INSTALLATION INSTRUCTIONS

2015-Current F-150 Radar Blindspot System

(Part # RDBS-1520)

Please read thoroughly before starting installation and check that kit contents are complete.

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Items Included in the Kit:

(2) Radar Housings
(2) Radars
Chassis Harness
Radar Harness
OBDII Connector
RDBS ECU
HMI Display Set and Buzzer
Heat Shrink (for interior wire connections)
(2) Radar Harness Connectors
22 ga. White, Brown and Yellow Wire (4ft)
22 ga. Light Green and Red Wire (10ft)
(12) zip ties with 1 Ztech rust inhibitor
(2) ¼″ plastic screws (for Radar mounting)
(4) ⅜″ screws (for Radar mounting)
(6) 1½″ screws (for Base mounting)

Tools & Supplies Needed:

Electrical Tape
Zip ties
⅛″ Drill Bit
Digital Volt Meter / BCM Safe Test Light
Screwdriver
Panel Popping Tool
Rotary Cutting Tool
Masking Tape

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Safety Precautions:

- Work in well ventilated area that is clear of obstructions.
- Secure vehicle with tire chucks in both front and rear of tires.
- Turn vehicle accessories OFF and ensure ignition key is in OFF position.
- Wear safety goggles and snug fitting clothes.
- Use tools only for their intended purpose and which are in good repair.
- Only perform this task if confidence, skill, and physical ability permit.

NOTE: We strive to provide accurate and up-to-date installation instructions. For the latest full color instructions, as well as an installation video, please visit www.brandmotion.com

Installing ECU Into Vehicle:

1. For the interior harness installation (Interior is taped up) run wires to passenger kick panel and make following connections. Keep the connector end under the drivers side dash.
    a. GREEN wire connects to the vehicle's RIGHT TURN SIGNAL positive wire.
    b. YELLOW wire connects to the vehicle's LEFT TURN SIGNAL positive wire.
    c. WHITE wire connects to the vehicle's REVERSE lights.
    d. BROWN wire connects to the vehicle's PARKING LIGHTS positive wire.
    e. RED wire connects to vehicle IGNITION.
    f. BLACK plastic-coated wire connects to a good, clean GROUND in the vehicle.

Turn Signal (Left)	blue/green (F); gray/orange (R)	+	BCM in passenger kick, 40 pin plug (F), pin 39; 52 pin plug (E), pin 26
Turn Signal (Right)	yellow/violet (F); green/orange (R)	+	BCM in passenger kick, 40 pin plug (F), pin 38; 52 pin plug (E), pin 52
Reverse Light	green/brown	+	driver kick or BCM in passenger kick, 36 pin plug (C), pin 11
Ignition	white/orange	+	ignition switch, black 7 pin plug, pin 1
Parking Lights	blue/gray (F); blue/gray (R)	+	BCM in passenger kick, 22 pin plug (G), pin 3; 36 pin plug (C), pin 12

2. Plug the interior harness into the ECU
3. Determine best mounting location for ECU under the drivers side dash.
4. Mount ECU
5. Connect the Blue and Brown CAN wires to the supplied OBDII connector.
6. Plug OBDII connector into OBDII under the dash.

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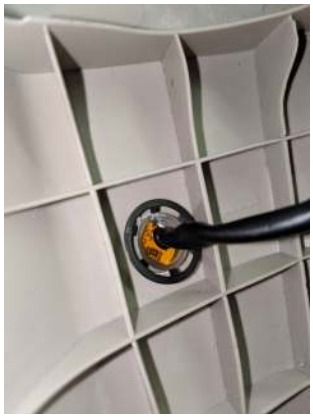
INSTALL HMI (warning lights) and BUZZER:

1. Run HMI (human-machine interface) harness to interior harness. The short wire with connector goes to the driver's side and the longer wire goes to the passenger side.
2. Remove both driver and passenger A-pillar covers from vehicle.



3. Find a visible location low on the A-pillars covers to mount HMI.
4. Mark the location on both A-pillar covers and, using a 9/16-inch drill bit, carefully drill through each A-pillar.
5. Insert HMI into drilled hole and secure from the back side of A-pillar cover using retaining washer.
6. Plug in HMI to HMI harness and reattach A-pillar covers to appropriate sides, taking care not to pinch HMI harness wires.
7. Plug the buzzer into the interior harness. Find a flat surface to mount the buzzer to and remove backing of double-sided tape to attach to preferred location. (The more hidden the location is, the lower the buzzer volume will be.)

Install Chassis Harness:

1. Plug supplied chassis harness into ECU.
2. Run harness down drivers side of vehicle. Zip Tie harness along factory harnesses running to the rear bumper. ***Be sure to avoid*** things like exhaust pipes, brake lines, fuel lines, suspension components, and anything else that could damage the harness.
3. Run chassis harness to a location under the rear bumper on the drivers side. Leave connector in an accessible location to be used in final step.

INSTALLING RADARS AND HOUSINGS

1. Cover both corners of the bumper with painters tape. This will help with making hole marks and a cutout template for the connector hole.
2. Place the housing base on the bumper. The base should fit snug within the grooves on the bumper. Mark the three screw holes and trace connector hole.

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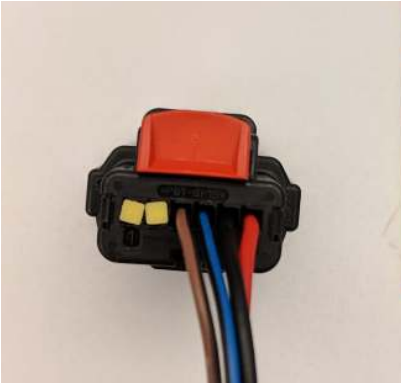
3. Remove housing base and drill three screw holes with 1/8th inch drill bit. Be sure to drill through the layer of metal beneath the plastic bumper. Using the template that was traced on the tape, cut out the hole for the connector.

4. Route the radar harness through each side of the bumper. The short side of the radar harness goes to the drivers side and the long side will go to the passenger side of the vehicle.
5. Insert the pins into the connector as shown below. Once inserted, push the white locking clip shown in photo below into place to secure pins in connector.



Pin #	1	2	3	4	5	6
Color	N/A	N/A	Brown w/ Black Stripe	Blue w/ Black Stripe	Black	Red

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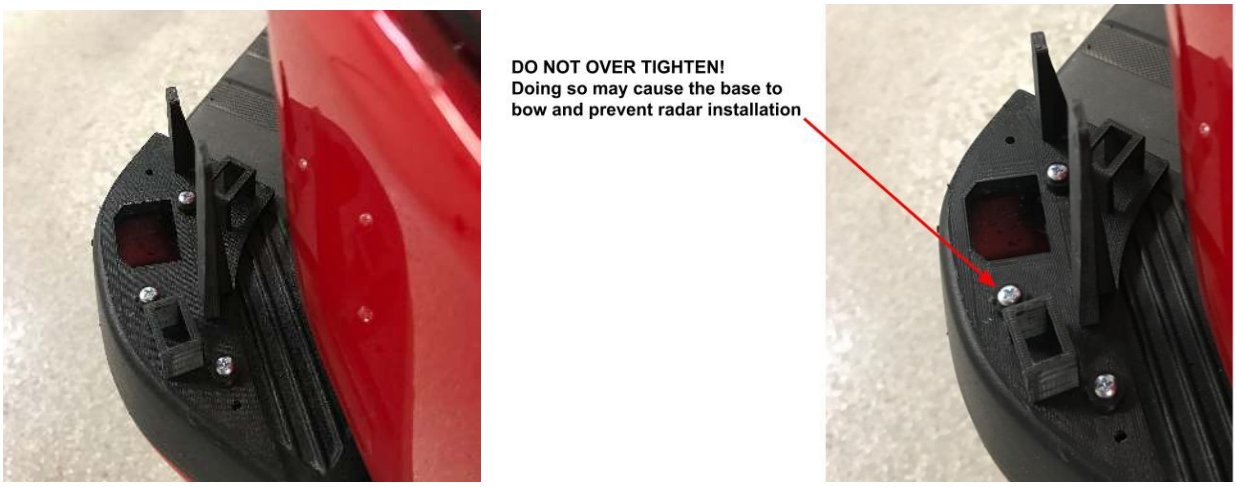
6. Using the provided screws, attach the housing base to the bumper. Be careful not to damage the harness when installing screws.

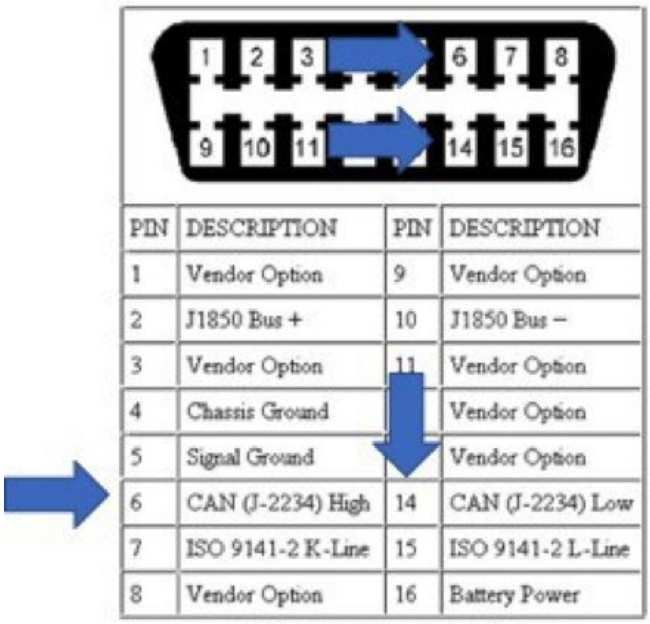


7. Connect the radar marked with an "L" on the back to the drivers side radar connector. Use provided screws to attach radar to posts on housing base
8. Connect the radar marked with an "R" on the back to the passenger side radar connector. Use provided screws to attach radar to posts on housing base.

⅜" screws are for the lower mounting holes, ¼" for the single top mounting hole.

9. Install housing cover. Make sure the clips on the cover are lined up with the receivers on the base before applying pressure.
10. Connect the chassis harness to the radar harness.

Once install is complete, enter diagnostic mode for component testing. See last page for diagnostic mode instructions.

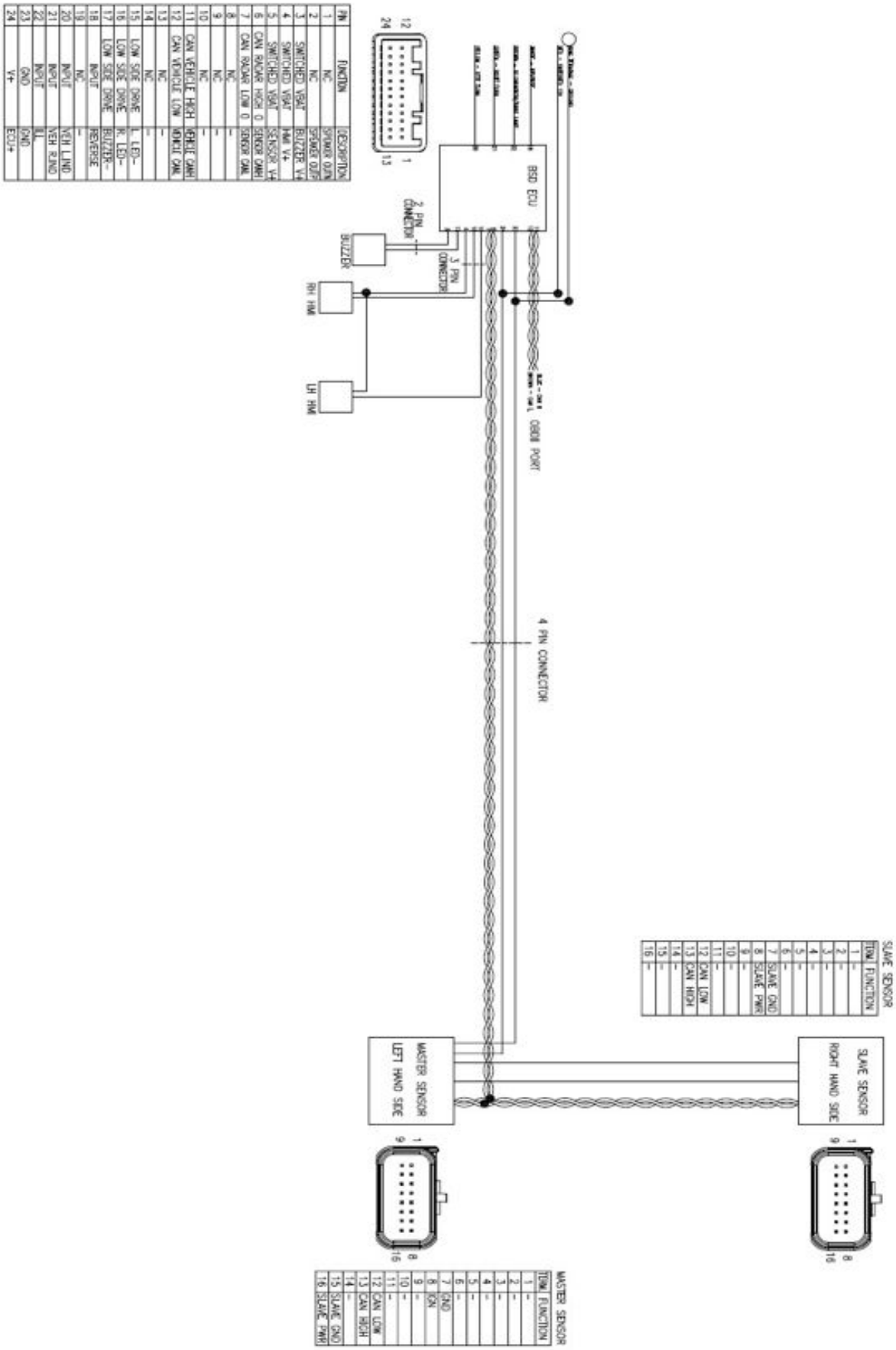


PIN	DESCRIPTION	PIN	DESCRIPTION
1	Vendor Option	9	Vendor Option
2	J1850 Bus +	10	J1850 Bus –
3	Vendor Option	11	Vendor Option
4	Chassis Ground		Vendor Option
5	Signal Ground		Vendor Option
6	CAN (J-2234) High	14	CAN (J-2234) Low
7	ISO 9141-2 K-Line	15	ISO 9141-2 L-Line
8	Vendor Option	16	Battery Power

OBD-II Connector and Pinout

INSTALLATION INSTRUCTIONS

Harness Schematic



PIN	FUNCTION	DESCRIPTION
1	NC	SPARE OUTP
2	NC	SPARE OUTP
3	SWITCHED VBAT	BUZZER V+
4	SWITCHED VBAT	HW V+
5	SWITCHED VBAT	SENSOR V+
6	CAN RADAR HIGH	0 SENSOR CAN
7	CAN RADAR LOW	0 SENSOR CAN
8	NC	-
9	NC	-
10	NC	-
11	CAN VEHICLE HIGH	VEHICLE CAN
12	CAN VEHICLE LOW	VEHICLE CAN
13	NC	-
14	NC	-
15	LOW SIDE DRIVE	L LED-
16	LOW SIDE DRIVE	R LED-
17	LOW SIDE DRIVE	BUZZER-
18	INPUT	REVERSE
19	NC	-
20	INPUT	VEH LIND
21	INPUT	VEH RIND
22	INPUT	IL
23	GND	GND
24	V+	ECU+

PIN	FUNCTION
1	-
2	-
3	-
4	-
5	-
6	-
7	SLAVE GND
8	SLAVE PWR
9	-
10	-
11	-
12	CAN LOW
13	CAN HIGH
14	-
15	-
16	-

PIN	FUNCTION
1	-
2	-
3	-
4	-
5	-
6	-
7	GND
8	IGN
9	-
10	-
11	-
12	CAN LOW
13	CAN HIGH
14	-
15	SLAVE GND
16	SLAVE PWR

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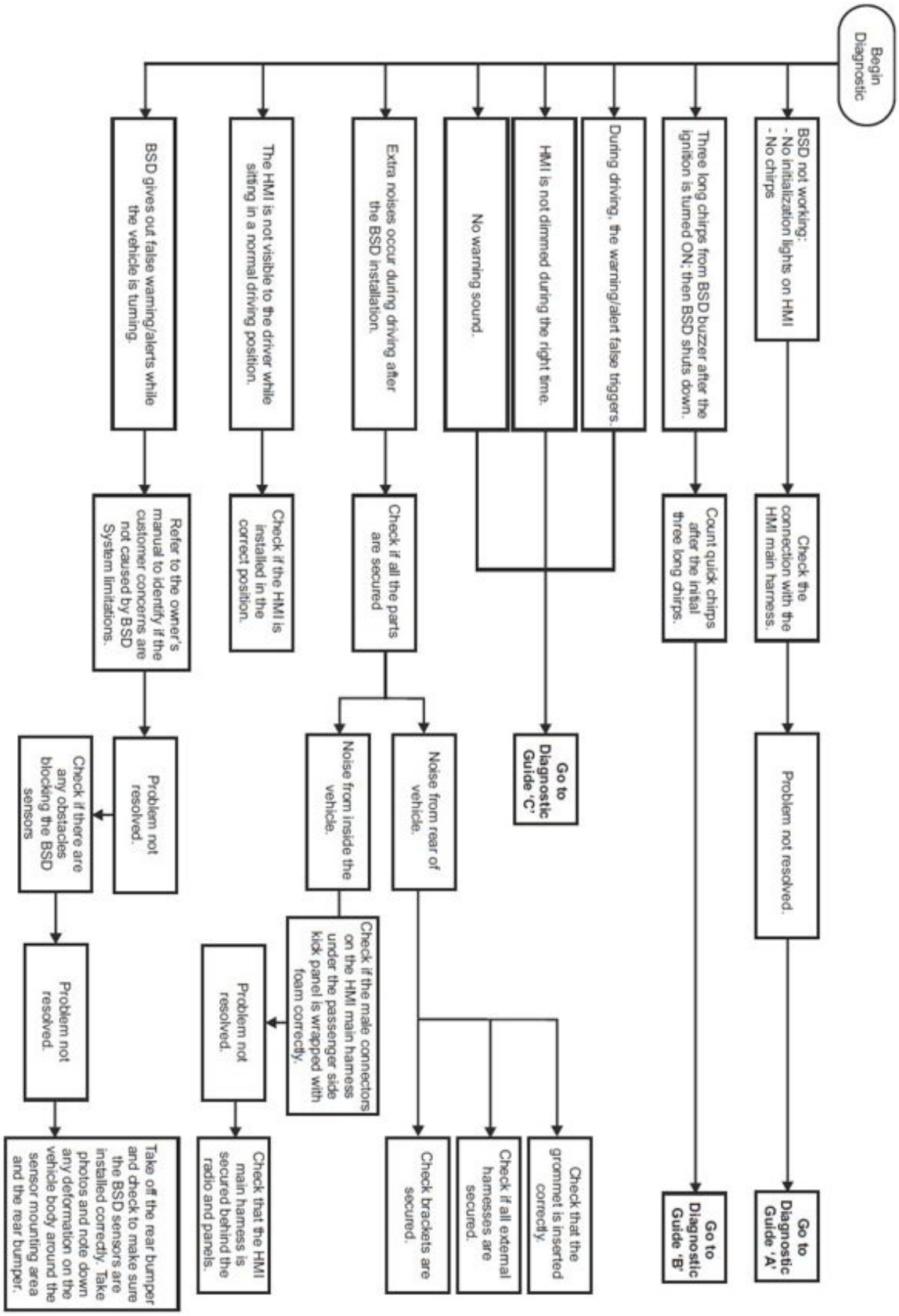

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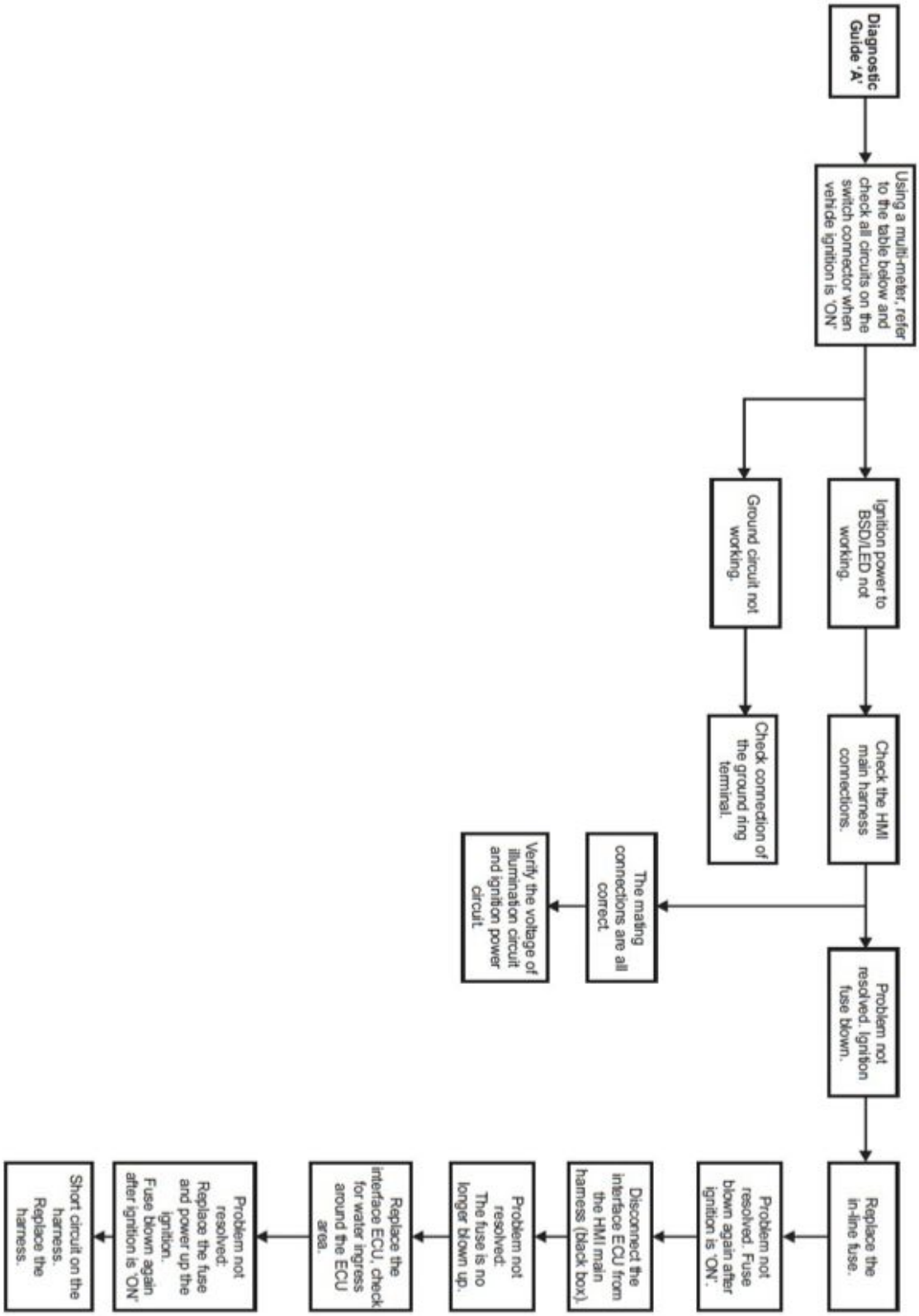

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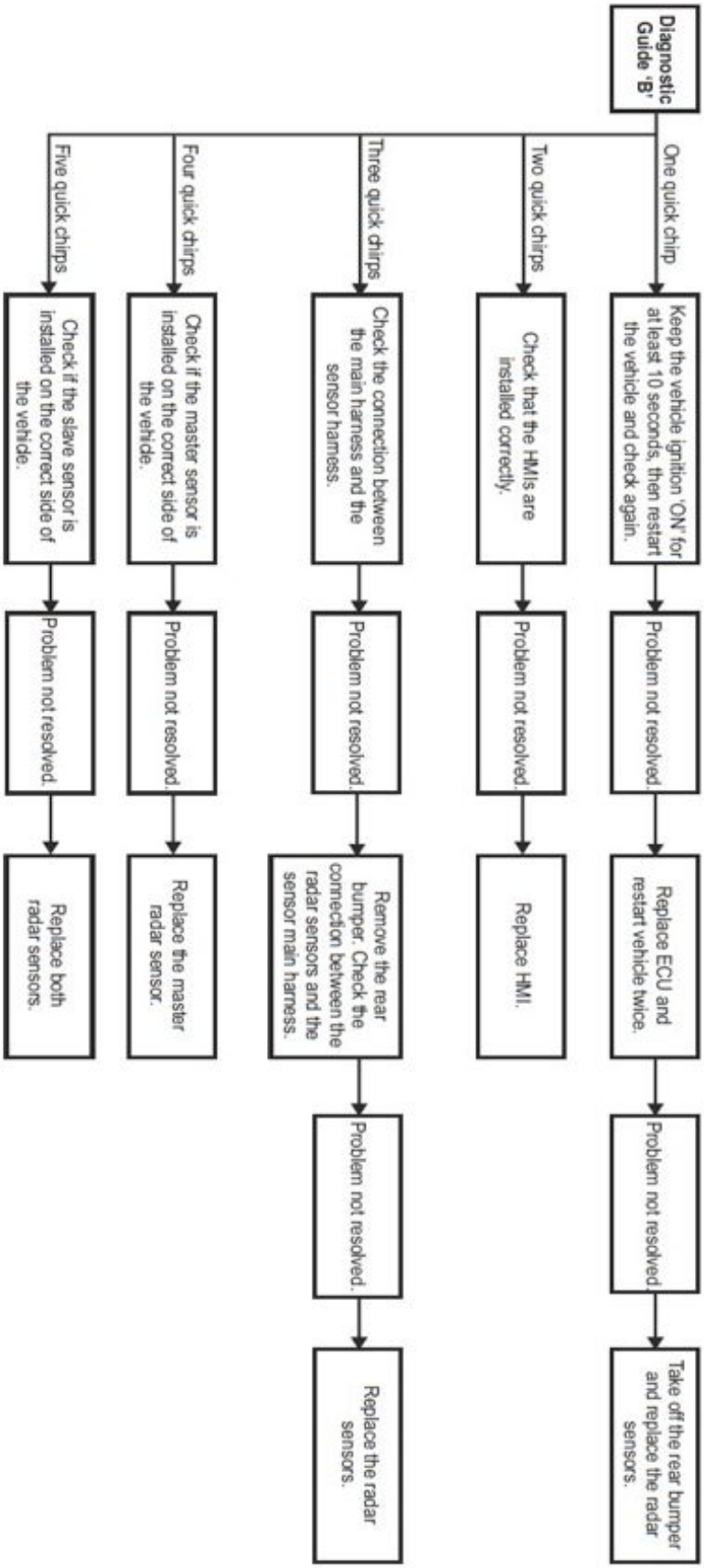

INSTALLATION INSTRUCTIONS

Diagnostic Guide 'C'

Test the BSD system for correct operation:

To Enter Dealer Diagnostic Mode:

- Turn ON Ignition power.
- Within the first 10 seconds, toggle the low beam lights from OFF to ON at least 10 times.
- Wait for 10 beeps from the buzzer.
- The HMI will blink 10 times at the same rate as the beeping sound.
- Now the BSD is in the dealer diagnostic mode.

To Check Signal Connection:

Based on the table below:

- Check Left Indicator.
- Turn on position light, check Left Indicator (Night).
- Check Right Indicator.
- Turn on position light, check Right Indicator (Night).
- Check the speed signal by driving vehicle at 5-20 km/h.

Item under Diagnostic	Left Warning Lamp Status	Right Warning Lamp Status
Left Indicator	On at 80% brightness	OFF
Left Indicator (Night)	On at 10% brightness	OFF
Right Indicator	OFF	On at 80% brightness
Right Indicator (Night)	OFF	On at 10% brightness
Speed 5 - 20km (12mph)	Flashing	Flashing

Note: The vehicle must not be driven in diagnostic mode above 20km/h / 15mph, otherwise constant warnings will be given by the BSD. Ignition power shall be reset to quit the dealer diagnostic mode before returning vehicle to the customer.

- If BSM system has no beeps or visual warnings at all, check that the switch is turned ON and the patch behind the heater panel is connected correctly.
- If more than two long beeps sound from the BSM after ignition is turned ON, check the radar sensor connections.
- If the HMI does not turn ON when the vehicle indicator signal turns ON, then check the IND patch under the steering wheel.
- If the HMI does not change its brightness during tests, then check the illumination patch behind the heater box.
- If the HMI does not flash while the vehicle is moving above 5km/h, check if the speed terminal is inserted correctly.

Enter the BSD diagnostic mode.

Check buzzer.

Buzzer works correctly.

Buzzer not working.

Check the buzzer connection with the main harness.

Problem not resolved.

Replace the buzzer near the interface ECU behind the switch panel.

Check HMI lights by turning on the corresponding indicator.

HMI works correctly.

HMI not working.

Check the buzzer connection with the main harness.

Problem not resolved.

Check the indicator patch connection is correct under the steering wheel cover next to the key hole.

Problem not resolved.

Check the indicator signals.

Check illumination signal by cycling headlight ON/OFF when indicator is ON.

Illumination signal works correctly.

Illumination not working.

Check the illumination circuit connection.

Check speed signal by driving from 5 - 25km/h (15 mph).

All signals work.

Restart the vehicle to stop the BSD diagnostic mode.

Buzzer not working.

Check the CAN connection.