. With the ignition OFF, measure the resistance (Ohms) between harness pins 1 and 2 using a multi-meter. The reading should be approximately 60 Ohms. If this is not the case, the vehicle wiring should be investigated.

3.7 J1939 DIAGNOSTIC TROUBLE CODE (DTC) TROUBLESHOOTING PROCEDURE



The Bendix™ BlindSpotter® Rev. 2 sensor can be diagnosed with either Bendix® ACom® PRO™ Diagnostic Software or a J1939 scan tool. The sensor will send a diagnostic message (DM1) for an active fault on the data link. The DM1 message contains a Diagnostic Trouble Code (DTCs) indicating the error.

As part of the troubleshooting procedure, active faults should be cleared with the service tool and then the J1939 data link checked to see if it recurs. Perform one of the service actions as indicated in this table.

One of the following DTCs will be sent:

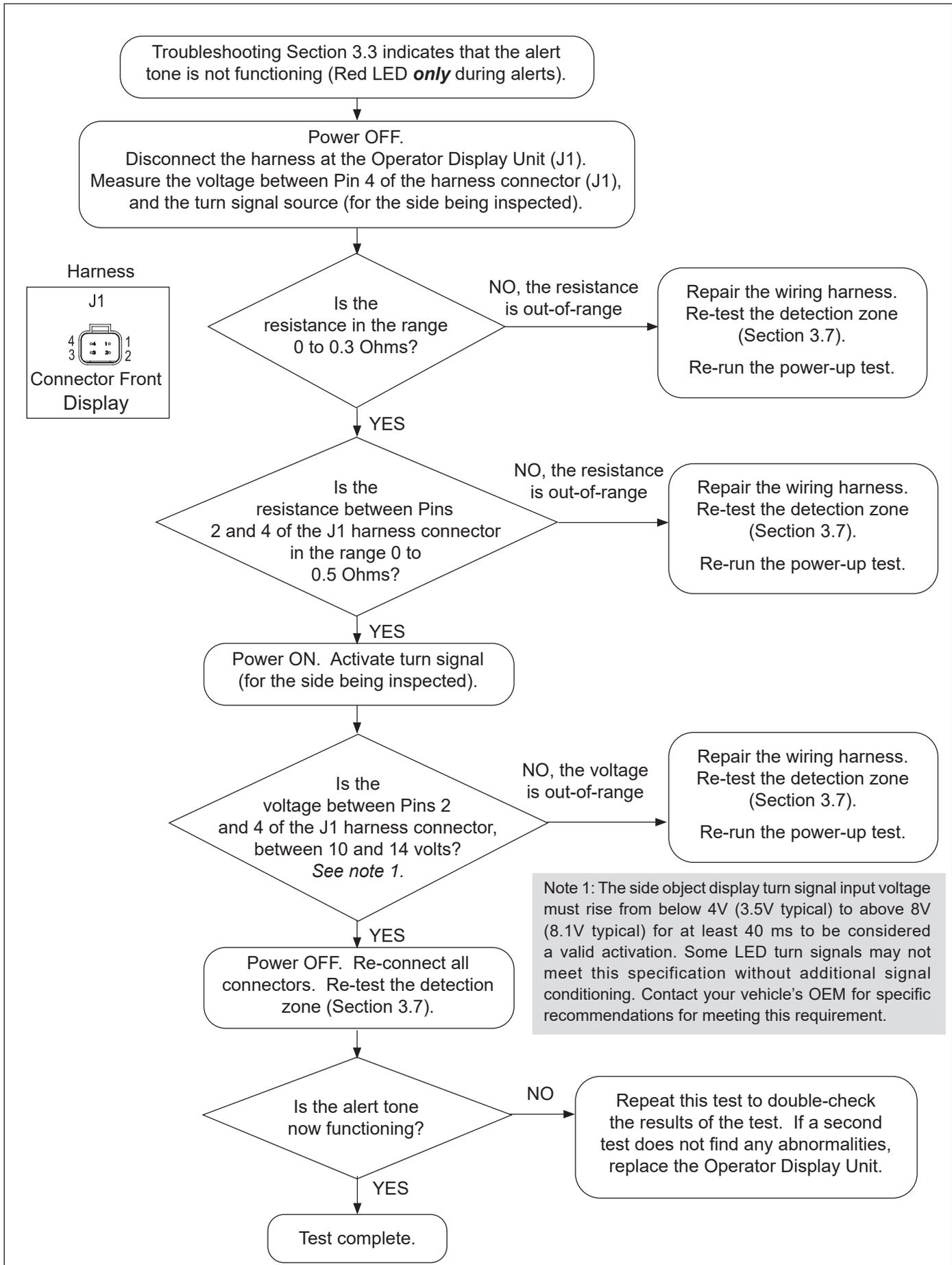
Bendix®-brand Electronic Control Units (ECUs) are not designed to store data for purposes of accident reconstruction and Bendix® ACom® PRO™ Diagnostic Software is not intended to retrieve data for purposes of accident reconstruction. Bendix makes no representations as to the accuracy of data or video retrieved and interpreted from ECUs for purposes of accident reconstruction. Bendix does not offer accident reconstruction services or interpretation of stored data. Bendix ECUs are not protected from fire, loss of power, impact damage, or other conditions that may be sustained in a crash situation and may cause data to be unavailable or irretrievable.

Sensor Condition	Side Object Display Lamp Status	DTC AWL (Amber Warning Lamp) Status	DTC SPN	DTC FMI	Service Action
Good; normal operation	Yellow normally; red with object detection.	OFF	N/A	N/A	None needed
Built-In Self-Test (BIST) Error	Red and yellow lamps both lit constantly.	ON	953 (right) 950 (left)	12 (Bad Intelligent Device)	Replace a sensor
Blockage	Red and yellow lamps both lit constantly.	ON	953 (right) 950 (left)	7 (System Not Responding)	Do not replace sensor: Check for mounting problem or other blockage
Missing Speed Message	Red and yellow lamps both lit constantly.	ON	639	9 (Abnormal Update Rate)	Do not replace the sensor: Troubleshoot J1939 data link per section 3.6
CCVS1 data in error	Red and yellow lamps both lit constantly.	ON	639	2 (Incorrect or Erratic)	Do not replace the sensor: Troubleshoot J1939 data link per section 3.6

Notes:

- DM1 = Diagnostic Message 1
- SPN = Suspect Parameter Number
- FMI = Failure Mode Indicator
- CCVS1 = Cruise Control/Vehicle Speed

3.8 TROUBLESHOOTING WHEN THE ALERT TONE IS NOT FUNCTIONING



3.9 TROUBLESHOOTING THE DETECTION ZONE

Park the vehicle in an area with no radar reflective objects within 20 feet of the sensor being inspected.

- Turn the ignition ON and wait for the self-check to complete. See *Table 1*.
- Activate the turn signal towards the side being examined. Using a sizeable metallic object [at least one (1) foot by one (1) foot], test the effective Detection Zone for the Bendix™ BlindSpotter® Rev. 2. Note that the alert tone will sound once for each operation of the turn signal. The technician may find it helpful to have an assistant be ready to cancel and re-apply the turn signal as the metallic object is moved into the detection zone from the side, front, and back.
- The red LED should remain illuminated while the object is within the detection zone. The zone should be approximately ten (10) feet from the vehicle directly in line with the sensor, and approximately six (6.0) feet towards the front (and back) of the vehicle. See *Figure 9*.

If the zone is not as expected, inspect the mounting location for any obstructions, vehicle trim damage, loose brackets, etc. and repair or relocate the sensor as needed.

See *Section 1.2* in cases where the sensor needs to be relocated.

See *Section 1.13* for information about the required clearance zone around the sensor.

See the *Sections that follow* for cases where no detection or continuous detection is experienced.

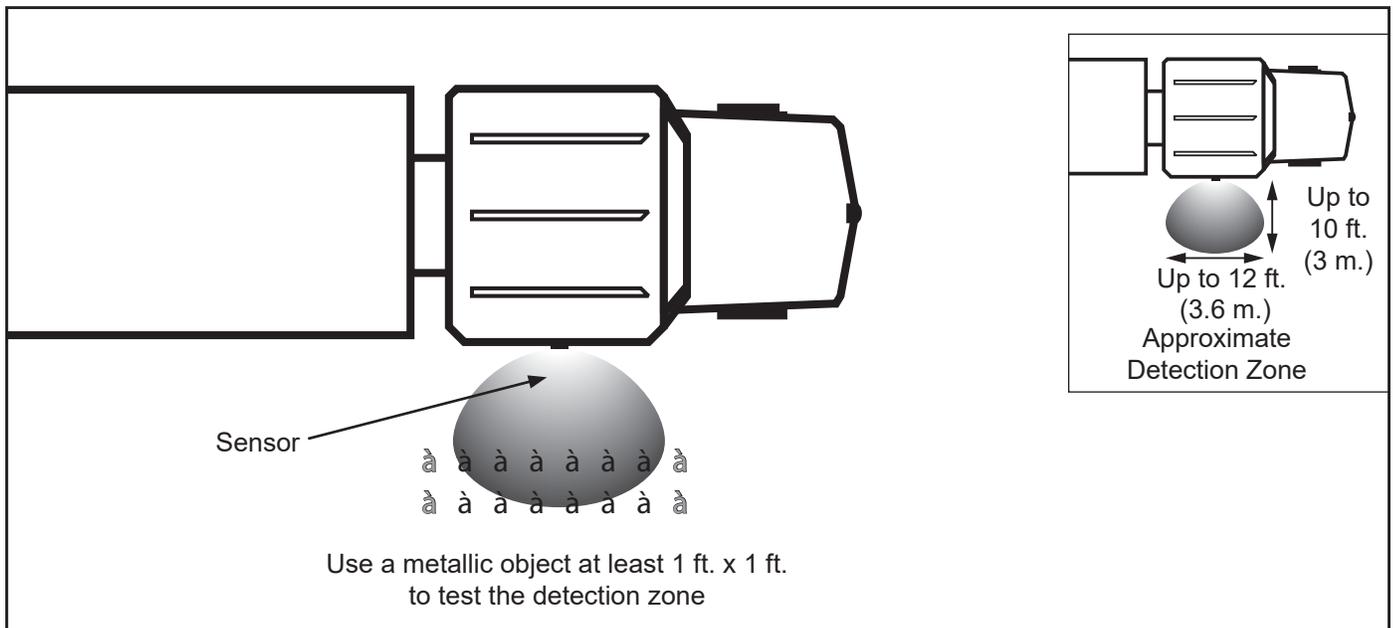
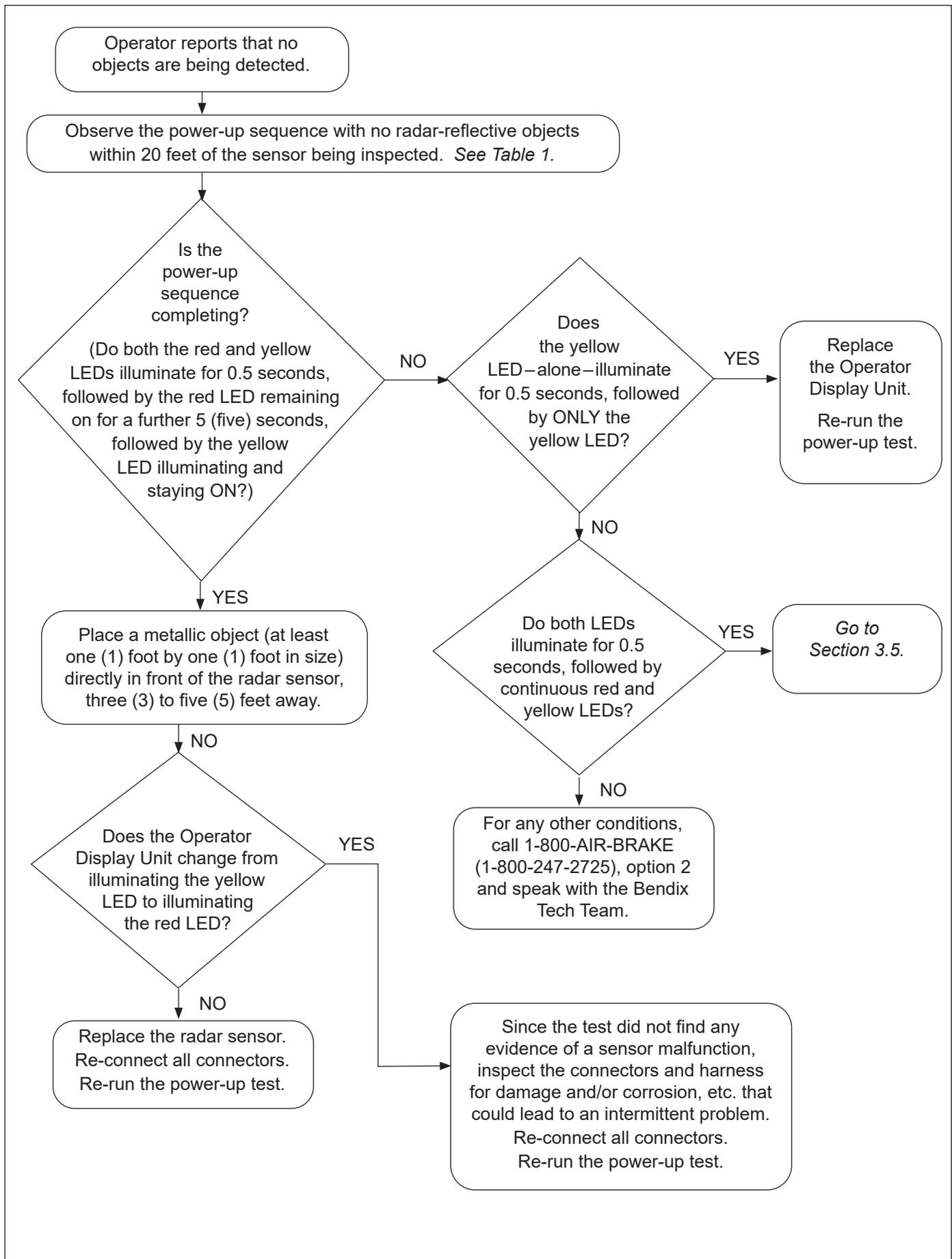
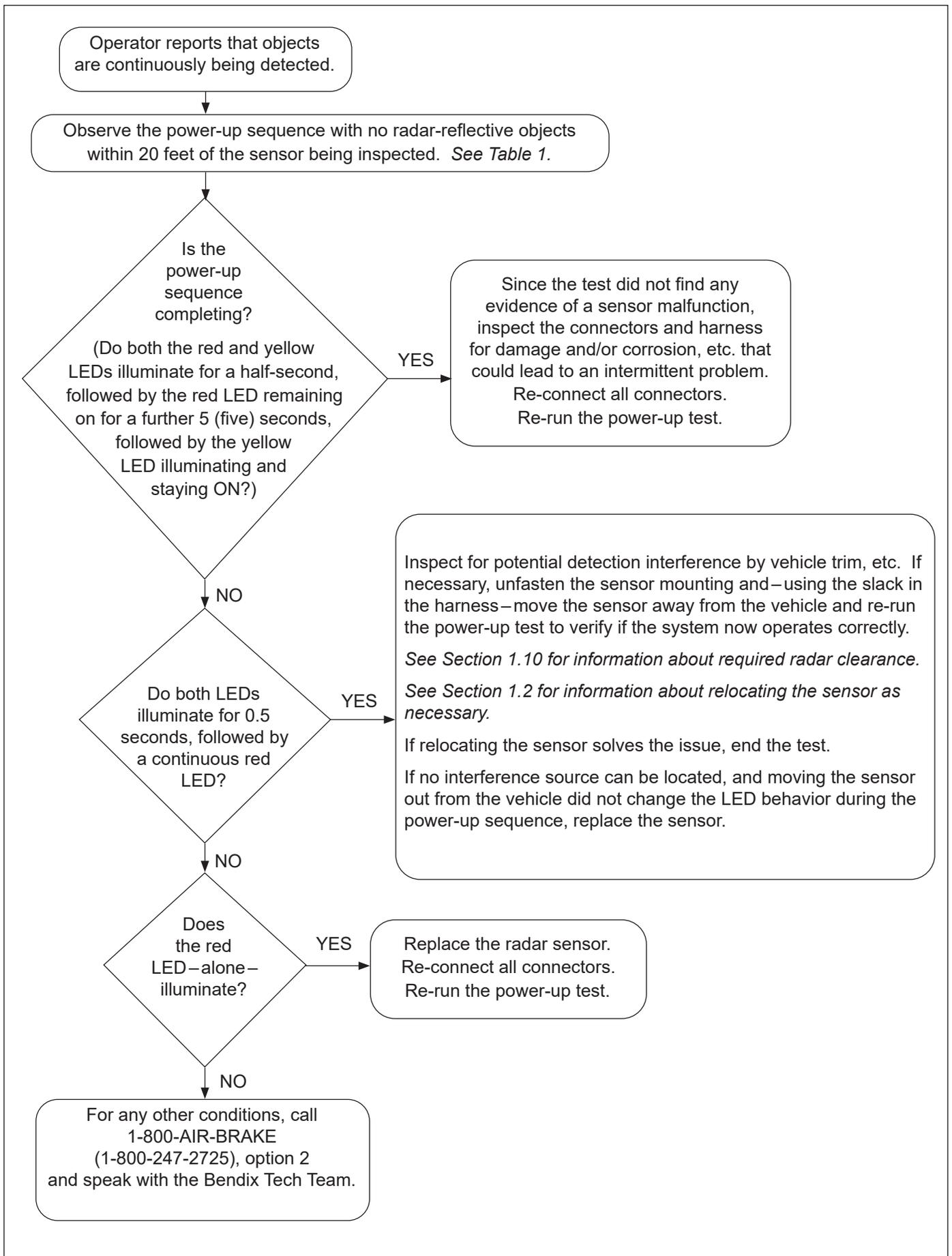


Figure 9 - Radar Sensor Detection Zone (Typical Installation On Passenger Side Shown)

3.10 TROUBLESHOOTING WHEN NO OBJECTS ARE BEING DETECTED



3.11 TROUBLESHOOTING WHEN OBJECTS ARE CONTINUOUSLY BEING DETECTED



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NOTES



The driver is always responsible for the control and safe operation of the vehicle at all times. The Bendix™ BlindSpotter® Rev. 2 system does not replace the need for a skilled, alert professional driver, reacting appropriately and in a timely manner, and using safe driving practices.

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