SECTION EXT
EXTERIOR

CONTENTS

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000014391489

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, it is recommended that all maintenance and repair be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper repair, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

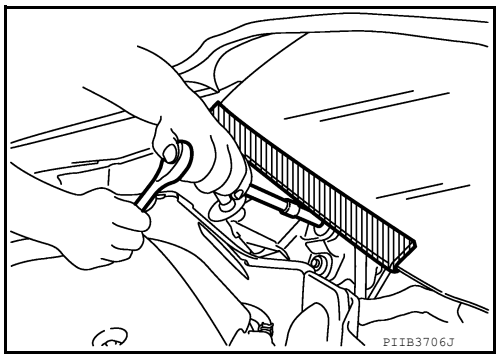
WARNING:

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery or batteries, and wait at least three minutes before performing any service.**

Procedure without Cowl Top Cover

INFOID:0000000014391490

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc. to prevent damage to the windshield.



Precaution for Work

INFOID:0000000014391491

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:

- Water soluble dirt:

- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.

- Oily dirt:

< PRECAUTION >

- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.

- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

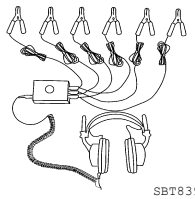
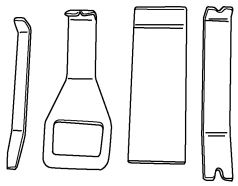
PREPARATION

PREPARATION

Special Service Tool

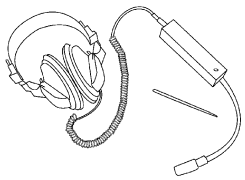
INFOID:0000000014391492

The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
— (J-39570) Chassis Ear  SBT839	Locating the noise
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components
— (J-50397) NISSAN Squeak and Rattle kit  ALJIA1232ZZ	Repairing the cause of noise

Commercial Service Tool

INFOID:0000000014391493

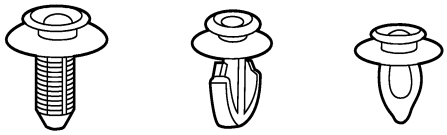
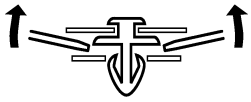
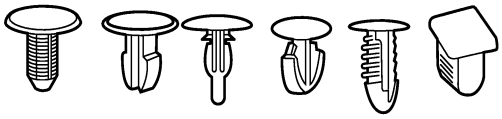
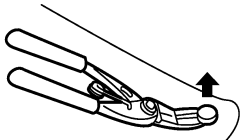
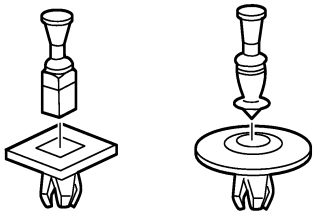
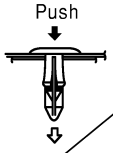
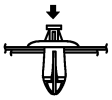
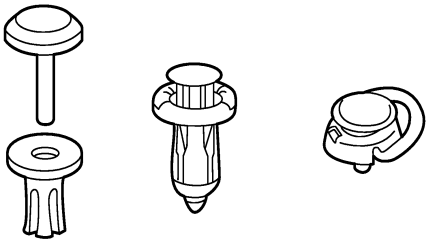
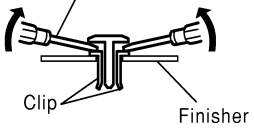
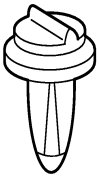
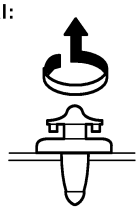
(TechMate No.) Tool name	Description
(J-39565) Engine ear  SIIA0995E	Locating the noise

CLIP LIST

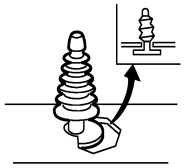
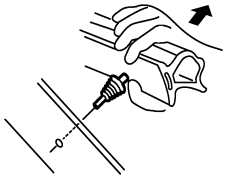
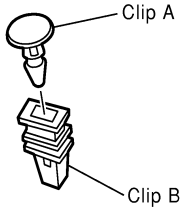
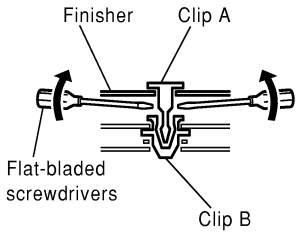
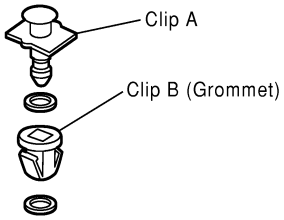
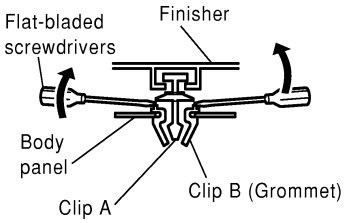
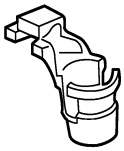
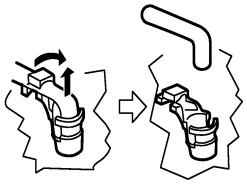
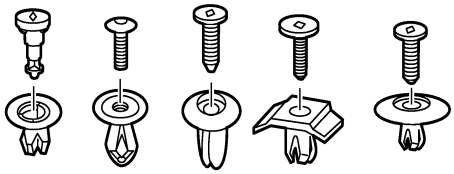
Descriptions for Clips

INFOID:0000000014391494

Replace any clips which are damaged during removal or installation.

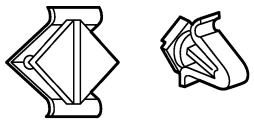
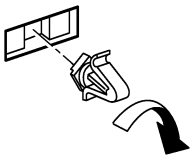
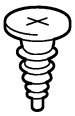
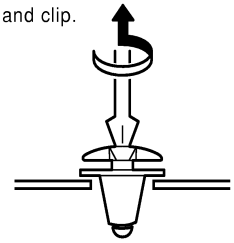
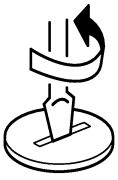
Symbol No.	Shapes	Removal & Installation
C101		**Removal:** Remove by bending up with flat-bladed screwdrivers or clip remover. 
C103		 **Removal:** Remove with a clip remover.
C203		**Removal:** Push center pin to catching position. (Do not remove center pin by hitting it.)  Push  Push **Installation:**
C205		**Removal:** Flat-bladed screwdriver  Clip Finisher
C206		**Removal:** 

SIIA0315E

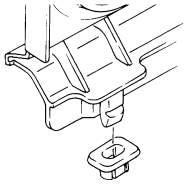
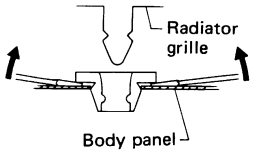
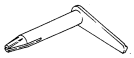
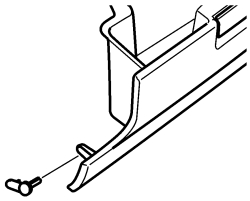
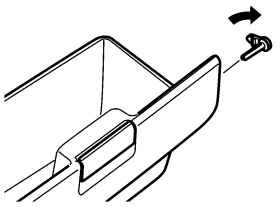
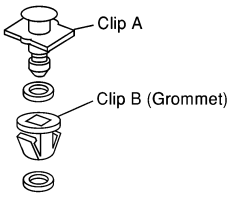
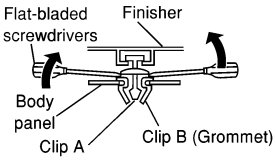
Symbol No.	Shapes	Removal & Installation
CE103 		**Removal:** 
CF110 		**Removal:** 
CF118 		**Removal:** 
CR103		**Removal:** Holder portion of clip must be spread out to remove rod. 
CS101 		**Removal:** 1. Screw out with a Phillips screwdriver. 2. Remove female portion with flat-bladed screwdriver. 

SIIA0316E

CLIP LIST

Symbol No.	Shapes	Removal & Installation
CG101 		**Removal:**  Rotate 45° to remove  **Removal:** **Installation:** 
CS102 		
CS113 		**Removal:** Disconnect upper connection of clip with a flat-bladed screwdriver, then remove clip while inserting a flat-bladed screwdriver between body panel and clip. 
C111 		

SIIA0317E

Symbol No.	Shapes	Removal & Installation
CG104 		**Removal:** **Remove by bending up with flat-bladed screwdrivers.** 
CE114 		
CF118 		**Removal:** 

ALJIA0564GB

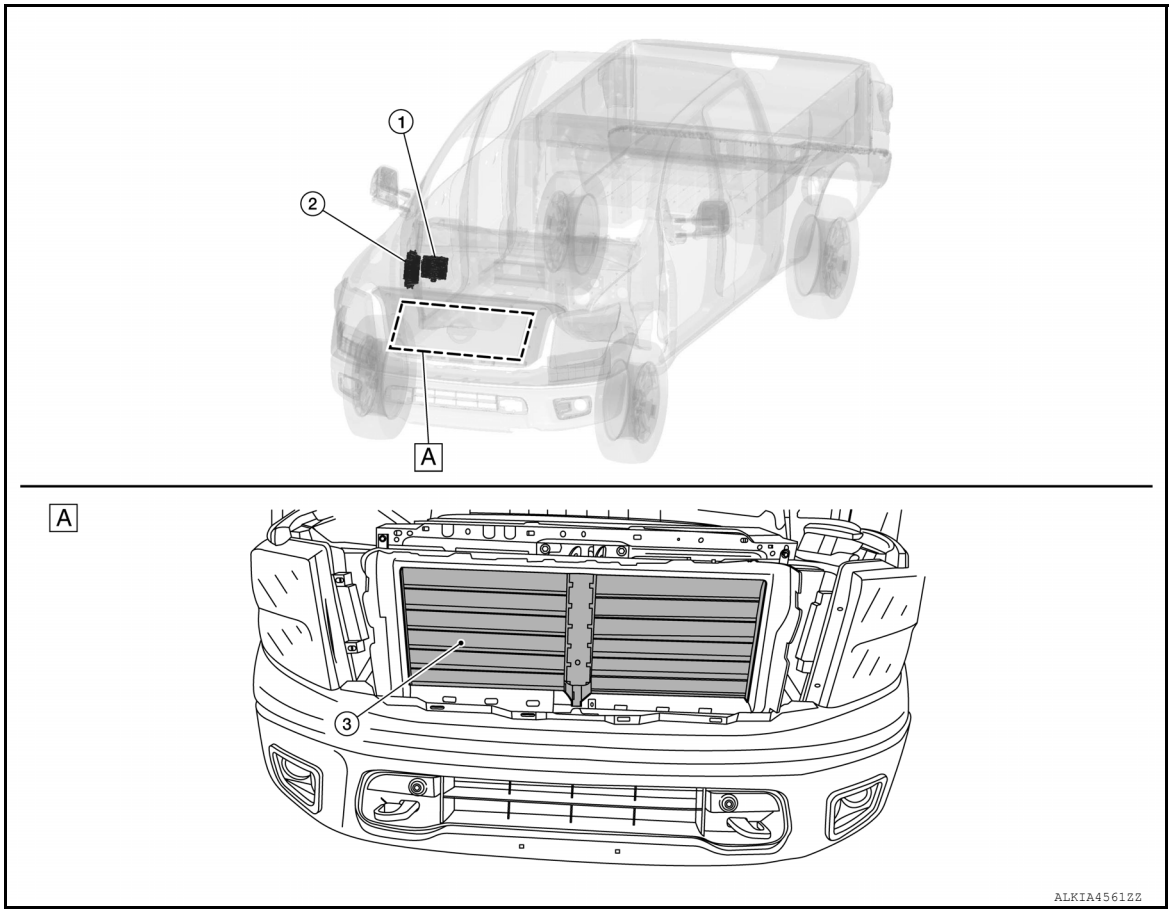
SYSTEM DESCRIPTION

COMPONENT PARTS

ACTIVE GRILLE SHUTTER SYSTEM

ACTIVE GRILLE SHUTTER SYSTEM : Component Parts Location

INFOID:0000000014681268



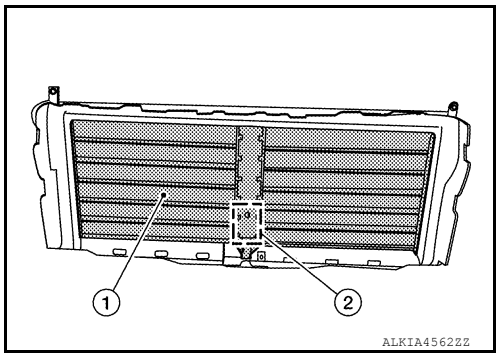
A. Behind front grille

No.	Component	Reference
1.	IPDM E/R	Refer to PCS-5, "Component Parts Location".
2.	ECM	Refer to EC-43, "ECM".
3.	Active grille shutter	Refer to EXT-11, "ACTIVE GRILLE SHUTTER SYSTEM : Active grille shutter".

ACTIVE GRILLE SHUTTER SYSTEM : Active grille shutter

INFOID:0000000014681269

Active grille shutter is located at front bumper lower opening, and according to the signal from ECM it operates actuator ② to perform open/close movement of flap ① to control the amount of air flow taken into engine compartment.

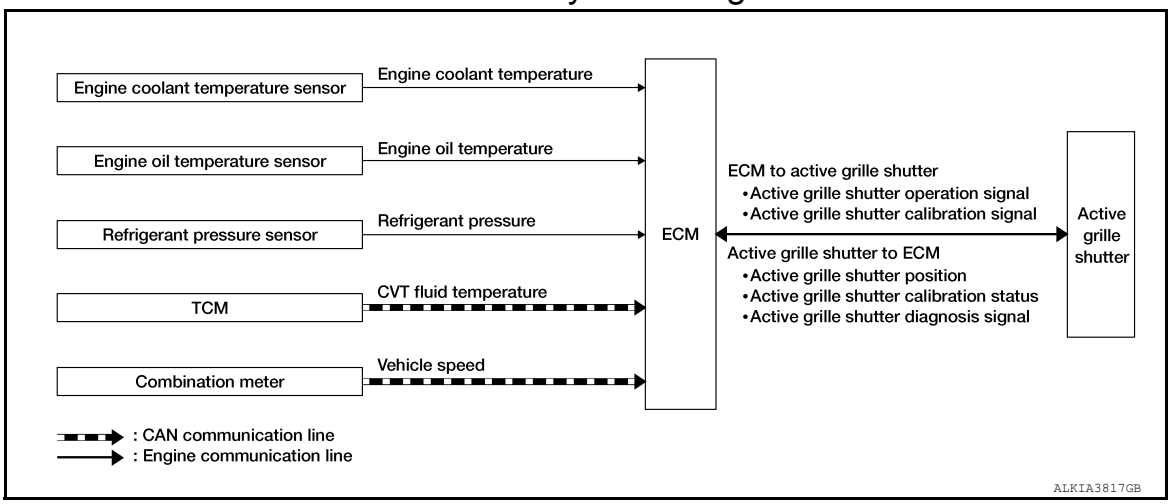


SYSTEM

ACTIVE GRILLE SHUTTER SYSTEM

ACTIVE GRILLE SHUTTER SYSTEM : System Diagram

INFOID:0000000014681270

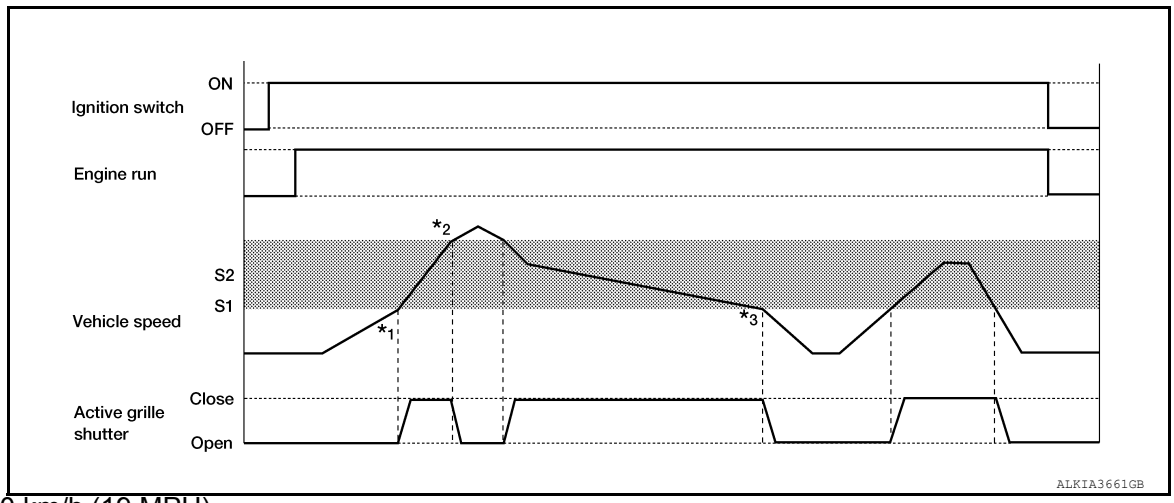


ACTIVE GRILLE SHUTTER SYSTEM : System Description

INFOID:0000000014681271

While driving, the active grille shutter system closes shutter to reduce air flow to engine compartment for the purpose of reducing aerodynamic drag, and as a result, improves the vehicle's fuel efficiency.
ECM controls active grille shutter system by detecting vehicle status through respective modules and sensors.
Active grille shutter actuator is equipped with self-diagnosis function. When a malfunction is detected, a signal is transmitted to the ECM and the ECM records the active grille shutter malfunction.

BASIC MOVEMENTS



- S1: 30 km/h (19 MPH)
- S2: Approx. 30 - 140 km/h (19 - 88 MPH)
- *1: Shutter initial position learning
- *2: Judgment of high vehicle speed
- *3: Judgment of low vehicle speed

DESCRIPTION OF MOVEMENTS

Active grille shutter is fully open when the vehicle stops or the ignition switch is turned OFF.
ECM operates the shutter to close position in order to perform shutter's initial position learning whenever the ignition switch is turned OFF → ON and the engine is started. At the end of initial position learning ECM operates shutter to open position.
While driving, after the initial position learning ends, ECM operates the active grille shutter to close position when the operational conditions of active grille shutter are met.
While driving at high speed, ECM operates the shutter to open position when the vehicle reaches the specified speed in order to prevent the shutter from shutting up due to wind resistance.

When the vehicle speed is reduced below the specified speed ECM operates active grille shutter to open position.

NOTE:

- When any one of the conditions for opening the active grille shutter is satisfied, ECM performs active grille shutter initial position learning even when the vehicle speed is less than 30 km/h.
- ECM may perform active grille shutter initial position learning according to other diagnosis conditions.

ACTIVE GRILLE SHUTTER OPERATIONAL CONDITIONS

ECM operates active grille shutter to close position when all of the following conditions are met.

Item	Status
Active grille shutter initial position learning	Complete
Vehicle speed	Approx. 30 - 140 km/h (19 - 88 MPH)
Engine coolant temperature	Approx. less than 102°C (216°F)
Engine oil temperature	Approx. less than 140°C (284°F)
A/T fluid temperature	Approx. less than 121°C (250°F)
Cooling fan	OFF
Refrigerant pressure	0.98 MPa (9.99 kg/cm^2, 142.1 psi) or less
Malfunction of engine coolant temperature sensor system	Not detected
Malfunction of engine oil temperature sensor system	Not detected
Malfunction of vehicle speed sensor system	Not detected
Malfunction of CAN communication system	Not detected

ECM operates active grille shutter to open position when one of the following conditions is met.

Item	Status
Vehicle speed	• 22 km/h (14 MPH) or less • 140 km/h (88 MPH) or more
Engine coolant temperature	Approx. 102°C (216°F) or more
Engine oil temperature	Approx. 140°C (284°F) or more
A/T fluid temperature	Approx. 121°C (250°F) or more
Cooling fan	ON
Refrigerant pressure	1.18 MPa (12.04 kg/cm^2, 171.1 psi) or more
Malfunction of engine coolant temperature sensor system	Detected
Malfunction of engine oil temperature sensor system	Detected
Malfunction of vehicle speed sensor system	Detected
Malfunction of CAN communication system	Detected

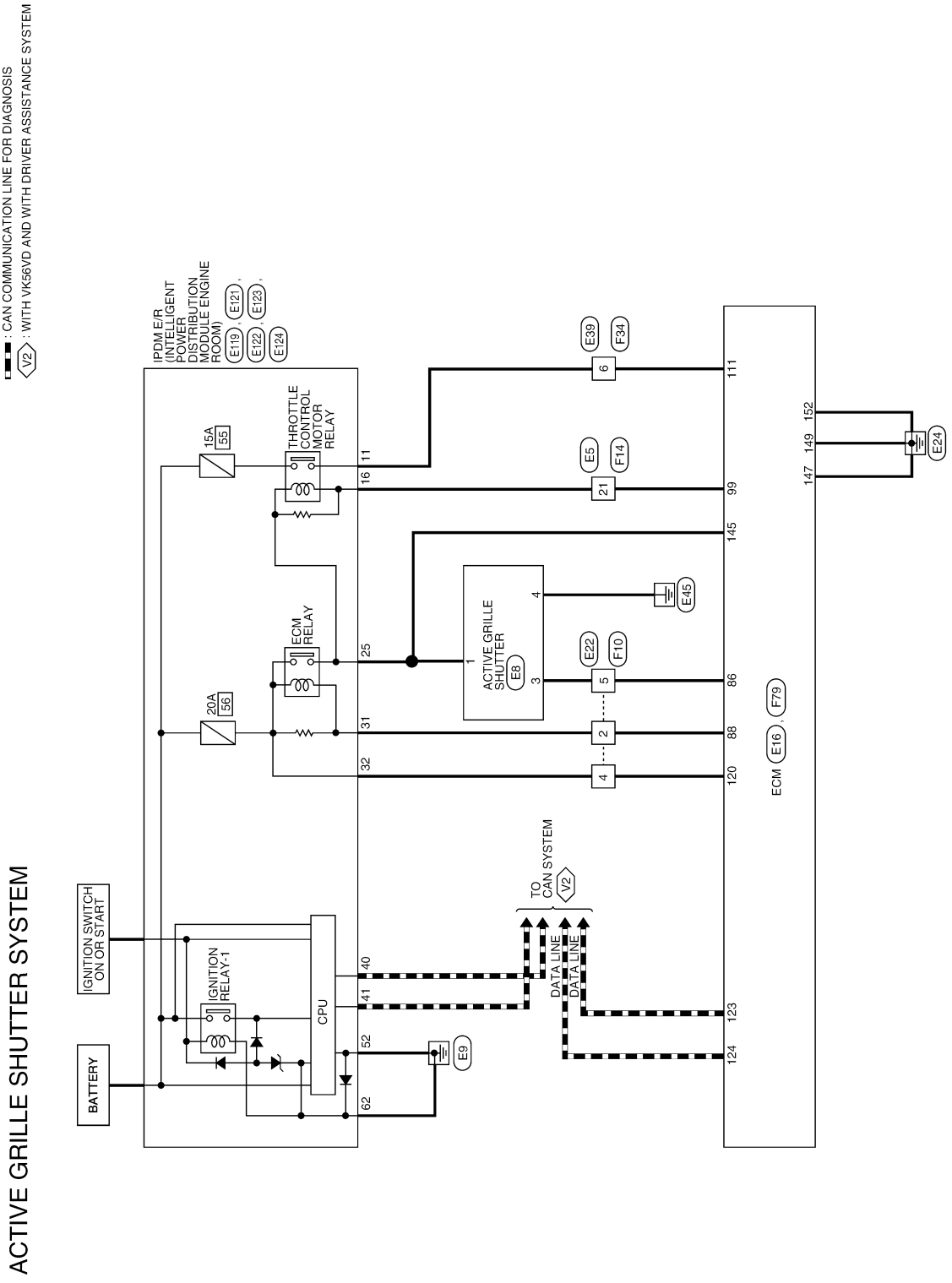
WIRING DIAGRAM

ACTIVE GRILLE SHUTTER

Wiring Diagram

INFOID:0000000014664639

ACTIVE GRILLE SHUTTER SYSTEM



ACTIVE GRILLE SHUTTER SYSTEM CONNECTORS

Connector No.	E5
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

Terminal No.	Color of Wire	Signal Name
1	L/R	TO ENGINE CONTROL HARNESS
2	BR	TO ENGINE CONTROL HARNESS
3	V	TO ENGINE CONTROL HARNESS
4	L/O	TO ENGINE CONTROL HARNESS
5	W	TO ENGINE CONTROL HARNESS
6	B/R	TO ENGINE CONTROL HARNESS
7	Y/R	TO ENGINE CONTROL HARNESS
8	BR	TO ENGINE CONTROL HARNESS
9	W/L	TO ENGINE CONTROL HARNESS
10	L/Y	TO ENGINE CONTROL HARNESS
11	SB	TO ENGINE CONTROL HARNESS
12	L	TO ENGINE CONTROL HARNESS
13	W/R	TO ENGINE CONTROL HARNESS
14	Y	TO ENGINE CONTROL HARNESS
15	B	TO ENGINE CONTROL HARNESS
16	B	TO ENGINE CONTROL HARNESS
17	R	TO ENGINE CONTROL HARNESS
18	B	TO ENGINE CONTROL HARNESS
19	B/R	TO ENGINE CONTROL HARNESS
20	GR	TO ENGINE CONTROL HARNESS
21	V/R	TO ENGINE CONTROL HARNESS
22	B	TO ENGINE CONTROL HARNESS
23	B	TO ENGINE CONTROL HARNESS
24	P	TO ENGINE CONTROL HARNESS

Connector No.	E8
Connector Name	ACTIVE GRILLE SHUTTER
Connector Type	RH04FB
Connector Color	BLACK

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	W	VBAT
2	–	–
3	L	LIN
4	B	GND

Connector No.	E16
Connector Name	ECM (WITH VK56VD)
Connector Type	MAA24FB-MEA8-RH
Connector Color	BLACK

H.S.

121	125	129	133	137	141	145	149
122	126	130	134	138	142	146	150
123	127	131	135	139	143	147	151
124	128	132	136	140	144	148	152

Terminal No.	Color of Wire	Signal Name
121	O/B	EVAP CONTROL SYSTEM PRESSURE SENSOR
122	–	–
123	P	CAN COMMUNICATION LINE (CAN-L)
124	L	CAN COMMUNICATION LINE (CAN-H)
125	SB	SENSOR POWER SUPPLY
126	–	–
127	–	–
128	V/W	FUEL TEMPERATURE SENSOR
129	–	–
130	R/W	FUEL PUMP CONTROL MODULE (FPCM) CHECK
131	–	–
132	–	–
133	W	IGNITION SWITCH
134	G/Y	ASCD STEERING SWITCH
135	B/Y	SENSOR GROUND
136	GR	FUEL PUMP CONTROL MODULE (FPCM)
137	R/W	ENG COMMUNICATION LINE
138	W	ENG COMMUNICATION LINE
139	R/G	STOP LAMP SWITCH
140	G/Y	BRAKE PEDAL POSITION SWITCH
141	Y	EVAP CANISTER VENT CONTROL VALVE
142	L/W	SENSOR POWER SUPPLY
143	O	ACCELERATOR PEDAL POSITION SENSOR 2
144	P/L	SENSOR GROUND
145	W	POWER SUPPLY FOR ECM
146	W/G	SENSOR POWER SUPPLY
147	B	ECM GROUND
148	R	SENSOR GROUND
149	B	ECM GROUND
150	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
151	R/Y	SENSOR GROUND
152	B	ECM GROUND

Connector No.	E22
Connector Name	WIRE TO WIRE
Connector Type	M08MB-LC
Connector Color	BLACK

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
1	V	TO ENGINE CONTROL HARNESS
2	L	TO ENGINE CONTROL HARNESS
3	W	TO ENGINE CONTROL HARNESS
4	L	TO ENGINE CONTROL HARNESS
5	L	TO ENGINE CONTROL HARNESS
6	L/Y	TO ENGINE CONTROL HARNESS
7	W/L	TO ENGINE CONTROL HARNESS
8	R	TO ENGINE CONTROL HARNESS

Connector No.	E39
Connector Name	WIRE TO WIRE
Connector Type	M08MW-GY-LC
Connector Color	GRAY

H.S.

1	2	3	4
5	6	7	8

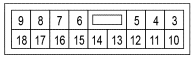
Terminal No.	Color of Wire	Signal Name
1	B	TO ENGINE CONTROL HARNESS
2	B	TO ENGINE CONTROL HARNESS
3	B	TO ENGINE CONTROL HARNESS
4	W/R	TO ENGINE CONTROL HARNESS
5	P	TO ENGINE CONTROL HARNESS
6	O	TO ENGINE CONTROL HARNESS
7	SB	TO ENGINE CONTROL HARNESS
8	R	TO ENGINE CONTROL HARNESS

AAKIA4135GB

ACTIVE GRILLE SHUTTER SYSTEM CONNECTORS

Connector No.	E119
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS
Connector Color	WHITE

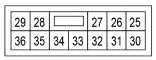
H.S.



Terminal No.	Color of Wire	Signal Name
3	–	–
4	B/R	NP SW
5	L/W	H/LAMP HI RH
6	G	H/LAMP HI LH
7	L	H/LAMP LO LH
8	R/Y	H/LAMP LO RH
9	G/W	FR FOG/L LH
10	–	–
11	O	ETC VB - (WITH VK56VD)
11	P	ETC VB - (WITH CUMMINS 5.0L)
12	W/R	FR FOG/L RH
13	Y/R	A/T ECU IGN
14	G	REVERSE LAMP IGN
15	GR	ABS ECU IGN
16	V/R	ETC RLY CONT - (WITH VK56VD)
16	G	ETC RLY CONT - (WITH CUMMINS 5.0L)
17	W	IGN COIL - (WITH VK56VD)
17	L/W	IGN COIL - (WITH CUMMINS 5.0L)
18	–	–

Connector No.	E121
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FBR-CS
Connector Color	BROWN

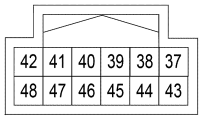
H.S.



Terminal No.	Color of Wire	Signal Name
25	BR	ECM VB - (WITH CUMMINS 5.0L)
25	W	ECM VB - (WITH VK56VD)
26	V	O2 SENS - (WITH VK56VD)
27	R/L	PARKING RH
28	R/L	TAIL 1
29	Y	FR WIPER HI
30	–	–
31	L	ECM RLY CONT
32	L	ECM BAT - (WITH VK56VD)
33	R/L	PARKING LH
34	R/W	TAIL 2
35	BR	FR WIPER LO
36	–	–

Connector No.	E122
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH12FW-NH
Connector Color	WHITE

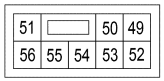
H.S.



Terminal No.	Color of Wire	Signal Name
37	–	–
38	–	–
39	L/Y	WIPER AUTO STOP SW
40	P	CAN-L
41	L	CAN-H
42	BR	DTRL RLY
43	–	–
44	W/B	START CONT
45	GR	FUEL RLY CONT
46	Y	HOOD SW
47	Y	ALT C - (WITH VK56VD)
48	R/W	HORN RLY CONT

Connector No.	E123
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FBR-CS
Connector Color	BROWN

H.S.



Terminal No.	Color of Wire	Signal Name
49	Y/B	A/C COMP - (WITH CUMMINS 5.0L)
49	GR/R	A/C COMP - (WITH VK56VD)
50	BR	TRAILER TOW
51	–	–
52	B	S-GND
53	–	–
54	–	–
55	–	–
56	–	–

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
57	W/B	RR DEF
58	BR	FUEL PUMP - (WITH CUMMINS 5.0L)
58	B/Y	FUEL PUMP - (WITH VK56VD)
59	–	–
60	–	–
61	–	–
62	B	P GND

Connector No.	F10
Connector Name	WIRE TO WIRE
Connector Type	M08FB-LC
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	V	TO ENGINE ROOM HARNESS
2	L/LG	TO ENGINE ROOM HARNESS
3	W	TO ENGINE ROOM HARNESS
4	L	TO ENGINE ROOM HARNESS
5	L/G	TO ENGINE ROOM HARNESS
6	L/Y	TO ENGINE ROOM HARNESS
7	W/L	TO ENGINE ROOM HARNESS
8	R	TO ENGINE ROOM HARNESS

AAKIA4136GB

ACTIVE GRILLE SHUTTER SYSTEM CONNECTORS

Connector No.	F14
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH
Connector Color	WHITE

H.S.

12	11	10	9	8	7	6	5	4	3	2	1
24	23	22	21	20	19	18	17	16	15	14	13

Terminal No.	Color of Wire	Signal Name
1	L/R	TO ENGINE ROOM HARNESS
2	BR	TO ENGINE ROOM HARNESS
3	V	TO ENGINE ROOM HARNESS
4	L/O	TO ENGINE ROOM HARNESS
5	W	TO ENGINE ROOM HARNESS
6	B/R	TO ENGINE ROOM HARNESS
7	Y/R	TO ENGINE ROOM HARNESS
8	BR	TO ENGINE ROOM HARNESS
9	W/L	TO ENGINE ROOM HARNESS
10	L/Y	TO ENGINE ROOM HARNESS
11	SB	TO ENGINE ROOM HARNESS
12	L	TO ENGINE ROOM HARNESS
13	W/R	TO ENGINE ROOM HARNESS
14	Y	TO ENGINE ROOM HARNESS
15	B	TO ENGINE ROOM HARNESS
16	B	TO ENGINE ROOM HARNESS
17	R	TO ENGINE ROOM HARNESS
18	B	TO ENGINE ROOM HARNESS
19	B/R	TO ENGINE ROOM HARNESS
20	GR	TO ENGINE ROOM HARNESS
21	V/R	TO ENGINE ROOM HARNESS
22	SHIELD	TO ENGINE ROOM HARNESS
23	SHIELD	TO ENGINE ROOM HARNESS
24	P	TO ENGINE ROOM HARNESS

Connector No.	F34
Connector Name	WIRE TO WIRE
Connector Type	M08FW-GY-LC
Connector Color	GRAY

H.S.

4	3	2	1
8	7	6	5

Terminal No.	Color of Wire	Signal Name
1	B	TO ENGINE ROOM HARNESS
2	B	TO ENGINE ROOM HARNESS
3	B	TO ENGINE ROOM HARNESS
4	W/R	TO ENGINE ROOM HARNESS
5	P	TO ENGINE ROOM HARNESS
6	O	TO ENGINE ROOM HARNESS
7	SB	TO ENGINE ROOM HARNESS
8	R	TO ENGINE ROOM HARNESS

Connector No.	F79
Connector Name	ECM (WITH VK56VD)
Connector Type	MAB55FB-MEB10-LH
Connector Color	BLACK

H.S.

56	61	66	71	76	81	86	91	96	101	106	111	116
57	62	67	72	77	82	87	92	97	102	107	112	117
58	63	68	73	78	83	88	93	98	103	108	113	118
59	64	69	74	79	84	89	94	99	104	109	114	119
60	65	70	75	80	85	90	95	100	105	110	115	120

Terminal No.	Color of Wire	Signal Name
56	V	MULTI-WAY CONTROL VALVE POWER SUPPLY
57	R	MULTI-WAY CONTROL VALVE MOTOR (-)
58	B	MULTI-WAY CONTROL VALVE MOTOR (+)
59	B	HIGH PRESSURE FUEL PUMP (HI)
60	W	HIGH PRESSURE FUEL PUMP (LO)
61	BR	MULTI-WAY CONTROL VALVE POSITION SENSOR
62	B/R	PNP SIGNAL
63	LG/B	SENSOR GROUND
64	SHIELD	SHIELD
65	W	ENGINE COOLANT TEMPERATURE SENSOR 2
66	P	CAMSHAFT POSITION SENSOR (PHASE) (BANK 2)
67	–	–
68	P	EXHAUST VALVE TIMING CONTROL POSITION SENSOR (BANK 2)
69	L/W	A/F SENSOR 1 (BANK 2)
70	Y/B	A/F SENSOR 1 (BANK 2)
71	–	–
72	–	–
73	LG/R	SENSOR POWER SUPPLY
74	R	A/F SENSOR 1 (BANK 1)
75	–	–
76	–	–
77	L/W	HEATED OXYGEN SENSOR 2 (BANK 2)
78	R/L	THROTTLE POSITION SENSOR 1
79	W	A/F SENSOR 1 (BANK 1)
80	B/W	THROTTLE POSITION SENSOR 2
81	–	–
82	–	–
83	V/G	SENSOR POWER SUPPLY
84	W/R	HEATED OXYGEN SENSOR 2 (BANK 1)
85	L	SENSOR GROUND
86	L/G	LIN -(WITH ACTIVE GRILLE SHUTTER)
87	–	–
88	L/LG	ECM RELAY (SELF SHUT-OFF)
89	–	–
90	BR/W	VVEL ACTUATOR MOTOR RELAY ABORT SIGNAL (VVEL CONTROL MODULE)
91	L/B	IGNITION SIGNAL NO. 2
92	BR/Y	IGNITION SIGNAL NO. 3
93	GR	FUEL PUMP RELAY
94	Y/R	IGNITION SIGNAL NO. 6
95	Y	IGNITION SIGNAL NO. 1
96	–	–
97	–	–
98	–	–
99	V/R	THROTTLE CONTROL MOTOR RELAY
100	–	–
101	O	IGNITION SIGNAL NO. 8
102	P/L	IGNITION SIGNAL NO. 5
103	–	–
104	LG/R	IGNITION SIGNAL NO. 4
105	G/Y	IGNITION SIGNAL NO. 7
106	V/W	EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE
107	W	THROTTLE CONTROL MOTOR (OPEN)
108	R	THROTTLE CONTROL MOTOR (CLOSE)
109	–	–
110	–	–
111	O	THROTTLE CONTROL MOTOR POWER SUPPLY
112	LG/B	INTAKE VALVE TIMING CONTROL SOLENOID VALVE (BANK 1)
113	LG/R	INTAKE VALVE TIMING CONTROL SOLENOID VALVE (BANK 2)
114	LG/B	EXHAUST VALVE TIMING CONTROL SOLENOID VALVE (BANK 1)
115	LG/R	EXHAUST VALVE TIMING CONTROL SOLENOID VALVE (BANK 2)
116	L/W	A/F SENSOR 1 HEATER (BANK 1)
117	SB	A/F SENSOR 1 HEATER (BANK 2)
118	LG	HEATED OXYGEN SENSOR 2 HEATER (BANK 1)
119	L/R	HEATED OXYGEN SENSOR 2 HEATER (BANK 2)
120	L	POWER SUPPLY FOR ECM (BACK-UP)

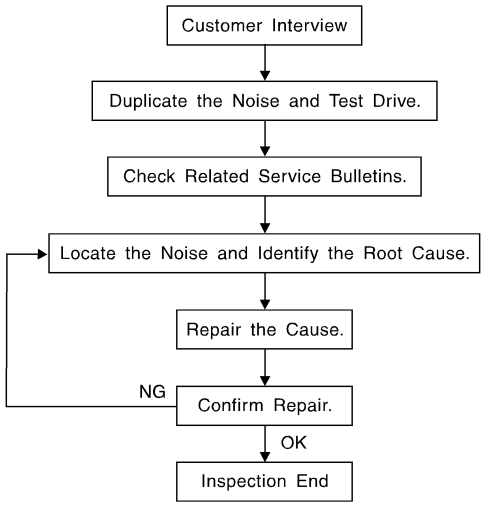
AAKIA4137GB

SYMPTOM DIAGNOSIS

SQUEAK AND RATTLE TROUBLE DIAGNOSES

Work Flow

INFOID:0000000014391495



SBT842

CUSTOMER INTERVIEW

Interview the customer if possible, to determine the conditions that exist when the noise occurs. Use the Diagnostic Worksheet during the interview to document the facts and conditions when the noise occurs and any customer's comments; refer to EXT-22, "Diagnostic Worksheet". This information is necessary to duplicate the conditions that exist when the noise occurs.

- The customer may not be able to provide a detailed description or the location of the noise. Attempt to obtain all the facts and conditions that exist when the noise occurs (or does not occur).
- If there is more than one noise in the vehicle, be sure to diagnose and repair the noise that the customer is concerned about. This can be accomplished by test driving the vehicle with the customer.
- After identifying the type of noise, isolate the noise in terms of its characteristics. The noise characteristics are provided so the customer, service adviser and technician are all speaking the same language when defining the noise.
- Squeak —(Like tennis shoes on a clean floor)
  Squeak characteristics include the light contact/fast movement/brought on by road conditions/hard surfaces = higher pitch noise/softer surfaces = lower pitch noises/edge to surface = chirping.
- Creak—(Like walking on an old wooden floor)
  Creak characteristics include firm contact/slow movement/twisting with a rotational movement/pitch dependent on materials/often brought on by activity.
- Rattle—(Like shaking a baby rattle)
  Rattle characteristics include the fast repeated contact/vibration or similar movement/loose parts/missing clip or fastener/incorrect clearance.
- Knock —(Like a knock on a door)
  Knock characteristics include hollow sounding/sometimes repeating/often brought on by driver action.
- Tick—(Like a clock second hand)
  Tick characteristics include gentle contacting of light materials/loose components/can be caused by driver action or road conditions.
- Thump—(Heavy, muffled knock noise)
  Thump characteristics include softer knock/dead sound often brought on by activity.
- Buzz—(Like a bumble bee)
  Buzz characteristics include high frequency rattle/firm contact.
- Often the degree of acceptable noise level will vary depending upon the person. A noise that you may judge as acceptable may be very irritating to the customer.
- Weather conditions, especially humidity and temperature, may have a great effect on noise level.

DUPLICATE THE NOISE AND TEST DRIVE

If possible, drive the vehicle with the customer until the noise is duplicated. Note any additional information on the Diagnostic Worksheet regarding the conditions or location of the noise. This information can be used to duplicate the same conditions when you confirm the repair.
If the noise can be duplicated easily during the test drive, to help identify the source of the noise, try to duplicate the noise with the vehicle stopped by doing one or all of the following:
1) Close a door.
2) Tap or push/pull around the area where the noise appears to be coming from.
3) Rev the engine.
4) Use a floor jack to recreate vehicle “twist”.
5) At idle, apply engine load (electrical load, half-clutch on M/T model, drive position on CVT and A/T models).
6) Raise the vehicle on a hoist and hit a tire with a rubber hammer.

- Drive the vehicle and attempt to duplicate the conditions the customer states exist when the noise occurs.
- If it is difficult to duplicate the noise, drive the vehicle slowly on an undulating or rough road to stress the vehicle body.

CHECK RELATED SERVICE BULLETINS

After verifying the customer concern or symptom, check ASIST for Technical Service Bulletins (TSBs) related to that concern or symptom.
If a TSB relates to the symptom, follow the procedure to repair the noise.

LOCATE THE NOISE AND IDENTIFY THE ROOT CAUSE

1. Narrow down the noise to a general area. To help pinpoint the source of the noise, use a listening tool (Chassis Ear: J-39570, Engine Ear: J-39565 and mechanic's stethoscope).
2. Narrow down the noise to a more specific area and identify the cause of the noise by:
   - removing the components in the area that you suspect the noise is coming from.
     Do not use too much force when removing clips and fasteners, otherwise clips and fasteners can be broken or lost during the repair, resulting in the creation of new noise.
   - tapping or pushing/pulling the component that you suspect is causing the noise.
     Do not tap or push/pull the component with excessive force, otherwise the noise will be eliminated only temporarily.
   - feeling for a vibration with your hand by touching the component(s) that you suspect is (are) causing the noise.
   - placing a piece of paper between components that you suspect are causing the noise.
   - looking for loose components and contact marks.
     Refer to EXT-19, "Generic Squeak and Rattle Troubleshooting".

REPAIR THE CAUSE

- If the cause is a loose component, tighten the component securely.
- If the cause is insufficient clearance between components:
- separate components by repositioning or loosening and retightening the component, if possible.
- insulate components with a suitable insulator such as urethane pads, foam blocks, felt cloth tape or urethane tape. A NISSAN Squeak and Rattle Kit (J-50397) is available through your authorized NISSAN Parts Department.

CAUTION:
Do not use excessive force as many components are constructed of plastic and may be damaged.
NOTE:

- Always check with the Parts Department for the latest parts information.
- The materials contained in the NISSAN Squeak and Rattle Kit (J-50397) are listed on the inside cover of the kit; and can each be ordered seperately as needed.
- The following materials not found in the kit can also be used to repair squeaks and rattles.
- SILICONE GREASE: Use instead of UHMW tape that will be visible or does not fit. The silicone grease will only last a few months.
- SILICONE SPRAY: Use when grease cannot be applied.
- DUCT TAPE: Use to eliminate movement.

CONFIRM THE REPAIR

Confirm that the cause of a noise is repaired by test driving the vehicle. Operate the vehicle under the same conditions as when the noise originally occurred. Refer to the notes on the Diagnostic Worksheet.

Generic Squeak and Rattle Troubleshooting

INFOID:0000000014391496

Refer to Table of Contents for specific component removal and installation information.

INSTRUMENT PANEL

Most incidents are caused by contact and movement between:

1. Cluster lid A and the instrument panel
2. Acrylic lens and combination meter housing
3. Instrument panel to front pillar finisher
4. Instrument panel to windshield
5. Instrument panel pins
6. Wiring harnesses behind the combination meter
7. A/C defroster duct and duct joint

These incidents can usually be located by tapping or moving the components to duplicate the noise or by pressing on the components while driving to stop the noise. Most of these incidents can be repaired by applying felt cloth tape or silicone spray (in hard to reach areas). Urethane pads can be used to insulate wiring harness.

CAUTION:

Do not use silicone spray to isolate a squeak or rattle. If you saturate the area with silicone, you will not be able to recheck the repair.

CENTER CONSOLE

Components to pay attention to include:

1. Shift selector assembly cover to finisher
2. A/C control unit and cluster lid C
3. Wiring harnesses behind audio and A/C control unit

The instrument panel repair and isolation procedures also apply to the center console.

DOORS

Pay attention to the:

1. Finisher and inner panel making a slapping noise
2. Inside handle escutcheon to door finisher
3. Wiring harnesses tapping
4. Door striker out of alignment causing a popping noise on starts and stops

Tapping or moving the components or pressing on them while driving to duplicate the conditions can isolate many of these incidents. You can usually insulate the areas with felt cloth tape or insulator foam blocks from the NISSAN Squeak and Rattle Kit (J-50397) to repair the noise.

TRUNK

Trunk noises are often caused by a loose jack or loose items put into the trunk by the owner.
In addition look for:

1. Trunk lid bumpers out of adjustment
2. Trunk lid striker out of adjustment
3. The trunk lid torsion bars knocking together
4. A loose license plate or bracket

Most of these incidents can be repaired by adjusting, securing or insulating the item(s) or component(s) causing the noise.

SUNROOF/HEADLINING

Noises in the sunroof/headlining area can often be traced to one of the following:

1. Sunroof lid, rail, linkage or seals making a rattle or light knocking noise
2. Sun visor shaft shaking in the holder
3. Front or rear windshield touching headlining and squeaking

Again, pressing on the components to stop the noise while duplicating the conditions can isolate most of these incidents. Repairs usually consist of insulating with felt cloth tape.

OVERHEAD CONSOLE (FRONT AND REAR)

Overhead console noises are often caused by the console panel clips not being engaged correctly. Most of these incidents are repaired by pushing up on the console at the clip locations until the clips engage.
In addition look for:

1. Loose harness or harness connectors.
2. Front console map/reading lamp lens loose.
3. Loose screws at console attachment points.

SEATS

When isolating seat noise it's important to note the position the seat is in and the load placed on the seat when the noise is present. These conditions should be duplicated when verifying and isolating the cause of the noise.

Cause of seat noise include:

1. Headrest rods and holder
2. A squeak between the seat pad cushion and frame
3. The rear seatback lock and bracket

These noises can be isolated by moving or pressing on the suspected components while duplicating the conditions under which the noise occurs. Most of these incidents can be repaired by repositioning the component or applying urethane tape to the contact area.

UNDERHOOD

Some interior noise may be caused by components under the hood or on the engine wall. The noise is then transmitted into the passenger compartment.

Causes of transmitted underhood noise include:

1. Any component installed to the engine wall
2. Components that pass through the engine wall
3. Engine wall mounts and connectors
4. Loose radiator installation pins
5. Hood bumpers out of adjustment
6. Hood striker out of adjustment

These noises can be difficult to isolate since they cannot be reached from the interior of the vehicle. The best method is to secure, move or insulate one component at a time and test drive the vehicle. Also, engine rpm or load can be changed to isolate the noise. Repairs can usually be made by moving, adjusting, securing, or insulating the component causing the noise.

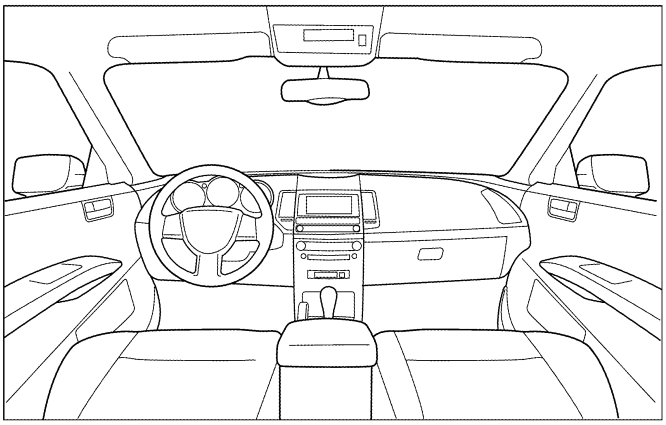
Diagnostic Worksheet

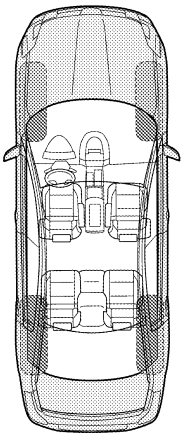
INFOID:0000000014391497

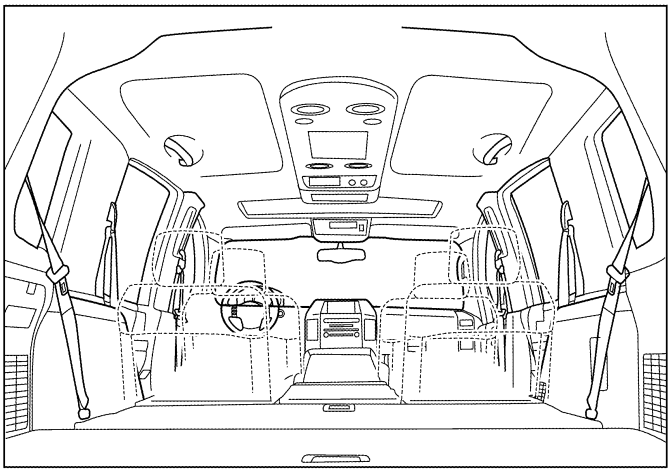
Dear Customer:
We are concerned about your satisfaction with your vehicle. Repairing a squeak or rattle sometimes can be very difficult. To help us fix your vehicle right the first time, please take a moment to note the area of the vehicle where the squeak or rattle occurs and under what conditions. You may be asked to take a test drive with a service advisor or technician to ensure we confirm the noise you are hearing.

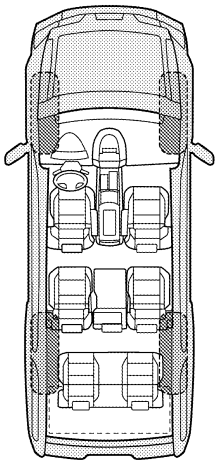
SQUEAK & RATTLE DIAGNOSTIC WORKSHEET

I. WHERE DOES THE NOISE COME FROM? (circle the area of the vehicle)
The illustrations are for reference only, and may not reflect the actual configuration of your vehicle.









Continue to page 2 of the worksheet and briefly describe the location of the noise or rattle. In addition, please indicate the conditions which are present when the noise occurs.

LAIA0072E

SQUEAK & RATTLE DIAGNOSTIC WORKSHEET - page 2

Briefly describe the location where the noise occurs:

_____

_____

II. WHEN DOES IT OCCUR? (please check the boxes that apply)

- ☐ Anytime
- ☐ 1st time in the morning
- ☐ Only when it is cold outside
- ☐ Only when it is hot outside
- ☐ After sitting out in the rain
- ☐ When it is raining or wet
- ☐ Dry or dusty conditions
- ☐ Other:

III. WHEN DRIVING:

- ☐ Through driveways
- ☐ Over rough roads
- ☐ Over speed bumps
- ☐ Only about ____ mph
- ☐ On acceleration
- ☐ Coming to a stop
- ☐ On turns: left, right or either (circle)
- ☐ With passengers or cargo
- ☐ Other: _____
- ☐ After driving _____ miles or _____ minutes

IV. WHAT TYPE OF NOISE

- ☐ Squeak (like tennis shoes on a clean floor)
- ☐ Creak (like walking on an old wooden floor)
- ☐ Rattle (like shaking a baby rattle)
- ☐ Knock (like a knock at the door)
- ☐ Tick (like a clock second hand)
- ☐ Thump (heavy muffled knock noise)
- ☐ Buzz (like a bumble bee)

TO BE COMPLETED BY DEALERSHIP PERSONNEL

Test Drive Notes:

_____

_____

_____

	YES	NO	Initials of person performing
Vehicle test driven with customer	☐	☐	_____
- Noise verified on test drive	☐	☐	_____
- Noise source located and repaired	☐	☐	_____
- Follow up test drive performed to confirm repair	☐	☐	_____

VIN: _____ Customer Name _____

W.O.# _____ Date: _____

This form must be attached to Work Order

LAIA0071E

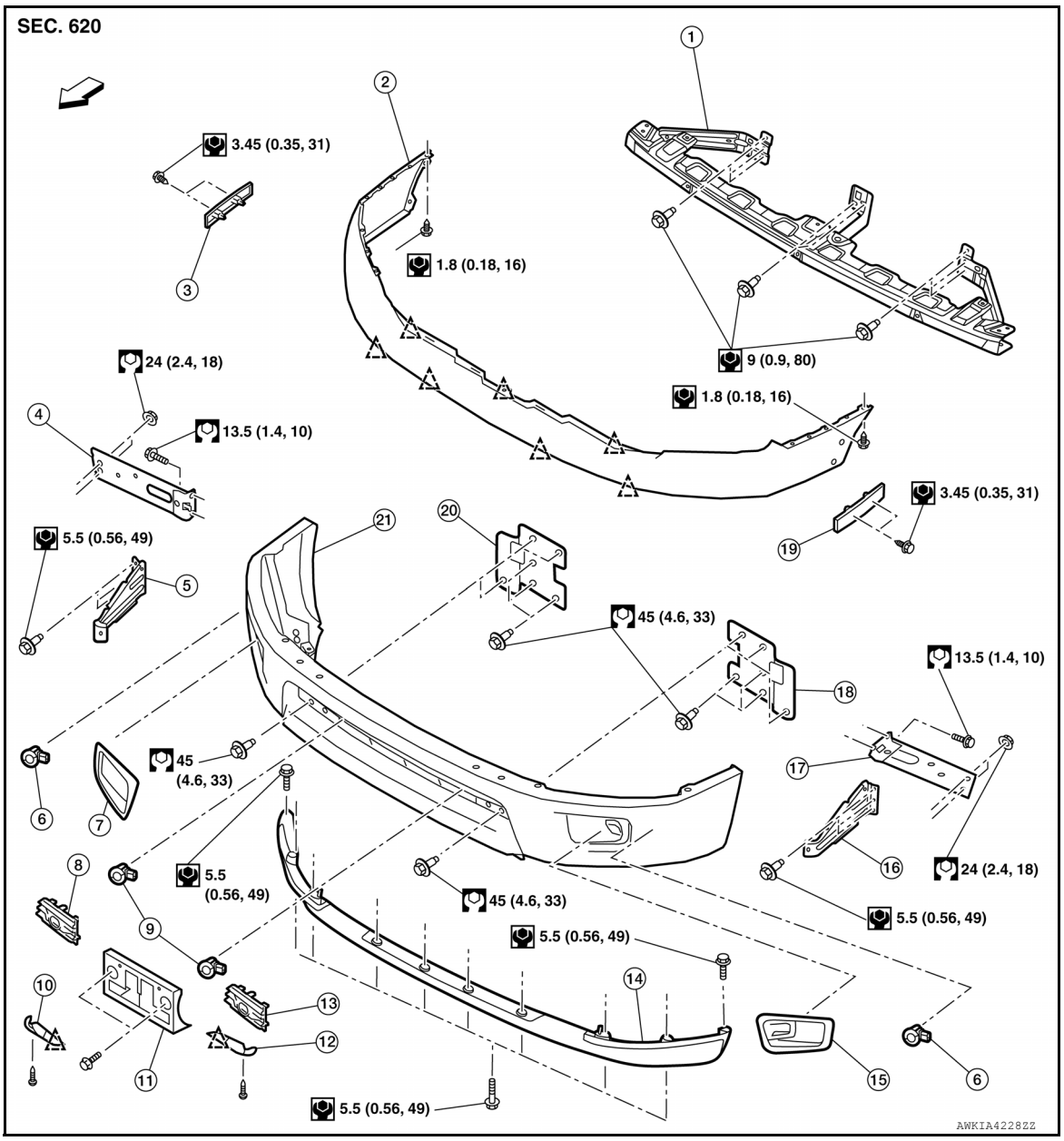
REMOVAL AND INSTALLATION

FRONT BUMPER

Exploded View

INFOID:0000000014391498

Non-XD Models

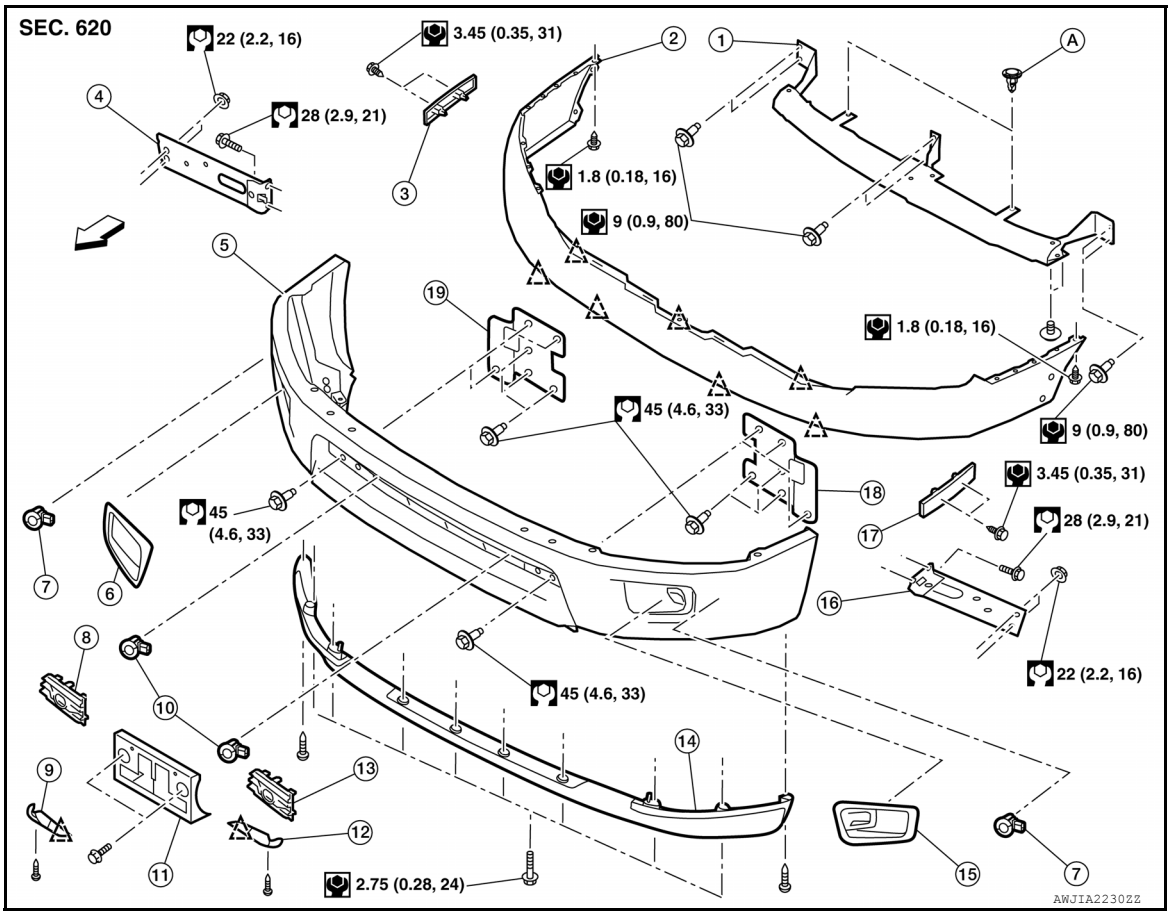


1. Front bumper retainer
2. Bumper fascia upper
3. Bumper fascia upper side bracket (RH)
4. Front bumper side bracket (RH)
5. Headlamp bracket (RH)
6. Front sonar outer sensor (if equipped)
7. Front bumper finisher (RH)
8. Front bumper grill finisher (RH)
9. Front sonar inner sensor (if equipped)
10. Tow hook finisher (RH)
11. Tow hook finisher (RH)
12. Tow hook finisher (LH)
13. Front bumper grille finisher (LH)
14. Front air spoiler
15. Front bumper finisher (LH)
16. Headlamp bracket (LH)
17. Front bumper side bracket (LH)
18. Front bumper mounting bracket (LH)
19. Bumper fascia upper side bracket (LH)
20. Front bumper mounting bracket (RH)
21. Front bumper

A. Clip

⇦ Front

XD Models



1. Front bumper retainer	2. Bumper fascia upper	3. Bumper fascia upper side bracket (RH)
4. Front bumper side bracket (RH)	5. Front bumper	6. Front bumper finisher (RH)
7. Front sonar outer sensor	8. Front bumper grill finisher (RH)	9. Tow hook finisher (RH)
10. Front sonar inner sensor	11. License plate bracket	12. Tow hook finisher (LH)
13. Front bumper grill finisher (LH)	14. Front air spoiler	15. Front bumper finisher (LH)
16. Front bumper side bracket (LH)	17. Bumper fascia upper side bracket (LH)	18. Front bumper mounting bracket (LH)
19. Front bumper mounting bracket (RH)	A. Clip	⇦ Front

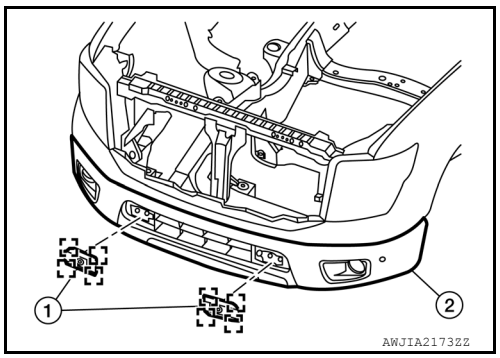
Removal and Installation - Front Bumper

INFOID:0000000014391499

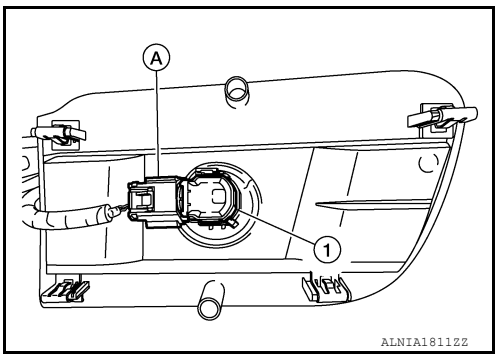
REMOVAL

1. Remove front fender protector (LH/RH). Refer to EXT-41, "Removal and Installation - Front Fender Protector".
2. Remove front grill. Refer to EXT-32, "Removal and Installation".
3. Release clips using suitable tool, and remove front bumper grill finisher (1) from front bumper (2).

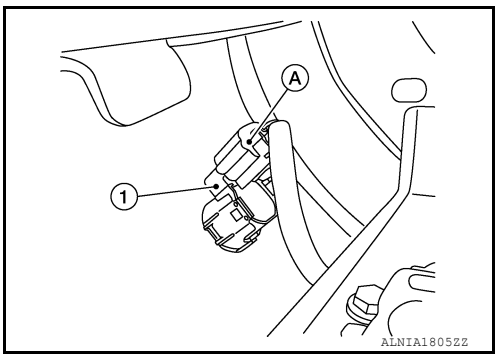
: Metal clip



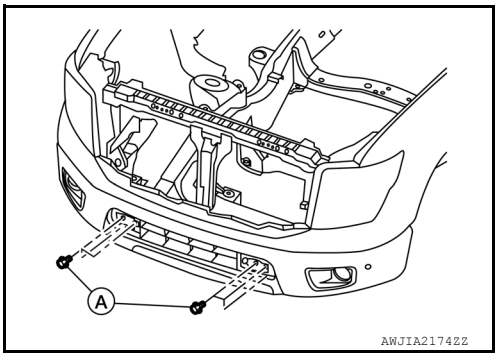
4. Disconnect harness connector (A) from front sonar inner sensor [1 (if equipped)].



5. Disconnect harness connector (A) from front sonar outer sensor [1(if equipped)].



6. Disconnect harness connectors from fog lamp (if equipped).
7. Remove clip and bolt from tow hook finisher, then remove tow hook finisher.
8. Remove front bumper side bracket nuts (LH/RH).
9. Remove front bumper bolts [LH/RH (A)].



10. Remove front bumper.
    CAUTION:
    When removing front bumper, two people are required.

INSTALLATION

Installation is in the reverse order of removal.

Removal and Installation - Bumper Fascia Upper

INFOID:0000000014391500

REMOVAL

1. Remove front grille. Refer to EXT-32, "Removal and Installation".
2. Remove active grille shutter (for Non-XD Models). Refer to EXT-34, "Removal and Installation".
3. Partially remove fender protector (LH/RH). Refer to EXT-41, "Exploded View - Front Fender Protector".
4. Remove bumper fascia upper screws.
5. Release clips and remove bumper fascia upper.

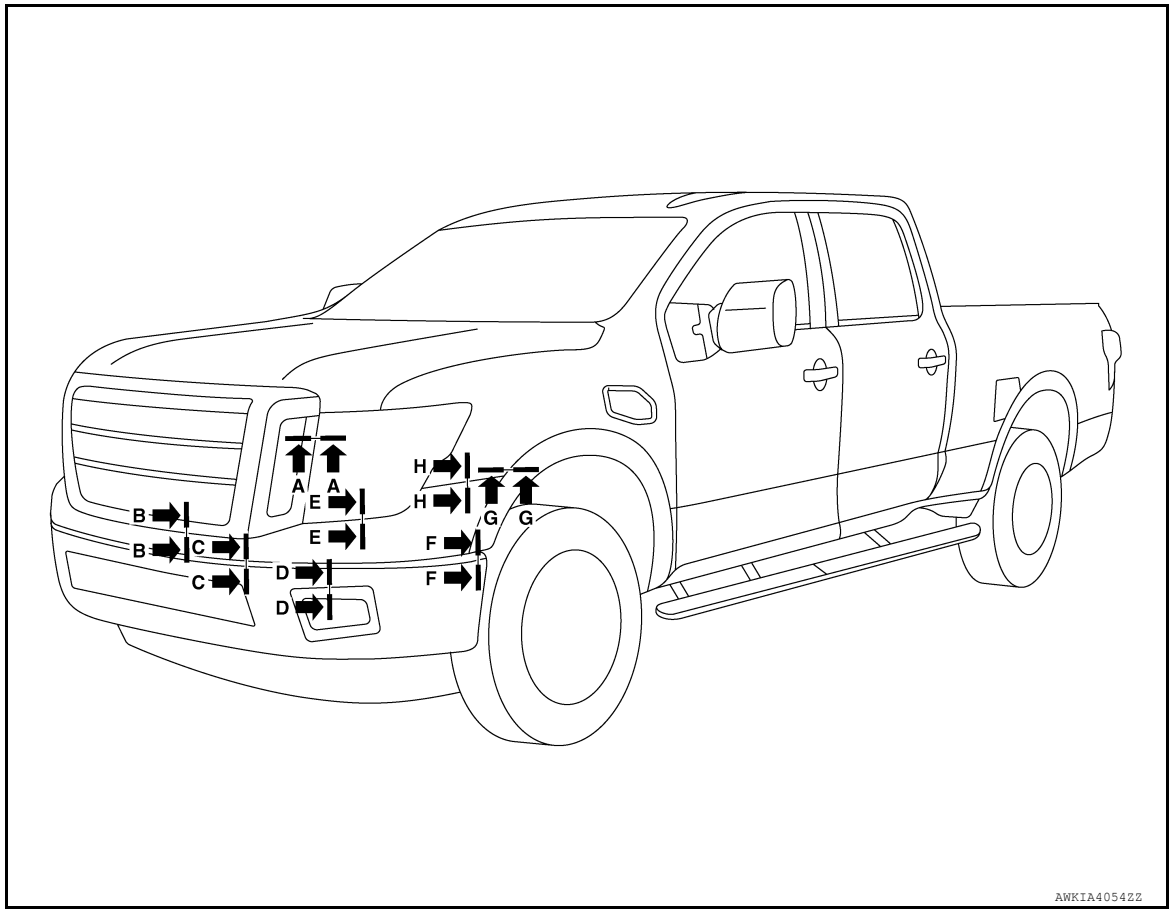
INSTALLATION

Installation is in the reverse order of removal.

Adjustment

INFOID:0000000014391501

Check clearance and surface height between front bumper and each part by visual inspection and tactile feel. If clearance and surface height are out of specification, adjust them.



Unit: mm (in)

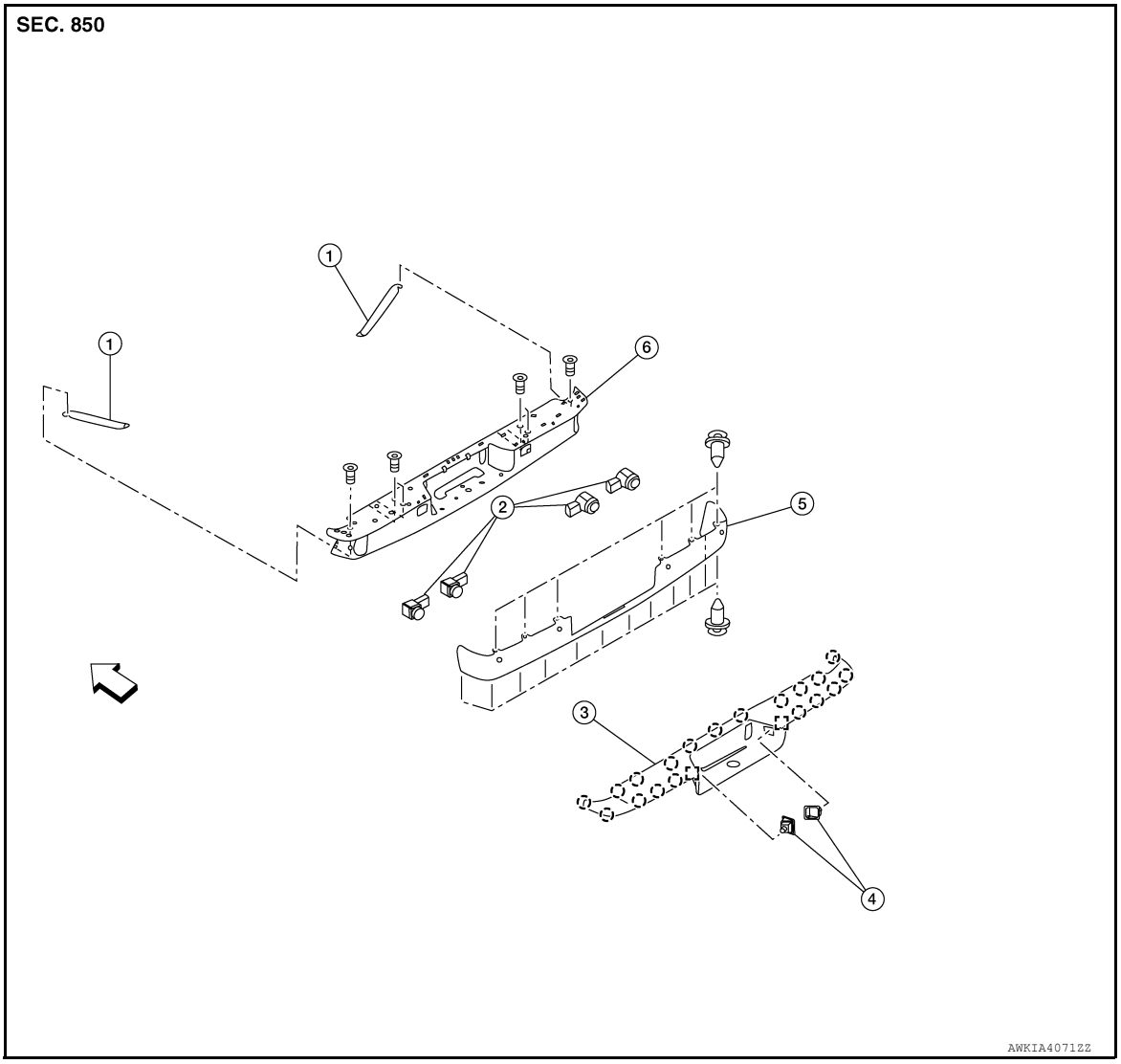
Section	Measurement	Standard	Parallelism
A-A	Clearance	4.2 ± 2.0 (0.17 ± 0.08)	1.5 (0.06)
	Surface Height	-	-
B-B	Clearance	3.0 ± 1.5 (0.12 ± 0.06)	1.2 (0.05)
	Surface Height	-	-
C-C	Clearance	20.0 ± 5.0 (0.79 ± 0.20)	5.0 (0.20)
	Surface Height	-	-
D-D	Clearance	3.0 ± 2.0 (0.12 ± 0.08)	-
	Surface Height	-	-
E-E	Clearance	2.0 ± 1.5 (0.08 ± 0.06)	1.5 (0.06)
	Surface Height	-	-
F-F	Clearance	-	-
	Surface Height	0.0 ± 1.7 (0.00 ± 0.7)	-
G-G	Clearance	0.5, -1.0 - 0.5 (0.02, - 0.02)	-
	Surface Height	-	-
H-H	Clearance	0.3, +1.0, - 0.3 (0.01, -0.04, - 0.01)	-
	Surface Height	0.8 ± 1.0 (0.03 ± 0.04)	-

REAR BUMPER

Exploded View

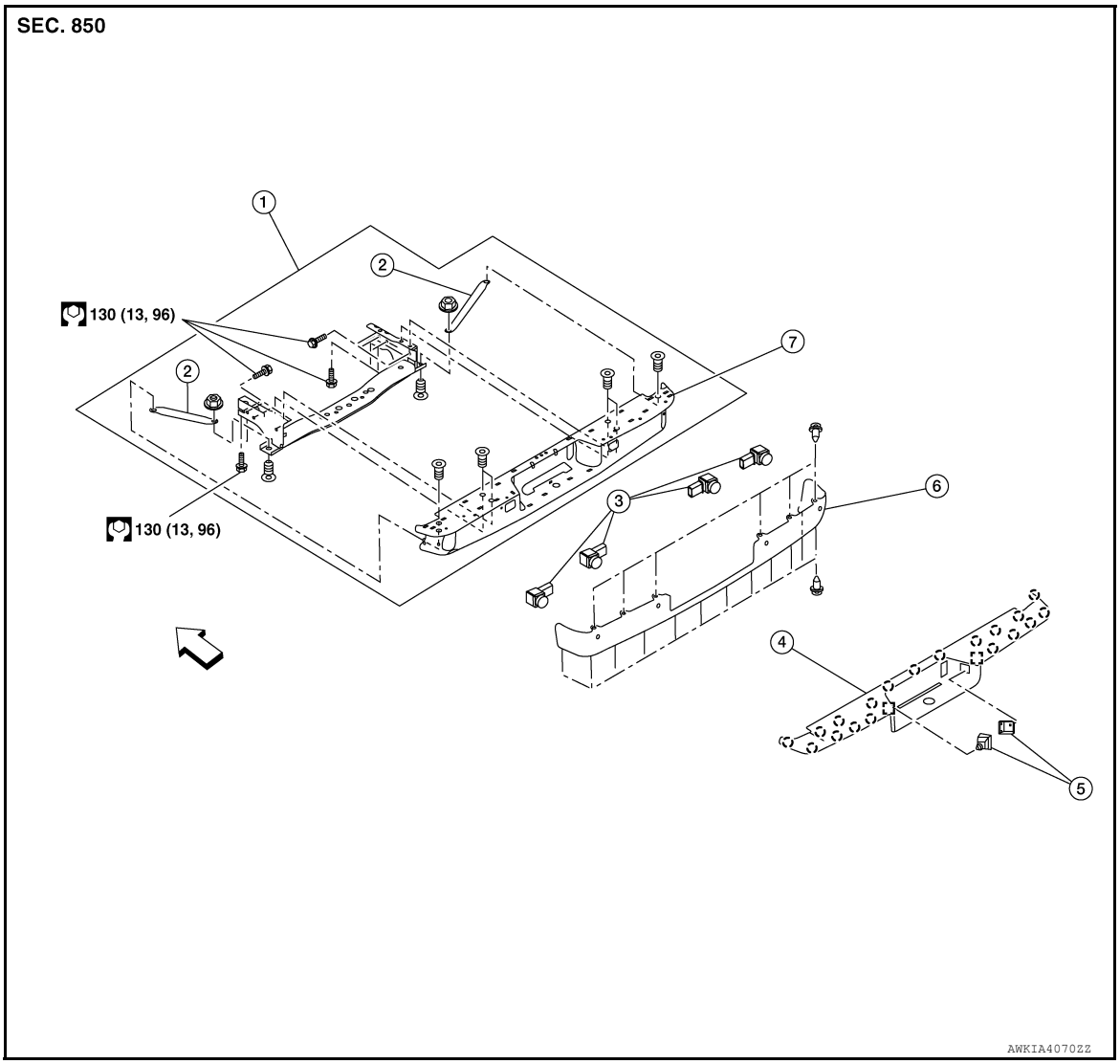
INFOID:0000000014391502

WITH TRAILER HITCH



1. Bumper bracket (LH/RH)	2. Sonar sensor (if equipped)	3. Bumper finisher
4. License plate lamp	5. Bumper fascia (if equipped)	6. Bumper
Pawl	Metal clip	Front

WITHOUT TRAILER HITCH



1. Bumper assembly	2. Bumper bracket (LH/RH)	3. Sonar sensor (if equipped)
4. Bumper finisher	5. License plate lamp	6. Bumper fascia (if equipped)
7. Bumper	Pawl	Metal clip
Front		

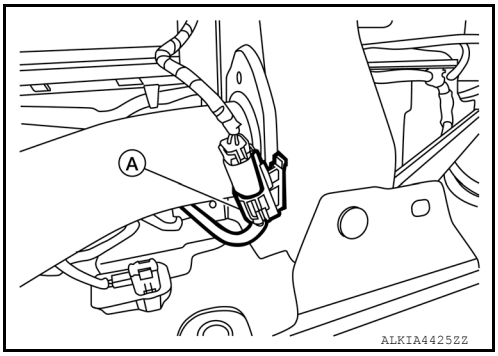
Removal and Installation

INFOID:0000000014391503

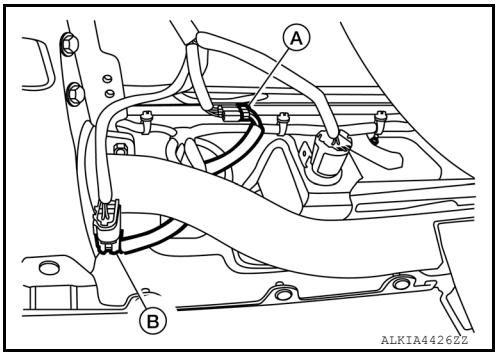
REMOVAL

1. Remove tailgate. Refer to DLK-166, "TAILGATE ASSEMBLY : Removal and Installation".
2. Remove license plate lamps. Refer to EXL-142, "Removal and Installation" (HALOGEN HEADLAMP) or EXL-301, "Removal and Installation" LED HEADLAMP).
3. Remove trailer tow connector socket (if equipped).

4. Disconnect license plate lamp connector (A) from chassis harness (LH) and separate vehicle.
   NOTE:
   Trailer hitch shown. Bumper reinforcement similar.



5. Disconnect side radar harness connector (A) and rear sonar harness connector (B) from chassis harness (RH) and separate from vehicle (if equipped).
   NOTE:
   Trailer hitch shown. Bumper reinforcement similar.



6. Release bumper finisher metal clips and pawls using suitable tool.
7. Separate adhesive tape from behind bumper finisher ends and remove bumper finisher from vehicle.
   CAUTION:
   Do not reuse adhesive tape.
8. Remove bolts, and remove bumper from vehicle.
   CAUTION:
   When removing bumper, two people are required.
9. Disconnect harness connector from side radar units (LH/RH) [if necessary (if equipped)]. Refer to DAS-120, "Exploded View".
10. Remove bumper fascia [if necessary (if equipped)].
11. Separate wire harness from bumper and remove wire harness (if necessary).
12. Remove side radar units and splash guards from bumper [if necessary (if equipped)]. Refer to DAS-120, "Removal and Installation".

INSTALLATION

Installation is in the reverse order of removal.

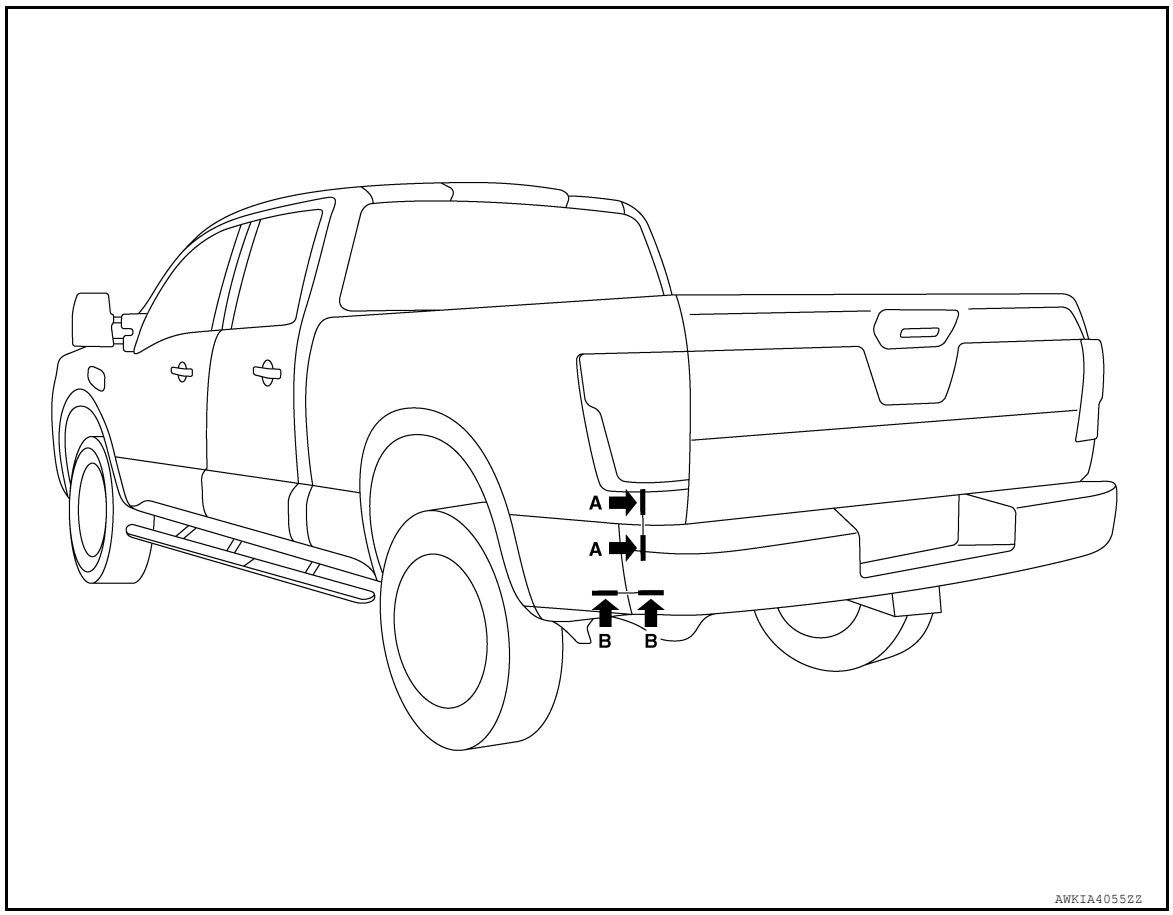
CAUTION:

Perform camera image calibration (if equipped with around view monitor). Refer to AV-332, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description".

Adjustment

INFOID:0000000014391504

Check clearance and surface height between rear bumper and each part by visual inspection and tactile feel. If clearance and surface height are out of specification, adjust them.



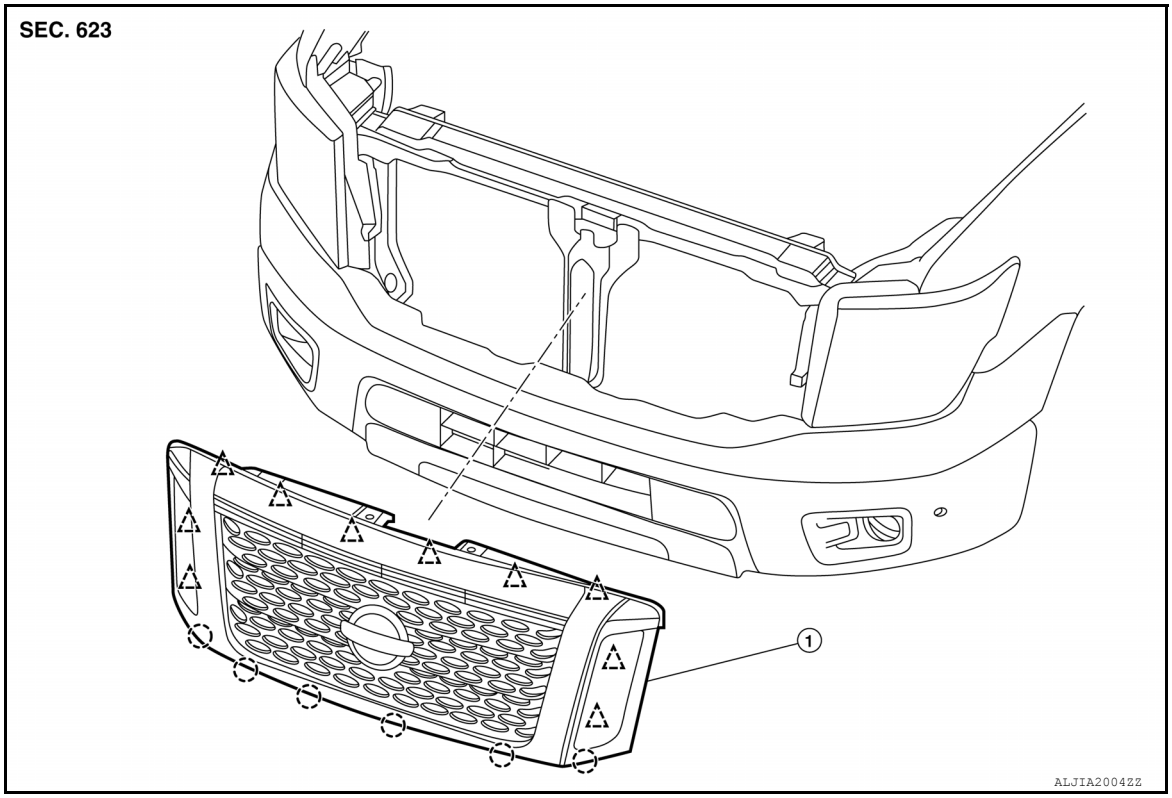
Unit: mm (in)

Section	Measurement	Standard	Parallelism
A-A	Clearance	25.0 ± 6.0 (0.98 ± 0.24)	6.0 (0.24)
	Surface Height	-	-
B-B	Clearance	20.0 ± 5.4 (0.79 ± 0.21)	5.4 (0.21)
	Surface Height	-	-

FRONT GRILLE

Exploded View

INFOID:0000000014391505



1. Front grille
Pawl
Clip

NOTE:
XD Model shown, Non-XD Model similar.

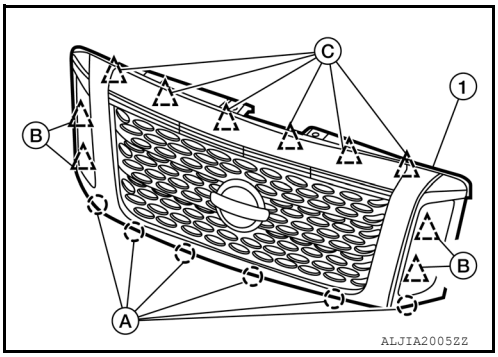
Removal and Installation

INFOID:0000000014391506

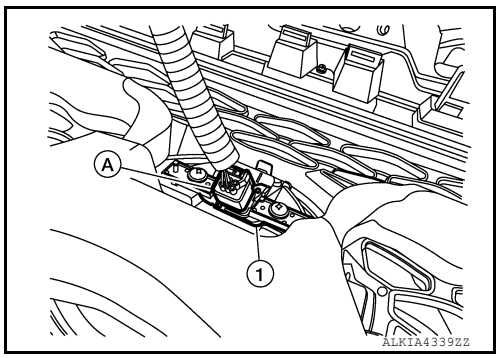
REMOVAL

1. Release the front grille (1) using a suitable tool with the following procedure:

a. Release clips (C)
b. Release clips (B)
c. Release pawls (A)



2. Disconnect harness connector (A) from front camera [1 (if equipped)], then remove the front grille.



INSTALLATION

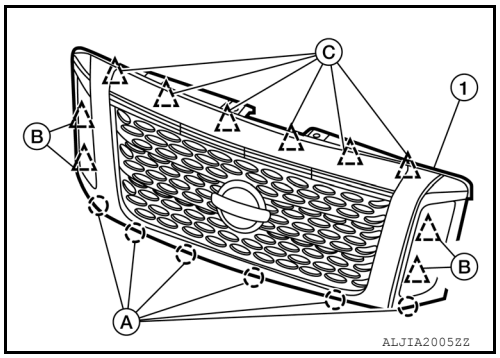
Installation is in the reverse order of removal.

1. Install front grille (1) using a suitable tool with the following procedure:

a. Install pawls (A)

b. Install clips (B)

c. Install clips (C)



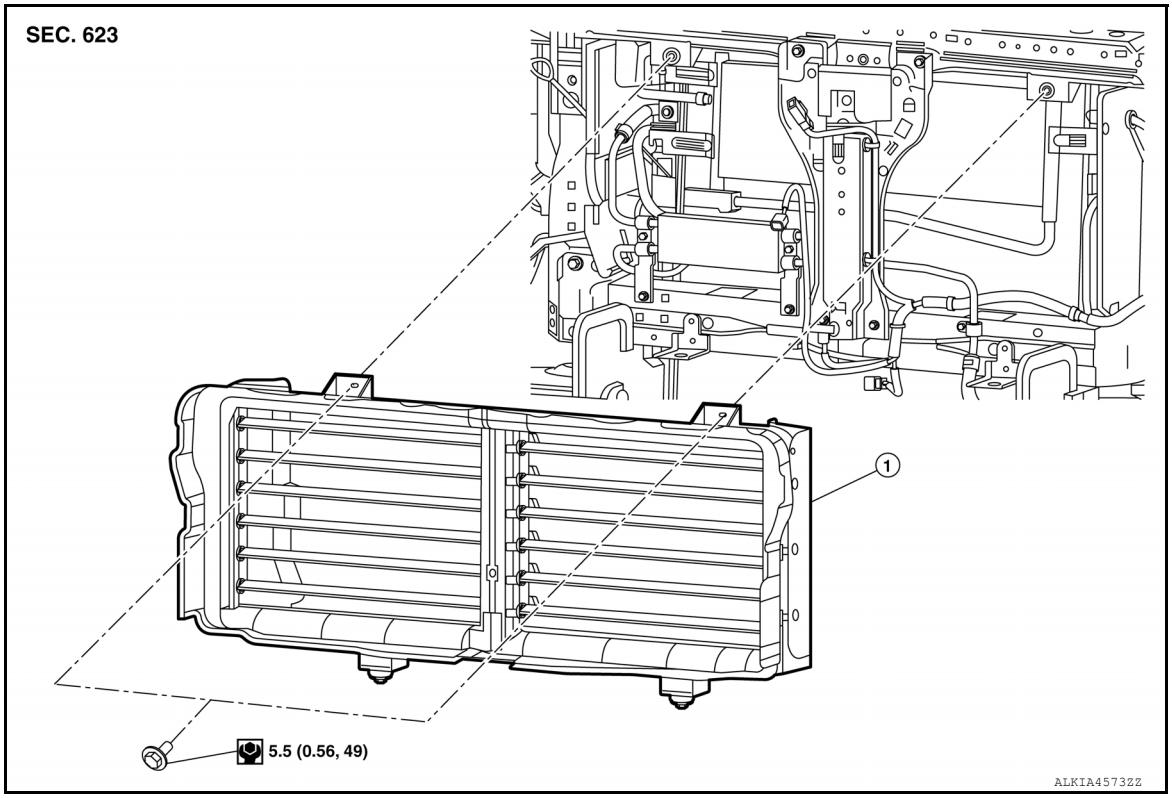
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit (if equipped). Refer to AV-332, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description".

ACTIVE GRILLE SHUTTER

Exploded View

INFOID:0000000014698174



1. Active grille shutter

Removal and Installation

INFOID:0000000014698175

REMOVAL

1. Remove front grille. Refer to EXT-32, "Removal and Installation".
2. Disconnect the harness connector from the active grille shutter.
3. Remove active grille shutter bolts.
4. Remove active grille shutter.

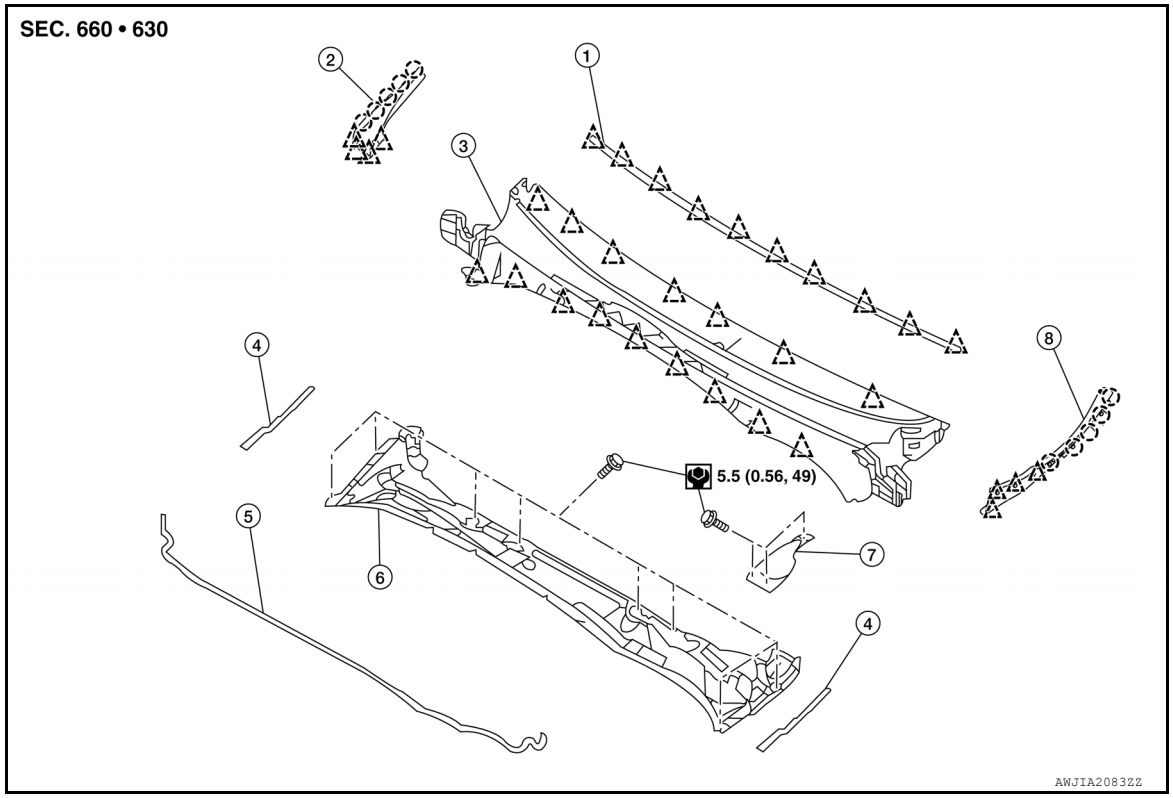
INSTALLATION

Installation is in the reverse order of removal.

COWL TOP

Exploded View

INFOID:0000000014391507



1. Cowl top cover seal
2. Cowl top side trim cover (RH)
3. Cowl top cover
4. Cowl top side seal (LH/RH)
5. Washer nozzle supply hose
6. Cowl top extension
7. Cowl top extension bracket
8. Cowl top side trim cover (LH)

Clip

Pawl

Removal and Installation - Cowl Top Side Trim Cover

INFOID:0000000014391508

REMOVAL

Using suitable tool, release clips and pawls and remove cowl top side trim cover (LH/RH).

CAUTION:

When performing the procedure after removing cowl top side trim cover, protect the lower end of windshield glass with urethane etc.

INSTALLATION

Installation is in the reverse order of removal.

Removal and Installation - Cowl Top Cover

INFOID:0000000014391509

REMOVAL

1. Remove wiper arms (LH/RH). Refer to WW-47, "WIPER ARM : Removal and Installation".
2. Disconnect the washer nozzle supply hose.
3. Remove cowl top fender cover (LH/RH).
4. Release the cowl top clips and remove cowl top.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Install so that there is no clearance between windshield glass and cowl top cover.

Removal and Installation - Cowl Top Extension

INFOID:0000000014391510

REMOVAL

1. Remove front wiper drive assembly. Refer to WW-49, "WIPER DRIVE ASSEMBLY : Removal and Installation".
2. Remove cowl top extension bracket bolts.
3. Remove cowl top extension bracket.
4. Remove cowl top extension.
5. Remove drain hose (if necessary).
6. Remove cowl top extension side seal (LH/RH) (if necessary).

INSTALLATION

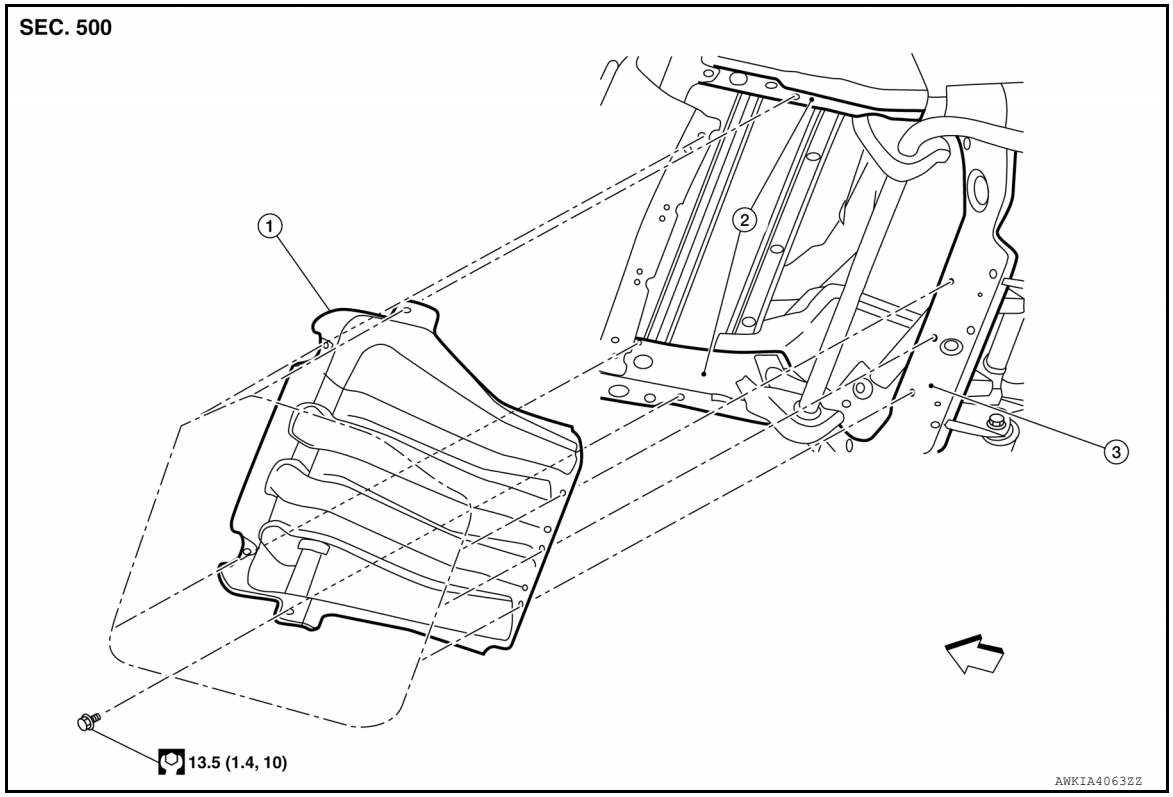
Installation is in the reverse order of removal.

UNDER COVER

FRONT UNDER COVER

FRONT UNDER COVER : Exploded View

INFOID:0000000014391511



1. Front under cover
2. Front side member
3. Front suspension cross member

⇦ Front

FRONT UNDER COVER : Removal and Installation

INFOID:0000000014391512

REMOVAL

1. Remove front undercover bolts.
2. Remove front under cover.

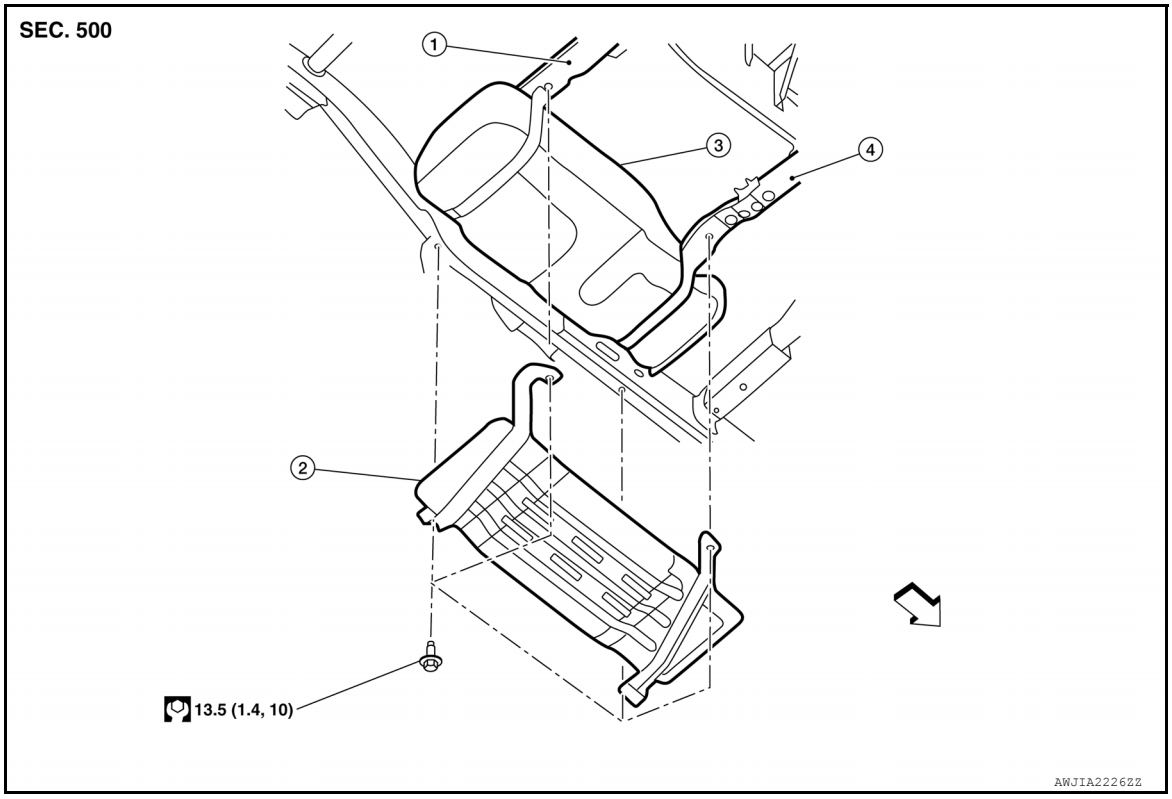
INSTALLATION

Installation is in the reverse order of removal.

REAR UNDER COVER

REAR UNDER COVER : Exploded View

INFOID:0000000014391513



1. Rear fuel tank cross member
2. Rear under cover
3. Fuel tank
4. Front fuel tank cross member
⇦ Front

REAR UNDER COVER : Removal and Installation

INFOID:0000000014391514

REMOVAL

1. Remove rear under cover bolts.
2. Remove rear under cover.

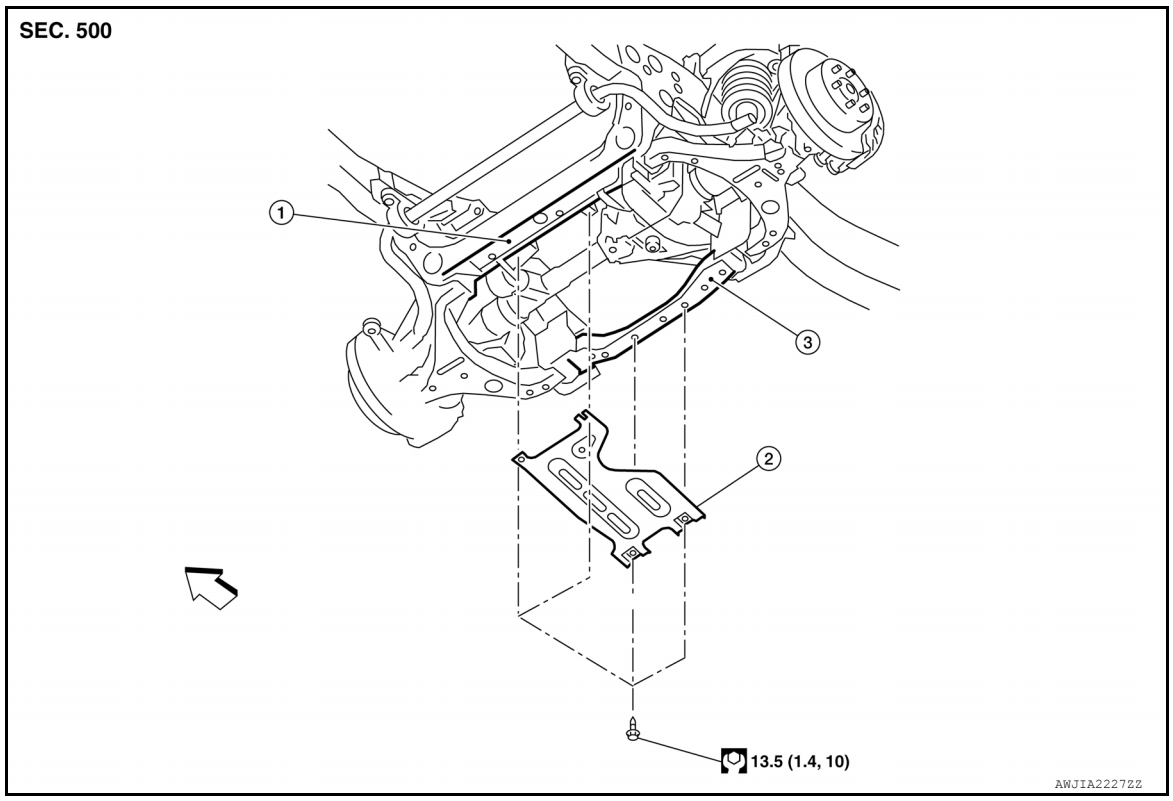
INSTALLATION

Installation is in the reverse order of removal.

ENGINE UNDER COVER

ENGINE UNDER COVER : Exploded View

INFOID:0000000014391515



1. Front suspension cross member (front)
2. Engine under cover
3. Front suspension cross member (rear)

⇦ Front

ENGINE UNDER COVER : Removal and Installation

INFOID:0000000014391516

REMOVAL

1. Remove engine under cover screws.
2. Remove engine under cover.

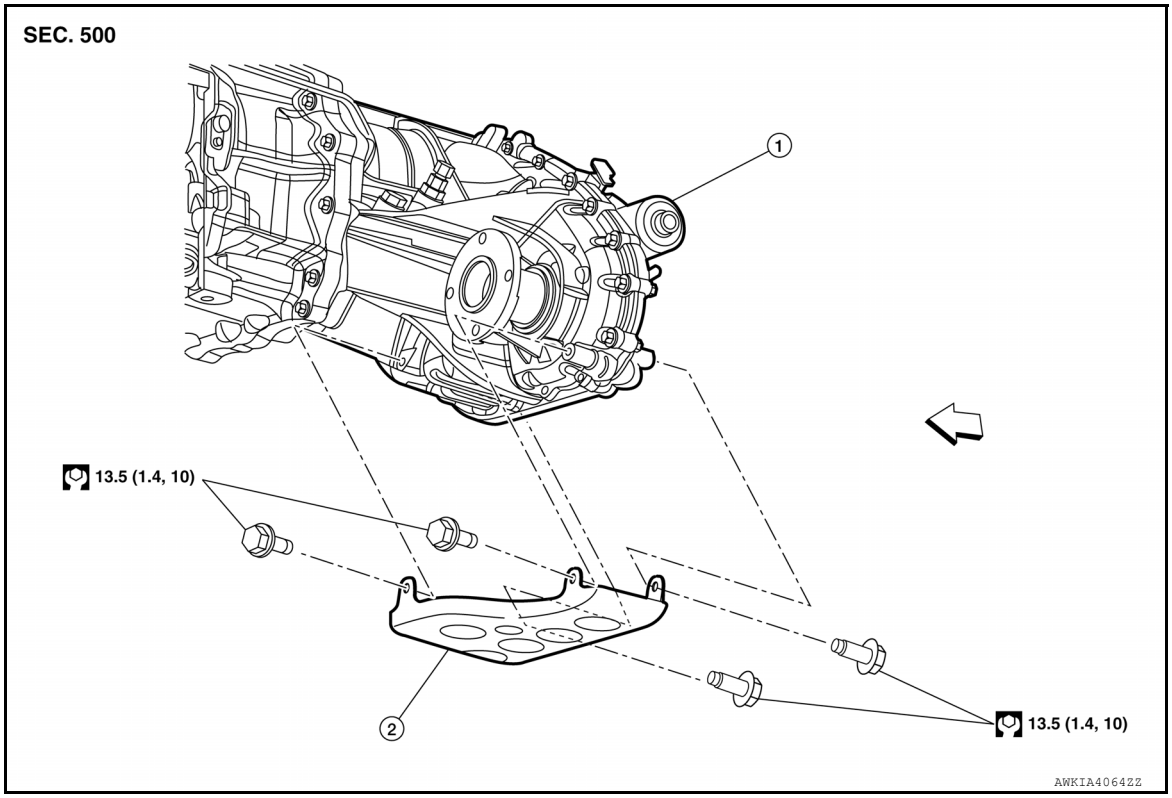
INSTALLATION

Installation is in the reverse order of removal.

FLOOR UNDER COVER

FLOOR UNDER COVER : Exploded View

INFOID:0000000014391517



1. Transfer case
2. Floor under cover
⇦ Front

FLOOR UNDER COVER : Removal and Installation

INFOID:0000000014391518

REMOVAL

1. Remove floor under cover bolts.
2. Remove floor under cover.

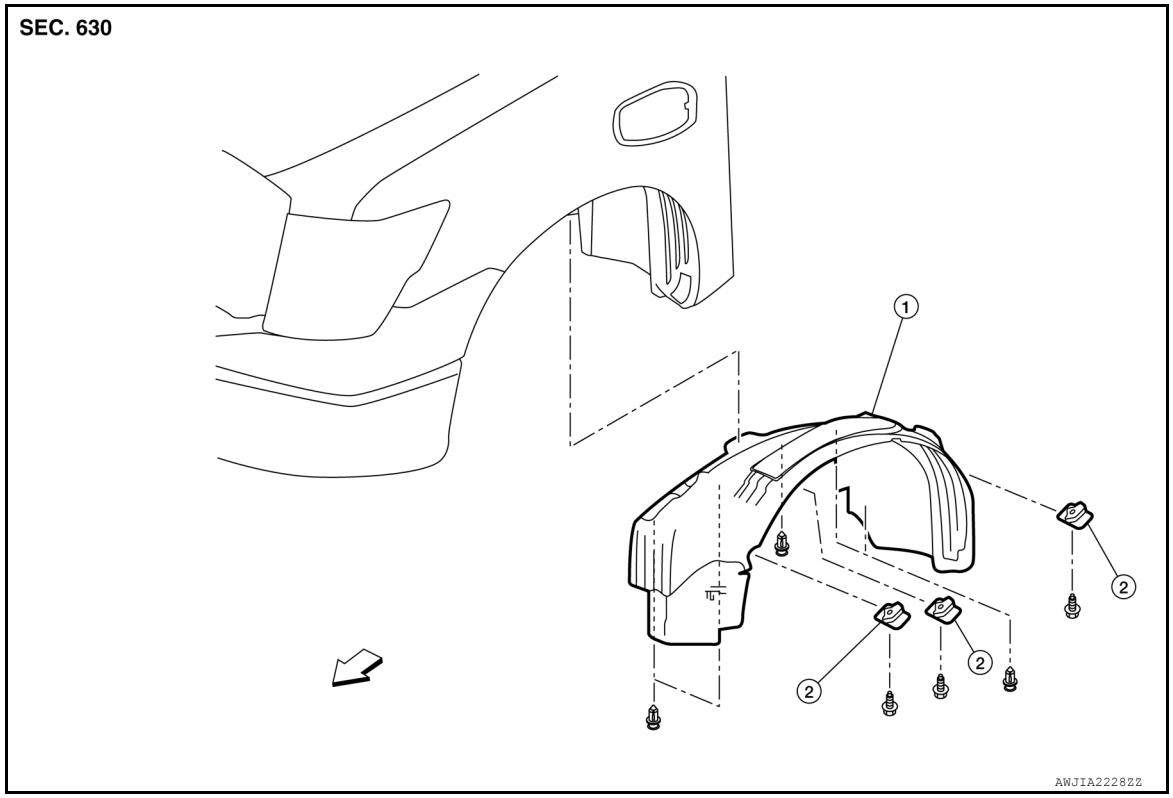
INSTALLATION

Installation is in the reverse order of removal.

FENDER PROTECTOR

Exploded View - Front Fender Protector

INFOID:0000000014391519



1. Front fender protector
2. Fender clip
⇦ Front

Removal and Installation - Front Fender Protector

INFOID:0000000014391520

FRONT FENDER PROTECTOR

REMOVAL

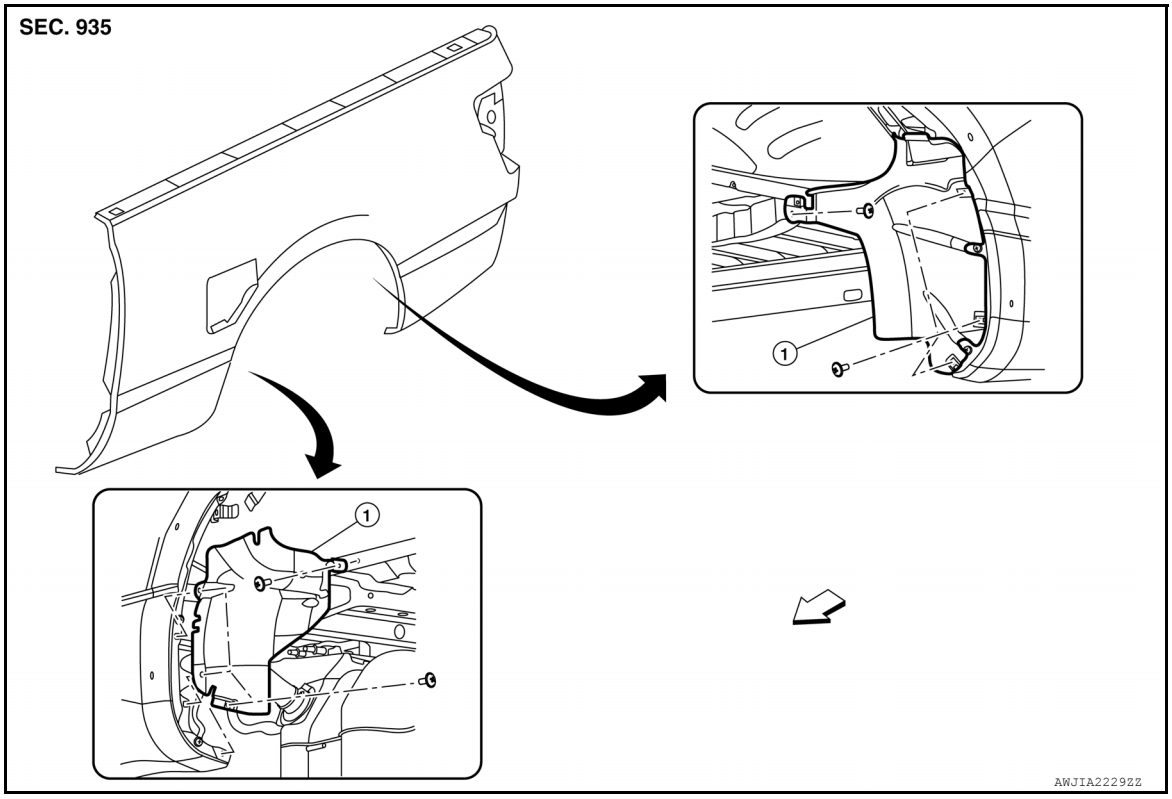
1. Remove the mudguard. Refer to EXT-45, "Removal and Installation".
2. Remove the front fender protector screws.
3. Release the front fender protector clips using suitable tool.
4. Remove the front fender protector.

INSTALLATION

Installation is in the reverse order of removal.

Exploded View - Rear Fender Protector

INFOID:0000000014391521



1. Rear fender protector ⇦ Front

Removal and Installation - Rear Fender Protector

INFOID:0000000014391522

REMOVAL

1. Remove the mud guard. Refer to EXT-45, "Removal and Installation".
2. Remove the rear wheel house wind deflector (if equipped). Refer to EXT-46, "Removal and Installation".
3. Partially remove the rear over fender (if equipped). Refer to EXT-44, "REAR OVER FENDER : Exploded View".
4. Remove the rear fender protector screws.
5. Remove the rear fender protector.

INSTALLATION

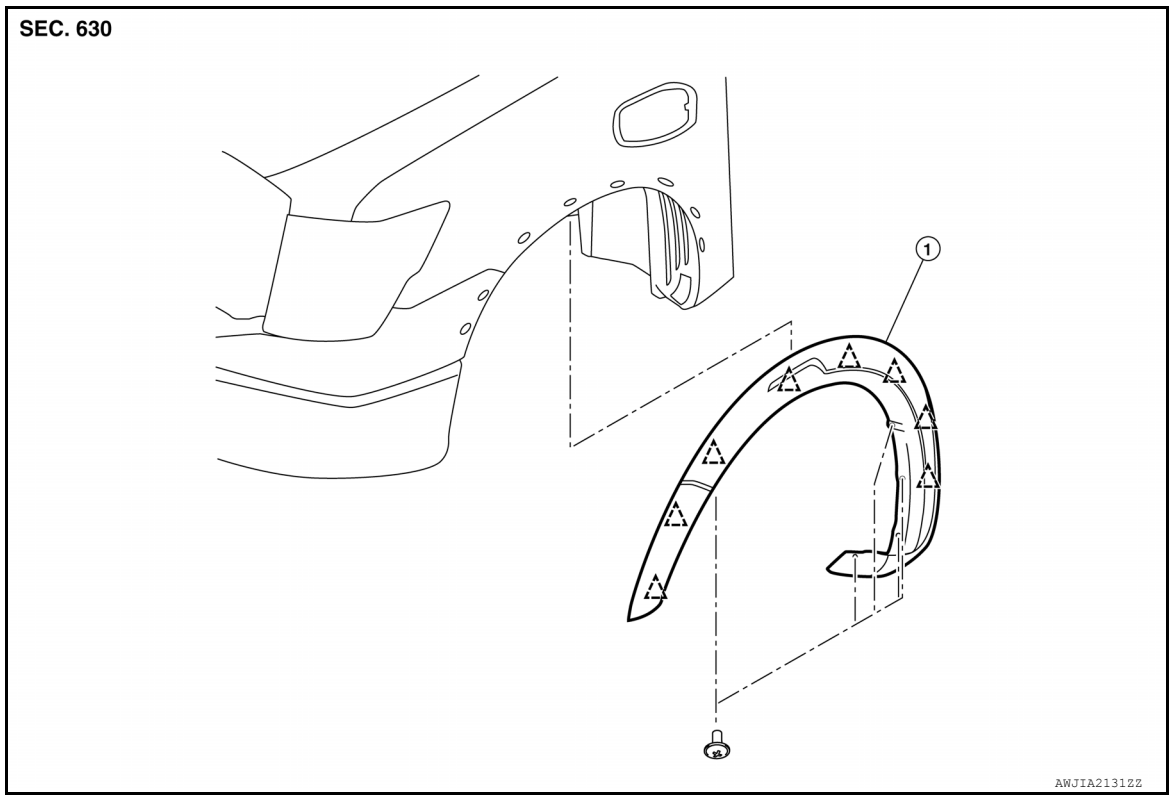
Installation is in the reverse order of removal.

OVER FENDER

FRONT OVER FENDER

FRONT OVER FENDER : Exploded View

INFOID:0000000014391523



1. Front over fender △ Clip

FRONT OVER FENDER : Removal and Installation

INFOID:0000000014391524

REMOVAL

1. Remove front mudguard. Refer to EXT-45, "Removal and Installation".
2. Remove front over fender screws.
3. Release clips and remove front over fender.

INSTALLATION

Installation is in the reverse order of removal.

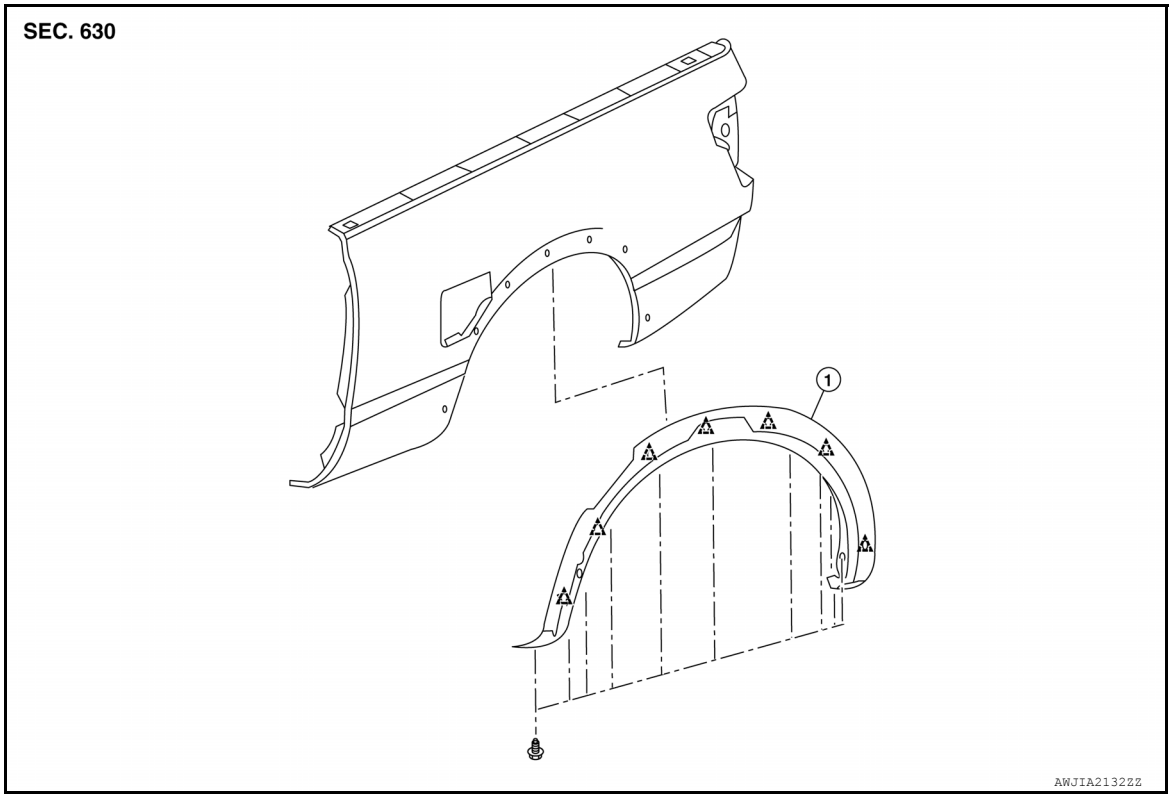
CAUTION:

- **Visually check the clips for deformation and damage during installation. Replace with new ones if necessary.**
- **When installing front over fender, check that clips are securely placed in body panel holes.**

REAR OVER FENDER

REAR OVER FENDER : Exploded View

INFOID:0000000014391525



1. Rear over fender
Clip

REAR OVER FENDER : Removal and Installation

INFOID:0000000014391526

REMOVAL

1. Remove rear wheel house wind deflector. Refer to EXT-46, "Removal and Installation"
2. Remove rear over fender screws.
3. Release clips and remove rear over fender.

INSTALLATION

Installation is in the reverse order of removal.

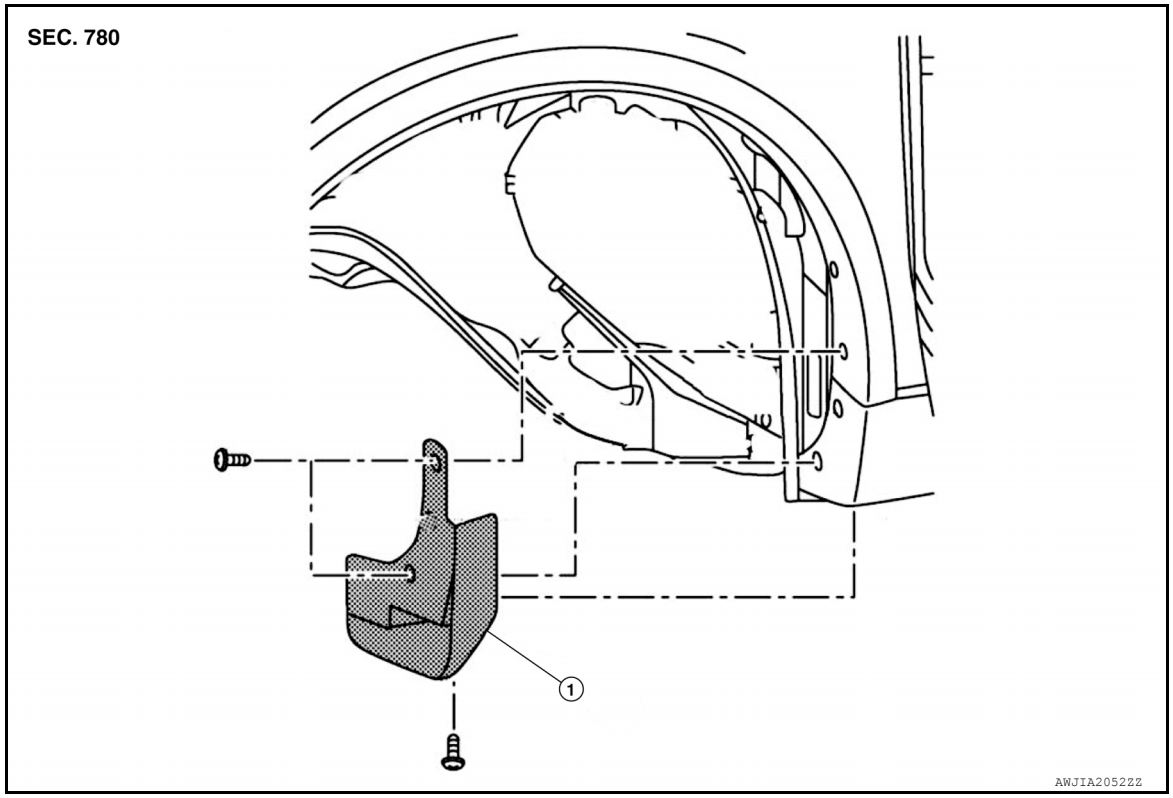
CAUTION:

- **Visually check the clips for deformation and damage during installation. Replace with new ones if necessary.**
- **When installing over fender, check that clips are securely placed in body panel holes.**

MUDGUARD

Exploded View

INFOID:0000000014391527



1. Mudguard

NOTE:
Front shown; rear similar.

Removal and Installation

INFOID:0000000014391528

REMOVAL

1. Remove mudguard screws.
2. Remove mudguard.

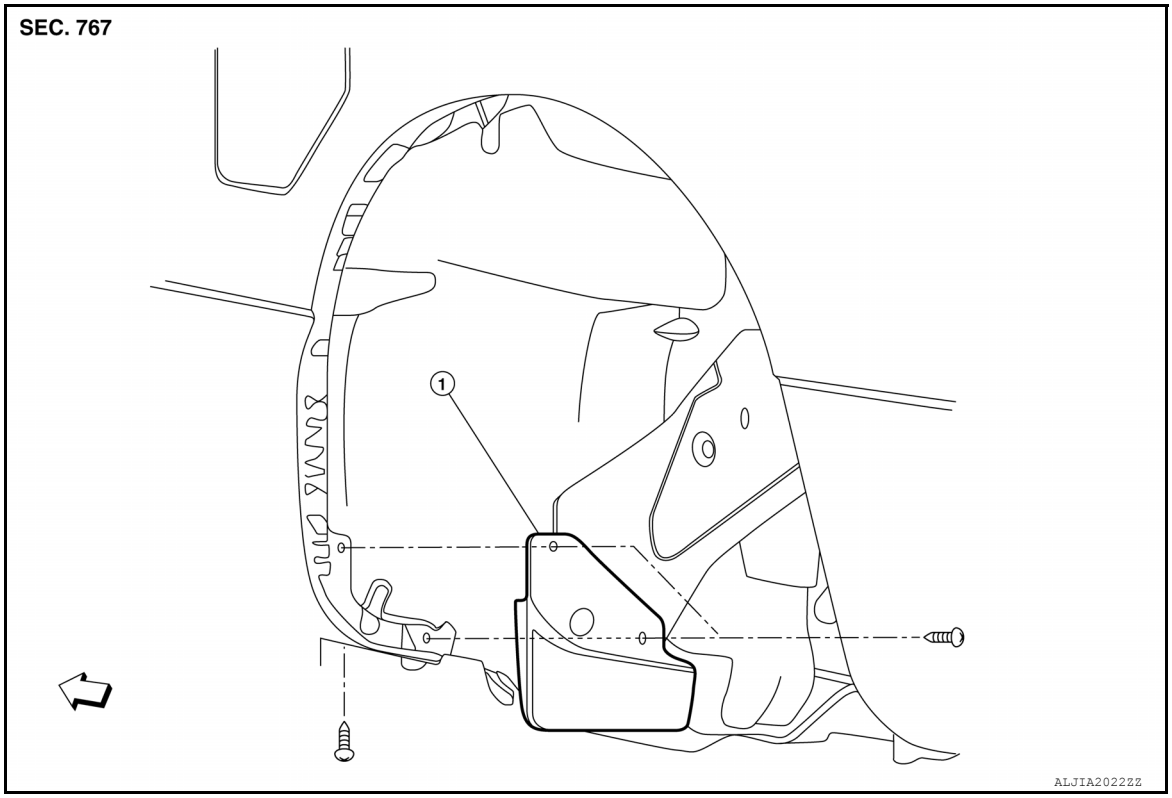
INSTALLATION

Installation is in the reverse order of removal.

REAR WHEEL HOUSE WIND DEFLECTOR

Exploded View

INFOID:0000000014391529



1. Rear wheel house wind deflector ⇦ Front

Removal and Installation

INFOID:0000000014391530

REMOVAL

1. Remove rear wheel house wind deflector screws.
2. Remove rear wheel house wind deflector.

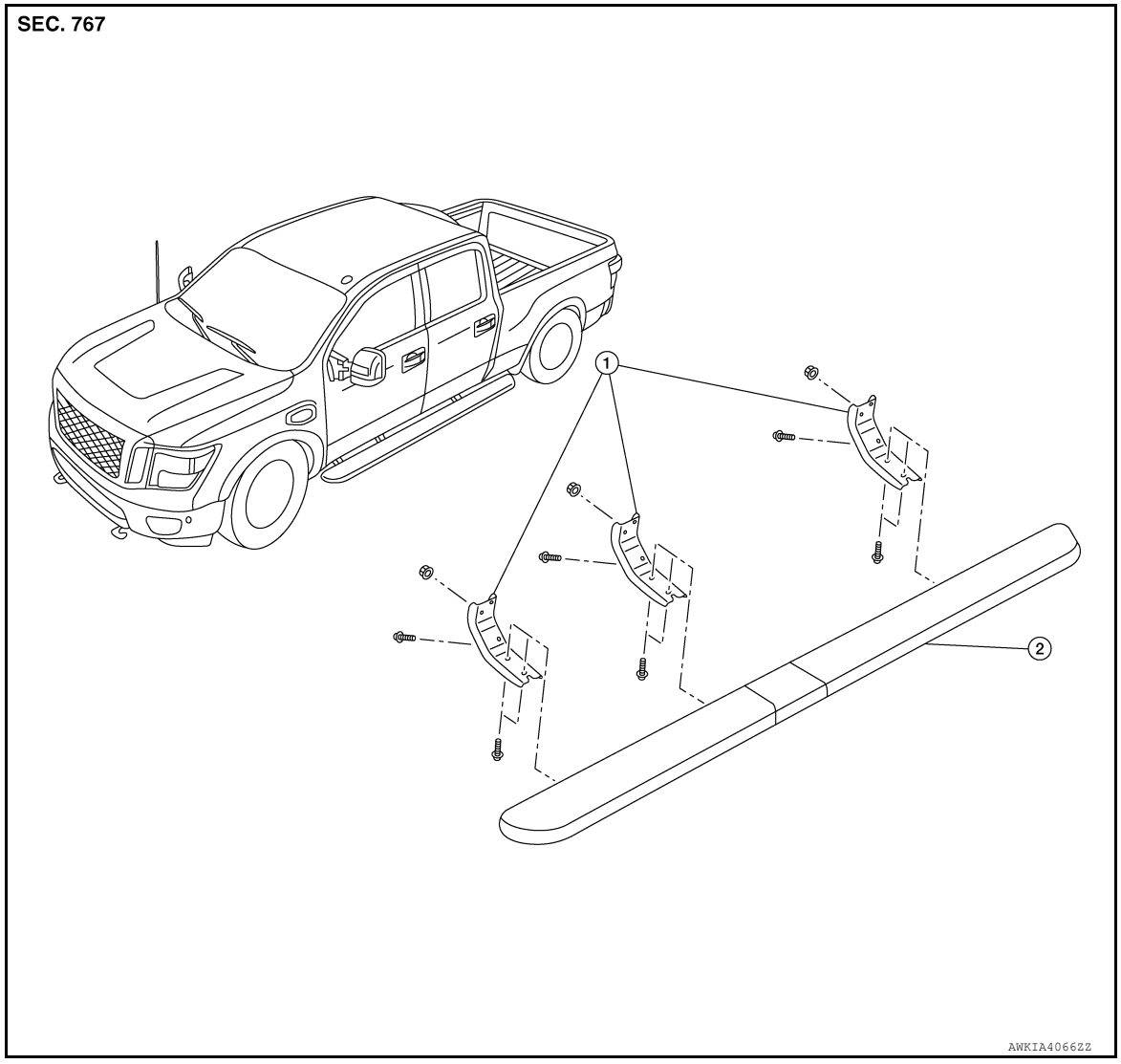
INSTALLATION

Installation is in the reverse order of removal.

SIDE STEP

Exploded View

INFOID:0000000014391531



1. Side step bracket
2. Side step

Removal and Installation

INFOID:0000000014391532

REMOVAL

1. Disconnect the harness connector from the side step.
2. Remove side step bolts, and then remove side step from side step bracket.
3. Remove side step bracket nut and bolt, then remove side step bracket.

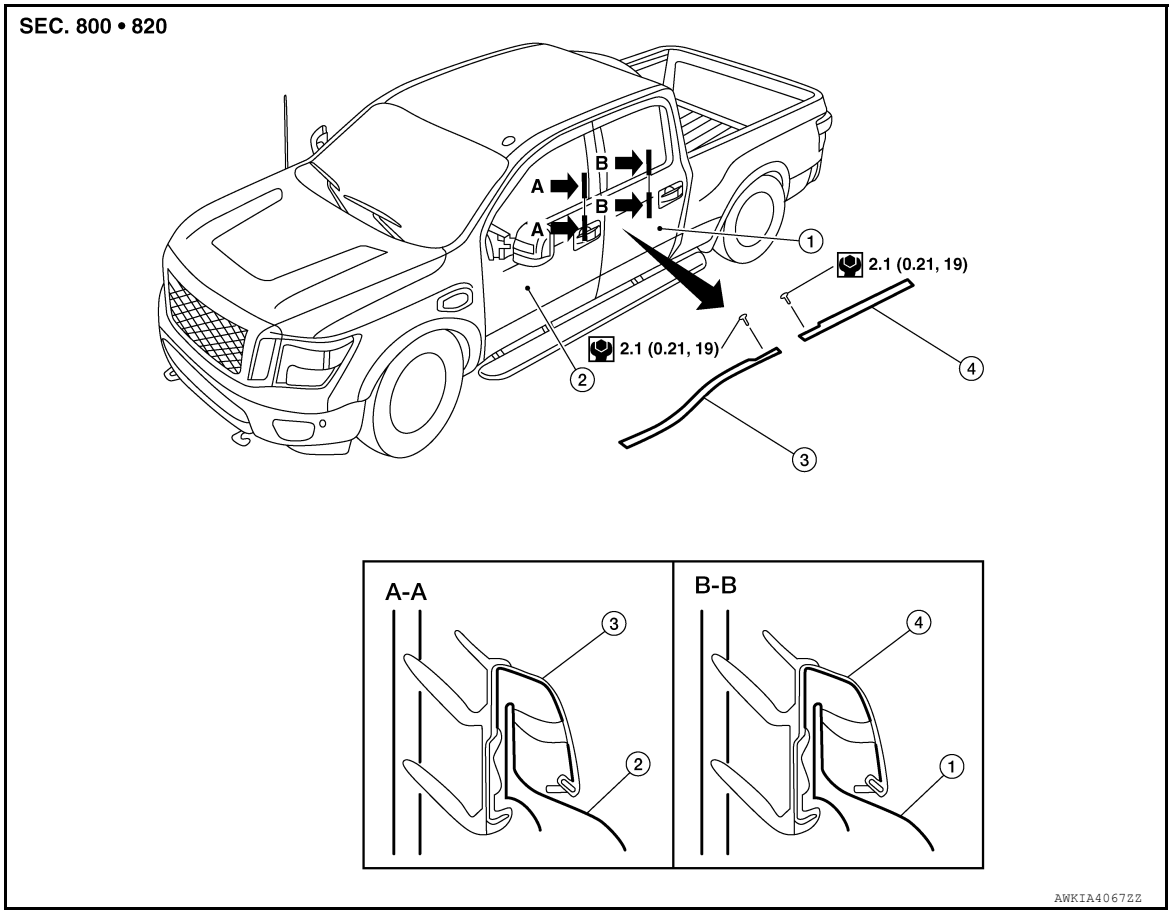
INSTALLATION

Installation is in the reverse order of removal.

DOOR OUTSIDE MOLDING

Exploded View

INFOID:0000000014391533



1. Rear door
2. Front door
3. Door molding front
4. Door molding rear

Removal and Installation

INFOID:0000000014391534

FRONT DOOR OUTSIDE MOLDING

REMOVAL

1. Fully open door window.
2. Remove door mirror. Refer to MIR-31, "Removal and Installation"
3. Remove screw cover and remove screw.
4. Twist and pull up to upper side, and remove front door outside molding.

INSTALLATION

Installation is in the reverse order of removal.

REAR DOOR OUTSIDE MOLDING

REMOVAL

1. Fully open door window.
2. Remove screw cover and remove screw.
3. Twist and pull up to upper side, and remove rear door outside molding.

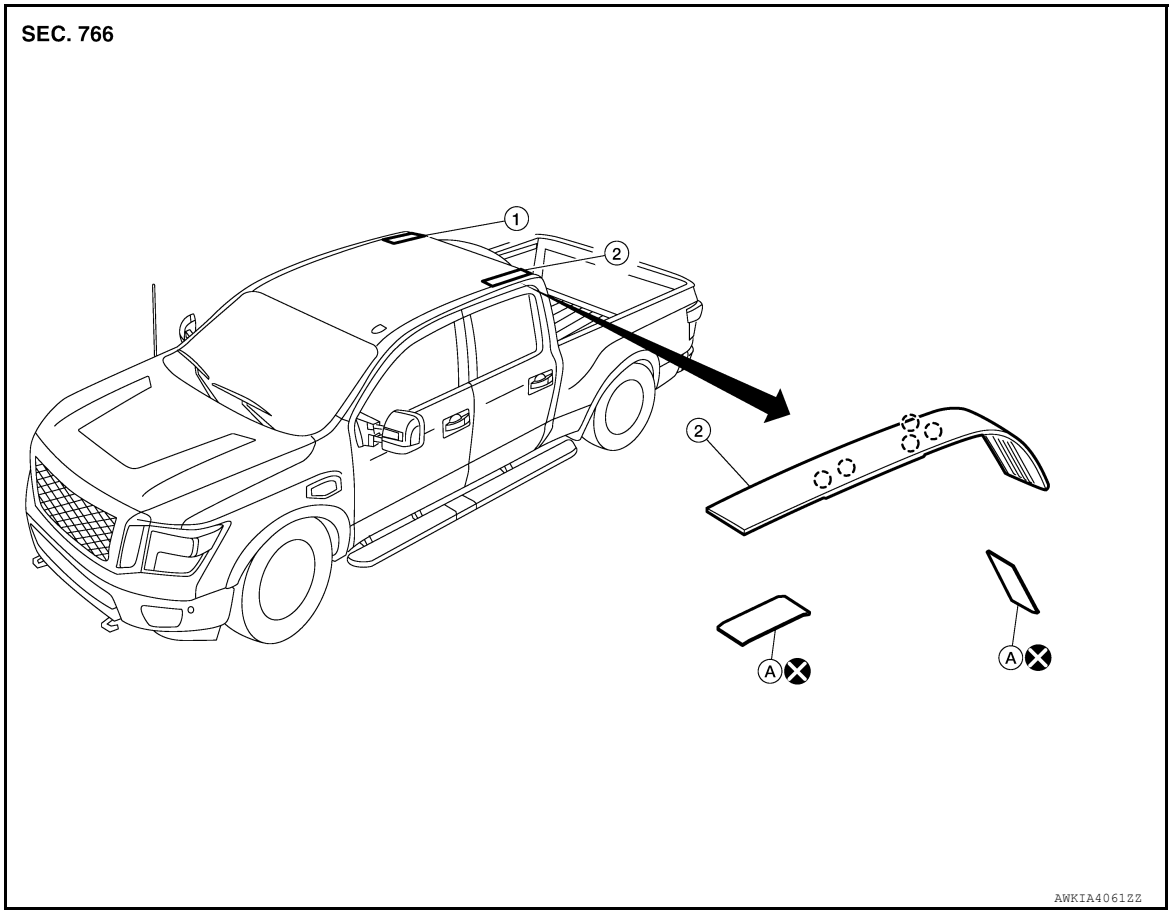
INSTALLATION

Installation is in the reverse order of removal.

ROOF SIDE MOLDING

Exploded View

INFOID:0000000014391535



1. Roof side molding (LH)
2. Roof side molding (RH)
A. Double-sided tape

Removal and Installation

INFOID:0000000014391536

REMOVAL

Using a suitable tool, release pawls and remove roof side molding.

CAUTION:

Apply protective tape to painted surfaces to prevent damage.

INSTALLATION

NOTE:

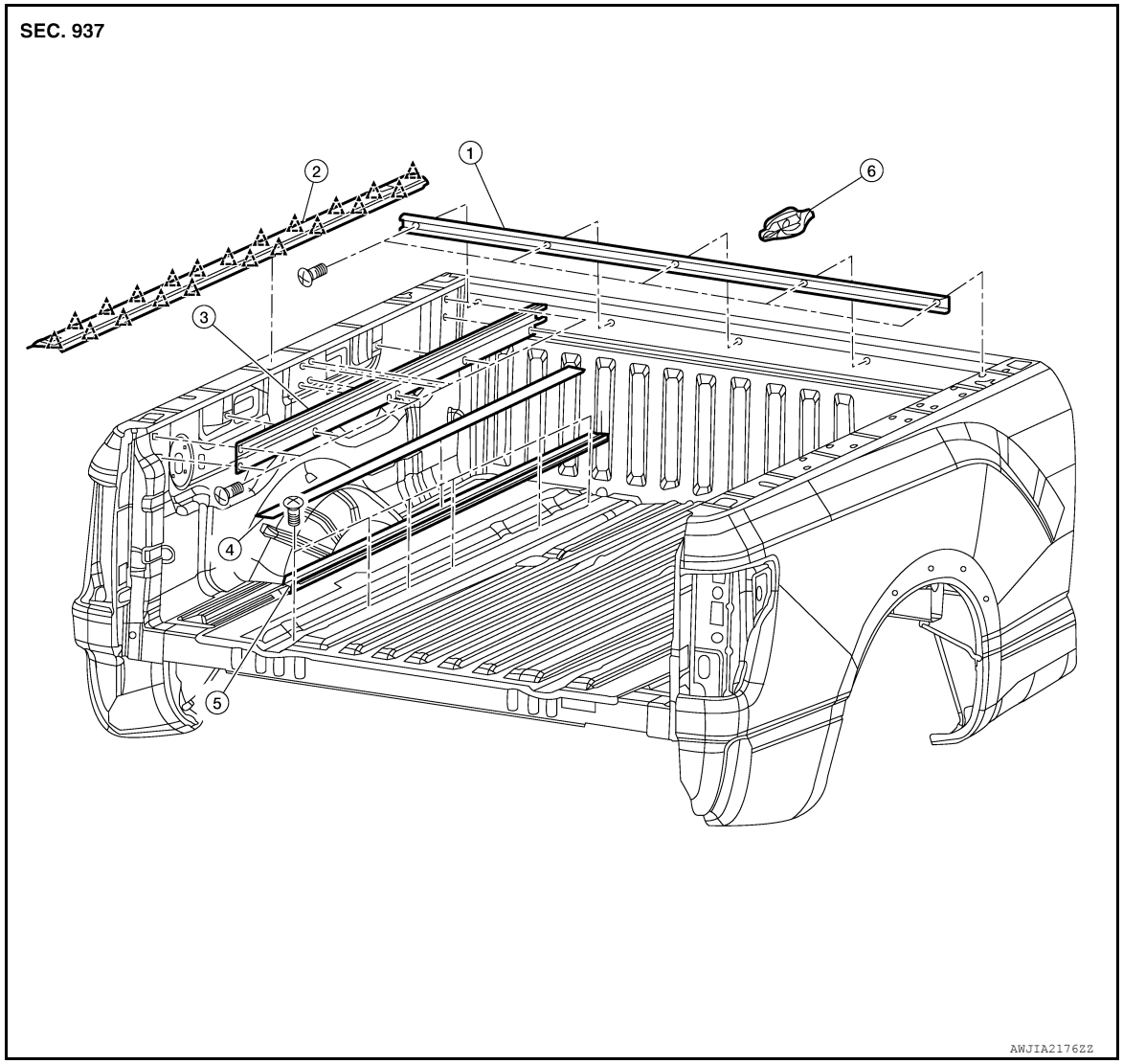
- The roof side molding (LH/RH) are affixed with double-faced adhesive tape.
- To re-use existing molding, clean all double-faced adhesive tape from molding and apply new double-faced adhesive tape to the molding.

1. Remove tape and clean surface with isopropyl alcohol or equivalent to degrease surface.
2. Align clips and install roof side molding, put pressure on double sided tape to secure fit.
   CAUTION:
   - **Use double-faced adhesive tape.**
   - **Do not wash vehicle within 24 hours of installation, to secure contact.**

BED RAILS AND TRIM

Exploded View - Without Storage Box

INFOID:0000000014391537



1. Center tie down rail
2. Bedside finisher
3. Bedside tie down rail (LH)
4. Floor rail cover
5. Floor rail (LH)
6. Tie down cleat

NOTE:
LH shown, RH similar.

Removal and Installation - Without Storage Box

INFOID:0000000014391538

REMOVAL

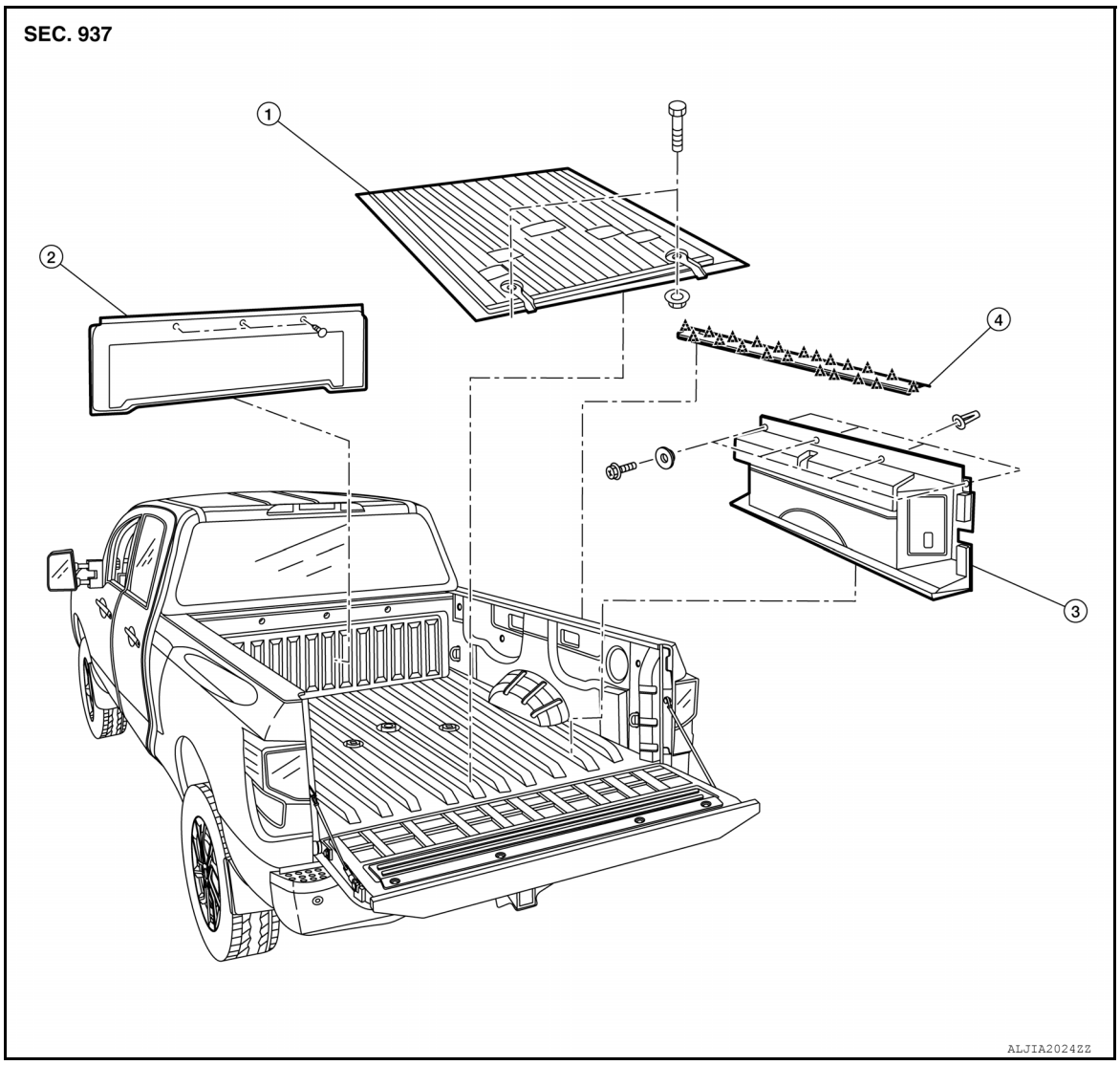
1. Remove center tie down rail bolts, then remove center tie down rail.
2. Remove bedside tie down rail bolts, then remove bedside tie down rail (LH/RH).
3. Release clips and remove bedside finisher.
4. Slide floor rail cover forward and remove.
5. Remove floor rail bolts, then remove floor rail.
6. Remove tie down cleat (if necessary).

INSTALLATION

Installation is in the reverse order of removal.

Exploded View - With Storage Box

INFOID:0000000014391539



1. Bed liner floor trim
2. Bed liner front trim
3. Bedside storage box (RH)
4. Bedside finisher (RH)

NOTE:
RH shown, LH similar.

Removal and Installation - With Storage Box

INFOID:0000000014391540

REMOVAL

1. Release clips and remove bedside finisher.
2. Remove storage box bolts.
3. Remove storage box.
   CAUTION:
   When removing storage box, two people are required.
4. Remove bed liner front trim clips, then remove bed liner front trim.

5. Remove bolts from bed liner floor trim.
   CAUTION:
   When removing bolts from bed trim, two people are required.
6. Remove bed liner floor trim.

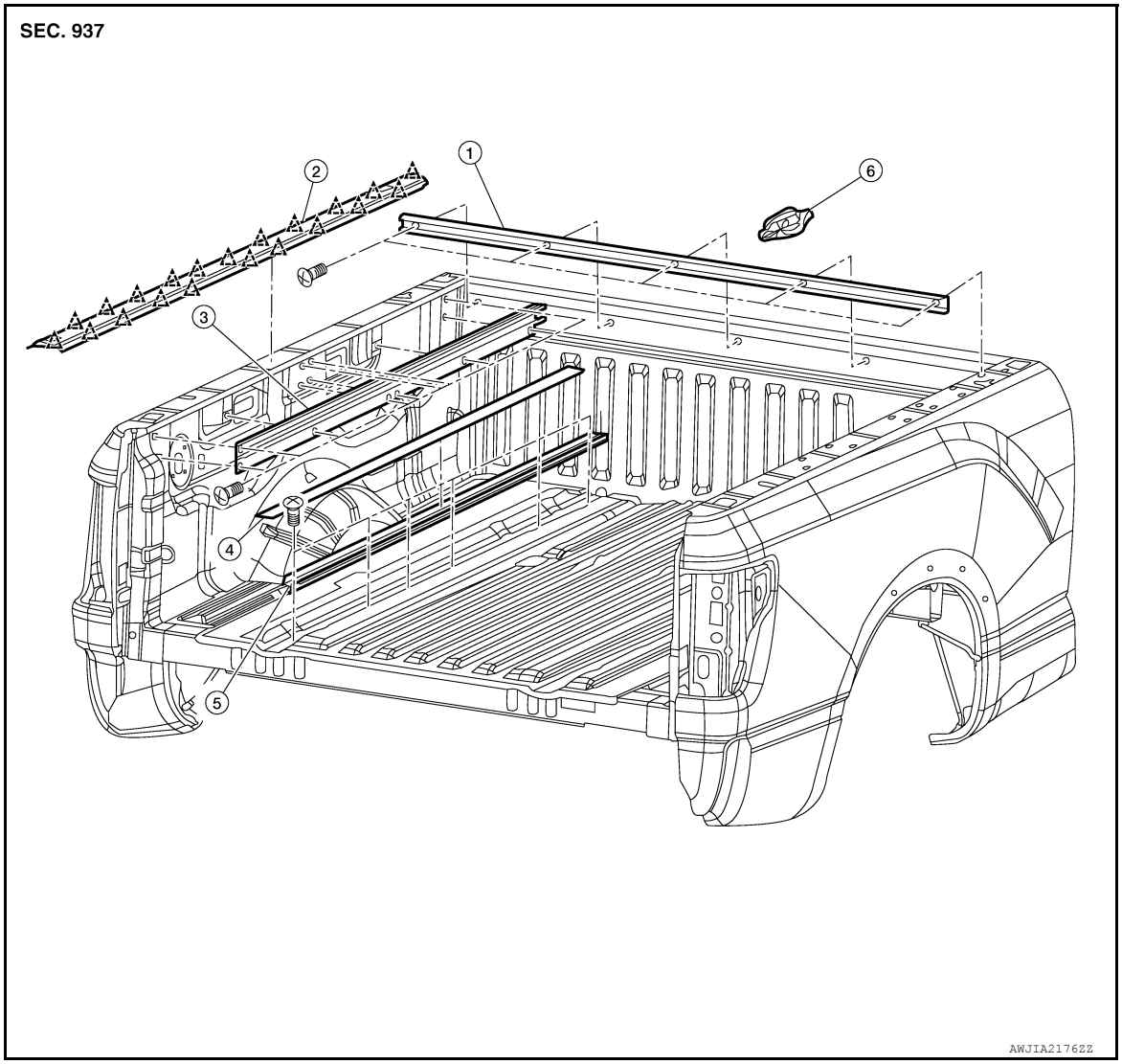
INSTALLATION

Installation is in the reverse order of removal.

TIE DOWN CLEAT

Exploded View

INFOID:0000000014710143



1. Center tie down rail
2. Bedside finisher
3. Bedside tie down rail (LH)
4. Floor rail cover
5. Floor rail (LH)
6. Tie down cleat

Removal and Installation

INFOID:0000000014710144

REMOVAL

1. Loosen tie down cleat nut.
2. Remove tie down cleat.

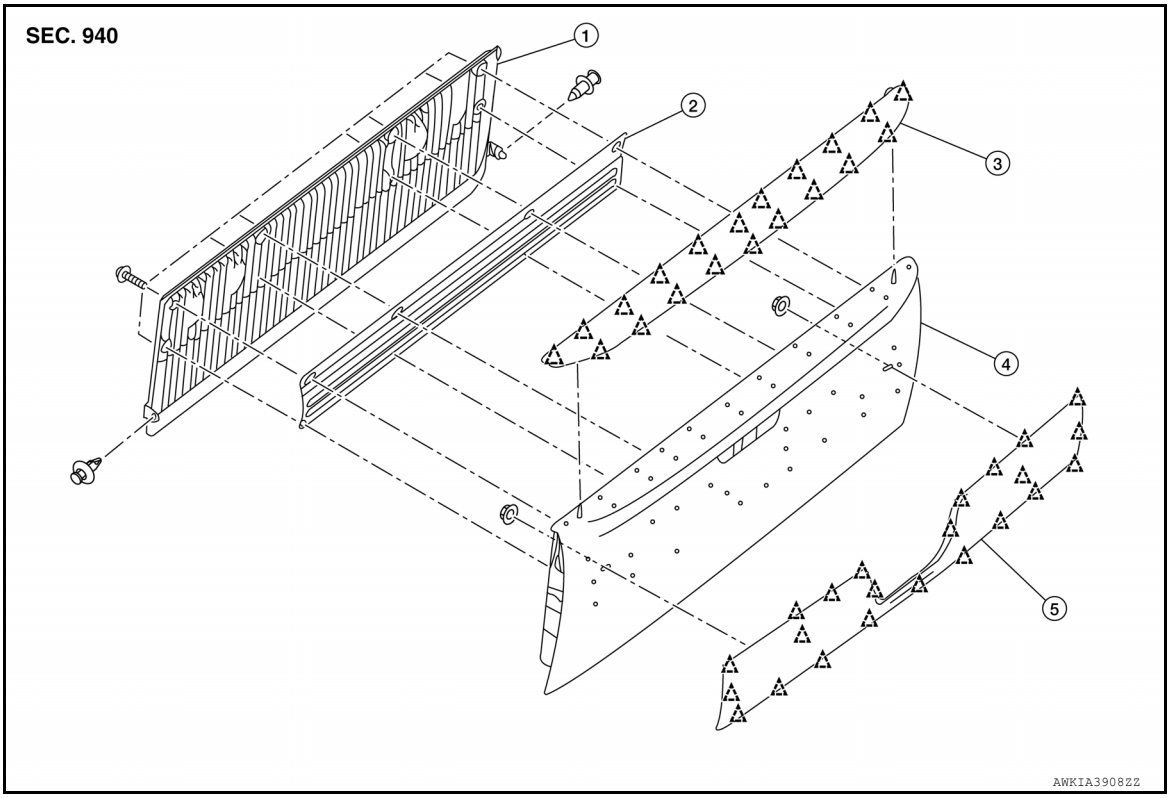
INSTALLATION

Installation is in the reverse order of removal.

TAILGATE TRIM

Exploded View

INFOID:0000000014391541



1. Tailgate protector
2. Tailgate cover plate
3. Tailgate trim
4. Tailgate assembly
5. Tailgate finisher
- Clip

Removal and Installation

INFOID:0000000014391542

REMOVAL

1. Release clips using suitable tool and remove tailgate trim.

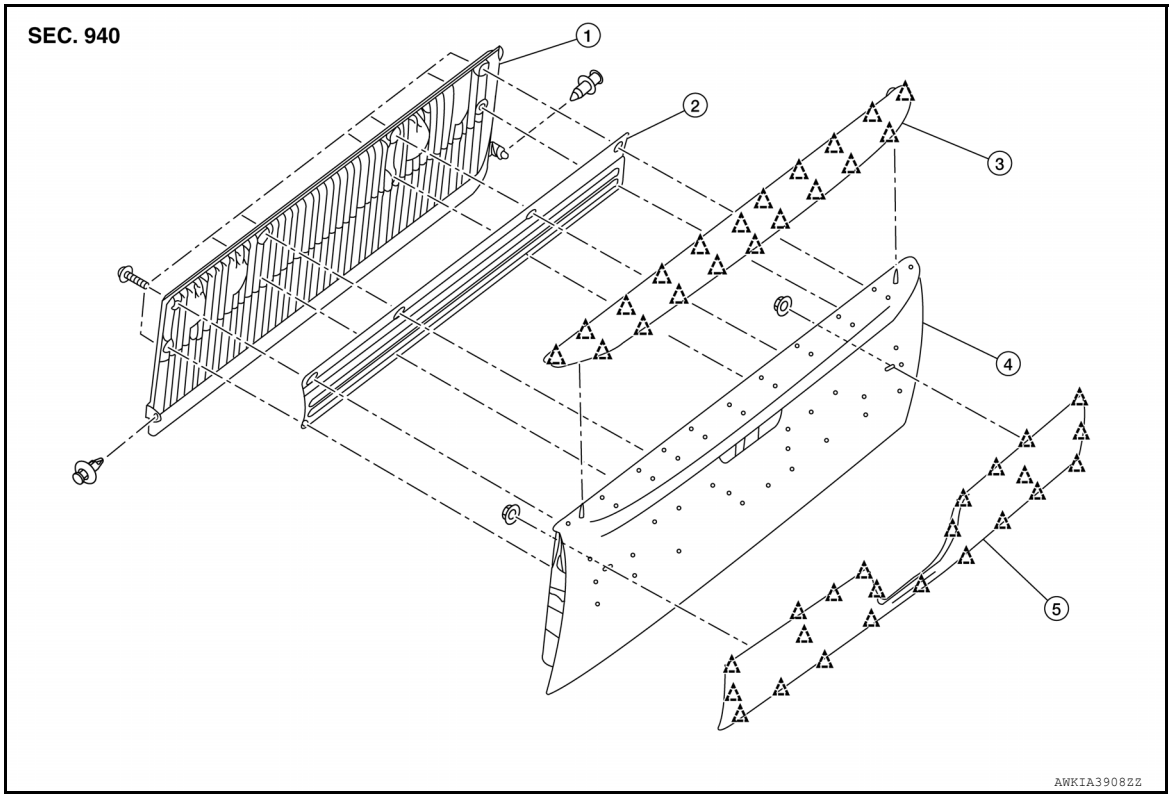
INSTALLATION

Installation is in the reverse order of removal.

TAILGATE FINISHER

Exploded View

INFOID:0000000014391543



1. Tailgate protector
2. Tailgate cover plate
3. Tailgate trim
4. Tailgate assembly
5. Tailgate finisher
- Clip

Removal and Installation

INFOID:0000000014391544

REMOVAL

1. Remove tailgate protector.
2. Remove tailgate cover plate.
3. Release clips using suitable tool and remove tailgate trim.
4. Remove tailgate finisher nuts.
5. Release tailgate finisher clips using suitable tool and remove tailgate finisher.

INSTALLATION

Installation is in the reverse order of removal.

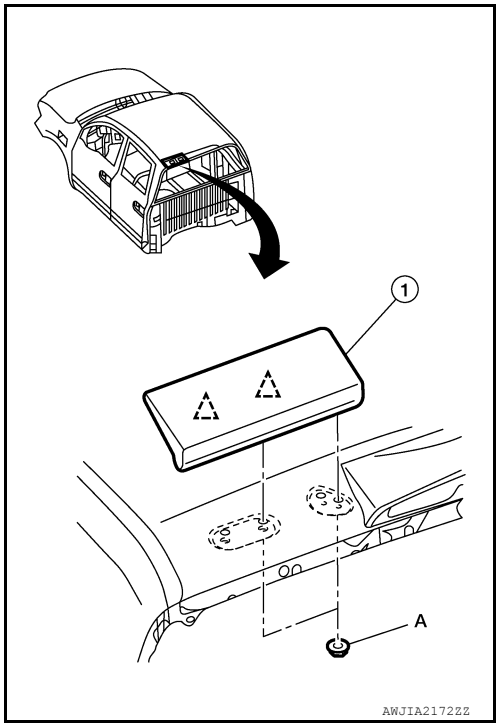
REAR ROOF SPOILER

Removal and Installation

INFOID:0000000014391545

REMOVAL

1. Remove headliner. Refer to INT-32, "Removal and Installation".
2. Remove rear roof spoiler nuts (A).
3. Release clips and remove rear roof spoiler (1).
   NOTE:
   LH shown, RH similar.



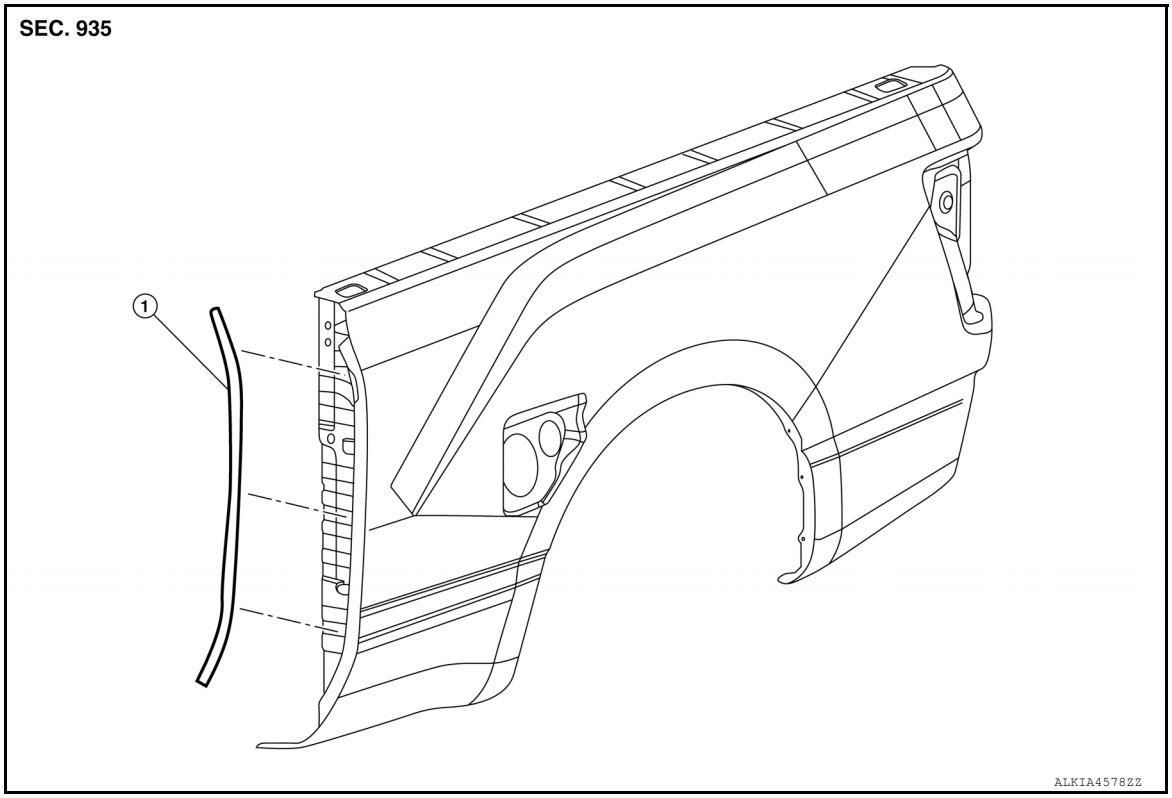
INSTALLATION

Installation is in the reverse order of removal.

SIDE PROTECTIVE STRIP

Exploded View

INFOID:0000000014727258



1. Side protective strip

NOTE:
LH shown, RH similar.

Removal and Installation

INFOID:0000000014727259

REMOVAL

1. Slide side protective seal upward and remove..

INSTALLATION

Installation is in the reverse order of removal.