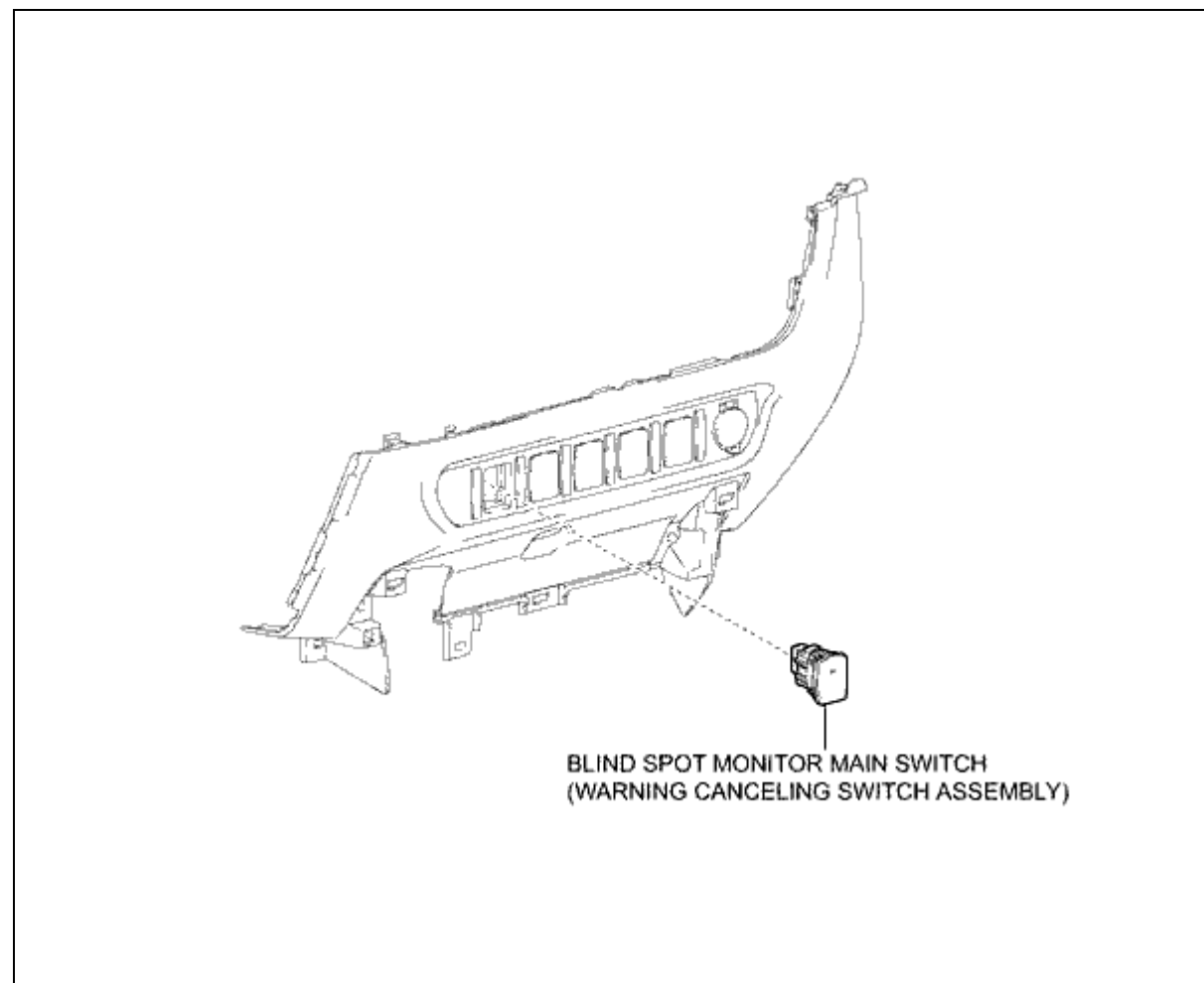


Last Modified: 11-13-2015	6.6 K	Doc ID: RM000004UDI00VX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR MAIN SWITCH: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION



Last Modified: 11-13-2015	6.6 G	Doc ID: RM000004UDH00KX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR MAIN SWITCH: INSPECTION; 2016 MY Tacoma [08/2015 -]		

INSPECTION

1. INSPECT BLIND SPOT MONITOR MAIN SWITCH (WARNING CANCELING SWITCH ASSEMBLY)

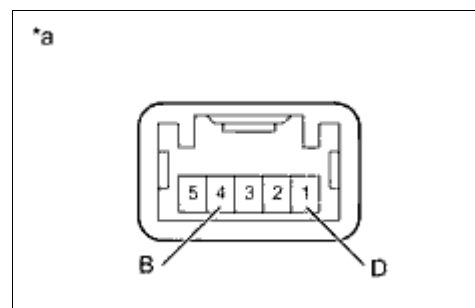
- (a) Measure the resistance according to the value(s) in the table below.

Text in Illustration

*a	Component without harness connected (Blind Spot Monitor Main Switch (Warning Canceling Switch Assembly))
----	---

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
4 (B) - 1 (D)	Blind spot monitor main switch on	Below 1 Ω
	Blind spot monitor main switch off	10 k Ω or higher



If the result is not as specified, replace the blind spot monitor main switch (warning canceling switch assembly).

- (b) Check that the switch illuminates.

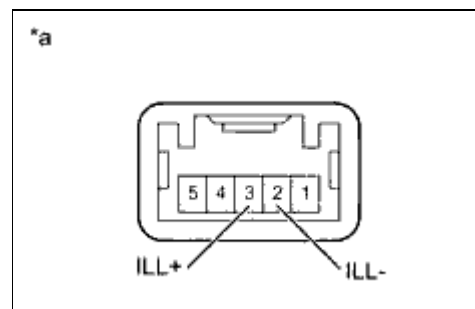
- (1) Apply battery voltage to the blind spot monitor main switch (warning canceling switch assembly) and check that the switch illuminates.

Text in Illustration

*a	Component without harness connected (Blind Spot Monitor Main Switch (Warning Canceling Switch Assembly))
----	---

OK:

CONNECTION	SPECIFIED CONDITION
Battery positive (+) → Terminal 3 (ILL+)	Illuminates
Battery negative (-) → Terminal 2 (ILL-)	



If the result is not as specified, replace the blind spot monitor main switch (warning canceling switch assembly).

(c) Check that the switch indicator operates.

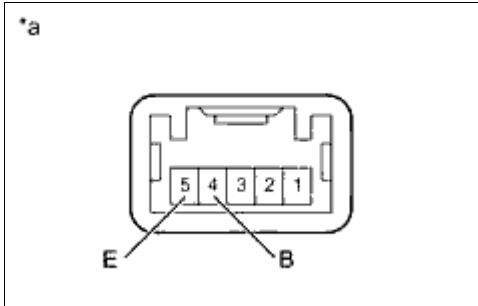
- (1) Apply battery voltage to the blind spot monitor main switch (warning canceling switch assembly) and check that the switch indicator operates.

Text in Illustration

*a	Component without harness connected (Blind Spot Monitor Main Switch (Warning Canceling Switch Assembly))
----	---

OK:

CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
Battery positive (+) → Terminal 4 (B) Battery negative (-) → Terminal 5 (E)	Blind spot monitor main switch on	Indicator Illuminates



If the result is not as specified, replace the blind spot monitor main switch (warning canceling switch assembly).



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000004UDG014X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR MAIN SWITCH: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

1. INSTALL BLIND SPOT MONITOR MAIN SWITCH (WARNING CANCELING SWITCH ASSEMBLY)

(a) Engage the 2 claws to install the blind spot monitor main switch (warning cancel switch assembly).

2. INSTALL INSTRUMENT PANEL LOWER CENTER FINISH PANEL



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000004UDJ014X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR MAIN SWITCH: REMOVAL; 2016 MY Tacoma [08/2015 -]		

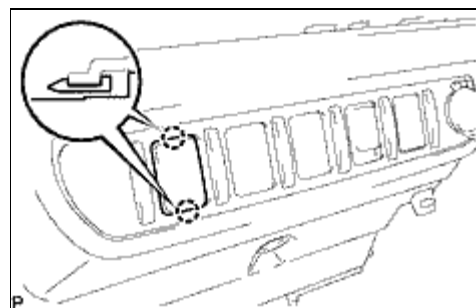
REMOVAL

1. REMOVE INSTRUMENT PANEL LOWER CENTER FINISH PANEL

INFO

2. REMOVE BLIND SPOT MONITOR MAIN SWITCH (WARNING CANCELING SWITCH ASSEMBLY)

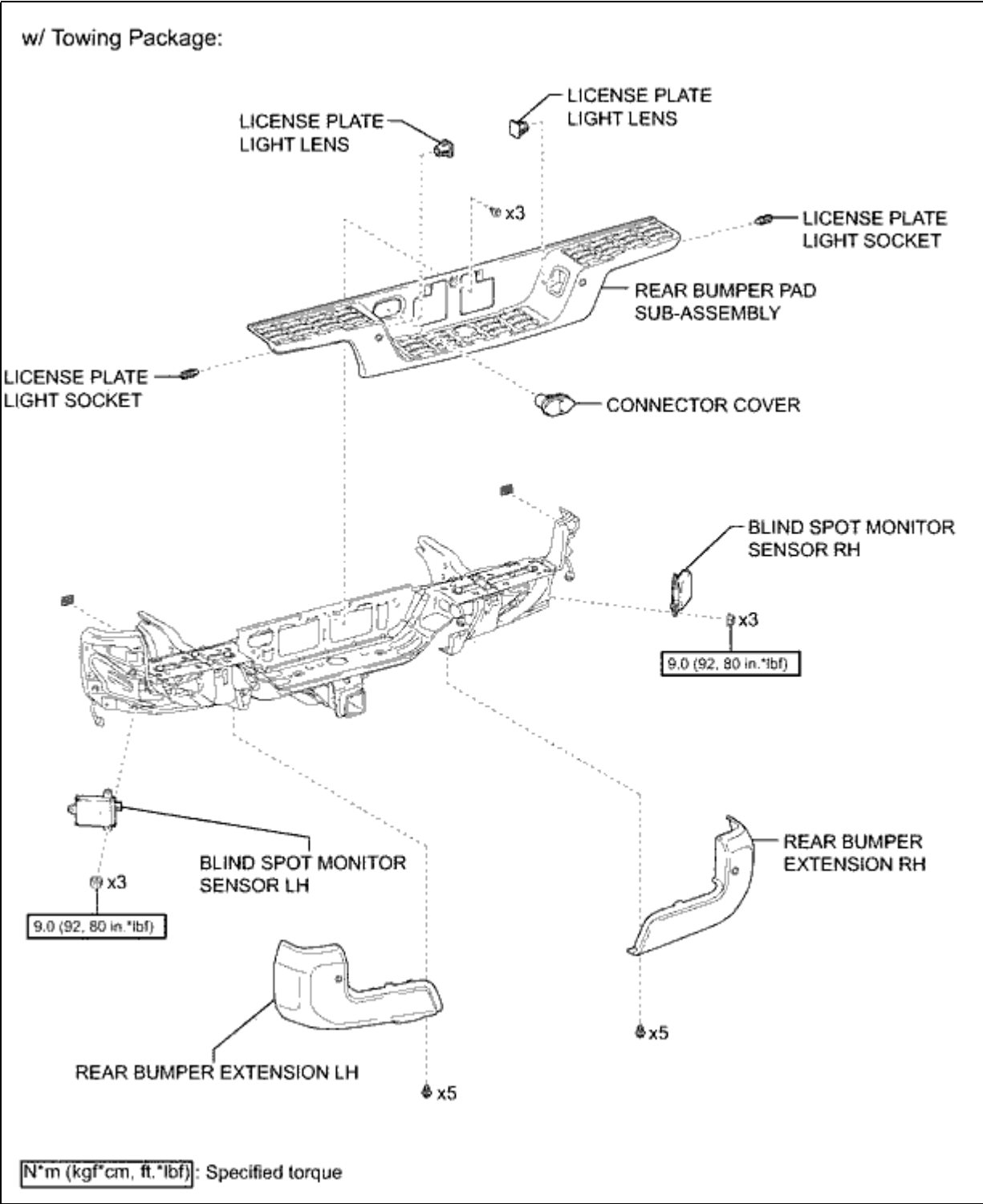
- (a) Disengage the 2 claws to remove the blind spot monitor main switch (warning canceling switch assembly).



Last Modified: 11-13-2015	6.6 K	Doc ID: RM000005VOH000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SENSOR: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

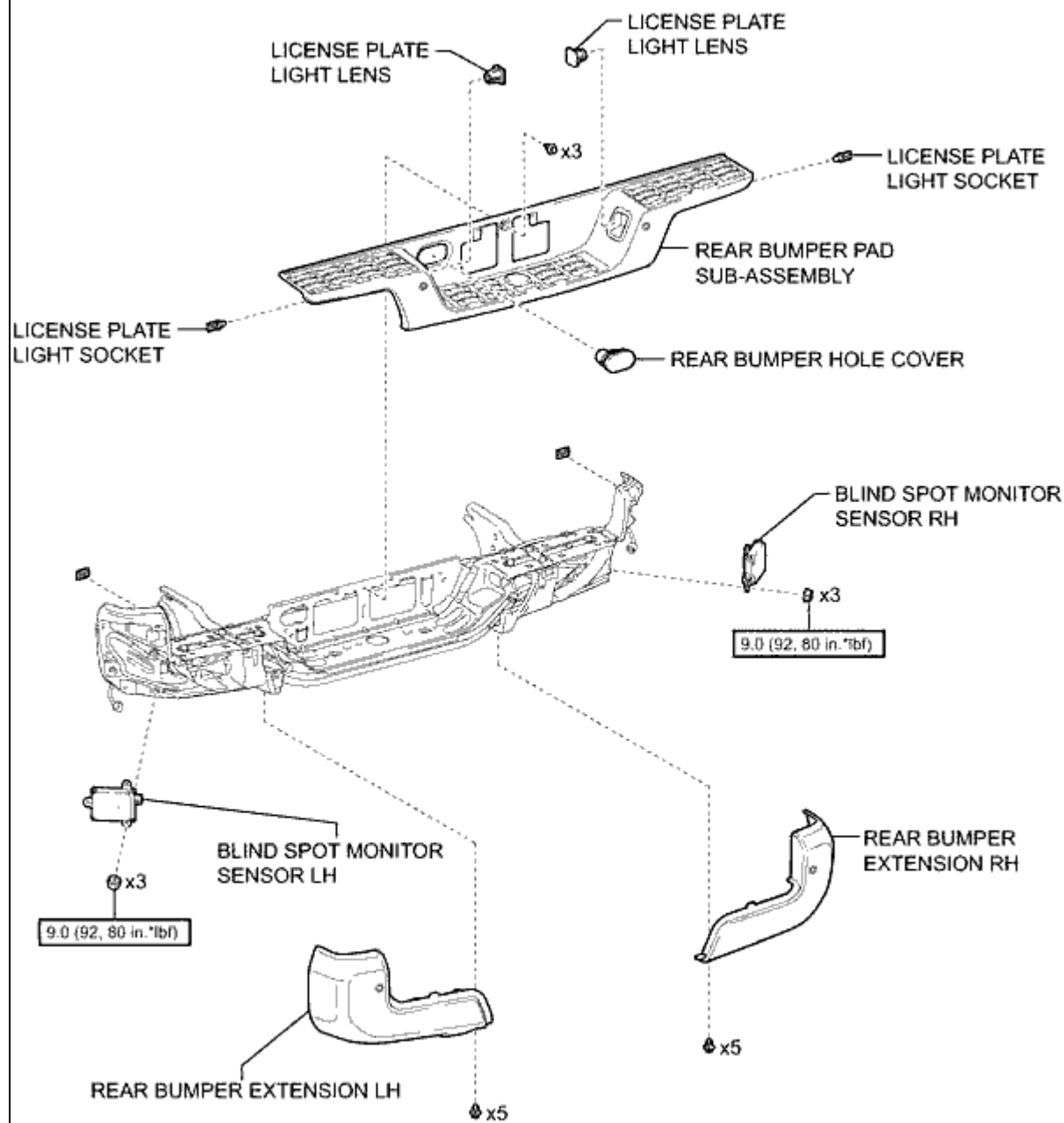
COMPONENTS

ILLUSTRATION



ILLUSTRATION

w/o Towing Package:



N*m (kgf*cm, ft.*lbf): Specified torque



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000004UCJ013X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SENSOR: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

NOTICE:

Replace the blind spot monitor sensor if it has been dropped or subjected to a severe impact.

1. INSTALL BLIND SPOT MONITOR SENSOR LH

(a) Install the blind spot monitor sensor LH with the 3 nuts.

Torque:

9.0 N·m {92 kgf·cm, 80in·lbf}

(b) Connect the connector.

2. INSTALL BLIND SPOT MONITOR SENSOR RH

HINT:

Use the same procedure as for the LH side.

3. INSTALL REAR BUMPER EXTENSION LH (w/ Towing Package) [INFO](#)

4. INSTALL REAR BUMPER EXTENSION LH (w/o Towing Package) [INFO](#)

5. INSTALL REAR BUMPER EXTENSION RH (w/ Towing Package)

HINT:

Use the same procedure as for the LH side.

6. INSTALL REAR BUMPER EXTENSION RH (w/o Towing Package)

HINT:

Use the same procedure as for the LH side.

7. INSTALL REAR BUMPER PAD SUB-ASSEMBLY (w/ Towing Package) [INFO](#)

8. INSTALL REAR BUMPER PAD SUB-ASSEMBLY (w/o Towing Package) [INFO](#)

9. INSTALL CONNECTOR COVER (w/ Towing Package) [INFO](#)

10. INSTALL REAR BUMPER HOLE COVER (w/o Towing Package) [INFO](#)

11. INSTALL REAR BUMPER ASSEMBLY (w/ Towing Package)

HINT: [INFO](#)

12. INSTALL REAR BUMPER ASSEMBLY (w/o Towing Package)

HINT: [INFO](#)



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000004UCL011X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SENSOR: REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

NOTICE:

Replace the blind spot monitor sensor if it has been dropped or subjected to a severe impact.

1. REMOVE REAR BUMPER ASSEMBLY (w/ Towing Package)

INFO

2. REMOVE REAR BUMPER ASSEMBLY (w/o Towing Package)

INFO

3. REMOVE CONNECTOR COVER (w/ Towing Package)

INFO

4. REMOVE REAR BUMPER HOLE COVER (w/o Towing Package)

INFO

5. REMOVE REAR BUMPER PAD SUB-ASSEMBLY (w/ Towing Package)

INFO

6. REMOVE REAR BUMPER PAD SUB-ASSEMBLY (w/o Towing Package)

INFO

7. REMOVE REAR BUMPER EXTENSION LH (w/ Towing Package)

INFO

8. REMOVE REAR BUMPER EXTENSION LH (w/o Towing Package)

INFO

9. REMOVE REAR BUMPER EXTENSION RH (w/ Towing Package)

HINT:

Use the same procedure as for the LH side.

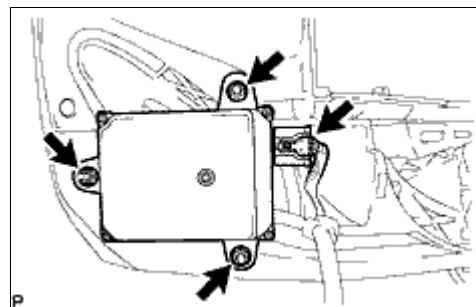
10. REMOVE REAR BUMPER EXTENSION RH (w/o Towing Package)

HINT:

Use the same procedure as for the LH side.

11. REMOVE BLIND SPOT MONITOR SENSOR LH

(a) Disconnect the connector.



(b) Remove the 3 nuts and blind spot monitor sensor LH.

12. REMOVE BLIND SPOT MONITOR SENSOR RH

HINT:

Use the same procedure as for the LH side.



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004S3502BX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1A45; Vehicle Speed Sensor; 2016 MY Tacoma [08/2015 -]		

DTC	C1A45	Vehicle Speed Sensor
------------	--------------	-----------------------------

DESCRIPTION

The blind spot monitor sensor receives vehicle speed signals from the skid control ECU (brake actuator assembly) via CAN communication.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1A45	A fail flag is transmitted from the skid control ECU (brake actuator assembly).	• Vehicle stability control system • Blind spot monitor sensor LH • Blind spot monitor sensor RH

INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK DTC (VEHICLE STABILITY CONTROL SYSTEM)
-----------	---

(a) Check for vehicle stability control system DTCs.

- for Hydraulic Brake Booster 
- for Vacuum Brake Booster 

OK:

Vehicle stability control system DTCs are not output.

Result

RESULT	PROCEED TO
OK	A
NG (for Hydraulic Brake Booster)	B
NG (for Vacuum Brake Booster)	C

B ► GO TO VEHICLE STABILITY CONTROL SYSTEM

C ► GO TO VEHICLE STABILITY CONTROL SYSTEM

A



2.	CHECK DTC
-----------	------------------

(a) Clear the DTCs  .

(b) Recheck for DTCs and check if the same DTC is output again  .

Result

RESULT	PROCEED TO
No DTC is output	A
DTC is output from the blind spot monitor sensor LH (master)	B
DTC is output from the blind spot monitor sensor RH (slave)	C

B ► REPLACE BLIND SPOT MONITOR SENSOR LH

C ► REPLACE BLIND SPOT MONITOR SENSOR RH

A ► USE SIMULATION METHOD TO CHECK



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004S3602BX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1A47; Steering Angle Sensor; 2016 MY Tacoma [08/2015 -]		

DTC	C1A47	Steering Angle Sensor
------------	--------------	------------------------------

DESCRIPTION

The blind spot monitor sensor receives steering angle signals from the spiral cable with sensor sub-assembly via CAN communication.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1A47	A fail flag is transmitted from the steering sensor	• Spiral cable with sensor sub-assembly • Blind spot monitor sensor LH • Blind spot monitor sensor RH

INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK DTC
-----------	------------------

(a) Clear the DTCs  .

(b) Recheck for DTCs and check if the same DTC is output again.

OK:

No DTCs are output.

NG  **GO TO STEP 2**

OK  **USE SIMULATION METHOD TO CHECK**

2.	REPLACE SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY
-----------	--

(a) Replace the spiral cable with sensor sub-assembly with a new or normally functioning one  .

NEXT
▼

3.	CHECK DTC
-----------	------------------

- (a) Clear the DTCs INFO .
- (b) Recheck for DTCs and check if the same DTC is output again.

Result

RESULT	PROCEED TO
No DTC is output	A
DTC is output from the blind spot monitor sensor LH (master)	B
DTC is output from the blind spot monitor sensor RH (slave)	C

B ► **REPLACE BLIND SPOT MONITOR SENSOR LH**

C ► **REPLACE BLIND SPOT MONITOR SENSOR RH**

A ► **END (SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY WAS DEFECTIVE)**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004UD101GX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1AB0; Short to +B in Outer Mirror Indicator(Master); 2016 MY Tacoma [08/2015 -]		

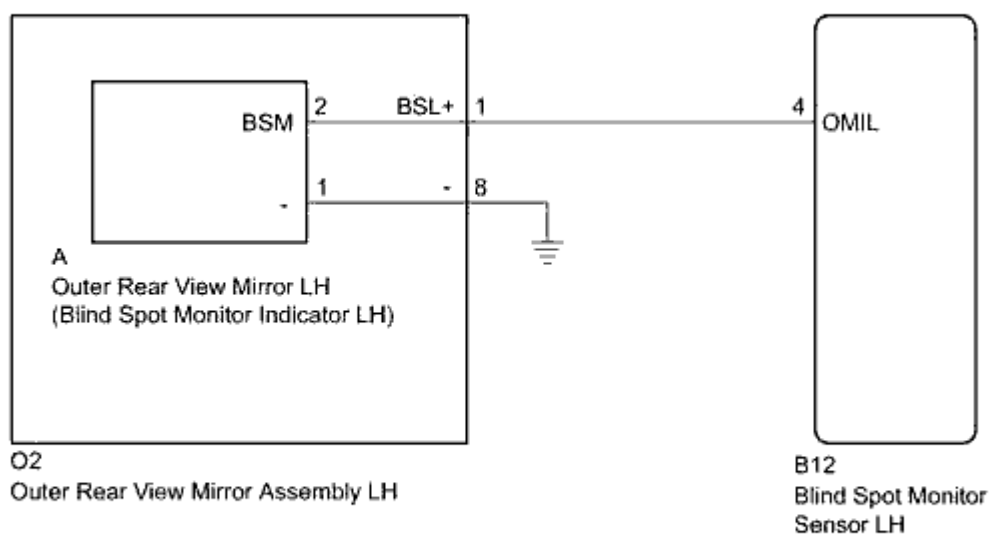
DTC	C1AB0	Short to +B in Outer Mirror Indicator(Master)
------------	--------------	--

DESCRIPTION

This DTC is stored when the blind spot monitor sensor LH detects a +B short in the blind spot monitor indicator LH.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1AB0	With the blind spot monitor main switch assembly (warning canceling switch assembly) on, the voltage applied to the indicator is high for a certain amount of time even though the blind spot monitor sensor is not outputting voltage to the indicator.	• Harness or connector • Blind spot monitor sensor LH • Outer rear view mirror assembly LH • Outer rear view mirror LH

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK DTC
----	-----------

(a) Clear the DTCs INFO.

(b) Recheck for DTCs and check if the same DTC is output again INFO.

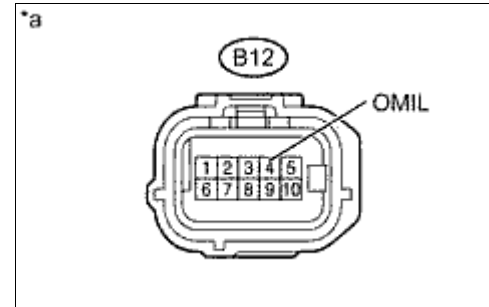
OK:

No DTCs are output.

NG ▶ GO TO STEP 2

OK ▶ USE SIMULATION METHOD TO CHECK

2.	CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR INDICATOR LH CIRCUIT)
----	---



(a) Disconnect the blind spot monitor sensor LH connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
B12-4 (OMIL) - Body ground	Ignition switch ON	Below 1 V

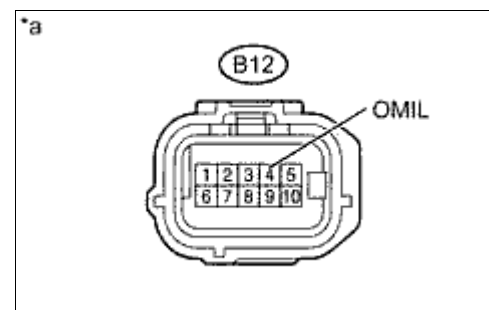
Text in Illustration

*a	Front view of wire harness connector (to Blind Spot Monitor Sensor LH)
----	---

NG ► **GO TO STEP 3**

OK ► **REPLACE BLIND SPOT MONITOR SENSOR LH**

3.	CHECK HARNESS AND CONNECTOR (BLIND SPOT MONITOR SENSOR LH - OUTER REAR VIEW MIRROR ASSEMBLY LH)
-----------	--



(a) Disconnect the blind spot monitor sensor LH connector.

(b) Disconnect the O2 outer rear view mirror assembly LH connector.

(c) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
B12-4 (OMIL) - Body ground	Ignition switch ON	Below 1 V

Text in Illustration

*a	Front view of wire harness connector (to Blind Spot Monitor Sensor LH)
----	---

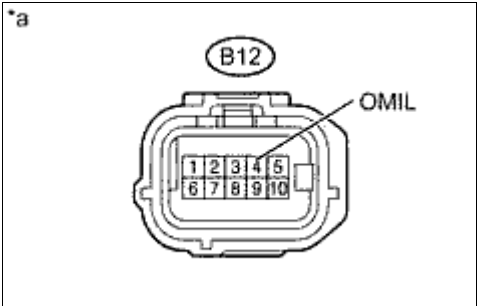
NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK
▼

4.	CHECK HARNESS AND CONNECTOR (BLIND SPOT MONITOR SENSOR LH - OUTER REAR VIEW MIRROR LH)
----	---

(a) Reconnect the O2 outer rear view mirror assembly LH connector.

(b) Disconnect the blind spot monitor sensor LH connector.



(c) Disconnect the A outer rear view mirror LH connector.

(d) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
B12-4 (OMIL) - Body ground	Ignition switch ON	Below 1 V

Text in Illustration

*a	Front view of wire harness connector (to Blind Spot Monitor Sensor LH)
----	---

NG ► REPLACE OUTER REAR VIEW MIRROR ASSEMBLY LH

OK ► REPLACE OUTER REAR VIEW MIRROR LH



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004UD201GX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1AB1; Short to +B in Outer Mirror Indicator(Slave); 2016 MY Tacoma [08/2015 -]		

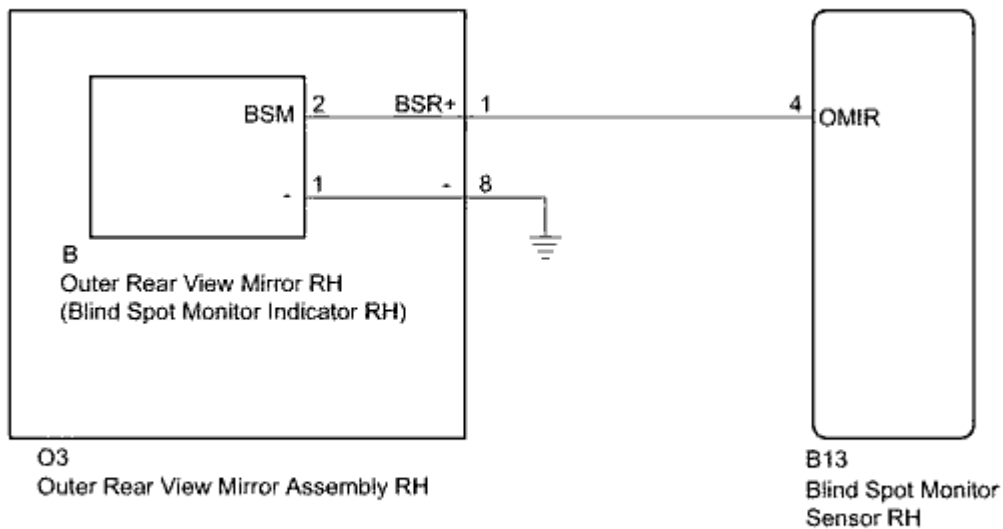
DTC	C1AB1	Short to +B in Outer Mirror Indicator(Slave)
------------	--------------	---

DESCRIPTION

This DTC is stored when the blind spot monitor sensor RH detects a +B short in the blind spot monitor indicator RH.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1AB1	With the blind spot monitor main switch assembly (warning canceling switch assembly) on, the voltage applied to the indicator is high for a certain amount of time even though the blind spot monitor sensor is not outputting voltage to the indicator.	• Harness or connector • Blind spot monitor sensor RH • Outer rear view mirror assembly RH • Outer rear view mirror RH

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK DTC
----	-----------

(a) Clear the DTCs INFO .

(b) Recheck for DTCs and check if the same DTC is output again INFO .

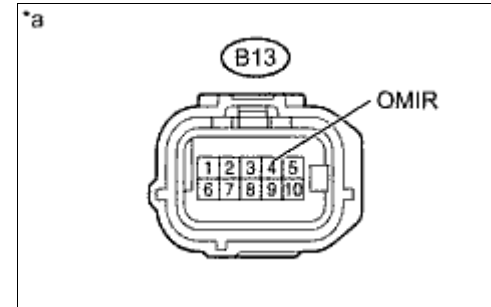
OK:

No DTCs are output.

NG ▶ GO TO STEP 2

OK ▶ USE SIMULATION METHOD TO CHECK

2.	CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR INDICATOR RH CIRCUIT)
----	---



(a) Disconnect the blind spot monitor sensor RH connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
B13-4 (OMIR) - Body ground	Ignition switch ON	Below 1 V

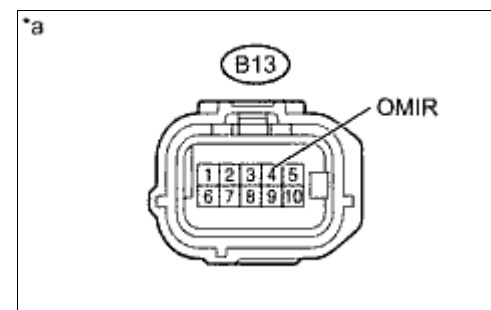
Text in Illustration

*a	Front view of wire harness connector (to Blind Spot Monitor Sensor RH)
----	---

NG ► **GO TO STEP 3**

OK ► **REPLACE BLIND SPOT MONITOR SENSOR RH**

3.	CHECK HARNESS AND CONNECTOR (BLIND SPOT MONITOR SENSOR RH - OUTER REAR VIEW MIRROR ASSEMBLY RH)
-----------	--



(a) Disconnect the blind spot monitor sensor RH connector.

(b) Disconnect the O3 outer rear view mirror assembly RH connector.

(c) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
B13-4 (OMIR) - Body ground	Ignition switch ON	Below 1 V

Text in Illustration

*a	Front view of wire harness connector (to Blind Spot Monitor Sensor RH)
----	---

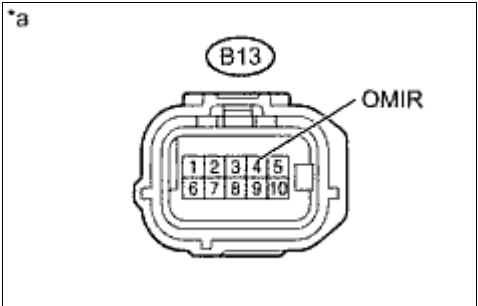
NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK
▼

4.	CHECK HARNESS AND CONNECTOR (BLIND SPOT MONITOR SENSOR RH - OUTER REAR VIEW MIRROR RH)
----	---

(a) Reconnect the O3 outer rear view mirror assembly RH connector.

(b) Disconnect the blind spot monitor sensor RH connector.



(c) Disconnect the B outer rear view mirror RH connector.

(d) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
B13-4 (OMIR) - Body ground	Ignition switch ON	Below 1 V

Text in Illustration

*a	Front view of wire harness connector (to Blind Spot Monitor Sensor RH)
----	---

NG ► REPLACE OUTER REAR VIEW MIRROR ASSEMBLY RH

OK ► REPLACE OUTER REAR VIEW MIRROR RH



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004UD301GX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1AB2; Short to GND in Outer Mirror Indicator(Master); 2016 MY Tacoma [08/2015 -]		

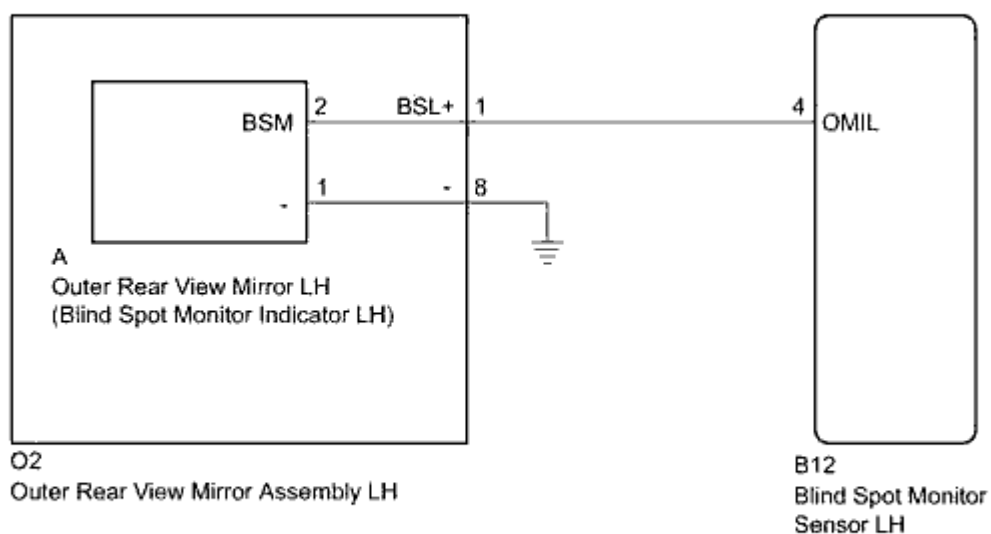
DTC	C1AB2	Short to GND in Outer Mirror Indicator(Master)
------------	--------------	---

DESCRIPTION

This DTC is stored when the blind spot monitor sensor LH detects a ground short in the blind spot monitor indicator LH.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1AB2	With the blind spot monitor main switch assembly (warning canceling switch assembly) on, the voltage output from the blind spot monitor sensor to the indicator is low for a certain amount of time.	• Harness or connector • Outer rear view mirror assembly LH • Outer rear view mirror LH • Blind spot monitor sensor LH

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK DTC
----	-----------

(a) Clear the DTCs [INFO](#) .

(b) Recheck for DTCs and check if the same DTC is output again [INFO](#) .

OK:

No DTCs are output.

NG ► **GO TO STEP 2**

OK ► **USE SIMULATION METHOD TO CHECK**

2.	CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR ASSEMBLY LH - BLIND SPOT MONITOR SENSOR LH)
----	---

(a) Disconnect the O2 outer rear view mirror assembly LH connector.

(b) Disconnect the B12 blind spot monitor sensor LH connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
O2-1 (BSL+) - Body ground	Always	10 kΩ or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

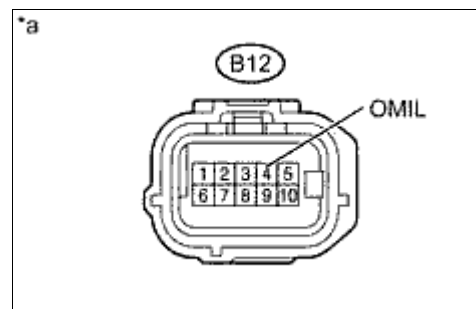
OK



3.	CHECK HARNESS AND CONNECTOR (BLIND SPOT MONITOR SENSOR LH - OUTER REAR VIEW MIRROR LH)
-----------	---

(a) Reconnect the O2 outer rear view mirror assembly LH connector.

(b) Disconnect the blind spot monitor sensor LH connector.



(c) Disconnect the A outer rear view mirror LH connector.

(d) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
B12-4 (OMIL) - Body ground	Always	10 kΩ or higher

Text in Illustration

*a	Front view of wire harness connector (to Blind Spot Monitor Sensor LH)
-----------	---

NG  **REPLACE OUTER REAR VIEW MIRROR ASSEMBLY LH**

OK



4.	CHECK OUTER REAR VIEW MIRROR LH
-----------	--

(a) Replace the outer rear view mirror LH with a new or normally functioning one  .

(b) Clear the DTCs  .

(c) Check for DTCs and check if the same DTC is output again  .

OK:

No DTCs are output.

NG  **REPLACE BLIND SPOT MONITOR SENSOR LH**

OK  **END (OUTER REAR VIEW MIRROR LH WAS DEFECTIVE)**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004UD401GX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1AB3; Short to GND in Outer Mirror Indicator(Slave); 2016 MY Tacoma [08/2015 -]		

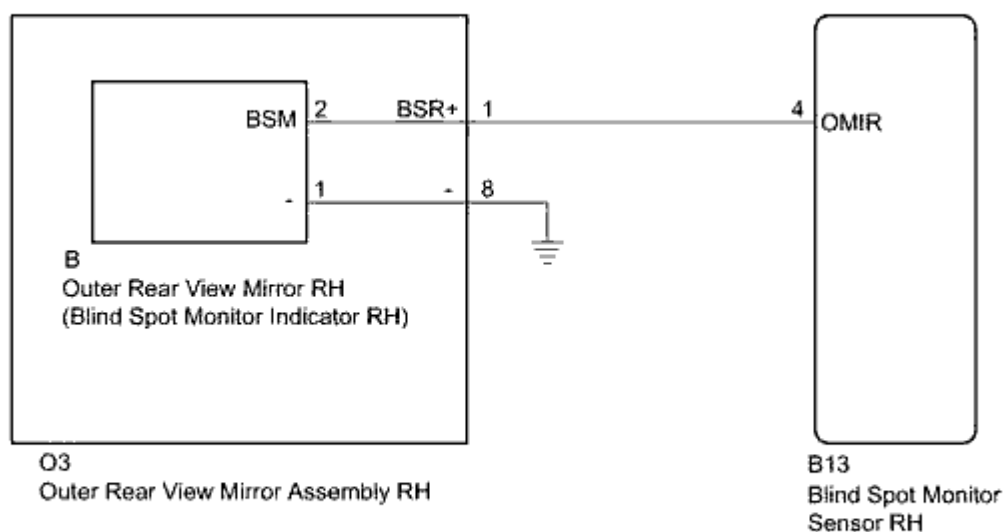
DTC	C1AB3	Short to GND in Outer Mirror Indicator(Slave)
------------	--------------	--

DESCRIPTION

This DTC is stored when the blind spot monitor sensor RH detects a ground short in the blind spot monitor indicator RH.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1AB3	With the blind spot monitor main switch assembly (warning canceling switch assembly) on, the voltage output from the blind spot monitor sensor to the indicator is low for a certain amount of time.	• Harness or connector • Outer rear view mirror assembly RH • Outer rear view mirror RH • Blind spot monitor sensor RH

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK DTC
----	-----------

(a) Clear the DTCs [INFO](#) .

(b) Recheck for DTCs and check if the same DTC is output again [INFO](#) .

OK:

No DTCs are output.

NG [GO TO STEP 2](#)

OK [USE SIMULATION METHOD TO CHECK](#)

2.	CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR ASSEMBLY RH - BLIND SPOT MONITOR SENSOR RH)
----	---

(a) Disconnect the O3 outer rear view mirror assembly RH connector.

(b) Disconnect the B13 blind spot monitor sensor RH connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
O3-1 (BSR+) - Body ground	Always	10 kΩ or higher

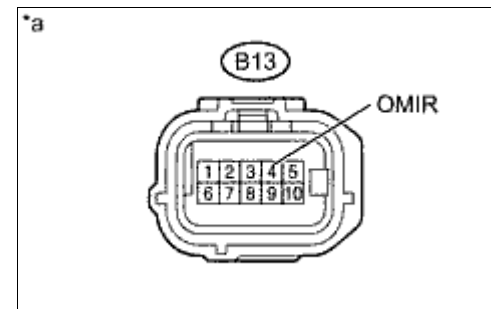
NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



3.	CHECK HARNESS AND CONNECTOR (BLIND SPOT MONITOR SENSOR RH - OUTER REAR VIEW MIRROR RH)
-----------	---

(a) Reconnect the O3 outer rear view mirror assembly RH connector.



(b) Disconnect the blind spot monitor sensor RH connector.

(c) Disconnect the B outer rear view mirror RH connector.

(d) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
B13-4 (OMIR) - Body ground	Always	10 kΩ or higher

Text in Illustration

*a	Front view of wire harness connector (to Blind Spot Monitor Sensor RH)
-----------	---

NG  **REPLACE OUTER REAR VIEW MIRROR ASSEMBLY RH**

OK



4.	CHECK OUTER REAR VIEW MIRROR RH
-----------	--

(a) Replace the outer rear view mirror RH with a new or normally functioning one  .

(b) Clear the DTCs  .

(c) Recheck for DTCs and check if the same DTC is output again  .

OK:

No DTCs are output.

NG  **REPLACE BLIND SPOT MONITOR SENSOR RH**

OK  **END (OUTER REAR VIEW MIRROR RH WAS DEFECTIVE)**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004UD501HX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1AB4; Open in Outer Mirror Indicator(Master); 2016 MY Tacoma [08/2015 -]		

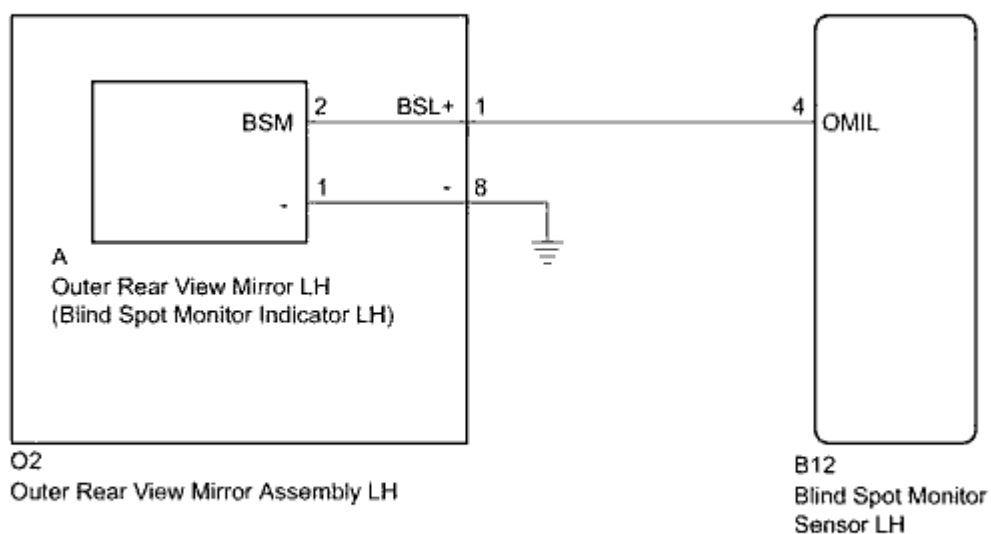
DTC	C1AB4	Open in Outer Mirror Indicator(Master)
------------	--------------	---

DESCRIPTION

This DTC is stored when the blind spot monitor sensor LH detects an open in the blind spot monitor indicator LH.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1AB4	With the blind spot monitor main switch assembly (warning canceling switch assembly) on, the current flowing to the indicator is below a specified value when indicator operation voltage is sent to the indicator.	• Harness or connector • Outer rear view mirror LH • Outer rear view mirror assembly LH • Blind spot monitor sensor LH

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1. CHECK DTC

(a) Clear the DTCs [INFO](#) .

(b) Recheck for DTCs and check if the same DTC is output again [INFO](#) .

OK:

No DTCs are output.

NG ► **GO TO STEP 2**

OK ► **USE SIMULATION METHOD TO CHECK**

2. CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR ASSEMBLY LH - BLIND SPOT MONITOR SENSOR LH AND BODY GROUND)

(a) Disconnect the B12 blind spot monitor sensor LH connector.

- (b) Disconnect the O2 outer rear view mirror assembly LH connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
B12-4 (OMIL) - O2-1 (BSL+)	Always	Below 1 Ω
O2-8 - Body ground	Always	Below 1 Ω

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



3.	INSPECT OUTER REAR VIEW MIRROR ASSEMBLY LH
-----------	---

- (a) Remove the outer rear view mirror assembly LH .
- (b) Remove the outer rear view mirror LH .
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
O2-1 (BSL+) - A-2 (+)	Always	Below 1 Ω
O2-8 - A-1 (-)	Always	Below 1 Ω

NG  **REPLACE OUTER REAR VIEW MIRROR ASSEMBLY LH**

OK



4.	CHECK OUTER REAR VIEW MIRROR LH
-----------	--

- (a) Replace the outer rear view mirror LH with a new or normally functioning one .
- (b) Clear the DTCs .
- (c) Recheck for DTCs and check if the same DTC is output again .

OK:

No DTCs are output.

NG ► **REPLACE BLIND SPOT MONITOR SENSOR LH**

OK ► **END (OUTER REAR VIEW MIRROR LH WAS DEFECTIVE)**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004UD601HX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1AB5; Open in Outer Mirror Indicator(Slave); 2016 MY Tacoma [08/2015 -]		

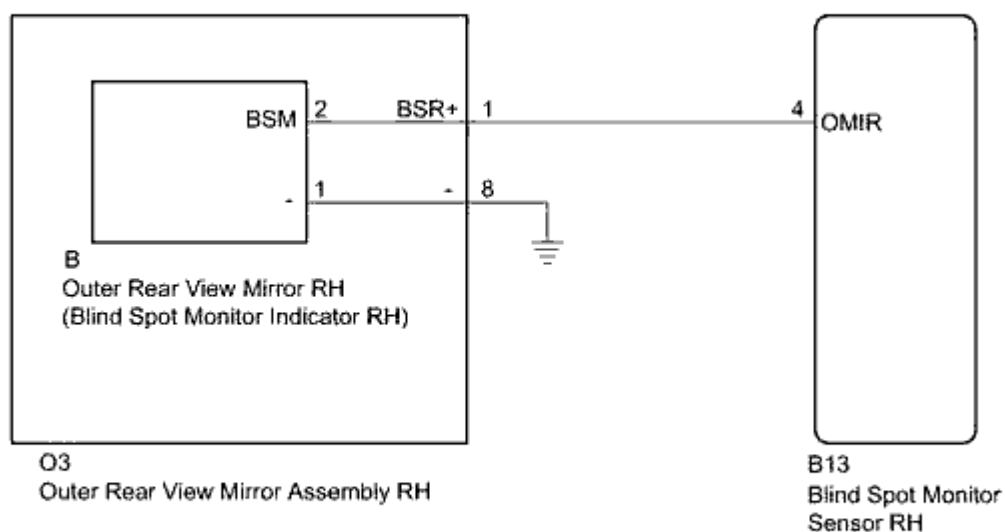
DTC	C1AB5	Open in Outer Mirror Indicator(Slave)
------------	--------------	--

DESCRIPTION

This DTC is stored when the blind spot monitor sensor RH detects an open in the blind spot monitor indicator RH.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1AB5	With the blind spot monitor main switch assembly (warning canceling switch assembly) on, the current flowing to the indicator is below a specified value when indicator operation voltage is sent to the indicator.	• Harness or connector • Outer rear view mirror RH • Outer rear view mirror assembly RH • Blind spot monitor sensor RH

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK DTC
----	-----------

(a) Clear the DTCs [INFO](#) .

(b) Recheck for DTCs and check if the same DTC is output again [INFO](#) .

OK:

No DTCs are output.

NG [GO TO STEP 2](#)

OK [USE SIMULATION METHOD TO CHECK](#)

2.	CHECK HARNESS AND CONNECTOR (OUTER REAR VIEW MIRROR ASSEMBLY RH - BLIND SPOT MONITOR SENSOR RH AND BODY GROUND)
----	---

(a) Disconnect the B13 blind spot monitor sensor RH connector.

- (b) Disconnect the O3 outer rear view mirror assembly RH connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
B13-4 (OMIR) - O3-1 (BSR+)	Always	Below 1 Ω
O3-8 - Body ground	Always	Below 1 Ω

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



3.	INSPECT OUTER REAR VIEW MIRROR ASSEMBLY RH
-----------	---

- (a) Remove the outer rear view mirror assembly RH  .
- (b) Remove the outer rear view mirror RH  .
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
O3-1 (BSR+) - B-2 (+)	Always	Below 1 Ω
O3-8 - B-1 (-)	Always	Below 1 Ω

NG  **REPLACE OUTER REAR VIEW MIRROR ASSEMBLY RH**

OK



4.	CHECK OUTER REAR VIEW MIRROR RH
-----------	--

- (a) Replace the outer rear view mirror RH with a new or normally functioning one  .
- (b) Clear the DTCs  .
- (c) Recheck for DTCs and check if the same DTC is output again  .

OK:

No DTCs are output.

NG ▶ **REPLACE BLIND SPOT MONITOR SENSOR RH**

OK ▶ **END (OUTER REAR VIEW MIRROR RH WAS DEFECTIVE)**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004S2T02CX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1AB6; Blind Spot Monitor Master Module; 2016 MY Tacoma [08/2015 -]		

DTC	C1AB6	Blind Spot Monitor Master Module
------------	--------------	---

DESCRIPTION

This DTC is stored when the blind spot monitor sensor LH detects an internal malfunction.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1AB6	The blind spot monitor sensor LH (master) detects an internal malfunction.	Blind spot monitor sensor LH

INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK DTC
-----------	------------------

(a) Clear the DTCs  .

(b) Recheck for DTCs and check if the same DTC is output again  .

OK:

No DTCs are output.

NG  **REPLACE BLIND SPOT MONITOR SENSOR LH**

OK  **USE SIMULATION METHOD TO CHECK**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004S2U02CX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1AB7; Blind Spot Monitor Slave Module; 2016 MY Tacoma [08/2015 -]		

DTC	C1AB7	Blind Spot Monitor Slave Module
------------	--------------	--

DESCRIPTION

This DTC is stored when the blind spot monitor sensor RH detects an internal malfunction.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1AB7	The blind spot monitor sensor RH (slave) detects an internal malfunction.	Blind spot monitor sensor RH

INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK DTC
-----------	------------------

(a) Clear the DTCs  .

(b) Recheck for DTCs and check if the same DTC is output again  .

OK:

No DTCs are output.

NG  **REPLACE BLIND SPOT MONITOR SENSOR RH**

OK  **USE SIMULATION METHOD TO CHECK**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004S2V02DX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1AB8; Destination Information Undefined; 2016 MY Tacoma [08/2015 -]		

DTC	C1AB8	Destination Information Undefined
------------	--------------	--

DESCRIPTION

This DTC is stored when correct destination information is not sent from the main body ECU (multiplex network body ECU) and destination information cannot be confirmed after a blind spot monitor has been replaced.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1AB8	The blind spot monitor sensor cannot communicate with the main body ECU (driver side junction block assembly).	• CAN communication system • Main body ECU (multiplex network body ECU) • Blind spot monitor sensor LH • Blind spot monitor sensor RH

INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK DTC (CAN COMMUNICATION SYSTEM)
-----------	---

(a) Check for CAN Communication System DTCs  .

OK:

CAN communication system DTCs are not output.

NG  **GO TO CAN COMMUNICATION SYSTEM**

OK



2.	REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)
-----------	---

(a) Replace the main body ECU (multiplex network body ECU) with a new or normally functioning one.

NEXT
▼

3.	CHECK DTC
----	-----------

(a) Recheck for DTCs and check if the same DTC is output again INFO .

Result

RESULT	PROCEED TO
No DTC is output	A
DTC is output from the blind spot monitor sensor LH (master)	B
DTC is output from the blind spot monitor sensor RH (slave)	C

B ► REPLACE BLIND SPOT MONITOR SENSOR LH

C ► REPLACE BLIND SPOT MONITOR SENSOR RH

A ► END (MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU) WAS DEFECTIVE)



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004S34026X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1ABB; Blind Spot Monitor Master Module Beam Axis Inspection Incomplete; 2016 MY Tacoma [08/2015 -]		

DTC	C1ABB	Blind Spot Monitor Master Module Beam Axis Inspection Incomplete
------------	--------------	---

DESCRIPTION

This DTC is stored when a beam axis inspection has not been performed for the blind spot monitor sensor LH.

HINT:

This DTC is always stored after replacing a blind spot monitor sensor. The purpose of this DTC is to ensure that beam axis inspection is performed. Completing the beam axis inspection after replacing a blind spot monitor sensor prevents this DTC from being output.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1ABB	A beam axis inspection has not been performed.	Blind spot monitor sensor LH

INSPECTION PROCEDURE

PROCEDURE

1.	PROCEED TO TEST MODE (BLIND SPOT MONITOR BEAM AXIS INSPECTION)
-----------	---

(a) Change the blind spot monitor sensor LH to Test Mode using the Techstream.

HINT:

Refer to Blind Spot Monitor Beam Axis Inspection [INFO](#) .

NEXT  **END**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004S2W026X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1ABC; Blind Spot Monitor Slave Module Beam Axis Inspection Incomplete; 2016 MY Tacoma [08/2015 -]		

DTC	C1ABC	Blind Spot Monitor Slave Module Beam Axis Inspection Incomplete
------------	--------------	--

DESCRIPTION

This DTC is stored when a beam axis inspection has not been performed for the blind spot monitor sensor RH.

HINT:

This DTC is always stored after replacing a blind spot monitor sensor. The purpose of this DTC is to ensure that beam axis inspection is performed. Completing the beam axis inspection after replacing a blind spot monitor sensor prevents this DTC from being output.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1ABC	A beam axis inspection has not been performed.	Blind spot monitor sensor RH

INSPECTION PROCEDURE

PROCEDURE

1.	PROCEED TO TEST MODE (BLIND SPOT MONITOR BEAM AXIS INSPECTION)
-----------	---

(a) Change the blind spot monitor sensor RH to Test Mode using the Techstream.

HINT:

Refer to Blind Spot Monitor Beam Axis Inspection [INFO](#) .

NEXT  **END**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002ADP04SX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1ABD,C1ABE; Short to +B in Buzzer; 2016 MY Tacoma [08/2015 -]		

DTC	C1ABD	Short to +B in Buzzer
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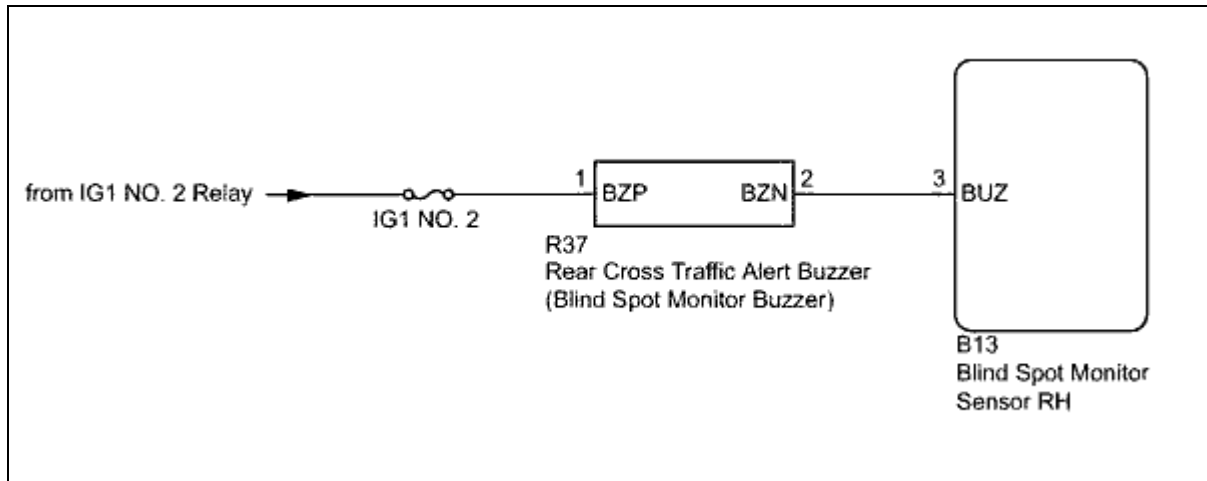
DTC	C1ABE	Short to GND or Open in Buzzer
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DESCRIPTION

- DTC C1ABD is stored when the blind spot monitor sensor RH detects a +B short in rear cross traffic alert buzzer (blind spot monitor buzzer) circuit.
- DTC C1ABE is stored when the blind spot monitor sensor RH detects a ground short or open in rear cross traffic alert buzzer (blind spot monitor buzzer) circuit.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1ABD	Both of the following conditions are met: ◦ Blind spot monitor main switch assembly (warning canceling switch assembly) is on with ignition switch ON. ◦ The blind spot monitor sensor is not sending voltage to the buzzer but the buzzer receives voltage above a specified level for a specified period of time.	• Blind spot monitor sensor RH • Rear cross traffic alert buzzer (blind spot monitor buzzer) • Harness or connector
C1ABE	Both of the following conditions are met: ◦ Blind spot monitor main switch assembly (warning canceling switch assembly) is on with ignition switch ON. ◦ The current flowing to the buzzer is below a specified value when buzzer operation voltage is being sent to the buzzer.	• Blind spot monitor sensor RH • Rear cross traffic alert buzzer (blind spot monitor buzzer) • Harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- When checking for DTCs, make sure that the blind spot main switch assembly (warning canceling switch assembly) is on.
- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.	CHECK DTC
----	------------------

(a) Clear the DTCs INFO.

(b) Recheck for DTCs and check if the same DTC is output again INFO.

OK:

No DTCs are output.

NG ▶ **GO TO STEP 2**

OK ▶ **USE SIMULATION METHOD TO CHECK**

2.	CHECK HARNESS AND CONNECTOR (REAR CROSS TRAFFIC ALERT BUZZER - BATTERY AND BLIND SPOT MONITOR SENSOR RH)
----	---

(a) Disconnect the R37 rear cross traffic alert buzzer (blind spot monitor buzzer) connector.

(b) Disconnect the B13 blind spot monitor sensor RH connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R37-2 (BZN) - B13-3 (BUS)	Always	Below 1 Ω

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R37-2 (BZN) - Body ground	Always	10 kΩ or higher

(d) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
R37-1 (BZP) - Body ground	Ignition switch ON	11 to 14 V
R37-1 (BZP) - Body ground	Ignition switch off	Below 1 V

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3.	REPLACE BLIND SPOT MONITOR BUZZER (REAR CROSS TRAFFIC ALERT BUZZER)
-----------	--

(a) Replace the rear cross traffic alert buzzer (blind spot monitor buzzer) with a new or normally functioning one.

for Access Cab: [INFO](#)

for Double Cab: [INFO](#)

NEXT

4.	CHECK DTC
-----------	------------------

(a) Clear the DTCs [INFO](#) .

(b) Recheck for DTCs and check if the same DTC is output again [INFO](#) .

OK:

No DTCs are output.

NG ► REPLACE BLIND SPOT MONITOR SENSOR RH

OK ► END (REAR CROSS TRAFFIC ALERT BUZZER (BLIND SPOT MONITOR BUZZER) WAS DEFECTIVE)



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005004026X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1AC1; Master Module Horizontal Axis Misalignment; 2016 MY Tacoma [08/2015 -]		

DTC	C1AC1	Master Module Horizontal Axis Misalignment
------------	--------------	---

DESCRIPTION

This DTC is stored when the angle of the blind spot monitor sensor LH deviates more than the allowable range from the horizontal axis.

HINT:

If drum tester such as a speedometer tester, brake/speedometer combination tester or chassis dynamometer is used with the blind spot monitor main switch assembly (warning canceling switch assembly) on, the blind spot monitor system may store this DTC by mistake.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1AC1	When the blind spot monitor sensor deviates 5 degrees or more from the horizontal axis when the system is activated.	Blind spot monitor sensor LH

INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK INSTALLATION CONDITION
-----------	-------------------------------------

(a) Check the installation condition of the blind spot monitor sensor LH .

HINT:

Take the appropriate action in accordance with the result.

NEXT



2.	PERFORM BEAM AXIS CONFIRMATION
-----------	---------------------------------------

(a) Install the rear bumper.

- w/ Towing Package 
- w/o Towing Package 

(b) Perform Blind Spot Monitor Beam Axis Confirmation using the Techstream  .

OK:

Blind Spot Monitor Beam Axis Confirmation performs normally.

NG  **REPLACE BLIND SPOT MONITOR SENSOR LH**

OK  **END**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005006026X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: C1AC2; Slave Module Horizontal Axis Misalignment; 2016 MY Tacoma [08/2015 -]		

DTC	C1AC2	Slave Module Horizontal Axis Misalignment
------------	--------------	--

DESCRIPTION

This DTC is stored when the angle of the blind spot monitor sensor RH deviates more than the allowable range from the horizontal axis.

HINT:

If drum tester such as a speedometer tester, brake/speedometer combination tester or chassis dynamometer is used with the blind spot monitor main switch assembly (warning canceling switch assembly) on, the blind spot monitor system may store this DTC by mistake.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1AC2	When the blind spot monitor sensor deviates 5 degrees or more from the horizontal axis when the system is activated.	Blind spot monitor sensor RH

INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK INSTALLATION CONDITION
-----------	-------------------------------------

(a) Check the installation condition of the blind spot monitor sensor RH .

HINT:

Take the appropriate action in accordance with the result.

NEXT



2.	PERFORM BEAM AXIS CONFIRMATION
-----------	---------------------------------------

(a) Install the rear bumper.

- w/ Towing Package 
- w/o Towing Package 

(b) Perform Blind Spot Monitor Beam Axis Confirmation using the Techstream  .

OK:

Blind Spot Monitor Beam Axis Confirmation performs normally.

NG  **REPLACE BLIND SPOT MONITOR SENSOR RH**

OK  **END**



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000004RS5021X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: DATA LIST / ACTIVE TEST; 2016 MY Tacoma [08/2015 -]		

DATA LIST / ACTIVE TEST

1. DATA LIST

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

HINT:

Using the Techstream to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Blind Spot Monitor Master or Blind Spot Monitor Slave / Data List.
- Read the Data List according to the display on the Techstream.

Blind Spot Monitor Master

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Main Switch	Blind spot monitor main switch assembly (warning canceling switch assembly) / OFF or ON	ON: Blind spot monitor main switch assembly (warning canceling switch assembly) on OFF: Blind spot monitor main switch assembly (warning canceling switch assembly) off	-
Warning Indicator Turning on (Master)	State of the outer rear view mirror indicator LH turning on / OFF or ON	OFF: The following conditions are not met ON: All of the following conditions are met - Not during initial check - Vehicle detected in warning area - Vehicle speed 16 km/h (10 mph) or more - Shift lever in any position except R	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
		○ No DTC output ○ Left turn signal OFF	
Warning Indicator Flashing (Master)	State of the outer rear view mirror indicator LH flashing / OFF or ON	OFF: The following conditions are not met ON: All of the following conditions are met ○ Not during initial check ○ Vehicle detected in warning area ○ Vehicle speed 16 km/h (10 mph) or more ○ Shift lever in any position except R ○ No DTC output ○ Left turn signal ON	-
Main Switch Indicator Status	State of the blind spot monitor indicator on the blind spot monitor main switch assembly (warning canceling switch assembly) / OFF or ON	OFF: Indicator not illuminated ON: Indicator illuminated	-
Warning Indicator Input Circuit Voltage	Outer rear view mirror indicator voltage / Min.: 0 V, Max.: 25.5 V	Not illuminated: 0 V Illuminated: 2.5 to 7.5 V	-
Warning Indicator Input Circuit Current	Outer rear view mirror indicator current / Min.: 0 mA, Max.: 255 mA	Not illuminated: 0 mA Illuminated: 5 to 100 mA	-
Main Switch Indicator Input Circuit Voltage	Blind spot monitor indicator on the blind spot monitor main switch (warning canceling switch assembly) voltage / Min.: 0 V, Max.: 25.5 V	Always: 9 to 16 V	-
Turn Switch State	State of the headlight dimmer switch assembly (right turn signal light switch) / Left ON, Right ON or OFF	Left ON: Left side of turn signal light switch on Right ON: Right side of turn signal light switch on OFF: Turn signal light switch off	-
Reverse (Only for AT/CVT)	State of the shift position R signal / OFF or ON	ON: Shift lever in R OFF: Shift lever in any position except R	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Vehicle Speed	Vehicle speed signal / Min.: 0 km/h (0 mph), Max.: 326 km/h (203 mph)	Vehicle stopped: 0 km/h (0 mph)	-
Steering Angle	Steering sensor / Min.: -3072°, Max.: 3070.5°	Left turn: Increases Right turn: Decreases	-
Power Supply Voltage	Power supply voltage / Min.: 0 V, Max.: 50 V	Always: 11 to 14 V	-
Indicator Light Control State	Outer rear view mirror indicator dimming state / Dim OFF or Dim ON	Dim OFF: Indicator not dimmed Dim ON: Indicator dimmed	-
HV Flag	Hybrid vehicle / OFF or ON	OFF: Non-hybrid vehicle ON: Hybrid vehicle	-
VGRS Flag	VGRS installed / OFF or ON	OFF: VGRS not installed ON: VGRS installed	-
Main SW Inspection Completeness Flag	Completion of inspection for blind spot monitor main switch assembly (warning canceling switch assembly) / Incompl or Compl	Incompl: Inspection not completed Compl: Inspection completed	Changes to Compl when the blind spot monitor main switch assembly (warning canceling switch assembly) is changed from off to on during Test Mode.
Beam Axis Inspection Completeness Flag	Completion of beam axis inspection / Incompl or Compl	Incompl: Inspection not completed Compl: Inspection completed	Changes to Compl when Test Mode has been entered.
Destination Undefined Flag	Destination determination / Unfixed or Fixed	Unfixed: Sensor destination information not determined Fixed: Sensor destination information determined according to CAN destination information	-
Angle Adjustment by Auto Alignment	Angle adjusted using auto alignment / Min.: Under -12.8 deg, Max.: Over 12.7 deg	Angle adjusted using auto alignment is displayed	When the adjusted angle is 12.7 degrees or more, "Over 12.7" is displayed and when it is -12.8 degrees or less, "Under -12.8" is displayed
Mirror LED Control Frequency	Frequency of the outer rear view mirror indicator when operating / Min.: 1500 Hz, Max.: 2400 Hz	Always: 1500 to 2400 Hz	-
Setting of Warning Indicator Current (Dim OFF)	Set current of the outer rear view mirror indicator when not dimmed / Min.: 0 mA, Max.: 100 mA	Always: 0 to 100 mA	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Setting of Warning Indicator Current (Dim ON)	Set current of the outer rear view mirror indicator when dimmed / Min.: 0 mA, Max.: 100 mA	Always: 0 to 100 mA	-
Mirror LED Duty Ratio (Blinking)	Duty ratio of the outer rear view mirror indicator when blinking / Min.: 0%, Max.: 100%	Always: 50%	-
Main Switch LED Control Frequency	Frequency of the blind spot monitor indicator on the blind spot monitor main switch (warning canceling switch assembly) when operating / Min.: 100 Hz, Max.: 500 Hz	Always: 100 Hz	-
Main Switch LED Duty Ratio (Bright Condition)	Duty ratio of the blind spot monitor indicator on the blind spot monitor main switch (warning canceling switch assembly) when illuminated / Min.: 0 %, Max.: 100 %	Always: 100 %	-
Main Switch LED Duty Ratio (Dimmed Condition)	Duty ratio of the blind spot monitor indicator on the blind spot monitor main switch (warning canceling switch assembly) when dimmed / Min.: 0 %, Max.: 100 %	Always: 100 %	-
Number of DTC	Number of DTC / Min.: 0, Max.: 255	When system is normal: 0 When a malfunction is detected: More than 0	-

Blind Spot Monitor Slave

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Warning Indicator Turning on (Slave)	State of the outer rear view mirror indicator RH turning on / OFF or ON	OFF: The following conditions are not met ON: All of the following conditions are met ○ Not during initial check ○ Vehicle detected in warning area ○ Vehicle speed 16 km/h (10 mph) or more ○ Shift lever in any	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
		position except R ◦ No DTC output ◦ Right turn signal OFF	
Warning Indicator Flashing (Slave)	State of the outer rear view mirror indicator RH flashing / OFF or ON	OFF: The following conditions are not met ON: All of the following conditions are met ◦ Not during initial check ◦ Vehicle detected in warning area ◦ Vehicle speed 16 km/h (10 mph) or more ◦ Shift lever in any position except R ◦ No DTC output ◦ Right turn signal ON	-
Buzzer Sound Status	State of the rear cross traffic alert buzzer (blind spot monitor buzzer) / OFF or ON	OFF: Buzzer not sounding ON: All of the following conditions are met: ◦ Not during initial check ◦ Vehicle detected in warning area of rear cross traffic alert ◦ Speed difference between driver's vehicle and target vehicle is 1.5 m/s or more ◦ Shift lever in R ◦ No DTC output	-
Warning Indicator Input Circuit Voltage	Outer rear view mirror indicator voltage / Min.: 0 V, Max.: 25.5 V	Not illuminated: 0 V Illuminated: 2.5 to 7.5 V	-
Warning Indicator Input Circuit Current	Outer rear view mirror indicator current / Min.: 0 mA, Max.: 255 mA	Not illuminated: 0 mA Illuminated: 5 to 100 mA	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Buzzer Input Circuit Voltage	Rear cross traffic alert buzzer (blind spot monitor buzzer) voltage / Min.: 0 V, Max.: 25.5 V	Not sounding buzzer: 11 to 14 V Sounding buzzer: Alternating between 0 to 14 V	-
Turn Switch State	State of the headlight dimmer switch assembly (right turn signal light switch) / Left ON, Right ON or OFF	Left ON: Left side of turn signal light switch on Right ON: Right side of turn signal light switch on OFF: Turn signal light switch off	-
Reverse (Only for AT/CVT)	State of the shift position R signal / OFF or ON	ON: Shift lever in R OFF: Shift lever in any position except R	-
Vehicle Speed	Vehicle speed signal / Min.: 0 km/h (0 mph), Max.: 326 km/h (203 mph)	Vehicle stopped: 0 km/h (0 mph)	-
Steering Angle	Steering sensor / Min.: -3072°, Max.: 3070.5°	Left turn: Increases Right turn: Decreases	-
Power Supply Voltage	Power supply voltage / Min.: 0 V, Max.: 50 V	Always: 11 to 14 V	-
Indicator Light Control State	Outer rear view mirror indicator dimming state / Dim OFF or Dim ON	Dim OFF: Indicator not dimmed Dim ON: Indicator dimmed	-
HV Flag	Hybrid vehicle / OFF or ON	OFF: Non-hybrid vehicle ON: Hybrid vehicle	-
VGRS Flag	VGRS installed / OFF or ON	OFF: VGRS not installed ON: VGRS installed	-
Beam Axis Inspection Completeness Flag	Completion of beam axis inspection / Incompl or Compl	Incompl: Inspection not completed Compl: Inspection completed	Changes to Compl when Test Mode has been entered.
Destination Undefined Flag	Destination determination / Unfixed or Fixed	Unfixed: Sensor destination information not determined Fixed: Sensor destination information determined according to CAN destination information	-
Angle Adjustment by Auto Alignment	Angle adjusted using auto alignment / Min.: Under -12.8 deg, Max.: Over 12.7 deg	Angle adjusted using auto alignment is displayed	When the adjusted angle is 12.7 degrees or more, "Over 12.7" is displayed and when it is -12.8 degrees or less, "Under -12.8" is displayed
Mirror LED Control Frequency	Frequency of the outer rear view mirror indicator when operating / Min.: 1500 Hz,	Always: 1500 to 2400 Hz	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
	Max.: 2400 Hz		
Setting of Warning Indicator Current (Dim OFF)	Set current of the outer rear view mirror indicator when not dimmed / Min.: 0 mA, Max.: 100 mA	Always: 0 to 100 mA	-
Setting of Warning Indicator Current (Dim ON)	Set current of the outer rear view mirror indicator when dimmed / Min.: 0 mA, Max.: 100 mA	Always: 0 to 100 mA	-
Mirror LED Duty Ratio (Blinking)	Duty ratio of the outer rear view mirror indicator when blinking / Min.: 0%, Max.: 100%	Always: 50%	-
Buzzer Control Frequency	Frequency of the rear cross traffic alert buzzer (blind spot monitor buzzer) when sounding / Min.: 1000 Hz, Max.: 2400 Hz	Always: 2000 Hz	-
Number of DTC	Number of DTC / Min.: 0, Max.: 255	When system is normal: 0 When a malfunction is detected: More than 0	-



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: DIAGNOSIS SYSTEM; 2016 MY Tacoma [08/2015 -]		

DIAGNOSIS SYSTEM

1. DESCRIPTION

- (a) Blind spot monitor data and Diagnostic Trouble Codes (DTCs) can be read from the Data Link Connector 3 (DLC3) of the vehicle. When the system seems to be malfunctioning, use the Techstream to check for malfunctions and to repair it.

2. CHECK DLC3

- (a) Check the DLC3 .

3. DIAGNOSIS FUNCTION

- (a) The blind spot monitor system displays an error message on the multi-information display to inform the driver that the system is unavailable either temporarily or due to a malfunction.

- When the system is unavailable temporarily:

Multi-information display displays "BSM not available".

- When the system is unavailable due to malfunction:

Multi-information display displays "Check BSM system".

4. ABNORMALITY HISTORY

HINT:

The abnormality history for a blind spot monitor sensor can be displayed or cleared.

- (a) Check abnormality history

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Turn the blind spot monitor main switch assembly (warning canceling switch assembly) on.
- Enter the following menus: Body Electrical / Blind Spot Monitor Master or Blind Spot Monitor Slave / Utility / BSM Master Abnormal History or BSM Slave Abnormal History
- Check the results displayed for the abnormality history check.

HINT:

- If "Yes" is displayed, check the suspected area column for each item.
- Abnormality history is stored only for the blind spot monitor sensor for which an abnormality has been detected.
- If "No" is displayed, proceed to the next suspected area shown in Problem Symptoms Table .

Abnormality History Table

TESTER DISPLAY	ITEM EXPLANATION	SUSPECTED AREA
History of Module Blockage	History of blind spot monitor sensor detection problems due to snow, rain,	Check if a bumper compatible with the blind spot monitor (such as an original

TESTER DISPLAY	ITEM EXPLANATION	SUSPECTED AREA
	etc. on the bumper	equipment bumper) is installed • Check if any foreign matter is attached to the bumper • Check if any foreign matter is present between the bumper and sensors
History of Low Voltage	History of low supply battery voltage from battery to the blind spot monitor sensor	Power Source Circuit 
History of High Voltage	History of high supply battery voltage from battery to the blind spot monitor sensor	
History of Low Temperature	History of low temperature for the blind spot monitor sensor	Check the outside temperature
History of High Temperature	History of high temperature for the blind spot monitor sensor	

(b) Clearing abnormality history

- (1) Connect the Techstream to the DLC3.
- (2) Turn the ignition switch to ON.
- (3) Turn the Techstream on.
- (4) Turn the blind spot monitor main switch assembly (warning canceling switch assembly) on.
- (5) Enter the following menus: Body Electrical / Blind Spot Monitor Master or Blind Spot Monitor Slave / Utility / BSM Master Abnormal History or BSM Slave Abnormal History
- (6) Clear the BSM Master Abnormal History and/or BSM Slave Abnormal History.



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Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: DIAGNOSTIC TROUBLE CODE CHART; 2016 MY Tacoma [08/2015 -]		

DIAGNOSTIC TROUBLE CODE CHART

Blind Spot Monitor System

DTC CODE	DETECTION ITEM	SEE PAGE
C1A45	Vehicle Speed Sensor	INFO
C1A47	Steering Angle Sensor	INFO
C1AB0	Short to +B in Outer Mirror Indicator(Master)	INFO
C1AB1	Short to +B in Outer Mirror Indicator(Slave)	INFO
C1AB2	Short to GND in Outer Mirror Indicator(Master)	INFO
C1AB3	Short to GND in Outer Mirror Indicator(Slave)	INFO
C1AB4	Open in Outer Mirror Indicator(Master)	INFO
C1AB5	Open in Outer Mirror Indicator(Slave)	INFO
C1AB6	Blind Spot Monitor Master Module	INFO
C1AB7	Blind Spot Monitor Slave Module	INFO
C1AB8	Destination Information Undefined	INFO
C1ABB*	Blind Spot Monitor Master Module Beam Axis Inspection Incomplete	INFO
C1ABC*	Blind Spot Monitor Slave Module Beam Axis Inspection Incomplete	INFO
C1ABD	Short to +B in Buzzer	INFO
C1ABE	Short to GND or Open in Buzzer	INFO
C1AC1	Master Module Horizontal Axis Misalignment	INFO
C1AC2	Slave Module Horizontal Axis Misalignment	INFO
U0100	Lost Communication with ECM / PCM "A"	INFO
U0126	Lost Communication with Steering Angle Sensor Module	INFO
U0129	Lost Communication with Brake System Control Module	INFO
U0142	Lost Communication with Body Control Module "B"	INFO
U0232	Lost Communication with Blind Spot Monitor Slave Module	INFO
U1331	Software Incompatibility with Body Control Module "B"	INFO

HINT:

*: Stored when a blind spot monitor sensor is replaced.



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Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: DTC CHECK / CLEAR; 2016 MY Tacoma [08/2015 -]		

DTC CHECK / CLEAR

1. CHECK DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the blind spot monitor main switch assembly (warning canceling switch assembly) on.
- (d) Turn the Techstream on.
- (e) Enter the following menus: Body Electrical / Blind Spot Monitor Master or Blind Spot Monitor Slave / Trouble Codes.

HINT:

The blind spot monitor sensor RH and the blind spot monitor sensor LH both output DTCs. Therefore, check both blind spot monitor sensors for DTCs.

- (f) Check for DTCs  .

2. CLEAR DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the blind spot monitor main switch assembly (warning canceling switch assembly) on.
- (d) Turn the Techstream on.
- (e) Enter the following menus: Body Electrical / Blind Spot Monitor Master or Blind Spot Monitor Slave / Trouble Codes.
- (f) Clear the DTCs.



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Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: FREEZE FRAME DATA; 2016 MY Tacoma [08/2015 -]		

FREEZE FRAME DATA

1. FREEZE FRAME DATA

- (a) Whenever a DTC is detected, the blind spot monitor sensor stores the current vehicle (sensor) state as Freeze Frame Data.

2. CHECK FREEZE FRAME DATA

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the blind spot monitor main switch assembly (warning canceling switch assembly) on.
- (d) Turn the Techstream on.
- (e) Enter the following menus: Body Electrical / Blind Spot Monitor Master or Blind Spot Monitor Slave / Trouble Codes.
- (f) According to the display on the Techstream, display the Freeze Frame Data for the selected DTC.

Blind Spot Monitor Master

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Main Switch	Blind spot monitor main switch assembly (warning canceling switch assembly) / OFF or ON	ON: Blind spot monitor main switch assembly (warning canceling switch assembly) on OFF: Blind spot monitor main switch assembly (warning canceling switch assembly) off	-
Warning Indicator Turning on (Master)	State of the outer rear view mirror indicator LH turning on / OFF or ON	OFF: The following conditions are not met ON: All of the following conditions are met ◦ Not during initial check ◦ Vehicle detected in warning area ◦ Vehicle speed 16 km/h (10 mph) or more ◦ Shift lever in any position except R ◦ No DTC output ◦ Left turn signal OFF	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Warning Indicator Flashing (Master)	State of the outer rear view mirror indicator LH flashing / OFF or ON	OFF: The following conditions are not met ON: All of the following conditions are met ○ Not during initial check ○ Vehicle detected in warning area ○ Vehicle speed 16 km/h (10 mph) or more ○ Shift lever in any position except R ○ No DTC output ○ Left turn signal ON	-
Main Switch Indicator Status	State of the blind spot monitor indicator on the blind spot monitor main switch assembly (warning canceling switch assembly) / OFF or ON	OFF: Indicator not illuminated ON: Indicator illuminated	-
Warning Indicator Input Circuit Voltage	The outer rear view mirror indicator voltage / Min.: 0 V, Max.: 25.5 V	Not illuminated: 0 V Illuminated: 2.5 to 7.5 V	-
Warning Indicator Input Circuit Current	The outer rear view mirror indicator current / Min.: 0 mA, Max.: 255 mA	Not illuminated: 0 mA Illuminated: 5 to 100 mA	-
Main Switch Indicator Input Circuit Voltage	Blind spot monitor indicator on the blind spot monitor main switch (warning canceling switch assembly) voltage / Min.: 0 V, Max.: 25.5 V	Always: 9 to 16 V	-
Turn Switch State	State of the headlight dimmer switch assembly (right turn signal light switch) / Left ON, Right ON or OFF	Left ON: Left side of turn signal light switch on Right ON: Right side of turn signal light switch on OFF: Turn signal light switch off	-
Reverse (Only for AT/CVT)	State of the shift position R signal / OFF or ON	ON: Shift lever in R OFF: Shift lever in any position except R	-
Vehicle Speed	Vehicle speed signal / Min.: 0 km/h (0 mph), Max.: 326	Vehicle stopped: 0 km/h (0 mph)	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
	km/h (203 mph)		
Steering Angle	Steering sensor / Min.: -3072°, Max.: 3070.5°	Left turn: Increases Right turn: Decreases	-
Power Supply Voltage	Power supply voltage / Min.: 0 V, Max.: 50 V	Always: 11 to 14 V	-
Indicator Light Control State	Outer rear view mirror indicator dimming state / Dim OFF or Dim ON	Dim OFF: Indicator not dimmed Dim ON: Indicator dimmed	-
Angle Adjustment by Auto Alignment	Angle adjusted using auto alignment / Min.: Under -12.8 deg, Max.: Over 12.7 deg	Angle adjusted using auto alignment is displayed	When the adjusted angle is 12.7 degrees or more, "Over 12.7" is displayed and when it is -12.8 degrees or less, "Under -12.8" is displayed
Number of DTC	Number of DTC / Min.: 0, Max.: 255	When system is normal: 0 When a malfunction is detected: More than 0	-

Blind Spot Monitor Slave

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Warning Indicator Turning on (Slave)	State of the outer rear view mirror indicator RH turning on / OFF or ON	OFF: The following conditions are not met ON: All of the following conditions are met ○ Not during initial check ○ Vehicle detected in warning area ○ Vehicle speed 16 km/h (10 mph) or more ○ Shift lever in any position except R ○ No DTC output ○ Right turn signal OFF	-
Warning Indicator Flashing (Slave)	State of the outer rear view mirror indicator RH flashing / OFF or ON	OFF: The following conditions are not met ON: All of the following conditions are met ○ Not during initial check	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
		- Vehicle detected in warning area - Vehicle speed 16 km/h (10 mph) or more - Shift lever in any position except R - No DTC output - Right turn signal ON	
Buzzer Sound Status	State of the rear cross traffic alert buzzer (blind spot monitor buzzer) / OFF or ON	OFF: Buzzer not sounding ON: All of the following conditions are met: - Not during initial check - Vehicle detected in warning area of rear cross traffic alert - Speed difference between driver's vehicle and target vehicle is 1.5 m/s or more - Shift lever in R - No DTC output	-
Warning Indicator Input Circuit Voltage	The outer rear view mirror indicator voltage / Min.: 0 V, Max.: 25.5 V	Not illuminated: 0 V Illuminated: 2.5 to 7.5 V	-
Warning Indicator Input Circuit Current	The outer rear view mirror indicator current / Min.: 0 mA, Max.: 255 mA	Not illuminated: 0 mA Illuminated: 5 to 100 mA	-
Buzzer Input Circuit Voltage	Rear cross traffic alert buzzer (blind spot monitor buzzer) voltage / Min.: 0 V, Max.: 25.5 V	Not sounding buzzer: 11 to 14 V Sounding buzzer: Alternating between 0 to 14 V	-
Turn Switch State	State of the headlight dimmer switch assembly (right signal light switch) / Left ON, Right ON or OFF	Left ON: Left side of turn signal light switch on Right ON: Right side of turn signal light switch on OFF: Turn signal light switch off	-
Reverse (Only for AT/CVT)	State of the shift position R signal / OFF or ON	ON: Shift lever in R OFF: Shift lever in any position except R	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Vehicle Speed	Vehicle speed signal / Min.: 0 km/h (0 mph), Max.: 326 km/h (203 mph)	Vehicle stopped: 0 km/h (0 mph)	-
Steering Angle	Steering sensor / Min.: -3072°, Max.: 3070.5°	Left turn: Increases Right turn: Decreases	-
Power Supply Voltage	Power supply voltage / Min.: 0 V, Max.: 50 V	Always: 11 to 14 V	-
Indicator Light Control State	Outer rear view mirror indicator dimming state / Dim OFF or Dim ON	Dim OFF: Indicator not dimmed Dim ON: Indicator dimmed	-
Angle Adjustment by Auto Alignment	Angle adjusted using auto alignment / Min.: Under -12.8 deg, Max.: Over 12.7 deg	Angle adjusted using auto alignment is displayed	When the adjusted angle is 12.7 degrees or more, "Over 12.7" is displayed and when it is -12.8 degrees or less, "Under -12.8" is displayed
Number of DTC	Number of DTC / Min.: 0, Max.: 255	When system is normal: 0 When a malfunction is detected: More than 0	-

3. CLEAR FREEZE FRAME DATA

NOTICE:

Clearing the DTCs will also clear the Freeze Frame Data

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the blind spot monitor main switch assembly (warning canceling switch assembly) on.
- Turn the Techstream on.
- Clear the DTCs and Freeze Frame Data.



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Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING; 2016 MY Tacoma [08/2015 -]		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedure to troubleshoot the blind spot monitor system.
- *: Use the Techstream.

1.	VEHICLE BROUGHT TO WORKSHOP
-----------	------------------------------------

NEXT



2.	CUSTOMER PROBLEM ANALYSIS
-----------	----------------------------------

NEXT



3.	INSPECT BATTERY VOLTAGE
-----------	--------------------------------

(a) Measure the battery voltage.

Standard voltage:

11 to 14 V

If the voltage is below 11 V, replace or recharge the battery before proceeding to the next step.

NEXT



4.	CHECK CAN COMMUNICATION SYSTEM*
-----------	--

(a) Use the Techstream to check if the CAN communication system is functioning normally  .

Result

RESULT	PROCEED TO
--------	------------

RESULT	PROCEED TO
CAN communication system DTC is not output.	A
CAN communication system DTC is output.	B

B ► **GO TO CAN COMMUNICATION SYSTEM**

A



5.	CHECK FOR DTC AND FREEZE FRAME DATA*
-----------	---

(a) Refer to DTC Check / Clear for the blind spot monitor system [INFO](#) .

(b) Record or print DTCs and freeze frame data, if necessary [INFO](#) .

Result

RESULT	PROCEED TO
DTCs are output.	A
DTCs are not output.	B

B ► **Go to step 9**

A



6.	CLEAR DTC*
-----------	-------------------

(a) Refer to DTC Check / Clear for the blind spot monitor system [INFO](#) .

HINT:

The current DTCs may not indicate actual malfunctions depending on the vehicle operating conditions.

NEXT



7.	RECHECK FOR DTC*
-----------	-------------------------

(a) Refer to DTC Check / Clear for the blind spot monitor system [INFO](#) .

Result

RESULT	PROCEED TO
DTCs are output.	A
DTCs are not output.	B

HINT:

Even if the malfunction symptom is not confirmed, check for DTCs. This is because the system stores history DTCs.

B ▶ Go to step 9

A



8.	DIAGNOSTIC TROUBLE CODE CHART
-----------	--------------------------------------

(a) Find the output DTC in Diagnostic Trouble Code Chart [INFO](#) .

NEXT ▶ Go to step 11

9.	PROBLEM SYMPTOMS TABLE
-----------	-------------------------------

(a) Refer to Problem Symptoms Table [INFO](#) .

Result

RESULT	PROCEED TO
Fault is not listed in Problem Symptoms Table.	A
Fault is listed in Problem Symptoms Table.	B

HINT:

If the symptom does not recur and no DTC is output, attempt to reproduce the symptoms [INFO](#) .

B ▶ **ADJUST, REPAIR OR REPLACE IN ACCORDANCE WITH PROBLEM SYMPTOMS TABLE**

A



10. PERFORM TROUBLESHOOTING BASED ON MALFUNCTION SYMPTOM*

- (a) Refer to Terminals of ECU [INFO](#) .
- (b) Refer to Data List / Active Test [INFO](#) .

NEXT



11. CIRCUIT INSPECTION

NEXT



12. ADJUST, REPAIR OR REPLACE

NEXT



13. PERFORM BEAM AXIS INSPECTION AND CONFIRMATION

- (a) Enter Test Mode (refer to Blind Spot Monitor Beam Axis Inspection) [INFO](#) .
- (b) Confirm the blind spot monitor beam axis display and perform the blind spot monitor beam axis adjustment [INFO](#) .

NEXT



14. PERFORM CONFIRMATION TEST*

NEXT  **END**



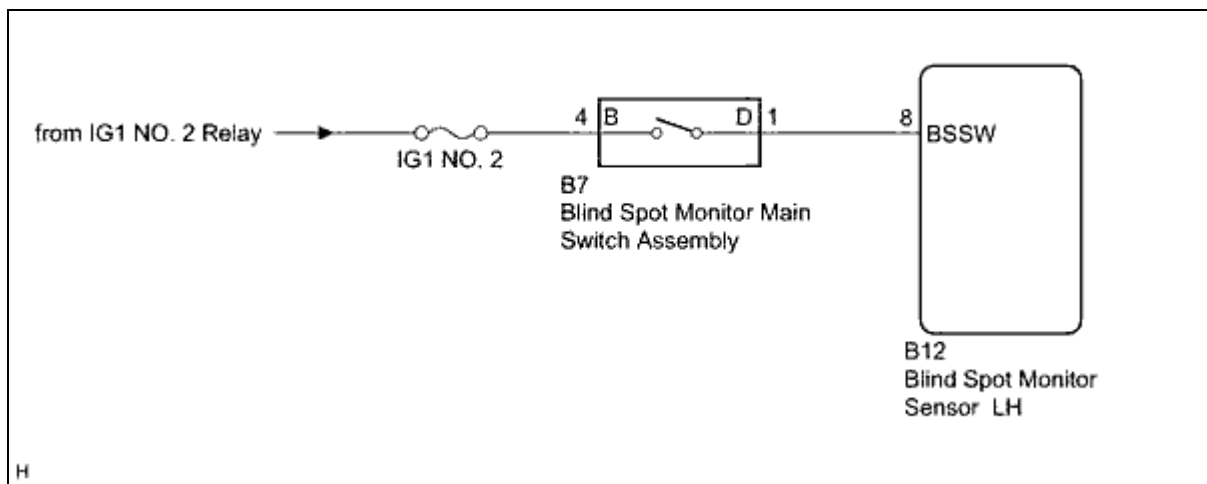
Last Modified: 11-13-2015	6.6 J	Doc ID: RM000004UCT00YX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: Main Switch Circuit; 2016 MY Tacoma [08/2015 -]		

Main Switch Circuit

DESCRIPTION

When the blind spot monitor main switch assembly (warning canceling switch assembly) is turned on, a signal is sent to the blind spot monitor sensor LH. The blind spot monitor system operates according to this signal.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuse for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.	READ VALUE USING TECHSTREAM (MAIN SW)
-----------	--

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Blind Spot Monitor Master / Data List.
- According to the display on the Techstream, read the Data List.

Blind Spot Monitor Master

TECHSTREAM DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Main SW	Blind spot monitor main switch assembly / OFF or ON	ON: Blind spot monitor main switch assembly on OFF: Blind spot monitor main switch assembly off	-

Result

RESULT	PROCEED TO
The display changes as shown above when the blind spot monitor main switch assembly is operated.	A
The display does not change as shown above when the blind spot monitor main switch assembly is operated.	B

B ► **GO TO STEP 2**

A ► **PROCEED TO NEXT SUSPECTED AREA SHOWN IN
PROBLEM SYMPTOMS TABLE**

2.	INSPECT BLIND SPOT MONITOR MAIN SWITCH ASSEMBLY
-----------	--

(a) Remove the blind spot monitor main switch assembly  .

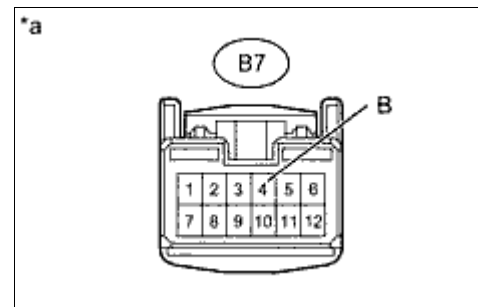
(b) Inspect the blind spot monitor main switch assembly  .

NG ► **REPLACE BLIND SPOT MONITOR MAIN SWITCH
ASSEMBLY**

OK



3.	CHECK HARNESS AND CONNECTOR (BLIND SPOT MONITOR MAIN SWITCH ASSEMBLY - BATTERY)
-----------	--



(a) Disconnect the blind spot monitor main switch assembly connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
B7-4 (B) - Body ground	Ignition switch ON	11 to 14 V
B7-4 (B) - Body ground	Ignition switch off	Below 1 V

Text in Illustration

*a	Front view of wire harness connector (to Blind Spot Monitor Main Switch Assembly)
----	--

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK
▼

4.	CHECK HARNESS AND CONNECTOR (BLIND SPOT MONITOR MAIN SWITCH ASSEMBLY - BLIND SPOT MONITOR SENSOR LH)
-----------	---

(a) Disconnect the B12 blind spot monitor sensor LH connector.

(b) Disconnect the B7 blind spot monitor main switch assembly connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
B12-8 (BSSW) - B7-1 (D)	Always	Below 1 Ω
B12-8 (BSSW) - Body ground	Always	10 k Ω or higher

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ► REPLACE BLIND SPOT MONITOR SENSOR LH



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Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: OPERATION CHECK; 2016 MY Tacoma [08/2015 -]		

OPERATION CHECK

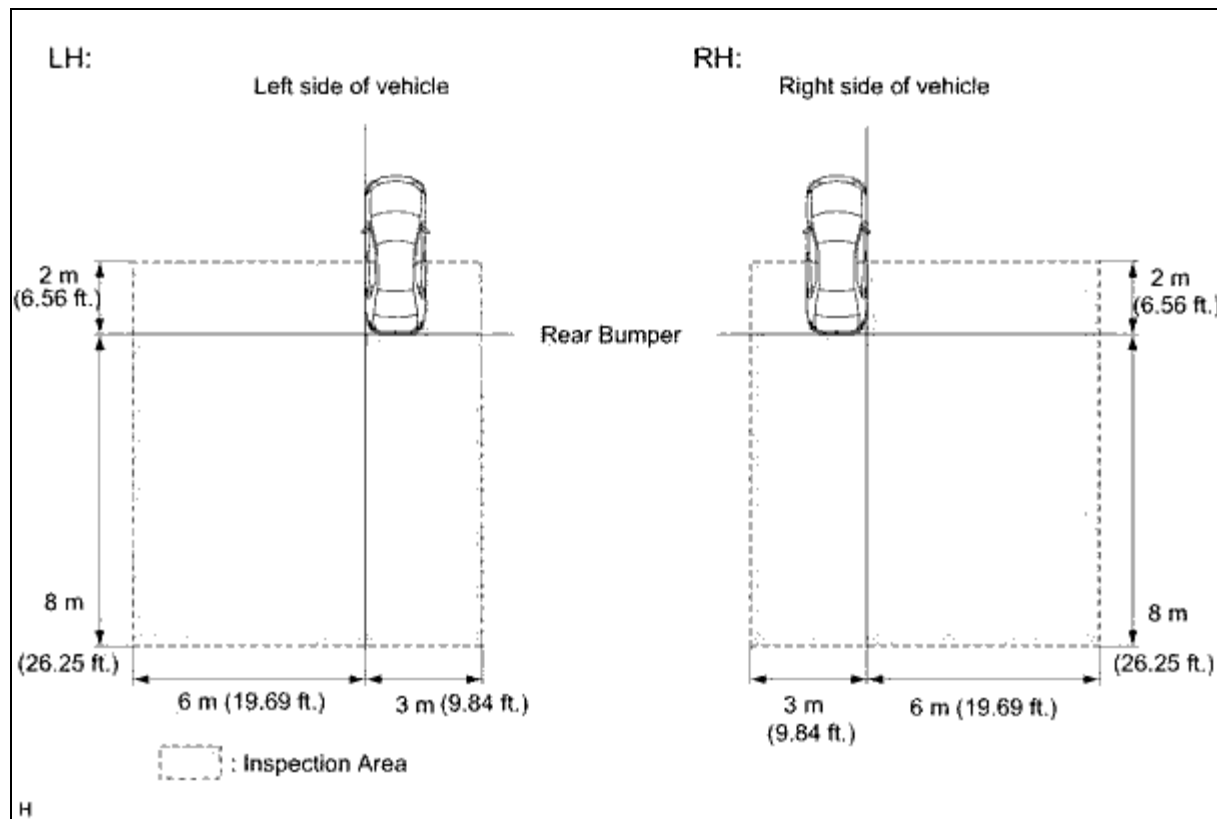
1. BLIND SPOT MONITOR BEAM AXIS INSPECTION

(a) Procedure to enter Test Mode

- (1) Connect the Techstream to the DLC3.
- (2) Turn the ignition switch to ON.
- (3) Turn the blind spot monitor main switch assembly (warning canceling switch assembly) on.
- (4) Turn the Techstream on.
- (5) Switch the blind spot monitor sensor to Test Mode using the Techstream. Enter the following menus:
Body Electrical / Blind Spot Monitor Master or Blind Spot Monitor Slave / Utility / BSM Master beam axis inspection or BSM Slave beam axis inspection.
- (6) Finish Test Mode.

2. BLIND SPOT MONITOR BEAM AXIS CONFIRMATION

(a) When performing the blind spot monitor beam axis confirmation, move the vehicle to a place where the space shown in the illustration can be secured.



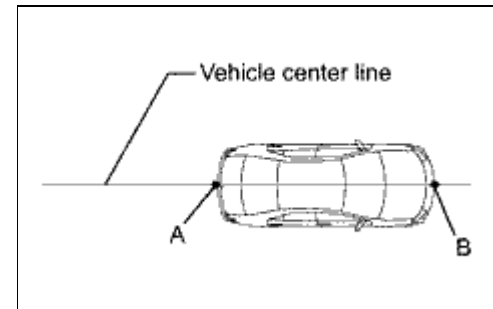
NOTICE:

- Perform this inspection on level ground.
- Make sure that there are no metal objects around the vehicle or on the ground.
- Unload the vehicle before beginning the inspection.

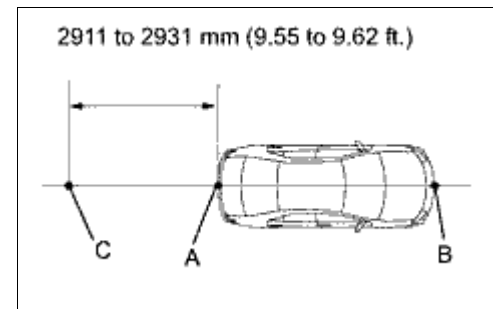
- Confirm that the tire pressure is correct before beginning the inspection.
- Do not place an object other than the reflector (such as a large metallic object) in or allow people to enter the inspection area (W 9 m (29.53 ft.) x L 10 m (32.81 ft.) x H 4 m (13.13 ft.)) shown in the illustration.
- Check that DTC C1ABB and DTC C1ABC are not output.

(b) Place the reflector.

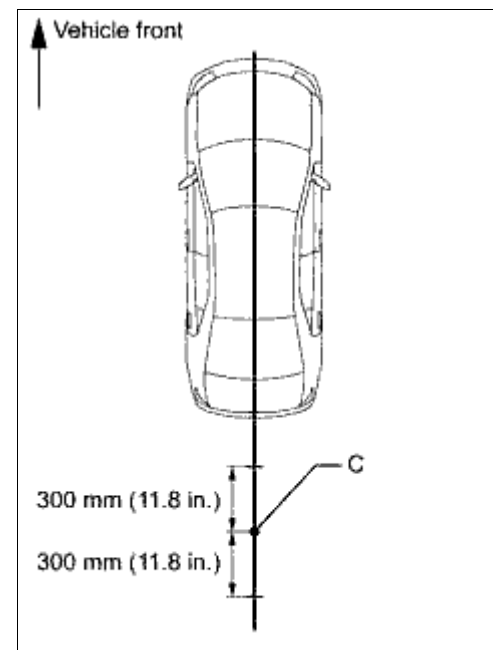
- (1) Hang a string (with weight) from the center of the vehicle's rear emblem. Mark the vehicle's rear center point on the ground. Repeat for the front of the vehicle. (mark (A) and (B))



- (2) Draw a vehicle center line so that it passes through mark (A) and (B) (front and rear center points).

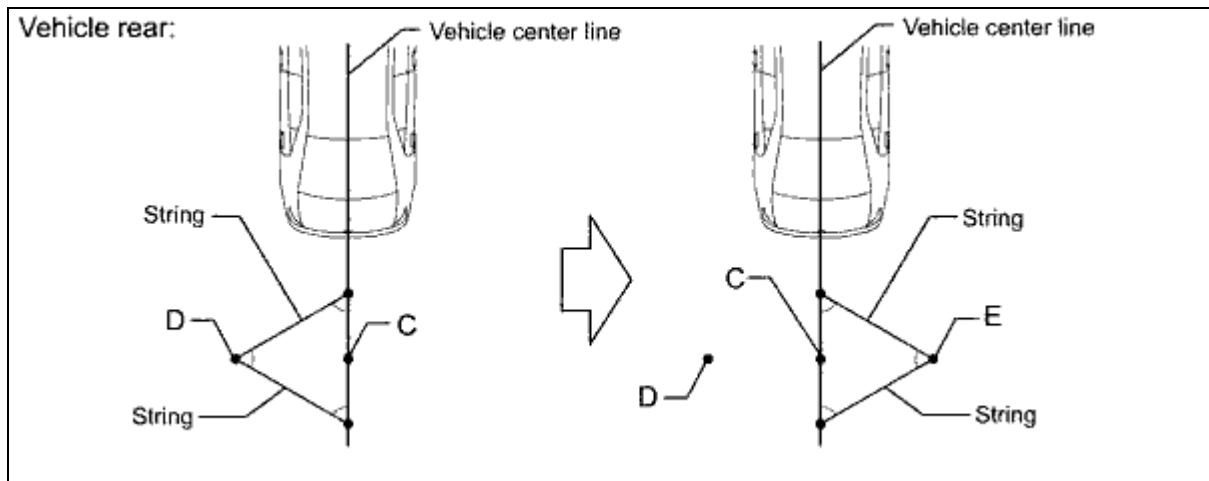


- (3) Mark the position on the center line 2911 to 2931mm (9.55 to 9.62 ft.) behind the rear bumper. (Mark (C))

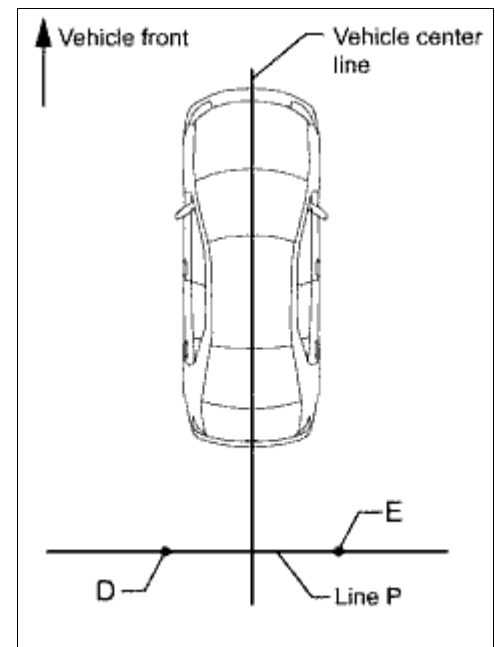


- (4) Prepare 2 pieces of string of 600 mm (1.97 ft.) in length and secure the end of each string at a point 300 mm (11.8 in.) from mark (C) as shown in the illustration.

- (5) Pull the end of each string and mark the position where each string meets on both the left and right side (marks (D) and (E)).



- (6) Draw a line (P) so that it passes through mark (D) and (E) and is perpendicular to the vehicle center line.

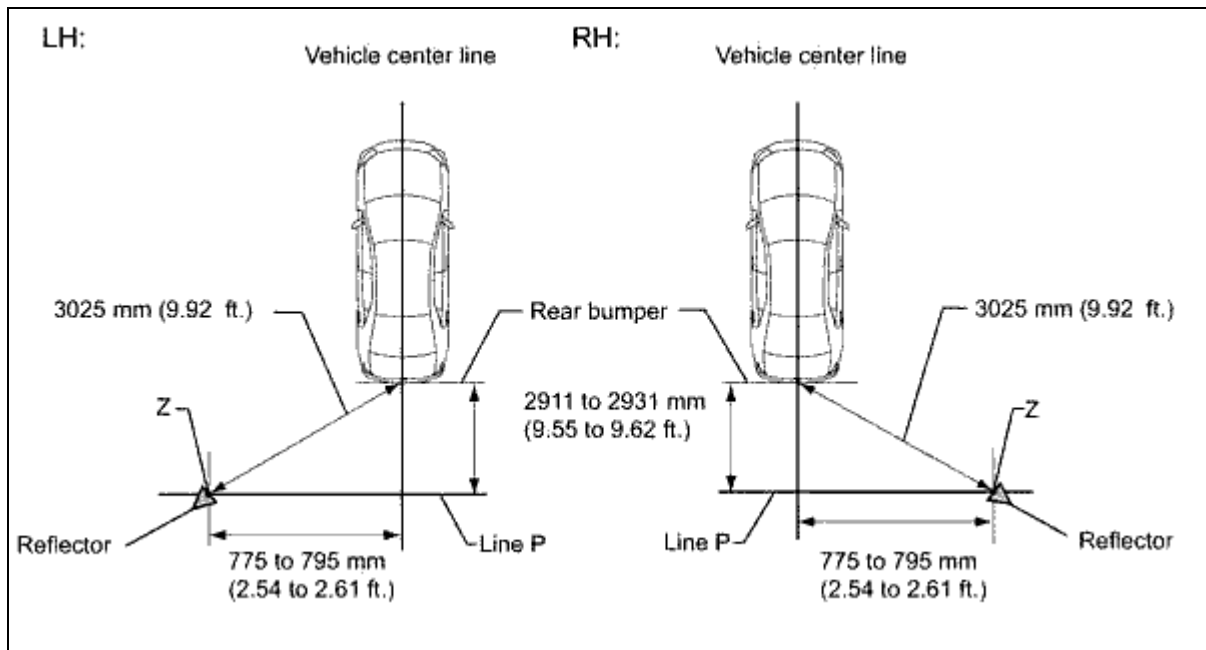


- (7) Set the reflector at the position (Z) shown in the illustration below.

SST: 09870-60000

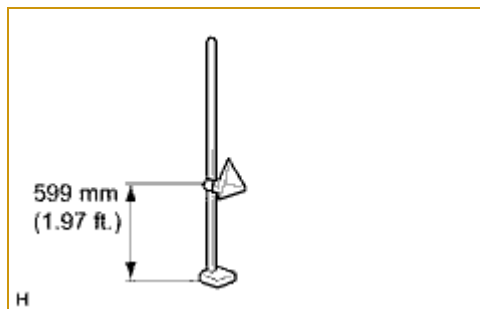
09870-60010

SST: 09870-60040

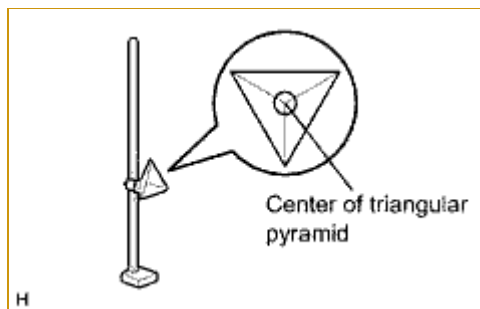


NOTICE:

- Set the reflector so that its center is 599 mm (1.97 ft.) above the ground.



- The center of triangular pyramid is the reference point for the setting position and angle.



- Set the reflector as shown in the illustration so that its center of triangular pyramid faces the blind spot monitor sensor.
- Perform the operation as precisely as possible.

(c) Perform the blind spot monitor beam axis display.

- (1) Connect the Techstream to the DLC3.
- (2) Turn the ignition switch to ON.
- (3) Turn the blind spot monitor main switch assembly (warning canceling switch assembly) on.
- (4) Turn the Techstream on.
- (5) Enter the following menus: Body Electrical / Blind spot monitor Master or Blind spot monitor Slave / Utility / BSM Master beam axis display or BSM Slave beam axis display.

(6) Check the results displayed for the BSM beam axis display.

Allowable Range:

ITEM	BLIND SPOT MONITOR SENSOR RH (MASTER)	BLIND SPOT MONITOR SENSOR LH (SLAVE)
Angle	-3.6 to +3.6°	-3.6 to +3.6°
Distance	2.0 to 3.0 m (6.57 to 9.85 ft.)	2.0 to 3.0 m (6.57 to 9.85 ft.)

HINT:

If the results are outside the allowable range, try again as the reflector setting position may be incorrect or a metal object may exist near the detection area.

(7) Perform the blind spot monitor beam axis adjustment using the Techstream. Enter the following menus: Body Electrical / Blind spot monitor Master or Blind spot monitor Slave / Utility / BSM Master beam axis adjustment or BSM Slave beam axis adjustment.

HINT:

When values on the axis display are in the allowable range, performing this adjustment compensates the values to the normal value.

3. BLIND SPOT MONITOR INSTALLATION CONDITION INSPECTION

NOTICE:

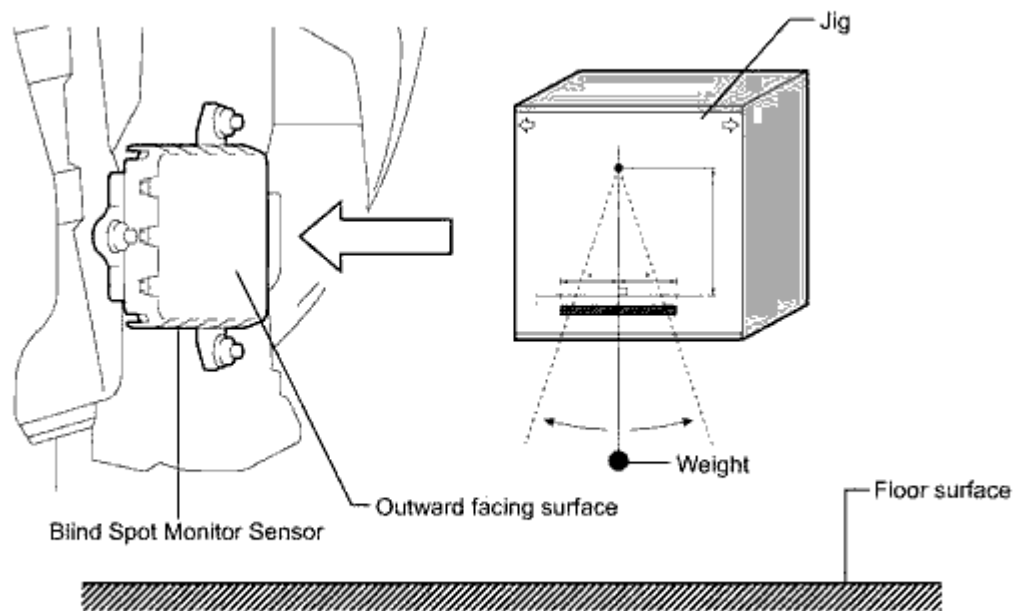
- Perform this inspection on level ground.
- Unload the vehicle before beginning the inspection.
- Confirm that the tire pressure is correct before beginning the inspection.

(a) Remove the rear bumper.

- w/ Towing Package 
- w/o Towing Package 

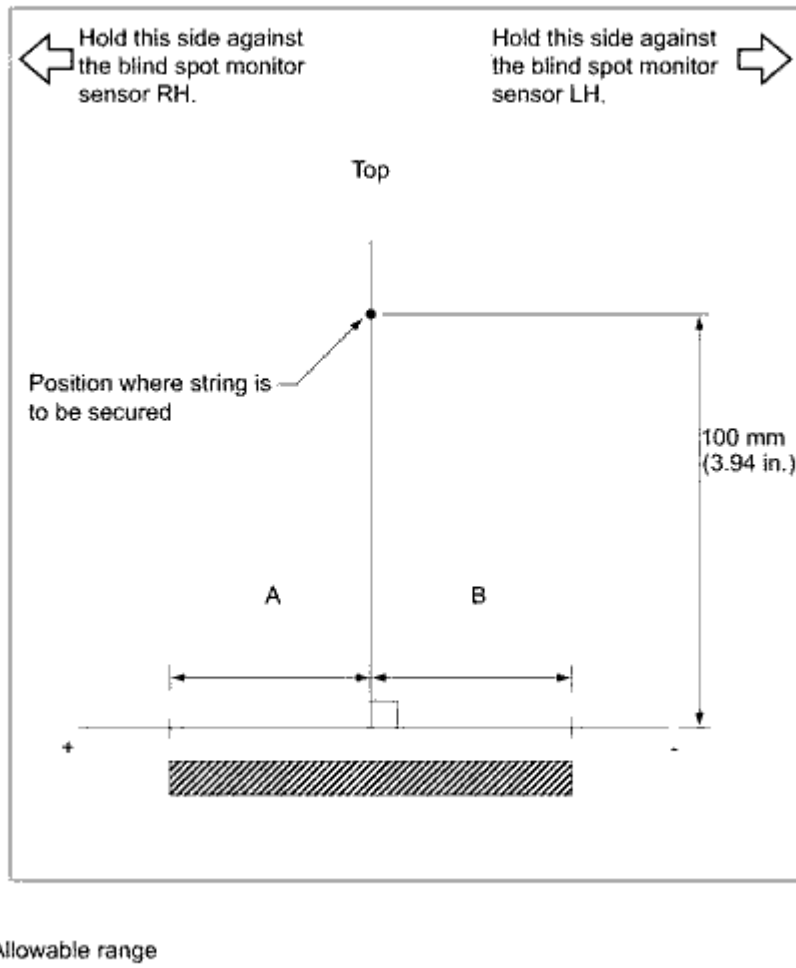
(b) Attach a jig similar to the one shown in the illustration to the outward facing surface of the blind spot monitor sensor and check that the blind spot monitor sensor is perpendicular to the floor surface or within the allowable range.

Rear view of vehicle (RH):



H

Jig:



H

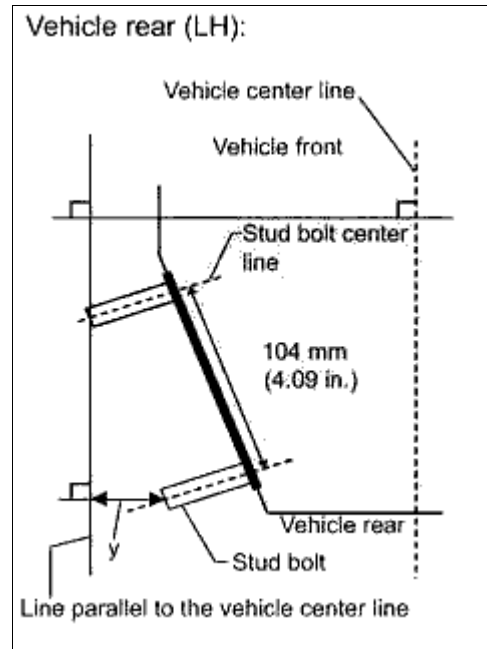
Standard

	A	B
Blind spot monitor sensor RH	8 mm (0.315 in.)	-8 mm (-0.315 in.)
Blind spot monitor sensor LH	8 mm (0.315 in.)	-8 mm (-0.315 in.)

(c) Using the sensor installation stud bolt center lines as a reference, check that the stud bolts are as shown in the illustration.

Standard:

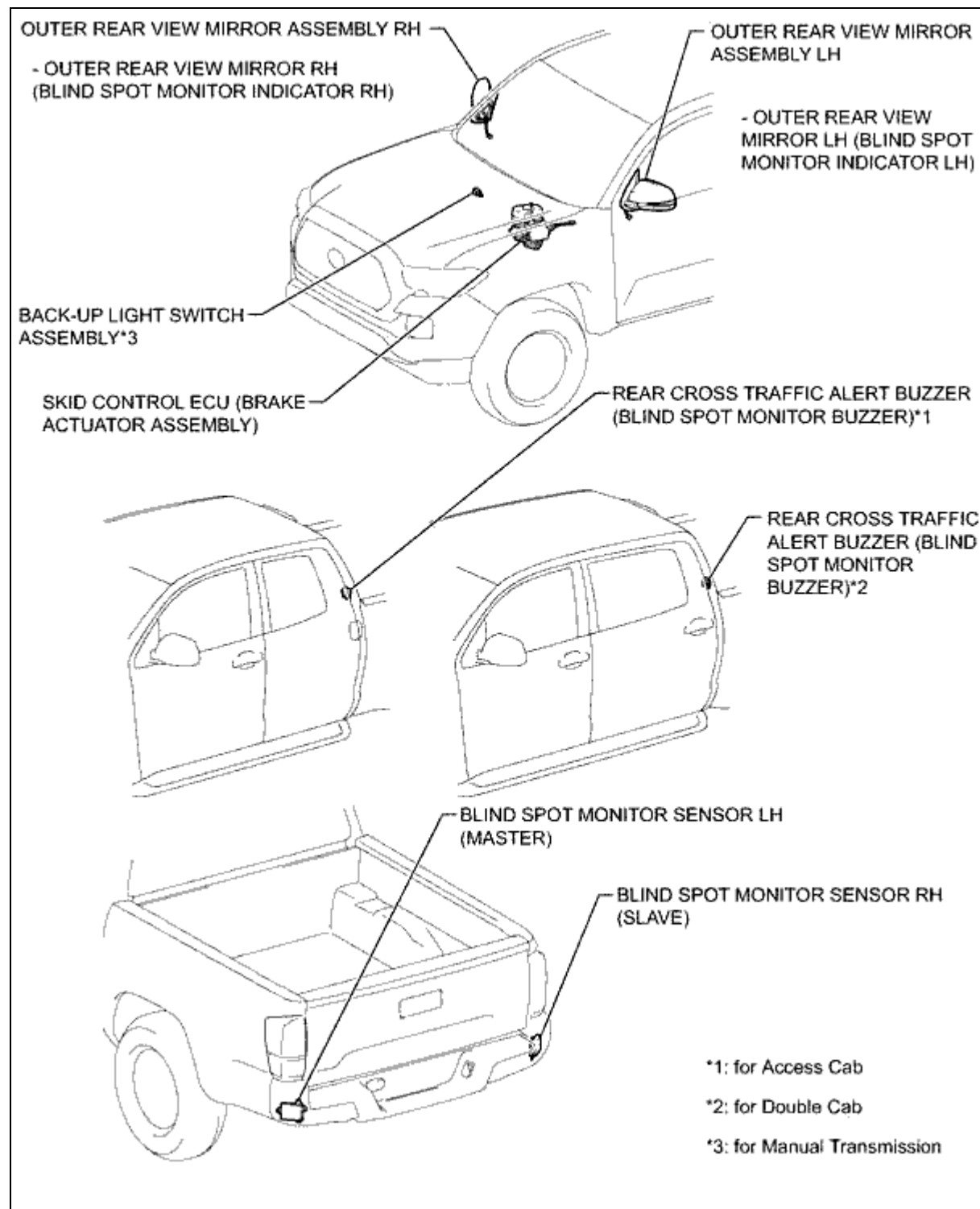
DIMENSION	SPECIFIED VALUE
y	75 to 84 mm (2.95 to 3.31 in.)



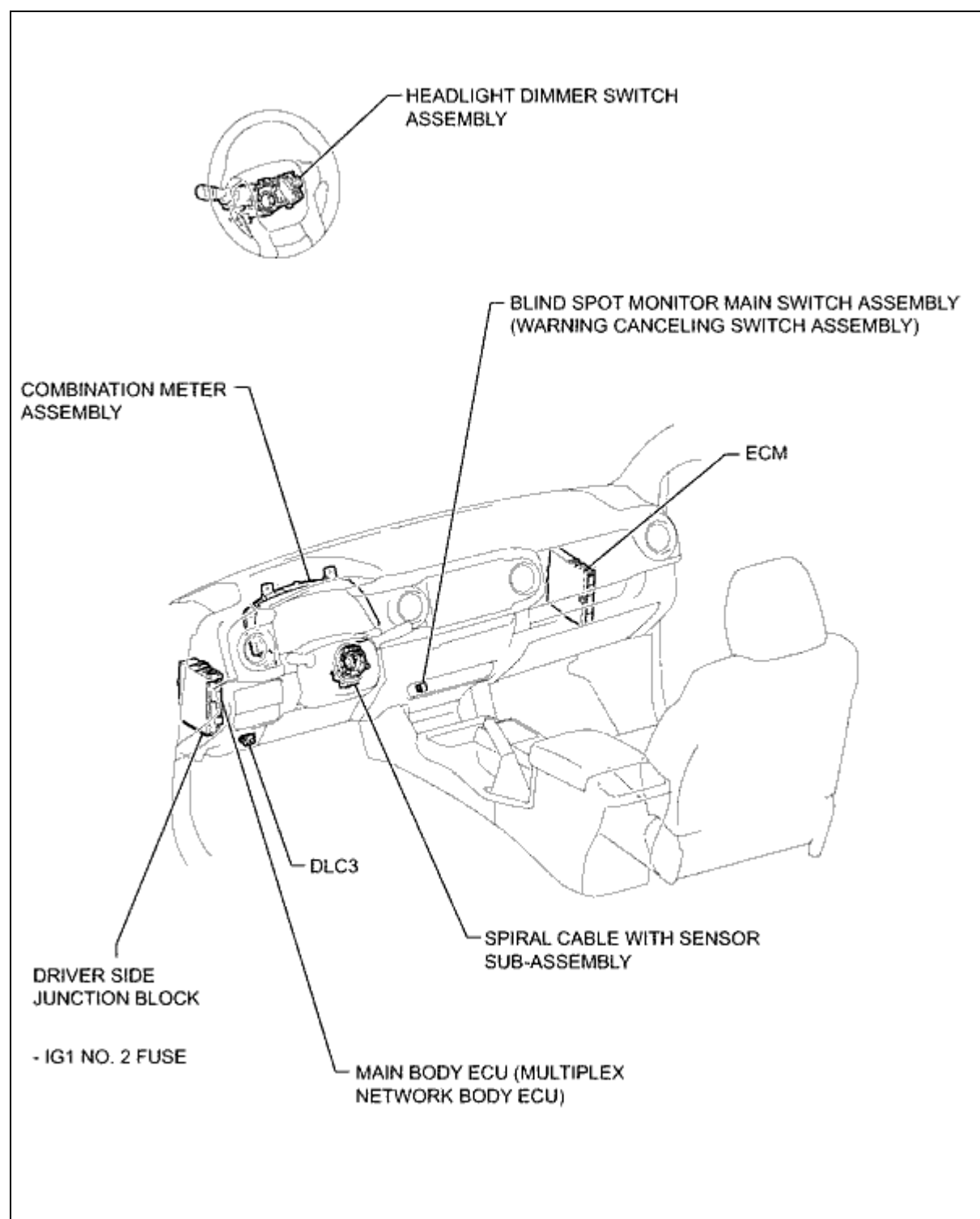
Last Modified: 11-13-2015	6.6 R	Doc ID: RM000004RRY01YX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: PARTS LOCATION; 2016 MY Tacoma [08/2015 -]		

PARTS LOCATION

ILLUSTRATION



ILLUSTRATION



Last Modified: 11-13-2015	6.6 L	Doc ID: RM000004RRV028X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: PRECAUTION; 2016 MY Tacoma [08/2015 -]		

PRECAUTION

1. IGNITION SWITCH EXPRESSIONS

(a) The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

EXPRESSION	IGNITION SWITCH (POSITION)	ENGINE SWITCH (CONDITION)
Ignition Switch off	LOCK	Off
Ignition Switch ACC	ACC	On (ACC)
Ignition Switch ON	ON	On (IG)
Engine Start	START	Start

2. PRECAUTIONS FOR BLIND SPOT MONITOR SYSTEM

(a) The blind spot monitor function may not detect vehicles correctly in the following conditions:

- (1) During bad weather such as heavy rain, fog, snow, etc.
- (2) When there is a significant difference in speed between this vehicle and the vehicle that enters the detection area.
- (3) When a vehicle is in the detection area from a stop and remains in the detection area as this vehicle accelerates.
- (4) When driving up or down steep inclines, such as hills, a dip in the road, etc.
- (5) When multiple vehicles approach with only a small gap between each vehicle.
- (6) When vehicle lanes are wide, and the vehicle in the next lane is too far away from this vehicle.
- (7) When the vehicle that enters the detection area is traveling at about the same speed as this vehicle.
- (8) When there is a significant difference in height between this vehicle and the vehicle that enters the detection area.
- (9) When driving on a road surface that is wet due to rain, standing water, etc.
- (10) When ice, mud, etc. is attached to the rear bumper.
- (11) Directly after the blind spot monitor main switch assembly (warning canceling switch assembly) is turned on.

HINT:

In this section, the expression "this vehicle" is used to refer to the vehicle equipped with this blind spot monitor system.

(b) The blind spot monitor function is not designed to detect the following types of vehicles or objects:

- (1) Vehicles traveling from the opposite direction.
- (2) Small motorcycles, bicycles, pedestrians, etc.*
- (3) Following vehicles that are in the same lane.*
- (4) Guardrails, walls, signs, parked vehicles and similar stationary objects.*

(5) Vehicles driving 2 lanes across from this vehicle

*: Depending on conditions, detection of a vehicle and/or object may occur.

(c) Instances of the blind spot monitor function unnecessarily detecting a vehicle and/or object may increase under the following conditions:

(1) When there is only a short distance between this vehicle and a guardrail, wall, etc.

(2) When vehicle lanes are narrow and a vehicle driving 2 lanes across from this vehicle enters the detection area.

(3) When there is only a short distance between this vehicle and a following vehicle.

(d) The rear cross traffic alert function may not detect vehicles correctly in the following conditions:

(1) During bad weather such as heavy rain, fog, snow, etc.

(2) When a vehicle is approaching at high speed.

(3) When multiple vehicles approach continuously.

(4) When a parking on a steep incline, such as hills, a dip in the road etc.

(5) Vehicles that the sensors cannot detect because of obstacles.

(6) Shallow angle parking.

(7) When ice, mud, etc. is attached to the rear bumper.

(8) Directly after the blind spot monitor main switch assembly (warning canceling switch assembly) is turned on.

HINT:

In this section, the expression "this vehicle" is used to refer to the vehicle equipped with this blind spot monitor system.

(e) The rear cross traffic alert function is not designed to detect the following types of vehicles or objects:

(1) Vehicles approaching from directly behind

(2) Small motorcycles, bicycles, pedestrians, etc.*

(3) Vehicles moving away from this vehicle*

(4) Guardrails, walls, signs, parked vehicles and similar stationary objects*

(5) Vehicles that enter the detection range from a parking space next to this vehicle*

*: Depending on conditions, detection of a vehicle and/or object may occur.

HINT:

In this section, the expression "this vehicle" is used to refer to the vehicle equipped with this blind spot monitor system.

(f) Instances of the rear cross traffic alert function unnecessarily detecting a vehicle and/or object may increase under the following condition:

(1) When backing this vehicle into a parking space that faces a road, the function may detect vehicles driving on the road.

(g) Under the following condition, the blind spot monitor system may store DTCs C1AC1 and C1AC2 by mistake:

(1) The vehicle is driven continuously with the blind spot monitor main switch assembly (warning canceling switch assembly) on when using a drum tester such as a speedometer tester, brake/speedometer combination tester or chassis dynamometer.

3. HANDLING THE RADAR SENSOR

(a) One blind spot monitor sensor is installed inside the left and right sides of the vehicle rear bumper respectively. Observe the following to ensure that the blind spot monitor can function correctly.

- (1) Keep the sensor and its surrounding area on the bumper clean at all times.
- (2) Do not subject surrounding area on the bumper to a strong impact. If the sensor moves even slightly off position, the system may malfunction and vehicles that enter the detection area may not be detected. If surrounding area has been subjected to a strong impact, inspect the sensor and surrounding area.
- (3) Do not disassemble the sensor.
- (4) Do not attach accessories or stickers to the sensor or surrounding area on the bumper.
- (5) Do not modify the sensor or surrounding area on the bumper.
- (6) Do not paint the rear bumper any color other than an official Toyota color.
- (7) Do not apply strong impacts to the sensor or drop it, as it is a high-precision device.
- (8) Do not reuse a sensor that has been dropped or subjected to a strong impact.



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: PROBLEM SYMPTOMS TABLE; 2016 MY Tacoma [08/2015 -]		

PROBLEM SYMPTOMS TABLE

HINT:

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Entire System

SYMPTOM	SUSPECTED AREA	SEE PAGE
System does not operate at all (both the blind spot monitor function and rear cross traffic alert function do not operate)	Proceed to "Power Source Circuit"	INFO
	Proceed to "Main Switch Circuit"	INFO
	Blind spot monitor sensor LH	INFO
System cannot be turned off	Proceed to "Main Switch Circuit"	INFO
	Blind spot monitor sensor LH	INFO
"BSM not available" or "Check BSM system" is displayed on the multi-information display	Check abnormality history	INFO
	Blind spot monitor sensor RH	INFO
	Blind spot monitor sensor LH	INFO
	Combination meter assembly	INFO
"Check BSM system" is displayed on the multi-information display	Check abnormality history	INFO
	Blind spot monitor sensor RH	INFO
	Blind spot monitor sensor LH	INFO

Blind Spot Monitor Function

SYMPTOM	SUSPECTED AREA	SEE PAGE
Outer rear view mirror indicator RH does not illuminate	Proceed to "Blind Spot Monitor Beam Axis Confirmation"	INFO
	Outer rear view mirror RH (blind spot monitor indicator RH)	INFO
	Outer rear view mirror assembly RH	INFO
	Blind spot monitor sensor RH	INFO

SYMPTOM	SUSPECTED AREA	SEE PAGE
Outer rear view mirror indicator LH does not illuminate	Proceed to "Blind Spot Monitor Beam Axis Confirmation"	INFO
	Outer rear view mirror LH (blind spot monitor indicator LH)	INFO
	Outer rear view mirror assembly LH	INFO
	Blind spot monitor sensor LH	INFO
Outer rear view mirror indicator RH remains illuminated	Proceed to "Blind Spot Monitor Beam Axis Confirmation"	INFO
	Blind spot monitor sensor RH	INFO
Outer rear view mirror indicator LH remains illuminated	Proceed to "Blind Spot Monitor Beam Axis Confirmation"	INFO
	Blind spot monitor sensor LH	INFO
Outer rear view mirror indicator RH does not flash	Proceed to "Turn Signal Light" in Problem Symptoms Table for the Lighting section	INFO
	Blind spot monitor sensor RH	INFO
Outer rear view mirror indicator LH does not flash	Proceed to "Turn Signal Light" in Problem Symptoms Table for the Lighting section	INFO
	Blind spot monitor sensor LH	INFO
Outer rear view mirror indicator RH continues to flash	Blind spot monitor sensor RH	INFO
Outer rear view mirror indicator LH continues to flash	Blind spot monitor sensor LH	INFO

Rear Cross Traffic Alert Function

SYMPTOM	SUSPECTED AREA	SEE PAGE
Function does not operate at all (the blind spot monitor function operates normally)	Data List / Active Test (Reverse)	INFO
	Automatic transmission system (for AC60F (for 2GR-FKS))	INFO
	Automatic transmission system (for AC60F (for 2TR-FE))	INFO
	Automatic transmission system (for AC60E (for 2GR-FKS))	INFO
	Automatic transmission system (for AC60E (for 2TR-FE))	INFO
	Back-up light switch (for RC62F)	INFO
	Back-up light switch (for R156F)	INFO
	Blind spot monitor sensor LH	INFO



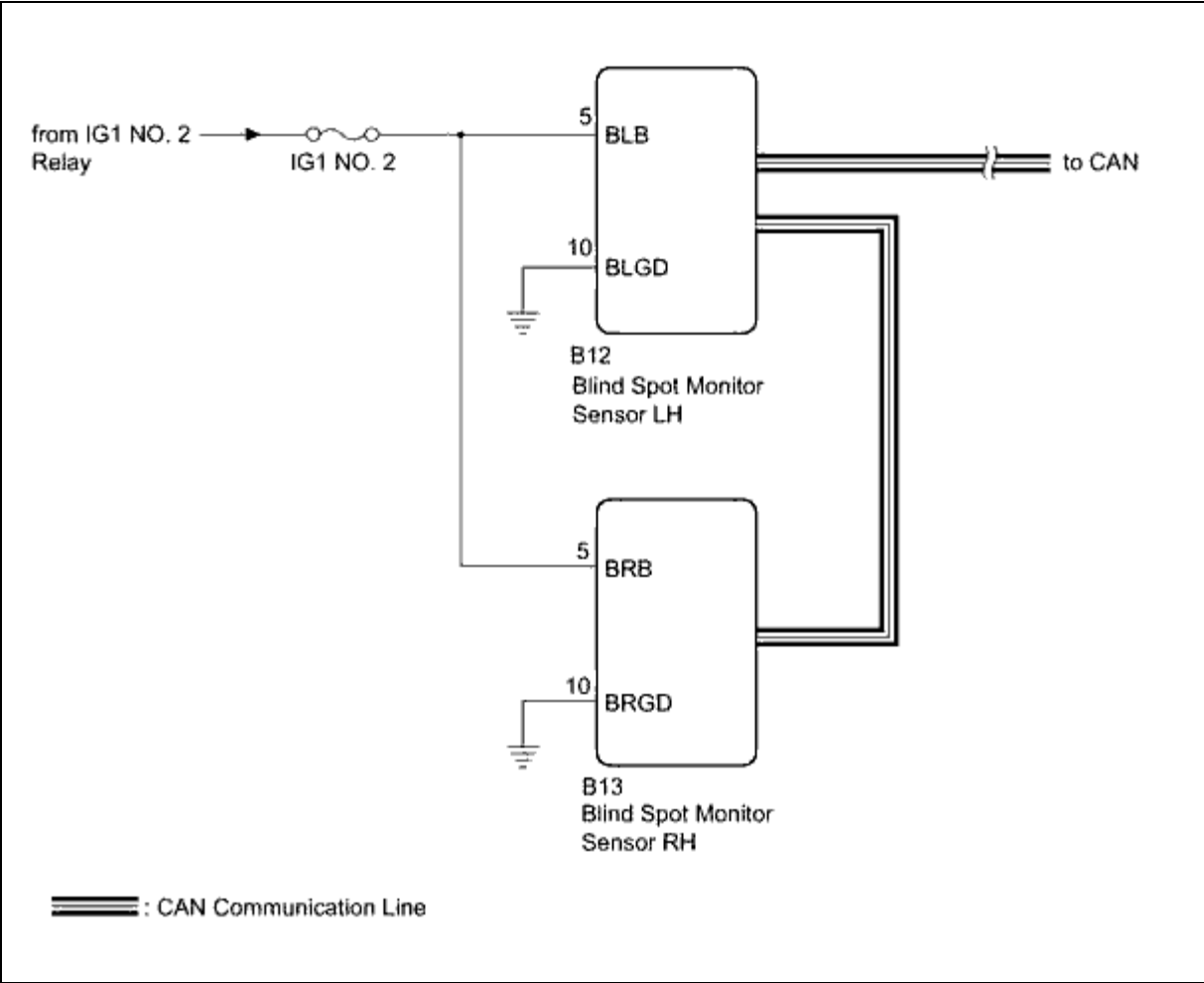
Last Modified: 11-13-2015	6.6 J	Doc ID: RM000004S2N02LX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: Power Source Circuit; 2016 MY Tacoma [08/2015 -]		

Power Source Circuit

DESCRIPTION

This circuit provides power to operate the blind spot monitor sensor.

WIRING DIAGRAM



INSPECTION PROCEDURE

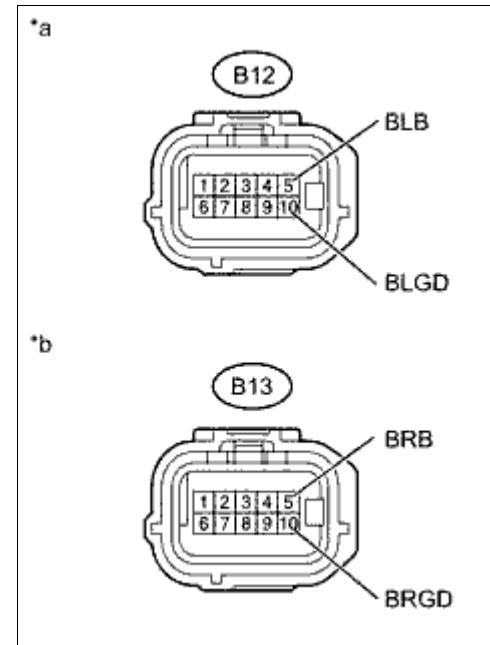
NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (BLIND SPOT MONITOR SENSOR RH, BLIND SPOT MONITOR SENSOR LH - BATTERY AND BODY GROUND)
----	---

(a) Disconnect the blind spot monitor sensor LH connector.



(b) Disconnect the blind spot monitor sensor RH connector.

(c) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
B12-5 (BLB) - Body ground	Ignition switch ON	11 to 14 V
B12-5 (BLB) - Body ground	Ignition switch off	Below 1 V
B13-5 (BRB) - Body ground	Ignition switch ON	11 to 14 V
B13-5 (BRB) - Body ground	Ignition switch off	Below 1 V

(d) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
B12-10 (BLGD) - Body ground	Always	Below 1 Ω
B13-10 (BRGD) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Blind Spot Monitor Sensor LH)
*b	Front view of wire harness connector (to Blind Spot Monitor Sensor RH)

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ► PROCEED TO NEXT SUSPECTED AREA SHOWN IN
PROBLEM SYMPTOMS TABLE



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: SYSTEM DESCRIPTION; 2016 MY Tacoma [08/2015 -]		

SYSTEM DESCRIPTION

1. GENERAL

(a) The blind spot monitor system has the blind spot monitor function and rear cross traffic alert function.

(1) Blind spot monitor function

- The blind spot monitor function is a function that assists the driver in making the decision to change lanes. The function uses quasi-millimeter wave radar to detect vehicles that are traveling in an adjacent lane in the area that is not reflected in the outer rear view mirror assembly. The function advises the driver of the existence of a vehicle by illuminating the outer rear view mirror indicator on the outer rear view mirror assembly.
- If the turn signal switch is operated while the outer rear view mirror indicator on an outer rear view mirror assembly is illuminated, the indicator starts blinking to give additional warning to the driver.

(2) Rear cross traffic alert function

- The rear cross traffic alert function is a function that informs the driver of an approaching vehicle from diagonally behind. The function uses quasi-millimeter wave radar to detect the positions of and relative speed to a vehicle. When the function determines that a vehicle is approaching this vehicle, this function informs the driver of it using the indicators and buzzer.

2. FUNCTION OF COMPONENTS

COMPONENT	FUNCTION
Blind Spot Monitor Sensor	• Consists of a 24 GHz radar module and an integrated processing module. • Illuminates or blinks the outer rear view mirror indicator on the outer rear view mirror assembly. • Sounds the rear cross traffic alert buzzer (blind spot monitor buzzer) when the rear cross traffic alert function is operating. • Changes the outer rear view mirror indicator on the outer rear view mirror assembly from illuminated to blinking when a turn signal switch operation signal is received from the windshield wiper switch assembly with the blind spot monitor function operating. • Dims the outer rear view mirror indicator on the outer rear view mirror assembly and blind spot monitor indicator on the blind spot monitor main switch assembly (warning canceling switch assembly). • Turns on the blind spot monitor indicator on the blind spot monitor main switch assembly (warning canceling switch assembly) when the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

COMPONENT	FUNCTION
Outer Rear View Mirror Assembly Outer Rear View Mirror (Blind Spot Monitor Indicator)	Turns on or blinks the indicator based on a signal from the blind spot monitor sensor.
Blind Spot Monitor Main Switch Assembly (Warning Canceling Switch Assembly) Blind Spot Monitor Indicator	- Turns the blind spot monitor system on or off. - Informs the state of the blind spot monitor system by illuminating the blind spot monitor indicator.
Rear Cross Traffic Alert Buzzer (Blind Spot Monitor Buzzer)	Sounds based on a signal from the blind spot monitor sensor.
Combination Meter Assembly Multi-information Display	- Displays an error message on the multi-information display if the blind spot monitor detects a malfunction while it is operating. - Receives a turn signal from headlight dimmer switch assembly. - Sends a turn signal to the blind spot monitor sensor via CAN communication.
Main Body ECU (Multiplex Network Body ECU)	Sends the destination information and the dimmer signal to the blind spot monitor sensor via CAN communication.
Skid Control ECU (Brake Actuator Assembly)	Transmits a vehicle speed signal to the blind spot monitor sensor via CAN communication.
ECM	Sends a shift position signal (R) to the blind spot monitor sensor via CAN communication.*1
Back-up Light Switch Assembly	Sends a shift position signal (R) to the blind spot monitor sensor.*2
Spiral Cable with Sensor Sub-assembly	Detects the angle of the steering wheel and sends the resulting signals to the blind spot monitor sensor via CAN communication.

*1: for Automatic Transmission

*2: for Manual Transmission

3. OPERATION DESCRIPTION

(a) Operation description of the blind spot monitor function

(1) Operation conditions

- The blind spot monitor main switch assembly (warning canceling switch assembly) is on.
- Vehicle speed is more than approximately 16 km/h (10 mph).

(2) Conditions in which a sensor can detect a vehicle

The blind spot monitor function indicates detection of a vehicle in the detection area when either condition is met:

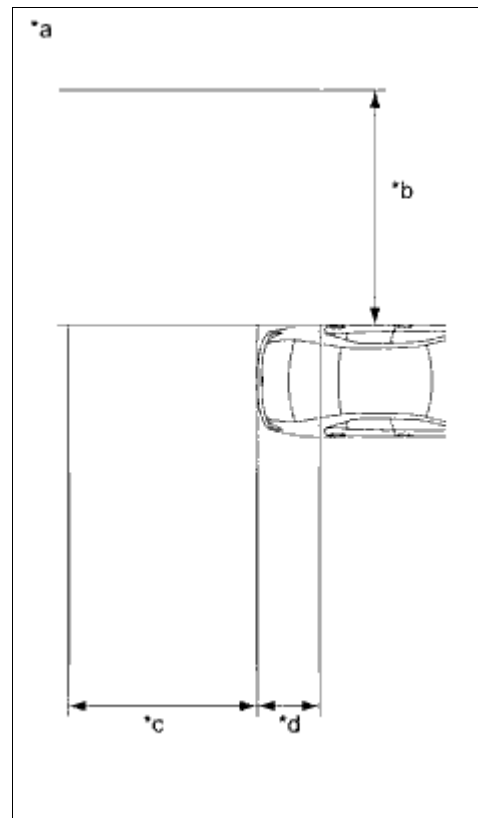
- When a vehicle is detected in an adjacent lane overtaking this vehicle.
- When a vehicle is detected entering the detection area because it changed lanes.

(3) Detection area

Vehicles in the following areas can be detected:

Text in Illustration

*a	Vehicles in the following areas can be detected:
*b	Within approximately 3.5 m (11.49 ft.) from the side of the vehicle
*c	Within approximately 3 m (9.85 ft.) behind the rear bumper
*d	Within approximately 1 m (3.29 ft.) forward of the rear bumper



(b) Operation description of the rear cross traffic alert function.

(1) Operation conditions:

- The blind spot monitor main switch assembly (warning canceling switch assembly) is on.
- The shift lever is in R.
- The vehicle speed is less than approximately 8 km/h (5 mph).

(2) Conditions in which a sensor can detect a vehicle

The rear cross traffic alert function indicates detection of a vehicle in the detection area when both conditions are met:

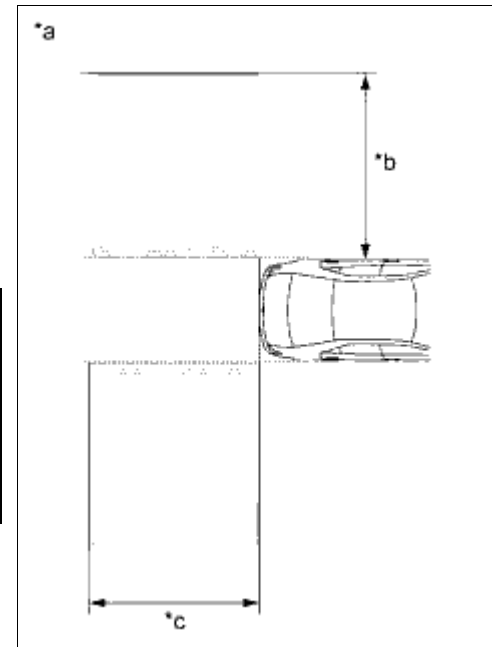
- A vehicle is approaching this vehicle from diagonally behind.
- The vehicle speed is approximately 8 km/h (5 mph) to 28 km/h (18 mph).

(3) Detection area

Vehicles in the following areas can be detected:

Text in Illustration

*a	Vehicles in the following areas can be detected:
*b	Within approximately 5.5 to 20 m (18.04 to 65.62 ft.) from the side of the vehicle (detection area changes according to vehicle speed)
*c	Within approximately 6 m (19.69 ft.) behind the rear bumper



4. OPERATION OF OUTER REAR VIEW MIRROR INDICATOR AND REAR CROSS TRAFFIC ALERT BUZZER (BLIND SPOT MONITOR BUZZER)

(a) Initial check

- (1) When the blind spot monitor main switch assembly (warning canceling switch assembly) is turned on with the ignition switch ON, the outer rear view mirror indicator on each outer rear view mirror assembly illuminates for 3 seconds and the rear cross traffic alert buzzer assembly (blind spot monitor buzzer) sounds for 1 second.
- (2) When the ignition switch is turned from off to ON with the blind spot monitor main switch assembly (warning canceling switch assembly) on, the outer rear view mirror indicator on each outer rear view mirror assembly illuminates for 3 seconds.

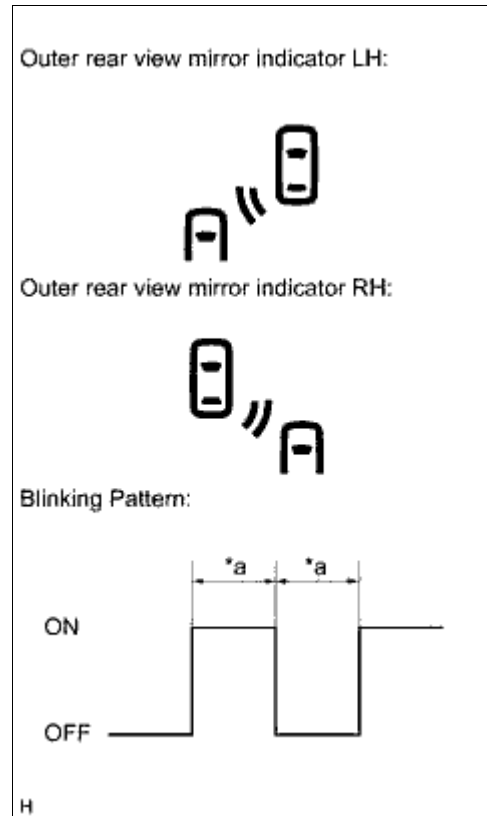
(b) Operation for each function

(1) Operation for blind spot monitor function

- When a sensor detects a vehicle in the blind spot area, the outer rear view mirror indicator on the outer rear view mirror assembly illuminates.
- While the sensor is detecting a vehicle in the detection area and the indicator is illuminated, if the turn signal switch is operated, the outer rear view mirror indicator on the outer rear view mirror assembly starts blinking as shown in the illustration.

Text in Illustration

*a	0.125 seconds
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(2) Operation for rear cross traffic alert function

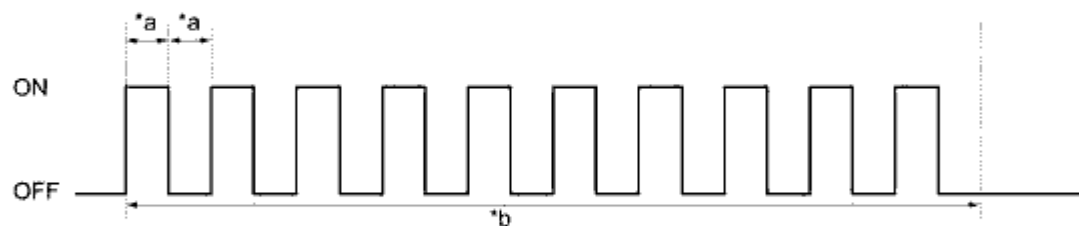
- When all of the operation conditions for the rear cross traffic alert function are met, the outer rear view mirror indicators on the outer rear view mirror assembly blink for 2.5 seconds and the rear cross traffic alert buzzer (blind spot monitor buzzer) sounds for 2.3 seconds as shown in the illustration.

Outer Rear View Mirror Indicator LH:

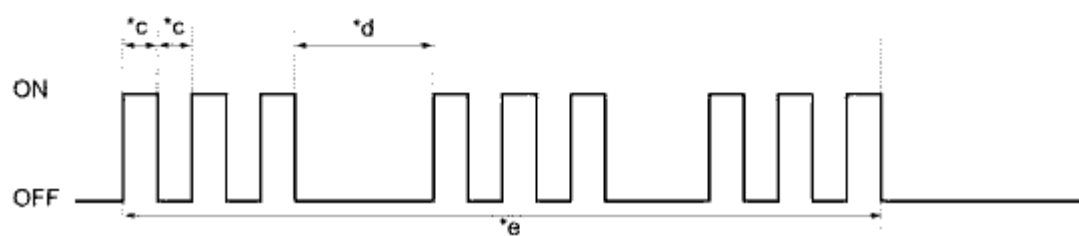
Outer Rear View Mirror Indicator RH:



Outer Rear View Mirror Indicator Blinking Pattern:



Rear Cross Traffic Alert Buzzer (Blind Spot Monitor Buzzer) Sounding Pattern:



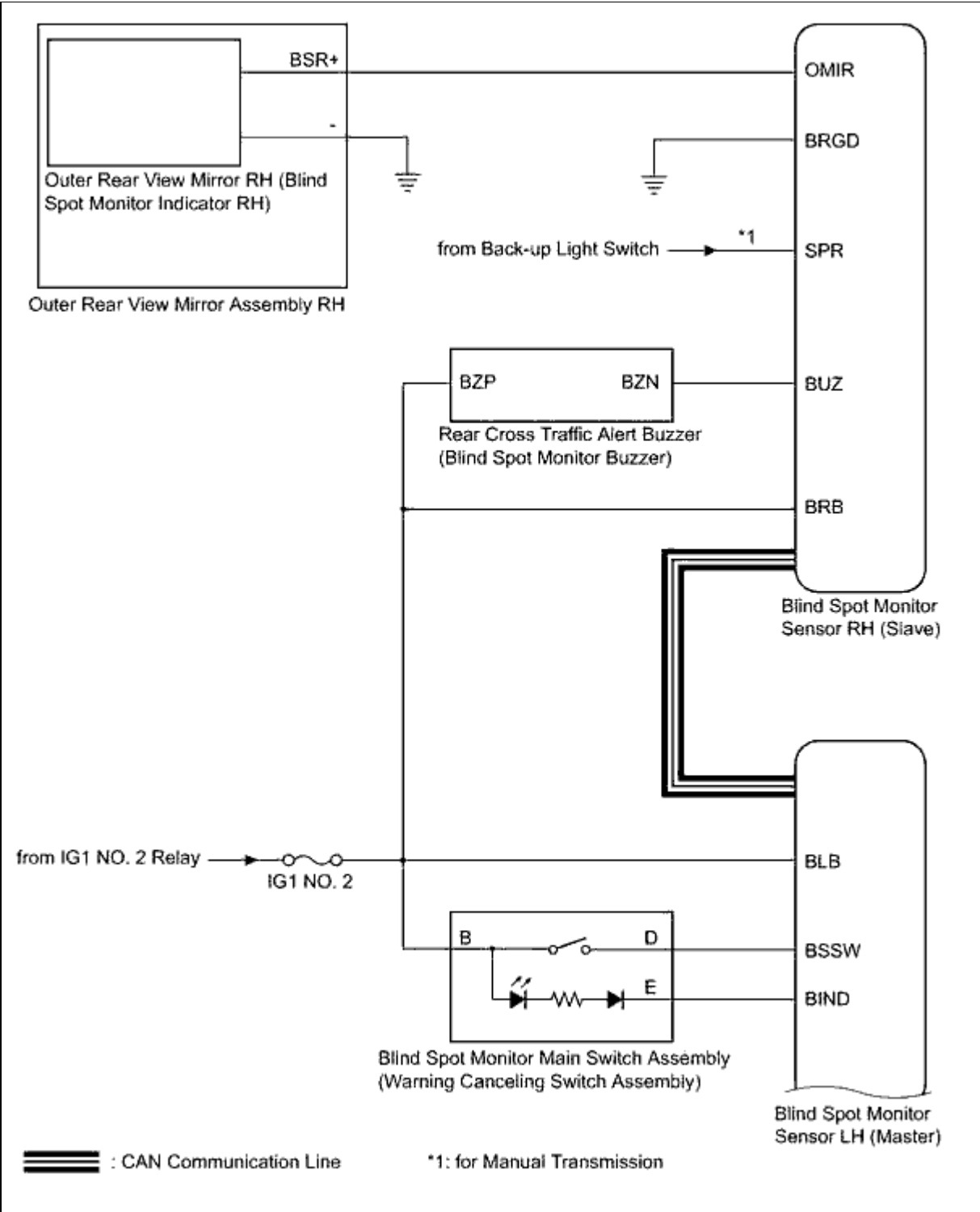
Text in Illustration

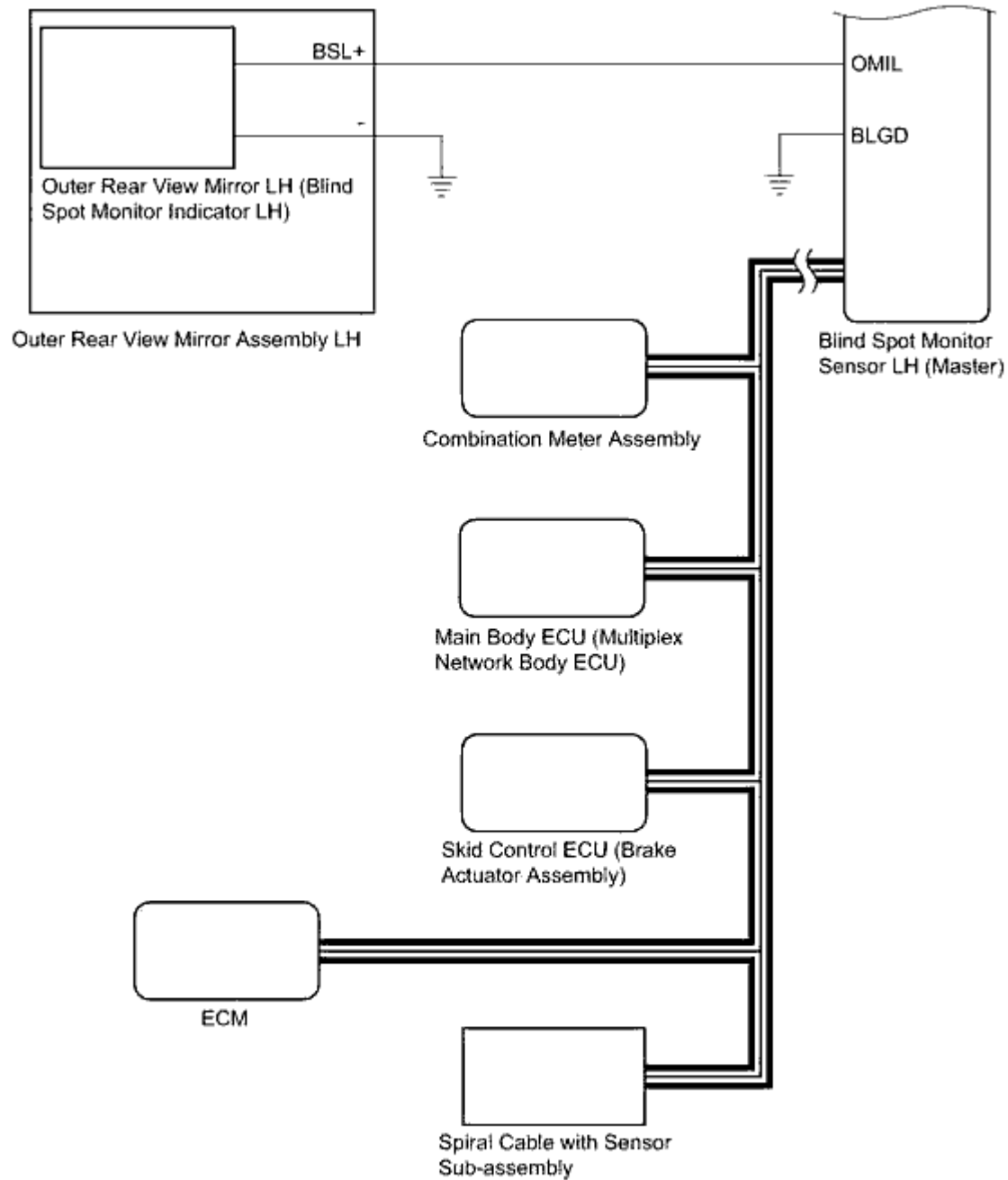
*a	0.125 seconds	*b	2.5 seconds
*c	0.1 seconds	*d	0.4 seconds
*e	2.3 seconds	-	-



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000004RS4025X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: SYSTEM DIAGRAM; 2016 MY Tacoma [08/2015 -]		

SYSTEM DIAGRAM



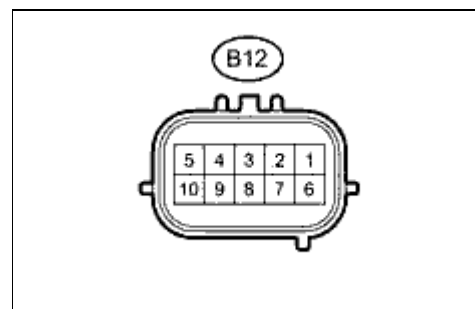


Last Modified: 11-13-2015	6.6 U	Doc ID: RM000004S2J023X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: TERMINALS OF ECU; 2016 MY Tacoma [08/2015 -]		

TERMINALS OF ECU

1. BLIND SPOT MONITOR SENSOR LH (MASTER)

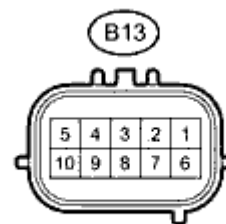
TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
B12-3 (BIND) - B12-10 (BLGD)	Y - W-B	Blind spot monitor main switch indicator signal	Blind spot monitor main switch indicator illuminated	11 to 14 V
			Blind spot monitor main switch indicator not illuminated	Below 1 V
B12-4 (OMIL) - B12-10 (BLGD)	G - W-B	Outer rear view mirror indicator power source signal RH	Outer rear view mirror indicator illuminated	2.5 to 7.5 V
			Outer rear view mirror indicator blinks	Alternating between 0 to 7.5 V
			Outer rear view mirror indicator not illuminated	Below 1 V
B12-5 (BLB) - B12-10 (BLGD)	LG - W-B	IG power source signal	Ignition switch off	Below 1 V
			Ignition switch ON	11 to 14 V
B12-8 (BSSW) - B12-10 (BLGD)	GR - W-B	Blind spot monitor main switch assembly (warning canceling switch assembly) signal	Ignition switch ON, blind spot monitor main switch assembly (warning canceling switch assembly) on	11 to 14 V
			Ignition switch ON, blind spot monitor main switch	Below 1 V



TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
			assembly (warning canceling switch assembly) off	
B12-10 (BLGD) - Body Ground	W-B - Body ground	Ground	Always	Below 1 V

2. BLIND SPOT MONITOR SENSOR RH (SLAVE)

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
B13-3 (BUZ) - B13-10 (BRGD)	R - W-B	Rear cross traffic alert buzzer (blind spot monitor buzzer) operation signal	Rear cross traffic alert buzzer (blind spot monitor buzzer) not sounding	11 to 14 V
			Outer rear view mirror indicator blinks	Alternating between 0 to 7.5 V
			Rear cross traffic alert buzzer (blind spot monitor buzzer) sounding	Alternating between 0 to 14 V
B13-4 (OMIR) - B13-10 (BRGD)	SB - W-B	Outer rear view mirror indicator power source signal LH	Outer rear view mirror indicator illuminated	2.5 to 7.5 V
			Outer rear view mirror indicator blinks	Alternating between 0 to 7.5 V
			Outer rear view mirror indicator not illuminated	Below 1 V
B13-5 (BRB) -	LG - W-B	IG power source signal	Ignition switch off	Below 1 V



TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
B13-10 (BRGD)			Ignition switch ON	11 to 14 V
B13-8 (SPR) - B13-10 (BRGD)*1	P - W-B	Shift position reverse switch signal	Rear cross traffic alert function is active (vehicle is in reverse)	11 to 14 V
			Rear cross traffic alert function is not active (vehicle is in position other than reverse)	Below 1 V
B13-10 (BRGD) - Body Ground	W-B - Body ground	Ground	Always	Below 1 V

*1: for Manual Transmission



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000003WW70ARX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: U0100,U0126,U0129,U0142; Lost Communication with ECM / PCM "A"; 2016 MY Tacoma [08/2015 -]		

DTC	U0100	Lost Communication with ECM / PCM "A"
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DTC	U0126	Lost Communication with Steering Angle Sensor Module
------------	--------------	---

DTC	U0129	Lost Communication with Brake System Control Module
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DTC	U0142	Lost Communication with Body Control Module "B"
------------	--------------	--

DESCRIPTION

These DTCs are stored if there is a malfunction in the CAN communication system connected to the blind spot monitor sensor.

HINT:

If CAN communication system DTCs are stored, they may also be stored for other systems.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
U0100	Lost communication with ECM	CAN communication system
U0126	Lost communication with steering sensor	
U0129	Lost communication with skid control ECU (brake actuator assembly)	
U0142	Lost communication with main body ECU (driver side junction block assembly)	

INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CHECK DTC
-----------	------------------

(a) Clear the DTCs .

(b) Check for DTCs .

Result

RESULT	PROCEED TO
DTCs are output	A
No DTCs are output	B

HINT:

- If CAN communication system DTCs are stored, they may also be stored for other systems.
- If the CAN communication system has been inspected and repaired, the DTCs will not be output when rechecking for DTCs.
- If these DTCs are output frequently, duplicate the conditions that cause the problem symptoms and perform the inspection again, even though the DTC was not output when rechecking for DTCs  .

B  **USE SIMULATION METHOD TO CHECK**

A  **GO TO CAN COMMUNICATION SYSTEM**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004S2Y02HX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: U0232; Lost Communication with Blind Spot Monitor Slave Module; 2016 MY Tacoma [08/2015 -]		

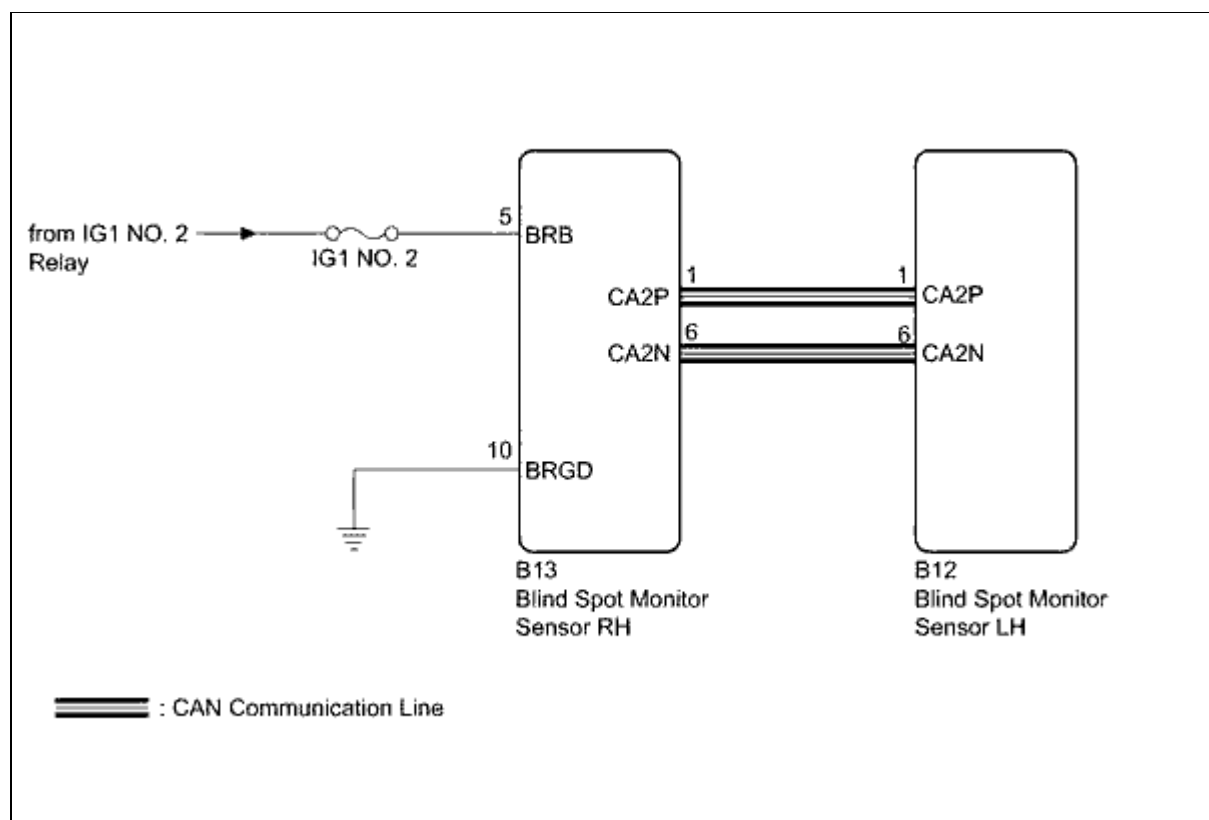
DTC	U0232	Lost Communication with Blind Spot Monitor Slave Module
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DESCRIPTION

This DTC is stored when the blind spot monitor sensor LH judges that there is a communication problem with the blind spot monitor sensor RH.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
U0232	The blind spot monitor sensor LH cannot receive signals from the blind spot monitor sensor RH.	• CAN communication Line • Harness or connector • Blind spot monitor sensor LH • Blind spot monitor sensor RH

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.
- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.

CHECK HARNESS AND CONNECTOR (BLIND SPOT MONITOR SENSOR LH - BLIND SPOT MONITOR SENSOR RH)

- (a) Disconnect the B12 blind spot monitor sensor LH connector.
- (b) Disconnect the B13 blind spot monitor sensor RH connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
B12-1 (CA2P) - B13-1 (CA2P)	Always	Below 1 Ω
B12-6 (CA2N) - B13-6 (CA2N)	Always	Below 1 Ω

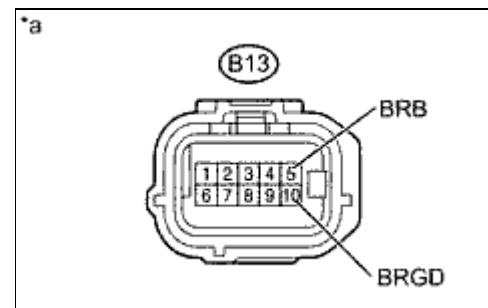
NG ► REPAIR OR REPLACE CAN LINE OR CONNECTOR

OK

2.

CHECK HARNESS AND CONNECTOR (BLIND SPOT MONITOR SENSOR RH - BATTERY AND BODY GROUND)

- (a) Disconnect the blind spot monitor sensor RH connector.



- (b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
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TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
B13-5 (BLB) - Body ground	Ignition switch ON	11 to 14 V
	Ignition switch off	Below 1 V

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
B13-10 (BRGD) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to Blind Spot Monitor Sensor RH)
----	---

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



3.	CHECK BLIND SPOT MONITOR SENSOR RH
-----------	---

(a) Replace the blind spot monitor sensor RH with a new or normally functioning one  .

(b) Clear the DTCs  .

(c) Recheck for DTCs and check if the same DTC is output again  .

OK:

No DTCs are output.

NG  **REPLACE BLIND SPOT MONITOR SENSOR LH**

OK  **END (BLIND SPOT MONITOR SENSOR RH WAS DEFECTIVE)**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000004S2X02DX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: BLIND SPOT MONITOR SYSTEM: U1331; Software Incompatibility with Body Control Module "B"; 2016 MY Tacoma [08/2015 -]		

DTC	U1331	Software Incompatibility with Body Control Module "B"
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DESCRIPTION

This DTC is stored when the destination information of the main body ECU (multiplex network body ECU) does not match that of the blind spot monitor sensors.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
U1331	Destination information of the main body ECU (driver side junction block assembly) and blind spot monitor sensor do not match.	• Main body ECU (multiplex network body ECU) • Blind spot monitor sensor LH • Blind spot monitor sensor RH

INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch assembly (warning canceling switch assembly) is on.

PROCEDURE

1.	CONFIRM PART NUMBER (MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU))
-----------	---

(a) Check the main body ECU (multiplex network body ECU) part number.

(1) Check if the part number of the main body ECU (multiplex network body ECU) installed on the vehicle is correct.

OK:

The part number is correct.

NG  **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**

OK



2. CHECK DTC

- (a) Clear the DTCs  .
- (b) Recheck for DTCs and check if the same DTC is output again.

Result

RESULT	PROCEED TO
No DTC is output	A
DTC is output from the blind spot monitor sensor LH (master)	B
DTC is output from the blind spot monitor sensor RH (slave)	C

B ► REPLACE BLIND SPOT MONITOR SENSOR LH

C ► REPLACE BLIND SPOT MONITOR SENSOR RH

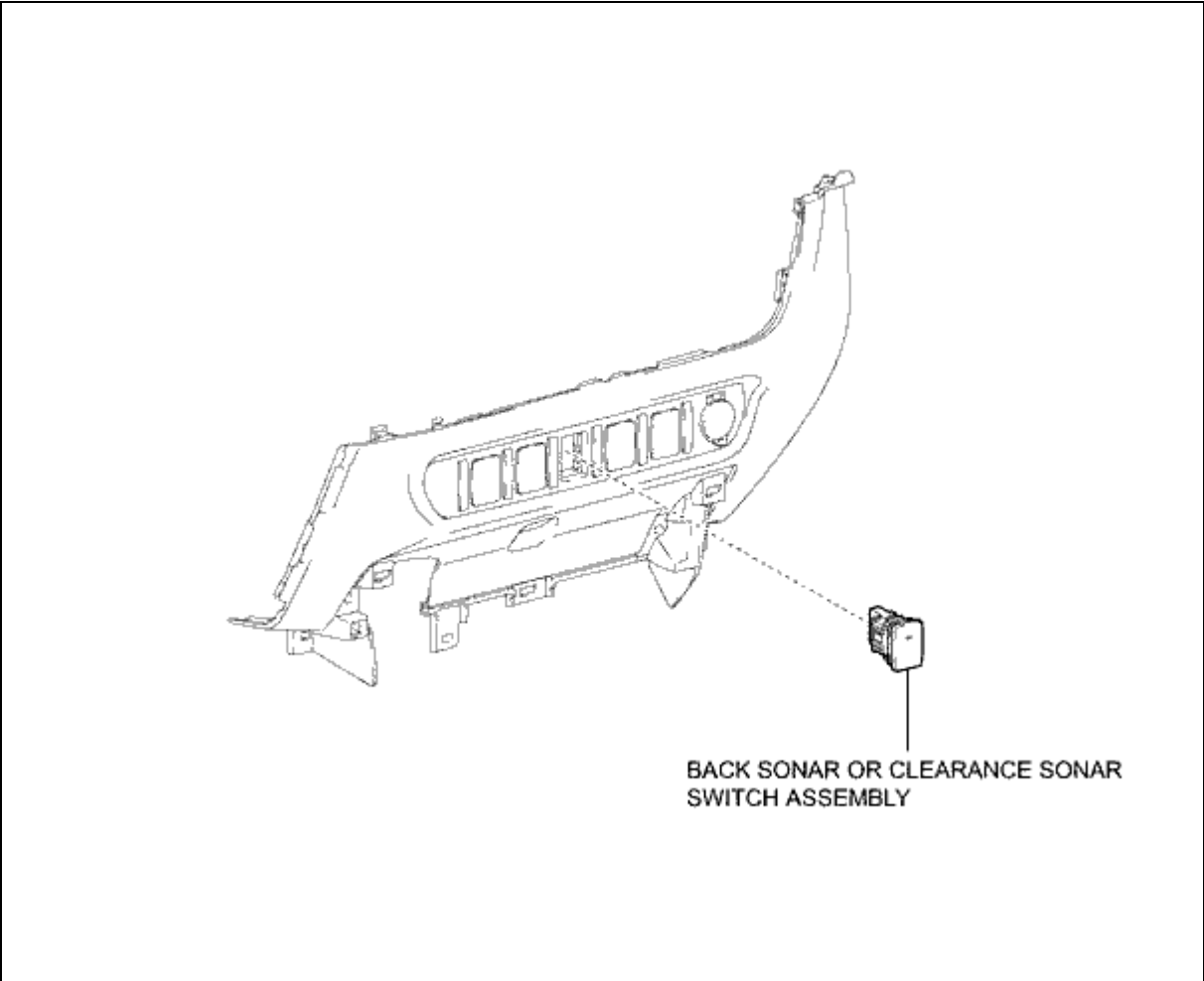
A ► USE SIMULATION METHOD TO CHECK



Last Modified: 11-13-2015	6.6 K	Doc ID: RM0000017EH00KX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: CLEARANCE SONAR MAIN SWITCH: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION



Last Modified: 11-13-2015	6.6 G	Doc ID: RM00000316S00RX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: CLEARANCE SONAR MAIN SWITCH: INSPECTION; 2016 MY Tacoma [08/2015 -]		

INSPECTION

1. INSPECT BACK SONAR OR CLEARANCE SONAR SWITCH ASSEMBLY

(a) Check the resistance.

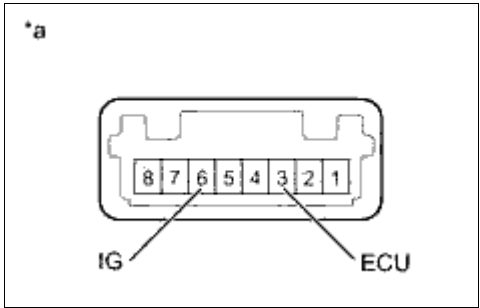
(1) Measure the resistance according to the value(s) in the table below.

Text in Illustration

*a	Component without harness connected: (Back sonar or clearance sonar switch assembly)
----	---

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
3 (ECU) - 6 (IG)	Sonar switch off	10 kΩ or higher
	Sonar switch on	Below 1 Ω



If the result is not as specified, replace the back sonar or clearance sonar switch assembly.

(b) Check the illumination operation.

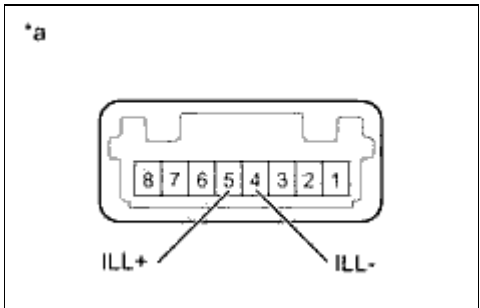
(1) Apply battery voltage to the back sonar or clearance sonar switch assembly and check that the switch illuminates.

Text in Illustration

*a	Component without harness connected: (Back sonar or clearance sonar switch assembly)
----	---

OK

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → Terminal 5 (ILL+)	Illuminates
Battery negative (-) → Terminal 4 (ILL-)	



If the result is not as specified, replace the back sonar or clearance sonar switch assembly.



Last Modified: 11-13-2015	6.6 A	Doc ID: RM0000017EG00LX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: CLEARANCE SONAR MAIN SWITCH: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

1. INSTALL BACK SONAR OR CLEARANCE SONAR SWITCH ASSEMBLY

(a) Engage the 2 claws to install the back sonar or clearance sonar switch assembly.

2. INSTALL INSTRUMENT PANEL LOWER CENTER FINISH PANEL



Last Modified: 11-13-2015	6.6 A	Doc ID: RM0000017EI00KX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: CLEARANCE SONAR MAIN SWITCH: REMOVAL; 2016 MY Tacoma [08/2015 -]		

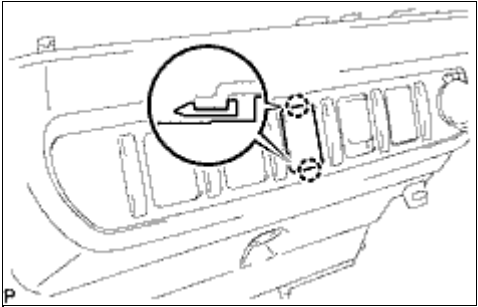
REMOVAL

1. REMOVE INSTRUMENT PANEL LOWER CENTER FINISH PANEL

INFO

2. REMOVE BACK SONAR OR CLEARANCE SONAR SWITCH ASSEMBLY

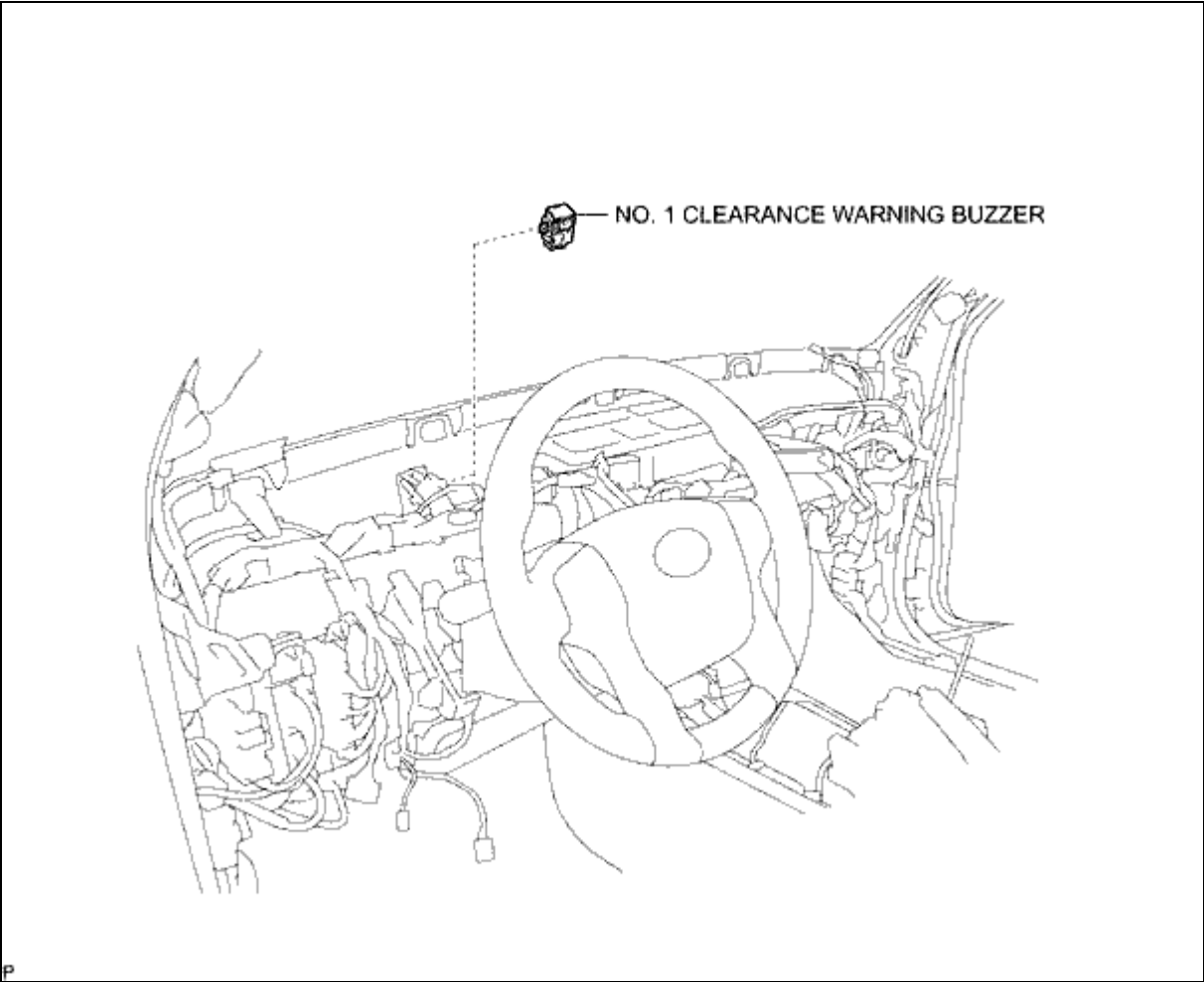
- (a) Disengage the 2 claws to remove the back sonar or clearance sonar switch assembly.



Last Modified: 11-13-2015	6.6 K	Doc ID: RM000003WB202HX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING BUZZER: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION



P



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000001PZH0BWX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING BUZZER: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

1. INSTALL NO. 1 CLEARANCE WARNING BUZZER

- (a) Connect the connector.
- (b) Engage the clamp to install the No. 1 clearance warning buzzer.

2. INSTALL INSTRUMENT PANEL SUB-ASSEMBLY



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000001PZJ0BVX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING BUZZER: REMOVAL; 2016 MY Tacoma [08/2015 -]		

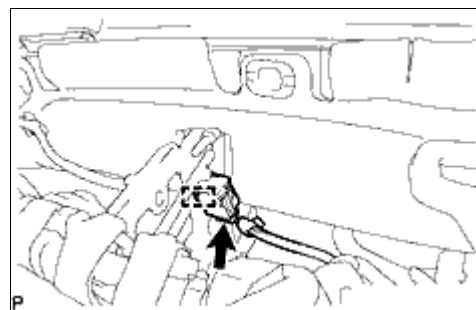
REMOVAL

1. REMOVE INSTRUMENT PANEL SUB-ASSEMBLY

INFO

2. REMOVE NO. 1 CLEARANCE WARNING BUZZER

(a) Disengage the clamp.



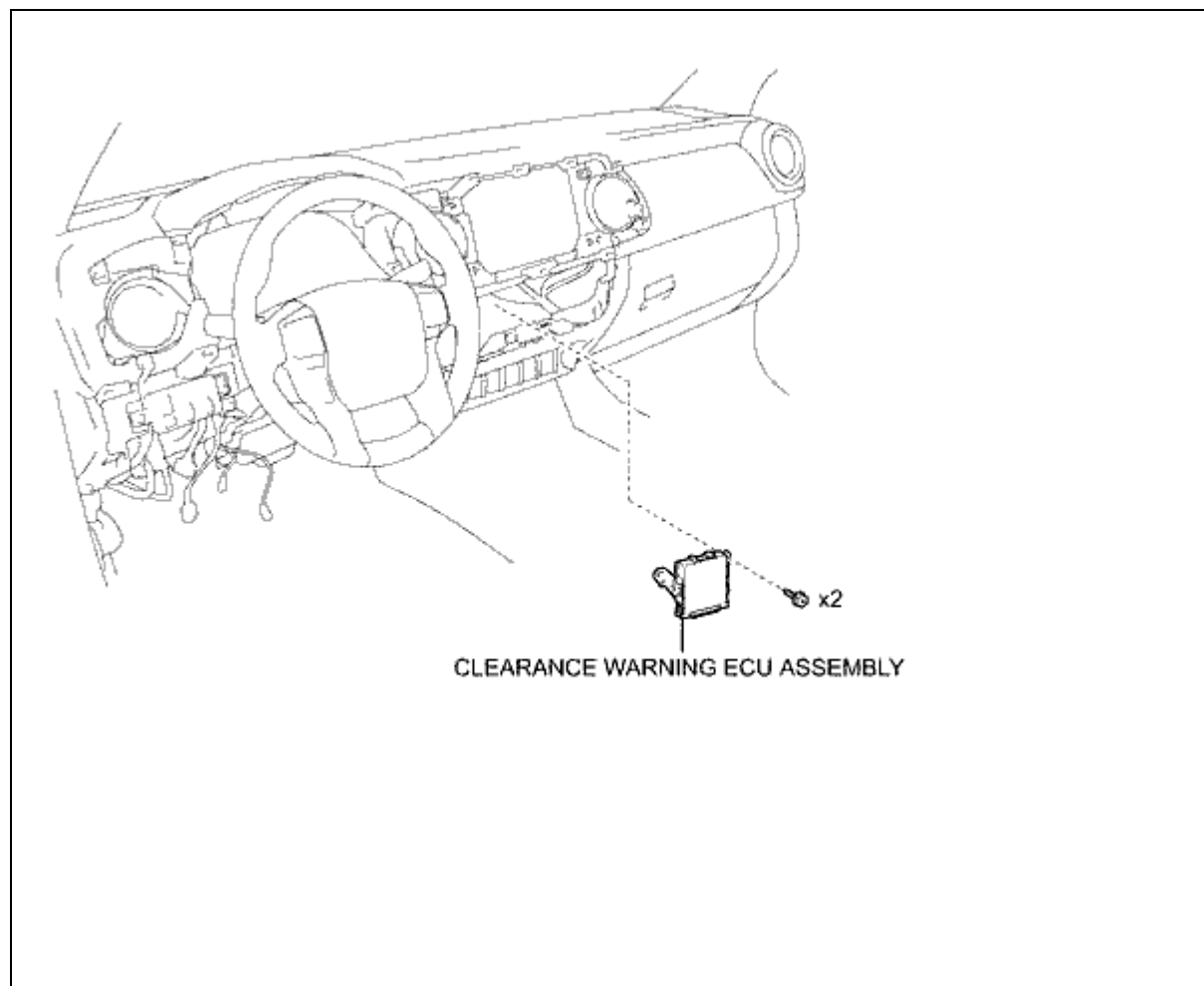
(b) Disconnect the connector to remove the No. 1 clearance warning buzzer.



Last Modified: 11-13-2015	6.6 K	Doc ID: RM000002ZOG00BX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING ECU: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000002ZOF00BX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING ECU: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

1. INSTALL CLEARANCE WARNING ECU ASSEMBLY

- (a) Connect the connector.
- (b) Engage the 2 guides to install the clearance warning ECU assembly.
- (c) Install the 2 screws.

2. INSTALL AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)

INFO

3. INSTALL AIR CONDITIONING CONTROL ASSEMBLY (for Manual Air Conditioning System)

INFO



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000002ZOH00BX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING ECU: REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

1. REMOVE AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)

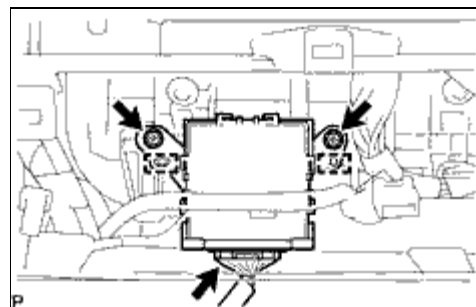
INFO

2. REMOVE AIR CONDITIONING CONTROL ASSEMBLY (for Manual Air Conditioning System)

INFO

3. REMOVE CLEARANCE WARNING ECU ASSEMBLY

(a) Remove the 2 screws.



(b) Disengage the 2 guides to separate the clearance warning ECU assembly.

(c) Disconnect the connector to remove the clearance warning ECU assembly.



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002KST069X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: C1AE6; Rear Left Sensor Malfunction; 2016 MY Tacoma [08/2015 -]		

DTC	C1AE6	Rear Left Sensor Malfunction
------------	--------------	-------------------------------------

DESCRIPTION

The No. 1 ultrasonic sensor (rear corner sensor LH) is installed on the rear bumper. The ECU detects obstacles based on signals received from the No. 1 ultrasonic sensor (rear corner sensor LH). If the No. 1 ultrasonic sensor (rear corner sensor LH) has an open circuit or other malfunction, it will not function normally.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C1AE6	A malfunction of the No. 1 ultrasonic sensor (rear corner sensor LH).	- No. 1 ultrasonic sensor (rear corner sensor LH) - Clearance warning ECU assembly

INSPECTION PROCEDURE

NOTICE:

If DTCs are output after repairs, turn the ignition switch to ON and turn the back sonar or clearance sonar switch assembly on. Then clear the DTCs .

PROCEDURE

1.	CHECK DTC OUTPUT
-----------	-------------------------

(a) Check for DTCs .

Result

RESULT	PROCEED TO
Only DTC C1AE6 is output	A
DTC C1AE6 and C1AED are output	B
No DTCs are output	C

B  **GO TO DTC (C1AED)**

C  **USE SIMULATION METHOD TO CHECK**

A



2.	REPLACE NO. 1 ULTRASONIC SENSOR (REAR CORNER SENSOR LH)
----	---

(a) Replace the No. 1 ultrasonic sensor (rear corner sensor LH) with a known good one [INFO](#) .

HINT:

All of the sensors are interchangeable. To confirm whether a sensor is functioning normally, switch it with a known good sensor from the other end of the vehicle.

NEXT



3.	CHECK DTC OUTPUT
----	------------------

(a) Clear the DTCs [INFO](#) .

(b) Check for DTCs [INFO](#) .

Result

RESULT	PROCEED TO
No DTCs are output	OK
DTC C1AE6 is output	NG

NG REPLACE CLEARANCE WARNING ECU ASSEMBLY

OK END (REAR CORNER SENSOR LH WAS DEFECTIVE)



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002KSU066X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: C1AE7; Rear Left Center Sensor Malfunction; 2016 MY Tacoma [08/2015 -]		

DTC	C1AE7	Rear Left Center Sensor Malfunction
------------	--------------	--

DESCRIPTION

The No. 1 ultrasonic sensor (rear center sensor LH) is installed on the rear bumper. The ECU detects obstacles based on signals received from the No. 1 ultrasonic sensor (rear center sensor LH). If the No. 1 ultrasonic sensor (rear center sensor LH) has an open circuit or other malfunction, it will not function normally.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C1AE7	A malfunction of the No. 1 ultrasonic sensor (rear center sensor LH).	- No. 1 ultrasonic sensor (rear center sensor LH) - Clearance warning ECU assembly

INSPECTION PROCEDURE

NOTICE:

If DTCs are output after repairs, turn the ignition switch to ON and turn the back sonar or clearance sonar switch assembly on. Then clear the DTCs .

PROCEDURE

1.	CHECK DTC OUTPUT
-----------	-------------------------

(a) Check for DTCs .

Result

RESULT	PROCEED TO
Only DTC C1AE7 is output	A
DTC C1AE7 and C1AED are output	B
No DTCs are output	C

B  **GO TO DTC (C1AED)**

C  **USE SIMULATION METHOD TO CHECK**

A



2.	REPLACE NO. 1 ULTRASONIC SENSOR (REAR CENTER SENSOR LH)
----	---

(a) Replace the No. 1 ultrasonic sensor (rear center sensor LH) with a known good one [INFO](#) .

HINT:

All of the sensors are interchangeable. To confirm whether a sensor is functioning normally, switch it with a known good sensor from the other end of the vehicle.

NEXT



3.	CHECK DTC OUTPUT
----	------------------

(a) Clear the DTCs [INFO](#) .

(b) Check for DTCs [INFO](#) .

Result

RESULT	PROCEED TO
No DTCs are output	OK
DTC C1AE7 is output	NG

NG REPLACE CLEARANCE WARNING ECU ASSEMBLY

OK END (REAR CENTER SENSOR LH WAS DEFECTIVE)



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002KSV066X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: C1AE8; Rear Right Center Sensor Malfunction; 2016 MY Tacoma [08/2015 -]		

DTC	C1AE8	Rear Right Center Sensor Malfunction
------------	--------------	---

DESCRIPTION

The No. 1 ultrasonic sensor (rear center sensor RH) is installed on the rear bumper. The ECU detects obstacles based on signals received from the No. 1 ultrasonic sensor (rear center sensor RH). If the No. 1 ultrasonic sensor (rear center sensor RH) has an open circuit or other malfunction, it will not function normally.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C1AE8	A malfunction of the No. 1 ultrasonic sensor (rear center sensor RH).	- No. 1 ultrasonic sensor (rear center sensor RH) - Clearance warning ECU assembly

INSPECTION PROCEDURE

NOTICE:

If DTCs are output after repairs, turn the ignition switch to ON and turn the back sonar or clearance sonar switch assembly on. Then clear the DTCs .

PROCEDURE

1.	CHECK DTC OUTPUT
-----------	-------------------------

(a) Check for DTCs .

Result

RESULT	PROCEED TO
Only DTC C1AE8 is output	A
DTC C1AE8 and C1AED are output	B
No DTCs are output	C

B  **GO TO DTC (C1AED)**

C  **USE SIMULATION METHOD TO CHECK**

A



2.	REPLACE NO. 1 ULTRASONIC SENSOR (REAR CENTER SENSOR RH)
----	---

(a) Replace the No. 1 ultrasonic sensor (rear center sensor RH) with a known good one [INFO](#) .

HINT:

All of the sensors are interchangeable. To confirm whether a sensor is functioning normally, switch it with a known good sensor from the other end of the vehicle.

NEXT



3.	CHECK DTC OUTPUT
----	------------------

(a) Clear the DTCs [INFO](#) .

(b) Check for DTCs [INFO](#) .

Result

RESULT	PROCEED TO
No DTCs are output	OK
DTC C1AE8 is output	NG

NG REPLACE CLEARANCE WARNING ECU ASSEMBLY

OK END (REAR CENTER SENSOR RH WAS DEFECTIVE)



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002KSW069X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: C1AE9; Rear Right Sensor Malfunction; 2016 MY Tacoma [08/2015 -]		

DTC	C1AE9	Rear Right Sensor Malfunction
------------	--------------	--------------------------------------

DESCRIPTION

The No. 1 ultrasonic sensor (rear corner sensor RH) is installed on the rear bumper. The ECU detects obstacles based on signals received from the No. 1 ultrasonic sensor (rear corner sensor RH). If the No. 1 ultrasonic sensor (rear corner sensor RH) has an open circuit or other malfunction, it will not function normally.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C1AE9	A malfunction of the No. 1 ultrasonic sensor (rear corner sensor RH).	- No. 1 ultrasonic sensor (rear corner sensor RH) - Clearance warning ECU assembly

INSPECTION PROCEDURE

NOTICE:

If DTCs are output after repairs, turn the ignition switch to ON and turn the back sonar or clearance sonar switch assembly on. Then clear the DTCs .

PROCEDURE

1.	CHECK DTC OUTPUT
-----------	-------------------------

(a) Check for DTCs .

Result

RESULT	PROCEED TO
Only DTC C1AE9 is output	A
DTC C1AE9 and C1AED are output	B
No DTCs are output	C

B  **GO TO DTC (C1AED)**

C  **USE SIMULATION METHOD TO CHECK**

A



2.	REPLACE NO. 1 ULTRASONIC SENSOR (REAR CORNER SENSOR RH)
----	---

(a) Replace the No. 1 ultrasonic sensor (rear corner sensor RH) with a known good one [INFO](#) .

HINT:

All of the sensors are interchangeable. To confirm whether a sensor is functioning normally, switch it with a known good sensor from the other end of the vehicle.

NEXT



3.	CHECK DTC OUTPUT
----	------------------

(a) Clear the DTCs [INFO](#) .

(b) Check for DTCs [INFO](#) .

Result

RESULT	PROCEED TO
No DTCs are output	OK
DTC C1AE9 is output	NG

NG REPLACE CLEARANCE WARNING ECU ASSEMBLY

OK END (REAR CORNER SENSOR RH WAS DEFECTIVE)



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000003N4V051X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: C1AED; Rear Sensor Communication Malfunction; 2016 MY Tacoma [08/2015 -]		

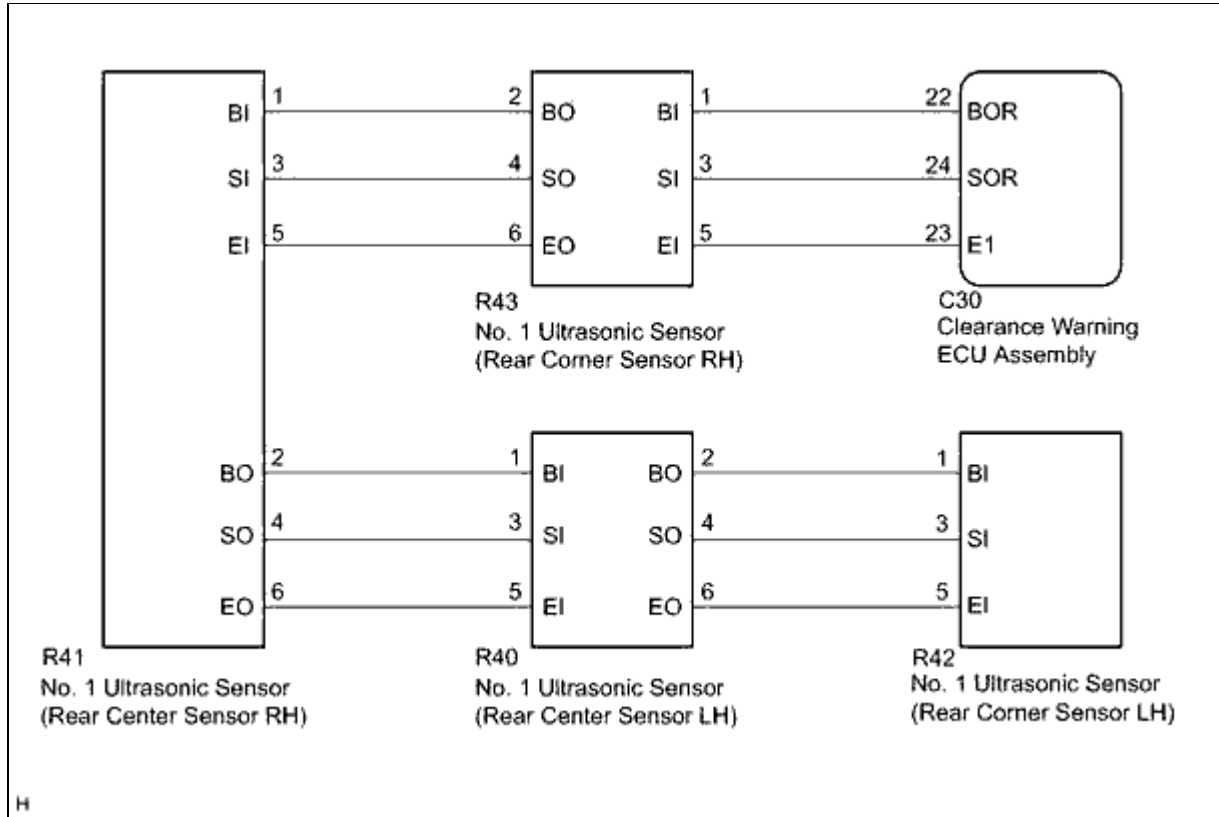
DTC	C1AED	Rear Sensor Communication Malfunction
------------	--------------	--

DESCRIPTION

This DTC is stored when there is an open or short circuit in the communication line between the rear sensors and the ECU, or when there is a malfunction in a rear sensor.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C1AED	An open or short circuit in the communication line between the rear sensors and ECU or a malfunction in a rear sensor during initialization mode after the ignition switch is turned ON.	• Rear ultrasonic sensor circuit • Clearance warning ECU assembly

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1. CHECK DTC OUTPUT (C1AED)

- (a) Check for DTCs  .
- (b) Clear the DTCs  .
- (c) Recheck for DTCs  .

Result

RESULT	PROCEED TO
DTC C1AED is output	A
No DTCs are output	B

B USE SIMULATION METHOD TO CHECK

A



2. CHECK HARNESS AND CONNECTOR (CLEARANCE WARNING ECU ASSEMBLY - REAR CORNER SENSOR RH)

- (a) Disconnect the C30 connector from the clearance warning ECU assembly.
- (b) Disconnect the R43 connector from the No. 1 ultrasonic sensor.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
C30-22 (BOR) - R43-1 (BI)	Always	Below 1 Ω
C30-24 (SOR) - R43-3 (SI)		
C30-23 (E1) - R43-5 (EI)		
C30-22 (BOR) - Body ground		10 k Ω or higher
C30-24 (SOR) - Body ground		
C30-23 (E1) - Body ground		

NG REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3.	CHECK HARNESS AND CONNECTOR (REAR CORNER SENSOR RH - REAR CENTER SENSOR RH)
-----------	--

(a) Disconnect the R43 and R41 connectors from the No. 1 ultrasonic sensors.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R43-2 (BO) - R41-1 (BI)	Always	Below 1 Ω
R43-4 (SO) - R41-3 (SI)		
R43-6 (EO) - R41-5 (EI)		
R43-2 (BO) - Body ground		10 k Ω or higher
R43-4 (SO) - Body ground		
R43-6 (EO) - Body ground		

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

4.	CHECK HARNESS AND CONNECTOR (REAR CENTER SENSOR RH - REAR CENTER SENSOR LH)
-----------	--

(a) Disconnect the R41 and R40 connectors from the No. 1 ultrasonic sensors.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R41-2 (BO) - R40-1 (BI)	Always	Below 1 Ω
R41-4 (SO) - R40-3 (SI)		
R41-6 (EO) - R40-5 (EI)		
R41-2 (BO) - Body ground		10 k Ω or higher
R41-4 (SO) - Body ground		

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R41-6 (EO) - Body ground		

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



5.	CHECK HARNESS AND CONNECTOR (REAR CENTER SENSOR LH - REAR CORNER SENSOR LH)
-----------	--

(a) Disconnect the R40 and R42 connectors from the No. 1 ultrasonic sensors.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R40-2 (BO) - R42-1 (BI)	Always	Below 1 Ω
R40-4 (SO) - R42-3 (SI)		
R40-6 (EO) - R42-5 (EI)		
R40-2 (BO) - Body ground		10 k Ω or higher
R40-4 (SO) - Body ground		
R40-6 (EO) - Body ground		

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



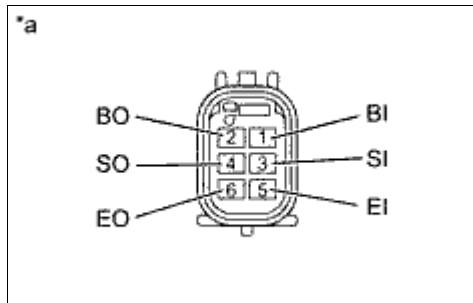
6.	INSPECT NO. 1 ULTRASONIC SENSOR (REAR CORNER SENSOR RH)
-----------	--

(a) Remove the No. 1 ultrasonic sensor (rear corner sensor RH)  .

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 (BI) - 5 (EI)	Always	10 k Ω or higher
1 (BI) - 2 (BO)		
3 (SI) - 4 (SO)		Below 1 Ω
5 (EI) - 6 (EO)		



Text in Illustration

*a	Component without harness connected (No. 1 Ultrasonic Sensor (Rear Corner Sensor RH))
----	--

NG  **REPLACE NO. 1 ULTRASONIC SENSOR (REAR CORNER SENSOR RH)**

OK



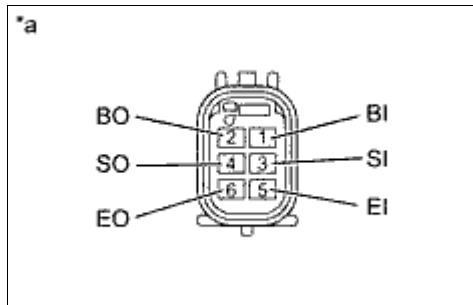
7.	INSPECT NO. 1 ULTRASONIC SENSOR (REAR CENTER SENSOR RH)
-----------	--

(a) Remove the No. 1 ultrasonic sensor (rear center sensor RH)  .

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 (BI) - 5 (EI)	Always	10 k Ω or higher
1 (BI) - 2 (BO)		
3 (SI) - 4 (SO)		Below 1 Ω
5 (EI) - 6 (EO)		



Text in Illustration

*a	Component without harness connected (No. 1 Ultrasonic Sensor (Rear Center Sensor RH))
----	--

NG▶ REPLACE NO. 1 ULTRASONIC SENSOR (REAR CENTER SENSOR RH)

OK
▼

8.

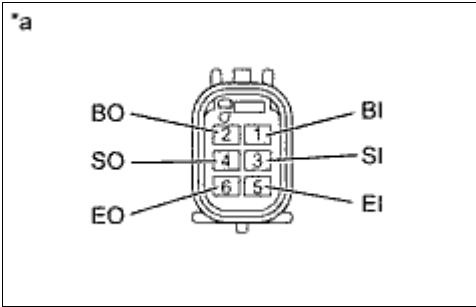
INSPECT NO. 1 ULTRASONIC SENSOR (REAR CENTER SENSOR LH)

(a) Remove the No. 1 ultrasonic sensor (rear center sensor LH) INFO .

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 (BI) - 5 (EI)	Always	10 kΩ or higher
1 (BI) - 2 (BO)		
3 (SI) - 4 (SO)		Below 1 Ω
5 (EI) - 6 (EO)		



Text in Illustration

*a	Component without harness connected (No. 1 Ultrasonic Sensor (Rear Center Sensor LH))
----	--

NG▶ REPLACE NO. 1 ULTRASONIC SENSOR (REAR CENTER SENSOR LH)

OK
▼

9.

REPLACE NO. 1 ULTRASONIC SENSOR (REAR CORNER SENSOR RH) INFO

NEXT
▼

10.

CHECK DTC OUTPUT (C1AED)

(a) Clear the DTCs [INFO](#) .

(b) Check for DTCs [INFO](#) .

Result

RESULT	PROCEED TO
DTC C1AED is output	A
No DTCs are output	B

B  **END (REAR CORNER SENSOR RH WAS DEFECTIVE)**

A



11.	REPLACE NO. 1 ULTRASONIC SENSOR (REAR CENTER SENSOR RH) INFO
------------	---

NEXT



12.	CHECK DTC OUTPUT (C1AED)
------------	---------------------------------

(a) Clear the DTCs [INFO](#) .

(b) Check for DTCs [INFO](#) .

Result

RESULT	PROCEED TO
DTC C1AED is output	A
No DTCs are output	B

B  **END (REAR CENTER SENSOR RH WAS DEFECTIVE)**

A



13.	REPLACE NO. 1 ULTRASONIC SENSOR (REAR CENTER SENSOR LH) INFO
------------	---

NEXT

14.	CHECK DTC OUTPUT (C1AED)
------------	---------------------------------

(a) Clear the DTCs [INFO](#) .

(b) Check for DTCs [INFO](#) .

Result

RESULT	PROCEED TO
DTC C1AED is output	A
No DTCs are output	B

B **END (REAR CENTER SENSOR LH WAS DEFECTIVE)**

A

15.	REPLACE NO. 1 ULTRASONIC SENSOR (REAR CORNER SENSOR LH) INFO
------------	---

NEXT

16.	CHECK DTC OUTPUT (C1AED)
------------	---------------------------------

(a) Clear the DTCs [INFO](#) .

(b) Check for DTCs [INFO](#) .

Result

RESULT	PROCEED TO
DTC C1AED is output	A
No DTCs are output	B

B **END (REAR CORNER SENSOR LH WAS DEFECTIVE)**

A ▶ REPLACE CLEARANCE WARNING ECU ASSEMBLY



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000004NOQ01MX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: CUSTOMIZE PARAMETERS; 2016 MY Tacoma [08/2015 -]		

CUSTOMIZE PARAMETERS

1. CUSTOMIZE INTUITIVE PARKING ASSIST SYSTEM

(a) Customizing with the Techstream

NOTICE:

- When the customer requests a change in a function, first make sure that the function can be customized.
- Be sure to make a note of the current settings before customizing.
- When troubleshooting a function, first make sure that the function is set to the default setting.

- (1) Connect the Techstream to the DLC3.
- (2) Turn the ignition switch to ON.
- (3) Turn the back sonar or clearance sonar switch assembly on.
- (4) Turn the Techstream on.
- (5) Enter the following menus: Body Electrical / Utility / Customize / Sensor
- (6) Select the setting by referring to the table below.

Warning

DISPLAY	DEFAULT	CONTENT	SETTING	RELEVANT ECU
Rr Sensor Onset Range	Wide	Sets the buzzer activation range for the rear center sensors.	Narrow or Wide • Narrow: 1000 mm (39.3 in.) • Wide: 1400 mm (55.1 in.) (Pole) • Wide: 1800 mm (70.9 in.) (Wall)	Clearance warning ECU assembly
Keep Sense Buzzer	Avail	Sounds the buzzer when the distance between the vehicle and obstacle does not change for more than 3 seconds.	Not Avail or Avail • Not Avail: Not Available • Avail: Available	Clearance warning ECU assembly
Fr & Rr Buzzer Volume	M2	Changes the buzzer volume setting.	L, M1, M2, M3 or H • L: Low volume • M1: Medium low volume • M2: Medium volume • M3: Medium high volume • H: High volume	Clearance warning ECU assembly

Sensor

DISPLAY	DEFAULT	CONTENT	SETTING	RELEVANT ECU
Sensor Condition N	Avail	Makes the front sensors available when the shift lever is in N.	Not Avail or Avail • Not Avail: Not Available • Avail: Available	Clearance warning ECU assembly
Non P/R Range Rear Sensor	R Stop	Changes the operation setting for the rear sensors when the shift lever is in any position other than P or R.	R, Rcrn or R Stop • R: All rear sensors are available • Rcrn: Rear corner sensors are available • R Stop: All rear sensors are not available	Clearance warning ECU assembly



Last Modified: 11-13-2015	6.6 J	Doc ID: X394000006908TJ
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: Clearance Sonar Main Switch Circuit; 2016 MY Tacoma [08/2015 -]		

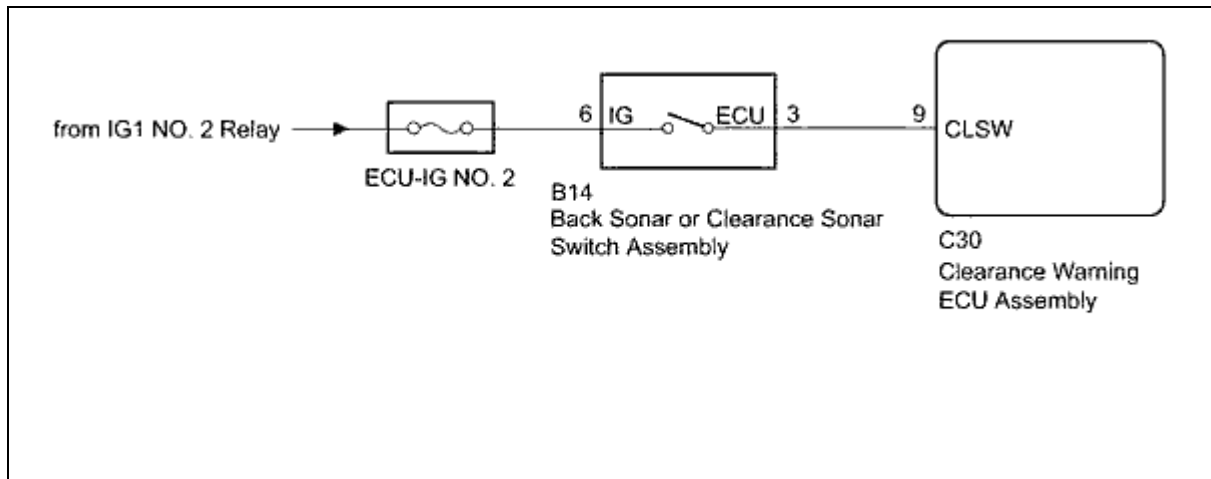
Clearance Sonar Main Switch Circuit

DESCRIPTION

The back sonar or clearance sonar switch assembly is installed at the base of the driver side of the instrument panel.

When the back sonar or clearance sonar switch assembly is turned on, an on signal is sent to the clearance warning ECU assembly. The intuitive parking assist system operates according to this signal.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuse for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.	READ VALUE USING TECHSTREAM
-----------	------------------------------------

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Intuitive P/A / Data List.
- According to the display on the Techstream, read the Data List.

Intuitive P/A

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Main Switch	Back sonar or clearance sonar switch assembly/OFF or ON	OFF: Back sonar or clearance sonar switch assembly off ON: Back sonar or clearance sonar switch assembly on	-
Intuitive P/A ECU Type	Type of intuitive P/A ECU/Normal	Normal: Normal clearance sonar type	-

Result

RESULT	PROCEED TO
Both of the following conditions are met: • The display changes as shown above when the back sonar or clearance sonar switch assembly is operated. • "Normal" is displayed.	A
"Normal" is not displayed.	B
Both of the following conditions are met: • The display does not change as shown above when the back sonar or clearance sonar switch assembly is operated. • "Normal" is displayed.	C

B ► REPLACE CLEARANCE WARNING ECU ASSEMBLY

C ► GO TO STEP 2

A ► PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE

2.	INSPECT BACK SONAR OR CLEARANCE SONAR SWITCH ASSEMBLY
-----------	--

(a) Remove the back sonar or clearance sonar switch assembly  .

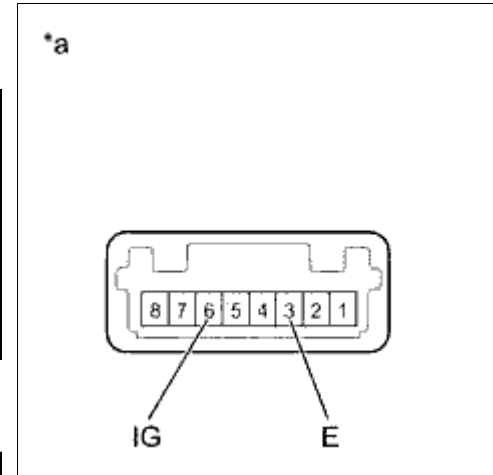
(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
6 (IG) - 3 (ECU)	Back sonar or clearance sonar switch assembly on	Below 1 Ω
6 (IG) - 3 (ECU)	Back sonar or clearance sonar switch assembly off	10 k Ω or higher

Text in Illustration

*a	Component without harness connected (Back Sonar or Clearance Sonar Switch Assembly)
----	--



NG **REPLACE BACK SONAR OR CLEARANCE SONAR SWITCH ASSEMBLY**

OK



3.	CHECK HARNESS AND CONNECTOR (BACK SONAR OR CLEARANCE SONAR SWITCH ASSEMBLY POWER SOURCE)
----	---

(a) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
B14-6 (IG) - Body ground	Ignition switch ON	11 to 14 V
B14-6 (IG) - Body ground	Ignition switch off	Below 1 V

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



4.	CHECK HARNESS AND CONNECTOR (BACK SONAR OR CLEARANCE SONAR SWITCH ASSEMBLY - CLEARANCE WARNING ECU ASSEMBLY)
----	---

(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
C30-9 (CLSW) - B14-3 (ECU)	Always	Below 1 Ω
C30-9 (CLSW) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK  **REPLACE CLEARANCE WARNING ECU ASSEMBLY**



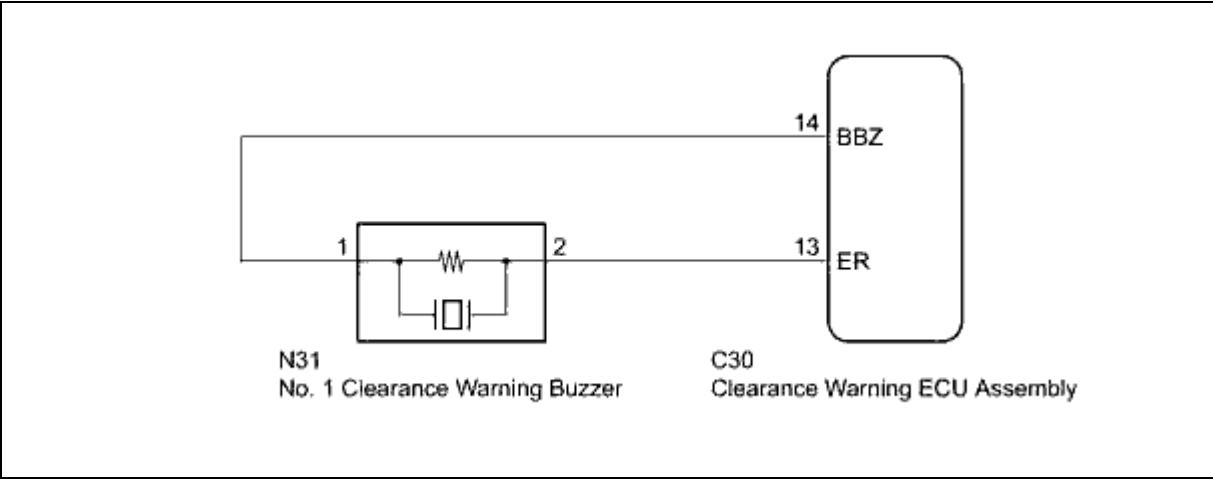
Last Modified: 11-13-2015	6.6 J	Doc ID: X394000006A076J
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: Clearance Warning Buzzer Circuit; 2016 MY Tacoma [08/2015 -]		

Clearance Warning Buzzer Circuit

DESCRIPTION

This circuit consists of the No. 1 clearance warning buzzer and clearance warning ECU assembly. An ECU-excited type buzzer is used. The battery voltage supplied through the buzzer is grounded inside the clearance warning ECU assembly using a pulsed digital pattern, producing sound. The ECU operates the buzzer using a sound pattern that changes depending on the distance to the obstacle.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	PERFORM ACTIVE TEST USING TECHSTREAM
----	--------------------------------------

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Intuitive P/A / Active Test.
- (e) Check that the buzzer operates by performing the Active Test.

Intuitive P/A

TESTER	TEST PART	CONTROL	DIAGNOSTIC NOTE
--------	-----------	---------	-----------------

DISPLAY		RANGE	
Buzzer	No. 1 clearance warning buzzer	Operate or Stop	Confirm that the vehicle is stopped and the ignition switch is ON

OK:

The No. 1 clearance warning buzzer sounds.

NG ► **GO TO STEP 2**

OK ► **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**

2.	CHECK HARNESS AND CONNECTOR (CLEARANCE WARNING ECU ASSEMBLY - NO. 1 CLEARANCE WARNING BUZZER)
-----------	--

- (a) Disconnect the N31 connector from the No. 1 clearance warning buzzer.
- (b) Disconnect the C30 connector from the clearance warning ECU assembly.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
C30-14 (BBZ) - N31-1	Always	Below 1 Ω
C30-13 (ER) - N31-2		
C30-14 (BBZ) - Body ground		10 k Ω or higher
C30-13 (ER) - Body ground		

NG ► **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



3.	REPLACE NO. 1 CLEARANCE WARNING BUZZER
-----------	---

- (a) Replace the No. 1 clearance warning buzzer with a new or known good one INFO.

NEXT



4. PERFORM ACTIVE TEST USING TECHSTREAM

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Intuitive P/A / Active Test.
- (e) Check that the buzzer operates by performing the Active Test.

Intuitive P/A

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Buzzer	No. 1 clearance warning buzzer	Operate or Stop	Confirm that the vehicle is stopped and the ignition switch is ON

OK:

The No. 1 clearance warning buzzer sounds.

NG ► **REPLACE CLEARANCE WARNING ECU ASSEMBLY**

OK ► **END (NO. 1 CLEARANCE WARNING BUZZER WAS DEFECTIVE)**



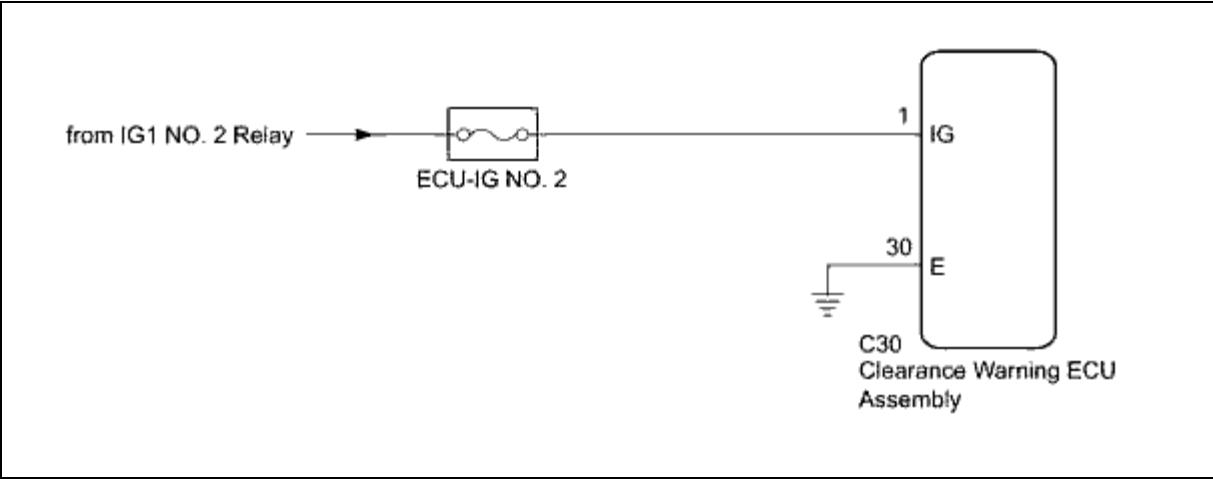
Last Modified: 11-13-2015	6.6 J	Doc ID: RM000000APU0ABX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: Clearance Warning ECU Power Source Circuit; 2016 MY Tacoma [08/2015 -]		

Clearance Warning ECU Power Source Circuit

DESCRIPTION

This circuit provides power to operate the clearance warning ECU assembly.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:
Inspect the fuse for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (CLEARANCE WARNING ECU ASSEMBLY POWER SOURCE)
----	--

- (a) Disconnect the C30 connector from the clearance warning ECU assembly.
 - (b) Measure the voltage according to the value(s) in the table below.
- Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
C30-1 (IG) - Body ground	Ignition switch ON	11 to 14 V
C30-1 (IG) - Body ground	Ignition switch off	Below 1 V

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK


2.	CHECK HARNESS AND CONNECTOR (CLEARANCE WARNING ECU ASSEMBLY - BODY GROUND)
----	---

(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
C30-30 (E) - Body ground	Always	Below 1 Ω

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK  **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**



Last Modified: 11-13-2015	6.6 U	Doc ID: RM0000037KY042X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: DATA LIST / ACTIVE TEST; 2016 MY Tacoma [08/2015 -]		

DATA LIST / ACTIVE TEST

1. DATA LIST

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

HINT:

Using the Techstream to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Intuitive P/A / Data List.
- According to the display on the Techstream, read the Data List.

Intuitive P/A

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Main Switch	Back sonar or clearance sonar switch assembly / OFF or ON	OFF: Back sonar or clearance sonar switch assembly off ON: Back sonar or clearance sonar switch assembly on	-
Intuitive P/A ECU Type	Type of intuitive P/A ECU / Normal	Normal: Normal clearance sonar type	-
Rr Left Sensor	Rear left sensor information / Undetect, Close R, Mid Y, Mid L Y, Freeze, Open or Blink	Undetect: Not detected Close R: Detected (Close-range) Mid Y: Detected (Medium-range) Mid L Y: Detected (Long-range) Freeze: Sensor frozen Open: Open in sensor Blink: All displays blinking	-
Rr Left Center Sensor	Rear left center sensor information / Undetect, Close R, Mid Y, Mid L Y, Long Y, Freeze, Open or Blink	Undetect: Not detected Close R: Detected (Close-range) Mid Y: Detected (Medium-range) Mid L Y: Detected (Long-range) Long Y: Detected (Longest-range) Freeze: Sensor frozen Open: Open in sensor	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
		Blink: All displays blinking	
Rr Right Center Sensor	Rear right center sensor information / Undetect, Close R, Mid Y, Mid L Y, Long Y, Freeze, Open or Blink	Undetect: Not detected Close R: Detected (Close-range) Mid Y: Detected (Medium-range) Mid L Y: Detected (Long-range) Long Y: Detected (Longest-range) Freeze: Sensor frozen Open: Open in sensor Blink: All displays blinking	-
Rr Right Sensor	Rear right sensor information/Undetect, Close R, Mid Y, Mid L Y, Freeze, Open or Blink	Undetect: Not detected Close R: Detected (Close-range) Mid Y: Detected (Medium-range) Mid L Y: Detected (Long-range) Freeze: Sensor frozen Open: Open in sensor Blink: All displays blinking	-
Rr Sensor Onset Range	Buzzer activation range (for rear center sensors) / Narrow or Wide	Narrow: 600 mm (23.6 in.) Wide: 1000 mm (39.4 in.) (Pole) Wide: 1500 mm (59.1 in.) (Wall)	Customized value displayed
Keep Sense Buzzer	Keep sense buzzer operation / Not Avail or Avail	Not Avail: Buzzer stops Avail: Buzzer sounds continuously	Customized value displayed
Fr & Rr Buzzer Volume	Buzzer volume setting / L, M1, M2, M3 or H	L: Low volume M1: Medium low volume M2: Medium volume M3: Medium high volume H: High volume	Customized value displayed
Non P/R Range Rear Sensor	Operation setting for rear sensors (rear center, rear corner) / R, Rcrn or R Stop	R: All rear sensors operate Rcrn: Rear corner sensors operate R Stop: All rear sensors stop	Customized value displayed
Sensor Condition N	Front sensor operation / Not Avail or Avail	Not Avail: Front sensors not available Avail: Front sensors available	Customized value displayed
Display Mode	Display mode setting / All or Undisp	All: Display displays all sensors Undisp: Display does not display	Customized value displayed
Temporary Mute Reset Speed Adjust	Temporary mute reset speed adjustment setting / System Link, 15 km/h, 20 km/h or 30 km/h	System Link: Adjustment will be canceled when vehicle speed 15 km/h (9 mph) or more (when accelerating) or 10 km/h (6 mph) or more (when decelerating) 15 km/h: Adjustment will be canceled when vehicle speed reaches 15 km/h 20 km/h: Adjustment will be canceled when vehicle speed reaches 20 km/h 30 km/h: Adjustment will be canceled when vehicle speed reaches 30 km/h	Customized value displayed

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Temporary Mute Function	Temporary mute function setting / OFF or ON	OFF: Temporary Mute Function not operating ON: Temporary Mute Function operating	Customized value displayed
Parking Signal	Parking signal / OFF or ON	OFF: Shift lever in any position other than P ON: Shift lever in P	-
Reverse Signal	Reverse signal / OFF or ON	OFF: Shift lever in any position other than R ON: Shift lever in R	-
Vehicle Speed Info	Vehicle speed signal / Snr Stop or Snr Work	Snr Stop: Vehicle speed approximately 13 km/h (8.1 mph) or more (when accelerating) or approximately 9 km/h (5.6 mph) or more (when decelerating) Snr Work: Vehicle speed less than approximately 13 km/h (8.1 mph) (when accelerating) or less than approximately 9 km/h (5.6 mph) (when decelerating)	-
Sonar Detection	Sonar detection condition / Stop or Work	Stop: Sonar detection not operating Work: Sonar detection operating	-
Intuitive P/A ECU	ECU information / Normal or Abnormal	Normal: ECU normal Abnormal: ECU not normal	-
Rr Right Freezed History	Rear right sensor frozen history / Not Rec or Recorded	Not Rec: No record history Recorded: Record history	-
Rr Right Center Freezed History	Rear right center sensor frozen history / Not Rec or Recorded	Not Rec: No record history Recorded: Record history	-
Rr Left Center Freezed History	Rear left center sensor frozen history / Not Rec or Recorded	Not Rec: No record history Recorded: Record history	-
Rr Left Freezed History	Rear left sensor frozen history / Not Rec or Recorded	Not Rec: No record history Recorded: Record history	-
AT/MT Recognition	Transmission information / AT or Unknown	AT: Automatic Transmission Unknown: Unknown	-
# Codes	Number of stored trouble codes / min.: 0, max.: 255	Number of DTCs will be displayed	-

2. ACTIVE TEST

HINT:

Using the Techstream to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

- Connect the Techstream to the DLC3.

- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Intuitive P/A / Active Test.
- (e) According to the display on the Techstream, perform the Active Test.

Intuitive P/A

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Buzzer	No. 1 clearance warning buzzer	Operate or Stop	Confirm that the vehicle is stopped and the ignition switch is ON



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: DIAGNOSIS SYSTEM; 2016 MY Tacoma [08/2015 -]		

DIAGNOSIS SYSTEM

1. DESCRIPTION

- (a) When troubleshooting a vehicle with a diagnosis system, the only difference from the usual troubleshooting procedure is connecting the Techstream to the vehicle and reading various data output from the clearance warning ECU assembly.

The clearance warning ECU assembly stores DTCs when the ECU detects a malfunction in the ECU itself or in its circuits.

To check the DTCs, connect the Techstream to the DLC3 on the vehicle. The Techstream makes it possible to clear the DTCs, activate the various actuators, and check the freeze frame data and Data List.

2. CHECK DLC3

- (a) Check the DLC3  .



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: DIAGNOSTIC TROUBLE CODE CHART; 2016 MY Tacoma [08/2015 -]		

DIAGNOSTIC TROUBLE CODE CHART

Intuitive Parking Assist System

DTC CODE	DETECTION ITEM	SEE PAGE
C1AE6	Rear Left Sensor Malfunction	INFO
C1AE7	Rear Left Center Sensor Malfunction	INFO
C1AE8	Rear Right Center Sensor Malfunction	INFO
C1AE9	Rear Right Sensor Malfunction	INFO
C1AED	Rear Sensor Communication Malfunction	INFO
U0100	Lost Communication with ECM / PCM "A"	INFO
U0101	Lost Communication with TCM	INFO
U0142	Lost Communication with Body Control Module "B"	INFO
U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	INFO



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: DTC CHECK / CLEAR; 2016 MY Tacoma [08/2015 -]		

DTC CHECK / CLEAR

1. CHECK DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the back sonar or clearance sonar switch assembly on.
- (d) Turn the Techstream on.
- (e) Enter the following menus: Body Electrical / Intuitive P/A / Trouble Codes.
- (f) Check for DTCs  .

2. CLEAR DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the back sonar or clearance sonar switch assembly on.
- (d) Turn the Techstream on.
- (e) Enter the following menus: Body Electrical / Intuitive P/A / Trouble Codes.
- (f) Clear the DTCs.



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING; 2016 MY Tacoma [08/2015 -]		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedure to troubleshoot the intuitive parking assist system.
- *: Use the Techstream.

1.	VEHICLE BROUGHT TO WORKSHOP
-----------	------------------------------------

NEXT



2.	CUSTOMER PROBLEM ANALYSIS
-----------	----------------------------------

NEXT



3.	INSPECT BATTERY VOLTAGE
-----------	--------------------------------

(a) Measure the battery voltage.

Standard Voltage:

11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to the next step.

NEXT



4.	CHECK CAN COMMUNICATION SYSTEM*
-----------	--

(a) Use the Techstream to check if the CAN communication system is functioning normally  .

Result

RESULT	PROCEED TO
--------	------------

RESULT	PROCEED TO
CAN communication system DTCs are not output	A
CAN communication system DTCs are output	B

B ► **GO TO CAN COMMUNICATION SYSTEM**

A



5.	PROBLEM SYMPTOM CONFIRMATION
-----------	-------------------------------------

NEXT



6.	CHECK DTC*
-----------	-------------------

(a) Check for DTCs INFO.

Result

RESULT	PROCEED TO
DTCs are output	A
DTCs are not output (Problem symptom does not occur)	B
DTCs are not output (Problem symptom occurs)	C

B ► **Go to step 8**

C ► **Go to step 9**

A



7.	DIAGNOSTIC TROUBLE CODE CHART
-----------	--------------------------------------

(a) Refer to Diagnostic Trouble Code Chart INFO.

NEXT ► **Go to step 11**

8. SYMPTOM SIMULATION

(a) Refer to Symptom Simulation [INFO](#) .

NEXT



9. PROBLEM SYMPTOMS TABLE

(a) Refer to Problem Symptoms Table [INFO](#) .

Result

RESULT	PROCEED TO
Fault is not listed in Problem Symptoms Table	A
Fault is listed in Problem Symptoms Table	B

B Go to step 11

A



10. OVERALL ANALYSIS AND TROUBLESHOOTING

(a) Operation Check [INFO](#)

(b) Terminals of ECU [INFO](#)

(c) Data List / Active Test [INFO](#)

NEXT



11. CIRCUIT INSPECTION*

NEXT



12.	IDENTIFICATION OF PROBLEM
-----	---------------------------

NEXT



13.	REPAIR OR REPLACE
-----	-------------------

NEXT



14.	CONFIRMATION TEST*
-----	--------------------

NEXT  **END**

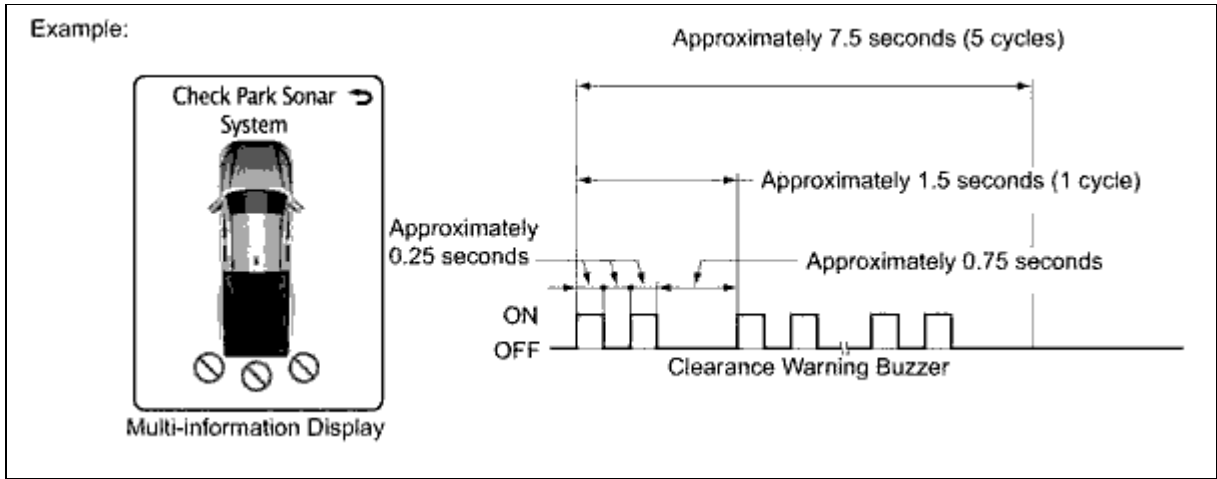


Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000VVD08UX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: OPERATION CHECK; 2016 MY Tacoma [08/2015 -]		

OPERATION CHECK

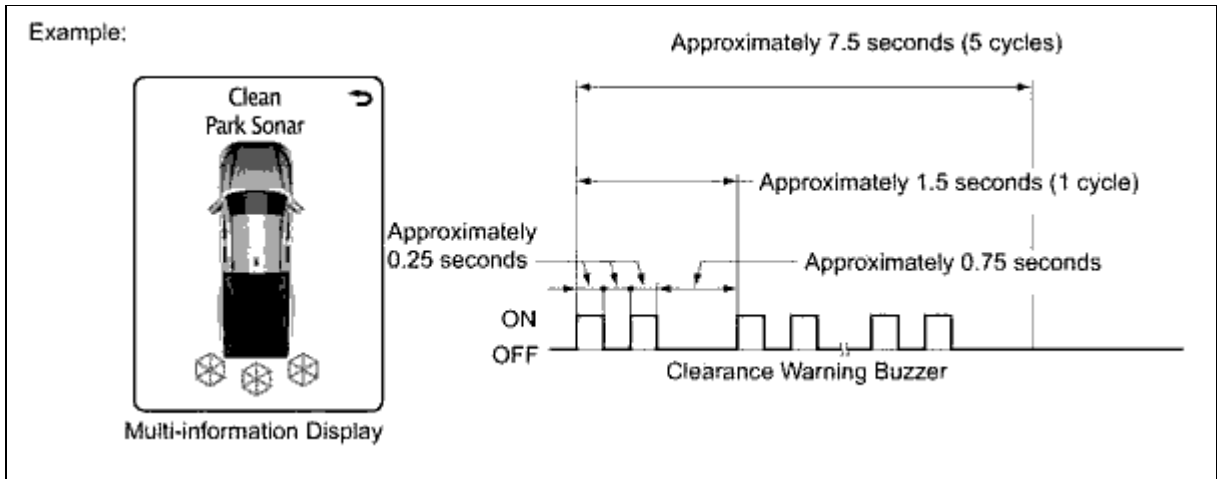
1. MALFUNCTION DISPLAY (MULTI-INFORMATION DISPLAY)

- (a) Open circuit indication
 - (1) If there is an open circuit between a No. 1 ultrasonic sensor and the clearance warning ECU assembly or a sensor is malfunctioning, the malfunction is displayed as shown in the illustration.



HINT:
 If a sensor has an open circuit, check for DTCs and troubleshoot according to each inspection procedure [INFO](#) .

- (b) Frozen indication
 - (1) If a sensor is covered with foreign matter, such as mud or snow, the affected sensor is displayed as shown in the illustration.



HINT:
 • If a frozen indication is displayed, read Precaution for Intuitive Parking Assist System first and confirm that the sensor is not covered with foreign matter [INFO](#) .

- Check for DTCs and troubleshoot according to each inspection procedure after confirming that the sensor is not covered with foreign matter **INFO** .

2. DETECTION RANGE MEASUREMENT AND DISPLAY INSPECTION

NOTICE:

The following measurement and inspection will be performed with the shift lever in a position other than P. Be sure to apply the parking lever and depress the brake pedal firmly to prevent the vehicle from moving.

- Turn the ignition switch to ON.
- Turn the back sonar or clearance sonar switch assembly on.
- Detection range measurement:
 - Move the shift lever according to the table below.

MEASUREMENT AREA	SHIFT LEVER POSITION
Rear Corner	R
Rear Center	

- Move a 60 mm (2.36 in.) diameter pole near each sensor to measure its detection range. When measuring the longest-range detection of the front center sonar and the rear center sonar, use a wall or equivalent.

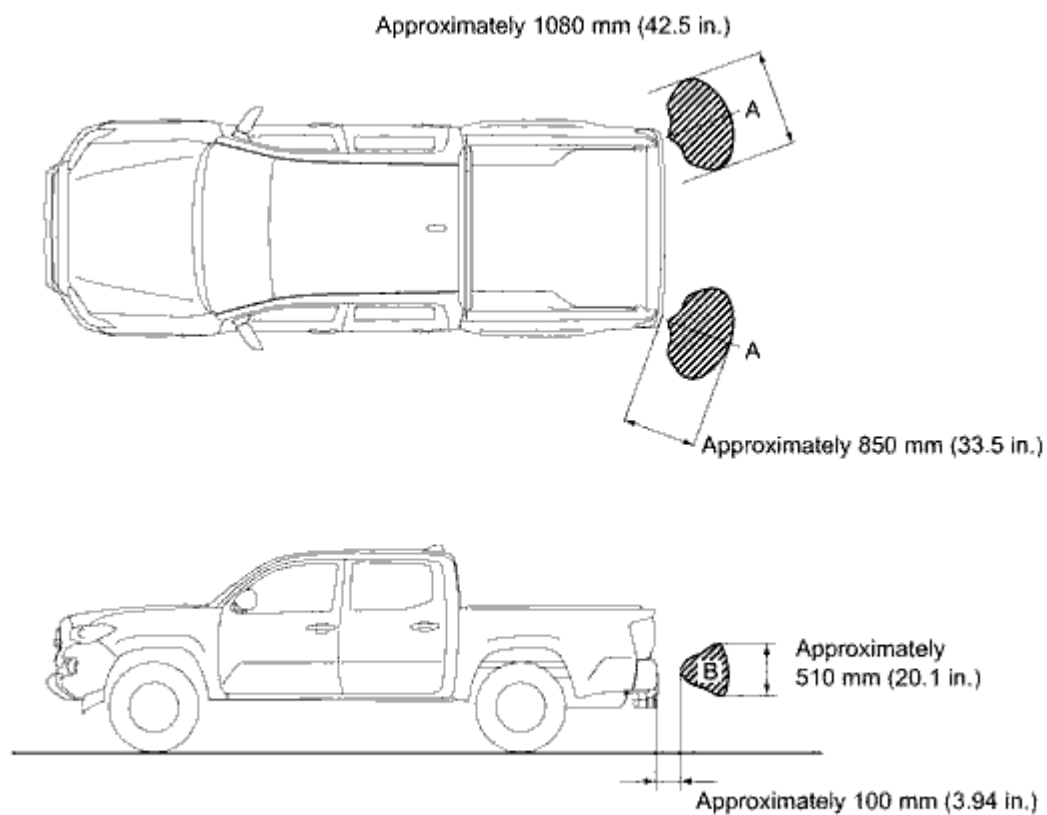
NOTICE:

These detection ranges are applicable when positioning the 60 mm (2.36 in.) diameter pole parallel or perpendicular to the ground. The detection range varies depending on the measuring method and type of obstacle (such as walls).

HINT:

Have an assistant move the pole.

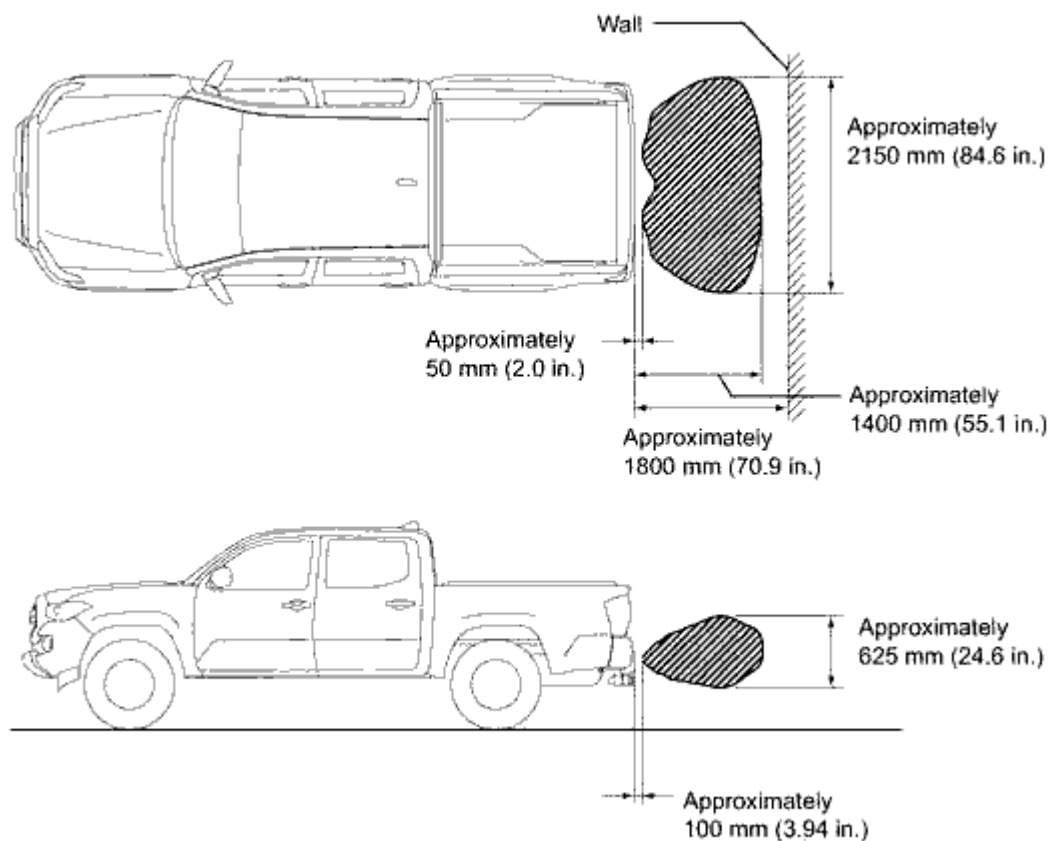
Corner Sonar Detection Range:



NOTICE:

The No. 1 ultrasonic sensor side view detection range (hatched area labeled (B)) represents the cross section of the top view detection range (A). The hatched area (B) does not represent the entire side view detection range.

Rear Center Sonar Detection Range:



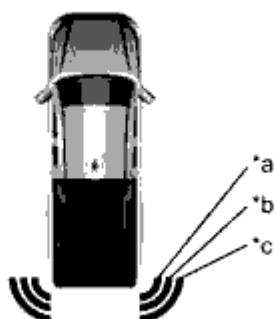
(d) Rear corner sonar display and buzzer operation check

- (1) When the No. 1 ultrasonic sensors (rear corner sonar) have detected an obstacle, check the display and check that the buzzer sounds.

Operation Condition

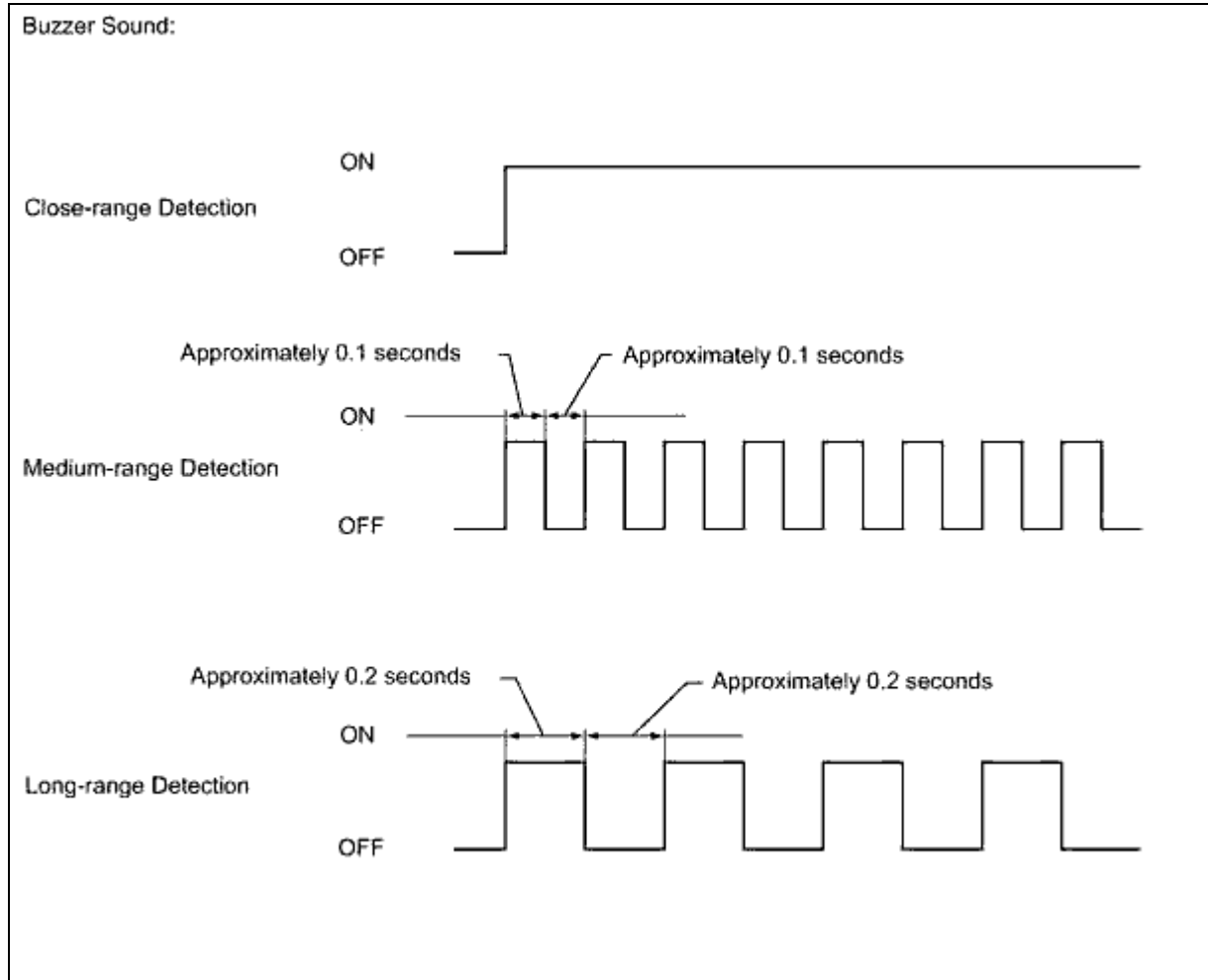
IGNITION SWITCH	BACK SONAR OR CLEARANCE SONAR SWITCH ASSEMBLY	SHIFT LEVER POSITION	VEHICLE SPEED
ON	On	R	-

Example (Rear Corner Sonar):



Text in Illustration

*a	Close-range Detection
*b	Medium-range Detection
*e	Long-range Detection



Standard:
Multi-information Display and Buzzer

DETECTION RANGE	DURING JUDGMENT	OBSTACLE
Close-range detection Within approximately 400 +/- 40 mm (15.7 +/- 1.57 in.)	Buzzer: Sounds continuously Number of bars displayed: 1 (blinking)	60 mm (2.36 in.) diameter pole
Medium-range detection From approximately 400 +/- 40 to 600 +/- 60 mm (15.7 +/- 1.57 to 23.6 +/- 2.36 in.)	Buzzer: Sounds intermittently (ON: 0.075 seconds / OFF: 0.075 seconds) Number of bars displayed: 2 (illuminated)	60 mm (2.36 in.) diameter pole
Long-range detection From approximately 600 +/- 60 to 850 +/- 90 mm (23.6 +/- 2.36 to 33.5 +/- 3.54 in.)	Buzzer: Sounds intermittently (ON: 0.15 seconds / OFF: 0.15 seconds) Number of bars displayed: 3 (illuminated)	60 mm (2.36 in.) diameter pole

HINT:

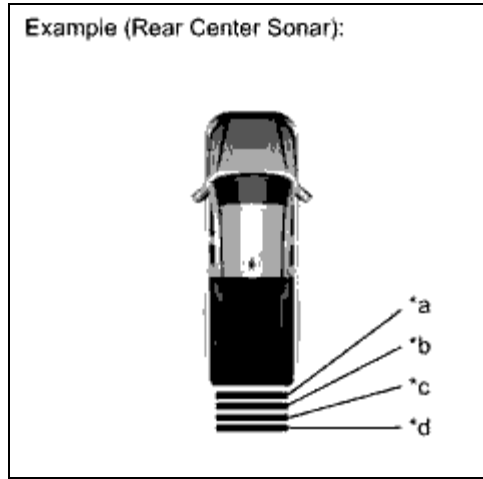
Ultrasonic waves are used to measure the detection range; however, the detection range may vary depending on the ambient temperature.

(e) Rear center sonar display and buzzer operation check

- (1) When the No. 1 ultrasonic sensors (rear center sonar) have detected an obstacle, check the display and check that the buzzer sounds.

Operation Condition

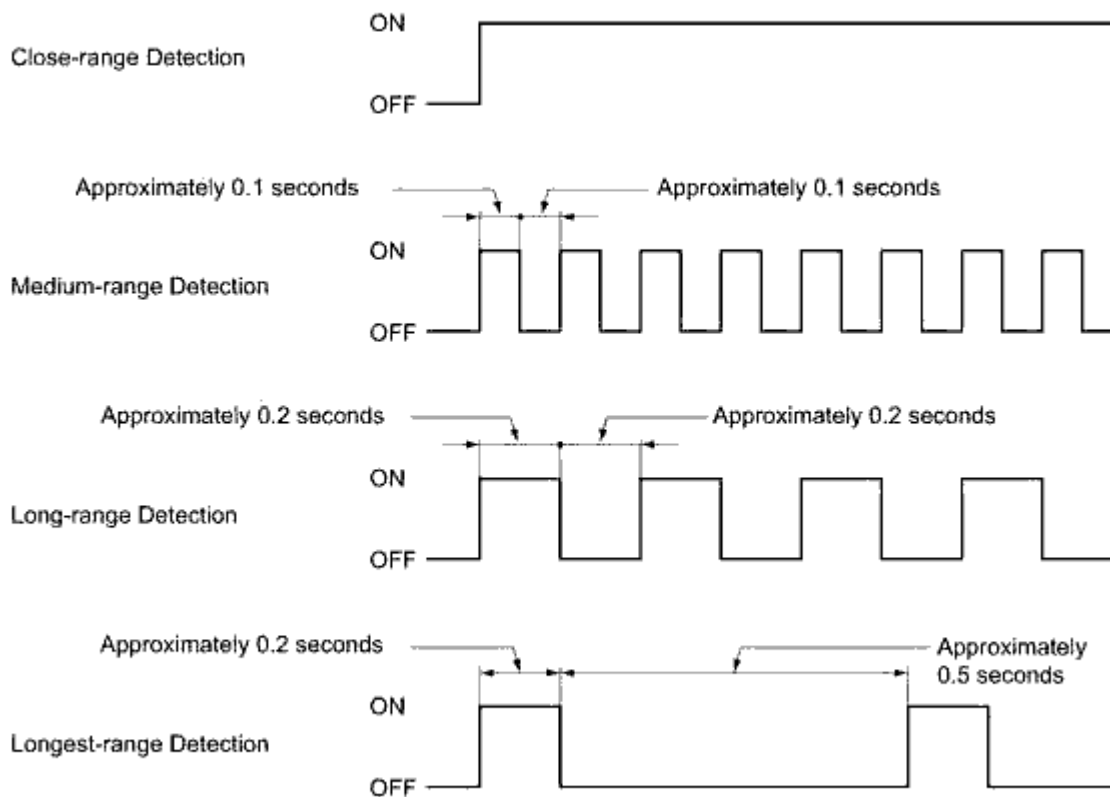
IGNITION SWITCH	BACK SONAR OR CLEARANCE SONAR SWITCH ASSEMBLY	SHIFT LEVER POSITION	VEHICLE SPEED
ON	On	R	-



Text in Illustration

*a	Close-range Detection
*b	Medium-range Detection
*c	Long-range Detection
*d	Longest-range Detection

Buzzer Sound:



Standard:

Multi-information Display and Buzzer

DETECTION RANGE	DURING DETECTION	OBSTACLE
Close-range detection Within approximately 500 +/- 50 mm (19.7 +/- 1.97 in.)	Buzzer: Sounds continuously Number of bars displayed: 1 (blinking)	60 mm (2.36 in.) diameter pole
Medium-range detection From approximately 500 +/- 50 to 750 +/- 80 mm (19.7 +/- 1.97 to 29.5 +/- 3.15 in.)	Buzzer: Sounds intermittently (ON: 0.1 seconds / OFF: 0.1 seconds) Number of bars displayed: 2 (illuminated)	60 mm (2.36 in.) diameter pole
Long-range detection From approximately 750 +/- 80 to 1000 +/- 100 mm (29.5 +/- 3.15 to 39.4 +/- 3.94 in.)	Buzzer: Sounds intermittently (ON: 0.2 seconds / OFF: 0.2 seconds) Number of bars displayed: 3 (illuminated)	60 mm (2.36 in.) diameter pole
Longest-range detection From approximately 1400 +/- 140 to 1800 +/- 180 mm (39.4 +/- 3.94 to 70.9 +/- 7.09 in.)	Buzzer: Sounds intermittently (ON: 0.2 seconds / OFF: 0.5 seconds) Number of bars displayed: 4 (illuminated)	Wall

HINT:

Ultrasonic waves are used to measure the detection range; however, the detection range may vary

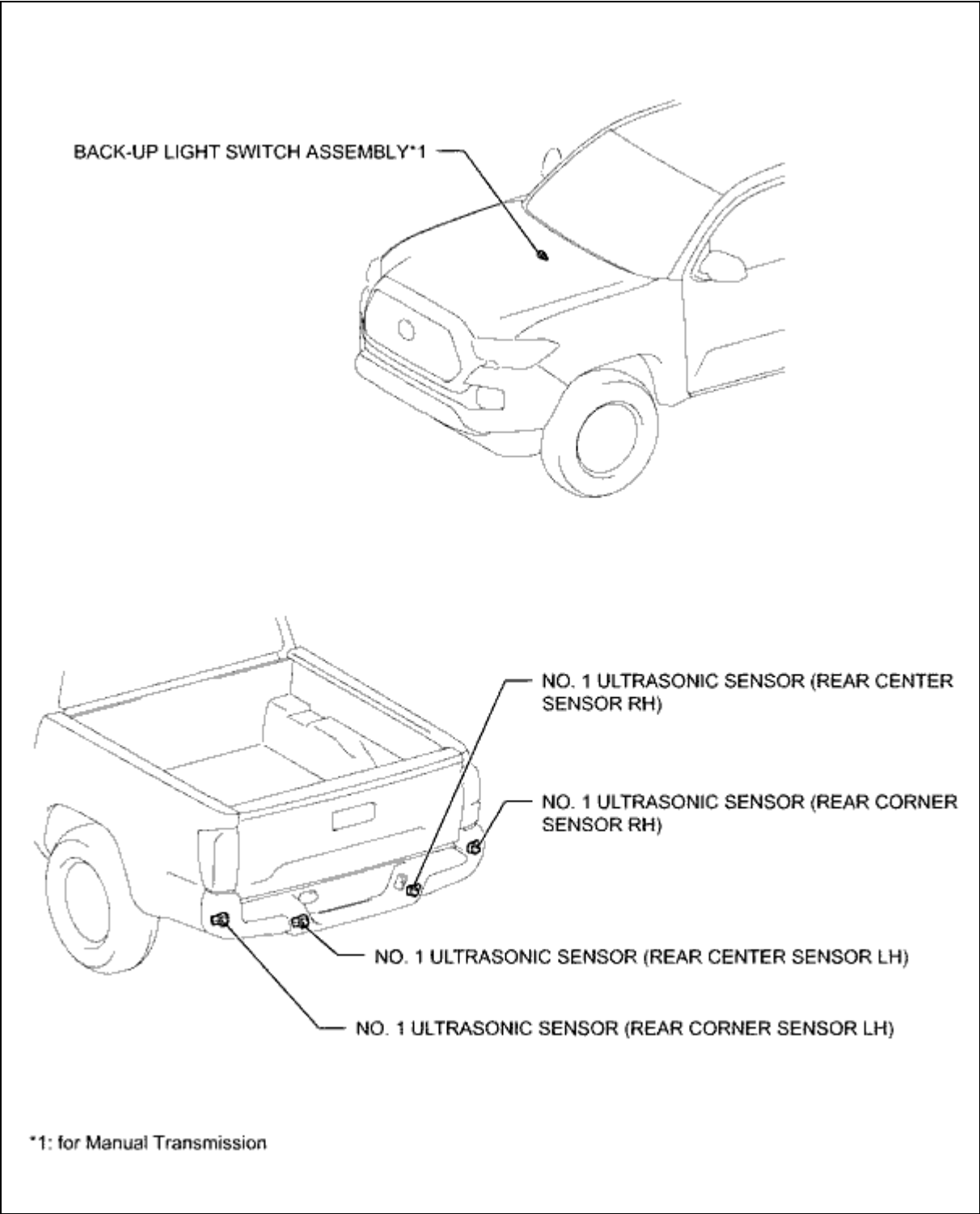
depending on the ambient temperature.



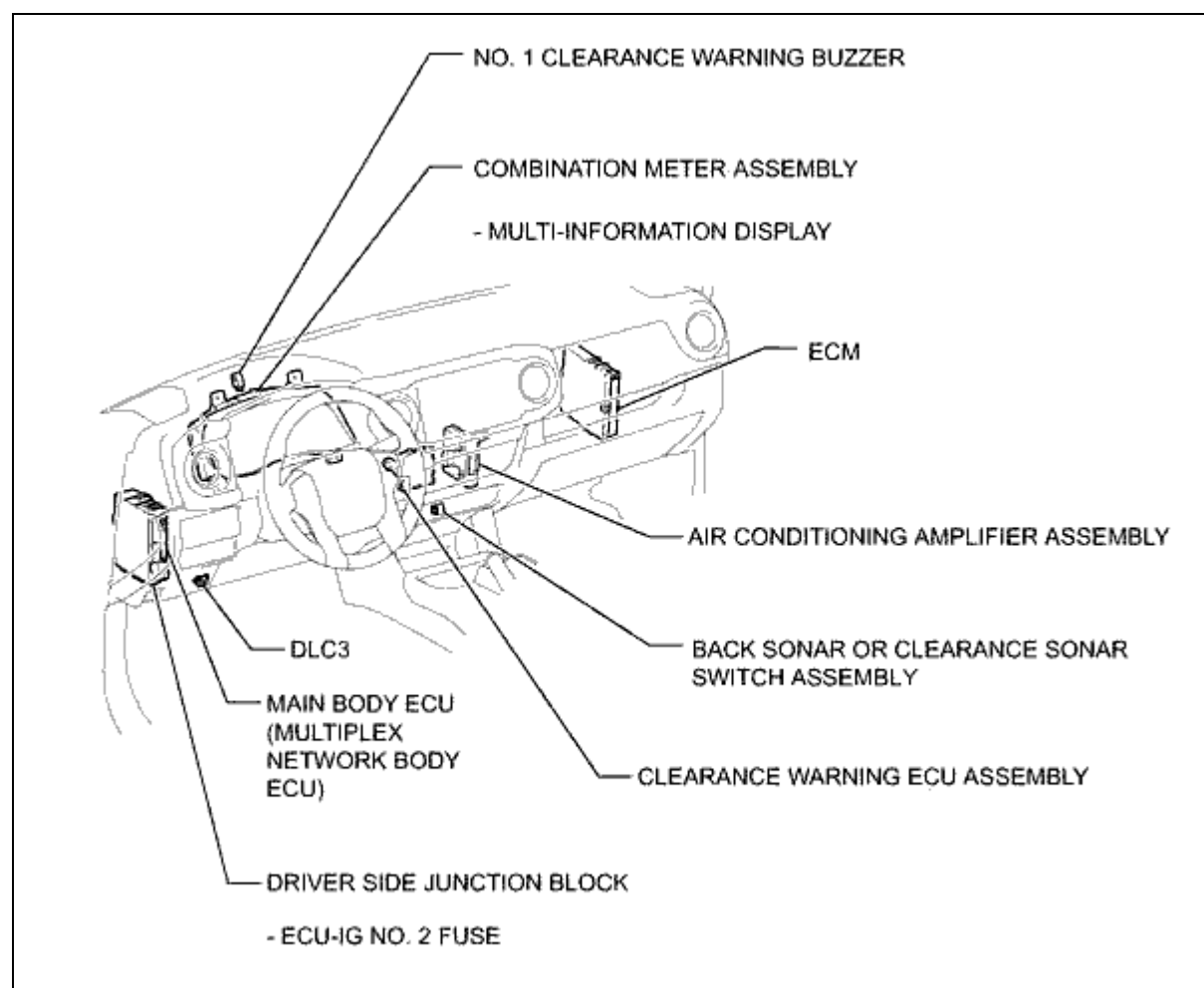
Last Modified: 11-13-2015	6.6 R	Doc ID: RM000003MYV022X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: PARTS LOCATION; 2016 MY Tacoma [08/2015 -]		

PARTS LOCATION

ILLUSTRATION



ILLUSTRATION



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: PRECAUTION; 2016 MY Tacoma [08/2015 -]		

PRECAUTION

1. IGNITION SWITCH EXPRESSIONS

(a) The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

EXPRESSION	IGNITION SWITCH (POSITION)	ENGINE SWITCH (CONDITION)
Ignition Switch off	LOCK	Off
Ignition Switch ACC	ACC	On (ACC)
Ignition Switch ON	ON	On (IG)
Engine Start	START	Start

2. PRECAUTIONS FOR INTUITIVE PARKING ASSIST SYSTEM

(a) Under the following conditions, the detection function may not function properly:

- (1) A sensor is covered with foreign matter, such as mud or snow (detection function returns to normal when the sensor is cleaned).
- (2) A sensor is frozen (detection function returns to normal when the temperature of the sensor rises).
- (3) A hand is blocking a sensor.

HINT:

- In very cold weather where a malfunction display appears, the sensor may not be able to detect obstacles.
- If the malfunction display appears, visually check the sensor first. If the sensor is free of foreign matter but the malfunction display remains, the sensor may have a malfunction.

(b) The detection range may be affected by the following conditions:

- (1) A sensor is covered with foreign matter, such as mud or snow.
- (2) The vehicle is in an excessively hot or excessively cold area.

(c) Under the following conditions, a detection error may occur:

- (1) Driving on a bumpy road, an unpaved road or in tall grass.
- (2) Ultrasonic waves are received from the horn or parking sonar system of another vehicle, a motorcycle engine, or the air brakes of a large vehicle.
- (3) It is raining heavily or the sensor is splashed with water.
- (4) The vehicle is tilted at a steep angle.
- (5) The vehicle is equipped with a fender pole or a wireless antenna mechanism.
- (6) A sensor is covered with foreign matter, such as mud or snow.
- (7) The vehicle is moving forward or backward towards high curbs or objects that are perpendicular to the ground.
- (8) A sensor is sprayed with high pressure water or steam.
- (9) A towing hitch is mounted on the vehicle.

(d) The sensors cannot detect the following objects:

- (1) Thin objects, such as wires and ropes
- (2) Materials that absorb ultrasonic waves, such as cotton, snow, etc.
- (3) Objects with sharp edges
- (4) Short objects
- (5) Objects that are tall and protrude toward the vehicle above the detection range of the sensors

(e) Other notices:

- (1) The sensors cannot detect objects directly under the bumper. (A sensor may detect low objects and thin poles, and then lose track of them.)
- (2) Be aware that the detection range of this system is limited. In certain conditions, some objects may not be detected. As a result, always make sure to check all around the vehicle when driving or parking.
- (3) The sensors may not be able to detect obstacles that are too close to the sensor.
- (4) The sensors may not be able to detect obstacles if the sensors have been dropped or subjected to a strong impact.



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: PROBLEM SYMPTOMS TABLE; 2016 MY Tacoma [08/2015 -]		

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.
- When an open circuit indication is displayed by the self-check function, check for DTCs and troubleshoot according to each inspection procedure.

General

SYMPTOM	SUSPECTED AREA	SEE PAGE
System does not operate at all	Proceed to "Clearance Warning ECU Power Source Circuit"	INFO
	Proceed to "Clearance Sonar Main Switch Circuit"	INFO
System cannot be turned off	Proceed to "Clearance Sonar Main Switch Circuit"	INFO

Sonar Function

SYMPTOM	SUSPECTED AREA	SEE PAGE
Combination meter assembly (shift position indicator) operates normally, but detection operates when shift lever is in any position other than R, or does not operate with shift lever in R (rear sonar)	CAN communication system	INFO
	Clearance warning ECU assembly	INFO

Buzzer Function

SYMPTOM	SUSPECTED AREA	SEE PAGE
Sonar detection operation is normal but buzzer operation is intermittent	Proceed to "Clearance Warning Buzzer Circuit"	INFO
	Clearance warning ECU assembly	INFO

Display Function

SYMPTOM	SUSPECTED AREA	SEE PAGE
Detection operation is normal but all sonar displays do not appear on multi-information display and multi-display	CAN communication system	INFO
	Clearance warning ECU assembly	INFO

SYMPTOM	SUSPECTED AREA	SEE PAGE
Detection operation is normal but sonar displays do not appear on multi-information display	CAN communication system	INFO
	Combination meter assembly	INFO
	Clearance warning ECU assembly	INFO



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: SYSTEM DESCRIPTION; 2016 MY Tacoma [08/2015 -]		

SYSTEM DESCRIPTION

1. GENERAL

- (a) This system uses ultrasonic sensors to detect any obstacles at the corners and the rear of the vehicle. The system then informs the driver of the distance between the sensors and an obstacle as well as their positions by indicating them on the multi-information display (in the combination meter assembly) and by sounding a buzzer.

2. FUNCTION OF COMPONENTS

COMPONENT	FUNCTION
No. 1 Ultrasonic Sensor	Detects the distance between the vehicle and an obstacle
No. 1 Clearance Warning Buzzer	Sounds to inform the driver according to the distance to an obstacle
Multi-information Display (on Combination Meter Assembly)	- Displays the location of an obstacle and the approximate distance between the vehicle and the obstacle - Displays a malfunction of the ultrasonic sensor to inform the driver
Combination Meter Assembly	Transmits the vehicle speed signal to the clearance warning ECU assembly
Back Sonar or Clearance Sonar Switch Assembly	Operating this switch enables, disables or cuts off the operation of the intuitive parking assist system
Clearance Warning ECU Assembly	- Judges the approximate distance between the vehicle and an obstacle based on the signals from the ultrasonic sensors, and sends it to the multi-information display - Judges the approximate distance between the vehicle and an obstacle based on the signals from the ultrasonic sensors and sounds the buzzer
Main Body ECU (Multiplex Network Body ECU)	Transmits the destination information to the clearance warning ECU assembly
ECM	Transmits the shift position signal to the clearance warning ECU assembly
Air Conditioning Amplifier Assembly	Transmits the temperature information signal to the clearance warning ECU assembly

3. OPERATION EXPLANATION

- (a) The operating conditions of each ultrasonic sensor differ according to the installation position as shown in the table below.

INSTALLATION POSITION	OPERATING CONDITION
Rear Corner Sensor	Ignition switch ON.

INSTALLATION POSITION	OPERATING CONDITION
Rear Center Sensor	• Back sonar or clearance sonar switch assembly is on. • Shift lever is in R.

When the system operates, the clearance warning ECU assembly transmits ultrasonic waves from the ultrasonic sensors. If these waves encounter an obstacle within one or more of the sensors ranges, the waves are reflected back to the sensors, which transmit them to the clearance warning ECU assembly.

Based on this information, the clearance warning ECU assembly sends signals to the multi-information display and the clearance warning buzzer. The approximate distance between the vehicle and the obstacle is then indicated, and the buzzer sounds.

HINT:

Refer to Detection Range Measurement and Display Inspection INFO.

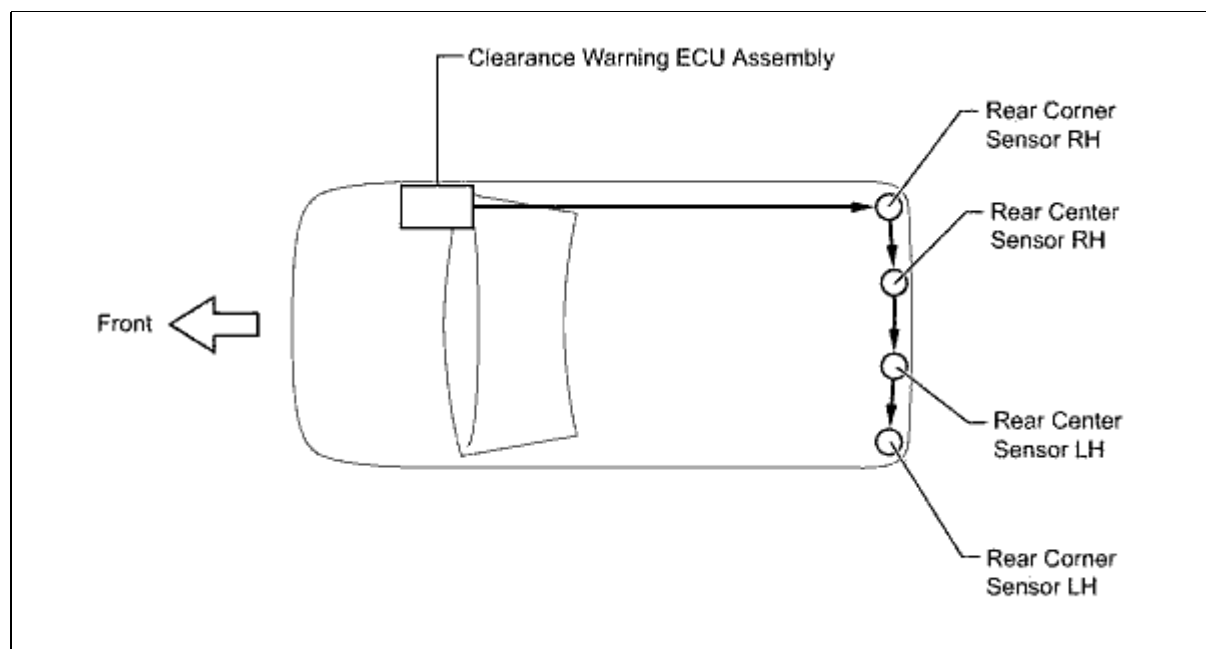
4. COMMUNICATION SIGNALS OF COMPONENTS

HINT:

- Allocation refers to the process of the clearance warning ECU assembly setting aside IDs for the sensors.
- The vehicle has the sensors arranged in 2 groups. There is a front series and a rear series. The sensors are connected in a "daisy chain".

(a) Initialization mode:

An ID is allocated to each sensor and sensor diagnosis is performed.



- (1) When the initial check is operating (the ignition switch ON and the back sonar or clearance sonar switch assembly on), the clearance warning ECU assembly provides power to the first sensors in each series (rear corner sensor RH).
- (2) After the power is supplied, the rear corner sensor RH enter standby mode to receive an ID from the ECU. When a certain amount of time has elapsed, the ECU sends an ID allocation signal to these sensors.
- (3) The rear corner sensor RH receive the ID allocation signal from the ECU and perform self-diagnosis. When the sensor self-diagnosis is completed, the ECU sends an ID allocation confirmation signal to these sensors.

- (4) After the ID allocation confirmation is performed, the ECU provides power to the second sensors in each series (rear center sensor RH) via the first sensors. In the same manner as the first sensors, the second sensors enter standby mode. When a certain amount of time has elapsed, the ECU sends an ID allocation signal to the second sensors.
- (5) The above operation will be repeated until an ID is allocated to the last sensor, which is in the rear series (rear corner sensor LH). Initialization ends when ID allocation to all ultrasonic sensors is completed.

(b) Detection mode:

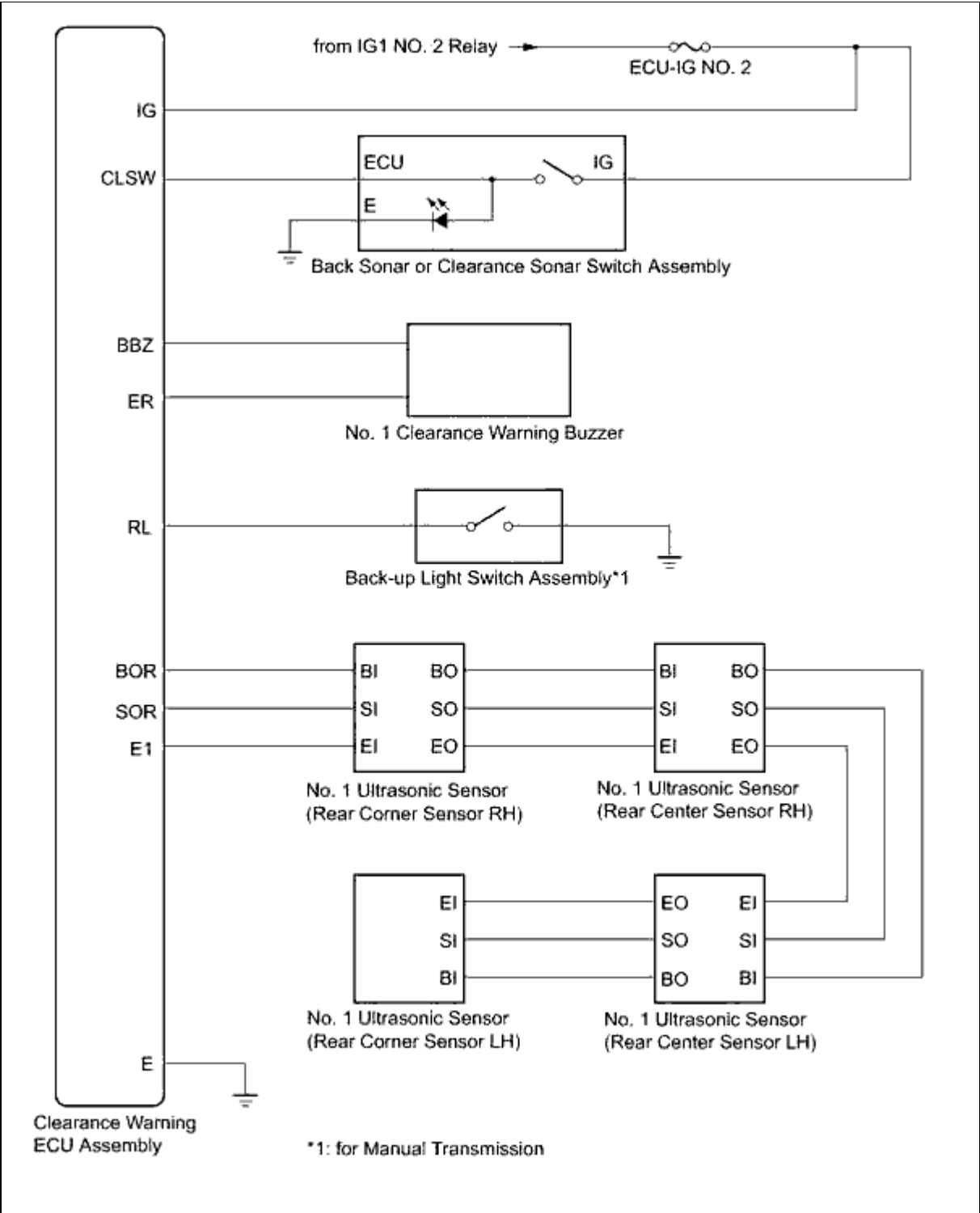
After initialization mode is completed, the system switches into detection mode. In detection mode, the clearance warning ECU assembly sends information request signals and sensor activation signals to the ultrasonic sensors and receives detection result signals from the sensors.

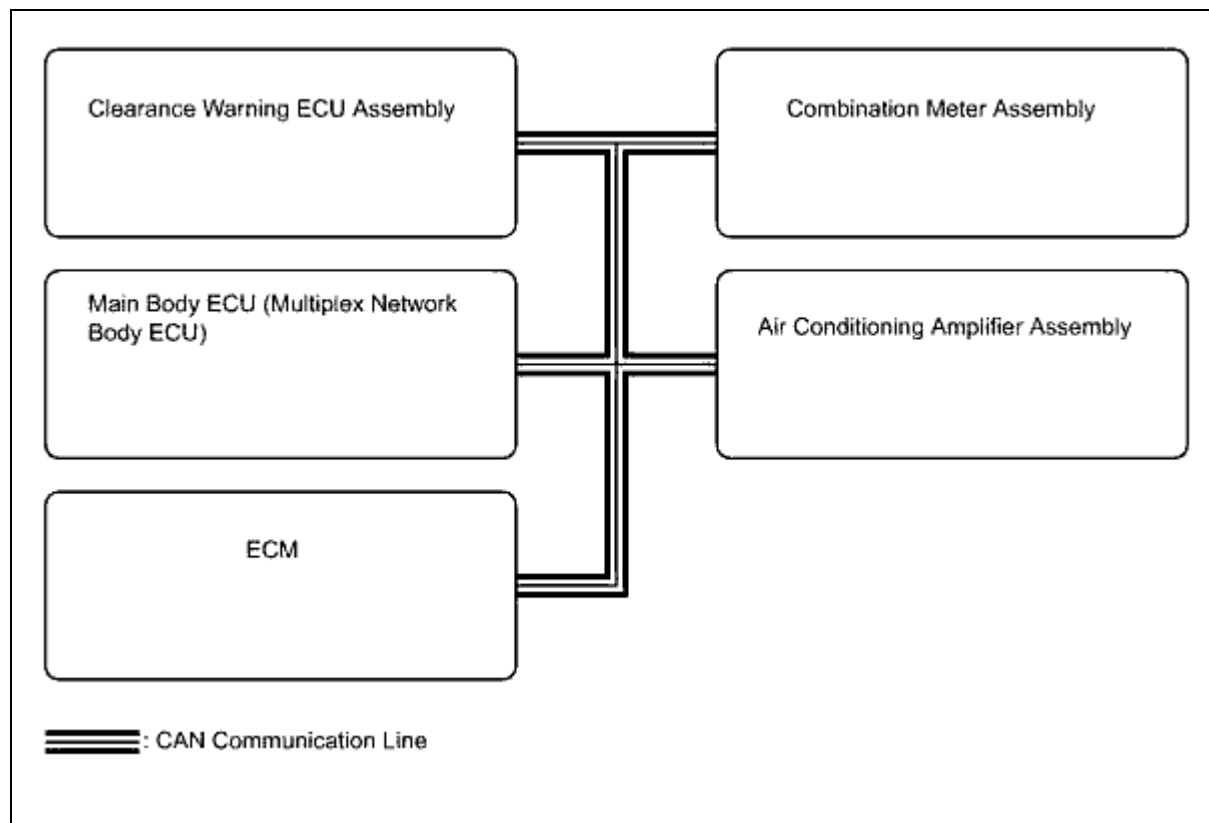
- (1) The ECU regularly sends ID signals, information request signals, and sensor activation signals to each ultrasonic sensor according to the communication schedule.
- (2) When a certain amount of time has elapsed (sensor detection operation is completed), the ECU sends an ID signal to the sensor to receive a detection result signal.
- (3) The ultrasonic sensor sends a detection result signal or detection information signal to the ECU.
- (4) The above operation is performed repeatedly for each ultrasonic sensor.



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: SYSTEM DIAGRAM; 2016 MY Tacoma [08/2015 -]		

SYSTEM DIAGRAM





Communication Table

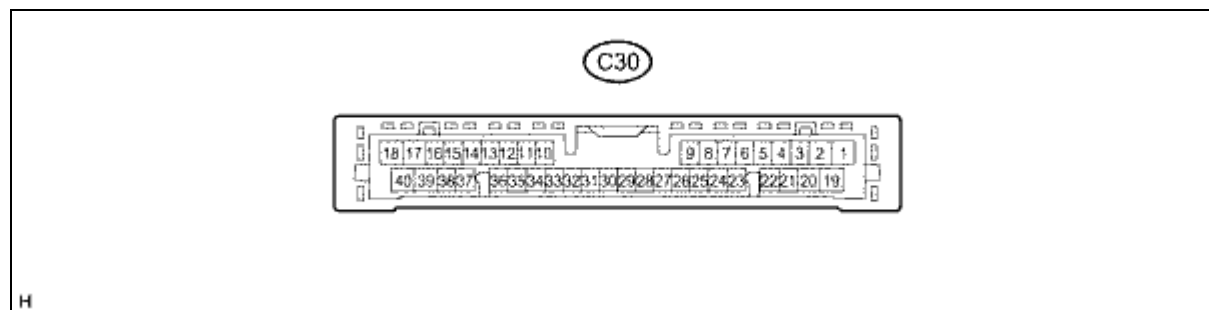
SENDER	RECEIVER	SIGNAL	LINE
Main Body ECU (Multiplex Network Body ECU)	Clearance Warning ECU Assembly	Destination information signal	CAN Communication Line
ECM	Clearance Warning ECU Assembly	Shift position signal	CAN Communication Line
Combination Meter Assembly	Clearance Warning ECU Assembly	Vehicle speed signal	CAN Communication Line
Air Conditioning Amplifier Assembly	Clearance Warning ECU Assembly	Ambient temperature display signal	CAN Communication Line
Clearance Warning ECU Assembly	Combination Meter Assembly	• Corner sensor information signal • Rear center sensor information signal • Clearance sonar sensor diagnosis signal	CAN Communication Line



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: TERMINALS OF ECU; 2016 MY Tacoma [08/2015 -]		

TERMINALS OF ECU

1. CLEARANCE WARNING ECU ASSEMBLY



- Disconnect the C30 connector from the clearance warning ECU assembly.
- Measure the voltage and resistance according to the value(s) in the table below.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
C30-9 (CLSW) - C30-30 (E)	Y - W-B	Back sonar or clearance sonar switch assembly power source signal	Ignition switch ON, back sonar or clearance sonar switch assembly on	11 to 14 V
C30-9 (CLSW) - C30-30 (E)	Y - W-B	Back sonar or clearance sonar switch assembly power source signal	Ignition switch ON, back sonar or clearance sonar switch assembly off	Below 1 V
C30-1 (IG) - C30-30 (E)	P - W-B	IG power source signal	Ignition switch off	Below 1 V
			Ignition switch ON	11 to 14 V
C30-30 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

- Reconnect the C30 connector to the clearance warning ECU assembly.
- Measure the voltage and check for pulses according to the value(s) in the table below.

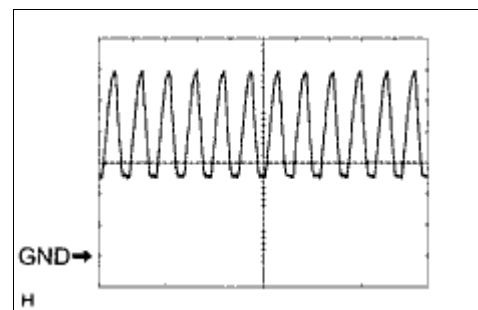
TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
C30-22 (BOR) - C30-30 (E)	BE - W-B	Power source for rear sensor circuit	Ignition switch off	Below 1 V
			Ignition switch ON, back sonar or clearance sonar switch assembly on	7.2 to 8.8 V
C30-13 (ER) - C30-30 (E)	R - W-B	Clearance warning buzzer signal	Buzzer sounding	Pulse generation (See waveform 1)

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
C30-23 (E1) - C30-30 (E)	B - W-B	Ground for rear clearance sonar	Always	Below 1 V
C30-24 (SOR) - C30-30 (E)	V - W-B	Rear sensor communication signal (Rear clearance sonar sensor)	Ignition switch ON, back sonar or clearance sonar switch assembly on, shift lever in R	Pulse generation (See waveform 2)

(e) Using an oscilloscope, check waveform 1.

(1) Waveform 1 (Reference)

ITEM	CONTENT
Terminal No. (Symbol)	C30-13 (ER) - C30-30 (E)
Tool Setting	2 V/DIV., 500 μ sec./DIV.
Vehicle Condition	When sonar detects obstacle (buzzer sounds)
Buzzer volume	M2 (Medium volume)



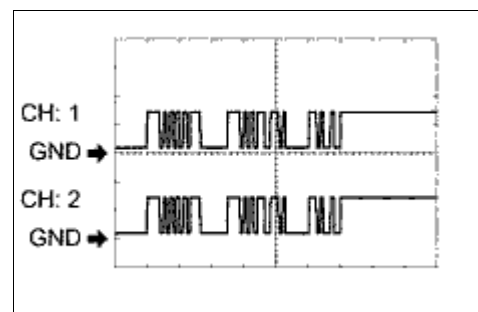
HINT:

The amplitude of the waveform changes according to the set volume.

(f) Using an oscilloscope, check waveform 2.

(1) Waveform 2 (Reference)

ITEM	CONTENT
Terminal No. (Symbol)	C30-24 (SOR) - C30-30 (E)
Tool Setting	5 V/DIV., 1 msec./DIV.
Condition	Ignition switch ON, back sonar or clearance sonar switch assembly on, shift lever in R



HINT:

The waveforms for CH1 and CH2 are same.



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002R2O05YX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: INTUITIVE PARKING ASSIST SYSTEM: U0100-U0142,U0155; Lost Communication with ECM / PCM "A"; 2016 MY Tacoma [08/2015 -]		

DTC	U0100	Lost Communication with ECM / PCM "A"
------------	--------------	--

DTC	U0101	Lost Communication with TCM
------------	--------------	------------------------------------

DTC	U0142	Lost Communication with Body Control Module "B"
------------	--------------	--

DTC	U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)
------------	--------------	--

DESCRIPTION

These DTCs are stored when the clearance warning ECU assembly cannot receive and recognize several signals via the CAN communication system.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
U0100	Lost Communication with ECM / PCM "A"	CAN communication system
U0101	Lost Communication with TCM	
U0142	Lost Communication with Body Control Module "B"	
U0155	Lost Communication with Instrument Panel Cluster Control Module (Combination Meter)	

HINT:

When 2 or more DTCs starting with "U" are output simultaneously, inspect the connectors and wire harnesses of each ECU.

INSPECTION PROCEDURE

PROCEDURE

1.	CHECK DTC OUTPUT
-----------	-------------------------

(a) Clear the DTCs INFO.

(b) Check for DTCs INFO.

Result

RESULT	PROCEED TO
DTCs (CAN communication system DTC) are output	A
No DTCs are output	B

B ► USE SIMULATION METHOD TO CHECK

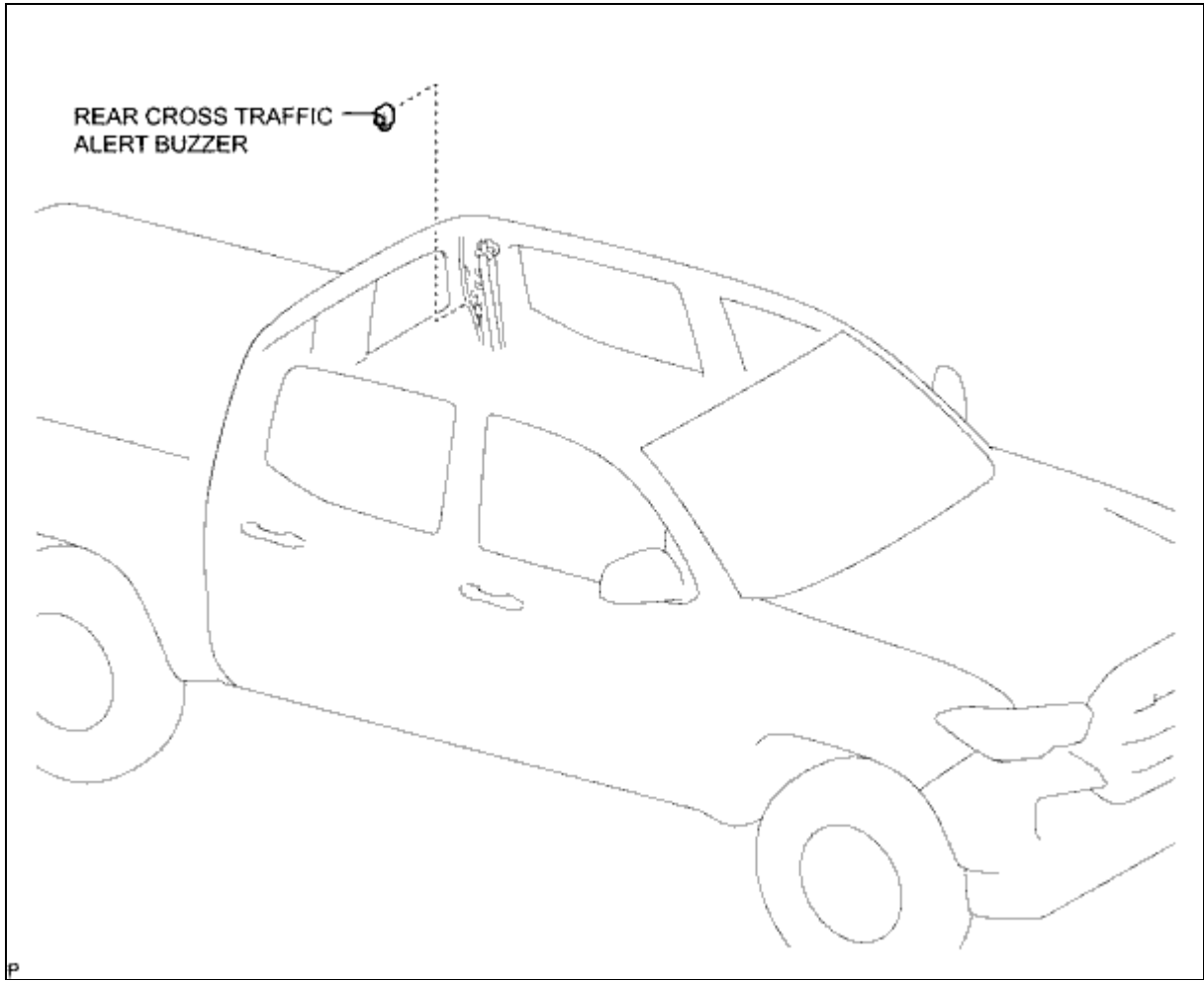
A ► GO TO CAN COMMUNICATION SYSTEM



Last Modified: 11-13-2015	6.6 K	Doc ID: RM000001PZ9063X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR CROSS TRAFFIC ALERT BUZZER: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000001PZ807FX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR CROSS TRAFFIC ALERT BUZZER: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

1. INSTALL REAR CROSS TRAFFIC ALERT BUZZER

- (a) Engage the clamp to install the rear cross traffic alert buzzer.
- (b) Connect the connector.

2. INSTALL QUARTER INSIDE TRIM BOARD LH (for Double Cab)

INFO

3. INSTALL QUARTER INSIDE TRIM BOARD LH (for Access Cab)

INFO



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000001PZA07GX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR CROSS TRAFFIC ALERT BUZZER: REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

1. REMOVE QUARTER INSIDE TRIM BOARD LH (for Double Cab)

INFO

2. REMOVE QUARTER INSIDE TRIM BOARD LH (for Access Cab)

INFO

3. REMOVE REAR CROSS TRAFFIC ALERT BUZZER

(a) Disconnect the connector.



(b) Disengage the clamp to remove the rear cross traffic alert buzzer.



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000003Y8M030X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR VIEW MONITOR SYSTEM: C1622; Open or Short Circuit in Back Camera Signal; 2016 MY Tacoma [08/2015 -]		

DTC	C1622	Open or Short Circuit in Back Camera Signal
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DESCRIPTION

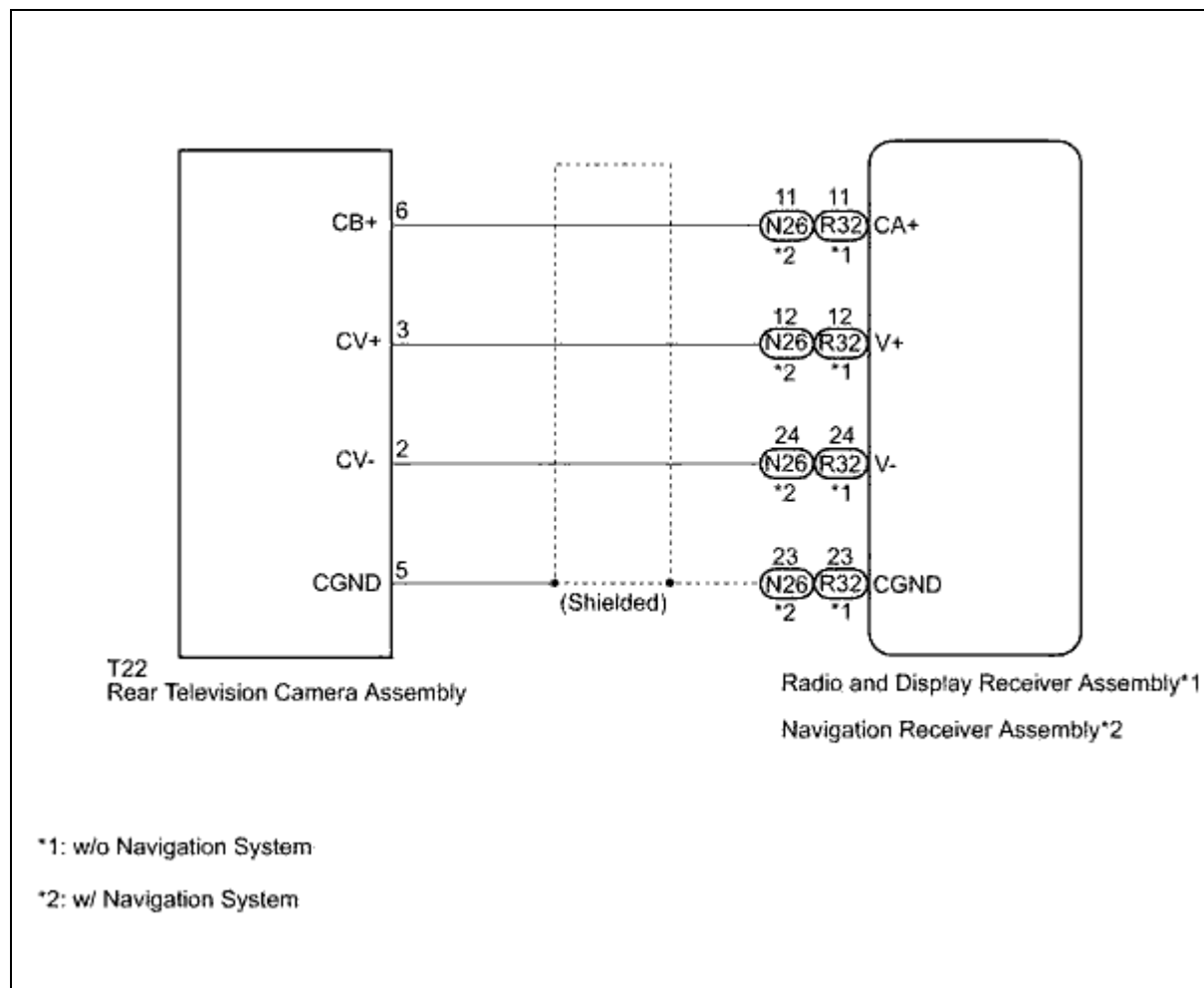
This DTC is stored if the radio and display receiver assembly*1 or navigation receiver assembly*2 judges as a result of its self check that the signals or signal lines between the radio and display receiver assembly*1 or navigation receiver assembly*2 and the rear television camera assembly are not normal.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA
C1622	Open or Short Circuit in rear television camera signal	• Harness or connector • Rear television camera assembly • Radio and display receiver assembly*1 • Navigation receiver assembly*2

*1: w/o Navigation System

*2: w/ Navigation System

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1. CHECK FOR DTC

(a) Clear the DTCs [INFO](#) .

(b) Check for DTCs [INFO](#) .

Result

RESULT	PROCEED TO
No DTC is output	A
DTC is output	B

B ► GO TO STEP 2

A ► USE SIMULATION METHOD TO CHECK

2. CONFIRM MODEL

(a) Choose the model to be inspected.

Result

RESULT	PROCEED TO
w/o Navigation System	A
w/ Navigation System	B

B  **GO TO STEP 9**

A



3. CHECK HARNESS AND CONNECTOR (RADIO AND DISPLAY RECEIVER ASSEMBLY - REAR TELEVISION CAMERA ASSEMBLY)

(a) Disconnect the R32 radio and display receiver assembly connector.

(b) Disconnect the T22 rear television camera assembly connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R32-11 (CA+) - T22-6 (CB+)	Always	Below 1 Ω
R32-12 (V+) - T22-3 (CV+)	Always	Below 1 Ω
R32-23 (CGND) - T22-5 (CGND)	Always	Below 1 Ω
R32-24 (V-) - T22-2 (CV-)	Always	Below 1 Ω
R32-11 (CA+) - Body ground	Always	10 k Ω or higher
R32-12 (V+) - Body ground	Always	10 k Ω or higher
R32-23 (CGND) - Body ground	Always	10 k Ω or higher
N26-24 (V-) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



4. CHECK RADIO AND DISPLAY RECEIVER ASSEMBLY

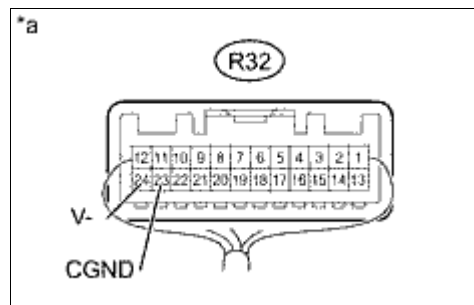
(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R32-23 (CGND) - Body ground	Always	Below 1 Ω
R32-24 (V-) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Component with harness connected (Radio and Display Receiver Assembly)
----	---

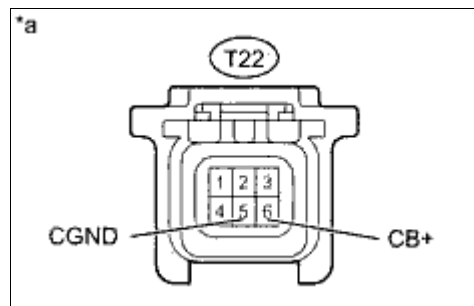


NG **REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY**

OK

5. CHECK RADIO AND DISPLAY RECEIVER ASSEMBLY

(a) Disconnect the rear television camera assembly connector.



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
T22-6 (CB+) - T22-5 (CGND)	Ignition switch ACC	5.5 to 7.05 V

Text in Illustration

*a	Front view of wire harness connector
----	--------------------------------------

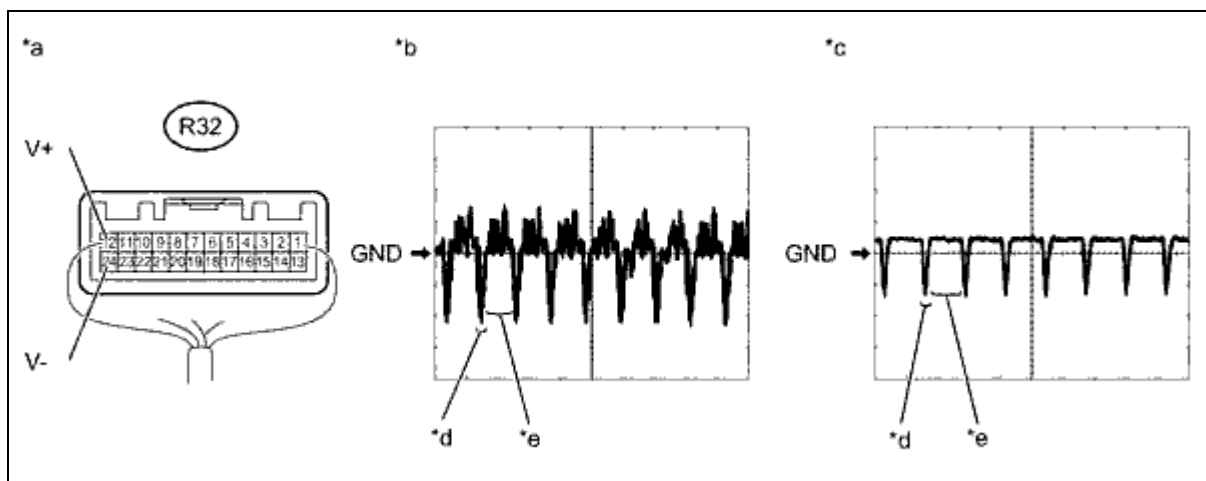
(to Rear Television Camera Assembly)

NG **REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY**

OK

6. CHECK REAR TELEVISION CAMERA ASSEMBLY

(a) Using an oscilloscope, check the waveform.



Text in Illustration

*a	Component with harness connected (Radio and Display Receiver Assembly)	*b	Waveform 1
*c	Waveform 2	*d	Synchronized Signal
*e	Video Waveform	-	-

Measurement Condition

ITEM	CONTENT
Tester Connection	R32-12 (V+) - R32-24 (V-)
Tool Setting	0.2 V/DIV., 50 μ s/DIV.
Condition	Waveform 1: Ignition switch ON, shift lever in R Waveform 2: Ignition switch ON, shift lever in R, screen blacked out by covering camera lens

OK:

Waveform is as shown in illustration.

HINT:

The video waveform changes according to the image sent by the rear television camera assembly.

NG ► **GO TO STEP 7**

OK ► **USE SIMULATION METHOD TO CHECK**

7. REPLACE REAR TELEVISION CAMERA ASSEMBLY

(a) Replace the rear television camera assembly with a new or normally functioning one **INFO**.

NEXT

8. CHECK FOR DTC

(a) Clear the DTCs **INFO**.

(b) Check for DTCs **INFO**.

OK:

No DTCs are output.

NG ► **REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY**

OK ► **END (REAR TELEVISION CAMERA ASSEMBLY WAS DEFECTIVE)**

9. CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - REAR TELEVISION CAMERA ASSEMBLY)

(a) Disconnect the N26 navigation receiver assembly connector.

(b) Disconnect the T22 rear television camera assembly connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
N26-11 (CA+) - T22-6 (CB+)	Always	Below 1 Ω
N26-12 (V+) - T22-3 (CV+)	Always	Below 1 Ω

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
N26-23 (CGND) - T22-5 (CGND)	Always	Below 1 Ω
N26-24 (V-) - T22-2 (CV-)	Always	Below 1 Ω
N26-11 (CA+) - Body ground	Always	10 k Ω or higher
N26-12 (V+) - Body ground	Always	10 k Ω or higher
N26-23 (CGND) - Body ground	Always	10 k Ω or higher
N26-24 (V-) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

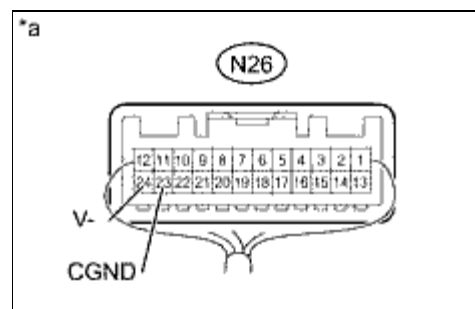


10.	CHECK NAVIGATION RECEIVER ASSEMBLY
------------	---

(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
N26-23 (CGND) - Body ground	Always	Below 1 Ω
N26-24 (V-) - Body ground	Always	Below 1 Ω



Text in Illustration

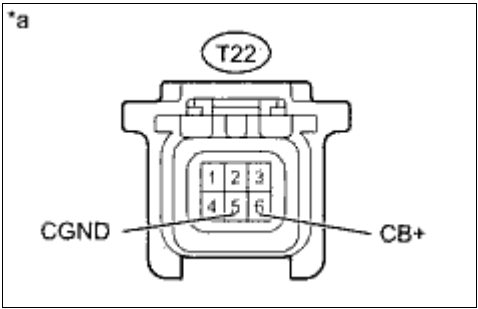
^{*a}	Component with harness connected (Navigation Receiver Assembly)
---------------	--

NG  **REPLACE NAVIGATION RECEIVER ASSEMBLY**

OK



11.	CHECK NAVIGATION RECEIVER ASSEMBLY
------------	---



(a) Disconnect the rear television camera assembly connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
T22-6 (CB+) - T22-5 (CGND)	Ignition switch ACC	5.5 to 7.05 V

Text in Illustration

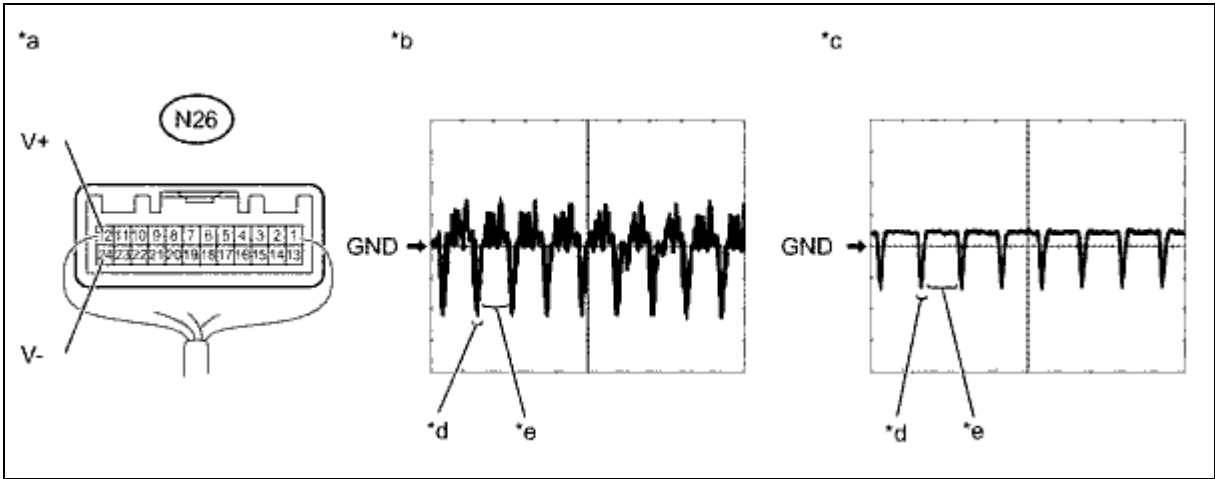
*a	Front view of wire harness connector (to Rear Television Camera Assembly)
----	--

NG▶ REPLACE NAVIGATION RECEIVER ASSEMBLY

OK
▼

12.	CHECK REAR TELEVISION CAMERA ASSEMBLY
-----	---------------------------------------

(a) Using an oscilloscope, check the waveform.



Text in Illustration

*a	Component with harness connected	*b	Waveform 1
----	----------------------------------	----	------------

	(Navigation Receiver Assembly)		
*c	Waveform 2	*d	Synchronized Signal
*e	Video Waveform	-	-

Measurement Condition

ITEM	CONTENT
Tester Connection	N26-12 (V+) - N26-24 (V-)
Tool Setting	0.2 V/DIV., 50 μ s/DIV.
Condition	Waveform 1: Ignition switch ON, shift lever in R Waveform 2: Ignition switch ON, shift lever in R, screen blacked out by covering camera lens

OK:

Waveform is as shown in illustration.

HINT:

The video waveform changes according to the image sent by the rear television camera assembly.

NG  **GO TO STEP 13**

OK  **USE SIMULATION METHOD TO CHECK**

13.	REPLACE REAR TELEVISION CAMERA ASSEMBLY
------------	--

(a) Replace the rear television camera assembly with a new or normally functioning one  .

NEXT



14.	CHECK FOR DTC
------------	----------------------

(a) Clear the DTCs  .

(b) Check for DTCs  .

OK:

No DTCs are output.

NG  **REPLACE NAVIGATION RECEIVER ASSEMBLY**

OK  **END (REAR TELEVISION CAMERA ASSEMBLY WAS**

DEFECTIVE)



Last Modified: 11-13-2015	6.6 S	Doc ID: RM0000051NB010X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR VIEW MONITOR SYSTEM: DIAGNOSTIC TROUBLE CODE CHART; 2016 MY Tacoma [08/2015 -]		

DIAGNOSTIC TROUBLE CODE CHART

Rear View Monitor System

DTC CODE	DETECTION ITEM	SEE PAGE
C1622	Open or Short Circuit in Back Camera Signal	INFO



Last Modified: 11-13-2015	6.6 D	Doc ID: RM0000051N6010X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR VIEW MONITOR SYSTEM: DTC CHECK / CLEAR; 2016 MY Tacoma [08/2015 -]		

DTC CHECK / CLEAR

HINT:

- Refer to Audio and Visual System (w/o Navigation System) [INFO](#) .
- Refer to Navigation System (w/ Navigation System) [INFO](#) .



Last Modified: 11-13-2015	6.6 D	Doc ID: RM0000013ZW0FHX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR VIEW MONITOR SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING; 2016 MY Tacoma [08/2015 -]		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

Use these procedures to troubleshoot the rear view monitor system.

1.	VEHICLE BROUGHT TO WORKSHOP
-----------	------------------------------------

NEXT



2.	CUSTOMER PROBLEM ANALYSIS
-----------	----------------------------------

NEXT



3.	CHECK DTC
-----------	------------------

(a) Check for DTCs and note any codes that are output [INFO](#) .

(b) Clear the DTCs [INFO](#) .

(c) Recheck for DTCs.

Result

RESULT	PROCEED TO
DTC is not output	A
DTC is output	B

B **GO TO DIAGNOSTIC TROUBLE CODE CHART**

A



--	--

4. PROBLEM SYMPTOM CONFIRMATION

NEXT



5. PROBLEM SYMPTOMS TABLE

(a) Refer to Problem Symptoms Table [INFO](#) .

Result

RESULT	PROCEED TO
Fault is not listed in Problem Symptoms Table	A
Fault is listed in Problem Symptoms Table	B

B Go to step 6

A



6. BASED ON PROBLEM SYMPTOM, PERFORM TROUBLESHOOTING BELOW

(a) Terminals of ECU [INFO](#) .

NEXT



7. ADJUST, REPAIR OR REPLACE

NEXT



8. CONFIRMATION TEST

NEXT **END**



Last Modified: 11-13-2015	6.6 J	Doc ID: RM000001YQ80ELX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR VIEW MONITOR SYSTEM: Image from Camera for Rear View Monitor is Abnormal; 2016 MY Tacoma [08/2015 -]		

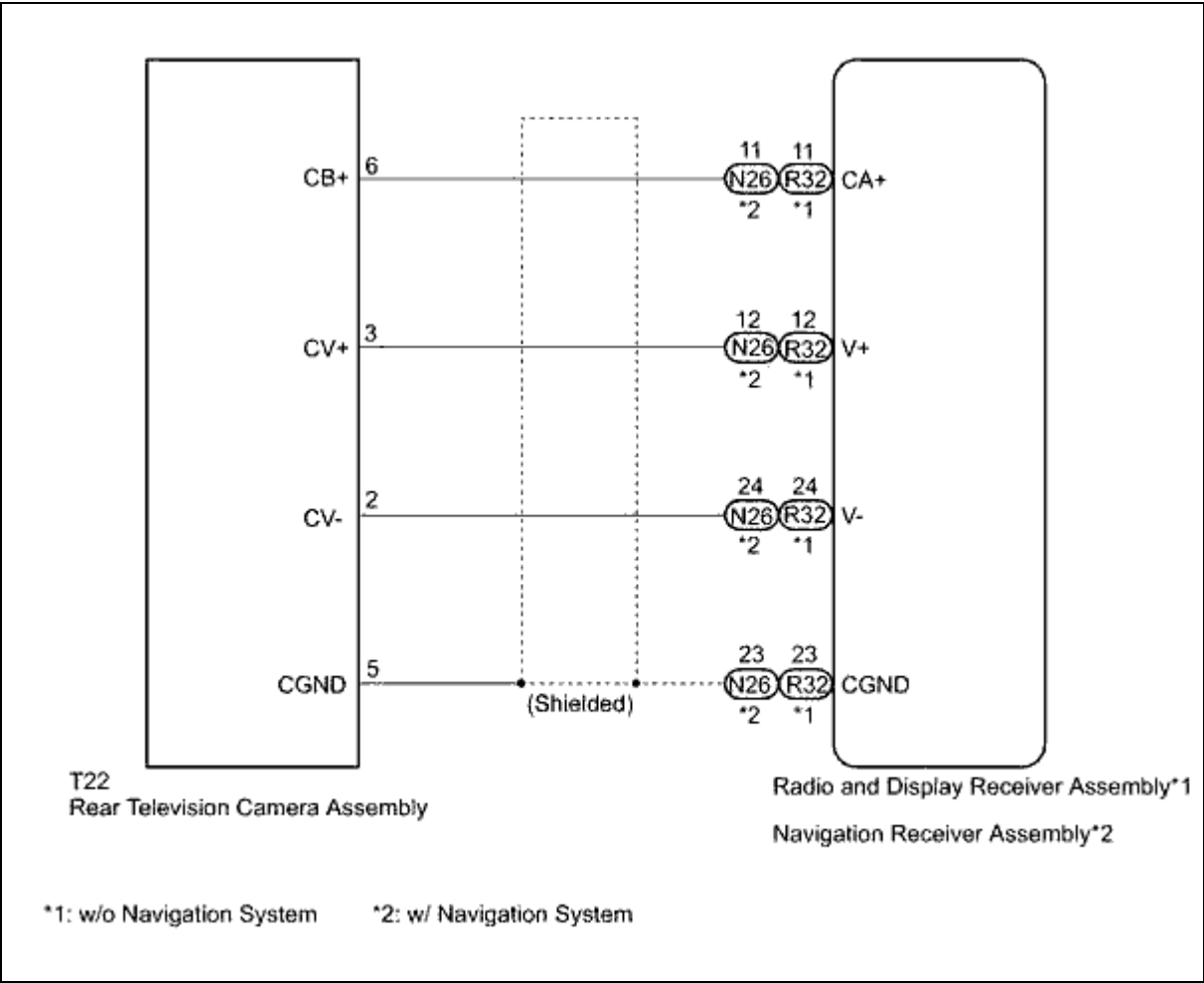
Image from Camera for Rear View Monitor is Abnormal

DESCRIPTION

The display signal of the rear television camera assembly is transmitted to the radio and display receiver assembly*1 or navigation receiver assembly*2.

- *1: w/o Navigation System
- *2: w/ Navigation System

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1. CONFIRM MODEL

(a) Choose the model to be inspected.

Result

RESULT	PROCEED TO
w/o Navigation System	A
w/ Navigation System	B

B  **GO TO STEP 5****A****2. CHECK HARNESS AND CONNECTOR (RADIO AND DISPLAY RECEIVER ASSEMBLY - REAR TELEVISION CAMERA ASSEMBLY)**

(a) Disconnect the R32 radio and display receiver assembly connector.

(b) Disconnect the T22 rear television camera assembly connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R32-11 (CA+) - T22-6 (CB+)	Always	Below 1 Ω
R32-12 (V+) - T22-3 (CV+)	Always	Below 1 Ω
R32-24 (V-) - T22-2 (CV-)	Always	Below 1 Ω
R32-23 (CGND) - T22-5 (CGND)	Always	Below 1 Ω
R32-11 (CA+) - Body ground	Always	10 k Ω or higher
R32-12 (V+) - Body ground	Always	10 k Ω or higher
R32-24 (V-) - Body ground	Always	10 k Ω or higher
R32-23 (CGND) - Body ground	Always	10 k Ω or higher

(d) Reconnect the radio and display receiver assembly connector.

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



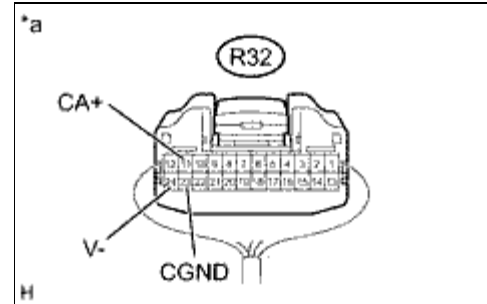
3. INSPECT RADIO AND DISPLAY RECEIVER ASSEMBLY

(a) Disconnect the radio and display receiver assembly connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
R32-24 (V-) - Body ground	Always	10 kΩ or higher
R32-23 (CGND) - Body ground	Always	10 kΩ or higher



(c) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
R32-11 (CA+) - R32-23 (CGND)	Ignition switch ON, shift lever in R	5.5 to 7.05 V

Text in Illustration

*a	Component with harness connected (Radio and Display Receiver Assembly)
----	---

NG  REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY

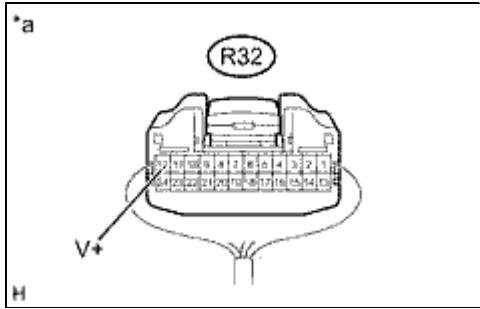
OK



4. INSPECT REAR TELEVISION CAMERA ASSEMBLY

(a) Reconnect the rear television camera assembly connector.

(b) Check the waveform of the rear television camera assembly using an oscilloscope.



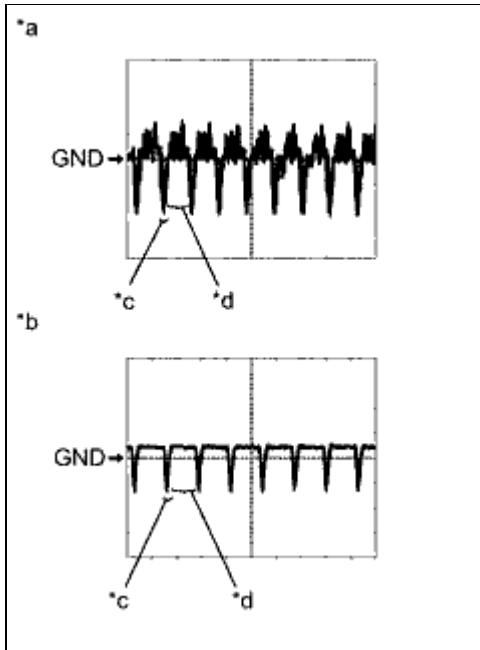
Text in Illustration

*a	Component with harness connected (Radio and Display Receiver Assembly)
----	---

HINT:
A waterproof connector is used for the rear television camera assembly. Therefore, inspect the waveform at the radio and display receiver assembly with the connector connected.

Measurement Condition

ITEM	CONTENT
Terminal No. (Symbol)	R32-12 (V+) - R32-24 (V-)
Tool Setting	200 mV/DIV., 50 μ sec./DIV.
Condition	Waveform 1: Ignition switch ON, shift lever in R Waveform 2: Ignition switch ON, shift lever in R, screen blacked out by covering camera lens



OK:
Waveform is as shown in the illustration.

HINT:
The video waveform changes according to the image sent by the rear television camera assembly.

Text in Illustration

*a	Waveform 1
*b	Waveform 2
*c	Synchronized Signal
*d	Video Waveform

NG  **REPLACE REAR TELEVISION CAMERA ASSEMBLY**

OK  **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**

5.	CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - REAR TELEVISION CAMERA ASSEMBLY)
-----------	---

- (a) Disconnect the N26 navigation receiver assembly connector.
- (b) Disconnect the T22 rear television camera assembly connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
N26-11 (CA+) - T22-6 (CB+)	Always	Below 1 Ω
N26-12 (V+) - T22-3 (CV+)	Always	Below 1 Ω
N26-24 (V-) - T22-2 (CV-)	Always	Below 1 Ω
N26-23 (CGND) - T22-5 (CGND)	Always	Below 1 Ω
N26-11 (CA+) - Body ground	Always	10 k Ω or higher
N26-12 (V+) - Body ground	Always	10 k Ω or higher
N26-24 (V-) - Body ground	Always	10 k Ω or higher
N26-23 (CGND) - Body ground	Always	10 k Ω or higher

- (d) Reconnect the navigation receiver assembly connector.

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



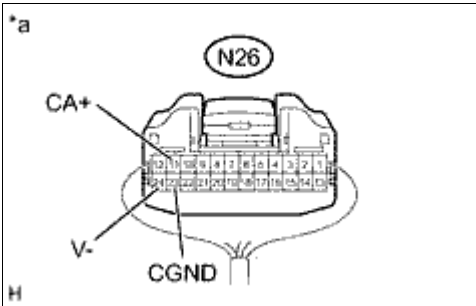
6.	INSPECT NAVIGATION RECEIVER ASSEMBLY
-----------	---

(a) Disconnect the navigation receiver assembly connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
N26-24 (V-) - Body ground	Always	10 kΩ or higher
N26-23 (CGND) - Body ground	Always	10 kΩ or higher



(c) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
N26-11 (CA+) - N26-23 (CGND)	Ignition switch ON, shift lever in R	5.5 to 7.05 V

Text in Illustration

*a	Component with harness connected (Navigation Receiver Assembly)
----	--

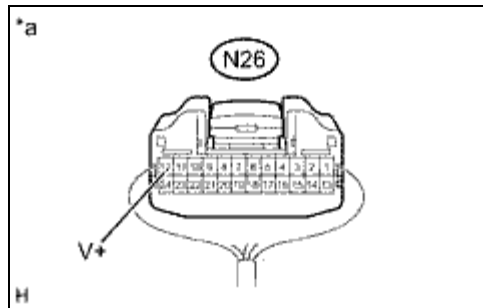
NG **REPLACE NAVIGATION RECEIVER ASSEMBLY**

OK

7. INSPECT REAR TELEVISION CAMERA ASSEMBLY

(a) Reconnect the rear television camera assembly connector.

(b) Check the waveform of the rear television camera assembly using an oscilloscope.



Text in Illustration

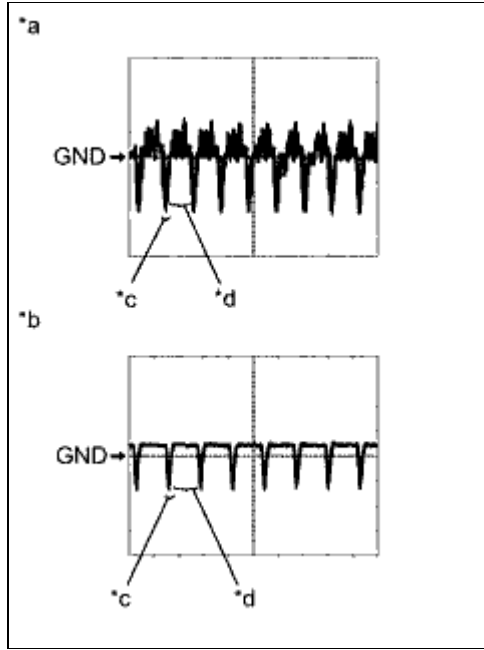
*a	Component with harness connected (Navigation Receiver Assembly)
----	--

HINT:

A waterproof connector is used for the rear television camera assembly. Therefore, inspect the waveform at the navigation receiver assembly with the connector connected.

Measurement Condition

ITEM	CONTENT
Terminal No. (Symbol)	N26-12 (V+) - N26-24 (V-)
Tool Setting	200 mV/DIV., 50 μ sec./DIV.
Condition	Waveform 1: Ignition switch ON, shift lever in R Waveform 2: Ignition switch ON, shift lever in R, screen blacked out by covering camera lens



OK:
Waveform is as shown in the illustration.

HINT:

The video waveform changes according to the image sent by the rear television camera assembly.

Text in Illustration

*a	Waveform 1
*b	Waveform 2
*c	Synchronized Signal
*d	Video Waveform

OK



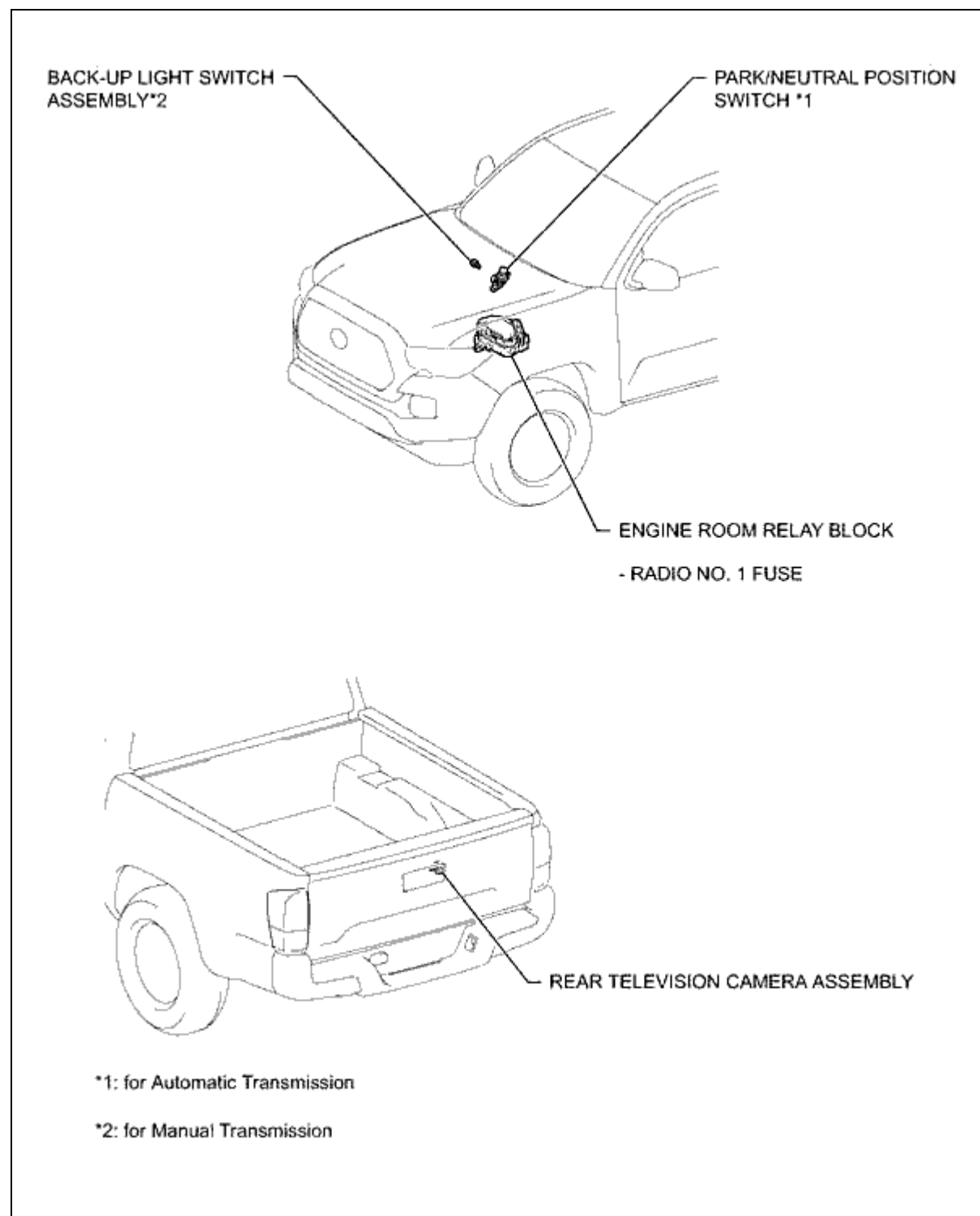
PROCEED TO NEXT SUSPECTED AREA SHOWN IN
PROBLEM SYMPTOMS TABLE



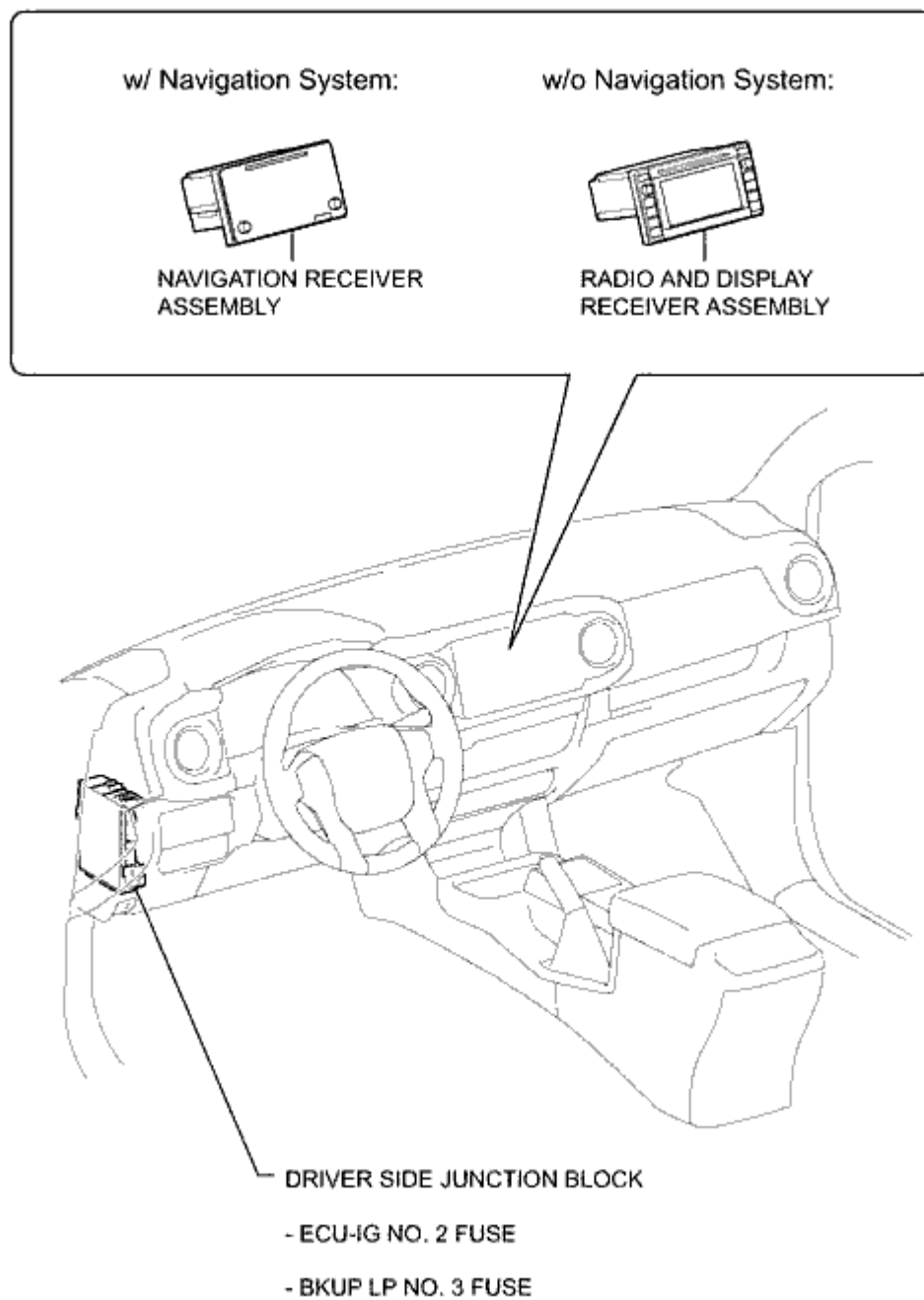
Last Modified: 11-13-2015	6.6 R	Doc ID: RM0000013ZY0BEX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR VIEW MONITOR SYSTEM: PARTS LOCATION; 2016 MY Tacoma [08/2015 -]		

PARTS LOCATION

ILLUSTRATION



ILLUSTRATION



Last Modified: 11-13-2015	6.6 T	Doc ID: RM0000014000EXX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR VIEW MONITOR SYSTEM: PROBLEM SYMPTOMS TABLE; 2016 MY Tacoma [08/2015 -]		

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

Rear View Monitor System

SYMPTOM	SUSPECTED AREA	SEE PAGE
When the shift lever is in R, the rear view monitor image is not displayed.	Proceed to "Reverse Signal Circuit"	INFO
	Proceed to "Radio Receiver Power Source Circuit"*1	INFO
	Proceed to "Radio Receiver Power Source Circuit"*2	INFO
	Radio and Display Receiver Assembly*1	INFO
	Navigation Receiver Assembly*2	INFO
When the shift lever is in R, the rear view monitor image is not displayed (screen is blue for 3 seconds and then turns off).	Proceed to "Image from Camera for Rear View Monitor is Abnormal"	INFO
	Radio and Display Receiver Assembly*1	INFO
	Navigation Receiver Assembly*2	INFO
When the shift lever is not in R, the rear view monitor image is displayed.	Proceed to "Reverse Signal Circuit"	INFO
	Radio and Display Receiver Assembly*1	INFO
	Navigation Receiver Assembly*2	INFO
Image from the camera for the rear view monitor is abnormal (color, distorted picture).	Proceed to "Image from Camera for Rear View Monitor is Abnormal"	INFO
	Radio and Display Receiver Assembly*1	INFO
	Navigation Receiver Assembly*2	INFO

*1: w/o Navigation System

*2: w/ Navigation System

HINT:

When the amber LED light is illuminated on the radio and display receiver assembly*1 or navigation

receiver assembly*2 with the ignition switch ON and the shift lever position R, this indicates that the monitor image has been canceled manually. Check if the image will be displayed by pressing the AUTO button.



Last Modified: 11-13-2015	6.6 J	Doc ID: RM000001W8V090X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR VIEW MONITOR SYSTEM: Reverse Signal Circuit; 2016 MY Tacoma [08/2015 -]		

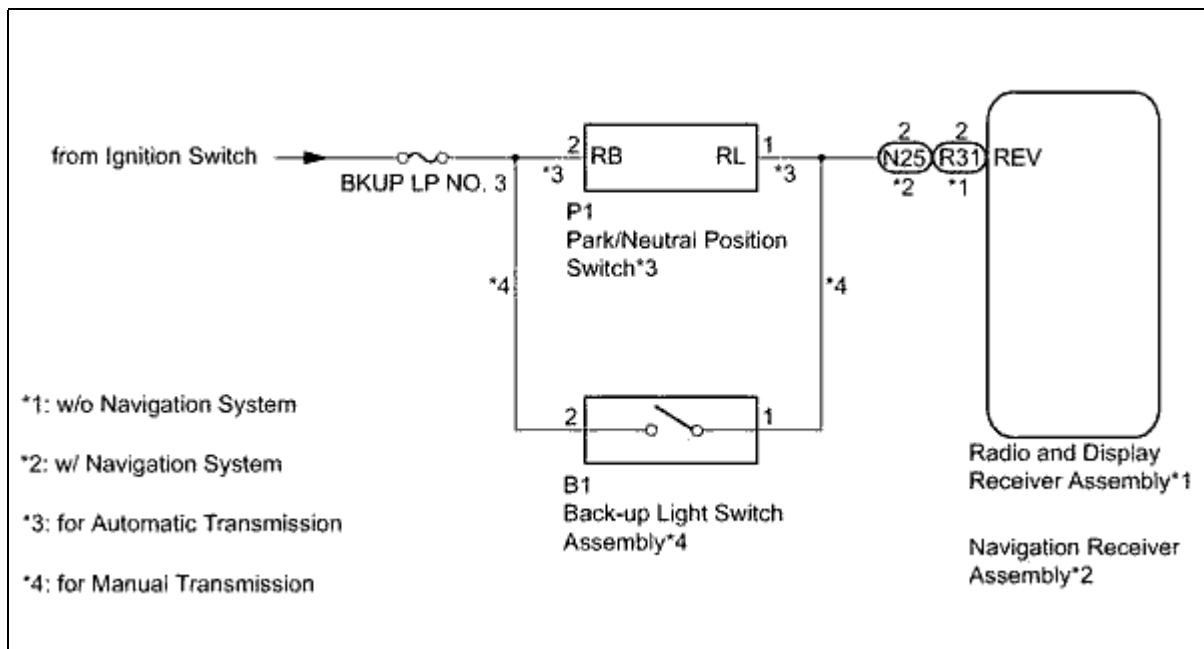
Reverse Signal Circuit

DESCRIPTION

The radio and display receiver assembly*1 or navigation receiver assembly*2 receives a reverse signal from the park/neutral position switch*3 or the back-up light switch assembly*4.

- *1: w/o Navigation System
- *2: w/ Navigation System
- *3: for Automatic Transmission
- *4: for Manual Transmission

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. CONFIRM MODEL	
-------------------------	--

(a) Choose the model to be inspected.

Result

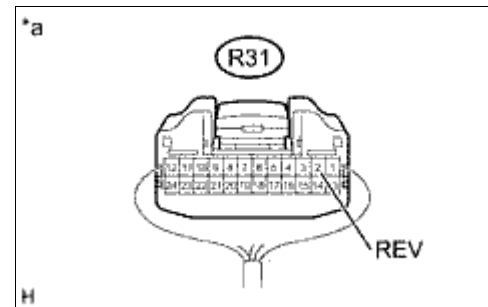
RESULT	PROCEED TO
w/o Navigation System	A
w/ Navigation System	B

B ► GO TO STEP 8

A

2.	INSPECT RADIO AND DISPLAY RECEIVER ASSEMBLY (REVERSE SIGNAL)
-----------	---

(a) Disconnect the radio and display receiver assembly connector.



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
R31-2 (REV) - Body ground	Ignition switch ON, shift lever in not R	Below 1 V
	Ignition switch ON, shift lever in R	11 to 14 V

Text in Illustration

*a	Rear view of wire harness connector (to Radio and Display Receiver Assembly)
-----------	---

(c) Reconnect the radio and display receiver assembly connector.

NG ► GO TO STEP 3

OK ► PROCEED TO NEXT SUSPECTED AREA SHOWN IN
PROBLEM SYMPTOMS TABLE

3.	SYSTEM CHECK
----	---------------------

(a) Check the vehicle specifications.

Result

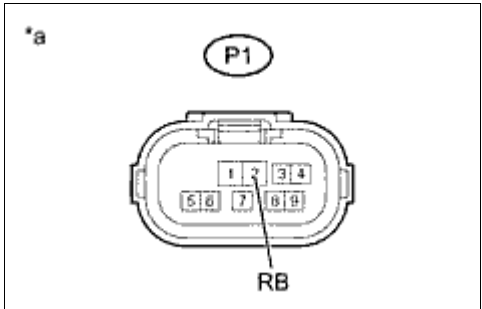
RESULT	PROCEED TO
for Automatic Transmission	A
for Manual Transmission	B

B  **GO TO STEP 6**

A


4.	INSPECT PARK/NEUTRAL POSITION SWITCH (IG SIGNAL)
----	---

(a) Disconnect the park/neutral position switch connector.



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
P1-2 (RB) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Park/Neutral Position Switch)
----	---

(c) Reconnect the park/neutral position switch connector.

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



5.

CHECK HARNESS AND CONNECTOR (RADIO AND DISPLAY RECEIVER ASSEMBLY - PARK/NEUTRAL POSITION SWITCH)

- (a) Disconnect the R31 radio and display receiver assembly connector.
- (b) Disconnect the P1 park/neutral position switch connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R31-2 (REV) - P1-1 (RL)	Always	Below 1 Ω
R31-2 (REV) - Body ground	Always	10 k Ω or higher

Result

RESULT	PROCEED TO
NG	A
OK (for AC60F)	B
OK (for AC60E)	C

- (d) Reconnect the radio and display receiver assembly connector.
- (e) Reconnect the park/neutral position switch connector.

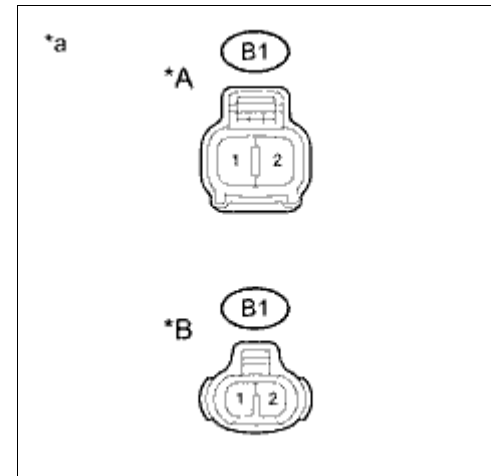
B ► REPLACE PARK/NEUTRAL POSITION SWITCH

C ► REPLACE PARK/NEUTRAL POSITION SWITCH

A ► REPAIR OR REPLACE HARNESS OR CONNECTOR

6.

INSPECT BACK-UP LIGHT SWITCH ASSEMBLY (IG SIGNAL)



(a) Disconnect the back-up light switch assembly connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
B1-2 - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*A	for 2GR-FKS
*B	for 2TR-FE
*a	Front view of wire harness connector (to Back-up Light Switch Assembly)

(c) Reconnect the back-up light switch assembly connector.

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



7.	CHECK HARNESS AND CONNECTOR (RADIO AND DISPLAY RECEIVER ASSEMBLY - BACK-UP LIGHT SWITCH ASSEMBLY)
-----------	--

(a) Disconnect the R31 radio and display receiver assembly connector.

(b) Disconnect the B1 back-up light switch assembly connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
-------------------	-----------	---------------------

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R31-2 (REV) - B1-1	Always	Below 1 Ω
R31-2 (REV) - Body ground	Always	10 k Ω or higher

Result

RESULT	PROCEED TO
NG	A
OK (for R156F)	B
OK (for RC62F)	C

(d) Reconnect the radio and display receiver assembly connector.

(e) Reconnect the back-up light switch assembly connector.

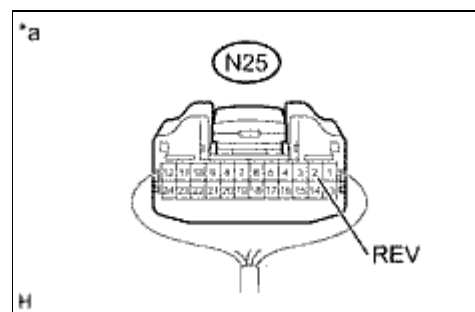
B ► REPLACE BACK-UP LIGHT SWITCH ASSEMBLY

C ► REPLACE BACK-UP LIGHT SWITCH ASSEMBLY

A ► REPAIR OR REPLACE HARNESS OR CONNECTOR

8.	INSPECT NAVIGATION RECEIVER ASSEMBLY (REVERSE SIGNAL)
-----------	--

(a) Disconnect the navigation receiver assembly connector.



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
N25-2 (REV) - Body ground	Ignition switch ON, shift lever in not R	Below 1 V
	Ignition switch ON, shift lever in R	11 to 14 V

Text in Illustration

*a	Rear view of wire harness connector
----	-------------------------------------

(to Navigation Receiver Assembly)

(c) Reconnect the navigation receiver assembly connector.

NG ► **GO TO STEP 9**

OK ► **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**

9. SYSTEM CHECK

(a) Check the vehicle specifications.

Result

RESULT	PROCEED TO
for Automatic Transmission	A
for Manual Transmission	B

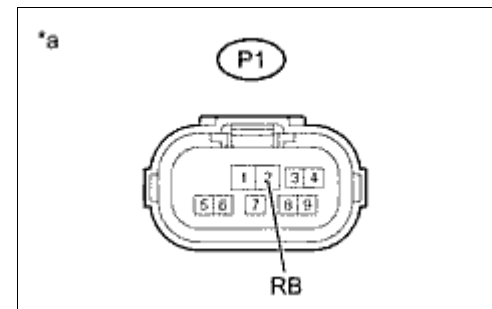
B ► **GO TO STEP 12**

A



10. INSPECT PARK/NEUTRAL POSITION SWITCH (IG SIGNAL)

(a) Disconnect the park/neutral position switch connector.



(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
P1-2 (RB) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Park/Neutral Position Switch)
----	---

(c) Reconnect the park/neutral position switch connector.

NG ► **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

11.	CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - PARK/NEUTRAL POSITION SWITCH)
------------	--

(a) Disconnect the N25 navigation receiver assembly connector.

(b) Disconnect the P1 park/neutral position switch connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
N25-2 (REV) - P1-1 (RL)	Always	Below 1 Ω
N25-2 (REV) - Body ground	Always	10 k Ω or higher

Result

RESULT	PROCEED TO
NG	A
OK (for AC60F)	B
OK (for AC60E)	C

(d) Reconnect the navigation receiver assembly connector.

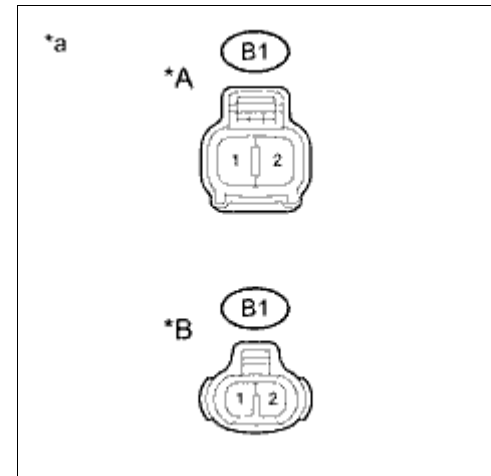
(e) Reconnect the park/neutral position switch connector.

B ► **REPLACE PARK/NEUTRAL POSITION SWITCH**

C ► **REPLACE PARK/NEUTRAL POSITION SWITCH**

A ► **REPAIR OR REPLACE HARNESS OR CONNECTOR**

12.	INSPECT BACK-UP LIGHT SWITCH ASSEMBLY (IG SIGNAL)
------------	--



(a) Disconnect the back-up light switch assembly connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
B1-2 - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*A	for 2GR-FKS
*B	for 2TR-FE
*a	Front view of wire harness connector (to Back-up Light Switch Assembly)

(c) Reconnect the back-up light switch assembly connector.

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



13.	CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - BACK-UP LIGHT SWITCH ASSEMBLY)
------------	---

(a) Disconnect the N25 navigation receiver assembly connector.

(b) Disconnect the B1 back-up light switch assembly connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
-------------------	-----------	---------------------

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
N25-2 (REV) - B1-1	Always	Below 1 Ω
N25-2 (REV) - Body ground	Always	10 k Ω or higher

Result

RESULT	PROCEED TO
NG	A
OK (for R155F)	B
OK (for RC62F)	C

(d) Reconnect the navigation receiver assembly connector.

(e) Reconnect the back-up light switch assembly connector.

B ► REPLACE BACK-UP LIGHT SWITCH ASSEMBLY

C ► REPLACE BACK-UP LIGHT SWITCH ASSEMBLY

A ► REPAIR OR REPLACE HARNESS OR CONNECTOR



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR VIEW MONITOR SYSTEM: SYSTEM DESCRIPTION; 2016 MY Tacoma [08/2015 -]		

SYSTEM DESCRIPTION

1. GENERAL

(a) To assist the driver with parking the vehicle by displaying an image of the area behind the vehicle, this system has a rear television camera assembly mounted on the tailgate. The system displays the image on the multi-display.

(b) This system consists of the following components:

- (1) Radio and display receiver assembly*1
- (2) Navigation receiver assembly*2
- (3) Rear television camera assembly
- (4) Park/neutral position switch*3
- (5) Back-up light switch assembly*4

*1: w/o Navigation System

*2: w/ Navigation System

*3: for Automatic Transmission

*4: for Manual Transmission

2. FUNCTION OF COMPONENTS

(a) The radio and display receiver assembly*1 or navigation receiver assembly*2 controls the system by using information from the following components:

ITEM	FUNCTION
Radio and display receiver assembly*1 Navigation receiver assembly*2	• Receives video signals, which contain an image of the area behind the vehicle taken with the rear television camera assembly. • Performs control of the system by receiving the reverse signal from the park/ neutral position switch*3 or back-up light switch assembly*4.
Rear television camera assembly	• Mounted on the tailgate to transmit an image of the area behind the vehicle to the radio and display receiver assembly*1 or navigation receiver assembly*2. • A color video camera that uses a CMOS (Complementary Metal Oxide Semiconductor) and a wide-angle lens.
Park/neutral position switch*3 Back-up light switch assembly*4	Transmits a reverse signal to the radio and display receiver assembly*1 or navigation receiver assembly*2.

*1: w/o Navigation System

*2: w/ Navigation System

*3: for Automatic Transmission

*4: for Manual Transmission

3. OPERATION EXPLANATION

- (a) The radio and display receiver assembly*1 or navigation receiver assembly*2 the reverse signal when the ignition switch is turned to ON and the shift lever is moved to R. After receiving the reverse signal, the radio and display receiver assembly*1 or navigation receiver assembly*2 switches to the rear view monitor system.

4. NOTES FOR REAR TELEVISION CAMERA ASSEMBLY

- (a) Notes for the rear television camera assembly

- (1) The rear view monitor system may not function properly if subjected to a severe blow by any hard object.
- (2) Do not scrub the cover part of the camera (resin made). Scrubbing may scratch the cover and affect the image. Prevent organic solvents, waxes, bond removing solvents or glass coating from adhering to the cover. If such material adheres to the cover, clean it off immediately and wash it with water.
- (3) Exposing the camera to a sudden temperature change may affect proper functioning of the camera.
- (4) A clear image may not appear if the camera is dirty with snow, mud, etc. In that case, wash it with water and wipe off the lens. Use a detergent to remove dirt if necessary.

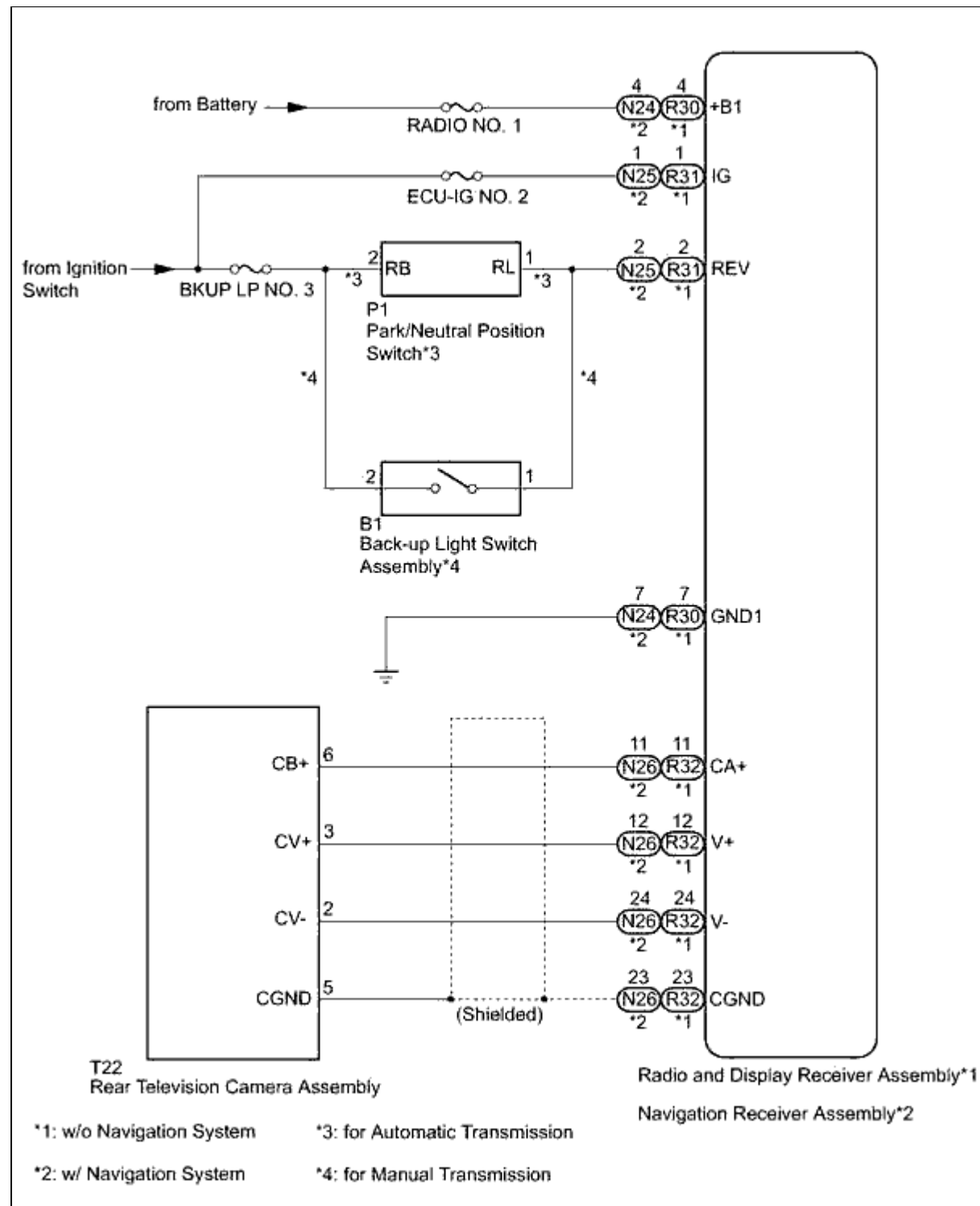
- (b) Images may be unclear even in normal conditions if:

- (1) The camera lens is frosted over (the image immediately after turning the ignition switch to ON may be blurred or darker than normal).
- (2) A strong beam of light, such as a sunbeam or headlight, hits the camera.
- (3) It is too dark around the camera (at night, etc.).
- (4) The ambient temperature around the camera is either too high or too low.



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR VIEW MONITOR SYSTEM: SYSTEM DIAGRAM; 2016 MY Tacoma [08/2015 -]		

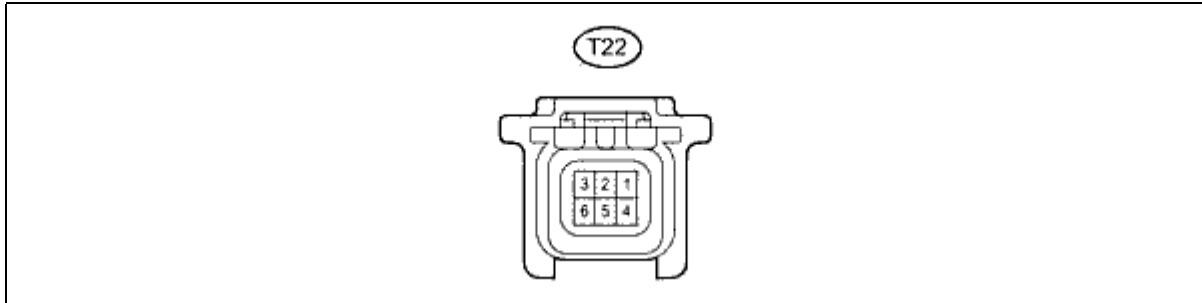
SYSTEM DIAGRAM



Last Modified: 11-13-2015	6.6 U	Doc ID: RM0000013ZZ0EAX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: REAR VIEW MONITOR SYSTEM: TERMINALS OF ECU; 2016 MY Tacoma [08/2015 -]		

TERMINALS OF ECU

1. REAR TELEVISION CAMERA ASSEMBLY



- (a) Disconnect the T22 television camera assembly connector.
- (b) Measure the voltage and resistance according to the value(s) in the table below.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
T22-5 (CGND) - Body ground	L - Body ground	Ground	Always	Below 1 Ω
T22-6 (CB+) - Body ground	B - Body ground	Power source	Ignition switch ON, shift lever in R	5.5 to 7.05 V

If the result is not as specified, there may be a malfunction on the wire harness side.

- (c) Reconnect the rear television camera assembly connector.
- (d) Measure the waveform according to the value(s) in the table below.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
T22-3 (CV+) - T22-2 (CV-)	R - W	Video signal	Ignition switch ON, shift lever in R	Pulse generation (See waveform 1)
			Ignition switch ON, shift lever in R, screen blacked out by covering camera lens	Pulse generation (See waveform 2)

HINT:

A waterproof connector is used for the rear television camera assembly. Therefore, inspect the waveform at the radio and display receiver assembly*1 or navigation receiver assembly*2 with the connector connected.

If the result is not as specified, the rear television camera assembly may have a malfunction.

*1: w/o Navigation System

*2: w/ Navigation System

(e) Using an oscilloscope, check the waveform.

HINT:

A waterproof connector is used for the rear television camera assembly. Therefore, inspect the waveform at the inner rear view assembly with the connector connected.

(1) Waveform 1 (Reference)

ITEM	CONTENT
Terminal No. (Symbol)	T22-3 (CV+) - T22-2 (CV-)
Tool Setting	200 mV/DIV., 50 μ sec./DIV.
Condition	Ignition switch ON, shift lever in R

HINT:

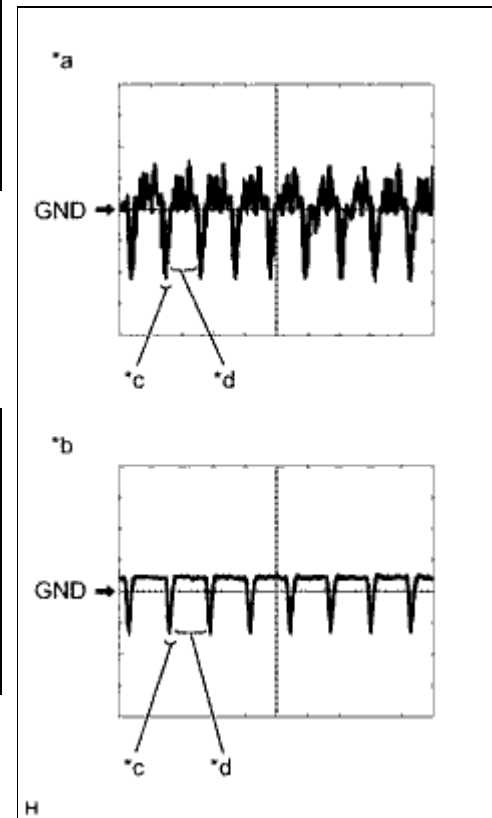
The video waveform changes according to the image sent by the rear television camera assembly.

(2) Waveform 2 (Reference)

ITEM	CONTENT
Terminal No. (Symbol)	T22-3 (CV+) - T22-2 (CV-)
Tool Setting	200 mV/DIV., 50 μ sec./DIV.
Condition	Ignition switch ON, shift lever in R, screen blacked out by covering camera lens

HINT:

The video waveform changes according to the image sent by the rear television camera assembly.



Text in Illustration

*a	Waveform 1
*b	Waveform 2
*c	Synchronized Signal
*d	Video Waveform

2. RADIO AND DISPLAY RECEIVER ASSEMBLY (w/o Navigation System)

INFO

3. NAVIGATION RECEIVER ASSEMBLY (w/ Navigation System)

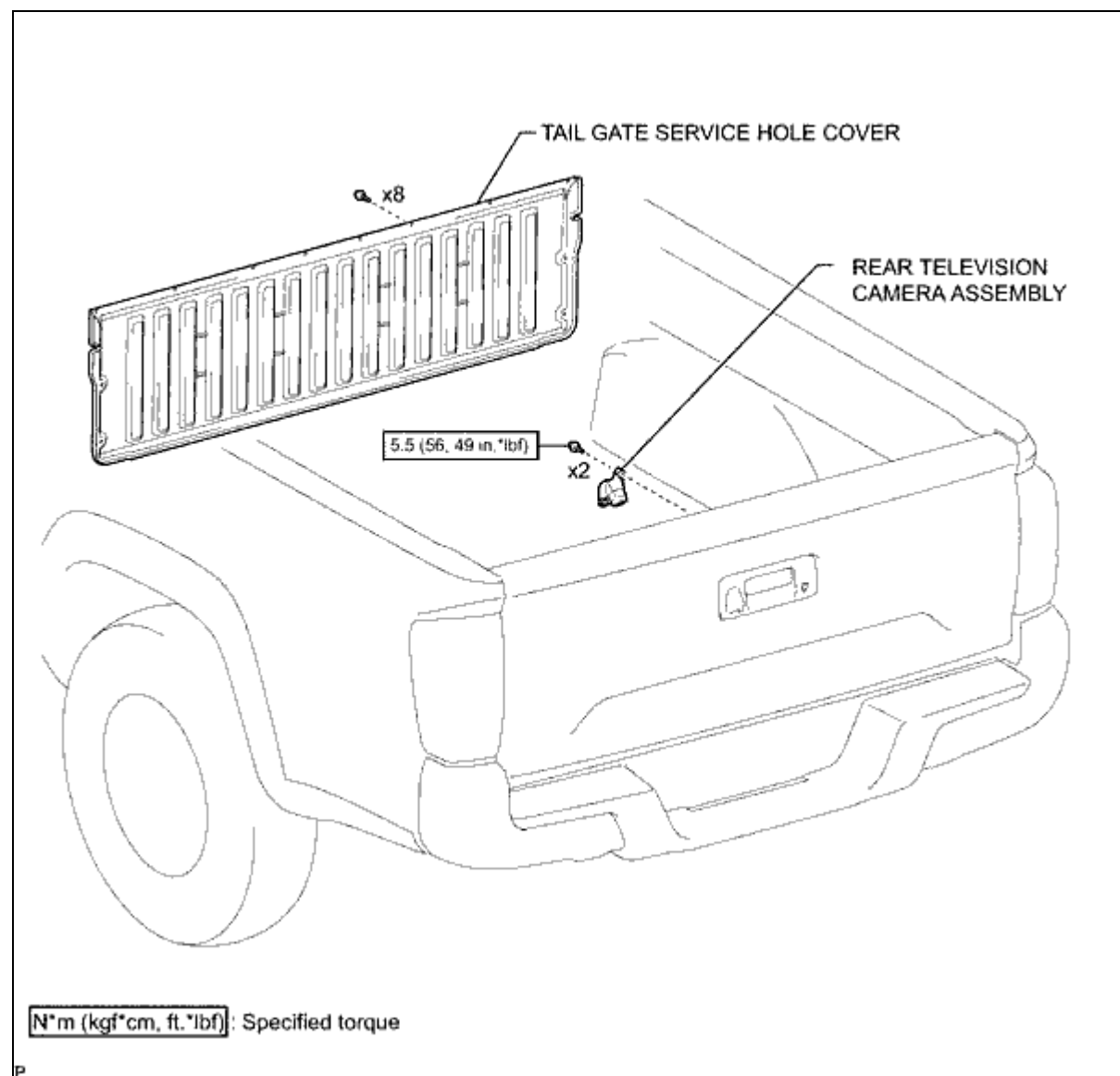
INFO



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: TELEVISION CAMERA: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION



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Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: TELEVISION CAMERA: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

1. INSTALL REAR TELEVISION CAMERA ASSEMBLY

(a) Install the rear television camera assembly with the 2 bolts.

Torque:

5.5 N·m {56 kgf·cm, 49in·lbf}

(b) Connect the connector.

2. INSTALL TAIL GATE SERVICE HOLE COVER [INFO](#)

3. INSTALL TAIL GATE PROTECTOR



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000003N5P007X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: TELEVISION CAMERA: REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

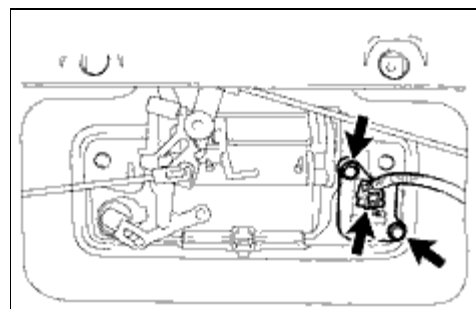
1. REMOVE TAIL GATE PROTECTOR

INFO

2. REMOVE TAIL GATE SERVICE HOLE COVER INFO

3. REMOVE REAR TELEVISION CAMERA ASSEMBLY

(a) Disconnect the connector.



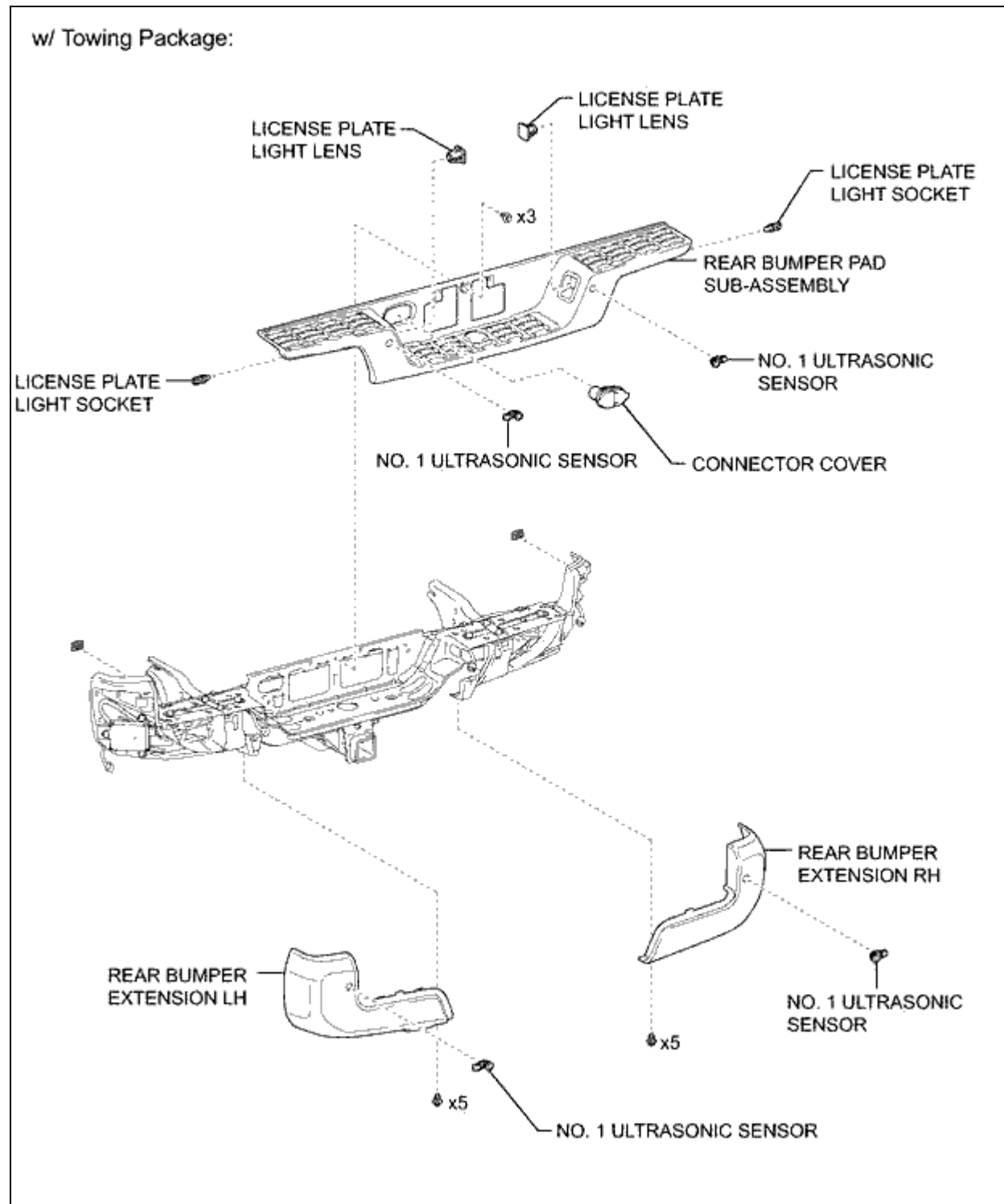
(b) Remove the 2 bolts and rear television camera assembly.



Last Modified: 11-13-2015	6.6 K	Doc ID: RM0000029H801XX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: ULTRASONIC SENSOR: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

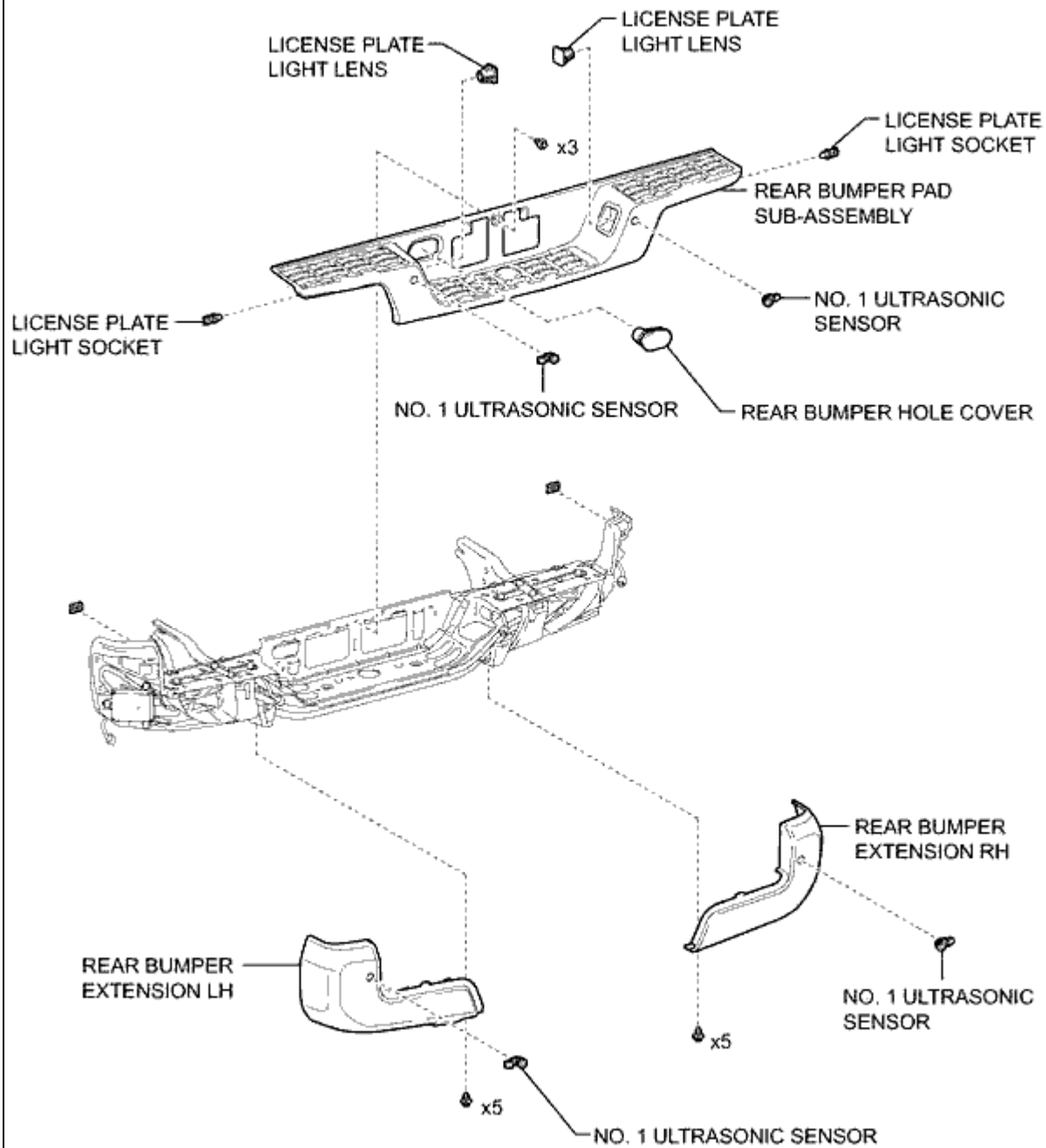
COMPONENTS

ILLUSTRATION



ILLUSTRATION

w/o Towing Package:



Last Modified: 11-13-2015	6.6 G	Doc ID: RM000005L2T006X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: ULTRASONIC SENSOR: INSPECTION; 2016 MY Tacoma [08/2015 -]		

INSPECTION

1. INSPECT NO. 1 ULTRASONIC SENSOR

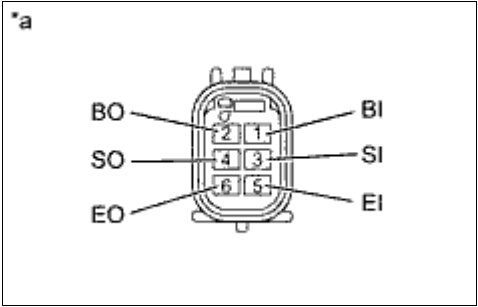
- (a) Measure the resistance according to the value(s) in the table below.

Text in Illustration

*a	Component without harness connected: (No. 1 Ultrasonic Sensor)
----	---

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 (BI) - 5 (EI)	Always	10 kΩ or higher
1 (BI) - 2 (BO)		
3 (SI) - 4 (SO)		Below 1 Ω
5 (EI) - 6 (EO)		



If the result is not as specified, replace the No. 1 ultrasonic sensor.



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000001PYC0B8X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: PARK ASSIST / MONITORING: ULTRASONIC SENSOR: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

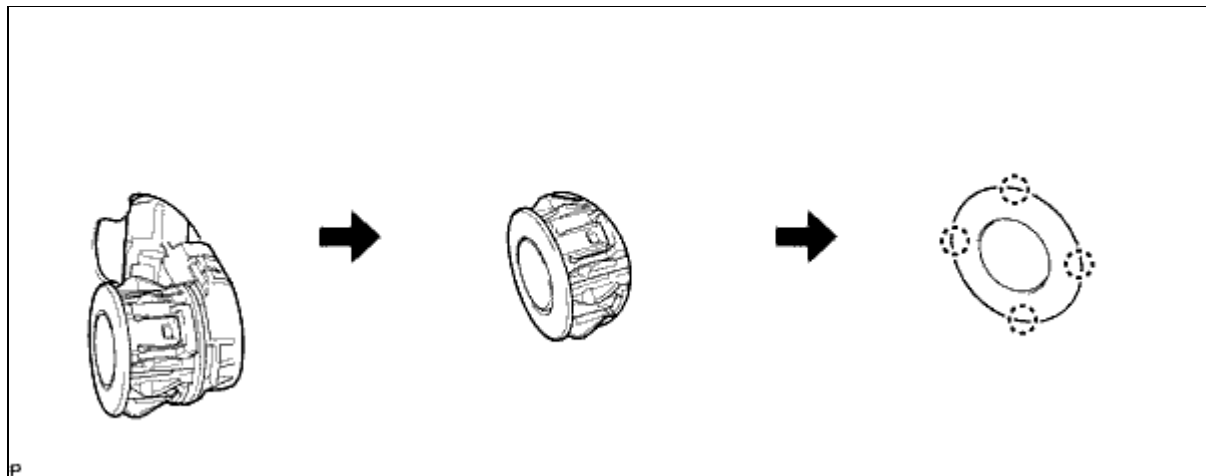
INSTALLATION

1. INSTALL NO. 1 ULTRASONIC SENSOR

HINT:

Use the same procedure for both sides.

(a) Engage the 4 claws to install the 4 No. 1 ultrasonic sensors as shown in the illustration.



2. INSTALL REAR BUMPER EXTENSION LH (w/ Towing Package) [INFO](#)

3. INSTALL REAR BUMPER EXTENSION LH (w/o Towing Package) [INFO](#)

4. INSTALL REAR BUMPER EXTENSION RH (w/ Towing Package)

HINT:

Use the same procedure as for the LH side.

5. INSTALL REAR BUMPER EXTENSION RH (w/o Towing Package)

HINT:

Use the same procedure as for the LH side.

6. INSTALL REAR BUMPER PAD SUB-ASSEMBLY (w/ Towing Package) [INFO](#)

7. INSTALL REAR BUMPER PAD SUB-ASSEMBLY (w/o Towing Package) [INFO](#)

8. INSTALL CONNECTOR COVER (w/ Towing Package) [INFO](#)

9. INSTALL REAR BUMPER HOLE COVER (w/o Towing Package) [INFO](#)

10. INSTALL REAR BUMPER ASSEMBLY (w/ Towing Package)

[INFO](#)

11. INSTALL REAR BUMPER ASSEMBLY (w/o Towing Package)

[INFO](#)



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Title: PARK ASSIST / MONITORING: ULTRASONIC SENSOR: REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

1. REMOVE REAR BUMPER ASSEMBLY (w/ Towing Package)

INFO

2. REMOVE REAR BUMPER ASSEMBLY (w/o Towing Package)

INFO

3. REMOVE CONNECTOR COVER (w/ Towing Package)

INFO

4. REMOVE REAR BUMPER HOLE COVER (w/o Towing Package)

INFO

5. REMOVE REAR BUMPER PAD SUB-ASSEMBLY (w/ Towing Package)

INFO

6. REMOVE REAR BUMPER PAD SUB-ASSEMBLY (w/o Towing Package)

INFO

7. REMOVE REAR BUMPER EXTENSION LH (w/ Towing Package)

INFO

8. REMOVE REAR BUMPER EXTENSION LH (w/o Towing Package)

INFO

9. REMOVE REAR BUMPER EXTENSION RH (w/ Towing Package)

HINT:

Use the same procedure as for the LH side.

10. REMOVE REAR BUMPER EXTENSION RH (w/o Towing Package)

HINT:

Use the same procedure as for the LH side.

11. REMOVE NO. 1 ULTRASONIC SENSOR

HINT:

Use the same procedure for both sides.

(a) Disengage the 4 claws to remove the 4 No. 1 ultrasonic sensors as shown in the illustration.

