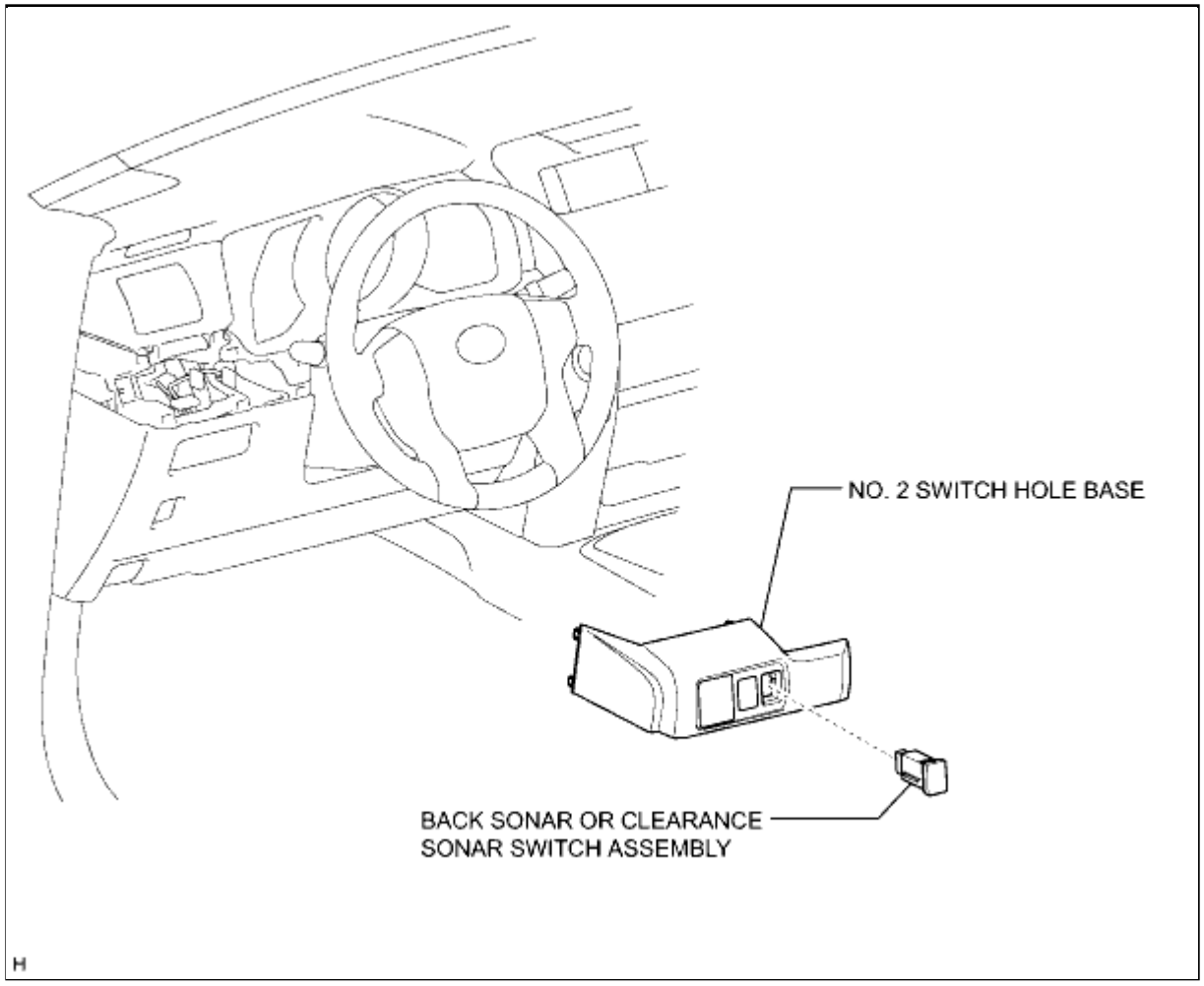
Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475M000X
Title: PARK ASSIST / MONITORING: CLEARANCE SONAR MAIN SWITCH: COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION



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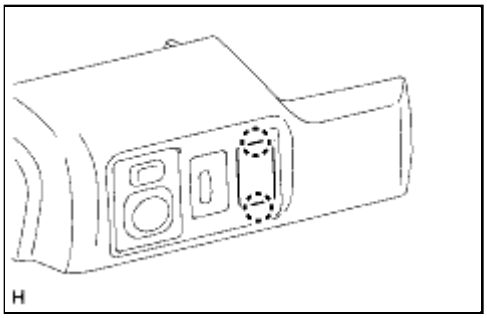
Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475N000X
Title: PARK ASSIST / MONITORING: CLEARANCE SONAR MAIN SWITCH: REMOVAL (2010 4Runner)		

REMOVAL

1. REMOVE NO. 2 SWITCH HOLE BASE INFO



2. REMOVE BACK SONAR OR CLEARANCE SONAR SWITCH ASSEMBLY

(a) Detach the 2 claws and remove the back sonar or clearance sonar switch.

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Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475P000X
Title: PARK ASSIST / MONITORING: CLEARANCE SONAR MAIN SWITCH: INSPECTION (2010 4Runner)		

INSPECTION

1. INSPECT BACK SONAR OR CLEARANCE SONAR SWITCH ASSEMBLY

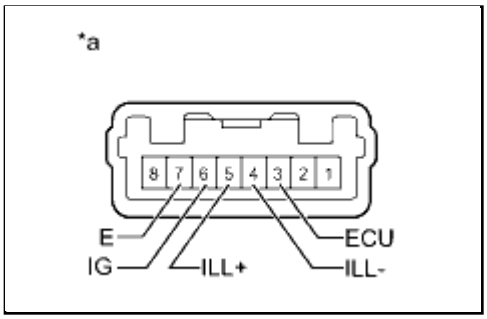
(a) Check the resistance.

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

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) Apply battery voltage to the connector and check the LED illumination condition.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → Terminal 3 (ECU) Battery negative (-) → Terminal 7 (E)	LED illuminates
Battery positive (+) → Terminal 5 (ILL+) Battery negative (-) → Terminal 4 (ILL-)	LED illuminates

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

Text in Illustration

*a	Component without harness connected

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	(Back Sonar or Clearance Sonar Switch Assembly)

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Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475L000X
Title: PARK ASSIST / MONITORING: CLEARANCE SONAR MAIN SWITCH: INSTALLATION (2010 4Runner)		

INSTALLATION

1. INSTALL BACK SONAR OR CLEARANCE SONAR SWITCH ASSEMBLY

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

2. INSTALL NO. 2 SWITCH HOLE BASE

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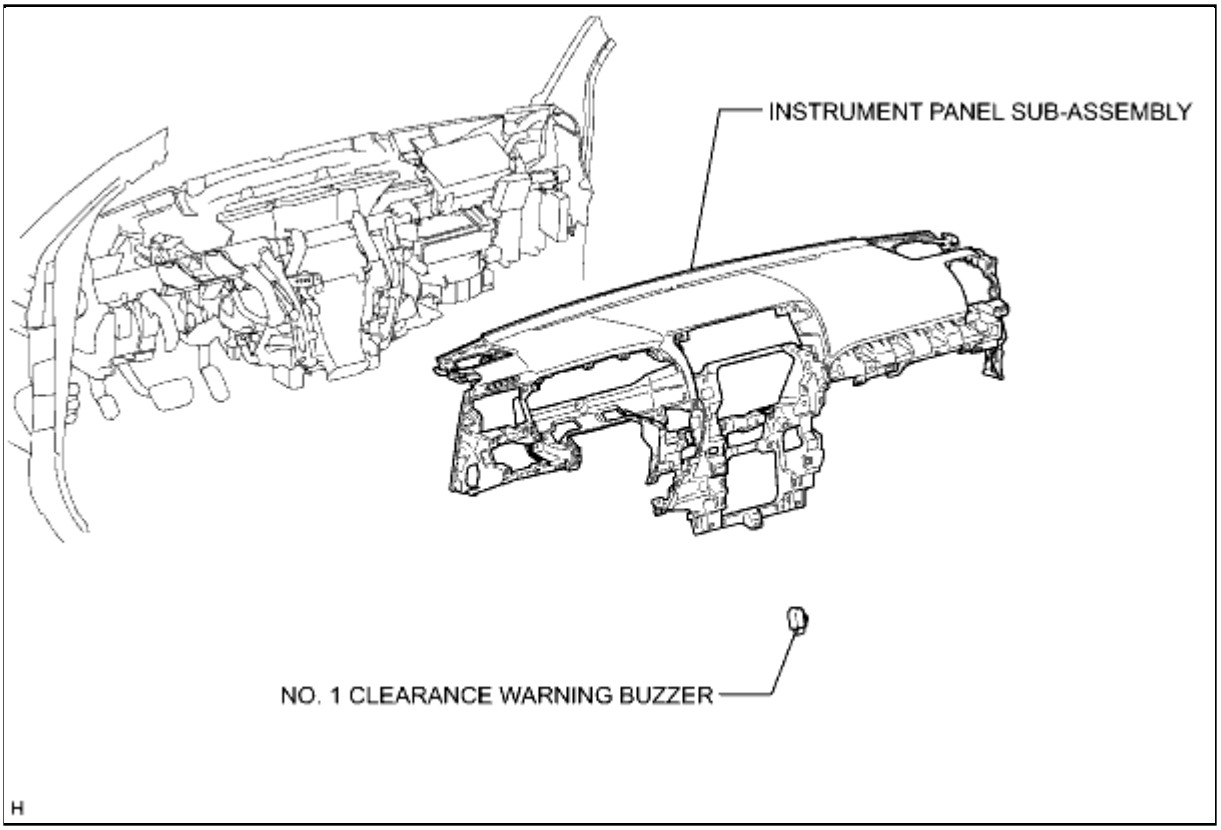
Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475C000X
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING BUZZER: COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION



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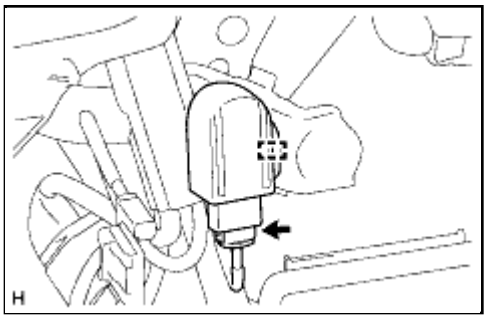
Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475F000X
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING BUZZER: REMOVAL (2010 4Runner)		

REMOVAL

1. REMOVE INSTRUMENT PANEL SUB-ASSEMBLY

(a) Remove the instrument panel sub-assembly INFO .



2. REMOVE NO. 1 CLEARANCE WARNING BUZZER

(a) Disconnect the connector.

(b) Detach the clamp and remove the No. 1 clearance warning buzzer.

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Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475E000X
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING BUZZER: INSTALLATION (2010 4Runner)		

INSTALLATION

1. INSTALL NO. 1 CLEARANCE WARNING BUZZER

(a) Attach the clamp to install the No. 1 clearance warning buzzer.

(b) Connect the connector.

2. INSTALL INSTRUMENT PANEL SUB-ASSEMBLY

(a) Install the instrument panel sub-assembly INFO .

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Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475D000X
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING ECU: COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION

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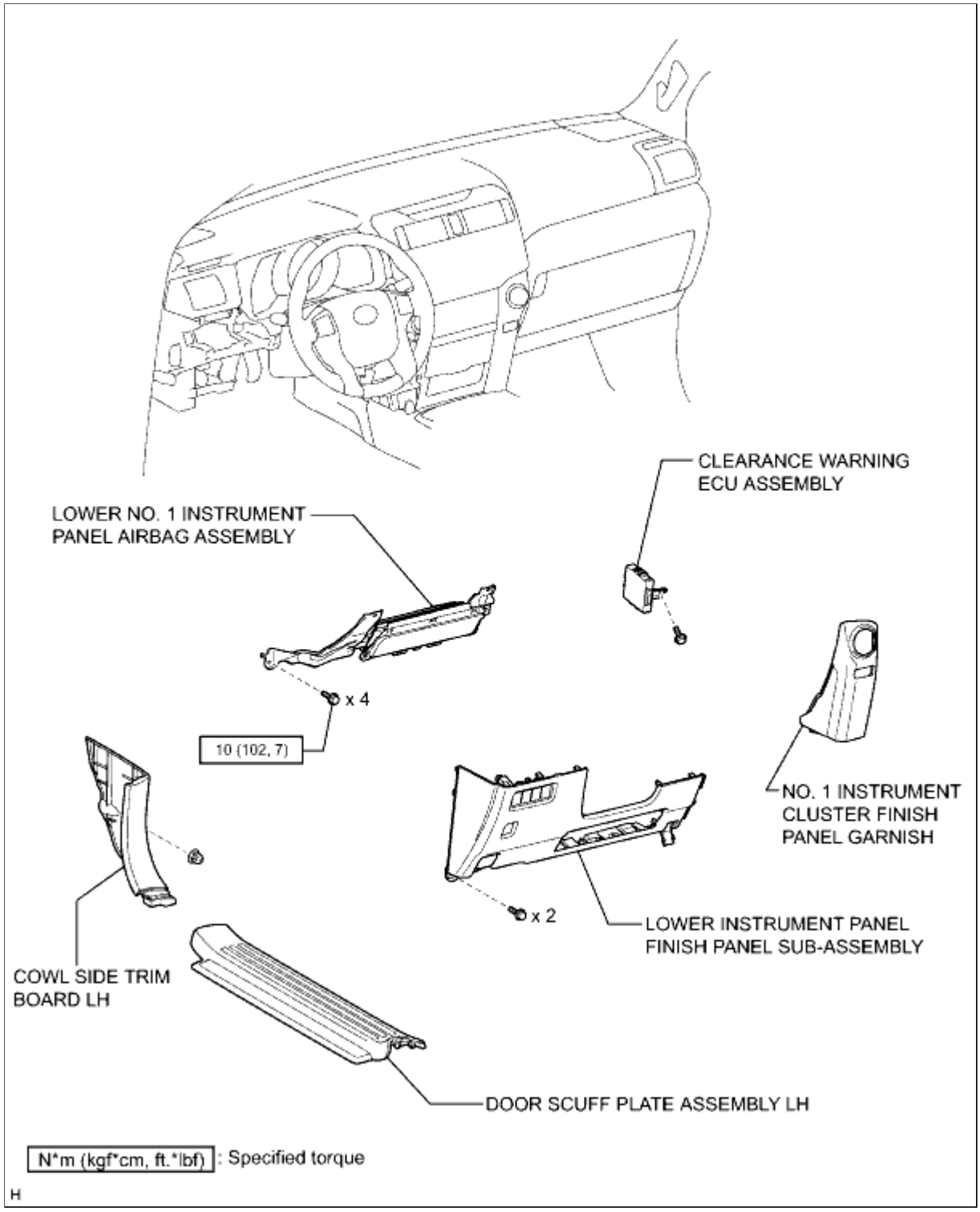

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Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000466X006X
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING ECU: REMOVAL (2010 4Runner)		

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to disable the SRS system.

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO **.**

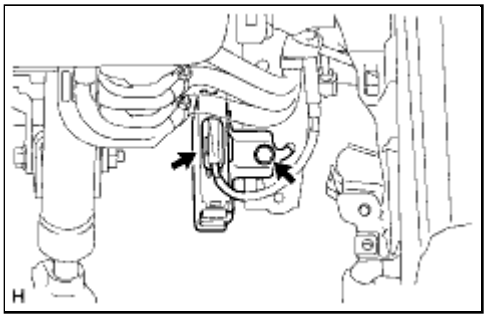
2. REMOVE DOOR SCUFF PLATE ASSEMBLY LH INFO

3. REMOVE COWL SIDE TRIM BOARD LH INFO

4. REMOVE NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH INFO

5. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY INFO

6. REMOVE LOWER NO. 1 INSTRUMENT PANEL AIRBAG ASSEMBLY INFO



7. REMOVE CLEARANCE WARNING ECU ASSEMBLY

(a) Disconnect the connector.

(b) Remove the bolt and clearance warning ECU.

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Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000466V006X
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING ECU: INSTALLATION (2010 4Runner)		

INSTALLATION

HINT:

A bolt without a torque specification is shown in the standard bolt chart INFO .

1. INSTALL CLEARANCE WARNING ECU ASSEMBLY

(a) Install the clearance warning ECU with the bolt.

(b) Connect the connector.

2. INSTALL LOWER NO. 1 INSTRUMENT PANEL AIRBAG ASSEMBLY INFO

3. INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY INFO

4. INSTALL NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH INFO

5. INSTALL COWL SIDE TRIM BOARD LH INFO

6. INSTALL DOOR SCUFF PLATE ASSEMBLY LH INFO

7. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO .

8. CHECK SRS WARNING LIGHT

(a) Check the SRS warning light INFO .

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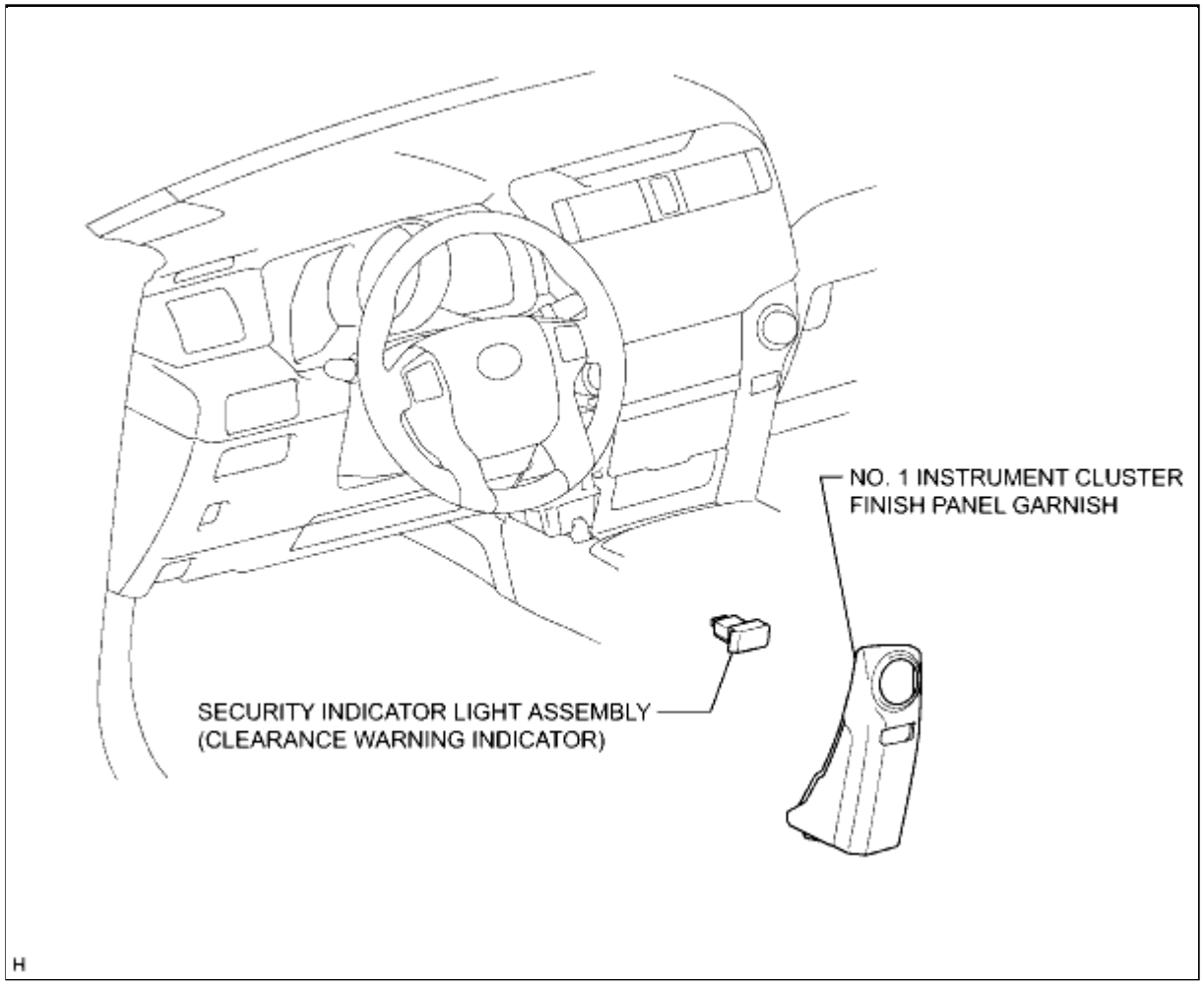
Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475I000X
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING INDICATOR: COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION



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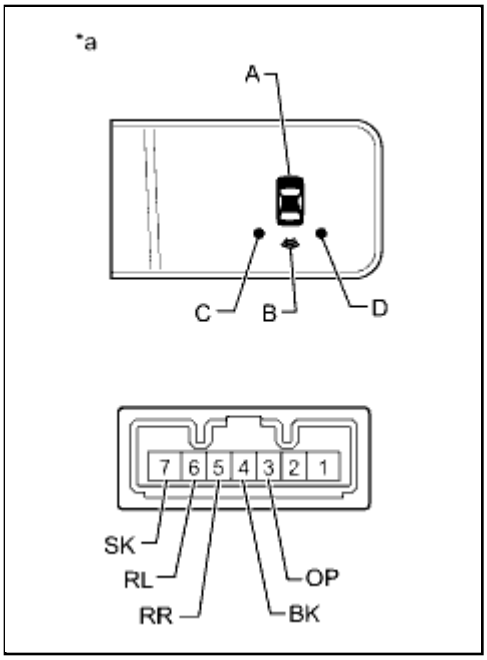
Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475H000X
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING INDICATOR: INSPECTION (2010 4Runner)		

INSPECTION

1. INSPECT SECURITY INDICATOR LIGHT ASSEMBLY (CLEARANCE WARNING INDICATOR)



(a) Apply battery voltage to the connector and check the LED illumination condition.

(1) for A:

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → Terminal 7 (SK) Battery negative (-) → Terminal 3 (OP)	LED illuminates

(2) for B:

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → Terminal 7 (SK) Battery negative (-) → Terminal 4 (BK)	LED illuminates

(3) for C:

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → Terminal 7 (SK) Battery negative (-) → Terminal 6 (RL)	LED illuminates

(4) for D:

OK:

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MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → Terminal 7 (SK) Battery negative (-) → Terminal 5 (RR)	LED illuminates

If the result is not as specified, replace the security indicator light (clearance warning indicator).

Text in Illustration

*a	Component without harness connected Security Indicator Light (Clearance Warning Indicator)

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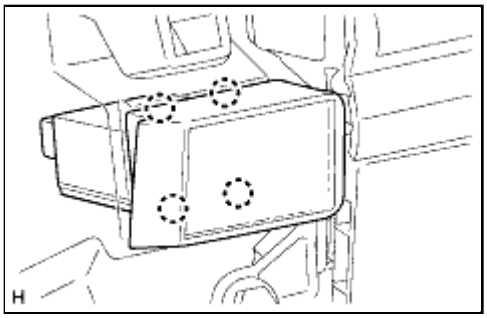
Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475J000X
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING INDICATOR: REMOVAL (2010 4Runner)		

REMOVAL

1. REMOVE NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH INFO



2. REMOVE SECURITY INDICATOR LIGHT ASSEMBLY (CLEARANCE WARNING INDICATOR)

(a) Disconnect the connector.

(b) Detach the 4 claws and remove the security indicator light (clearance warning indicator).

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Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475G000X
Title: PARK ASSIST / MONITORING: CLEARANCE WARNING INDICATOR: INSTALLATION (2010 4Runner)		

INSTALLATION

1. INSTALL SECURITY INDICATOR LIGHT ASSEMBLY (CLEARANCE WARNING INDICATOR)

(a) Attach the 4 claws to install the security indicator light (clearance warning indicator).

(b) Connect the connector.

2. INSTALL NO. 1 INSTRUMENT CLUSTER FINISH PANEL GARNISH INFO

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Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000475K000X
Title: PARK ASSIST / MONITORING: TELEVISION CAMERA (for Rear): COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION

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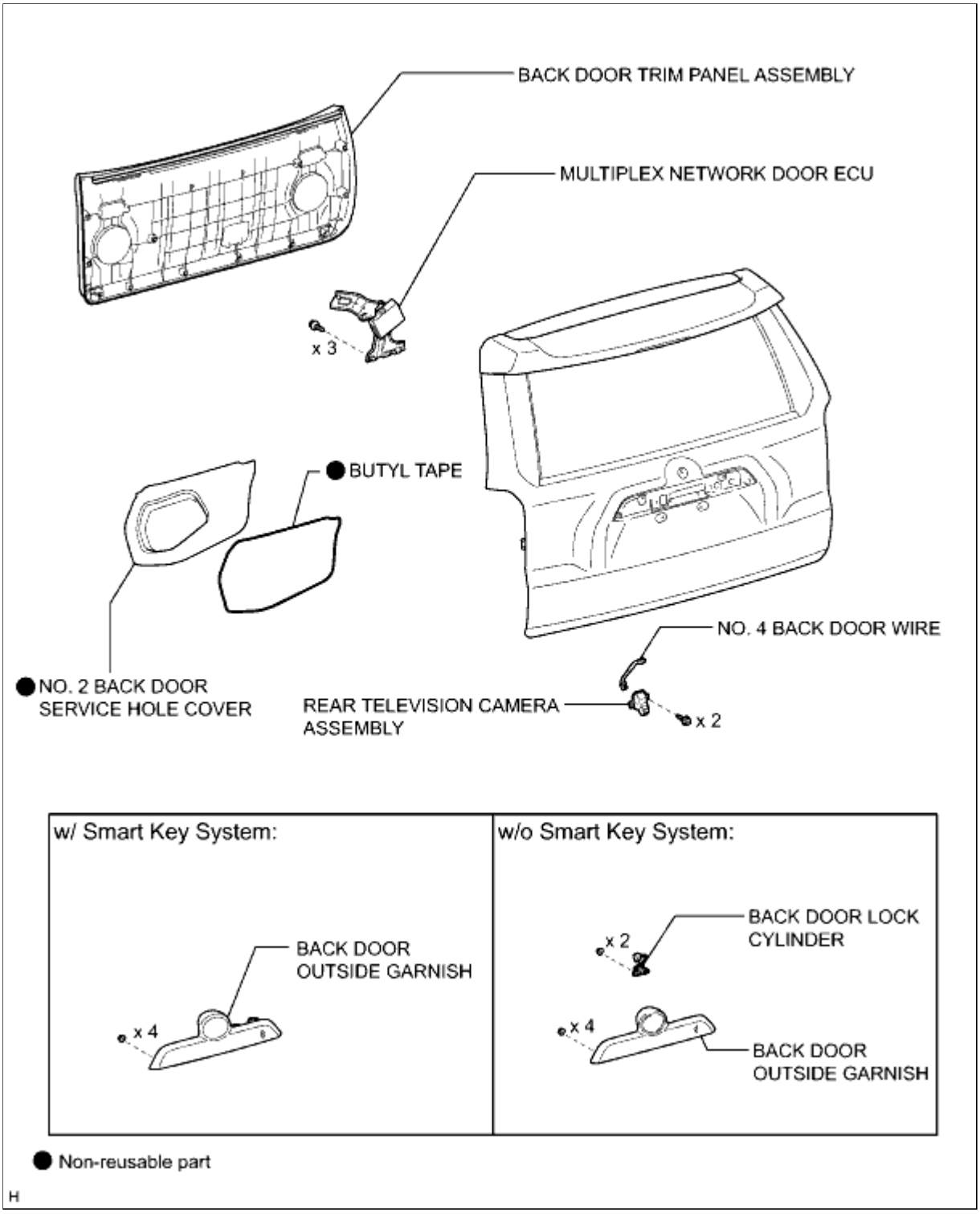

● Non-reusable part

H

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Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000470U001X
Title: PARK ASSIST / MONITORING: TELEVISION CAMERA (for Rear): REMOVAL (2010 4Runner)		

REMOVAL

1. REMOVE BACK DOOR TRIM PANEL ASSEMBLY INFO

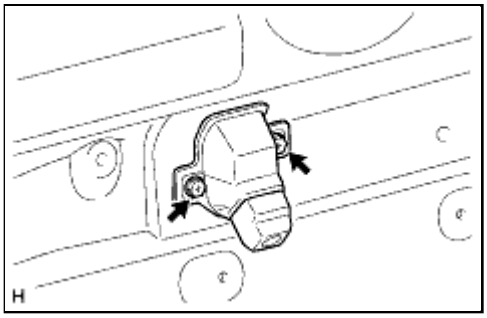
2. REMOVE MULTIPLEX NETWORK DOOR ECU INFO

3. REMOVE NO. 2 BACK DOOR SERVICE HOLE COVER INFO

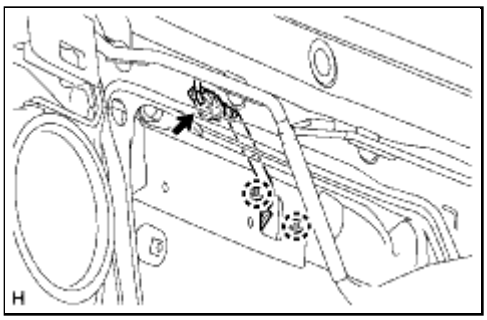
4. REMOVE BACK DOOR LOCK CYLINDER (w/o Smart Key System) INFO

5. REMOVE BACK DOOR OUTSIDE GARNISH INFO

6. REMOVE REAR TELEVISION CAMERA ASSEMBLY



(a) Remove the 2 screws.



(b) Disconnect the connector.

(c) Detach the 2 claws and remove the rear television camera.

7. REMOVE NO. 4 BACK DOOR WIRE

(a) Disconnect the connector and remove the No. 4 back door wire.

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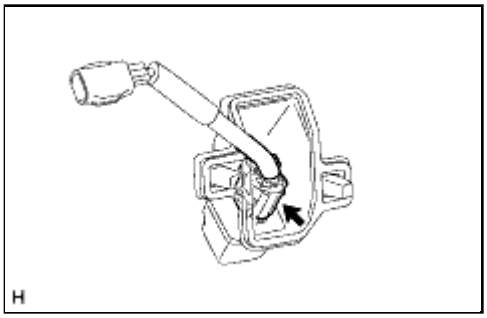

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Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000470S001X
Title: PARK ASSIST / MONITORING: TELEVISION CAMERA (for Rear): INSTALLATION (2010 4Runner)		

INSTALLATION

1. INSTALL NO. 4 BACK DOOR WIRE

(a) Connect the connector to install the No. 4 back door wire.

2. INSTALL REAR TELEVISION CAMERA ASSEMBLY

(a) Attach the 2 claws to install the rear television camera.

(b) Connect the connector.

(c) Install the 2 screws.

3. INSTALL BACK DOOR OUTSIDE GARNISH INFO

4. INSTALL BACK DOOR LOCK CYLINDER (w/o Smart Key System) INFO

5. INSTALL NO. 2 BACK DOOR SERVICE HOLE COVER INFO

6. INSTALL MULTIPLEX NETWORK DOOR ECU INFO

7. INSTALL BACK DOOR TRIM PANEL ASSEMBLY INFO

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Last Modified: 5-10-2010	6.4 K	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM000000475O000X
Title: PARK ASSIST / MONITORING: ULTRASONIC SENSOR (for Rear): COMPONENTS (2010 4Runner)		

COMPONENTS

ILLUSTRATION

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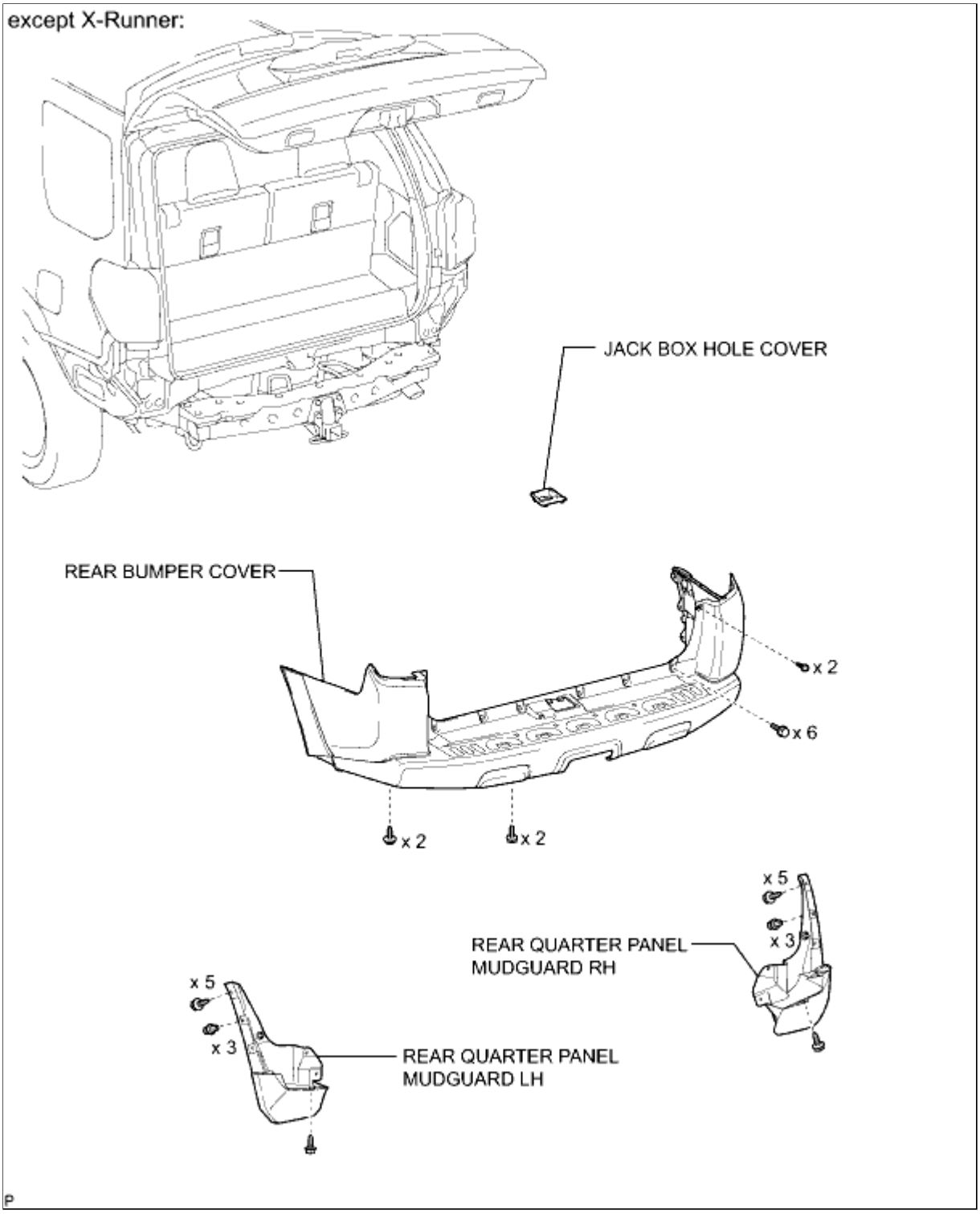

ILLUSTRATION

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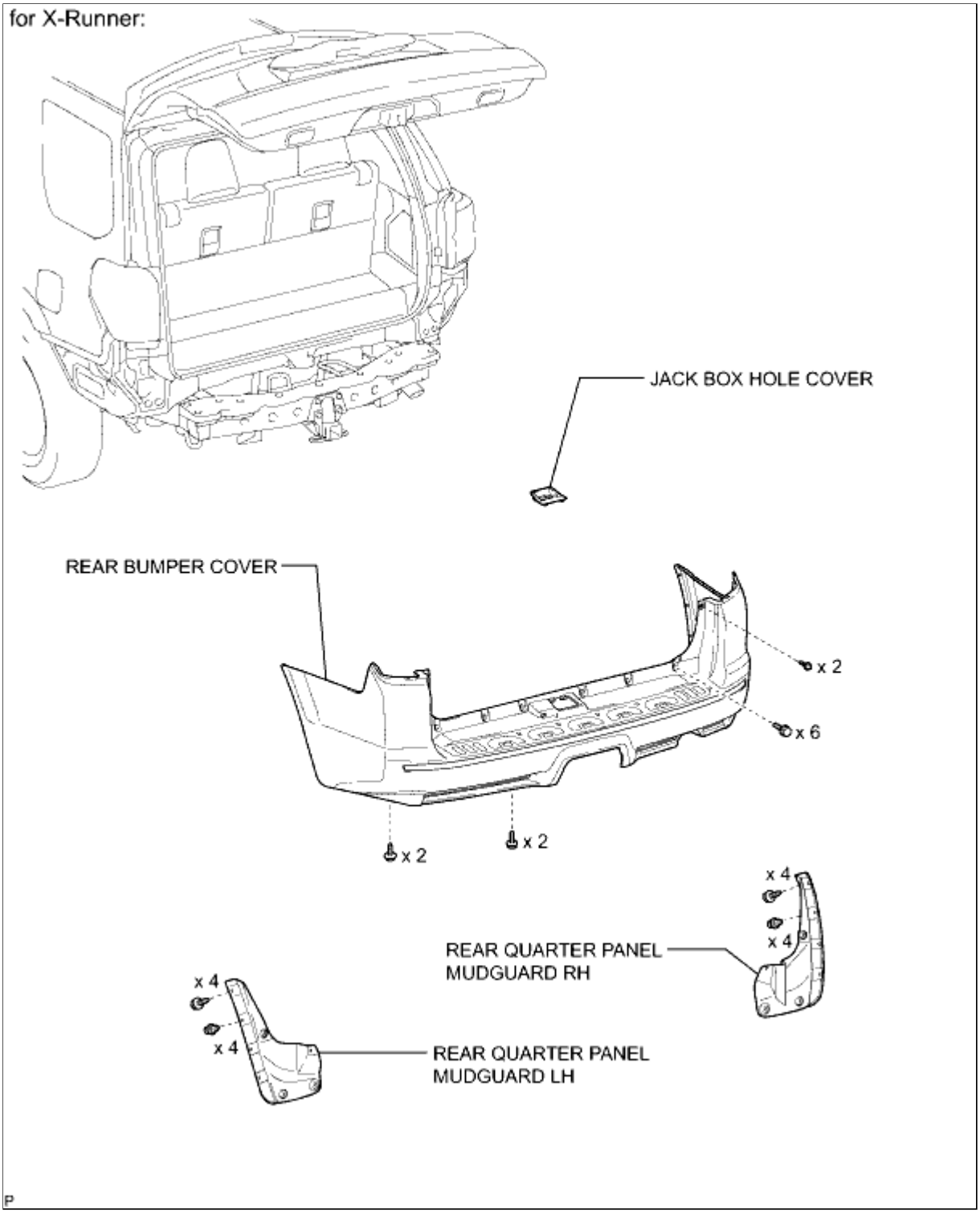

ILLUSTRATION

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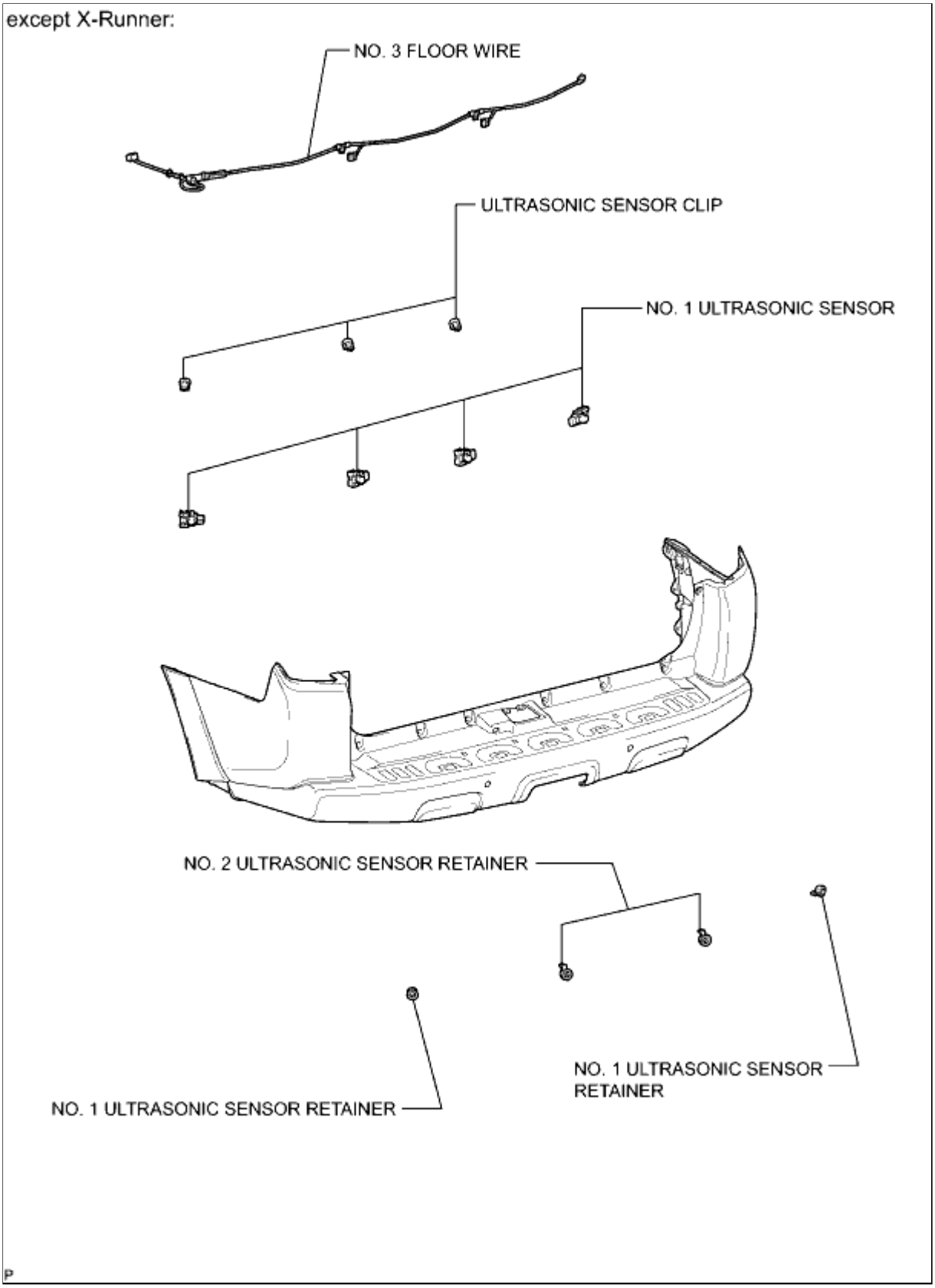

ILLUSTRATION

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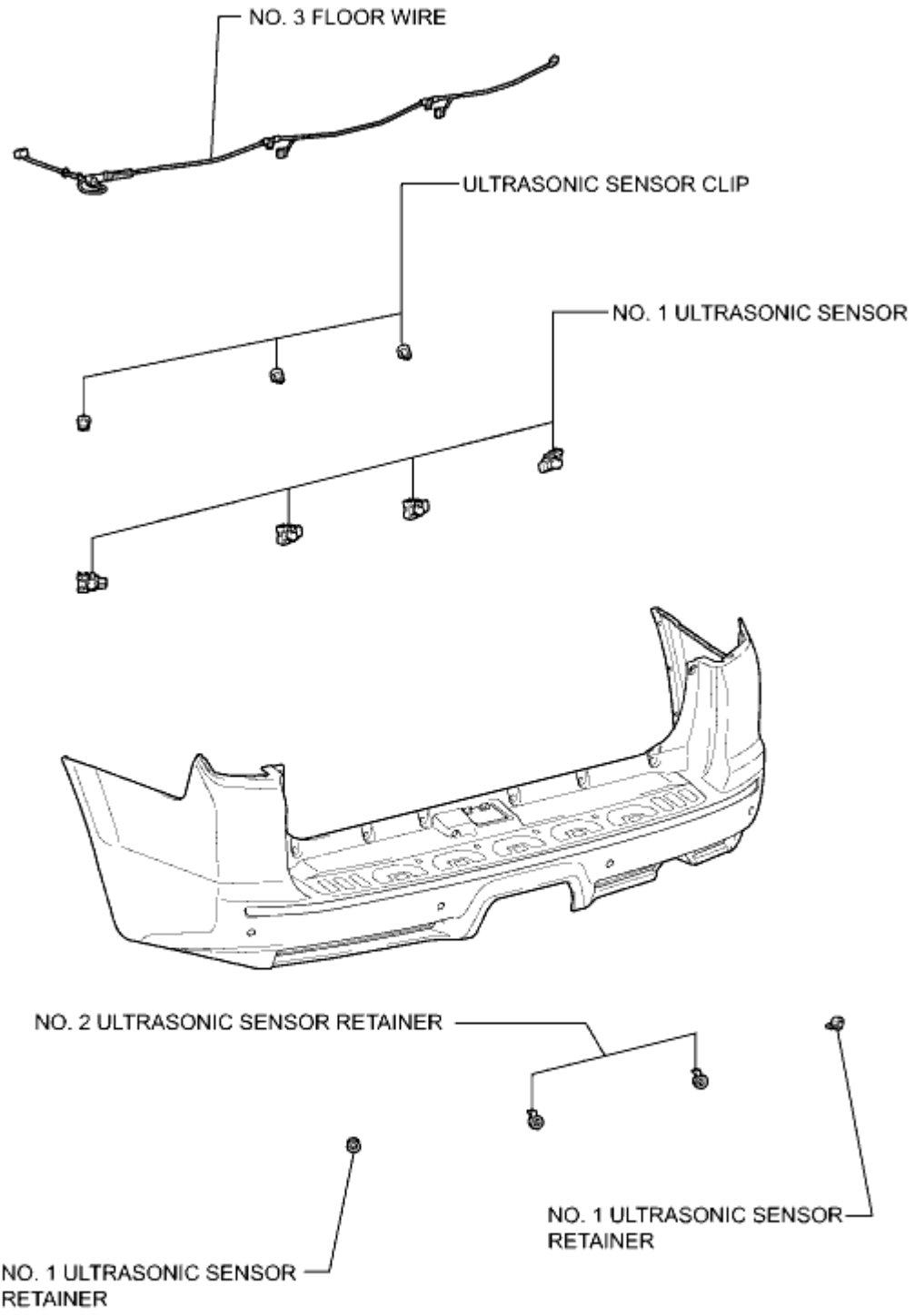
for X-Runner:



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Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000470F002X
Title: PARK ASSIST / MONITORING: ULTRASONIC SENSOR (for Rear): REMOVAL (2010 4Runner)		

REMOVAL

1. **REMOVE JACK BOX HOLE COVER** INFO

2. **REMOVE REAR QUARTER PANEL MUDGUARD LH** INFO

3. **REMOVE REAR QUARTER PANEL MUDGUARD RH**

HINT:

Use the same procedure described for the LH side.

4. **REMOVE REAR QUARTER PANEL MUDGUARD LH (for X-Runner)** INFO

5. **REMOVE REAR QUARTER PANEL MUDGUARD RH (for X-Runner)**

HINT:

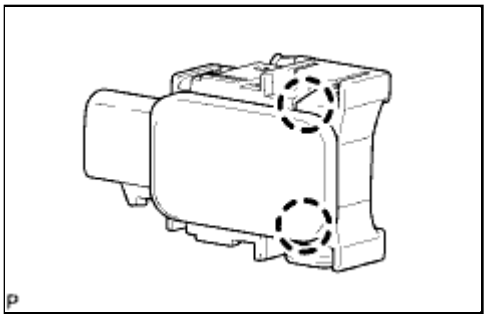
Use the same procedure described for the LH side.

6. **REMOVE REAR BUMPER COVER** INFO

7. **REMOVE REAR BUMPER COVER (for X-Runner)** INFO

8. **REMOVE NO. 3 FLOOR WIRE** INFO

9. **REMOVE NO. 3 FLOOR WIRE (for X-Runner)** INFO



10. **REMOVE NO. 1 ULTRASONIC SENSOR**

HINT:

Use the same procedure to remove the No. 1 ultrasonic sensor on the other side.

(a) Detach the 2 claws and remove the No. 1 ultrasonic sensor.

11. **REMOVE ULTRASONIC SENSOR CLIP**

HINT:

Use the same procedure to remove the No. 1 ultrasonic sensor clip on the other side.

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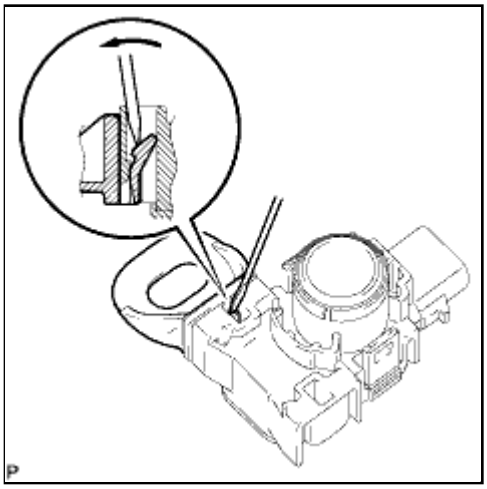
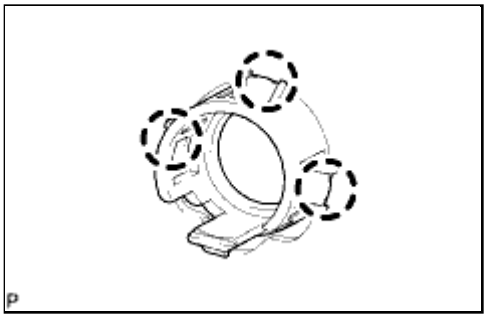


(a) Using a screwdriver, detach the claw and remove the ultrasonic sensor clip as shown in the illustration.

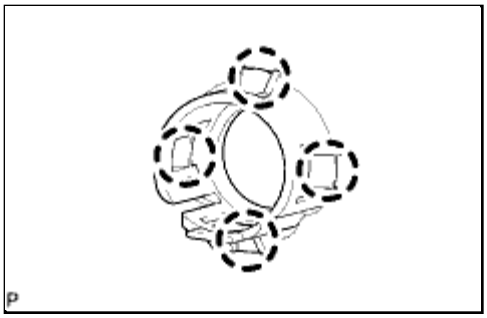


12. REMOVE NO. 2 ULTRASONIC SENSOR RETAINER

HINT:

Use the same procedure to remove the No. 2 ultrasonic sensor retainer on the other side.

(a) Detach the 3 claws and remove the No. 2 ultrasonic sensor retainer.



13. REMOVE NO. 1 ULTRASONIC SENSOR RETAINER

HINT:

Use the same procedure to remove the No. 1 ultrasonic sensor retainer on the other side.

(a) Detach the 4 claws and remove the No. 1 ultrasonic sensor retainer.

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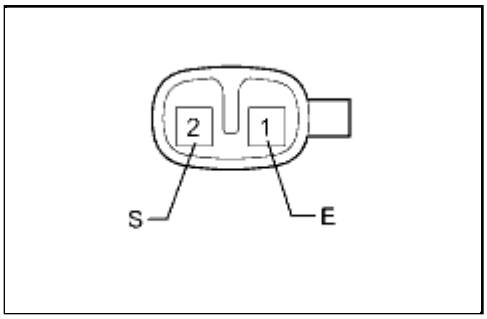
Last Modified: 5-10-2010	6.4 G	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000472K002X
Title: PARK ASSIST / MONITORING: ULTRASONIC SENSOR (for Rear): INSPECTION (2010 4Runner)		

INSPECTION



1. INSPECT NO. 1 ULTRASONIC SENSOR

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 (E) - 2 (S)	Always	20 to 40 kΩ

If the result is not as specified, replace the No. 1 ultrasonic sensor.

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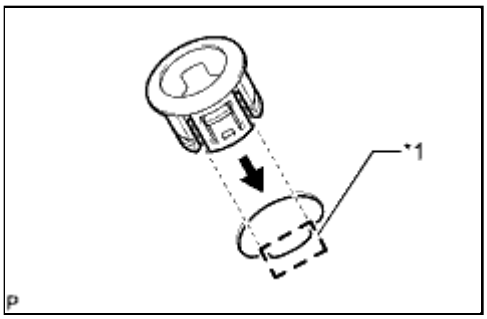
Last Modified: 5-10-2010	6.4 A	**From:** 200908
Model Year: 2010	**Model:** 4Runner	**Doc ID:** RM00000470D002X
Title: PARK ASSIST / MONITORING: ULTRASONIC SENSOR (for Rear): INSTALLATION (2010 4Runner)		

INSTALLATION

1. INSTALL NO. 1 ULTRASONIC SENSOR RETAINER

HINT:

Use the same procedure to install the No. 1 ultrasonic sensor retainer on the other side.



(a) Align the keyhole and protrusion as shown in the illustration.

Text in Illustration

*1	Keyhole

(b) Attach the 4 claws to install the ultrasonic sensor retainer to the front bumper cover.

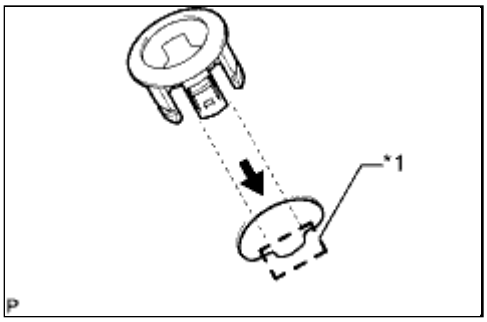
NOTICE:

Do not damage the bumper cover with the protrusion when installing the retainer.

2. INSTALL NO. 2 ULTRASONIC SENSOR RETAINER

HINT:

Use the same procedure to install the No. 2 ultrasonic sensor retainer on the other side.



(a) Align the keyhole and protrusion as shown in the illustration.

Text in Illustration

*1	Keyhole

(b) Attach the 3 claws to install the ultrasonic sensor retainer to the front bumper cover.

NOTICE:

Do not damage the bumper cover with the protrusion when

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installing the retainer.

3. INSTALL ULTRASONIC SENSOR CLIP

HINT:

Use the same procedure to install the No. 1 ultrasonic sensor clip on the other side.

(a) Attach the claw to install the ultrasonic sensor clip.

4. INSTALL NO. 1 ULTRASONIC SENSOR

HINT:

Use the same procedure to install the No. 1 ultrasonic sensor retainer on the other side.

(a) Attach the 2 claws to install the No. 1 ultrasonic sensor.

5. INSTALL NO. 3 FLOOR WIRE INFO

6. INSTALL NO. 3 FLOOR WIRE (for X-Runner) INFO

7. INSTALL REAR BUMPER COVER INFO

8. INSTALL REAR BUMPER COVER (for X-Runner) INFO

9. INSTALL REAR QUARTER PANEL MUDGUARD LH INFO

10. INSTALL REAR QUARTER PANEL MUDGUARD RH

HINT:

Use the same procedure described for the LH side.

11. INSTALL REAR QUARTER PANEL MUDGUARD LH (for X-Runner) INFO

12. INSTALL REAR QUARTER PANEL MUDGUARD RH (for X-Runner)

HINT:

Use the same procedure described for the LH side.

13. INSTALL JACK BOX HOLE COVER INFO

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