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2009 HVAC Air Conditioning - Highlander

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AIR CONDITIONING SYSTEM (FOR AUTOMATIC AIR CONDITIONING SYSTEM)

PRECAUTION

1. **PRECAUTION FOR DISCONNECTING THE BATTERY CABLE**

   HINT:

   When disconnecting the battery negative (-) terminal, initialize the following systems after the terminal is reconnected:

   SYSTEM REFERENCE CHART

System Name	See Procedure
Power Back Door System	INITIALIZATION

2. **IGNITION SWITCH EXPRESSIONS**

   HINT:

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

   IGNITION SWITCH EXPRESSIONS REFERENCE CHART

Expression	Ignition Switch (position)	Engine Switch (condition)
Ignition Switch off	LOCK	Off
Ignition Switch on (IG)	ON	On (IG)
Ignition Switch on (ACC)	ACC	On (ACC)
Engine Start	START	Start

3. **PRECAUTIONS WHEN USING TECHSTREAM**
   a. When using Techstream to troubleshoot the LIN communication line:

      Connect Techstream to the vehicle, and turn a courtesy light switch on and off at 1.5 second intervals until communication between the tester and vehicle begins.

   b. After all DTCs are cleared, check if the trouble occurs again 6 seconds after the ignition switch is turned on (IG).
4. **IF ANY OF FOLLOWING CONDITIONS ARE MET, KEEP ENGINE IDLING WITH A/C ON (ENGINE SPEED AT LESS THAN 2000 RPM) FOR AT LEAST 1 MINUTE:**
   - Refrigerant gas has been refilled or A/C parts have been replaced.

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- A long time has elapsed since the engine was stopped.

NOTE: If the engine speed exceeds 2000 rpm, the A/C compressor may be damaged.

5. **DO NOT HANDLE REFRIGERANT IN ENCLOSED AREAS OR NEAR OPEN FLAMES**
6. **ALWAYS WEAR EYE PROTECTION**



Fig. 1: Precaution For Handle Refrigerant In Enclosed Area
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. **BE CAREFUL NOT TO GET LIQUID REFRIGERANT IN YOUR EYES OR ON YOUR SKIN**

If liquid refrigerant gets in your eyes or on your skin:

a. Wash the area with lots of cold water.

CAUTION: Do not rub your eyes or skin.

b. Apply clean petroleum jelly to the skin.
c. Go immediately to a physician or hospital for professional treatment.

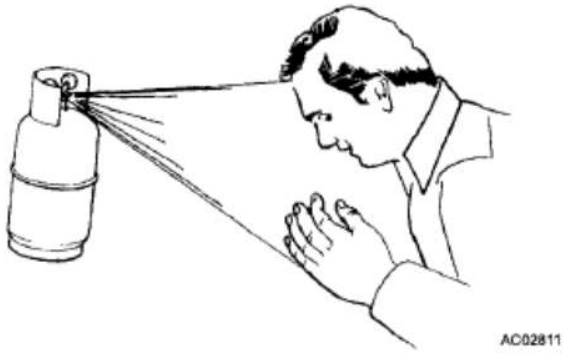


Fig. 2: Precaution For Liquid Refrigerant Eyes On Skin
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8. **NEVER HEAT CONTAINER OR EXPOSE IT TO OPEN FLAME**
9. **BE CAREFUL NOT TO DROP CONTAINER OR SUBJECT IT TO PHYSICAL SHOCKS**
10. **DO NOT OPERATE COMPRESSOR WITH INSUFFICIENT REFRIGERANT IN REFRIGERANT SYSTEM**

    If there is not enough refrigerant in the refrigerant system, oil circulation n will be insufficient and compressor burnout may occur. Necessary care should be taken to avoid this.

11. **DO NOT OPEN HIGH PRESSURE MANIFOLD VALVE WHILE COMPRESSOR IS OPERATING**

    Open and close only the low pressure valve. Opening and closing the high pressure valve could cause the charging cylinder to rupture.

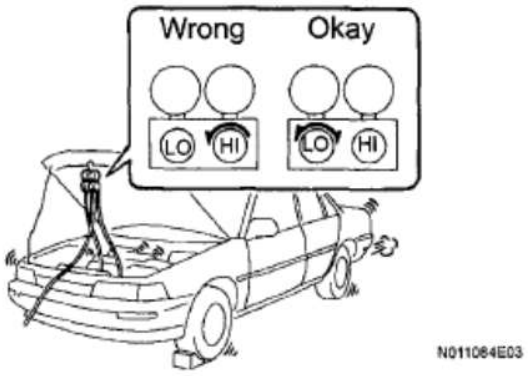


Fig. 3: Identifying Correct And Incorrect Connection Of Valves
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

12. **BE CAREFUL NOT TO OVERCHARGE SYSTEM WITH REFRIGERANT**

    If the refrigerant is overcharged, it causes problems such as insufficient cooling, poor fuel economy and engine overheating.

13. **DO NOT OPERATE ENGINE AND COMPRESSOR WITHOUT REFRIGERANT**

NOTE: **This may damage the inside of the compressor.**

PARTS LOCATION

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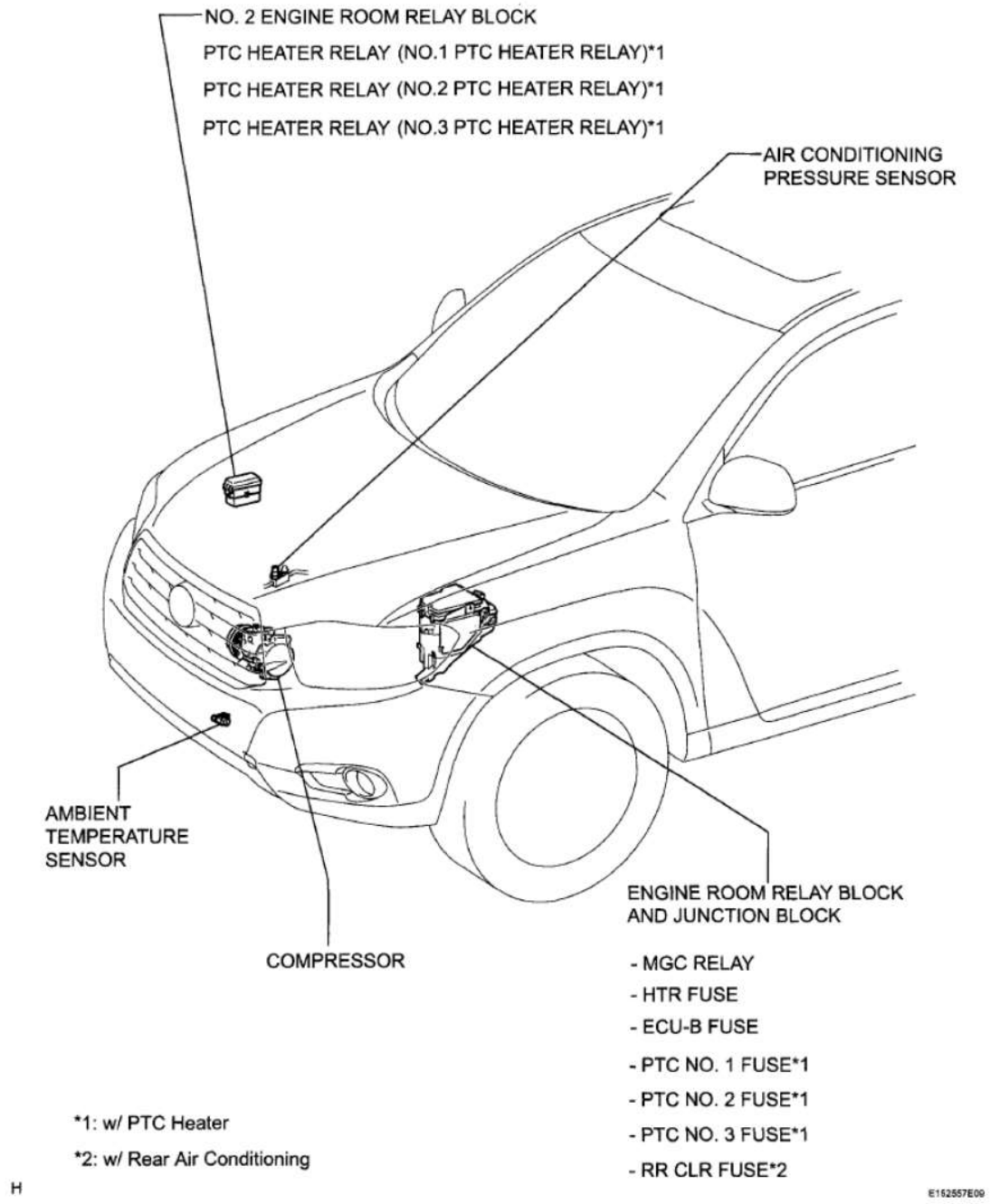


Fig. 4: Identifying Air Conditioning System Parts Location (1 Of 5)
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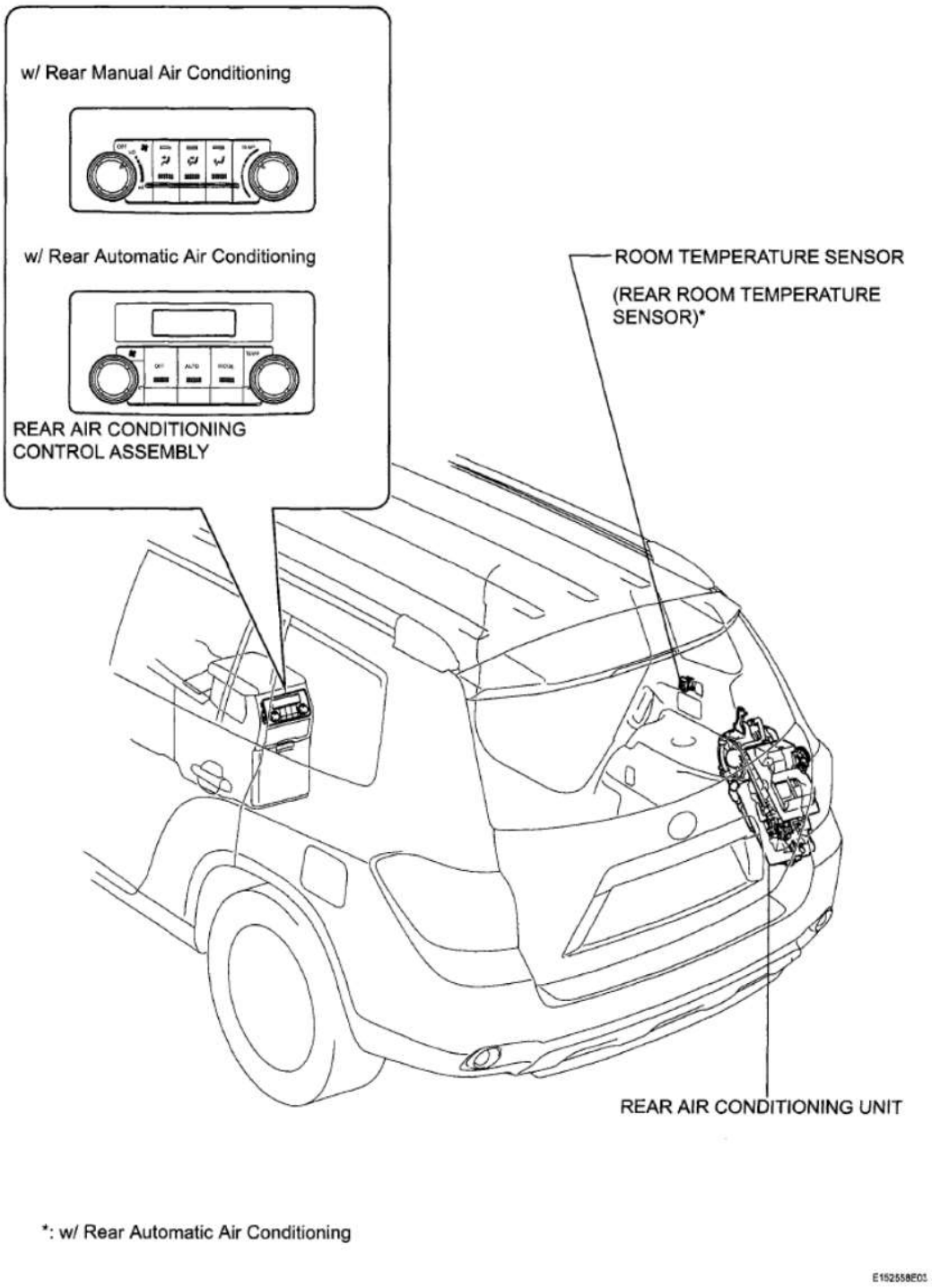


Fig. 5: Identifying Air Conditioning System Parts Location (2 Of 5)
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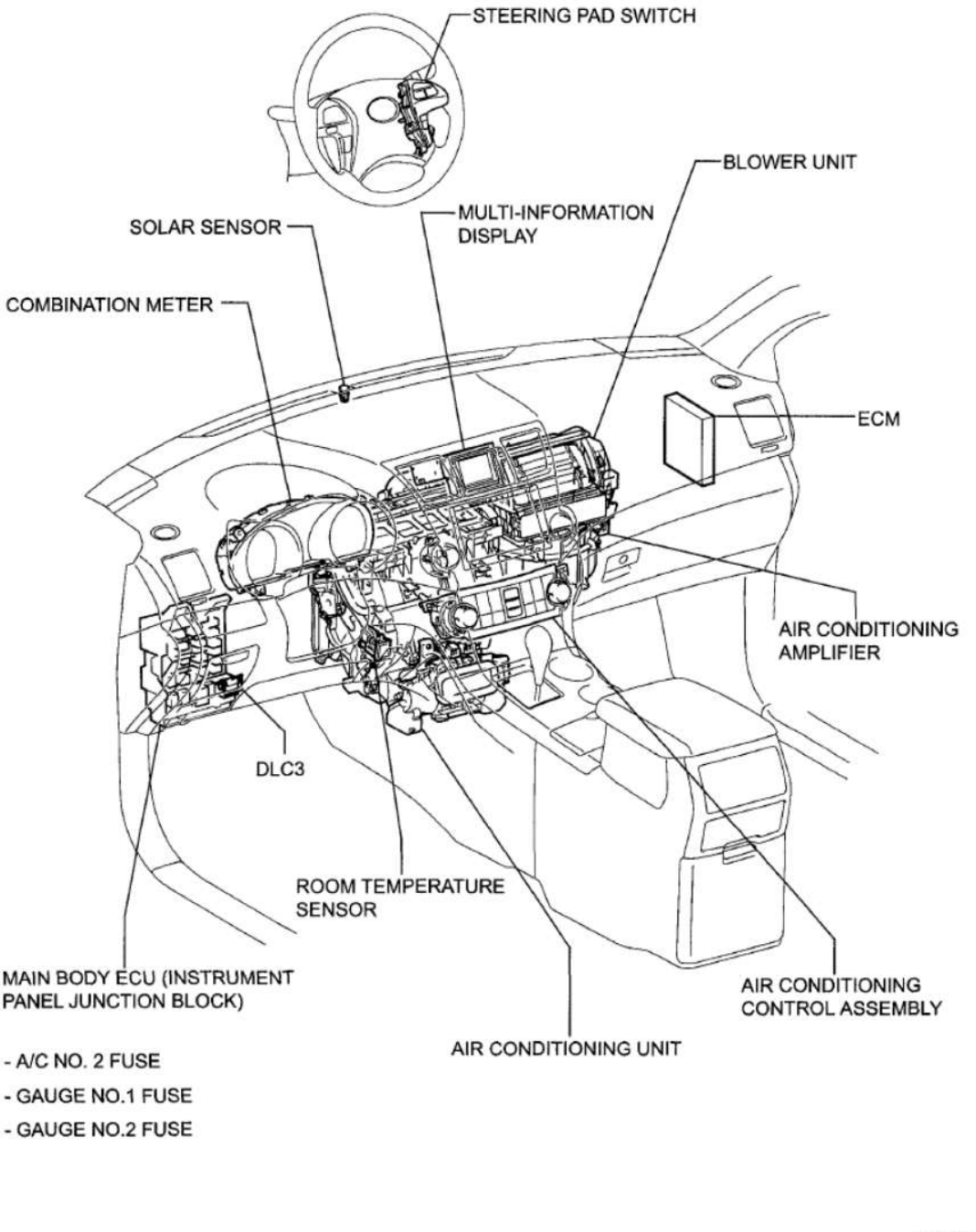


Fig. 6: Identifying Air Conditioning System Parts Location (3 Of 5)
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Front Air Conditioning Unit:

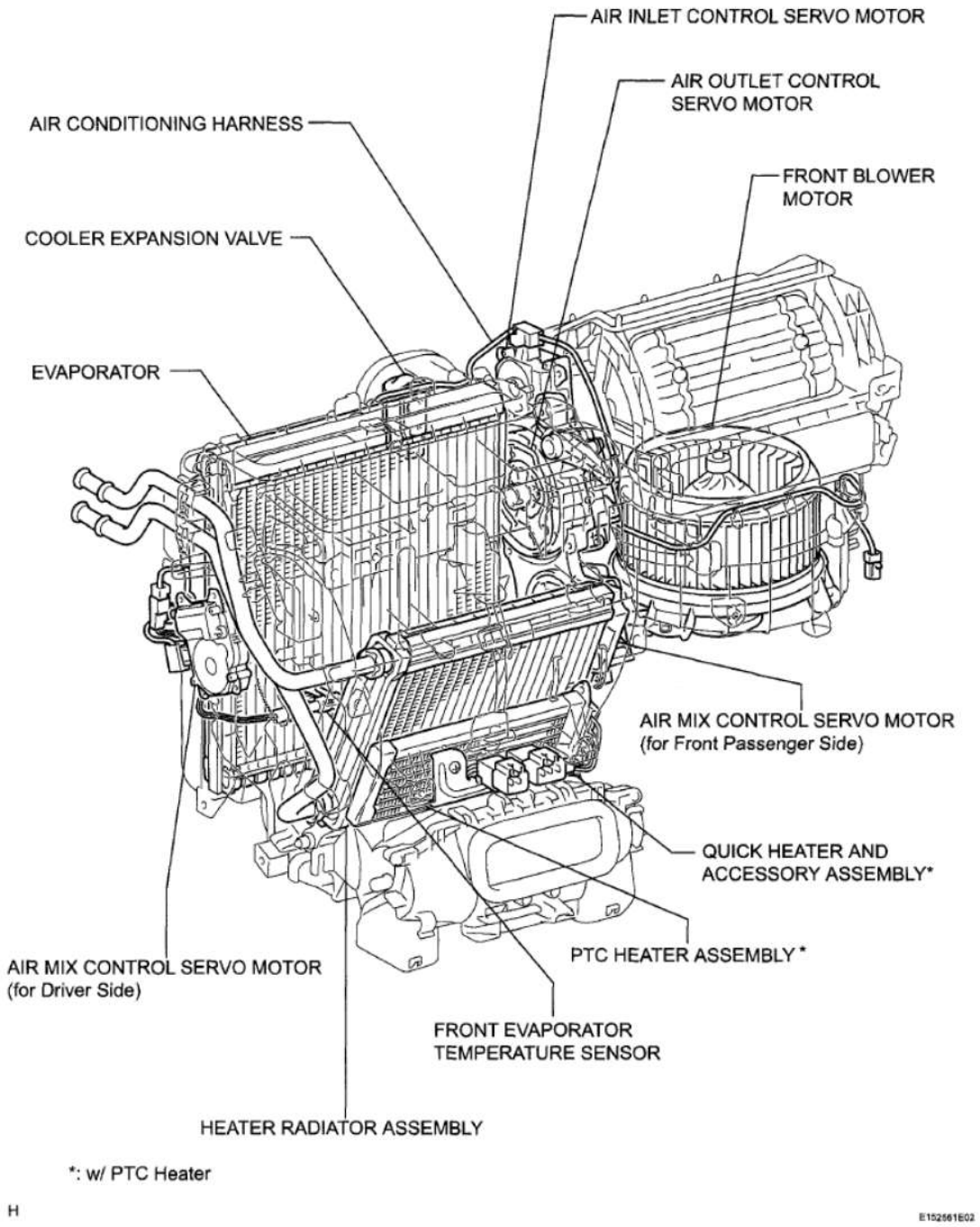


Fig. 7: Identifying Air Conditioning System Parts Location (4 Of 5)
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Rear Air Conditioning Unit:

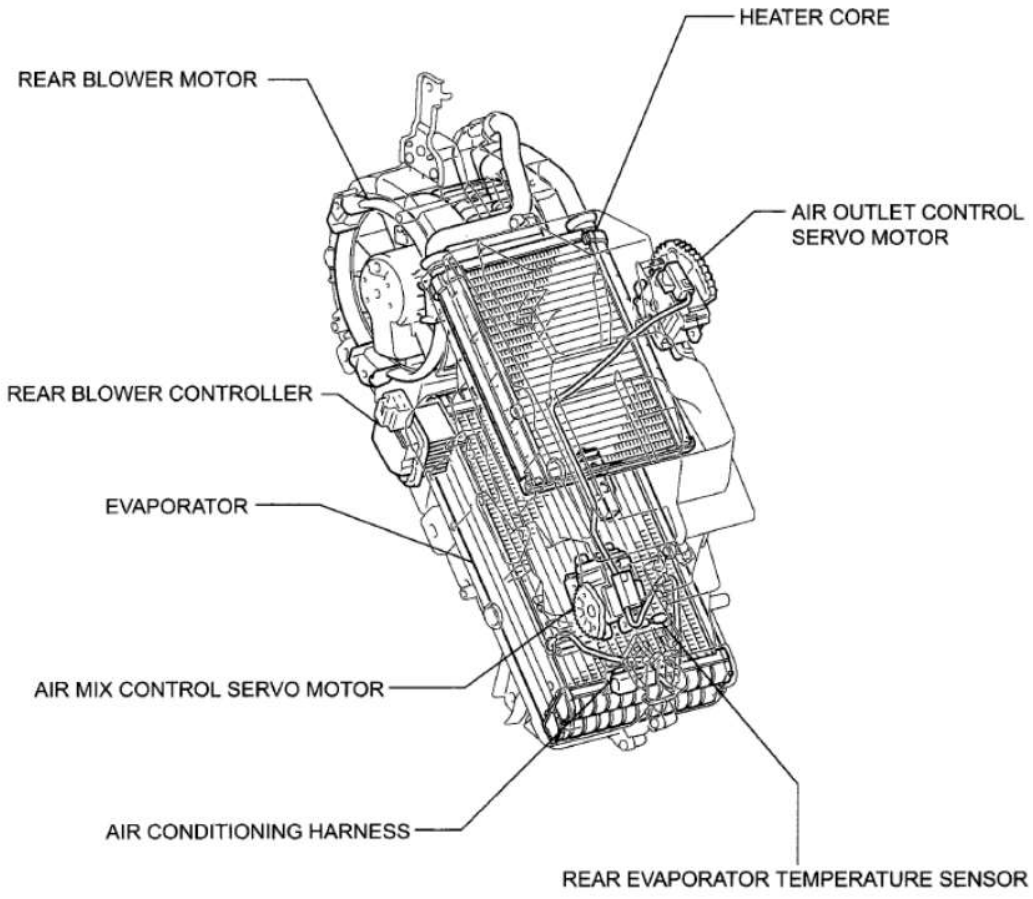


Fig. 8: Identifying Air Conditioning System Parts Location (5 Of 5)
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SYSTEM DIAGRAM

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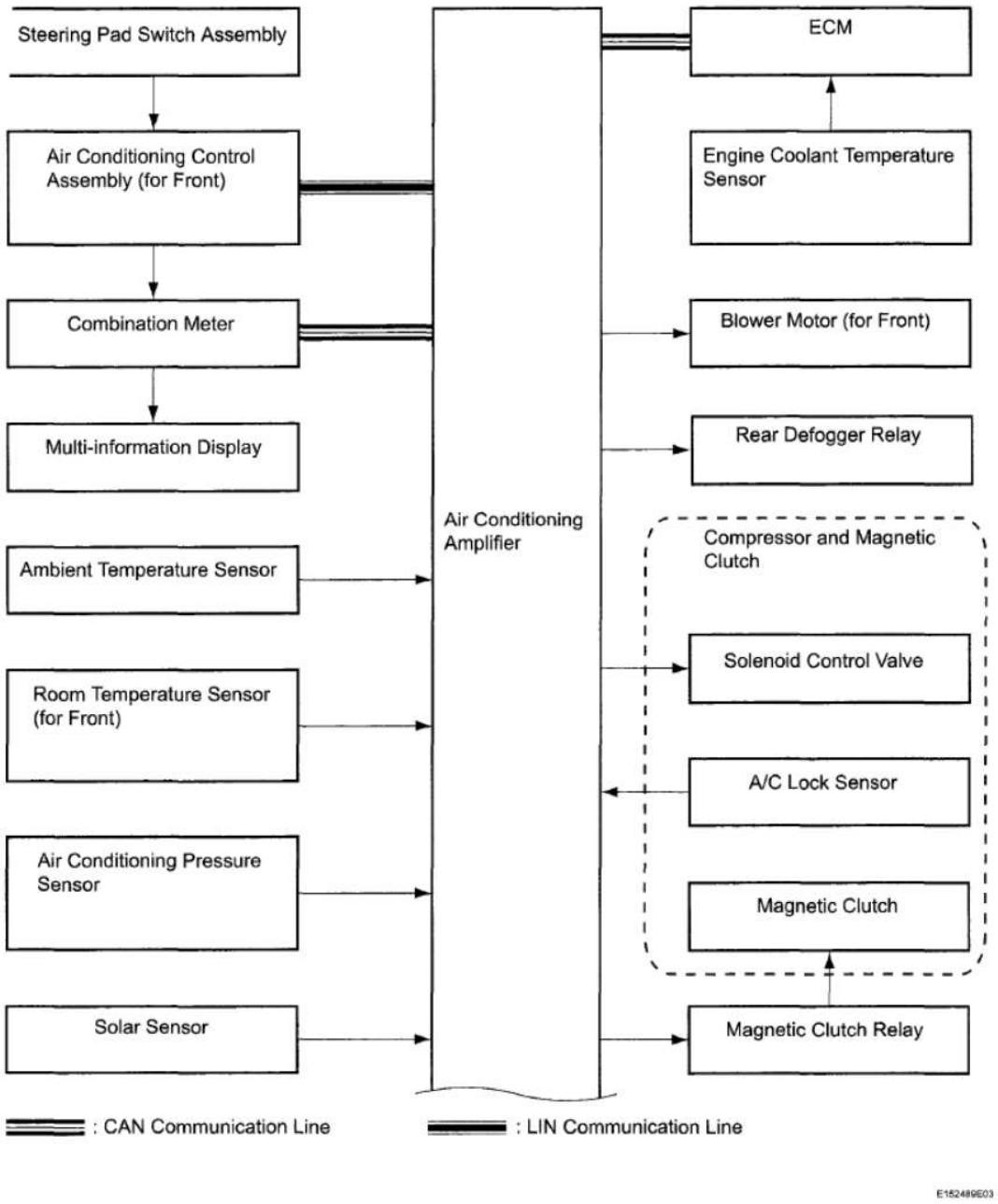


Fig. 9: Air Conditioning System Diagram (1 Of 2)
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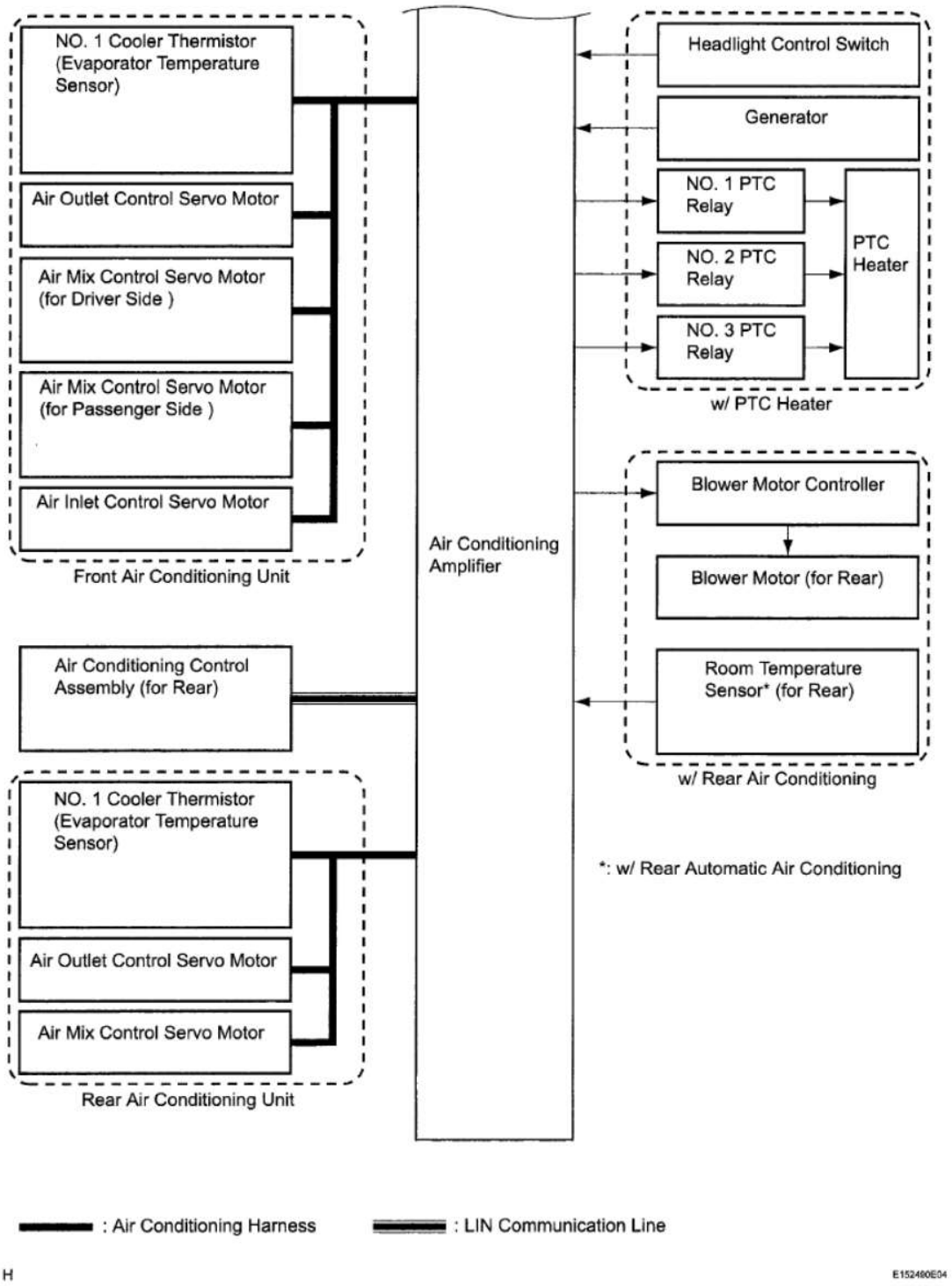


Fig. 10: Air Conditioning System Diagram (2 Of 2)
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Communication table

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COMMUNICATION CHART

Sender	Receiver	Signal	Communication Line
Air conditioning amplifier	ECM	A/C compressor control signal	CAN
		Idle up request signal	
		External variable control solenoid current signal	
		Cooling fan motor driving request signal	
		PTC heater driving number request signal	
		Ambient temperature signal	
Air conditioning amplifier	Air conditioning control	Front panel indication signal	LIN
		(for Front) AUTO indication signal	
		A/C indication signal	
		REC indication signal	
		FRS indication signal	
		RDEF indication signal	
Air conditioning amplifier	Air conditioning control	Rear panel indication signal	LIN
		(for Rear) AUTO indication signal	
		MODE indication signal	
		Blower level indication signal	
		Set temperature indication signal	
Combination meter	Air conditioning amplifier	Vehicle speed signal	CAN
		Ambient temperature signal	
ECM	Air conditioning amplifier	Engine revolution speed signal	CAN
		Engine coolant temperature signal	
		A/C control cut signal	
		Variable control prohibition signal	
		PTC heater permission number	
Air conditioning control (for Front)	Air conditioning amplifier	AUTO switch signal	LIN
		OFF switch signal	
		A/C switch signal	
		DEF switch signal	
		MODE switch signal	
		RDEF switch signal	
		Blower switch signal (FAN+, FAN-)	
		Set temperature switch signal (UP, DOWN)	
		AUTO switch signal	

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Air conditioning control (for Rear)	Air conditioning amplifier	OFF switch signal	LIN
		MODE switch signal	
		Blower switch signal (FAN+, FAN-)	
		Set temperature switch signal (UP, DOWN)	
Air conditioning amplifier	Malti-information display	MODE indication signal	CAN
		Blower level indication signal	
		Set temperature indication signal	
		Ambient temperature signal	

SYSTEM DESCRIPTION

1. **GENERAL**
   a. The air conditioning system has the following features:
      - An automatic, dual-control air conditioner system comprising front/rear independent temperature control is used.
      - In accordance with the temperature set using the temperature control switch, the air conditioning amplifier determines the outlet temperature based on the input signals from various sensors. In addition, corrections are made in accordance with the signals from the water temperature sensor to control the outlet air temperature.
      - Controls the blower motor in accordance with the airflow volume determined by the air conditioning amplifier based on the input signals from various sensors.
      - Automatically changes the outlets in accordance with the outlet mode ratio that is determined by the air conditioning amplifier based on the input signals from various sensors.
      - Based on the signals from the ambient temperature sensor, this system calculates the outside temperature and indicates it in the multi-information display.
      - The left/right independent temperature control and neural network control make air conditioner control available to suit the persons in the driver seat and in the passenger seat.
      - The Positive Temperature Coefficient (PTC) heater system contains a PTC heater that heats the air that has passed through the heater core to ensure the proper heater performance.
      - Turns the rear defogger and outside rear mirror heaters on for 15 minutes when the rear defogger switch is pressed. Turns them off if the switch is pressed while they are operating.
      - Checks the sensors in accordance with the operation of the air conditioner switches.
      - The air conditioning amplifier has the function of controlling the indicator lighting.
      - When a high load is applied to the EPS system, the EPS ECU will send a signal to the air conditioning amplifier. After receiving the signal, the air conditioning amplifier may turn off the rear defogger, front deicer, and seat heaters.
2. **MODE POSITION AND DAMPER OPERATION**

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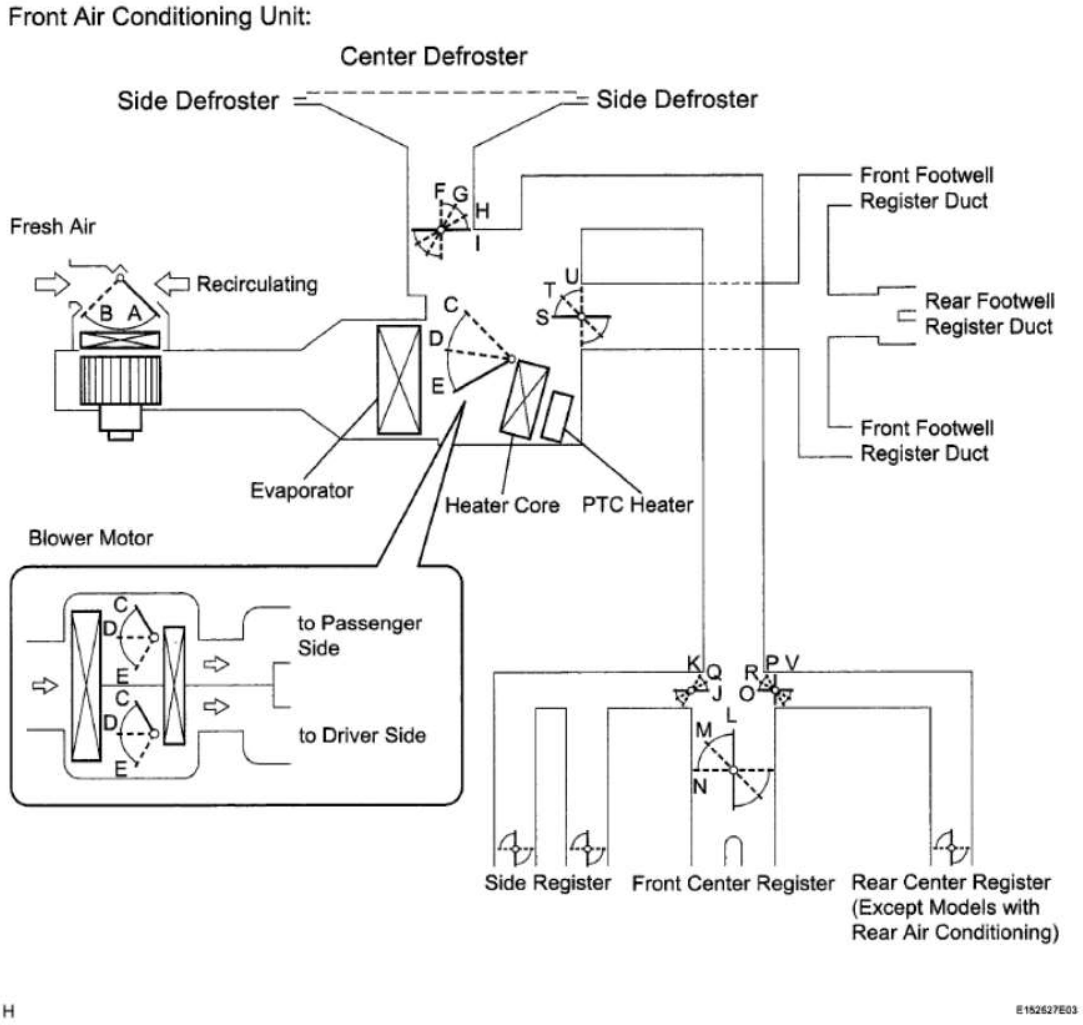


Fig. 11: Mode Position And Damper Operation Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

MODE POSITION AND DAMPER OPERATION REFERENCE CHART

Control Damper		Control Position	Damper Position	Operation
Air Inlet Control Damper		FRESH	A	Brings in fresh air
		RECIRC	B	Recirculates internal air
Air Mix Control Damper (Left/Right Independent Control)	Driver and Front Passenger Side	MAX COOL to MAX HOT (TEMP. SETTING 18 to 32°C (65 to 85°F))	C, D, E	Varies mixture ratio of fresh air and recirculation air in order to regulate temperature continuously from HOT to COOL
		FACE	I, J, L, O, U	Air blows out of center registers and side registers.
		BI-LEVEL	I, M, Q, R, T	Air mainly blows out of center registers, side registers, and footwell register ducts.

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Mode Control Film Damper	Driver and Front Passenger Side	FOOT	H, K, N, P, S	Air mainly blows out of front and rear footwell register ducts. In addition, air blows out slightly from front and side defrosters, and side registers.
		FOOT/DEF	G, K, N, P, S	Air mainly blows out of front and side defrosters to defrost windshield. Air also blows out from front and rear footwell register ducts, and side registers.
		DEF	F, K, N, U, V	Air blows out of front and side defrosters and side registers to defrost windshield.

Rear Air Conditioning Unit:

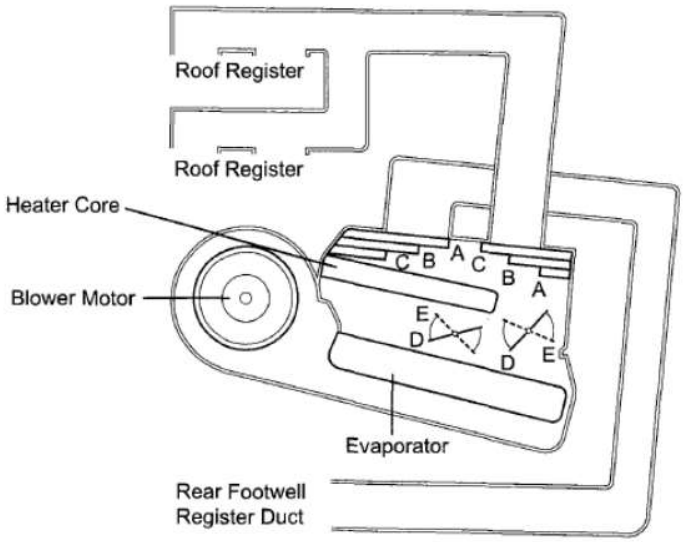


Fig. 12: Rear Air Conditioning Unit Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REAR AIR CONDITIONING UNIT REFERENCE CHART

Control Damper	Control Position	Damper Position	Operation
Air Mix Control Damper	MAX COOL to MAX HOT TEMP. SETTING 18 to 32°C (65 to 90°F)	D, E	Varies mixture ratio of fresh air and recirculating air in order to regulate temperature continuously from HOT to COOL
	FACE	A	Air blows out of roof face ducts.

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Mode Control Film Damper	BI-LEVEL	B	Air blows out of roof face ducts and rear foot ducts.
	FOOT	C	Air blows out of rear foot ducts.

3. **AIR OUTLET AND AIRFLOW VOLUME**

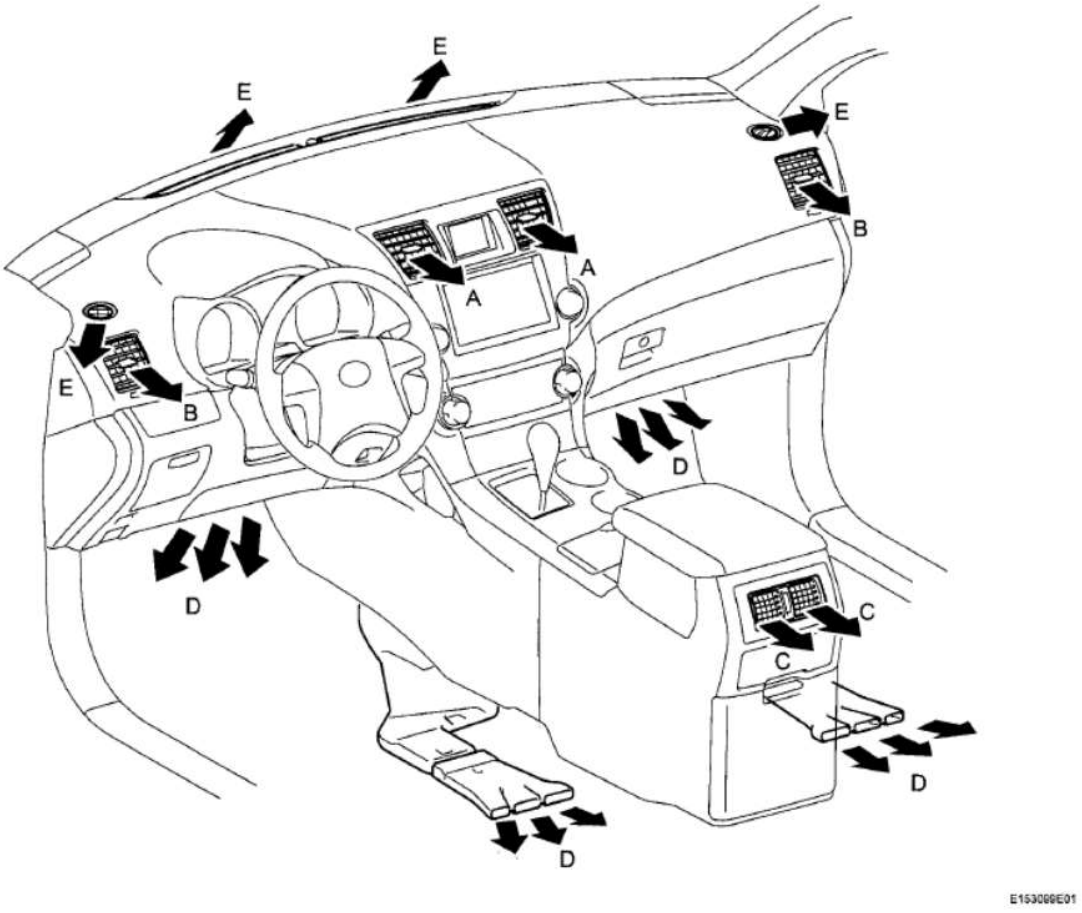


Fig. 13: Air Outlet And Airflow Volume Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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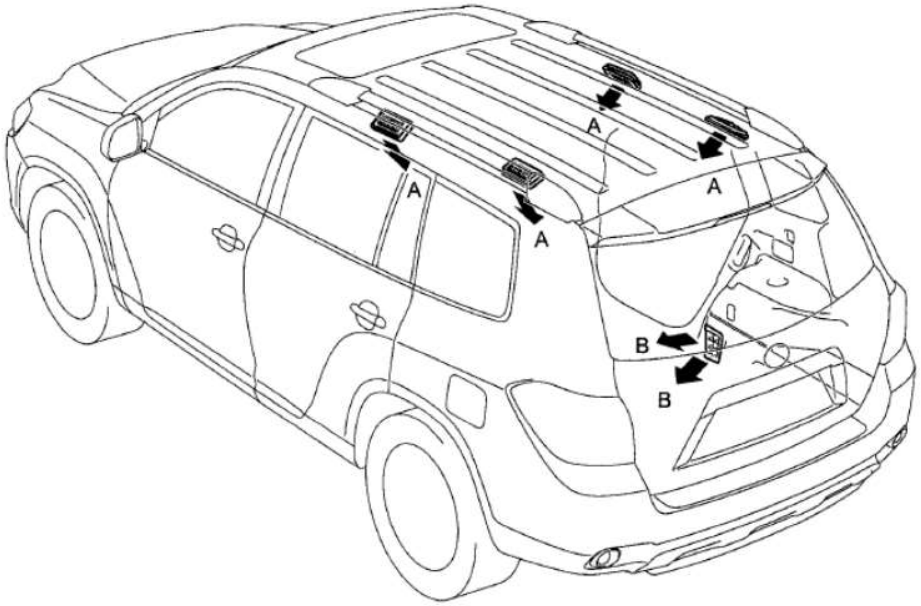
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Air Outlet Mode		Air Outlet Position Symbol				
		A	B	C	D	E
		Center Face	Side Face	Foot	Footwell	Defroster
	FACE	○	○	X	X	X
	BI-LEVEL	o	o	○	o	X
	FOOT	X	o	○	○	o
	FOOT/DEF	X	o	○	○	○
	DEF	X	○	X	X	○

Fig. 14: Air Outlet And Airflow Volume Reference Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

The size of the circle O indicates the proportion of airflow volume.



H E152630E01

Fig. 15: Air Outlet And Airflow Volume Chart

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Air Outlet Mode		Air Outlet Position Symbol	
		A	B
		Side Face	Rear Foot
	FACE	○	X
	BI-LEVEL	○	○
	FOOT	X	○

Fig. 16: Air Outlet And Airflow Volume Reference Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

The size of the circle O indicates the proportion of airflow volume.

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedure to troubleshoot the air conditioning system.
- *: Use Techstream.

1. **VEHICLE BROUGHT TO WORKSHOP**
2. **CUSTOMER PROBLEM ANALYSIS AND SYMPTOM CHECK**
3. **INSPECT BATTERY VOLTAGE**

   Standard voltage:

   11 to 14 V

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

4. **CHECK CAN COMMUNICATION SYSTEM***
   a. Use Techstream to check if the CAN communication system is functioning.

   Result

RESULT REFERENCE CHART

Result	Proceed to
CAN DTC is not output	A

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CAN DTC is output	B (See **DIAGNOSTIC TROUBLE CODE CHART**)

B: GO TO CAN COMMUNICATION SYSTEM

A: Go to next step

5. **CHECK FOR DTC**
   a. Check for DTCs.
      1. Write down the DTCs.
   b. Clear the DTCs.
   c. Check whether the DTCs recur.
   1. Reproduce the problem symptoms in accordance with the DTCs that were written down, and check whether the DTCs recur.

   HINT:

   Refer to the DTC chart when any DTCs are output.

   Result

   RESULT REFERENCE CHART

Result	Proceed to
DTC is not output	A
DTC is output	B

   B: Go to step 8

   A: Go to next step

6. REFER TO **PROBLEM SYMPTOMS TABLE**

   Result

   RESULT REFERENCE CHART

Result	Proceed to
Fault not listed in problem symptoms table	A
Fault listed in problem symptoms table	B

   B: Go to step 8

   A: Go to next step

7. **OVERALL ANALYSIS AND TROUBLESHOOTING***
   a. DATA LIST/ACTIVE TEST (See **DATA LIST/ACTIVE TEST**)

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b. Panel diagnosis (indicator check) (See **CHECK MODE PROCEDURE**)
c. Panel diagnosis (sensor check) (See **CHECK MODE PROCEDURE**)
d. Panel diagnosis (actuator check) (See **CHECK MODE PROCEDURE**)
e. Terminals of ECU (See **TERMINALS OF ECU**)

8. **ADJUST, REPAIR OR REPLACE**
9. **CONFIRMATION TEST**

NEXT: END

CUSTOMIZE PARAMETERS

HINT:

The following items can be customized.

NOTE:

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

Air conditioning system

AIR CONDITIONING SYSTEM CUSTOMIZE PARAMETERS

Display (Item)	Default	Contents	Setting
Set Temperature Shift	NORMAL	To control with shifted temperature against displayed temperature	+2 C/+1 C/NORMAL/-1 C/-2 C
Ambient Temperature Shift	NORMAL	To control with shifted temperature against displayed temperature	+3 C/+2 C/+1 C/NORMAL/-1 C/-2 C/-3 C
Air Inlet Mode	AUTO	Function to shift from INLET mode to RECIRCULATION mode when A/C is turned ON	MANUAL/AUTO
Compressor Mode	AUTO	Function to automatically turn A/C ON by pressing AUTO button when blower is ON and A/C is OFF	MANUAL/AUTO
Compressor/Air Inlet DEF Operation	LINK	Function to automatically turn A/C ON linked with FRONT DEF button when A/C is OFF	NORMAL/LINK
Evaporator Control	AUTO	Function to set evaporator control to AUTOMATIC position (AUTO) to save power, or to coldest position (MANUAL) to dehumidify air and to prevent windows from fogging up	MANUAL/AUTO

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Foot/DEF Auto Mode	ON	Function to automatically turn airflow from FOOT/DEF ON when AUTO MODE is ON	OFF/ON
Foot/DEF Automatic Blow Up Function	ON	Function to automatically increase blower level when defroster is ON	OFF/ON

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts if necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

Air conditioning system (for Front)

AIR CONDITIONING SYSTEM (FOR FRONT) - PROBLEM SYMPTOMS CHART

Symptom	Suspected Area	Refer to
No functions of Air Conditioning Control panel operate	LIN communication line	-
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
No functions of Air Conditioning system operate	A/C NO. 2 fuse	-
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
	Wire harness or connector	-
Airflow Control: No blower motor control (Blower motor does not operate)	HTR H-fuse	-
	Blower motor circuit	**BLOWER MOTOR CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	Wire harness or connector	-
Airflow Control: No blower motor control (Blower motor does not change speed)	Blower motor circuit	**BLOWER MOTOR CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**

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Temperature Control: No cool air comes out	Refrigerant volume	**REFRIGERANT**
	Refrigerant pressure	**REFRIGERANT**
	Air conditioning pressure sensor	**DTC B1423/23 PRESSURE SENSOR CIRCUIT**
	Air conditioning compressor magnetic clutch circuit	**AIR CONDITIONING COMPRESSOR MAGNETIC CLUTCH CIRCUIT**
	Compressor lock sensor circuit	**DTC B1422/22 COMPRESSOR LOCK SENSOR CIRCUIT**
	Compressor solenoid circuit	**DTC B1451/51 COMPRESSOR SOLENOID CIRCUIT**
	Driver side air mix damper control servo motor circuit	**DTC B1446/46 AIR MIX DAMPER CONTROL SERVO MOTOR CIRCUIT (DRIVER SIDE)**
	Passenger side air mix damper control servo motor circuit	**DTC B1441/41 AIR MIX DAMPER CONTROL SERVO MOTOR CIRCUIT (PASSENGER SIDE)**
	Evaporator temperature sensor circuit	**DTC B1413/13 EVAPORATOR TEMPERATURE SENSOR CIRCUIT**
	Room temperature sensor circuit	**DTC B1411/11 ROOM TEMPERATURE SENSOR CIRCUIT**
	Ambient temperature sensor circuit	**DTC B1412/12 AMBIENT TEMPERATURE SENSOR CIRCUIT**
	Expansion valve	-
	Air conditioning amplifier	**TERMINALS OF ECU**
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	ECM	**HOW TO PROCEED WITH TROUBLESHOOTING**
	LIN communication line	-
	CAN communication system	**PROBLEM SYMPTOMS TABLE**
Temperature Control: No warm air comes out	Driver side air mix damper control servo motor circuit	**DTC B1446/46 AIR MIX DAMPER CONTROL SERVO MOTOR CIRCUIT (DRIVER SIDE)**
	Passenger side air mix damper control servo motor circuit	**DTC B1441/41 AIR MIX DAMPER CONTROL SERVO MOTOR CIRCUIT (PASSENGER SIDE)**
	Air conditioning harness	**DTC B1497/97 BUS IC COMMUNICATION MALFUNCTION**
	Room temperature sensor circuit	**DTC B1411/11 ROOM TEMPERATURE SENSOR CIRCUIT**
	Air conditioning	**TERMINALS OF ECU**

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	amplifier	
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	ECM	**HOW TO PROCEED WITH TROUBLESHOOTING**
	LIN communication line	-
	CAN communication system	**PROBLEM SYMPTOMS TABLE**
Temperature Control: Output air is warmer or cooler than set temperature or response is slow	Driver side solar sensor circuit	**DTC B1424/24 SOLAR SENSOR CIRCUIT (DRIVER SIDE)**
	Passenger side solar sensor circuit	**DTC B1421/21 SOLAR SENSOR CIRCUIT (PASSENGER SIDE)**
	Room temperature sensor circuit	**DTC B1411/11 ROOM TEMPERATURE SENSOR CIRCUIT**
	Air inlet damper control servo motor circuit	**DTC B1442/42 AIR INLET DAMPER CONTROL SERVO MOTOR CIRCUIT**
	Heater radiator	-
	Expansion valve	-
	Air conditioning amplifier	**TERMINALS OF ECU**
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	ECM	**HOW TO PROCEED WITH TROUBLESHOOTING**
	LIN communication line	-
	CAN communication system	**PROBLEM SYMPTOMS TABLE**
Temperature Control: No temperature control (Only Max. cool or Max. warm)	Driver side solar sensor circuit	**DTC B1424/24 SOLAR SENSOR CIRCUIT (DRIVER SIDE)**
	Passenger side solar sensor circuit	**DTC B1421/21 SOLAR SENSOR CIRCUIT (PASSENGER SIDE)**
	Air conditioning amplifier	**TERMINALS OF ECU**
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	LIN communication line	-
No air inlet control	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	Air inlet damper control servo motor circuit	**DTC B1442/42 AIR INLET DAMPER CONTROL SERVO MOTOR CIRCUIT**
	Evaporator temperature sensor circuit	**DTC B1413/13 EVAPORATOR TEMPERATURE SENSOR CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**

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No air flow mode control	Air outlet damper control servo motor circuit	**DTC B1443/43 AIR OUTLET DAMPER CONTROL SERVO MOTOR CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
Engine idle up does not occur, or is continuous	Air conditioning compressor magnetic clutch circuit	**AIR CONDITIONING COMPRESSOR MAGNETIC CLUTCH CIRCUIT**
	Compressor lock sensor circuit	**DTC B1422/22 COMPRESSOR LOCK SENSOR CIRCUIT**
	Compressor solenoid circuit	**DTC B1451/51 COMPRESSOR SOLENOID CIRCUIT**
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	LIN communication line	-
	Air conditioning amplifier	**TERMINALS OF ECU**
	ECM	**HOW TO PROCEED WITH TROUBLESHOOTING**
Air Conditioning indicator blinking	Compressor solenoid circuit	**DTC B1451/51 COMPRESSOR SOLENOID CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
Diagnostic trouble codes are not recorded. Set mode is cleared when ignition switch turned off	Air conditioning amplifier	**TERMINALS OF ECU**
	Back-up power source circuit	**BACK-UP POWER SOURCE CIRCUIT**

Air conditioning system (for Rear)

AIR CONDITIONING SYSTEM (FOR REAR) - PROBLEM SYMPTOMS CHART

Symptom	Suspected Area	Refer to
No functions of rear Air Conditioning panel operate	LIN communication line	-
	Rear air conditioning control	**REAR AIR CONDITIONING CONTROL PANEL CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
No functions of rear Air Conditioning system operate	A/C NO.2 fuse	-
	Rear air conditioning control	**REAR AIR CONDITIONING CONTROL PANEL CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
	Wire harness or connector	-
Airflow Control: No blower control (Blower motor does not	RR CLR H-fuse	-
	Rear blower motor circuit	**REAR BLOWER MOTOR CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
	Rear air conditioning	**REAR AIR CONDITIONING**

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operate)	control	**CONTROL PANEL CIRCUIT**
	Wire harness or connector	-
Airflow Control: No blower control (Blower motor does not change speed)	Rear blower motor circuit	**REAR BLOWER MOTOR CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
	Rear air conditioning control	**REAR AIR CONDITIONING CONTROL PANEL CIRCUIT**
Temperature Control: No cool air comes out	Refrigerant volume	**REFRIGERANT**
	Refrigerant pressure	**REFRIGERANT**
	Air conditioning pressure sensor	**DTC B1423/23 PRESSURE SENSOR CIRCUIT**
	Compressor and magnetic clutch circuit	**DTC B1451/51 COMPRESSOR SOLENOID CIRCUIT**
	Rear air mix damper control servo motor circuit	**DTC B1447/47 REAR AIR MIX DAMPER CONTROL SERVO MOTOR CIRCUIT**
	Rear evaporator temperature sensor circuit	**DTC B1417/17 REAR EVAPORATOR TEMPERATURE SENSOR CIRCUIT**
	Rear room temperature sensor circuit*	**DTC B1419/19 REAR ROOM TEMPERATURE SENSOR CIRCUIT**
	Ambient temperature sensor circuit*	**DTC B1412/12 AMBIENT TEMPERATURE SENSOR CIRCUIT**
	LIN communication line	-
	Rear air conditioning control	**REAR AIR CONDITIONING CONTROL PANEL CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
Temperature Control: No warm air comes out	Rear air mix damper control servo motor circuit	**DTC B1447/47 REAR AIR MIX DAMPER CONTROL SERVO MOTOR CIRCUIT**
	Rear air conditioning harness	-
	Rear room temperature sensor circuit*	**DTC B1419/19 REAR ROOM TEMPERATURE SENSOR CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
	Rear air conditioning control	**REAR AIR CONDITIONING CONTROL PANEL CIRCUIT**
	LIN communication line	-
HINT: *: w/Rear Automatic Air Conditioning		

TERMINALS OF ECU

1. **CHECK AIR CONDITIONING AMPLIFIER**

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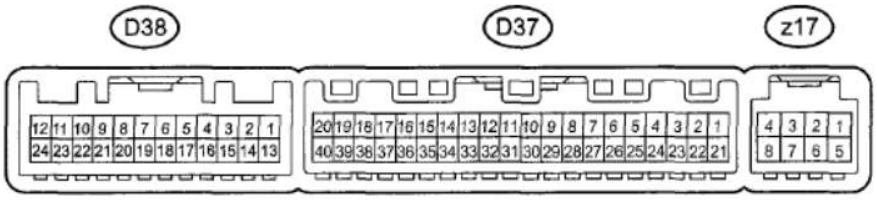


Fig. 17: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Measure the voltage of the connectors.

HINT:

Check from the rear of the connector while it is connected to the air conditioning amplifier.

AIR CONDITIONING AMPLIFIER CONNECTOR TERMINALS REFERENCE CHART

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
D37-1 (IG+) - D37-14 (GND)	GR - W-B	Power source (IG)	Ignition switch on (IG)	11 to 14 V
D37-2 (SOL+) - D37-14 (GND)	L-W-B	Air conditioning compressor operation signal	Engine idling	Pulse generation (see waveform 1 a)
			Blower switch LO	
			Air Conditioning switch ON	
D37-3 (PTC1) - Body ground (*1)	P - Body ground	PTC NO. 1 heater relay operation signal	Engine idling	Below 1 V --> 11 to 14 V
			Set temperature: MAX HOT	
			Engine coolant temperature: Below 65°C (149°F)	
			Ambient temperature: Below 10°C(50°F)	
			Blower switch OFF --> LO	
D37-4 (PTC3) - Body ground (*1)	W - Body ground	PTC NO. 3 heater relay operation signal	Engine idling	Below 1 V --> 11 to 14 V
			Set temperature: MAX HOT	
			Engine coolant temperature: Below 65°C (149°F)	
			Ambient temperature: Below 10°C(50°F)	
			Blower switch OFF -->	

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			LO	
D37-5 (TAM) - D37-14 (GND)	B-W-B	Ambient temperature sensor signal	Ignition switch on (IG) Ambient temperature: 25° C (77°F)	1.8 to 2.2 V
D37-8 (LOCK) - D37-14 (GND)	V-W-B	Air compressor lock sensor signal	Engine idling Air Conditioning switch ON Blower switch LO	Pulse generation (see waveform 5 e)
D37-9 (PRE) - D37-13 (SG-2)	R-SB	Air conditioning pressure sensor signal	Refrigerant pressure: Normal	0.76 to 4.74 V
D37-9 (PRE) - D37-13 (SG-2)	R-SB	Air conditioning pressure sensor signal	Refrigerant pressure: Abnormal (less than 0.196 MPa [2.0 kgf/cm^2 , 28 psi])	0.5 to 4.83 V
D37-9 (PRE) - D37-13 (SG-2)	R-SB	Air conditioning pressure sensor signal	Refrigerant pressure: Abnormal (more than 3.03 MPa [32 kgf/cm^2 , 455 psi])	4.74 V or higher
D37-10 (S5-3) - D37-14 (GND)	O-W-B	Power supply for pressure sensor	Ignition switch on (IG)	4.5 to 5.5 V
D37-11 (CANH) - D37-14 (GND)	LG - W-B	Hi-level CAN bus line	Ignition switch on (IG)	Pulse generation (see waveform 3 c)
D37-12 (CANL) - D37-14 (GND)	W-W-B	Lo-level CAN bus line	Ignition switch on (IG)	Pulse generation (see waveform 4 d)
D37-13 (SG-2) - Body ground	SB - Body ground	Ground for pressure sensor	Always	Below 1 V
D37-14 (GND) - Body ground	W-B - Body ground	Ground for main power supply	Always	Below 1 V
D37-20 (MGC) - D37-14 (GND)	V-W-B	Air conditioning compressor magnetic clutch operation signal	Engine idling Blower switch LO Air Conditioning switch ON	Below 1 V
D37-21 (B) - D37-14 (GND)	LG - W-B	Power source (Back-up)	Always	11 to 14 V
D37-22 (PTC2) - Body ground (*1)	G - Body ground	PTC NO. 2 heater relay operation signal	Engine idling Set temperature: MAX HOT Engine coolant temperature: Below 65°C (149°F)	Below 1 V --> 11 to 14 V

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			Ambient temperature: Below 10°C (50°F) Blower switch OFF --> LO	
D37-23 (BLW) - D37-14 (GND)	R-W-B	Blower motor control signal	Ignition switch on (IG) Blower switch LO	Pulse generation (see waveform 2 b)
D37-25 (ALT) - Body ground (*1)	SB - Body ground	Generator signal	Engine idling	Pulse generation
D37-29 (TR) - D37-35 (SG-4)	BR-LG	Room temperature sensor signal (for Front)	Ignition switch on (IG) Vehicle interior temperature: 25°C (77°F)	1.8 to 2.2 V
D37-32 (TSP) - D37-14 (GND)	Y-W-B	Front passenger side solar sensor signal	Ignition switch on (IG) Solar sensor subject to electric light	0.8 to 4.3 V
D37-33 (TSD) - D37-14 (GND)	O-W-B	Driver side solar sensor signal	Ignition switch on (IG) Solar sensor subject to electric light	0.8 to 4.3 V
D37-35 (SG-4) - Body ground	LG - Body ground	Ground for room temperature sensor (for Front)	Always	Below 1 V
D37-37 (LIN1) - D37-14 (GND)	R-W-B	LIN communication signal	Ignition switch on (IG)	Pulse generation
D37-38 (RDEF) - D37-14 (GND)	W-W-B	Rear defogger switch signal	Ignition switch on (IG) Rear defogger switch OFF	11 to 14 V
D37-38 (RDEF) - D37-14 (GND)	W-W-B	Rear defogger switch signal	Ignition switch on (IG) Rear defogger switch ON	Below 1 V
D38-1 (RBUS) - D38-21 (RBUG) (*2)	R-V	BUS IC control signal (for Rear)	Ignition switch on (IG)	Pulse generation
D38-4 (TEC) - D38-19 (SGND) (*2)	B-GR	Evaporator temperature sensor signal (for Rear)	Ignition switch on (IG) Evaporator temperature: 15°C(59°F)	1.4 to 1.8 V
D38-7 (SG-6) - Body ground (*3)	W - Body ground	Ground for room temperature sensor signal (for Rear)	Always	Below 1 V
D38-13 (RLIN) - D38-20 (GND2) (*2)	B-SB	LIN communication signal (for Rear)	Ignition switch on (IG)	Pulse generation
D38-17 (TR) - D38-7 (SG-6) (*3)	BR-W	Room temperature sensor signal (for Rear)	Ignition switch on (IG) Vehicle interior temperature: 25°C (77°F)	1.8 to 2.2 V
D38-19 (SGND) -	GR -	Ground for evaporator		

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Body ground (*2)	Body ground	temperature sensor signal (for Rear)	Always	Below 1 V
D38-20 (GND2) - Body ground (*2)	SB - Body ground	Ground for power supply	Always	Below 1 V
D38-21 (RBUG) - Body ground (*2)	V - Body ground	Ground for BUS IC (for Rear)	Always	Below 1 V
D38-22 (BLWH) - D38-20 (GND2) (*2)	G-SB	Blower motor control signal (for Rear)	Ignition switch on (IG)	Pulse generation
			Blower switch LO	
D38-23 (RBBU) - D38-21 (RBUG) (*2)	Y-V	Power supply for BUS IC (for Rear)	Ignition switch on (IG)	11 to 14 V
D38-24 (+B2) - D38-20 (GND2) (*2)	LG-SB	Power source (Back-up) (for Rear)	Always	11 to 14 V
Z17-2 (BUS G) - Body ground	-	Ground for BUS IC	Always	Below 1 V
z17-3 (BUS) - z17-2 (BUS G)	-	BUS IC control signal	Ignition switch on (IG)	Pulse generation
z17-4 (BBUS) - z17-2 (BUS G)	-	Power supply for BUS IC	Ignition switch on (IG)	11 to 14 V
z17-5 (SGA) - Body ground	-	Ground for evaporator temperature sensor	Always	Below 1 V
z17-6 (TEA) - z17-5 (SGA)	-	Evaporator temperature sensor signal (for Front)	Ignition switch on (IG)	1.4 to 1.8V
			Evaporator temperature: 15°C(59°F)	

b. Using an oscilloscope, check waveform 1.

Compressor and magnetic clutch operation signal

WAVEFORM REFERENCE CHART

Item	Content
Tester Connection	D37-2 (SOL+) - D37-14 (GND)
Tool Setting	5V/DIV., 500 µsec./DIV.
Condition	Engine idling, Blower switch LO, air conditioning switch ON

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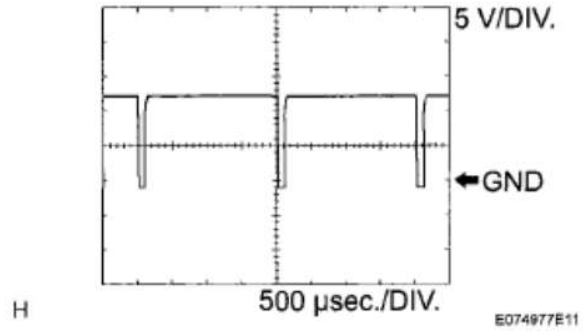


Fig. 18: Waveform 1 Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Using an oscilloscope, check waveform 2.

Blower motor control signal

WAVEFORM REFERENCE CHART

Item	Content
Tester Connection	D37-23 (BLW) - D37-14 (GND)
Tool Setting	1 V/DIV., 500 µsec/DIV.
Condition	Ignition switch on (IG), Blower switch LO

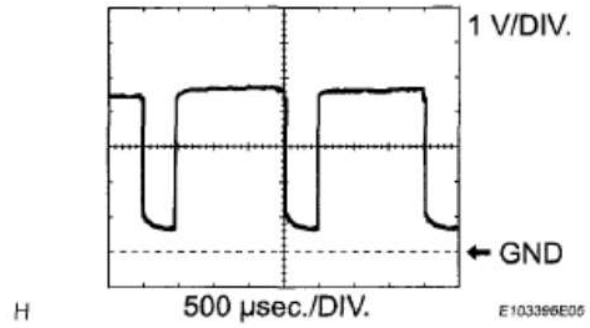


Fig. 19: Waveform 2 Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

When the blower level is increased, the duty ratio changes accordingly.

d. Using an oscilloscope, check waveform 3.

CAN communication signal

WAVEFORM REFERENCE CHART

Item	Content

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Tester Connection	D37-11 (CANH) - D37-14 (GND)
Tool Setting	1 V/DIV., 10 µsec./DIV.
Condition	Ignition switch on (IG)

HINT:

The waveform varies depending on the CAN communication signal.

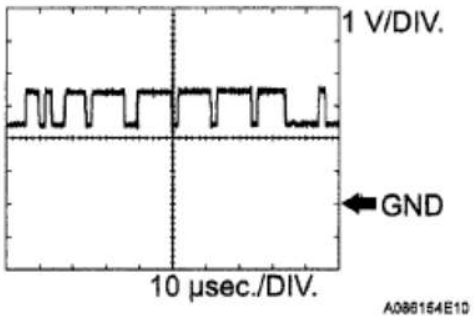


Fig. 20: Waveform 3 Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

e. Using an oscilloscope, check waveform 4.

CAN communication signal

WAVEFORM REFERENCE CHART

Item	Content
Tester Connection	D37-12 (CANL) - D37-14 (GND)
Tool Setting	1 V/DIV., 10 µsec./DIV.
Condition	Ignition switch on (IG)

HINT:

The waveform varies depending on the CAN communication signal.

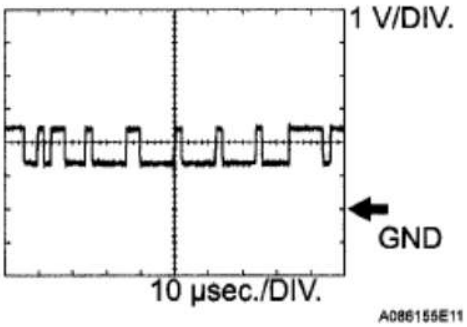


Fig. 21: Waveform 4 Graph

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

f. Using an oscilloscope, check waveform 5.

Air Conditioning compressor lock sensor signal

WAVEFORM REFERENCE CHART

Item	Content
Tester Connection	D37-8 (LOCK) - D37-14 (GND)
Tool Setting	200 mV/DIV., 10 ms./DIV.
Condition	Engine is running Blower switch: LO Air conditioning switch: ON

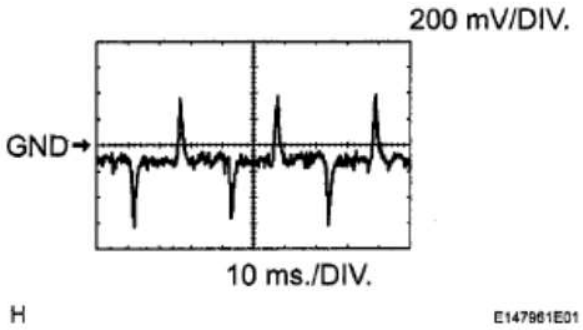


Fig. 22: Waveform 5 Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

The waveform varies depending on the engine speed.

*1:w/ PTC Heater

*2: for Rear Air Conditioning

*3: for Rear Automatic Air Conditioning

2. **CHECK FRONT AIR CONDITIONING CONTROL**

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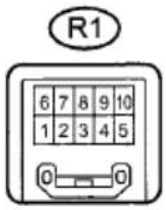
Fig. 23: Identifying Front Air Conditioning Control Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Measure the voltage of the connectors.

FRONT AIR CONDITIONING CONTROL CONNECTOR TERMINALS REFERENCE CHART

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
E10-2 (IG+) - E10-10 (GND)	V-GR	Power source (IG)	Ignition switch on (IG)	11 to 14 V
E10-5 (LIN1) - E10-10 (GND)	R-GR	LIN communication signal	Ignition switch on (IG)	Pulse generation
E10-10 (GND) - Body ground	GR - Body ground	Ground for front air conditioning control	Always	Below 1 V

3. **CHECK REAR AIR CONDITIONING CONTROL (for Rear Air Conditioning)**



E152670E02

Fig. 24: Identifying Rear Air Conditioning Control Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Measure the voltage of the connectors.

REAR AIR CONDITIONING CONTROL CONNECTOR TERMINALS REFERENCE CHART

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
R1-2 (IG+) - R1-10			Ignition switch on	

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(E)	V-W-B	Power source (IG)	(IG)	11 to 14 V
R1-5 (MPX-) - R1-10 (E)	B-W-B	LIN communication signal	Ignition switch on (IG)	Pulse generation
R1-10 (E) - Body ground	W-B - Body ground	Ground for rear air conditioning control	Always	Below 1 V

DIAGNOSIS SYSTEM

1. **DESCRIPTION**
   a. Air conditioning system data and the Diagnostic Trouble Codes (DTCs) can be read through the Data Link Connector 3 (DLC3) of the vehicle. When the system seems to be malfunctioning, use Techstream to check for malfunctions and perform troubleshooting.
2. **CHECK DLC3**
   a. Check the DLC3 (See **HOW TO TROUBLESHOOT ECU CONTROLLED SYSTEMS**).

DTC CHECK/CLEAR

1. **CHECK DTC**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream on.
   c. Read the DTC by following the prompts on the tester screen.

   HINT:

   Refer to Techstream operator's manual for further details.

2. **CLEAR DTC**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream on.
   c. Clear the DTC by following the prompts on the tester screen.

   HINT:

   Refer to Techstream operator's manual for further details.

CHECK MODE PROCEDURE

1. **LIST OF OPERATION METHODS**
   a. By operating each of the air conditioning control switches as shown in the diagram below, it is possible to enter the diagnostic check mode.

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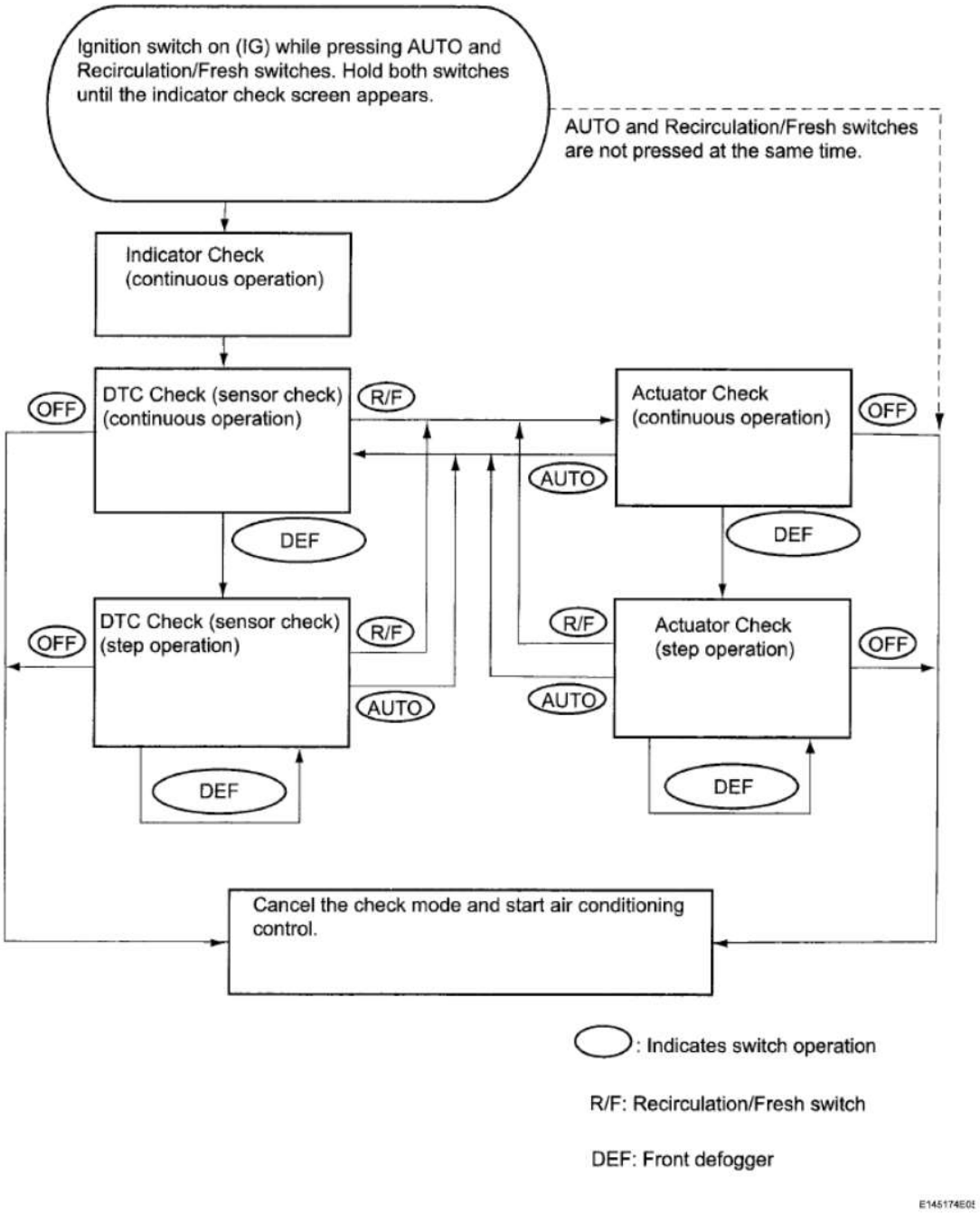


Fig. 25: Check Mode Procedure Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

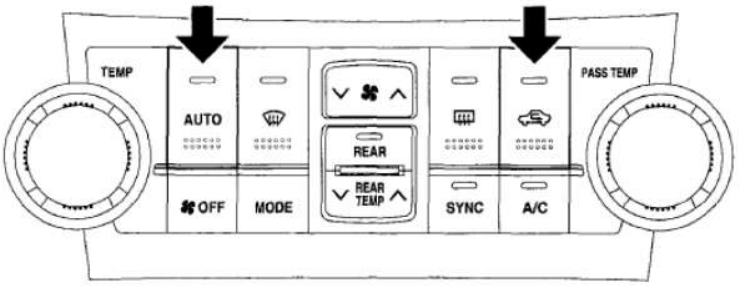
2. **INDICATOR CHECK**
   a. Turn the ignition switch off.
   b. Turn the ignition switch on (IG) while pressing the air conditioning control assembly "AUTO" switch and "R/F" switch simultaneously. Hold both switches until the indicator check screen appears.

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Air Conditioning Control Assembly (for Front):

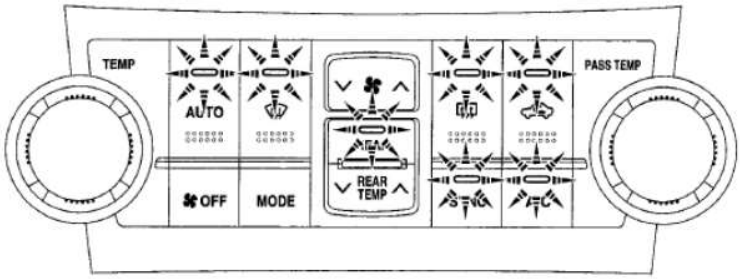


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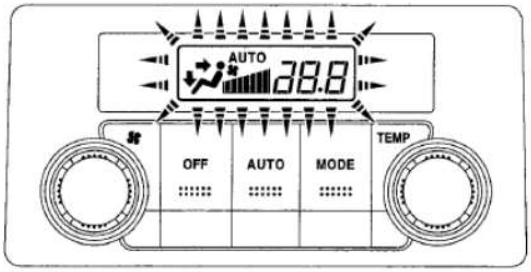
Fig. 26: Locating AUTO Switch And R/F Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. The indicator check is automatically performed when panel diagnosis is activated. Check that the indicators light up and go off at 1 second intervals 4 times in succession.

Air Conditioning Control Assembly (for Front):



Air Conditioning Control Assembly (for Rear Automatic Air Conditioning):



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Fig. 27: Identifying Indicators Light Blink On Air Conditioning Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

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- The sensor check automatically starts when the indicator check is completed.
- Press the "OFF" switch to cancel the check mode.
- If a navigation system is installed, the indicator will blink and the buzzer will sound.

3. **DTC CHECK (SENSOR CHECK)**
   a. Start the engine and warm it up.
   b. Perform the indicator check.

   HINT:

   After the indicator check is completed, the system enters the DTC check mode automatically.

   c. Read the code displayed on the panel.

NOTE:

- **In the sensor check mode, which is automatically transferred from the indicator check mode, troubleshooting may be partially performed. Be sure to perform the actuator check, and then the sensor check again.**
- **If the check is performed in a dark place, DTC 21 or 24 may be displayed even though the system is normal.**

HINT:

Refer to the **DTC CHART (DIAGNOSTIC TROUBLE CODE CHART)** for details of the codes (See **DIAGNOSTIC TROUBLE CODE CHART**).

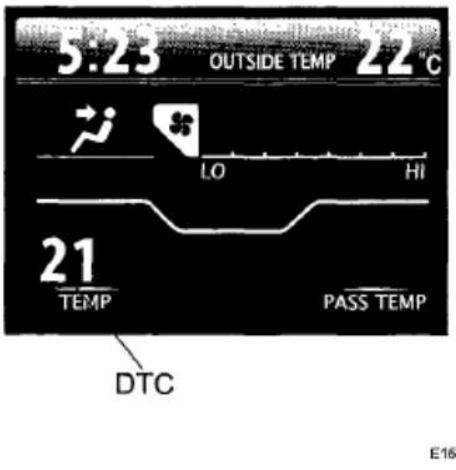


Fig. 28: Identifying Code Displayed On Panel
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- When there are no problems, DTC 00 is output.
- As an example, the illustration shows that display code 21 is output.

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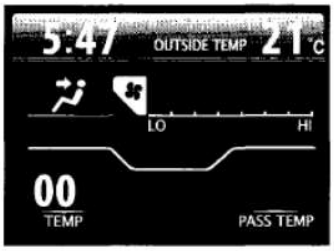
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- Illustrations may differ from the actual screen displayed depending on the specifications of the vehicle and customized settings.

d. If the steps are difficult to read because they change automatically, push the "DEF" switch to display the steps one at a time so that they can be read easily. The items are displayed step by step each time the "DEF" switch is pushed.

- Push the "OFF" switch to finish panel diagnosis.
- Push the "R/F" switch to enter the actuator check mode.

4. **CLEAR SENSOR CHECK CODE**



Air Conditioning Control Assembly (for Front):

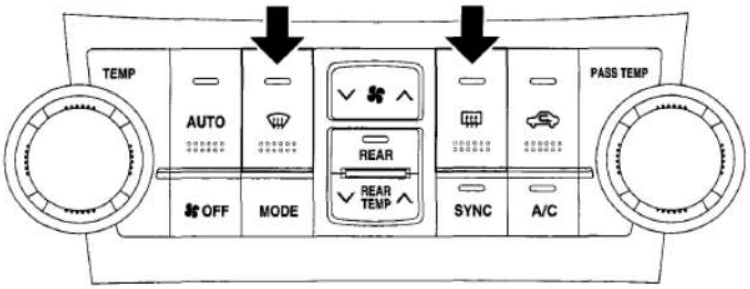


Fig. 29: Clearing Sensor Check Code
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

Illustrations may differ from the actual screen displayed depending on the specifications of the vehicle and customized settings.

a. Inspect and repair or replace the malfunctioning parts.
b. Clear the sensor check codes.
   1. While pressing the Fr DEF switch during sensor check mode, press the Rr DEF switch.

      HINT:

      Sensor check codes can be cleared by removing the ECU-B fuse from the engine room No. 1 relay block for more than 60 seconds.

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c. Perform the sensor check and confirm that normal code 00 is displayed.

5. **ACTUATOR CHECK**

a. Start the engine and warm it up.

b. Perform the indicator check.

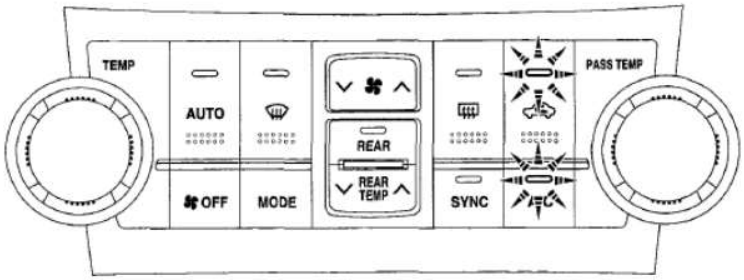
c. Push the "R/F" switch to perform the actuator check.

HINT:

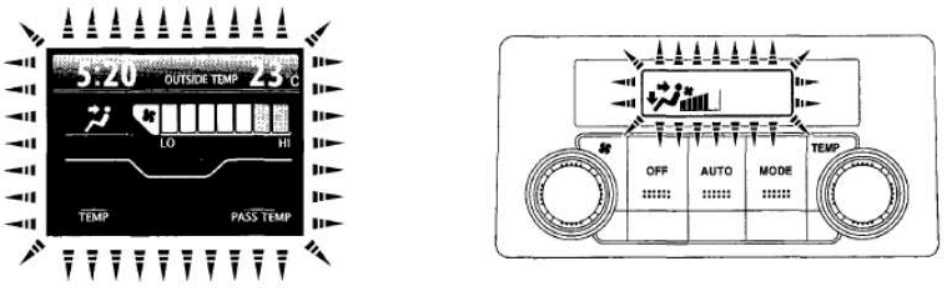
Be sure to perform the actuator check after starting the engine.

d. As the actuator check is repeated from steps 0 to 9 at 1 second intervals, check the temperature and air flow visually and by hand.

Air Conditioning Control Assembly (for Front):



Air Conditioning Control Assembly (for Rear Automatic Air Conditioning):



H

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Fig. 30: Actuator Check Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- The display blinks at 1 second intervals in the step operation.
- Push the "OFF" switch to finish panel diagnosis.

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- Push the "AUTO" switch to enter the sensor check mode.
- Illustrations may differ from the actual screen displayed depending on the specifications of the vehicle and customized settings.

ACTUATOR REFERENCE CHART

Step No. (Front display)	Blower Level	Front Air Mix Damper	Air Flow Vent	Air Inlet Damper	Cool Air By-pass	Compressor	Rear Air Mix Damper	Rear Air Flow Vent	Rear Blower Level
0	0	0%	FACE	FRESH	-	OFF	0%	Rr FACE	0
1	1	0%	FACE	FRESH	-	OFF	0%	Rr FACE	1
2	17	0%	FACE	RECIRCULATE/FRESH	-	ON	0%	Rr FACE	17
3	17	0%	FACE	RECIRCULATE	-	ON	0%	Rr FACE	17
4	17	50%	B/L	RECIRCULATE	-	ON	50%	RrB/L	17
5	17	50%	B/L	RECIRCULATE	-	ON	50%	RrB/L	17
6	17	50%	FOOT	FRESH	-	ON	50%	RrFOOT	17
7	17	100%	FOOT-0	FRESH	-	ON	100%	Rr FOOT	17
8	17	100%	F/D	FRESH	-	ON	100%	Rr FOOT	17
9	31	100%	DEF	FRESH	-	ON	100%	Rr FOOT	31

6. If the steps are difficult to read because they change automatically, push the "DEF" switch to display the steps one at a time so that they can be read easily. The items are displayed step by step each time the "DEF" switch is pushed.

   HINT:

   - Push the "OFF" switch to finish panel diagnosis.
   - Push the "R/F" switch to enter the sensor check mode.

DATA LIST/ACTIVE TEST

1. **READ DATA LIST**

   HINT:

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

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a. Connect Techstream to the DLC3.
b. Turn the ignition switch on (IG) and turn Techstream on.
c. Read the Data List by following the prompts on the tester.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Room Temperature sensor	Room temperature sensor/Min.: -6.5°C (20.3°F) Max.: 57.25°C (135.05°F)	Actual cabin temperature is displayed	Open in circuit: -6.5°C (20.3°F) Short in circuit: 57.25°C (135.05°F)
Ambient Temp Sensor	Ambient temperature sensor/Min.: -23.3°C (-9.94° F) Max.: 65.95°C (150.71°F)	Actual ambient temperature is displayed	Open in circuit: -23.3° C (-9.94°F) Short in circuit: 65.95°C (150.71°F)
Solar Sensor (D side)	Driver side solar sensor/Min.: 0, Max.: 255	Driver side solar sensor value increases as brightness increases	Open in circuit: 0 Short in circuit: 255
Solar Sensor (P Side)	Passenger side solar sensor/Min.: 0, Max.: 255	Front passenger side solar sensor value increases as brightness increases	Open in circuit: 0 Short in circuit: 255
Engine Coolant Temp	Engine coolant temperature sensor/ Min.: 1.3°C (34.34° F) Max.: 90.55°C (194.99°F)	Actual engine coolant temperature is displayed	-
Set Temperature (D Side)	Driver side set temperature/Min.: 0°C (32° F) Max.: 30°C (86°F)	Driver side actual set temperature is displayed	-
Set Temperature (P Side)	Passenger side set temperature/Min.: 0°C (32° F) Max.: 30°C (86°F)	Front passenger side actual set temperature is displayed	-
Blower motor speed Level	Blower motor speed level/Min.: 0, Max.: 31	Increases in range between 0 and 31 as blower motor speed increases	-
Adjusted Ambient Temp	Adjusted ambient Min.: -30.8°C (-23.44°F) Max.: 50.8°C (123.44°F)	Adjusted ambient temperature is displayed	-
Air Mix Sensor Targ Pulse(D)	Driver side air mix control servo motor target pulse/Min.: 0, Max.: 255	MAX. COLD: 5 (pulse) MAX. HOT: 103 (pulse)	-
Air Mix Sensor Targ Pulse(P)	Passenger side air mix control servo motor target pulse/Min.: 0, Max.: 255	MAX. COLD: 105 (pulse) MAX. HOT: 7 (pulse)	-

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Air Outlet Servo Pulse(D)	Driver side air outlet control servo motor target/Min.: 0, Max.: 255	FACE: 8 (pulse) B/L: 30 (pulse) FOOT: 67 (pulse) FOOT/DEF: 80 (pulse) DEF: 97 (pulse)	-
Air Inlet Damper Targ Pulse	Air inlet damper target pulse/Min.: 0, Max.: 255	RECIRCULATION: 7 (pulse) FRESH: 28 (pulse)	-
Evaporator Fin Temperature	Evaporator temperature sensor/Min.:-29.7°C (-21.46°F) Max.: 59.55°C (139.19°F)	Actual evaporator temperature is displayed	Open in circuit: -29.7°C (-21.46°F) Short in circuit: 59.55°C (139.19°F)
Regulator Pressure Sensor	Regulator pressure sensor/Min.: 0 kgf/cm^2 G Max.: 38.25 kgf/cm^2 G	Actual regulator pressure is displayed	-
Regulator Control Current	Regulator control current/Min.: 0 A Max.: 0.997 A	Value changes between 0 A and 0.997 A in accordance with compressor operation	-
Room Temp Sensor(Rear)	Rear room temperature sensor/Min.: -6.5°C (20.3°F) Max.: 57.25°C (135.05°F)	Actual rear cabin temperature is displayed	Open circuit: -6.5°C (20.3°F) Short circuit: 57.25°C (135.05°F)
Ambient Temp Sensor(Rear)	Rear evaporator temperature sensor/ Min.:-29.7°C(-21.46°F) Max.: 59.55°C(139.19°F)	Actual rear evaporator temperature is displayed	-
Set Temperature (Rear)	Rear side set temperature/Min.: 0 Max.: 255	Rear side actual rear set temperature is displayed	-
Blower Motor Level(Rear)	Rear blower motor speed level/Min.; 0, Max.: 31	Increases in range between 0 and 31 as rear blower motor speed increases	-
Air Outlet Servo Pulse(R)	Rear side air outlet control servo motor target pulse/Min.: 0, Max.: 255	Rr FACE: 83 (pulse) Rr B/L: 38 (pulse) Rr FOOT: 7 (pulse)	-
Air Mix Servo Targ Pulse(R)	Rear side air mix control servo motor target pulse/Min.: 0, Max.: 255	MAX. COLD: 9 (pulse) MAX. HOT: 54 (pulse)	-
#Codes	Number of trouble codes/Min.: 0, Max.: 255	Number of DTCs displayed	-

2. **PERFORM ACTIVE TEST**

HINT:

Using Techstream to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because

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intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Connect Techstream to the DLC3.
b. Turn the ignition switch on (IG) and turn Techstream on.
c. Perform the Active Test by following the prompts on the tester.

Active Test/Air conditioner

ACTIVE TEST/AIR CONDITIONER REFERENCE CHART

Tester Display	Test Part	Control Range	Diagnostic Note
Blower Motor	Blower motor	Min.: 0, Max.: 31	-
Magnetic Clutch Relay	Magnetic clutch relay	OFF, ON	-
Defogger Relay(Rear)	Defogger relay (Rear)	OFF, ON	-
Electric Heater 1	PTC heater 1	OFF, ON	-
Electric Heater 2	PTC heater 2	OFF, ON	-
Electric Heater 3	PTC heater 3	OFF, ON	-
Air Mix Servo Targ Pulse(D)	Air mix servo motor pulse (D side)	Min.: 5, Max. 103	-
Air Mix Servo Targ Pulse(P)	Air mix servo motor pulse (P side)	Min.: 7, Max. 105	-
Air Outlet Servo Targ Pulse (D)	Air outlet servo motor pulse (D side)	Min.: 8, Max. 97	-
Air Inlet Damper Targ Pulse (D)	Air inlet damper target pulse	Min.: 7, Max. 28	-
Rear Blower Motor	Rear blower motor	Min.: 0, Max. 31	-
Rear Air Mix Servo Targ Pulse	Rear air mix control servo motor pulse	Min.: 9, Max.54	-

DIAGNOSTIC TROUBLE CODE CHART

Air conditioning system

DIAGNOSTIC TROUBLE CODE CHART

DTC Code	Detection Item	Trouble Area	Memory(4)
B1411/11(1)	Room Temperature Sensor Circuit	1. Room temperature sensor (for front) 2. Wire harness between room temperature sensor and air conditioning	Memorized (8.5 min. or more)

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		amplifier 3. Air conditioning amplifier	
B1412/12(2)	Ambient Temperature Sensor Circuit	1. Ambient temperature sensor 2. Wire harness between ambient temperature sensor and Air conditioning amplifier 4. Air conditioning amplifier	Memorized (8.5 min. or more)
B1413/13	Evaporator Temperature Sensor Circuit	1. No. 1 cooler thermistor (Evaporator temperature sensor) 2. Air conditioning harness 3. Air conditioning amplifier	Memorized (8.5 min. or more)
B1417/17(5)	Rear Evaporator Temperature Sensor Circuit	1. Rear evaporator temperature sensor 2. Wire harness between rear evaporator temperature sensor and air conditioning amplifier 3. Air conditioning amplifier	Memorized (8.5 min. or more)
B1419/19(6)	Rear Room Temperature Sensor Circuit	1. Rear room temperature sensor 2. Wire harness between rear room temperature sensor and air conditioning amplifier 3. Air conditioning amplifier	Memorized (8.5 min. or more)
	Solar Sensor Circuit	1. Solar sensor	Memorized (8.5 min. or

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B1421/21(3)	(Passenger Side)	2. Wire harness between solar sensor and air conditioning amplifier 3. Wire harness between solar sensor and main body ECU 4. Air conditioning amplifier	more)
B1422/22	Compressor Lock Sensor Circuit	1. A/C compressor (A/C lock sensor) 2. Compressor drive belt 3. Harness or connector between compressor and A/C amplifier 4. A/C amplifier 5. CAN communication system	-
B1423/23	Pressure Sensor Circuit	1. Pressure sensor 2. Harness or connector between pressure sensor and A/C amplifier 3. A/C amplifier 4. Expansion valve (blocked, stuck) 5. Condenser (blocked, deterioration of cooling capacity due to dirt) 6. Cooler dryer (moisture in the refrigerant cycle cannot be absorbed) 7. Cooling fan system (condenser cannot	-

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		be cooled down) 8. A/C system (leaks, blocked)	
B1424/24(3)	Solar Sensor Circuit (Driver Side)	1. Solar sensor 2. Wire harness between solar sensor and air conditioning amplifier 3. Wire harness between solar sensor and main body ECU 4. Air conditioning amplifier	Memorized (8.5 min. or more)
B1441/41	Air Mix Damper Control Servo Motor Circuit (Passenger Side)	1. Air mix control servo motor 2. Air conditioning harness 3. Air conditioning amplifier	Memorized (30 sec.)
B1442/42	Air Inlet Damper Control Servo Motor Circuit	1. Air inlet control servo motor 2. Air conditioning harness 3. Air conditioning amplifier	Memorized (30 sec.)
B1443/43	Air Outlet Damper Control Servo Motor Circuit	1. Air outlet control servo motor 2. Air conditioning harness 3. Air conditioning amplifier	Memorized (30 sec.)
B1446/46	Air Mix Damper Control Servo Motor Circuit (Driver Side)	1. Air mix control servo motor 2. Air conditioning harness 3. Air conditioning amplifier	Memorized (30 sec.)
	Rear Air Mix Damper Control Servo Motor Circuit	1. Rear air mix control servo motor 2. Rear air	Memorized (30 sec.)

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B1447/47(5)		conditioning harness 3. Wire harness between rear air conditioning harness and air conditioning amplifier 4. Air conditioning amplifier	
B1449/49(5)	Rear Air Outlet Damper Control Servo Motor Circuit	1. Rear air outlet control servo motor 2. Rear air conditioning harness 3. Wire harness between rear air conditioning harness and air conditioning amplifier 4. Air conditioning amplifier	Memorized (30 sec.)
B1451/51	Compressor Solenoid Circuit	1. Compressor and magnetic clutch 2. Wire harness between air conditioning amplifier and compressor and Magnetic clutch 3. Air conditioning amplifier	-
B1497/97	BUS IC Communication Malfunction	1. Air conditioning harness 2. Air conditioning amplifier	-
B1499/99	Multiplex Communication Circuit	1. Air conditioning amplifier 2. ECM 3. Combination meter 4. CAN communication	-

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		line	

(1) If the room temperature is approximately -18.6°C (-1.48°F) or lower, DTC B1411/11 may be output even though the system is normal.

(2) If the ambient temperature is approximately -52.9°C (-63.22°F) or lower, DTC B1412/12 may be output even though the system is normal.

(3) If the check is performed in a dark place, DTC B1421/21 or B1424/24 (solar sensor circuit abnormal) may be output even though the system is normal.

(4) The A/C amplifier memorizes the DTC of the respective malfunction if it has occurred for the period of time indicated in the brackets.

(5) for Rear Air Conditioning System

(6) for Rear Automatic Air Conditioning System

DTC B1411/11 ROOM TEMPERATURE SENSOR CIRCUIT

DESCRIPTION

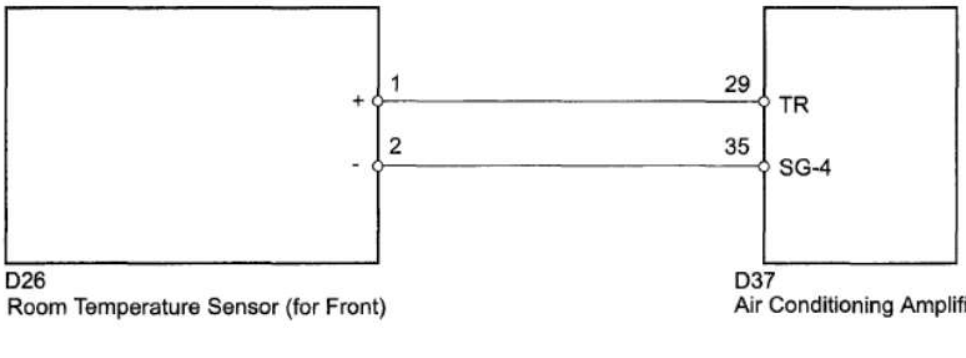
The room temperature sensor is installed in the instrument panel to detect the room temperature and control the heater and air conditioning AUTO mode. The resistance of the room temperature sensor changes in accordance with the room temperature. As the temperature decreases, the resistance increases. As the temperature increases, the resistance decreases.

The air conditioning amplifier applies a voltage (5 V) to the room temperature sensor and reads voltage changes as changes in the resistance of the room temperature sensor.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1411/11	Open or short in room temperature sensor circuit	• Room temperature sensor (for front) • Wire harness between room temperature sensor and air conditioning amplifier • Air conditioning amplifier

WIRING DIAGRAM



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Fig. 31: Room Temperature Sensor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the item below in the Data List, and read the value displayed on Techstream.

   Data List/Air Conditioner

   DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Room Temperature sensor	Room temperature sensor/Min.: -6.5°C (20.3°F) Max.: 57.25°C(135.05°F)	Actual room temperature is displayed	Open circuit: -19°C (-2.2°F) Short circuit: 70.1°C (158.18°F)

   OK:

   The display is as specified in the normal condition column.

   Result

   RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

   B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

   C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

   A: Go to next step

2. **INSPECT ROOM TEMPERATURE SENSOR**
   a. Remove the room temperature sensor (for front) (See **INSPECTION**).
   b. Measure the resistance according to the value(s) in the table below.

   Standard resistance

   STANDARD RESISTANCE CHART

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Tester Connection	Condition	Specified Condition
D26-1 (+) - D26-2 (-)	10°C(50°F)	3.00 to 3.73 kohms
D26-1 (+) - D26-2 (-)	15°C(59°F)	2.45 to 2.88 kohms
D26-1 (+) - D26-2 (-)	20°C (68°F)	1.95 to 2.30 kohms
D26-1 (+) - D26-2 (-)	25°C (77°F)	1.60 to 1.80 kohms
D26-1 (+) - D26-2 (-)	30°C (86°F)	1.28 to 1.47 kohms
D26-1 (+) - D26-2 (-)	35°C (95°F)	1.00 to 1.22 kohms
D26-1 (+) - D26-2 (-)	40°C (104°F)	0.80 to 1.00 kohms
D26-1 (+) - D26-2 (-)	45°C (113°F)	0.65 to 0.85 kohms
D26-1 (+) - D26-2 (-)	50°C(122°F)	0.50 to 0.70 kohms
D26-1 (+) - D26-2 (-)	55°C(131°F)	0.44 to 0.60 kohms
D26-1 (+) - D26-2 (-)	60°C (140°F)	0.36 to 0.50 kohms

NOTE:

- **Touching the sensor even slightly may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring, the sensor temperature must be the same as the ambient temperature.**

HINT:

As the temperature increases, the resistance decreases (see the graph).

NG: REPLACE ROOM TEMPERATURE SENSOR (See **INSPECTION**)

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Component without harness connected:
(Room Temperature Sensor (for Front))

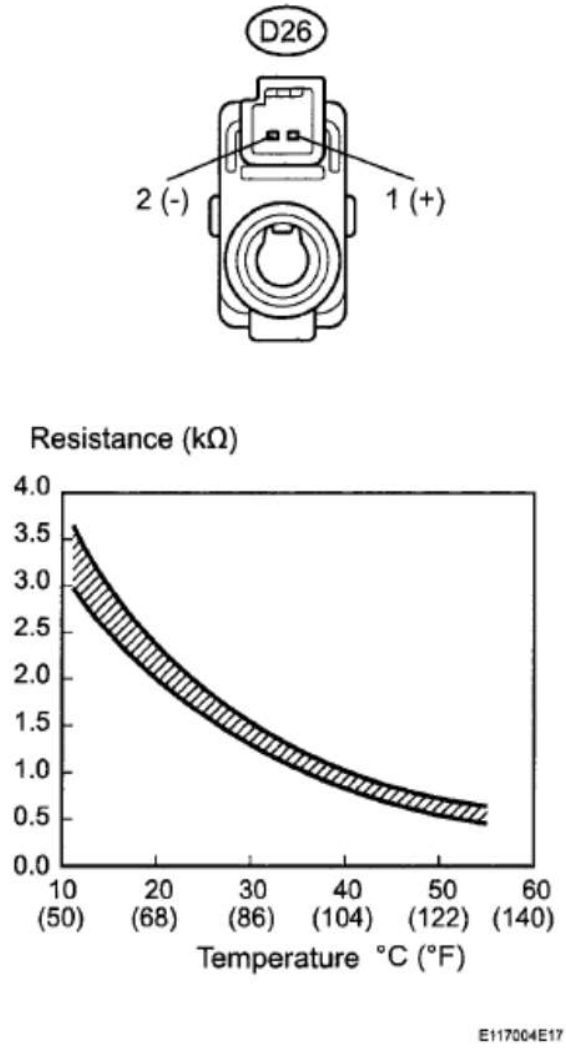


Fig. 32: Identifying Room Temperature Sensor Terminals And Temperature/Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (ROOM TEMPERATURE SENSOR - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the D26 sensor connector.
   b. Disconnect the D37 amplifier connector.
   c. Measure the resistance according to the value(s) in the table below.

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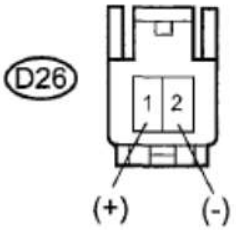
Standard resistance

STANDARD RESISTANCE CHART

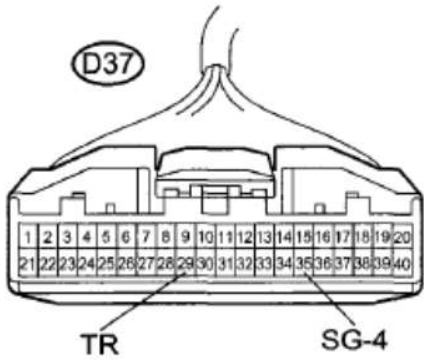
Tester Connection	Condition	Specified Condition
D26-1 (+) - D37-29 (TR)	Always	Below 1 ohms
D26-2 (-) - D37-35 (SG-4)	Always	Below 1 ohms
D26-1 (+) - Body ground	Always	1 Mohms or higher
D26-2 (-) - Body ground	Always	1 Mohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Room Temperature Sensor (for Front))



Front view of wire harness connector:
(to Air Conditioning Amplifier)



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Fig. 33: Identifying D26 Sensor Connector And D37 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1412/12 AMBIENT TEMPERATURE SENSOR CIRCUIT

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DESCRIPTION

The ambient temperature sensor is installed in front of the condenser to detect the ambient temperature which is used to control the air conditioner "AUTO" mode. This sensor is connected to the A/C amplifier and detects fluctuations in the ambient temperature. This data is used for controlling the cabin temperature. The sensor sends a signal to the A/C amplifier. The resistance of the ambient temperature sensor changes in accordance with the ambient temperature. As the temperature decreases, the resistance increases. As the temperature increases, the resistance decreases.

The A/C amplifier applies voltage (5 V) to the ambient temperature sensor and reads voltage changes as the resistance of the ambient temperature sensor changes.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1412/12	Open or short in ambient temperature sensor circuit	• Ambient temperature sensor • Wire harness between ambient temperature sensor and air conditioning amplifier • Air conditioning amplifier

WIRING DIAGRAM

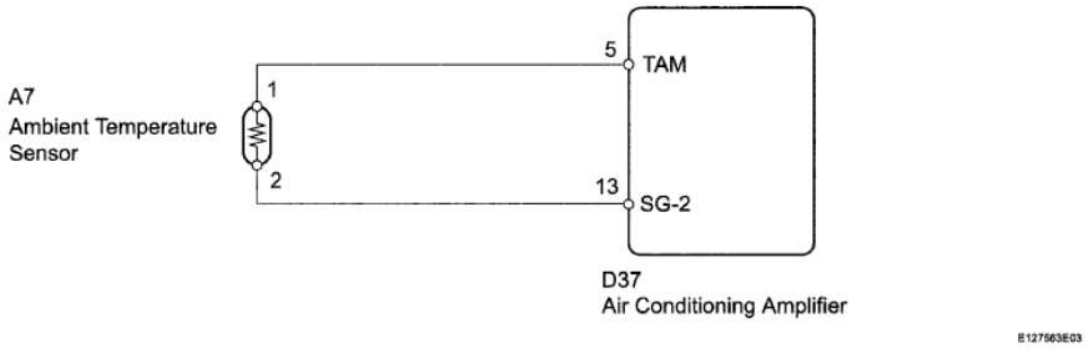


Fig. 34: Ambient Temperature Sensor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the item below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note

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Ambient Temp Sensor	Ambient temperature sensor/Min.: -23.3°C (-9.94°F) Max.: 65.96°C (150.71°F)	Actual ambient temperature is displayed	Open in circuit: -23.3°C (-9.94°F) Short in circuit: 65.95°C (150.71°F)

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **INSPECT AMBIENT TEMPERATURE SENSOR**
   a. Remove the ambient temperature sensor (See **INSPECTION**).
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A7-1 - A7-2	10°C (50°F)	3.00 to 3.73 kohms
A7-1 - A7-2	15°C (50°F)	2.45 to 2.88 kohms
A7-1 - A7-2	20°C (68°F)	1.95 to 2.30 kohms
A7-1 - A7-2	25°C (77°F)	1.60 to 1.80 kohms
A7-1 - A7-2	30°C (86°F)	1.28 to 1.47 kohms
A7-1 - A7-2	35°C (95°F)	1.00 to 1.22 kohms
A7-1 - A7-2	40°C (104°F)	0.80 to 1.00 kohms
A7-1 - A7-2	45°C (113°F)	0.65 to 0.8S kohms
A7-1 - A7-2	50°C(122°F)	0.50 to 0.70 kohms
A7-1 - A7-2	55°C(131°F)	0.44 to 0.60 kohms
A7-1 - A7-2	60°C (140°F)	0.36 to 0.50 kohms

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NOTE:

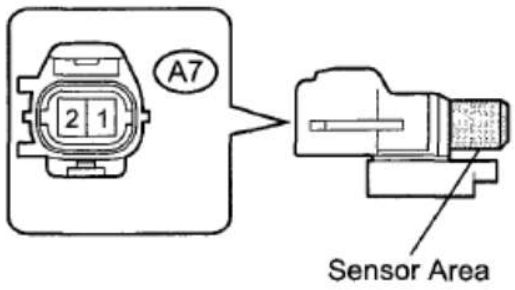
- **Touching the sensor even slightly may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring, the sensor temperature must be the same as the ambient temperature.**

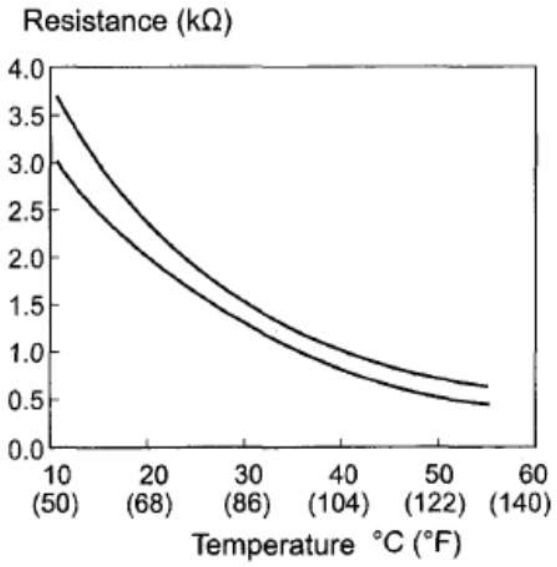
HINT:

As the temperature increases, the resistance decreases (see the graph).

NG: REPLACE AMBIENT TEMPERATURE SENSOR (See **INSPECTION**)

Component without harness connected:
(Ambient temperature Sensor)





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Fig. 35: Identifying Ambient Temperature Sensor Terminals And Temperature/Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (AMBIENT TEMPERATURE SENSOR - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the A7 sensor connector.
   b. Disconnect the D37 amplifier connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A7-1 - D37-5 (TAM)	Always	Below 1 ohms
A7-2 - D37-13 (SG-2)	Always	Below 1 ohms
D37-5 (TAM) - Body ground	Always	10 kohms or higher
D37-13 (SG-2) -Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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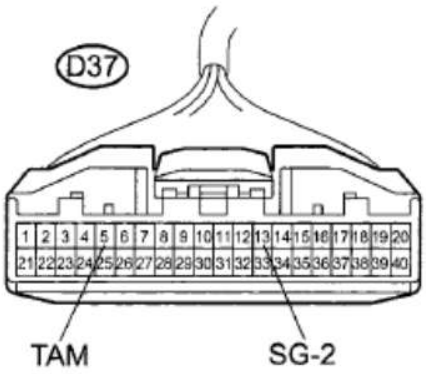
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Front view of wire harness connector:
(to Ambient Temperature Sensor)



Front view of wire harness connector:
(to Air Conditioning Amplifier)



E152697E02

Fig. 36: Identifying A7 Sensor Connector And D37 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1413/13 EVAPORATOR TEMPERATURE SENSOR CIRCUIT

DESCRIPTION

The No. 1 cooler thermistor (evaporator temperature sensor) is installed on the evaporator in the front air conditioning unit to detect the temperature of the cooled air that has passed through the evaporator and to control the air conditioner. It sends signals to the air conditioning amplifier. The signals change in accordance with the resistance of the No. 1 cooler thermistor (evaporator temperature sensor). As the temperature decreases, the resistance increases. As the temperature increases, the resistance decreases. The air conditioning amplifier applies a voltage (5 V) to the No. 1 cooler thermistor (evaporator temperature sensor) and reads voltage changes as changes in the resistance of the No. 1 cooler thermistor (evaporator temperature sensor). This sensor is used for frost prevention.

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DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1413/13	Open or short in evaporator temperature sensor circuit	• No. 1 cooler thermistor (evaporator temperature sensor) • Air conditioning harness • Air conditioning amplifier

WIRING DIAGRAM

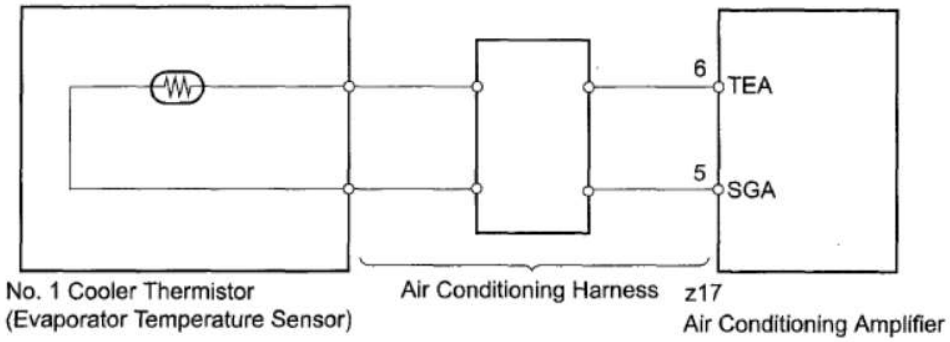


Fig. 37: Evaporator Temperature Sensor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the item below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Evaporator Fin Temperature	Evaporator temperature sensor/Min.:-29.7°C(-21.46°F) Max.: 59.6°C (139.28°F)	Actual evaporator temperature is displayed	Open in circuit: -29.7° C (-21.46°F) Short in circuit: 59.6° C (139.28°F)

OK:

The display is as specified in the normal condition column.

Result

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RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **INSPECT NO. 1 COOLER THERMISTOR (EVAPORATOR TEMPERATURE SENSOR)**
   a. Remove the No. 1 cooler thermistor from the front evaporator.

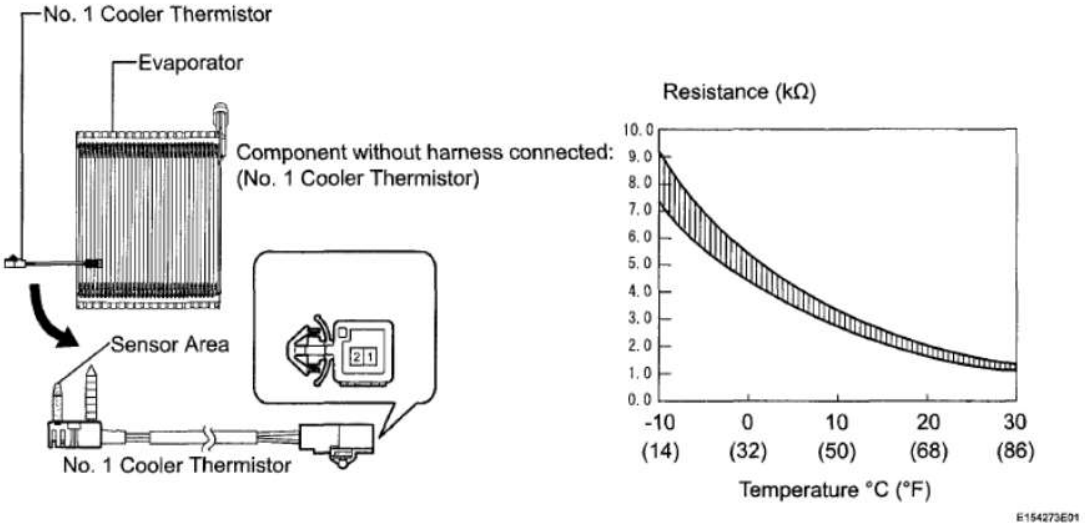


Fig. 38: Identifying No. 1 Cooler Thermistor And Temperature/Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
1-2	-10°C (14°F)	7.30 to 9.10 kohms
1-2	-5°C (23°F)	5.65 to 6.95 kohms
1-2	0°C (32°F)	4.40 to 5.35 kohms
1-2	5°C (41°F)	3.40 to 4.15 kohms
1-2	10°C (50°F)	2.70 to 3.25 kohms

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1-2	15°C (59°F)	2.14 to 2.58 kohms
1-2	20°C (68°F)	1.71 to 2.05 kohms
1-2	25°C (77°F)	1.38 to 1.64 kohms
1 -2	30°C (86°F)	1.11 to 1.32 ohms

NOTE:

- **Touching the thermistor even slightly may change the resistance value. Be sure to hold the connector of the thermistor.**
- **When measuring, the thermistor temperature must be the same as the ambient temperature.**

HINT:

As the temperature increases, the resistance decreases (see the graph).

NG: REPLACE NO. 1 COOLER THERMISTOR (See **REASSEMBLY**)

OK: Go to next step

3. **INSPECT AIR CONDITIONING HARNESS ASSY**
   a. Remove the air conditioning harness.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
Z17-6 (TEA) - 2	Always	Below 1 ohms
Z17-5 (SGA) -1	Always	Below 1 ohms
z17-6 (TEA) - Body ground	Always	10 kohms or higher
Z17-5 (SGA) - Body ground	Always	10 kohms or higher

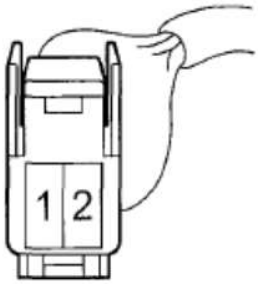
NG: REPLACE AIR CONDITIONING HARNESS (See **REASSEMBLY**)

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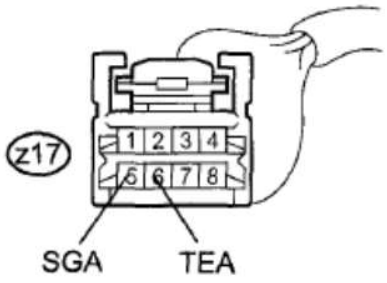
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Front view of wire harness connector:
(to Evaporator Temperature Sensor)



Front view of wire harness connector:
(to Air Conditioning Amplifier)



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Fig. 39: Identifying Evaporator Temperature Sensor And Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1417/17 REAR EVAPORATOR TEMPERATURE SENSOR CIRCUIT

DESCRIPTION

The rear air conditioning harness (rear evaporator temperature sensor) is installed on the evaporator in the rear air conditioning unit to detect the temperature of the cooled air that has passed through the evaporator and to control the rear air conditioner. It sends signals to the air conditioning amplifier. The signals change in accordance with the resistance of the rear air conditioning harness (rear evaporator temperature sensor). As the temperature decreases, the resistance increases. As the temperature increases, the resistance decreases. The air conditioning amplifier applies a voltage (5 V) to the rear air conditioning harness (rear evaporator temperature sensor) and reads voltage changes as changes in the resistance of the rear air conditioning harness (rear evaporator temperature sensor). This sensor is used for frost prevention.

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DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1417/17	Open or short in rear air conditioning harness circuit (rear evaporator temperature sensor)	• Rear air conditioning harness (rear evaporator temperature sensor) • Wire harness between rear air conditioning harness (rear evaporator temperature sensor) and air conditioning amplifier • Air conditioning amplifier

WIRING DIAGRAM

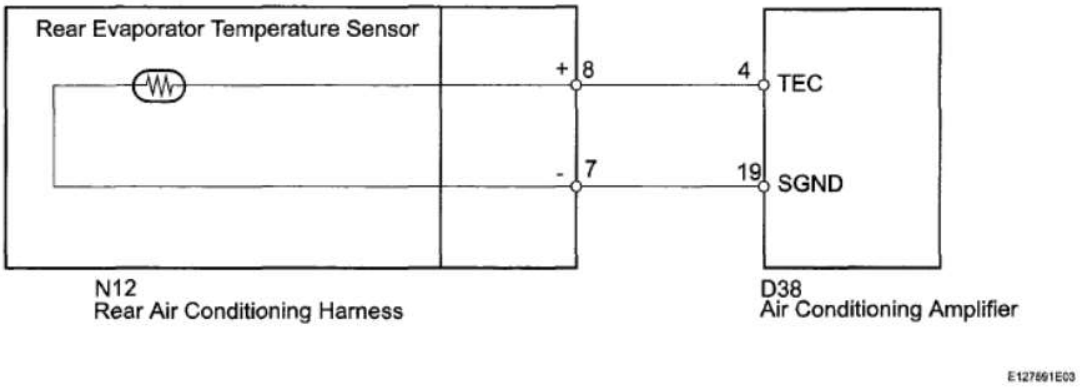


Fig. 40: Rear Air Conditioning Harness Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the item below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Ambient Temp Sensor(Rear)	Rear evaporator temperature sensor/ Min.:-29.7°C (-21.46°F) Max.: 59.6°C(139.28°F)	Actual rear evaporator temperature is displayed	Open circuit: -49°C (-56.2°F) Short circuit: 171°C (339.8°F)

OK:

The display is as specified in the normal condition column.

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Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **INSPECT REAR AIR CONDITIONING HARNESS (REAR EVAPORATOR TEMPERATURE SENSOR)**
   a. Remove the rear air conditioning harness.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
N12-7 (-) - N12-8 (+)	-10°C (14°F)	7.30 to 9.10 kohms
N12-7 (-) - N12-8 (+)	-5°C (23°F)	5.65 to 6.95 kohms
N12-7 (-) - N12-8 (+)	0°C (32°F)	4.40 to 5.35 kohms
N12-7 (-) - N12-8 (+)	5°C (41°F)	3.40 to 4.15 kohms
N12-7 (-) - N12-8 (+)	10°C (50°F)	2.70 to 3.25 kohms
N12-7 (-) - N12-8 (+)	15°C (59°F)	2.14 to 2.58 kohms
N12-7 (-) - N12-8 (+)	20°C (68°F)	1.71 to 2.05 kohms
N12-7 (-) - N12-8 (+)	25°C (77°F)	1.38 to 1.64 kohms
N12-7 (-) - N12-8 (+)	30°C (86°F)	1.11 to 1.32 kohms

NOTE:

- **Touching the thermistor even slightly may change the resistance value. Be sure to hold the connector of the thermistor.**
- **When measuring, the thermistor temperature must be the same as the ambient temperature.**

HINT:

As the temperature increases, the resistance decreases (see the graph).

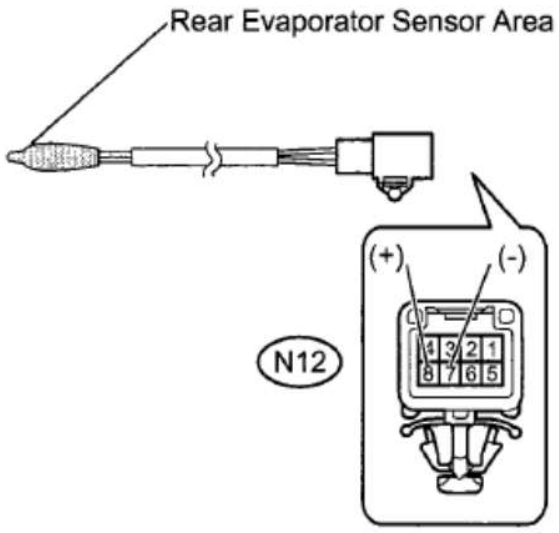
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NG: REPLACE REAR AIR CONDITIONING HARNESS

Component without harness connected:
(Rear Air Conditioning Harness(Rear Evaporator Temperature Sensor))



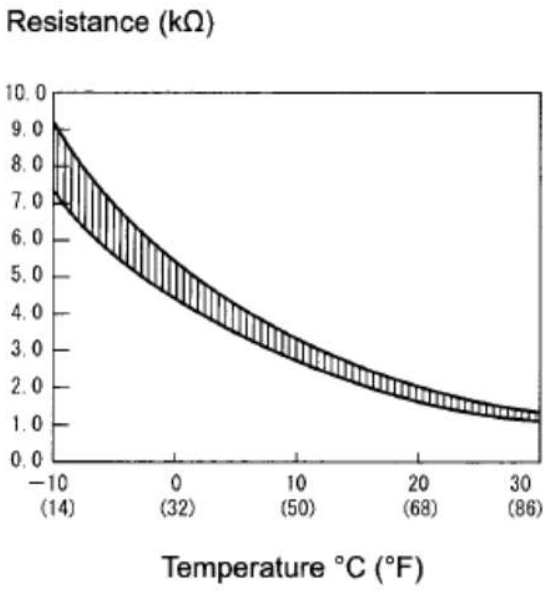


Fig. 41: Identifying Rear Evaporator Temperature Sensor Connector Terminals And Temperature/Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (REAR AIR CONDITIONING HARNESS - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the N12 rear air conditioning harness connector.
   b. Disconnect the D38 amplifier connector.
   c. Measure the resistance according to the value(s) in the table below.

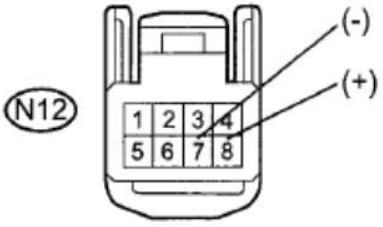
Standard resistance

STANDARD RESISTANCE CHART

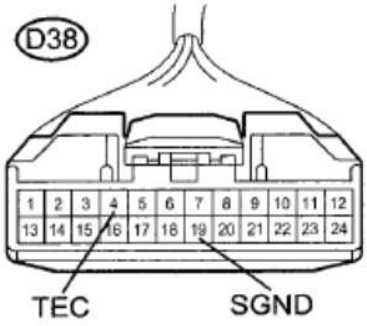
Tester Connection	Condition	Specified Condition
N12-8 (+) - D38-4 (TEC)	Always	Below 1 ohms
N12-7 (-) - D38-19 (SGND)	Always	Below 1 ohms

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Rear Air Conditioning Harness (Rear Evaporator Temperature Sensor))



Front view of wire harness connector:
(to Air Conditioning Amplifier)



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Fig. 42: Identifying N12 Rear Air Conditioning Harness Connector And D38 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1419/19 REAR ROOM TEMPERATURE SENSOR CIRCUIT

DESCRIPTION

The rear room temperature sensor is installed in the rear panel to detect the rear room temperature and control the heater and air conditioning AUTO mode. The resistance of the rear room temperature sensor changes in accordance with the rear room temperature. As the temperature decreases, the resistance increases. As the temperature increases, the resistance decreases.

The air conditioning amplifier applies a voltage (5 V) to the rear room temperature sensor and reads voltage changes as changes in the resistance of the rear room temperature sensor.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1419/19	Open or short in rear room temperature sensor circuit	• Rear room temperature sensor • Wire harness between rear room temperature sensor and air conditioning amplifier • Air conditioning amplifier

WIRING DIAGRAM

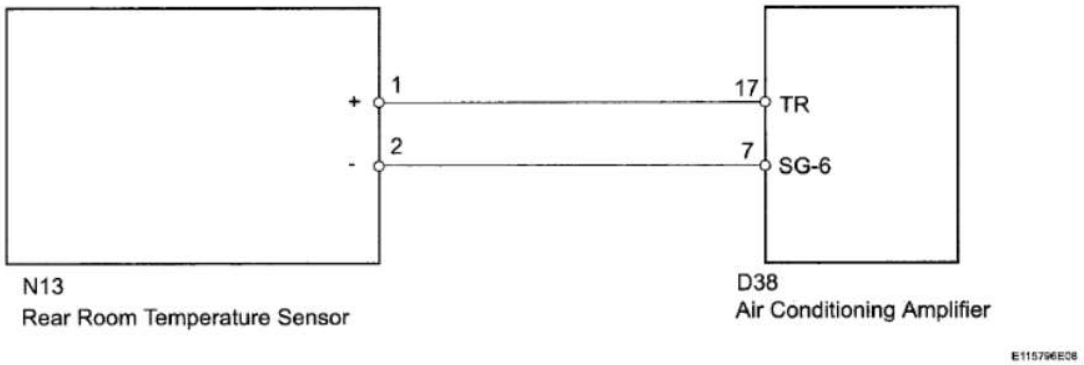


Fig. 43: Rear Room Temperature Sensor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.

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c. Select the item below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Room Temp Sensor(Rear)	Rear room temperature sensor/Min.: -6.5°C (20.3°F) Max.: 57.25°C (135.05°F)	Actual rear room temperature is displayed	Open circuit: -19°C (2.2°F) Short circuit: 70.1°C (158.2°F)

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from the PROBLEM SYMPTOMS TABLE)	B
OK (Checking from the DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **INSPECT REAR ROOM TEMPERATURE SENSOR**
   a. Remove the rear room temperature sensor (See **ROOM TEMPERATURE SENSOR (FOR REAR)**).
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
N13-1 (+) - N13-2 (-)	10°C (50°F)	3.00 to 3.73 kohms
N13-1 (+) - N13-2 (-)	15°C(59°F)	2.45 to 2.88 kohms
N13-1 (+) - N13-2 (-)	20°C (68°F)	1.95 to 2.30 kohms
N13-1 (+) - N13-2 (-)	25°C (77°F)	1.60 to 1.80 kohms
N13-1 (+) - N13-2 (-)	30°C (86°F)	1.28 to 1.47 kohms

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N13-1 (+) - N13-2 (-)	35°C (95°F)	1.00 to 1.22 kohms
N13-1 (+) - N13-2 (-)	40°C (104°F)	0.80 to 1.00 kohms
N13-1 (+) - N13-2 (-)	45°C (113°F)	0.65 to 0.85 kohms
N13-1 (+) - N13-2 (-)	50°C(122°F)	0.50 to 0.70 kohms
N13-1 (+) - N13-2 (-)	55°C(131°F)	0.44 to 0.60 kohms
N13-1 (+) - N13-2 (-)	60°C (140°F)	0.36 to 0.50 kohms

NOTE:

- **Touching the sensor even slightly may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring, the sensor temperature must be the same as the ambient temperature.**

HINT:

As the temperature increases, the resistance decreases (see the graph).

NG: REPLACE REAR ROOM TEMPERATURE SENSOR (See **ROOM TEMPERATURE SENSOR (FOR REAR)**)

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Component without harness connected:
(Rear Room Temperature Sensor)

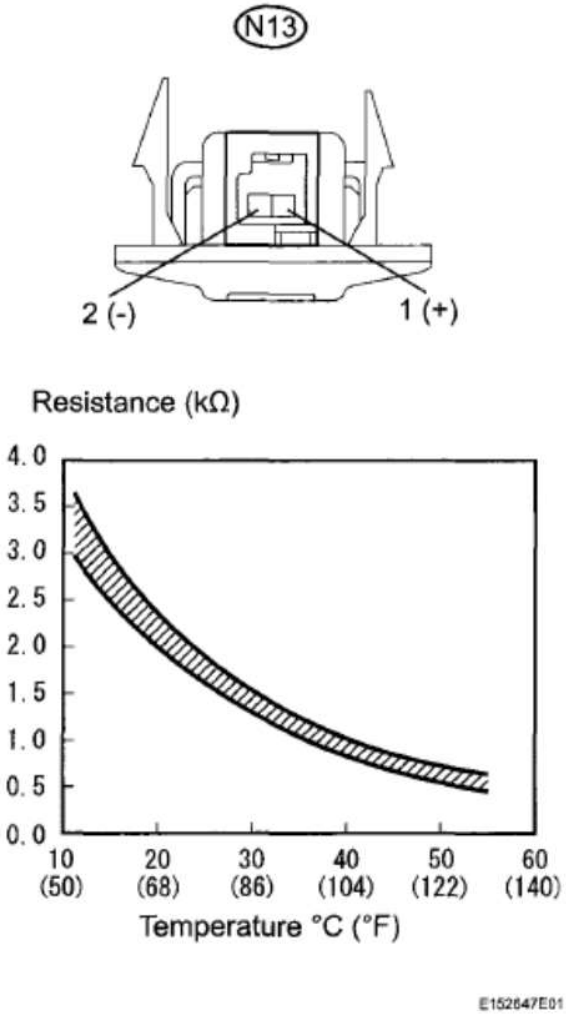


Fig. 44: Identifying Rear Room Temperature Sensor Connector Terminals And Temperature/Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (REAR ROOM TEMPERATURE SENSOR - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the N13 sensor connector.
   b. Disconnect the D38 amplifier connector.
   c. Measure the resistance according to the value(s) in the table below.

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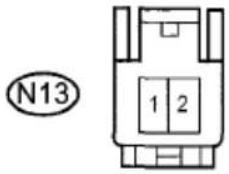
Standard resistance

STANDARD RESISTANCE CHART

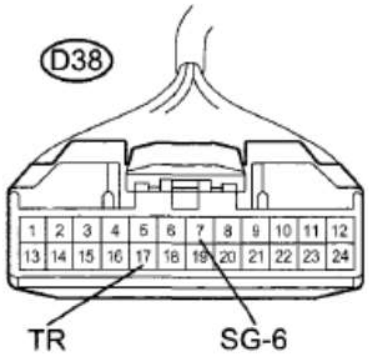
Tester Connection	Condition	Specified Condition
N13-1 - D38-17 (TR)	Always	Below 1 ohms.
N13-2 - D38-7 (SG-6)	Always	Below 1 ohms
N13-1 - Body ground	Always	1 Mohms or higher
N13-2 - Body ground	Always	1 Mohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Rear Room Temperature Sensor)



Front view of wire harness connector:
(to Air Conditioning Amplifier)



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Fig. 45: Identifying N13 Sensor Connector And D38 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1421/21 SOLAR SENSOR CIRCUIT (PASSENGER SIDE)

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DESCRIPTION

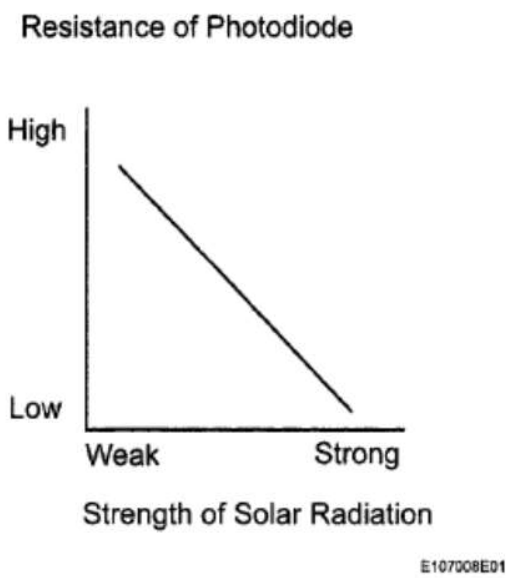


Fig. 46: Solar Radiation And Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

The solar sensor, which is installed on the upper side of the instrument panel, detects sunlight and controls the air conditioning AUTO mode. The output voltage from the solar sensor varies in accordance with the amount of sunlight. When the sunlight increases, the output voltage increases. As the sunlight decreases, the output voltage decreases. The air conditioning amplifier detects changes in the output voltage from the solar sensor.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1421/21	Open or short in passenger side solar sensor circuit	• Solar sensor • Wire harness between solar sensor and air conditioning amplifier • Wire harness between solar sensor and main body ECU • Air conditioning amplifier

WIRING DIAGRAM

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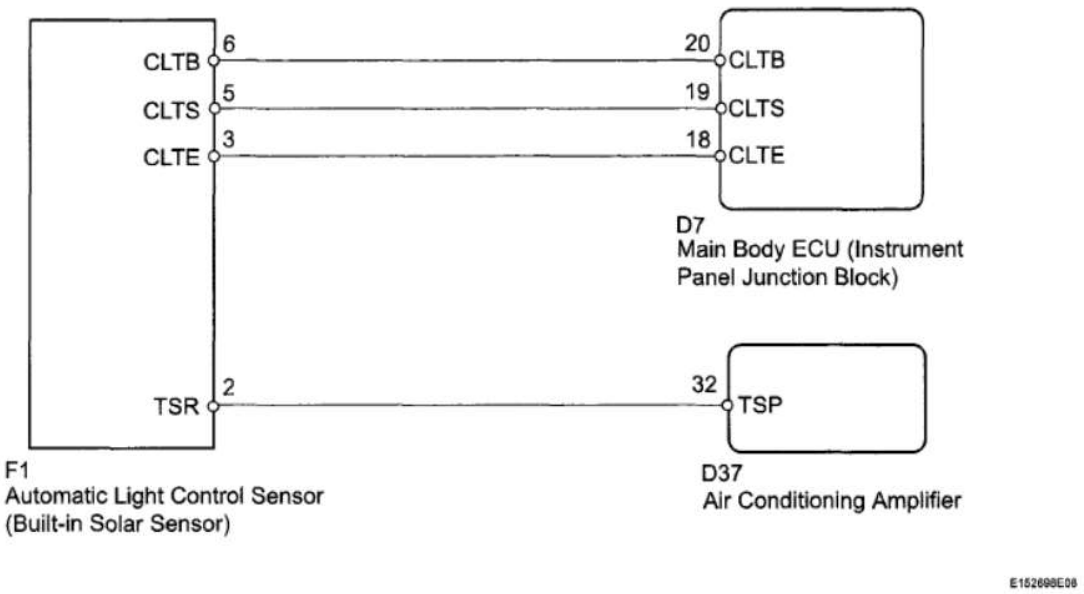


Fig. 47: Solar Sensor Circuit (Passenger Side) - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the item below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Solar Sensor (P Side)	Passenger side solar sensor/Min.: 0, Max.: 255	Passenger side solar sensor value increases as brightness increases	-

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B

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OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **CHECK SOLAR SENSOR (SENSOR POWER INPUT)**
   a. Disconnect the F1 solar sensor connector.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
F1-6 (CLTB) - F1-3 (CLTE)	Ignition switch off	Below 1 V
F1-6 (CLTB) - F1-3 (CLTE)	Ignition switch on (IG)	11 to 14 V

OK: Go to step 4

Front view of wire harness connector:
(to Solar Sensor)

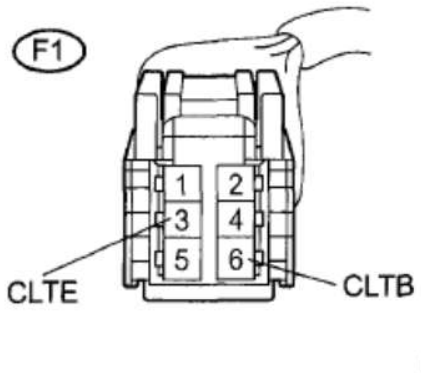


Fig. 48: Identifying F1 Solar Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NG: Go to next step

3. **CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - SOLAR SENSOR)**

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a. Disconnect the D7 main body ECU connector.
b. Disconnect the F1 solar sensor connector.
c. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D7-20 (CLTB) - F1-6 (CLTB)	Always	Below 1 ohms
D7-18 (CLTE) - F1-3 (CLTE)	Always	Below 1 ohms
D7-20 (CLTB) - Body ground	Always	10 kohms or higher
D7-18 (CLTE) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Main Body ECU)



Front view of wire harness connector:
(to Solar Sensor)

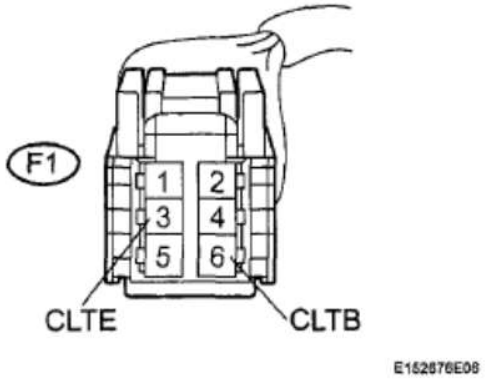


Fig. 49: Identifying D7 Main Body ECU Connector And F1 Solar Sensor Connector Terminals

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE MAIN BODY ECU (INSTRUMENT PANEL JUNCTION BLOCK)

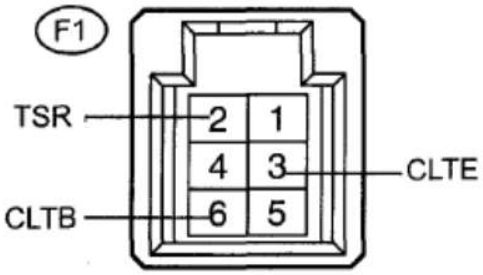
4. **CHECK SOLAR SENSOR**
   a. Remove the solar sensor (See **INSPECTION**) with its connector still connected.
   b. Connect the battery's positive (+) lead to terminal 6 (CLTB) and the negative (-) lead to terminal 3 (CLTE) of the solar sensor.
   c. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
F1-2 (TSR) - F1-3 (CLTE)	Sensor is subjected to electric light	0.8 to 4.3 V
F1-2 (TSR) - F1-3 (CLTE)	Sensor is covered with a cloth	Below 0.8 V

Component without harness connected:
(Solar Sensor)



P E109215E38

Fig. 50: Identifying Solar Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE:

- **The connection procedure for using a digital tester such as a TOYOTA electrical tester is shown above. When using an analog tester, connect the negative (-) lead to terminal 6 and positive (+) lead to terminal 3 of the solar sensor.**
- **While using the battery during inspection, do not bring the positive and negative tester probes too close to each other as a short circuit may occur.**

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HINT:

- Use an incandescent light for inspection. Bring it within about 30 cm (11.8 in.) of the solar sensor.
- As the inspection light is moved away from the sensor, the voltage increases.

NG: REPLACE SOLAR SENSOR (See **INSPECTION**)

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (SOLAR SENSOR - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the F1 solar sensor connector.
   b. Disconnect the D37 air conditioning amplifier connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D37-32 (TSP) - F1-2 (TSR)	Always	Below 1 ohms
D37-32 (TSP) - Body ground	Always	10 kohms or higher

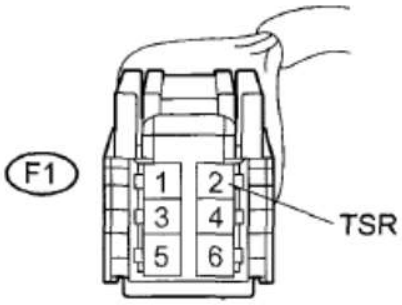
NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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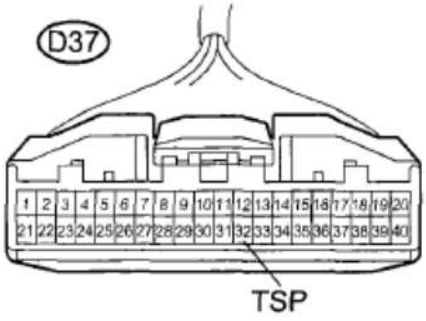
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Front view of wire harness connector:
(to Solar Sensor)



Front view of wire harness connector:
(to Air Conditioning Amplifier)



E152677E04

Fig. 51: Identifying F1 Solar Sensor Connector And D37 Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1422/22 COMPRESSOR LOCK SENSOR CIRCUIT

SYSTEM DESCRIPTION

The ECM sends the engine speed signal to the air conditioning amplifier via CAN communication. The air conditioning amplifier reads the difference between compressor speed and engine speed. When the difference becomes too large, the air conditioning amplifier determines that the compressor is locked, and turns the magnetic clutch off.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area

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B1422/22	Open or short in compressor lock sensor circuit	• Air conditioning compressor (Air conditioning lock sensor) • Compressor drive belt • Harness or connector between compressor and air conditioning amplifier • Air conditioning amplifier • CAN communication system

WIRING DIAGRAM

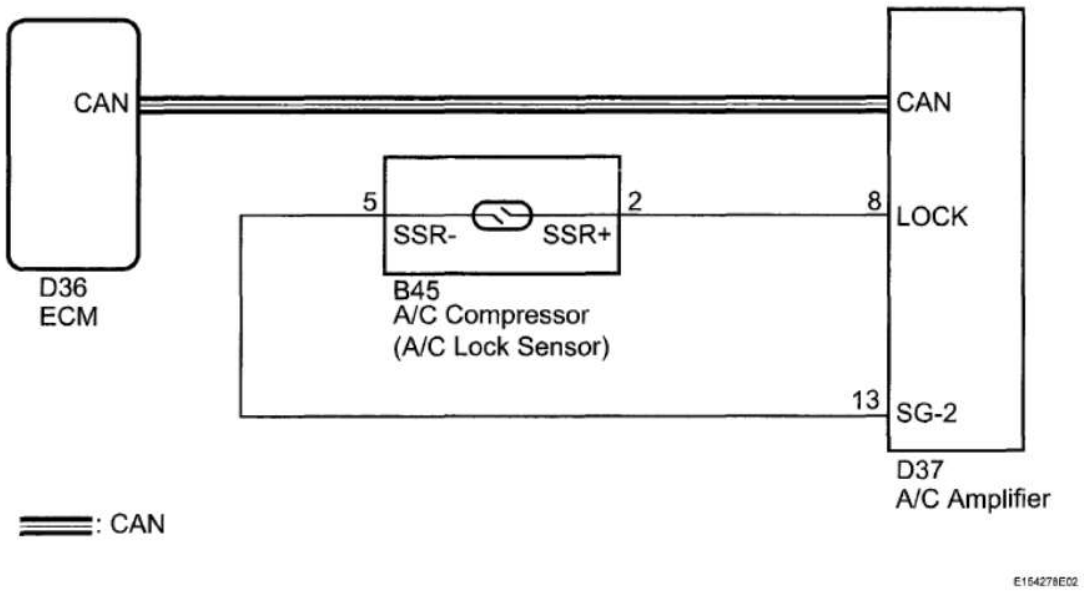


Fig. 52: Compressor Lock Sensor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK CAN COMMUNICATION SYSTEM**
   a. Use Techstream to check if the CAN communication system is functioning normally.

   OK: CAN DTC is not output

   NG: GO TO CAN COMMUNICATION SYSTEM (See **HOW TO PROCEED WITH TROUBLESHOOTING**)

   OK: Go to next step

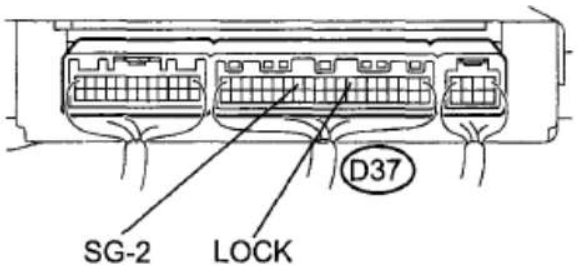
2. **INSPECT AIR CONDITIONING AMPLIFIER**
   a. Remove the air conditioning amplifier (See **REMOVAL**) with the connectors still connected.

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Components with harness connected:
(Air Conditioning Amplifier)



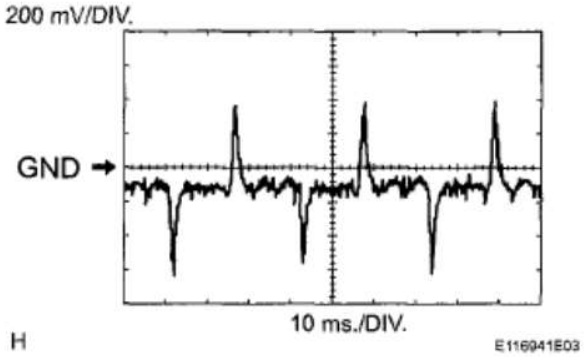
H E124471E38

Fig. 53: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Measure the waveform of the connector.

WAVEFORM REFERENCE CHART

Item	Contents
Tool setting	200mV/DIV., 10ms./DIV.
Vehicle condition	Engine is running Air conditioning switch: ON Blower switch: LO



H E116941E03

Fig. 54: Identifying Connector Waveform
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard

TESTER CONNECTION AND SPECIFIED CONDITION

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Tester Connection	Condition	Specified Condition
D37-8 (LOCK) - D37-13 (SG-2)	Engine is running Air conditioning switch: ON Blower switch: LO	Pulse generation

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (When troubleshooting according to PROBLEM SYMPTOMS TABLE)	B
OK (When troubleshooting according to DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

3. **INSPECT COMPRESSOR AND MAGNETIC CLUTCH (A/C LOCK SENSOR)**
   a. Disconnect the connector from the air conditioning compressor.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B45-2 (SSR+) - B45-5 (SSR-)	20°C (68°F)	160 to 320 ohms

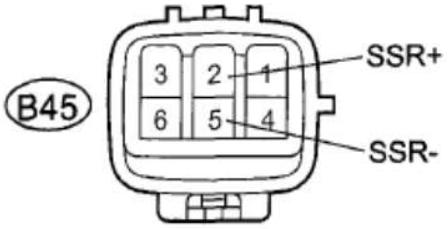
NG: REPLACE COMPRESSOR AND MAGNETIC CLUTCH (A/C LOCK SENSOR) (See **DISASSEMBLY**)

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Component without harness connected:
(Air Conditioning Lock Sensor)



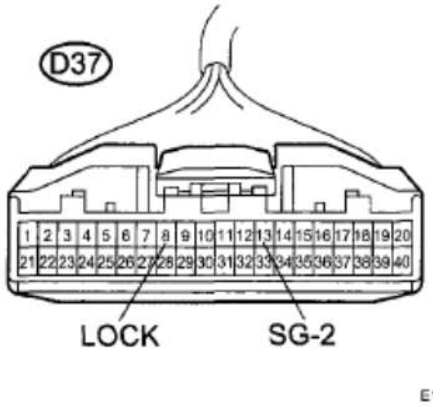
E152688E03

Fig. 55: Identifying Air Conditioning Lock Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (A/C AMPLIFIER - A/C LOCK SENSOR)**
   a. Disconnect the connector from the air conditioning amplifier.

Front view of wire harness connector:
(to Air Conditioning Amplifier)



H

E143742E74

Fig. 56: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

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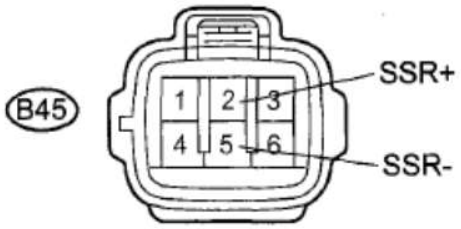
Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D37-8 (LOCK) - B45-2 (SSR+)	Always	Below 1 ohms
D37-13 (SG-2) - B45-5 (SSR-)	Always	Below 1 ohms
D37-8 (LOCK) - Body ground	Always	10 kohms or higher
D37-13 (SG-2) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Compressor and Magnetic Clutch)



E152687E03

Fig. 57: Identifying Air Conditioning Lock Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1423/23 PRESSURE SENSOR CIRCUIT

DESCRIPTION

This DTC is output if refrigerant pressure on the high pressure side is extremely low (0.176 MPa (2.0 kgf/cm^2 , 28 psi) or less) or extremely high (3.03 MPa (32.0 kgf/cm^2 , 455 psi) or more). The pressure sensor, which is installed on the pipe of the high pressure side to detect refrigerant pressure, outputs a refrigerant pressure signal to the Air Conditioning amplifier. The Air Conditioning amplifier converts this signal to pressure according to the sensor characteristics to control the compressor.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area

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B1423/23	• Open or short in pressure sensor circuit • Refrigerant pressure on the high pressure side is extremely low (0.176 MPa (2.0 kgf/cm^2 , 28 psi) or less) or extremely high (3.03 MPa (32.0 kgf/cm^2 , 455 psi) or more).	• Pressure sensor • Harness or connector between pressure sensor and Air Conditioning amplifier • Air Conditioning amplifier • Expansion valve (blocked, stuck) • Condenser (blocked, deterioration of cooling capacity due to dirt) • Cooler dryer (moisture in the refrigerant cycle cannot be absorbed) • Cooling fan system (condenser cannot be cooled down) • Air Conditioning system (leaks, blocked)

WIRING DIAGRAM

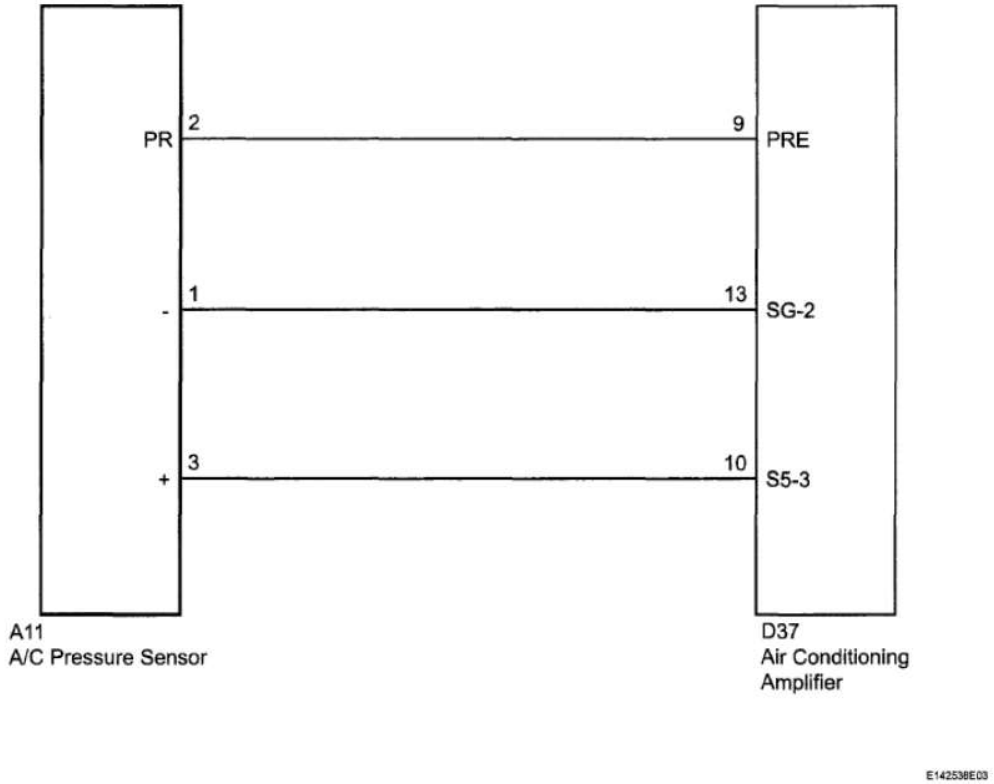


Fig. 58: Pressure Sensor Circuit - Wiring Diagram

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (POWER SOURCE CIRCUIT)**
   a. Disconnect the connector from the A/C pressure sensor.
   b. Measure the voltage according to the value(s) in the table below.

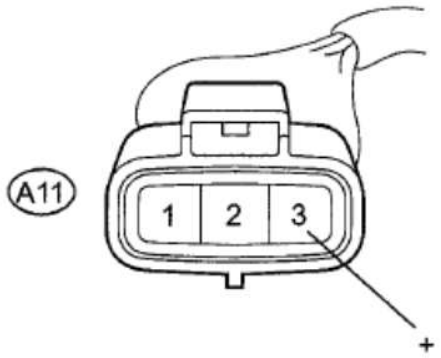
Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
A11-3 (+) - Body ground	Ignition switch on (IG)	Approx. 5 V

NG: Go to step 5

Front view of wire harness connector:
(to Air Conditioning Pressure Sensor)



H E124477E33

Fig. 59: Identifying A/C Pressure Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (GROUND CIRCUIT)**
   a. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

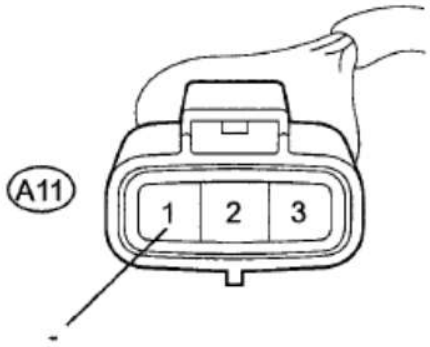
Tester Connection	Condition	Specified Condition

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A11-1 (-) - Body ground	Always	Below 1 ohms

NG: Go to step 6

Front view of wire harness connector:
(to Air Conditioning Pressure Sensor)



H E124477E34

Fig. 60: Identifying A/C Pressure Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **INSPECT A/C PRESSURE SENSOR (SENSOR SIGNAL CIRCUIT)**
   a. Reconnect the connector to the A/C pressure sensor.
   b. Remove the Air Conditioning amplifier with connectors still connected.
   c. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-9 (PRE) - Body ground	Ignition switch on (IG) (A/C: OFF)	0.5 to 4.8 V

HINT:

If the measured voltage is not within the normal range, there may be a malfunction in the Air Conditioning amplifier, A/C pressure sensor, or wire harness. It is also possible that the amount of refrigerant may not be appropriate.

NG: Go to step 7

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Component with harness connected:
(Air Conditioning Amplifier)

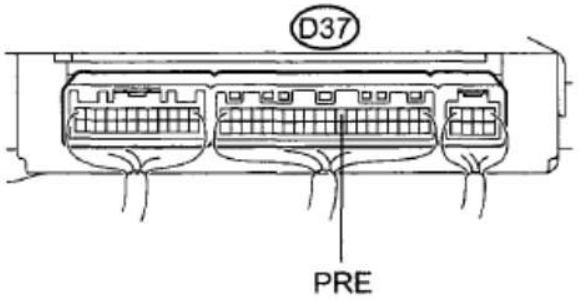


Fig. 61: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **INSPECT A/C PRESSURE SENSOR (SENSOR SIGNAL CIRCUIT)**
   a. Measure the voltage when the following conditions are satisfied.

VOLTAGE CONDITIONS CHART

Item	Condition
Vehicle Doors	Fully open
Temperature Setting	MAX COLD
Blower Speed	HI
A/C Switch	ON
R/F Switch	RECIRCULATION
Interior Temperature	25 to 35°C (77 to 95°F)
Engine Speed	2000 rpm

NOTE:

- **If refrigerant pressure on the high pressure side becomes extremely high during the inspection (if the voltage exceeds 4.8 V), the fail-safe function stops compressor operation. Therefore, measure the voltage before the fail-safe operation.**
- **It is necessary to measure the voltage for a certain amount of time (approximately 10 minutes) because the problem symptom may recur after a while.**

HINT:

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When the outside air temperature is low (below -1.5°C (29.3°F)), the compressor stops due to operation of the ambient temperature sensor and the evaporator temperature sensor to prevent the evaporator from freezing. In this case, perform the inspection in a warm indoor environment.

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

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-9 (PRE) - Body ground	Ignition switch on (IG) (A/C: ON)	0.5 to 4.8 V

Result

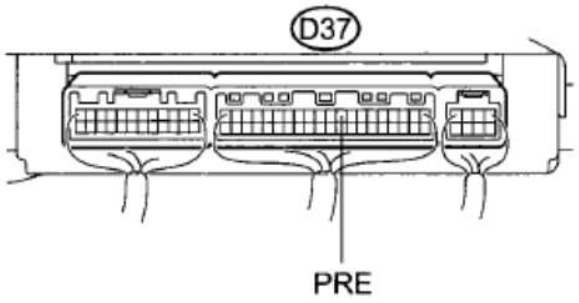
RESULT REFERENCE CHART

Result	Proceed to
OK (When troubleshooting according to DTC)	A
OK (When troubleshooting according to PROBLEM SYMPTOMS TABLE)	B
NG	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE
(See **PROBLEM SYMPTOMS TABLE**)

C: Go to step 13

Component with harness connected:
(Air Conditioning Amplifier)



H E124471E41

Fig. 62: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

A: REPAIR OR REPLACE HARNESS OR CONNECTOR

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5. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - A/C PRESSURE SENSOR)**
   a. Disconnect the connector from the Air Conditioning amplifier.

Front view of wire harness connector:
(to Air Conditioning Amplifier)

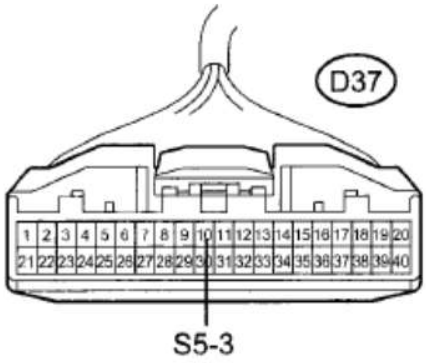


Fig. 63: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A11-3 (+) - D37-10 (S5-3)	Always	Below 1 ohms
D37-10 (S5-3) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Air Conditioning Pressure Sensor)

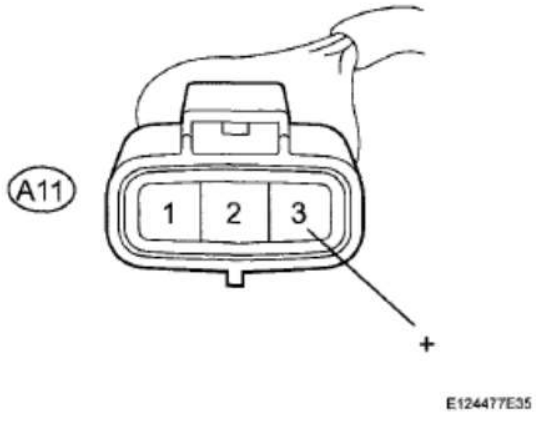


Fig. 64: Identifying A/C Pressure Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

6. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - A/C PRESSURE SENSOR)**
   a. Disconnect the connector from the Air Conditioning amplifier.

Front view of wire harness connector:
(to Air Conditioning Amplifier)

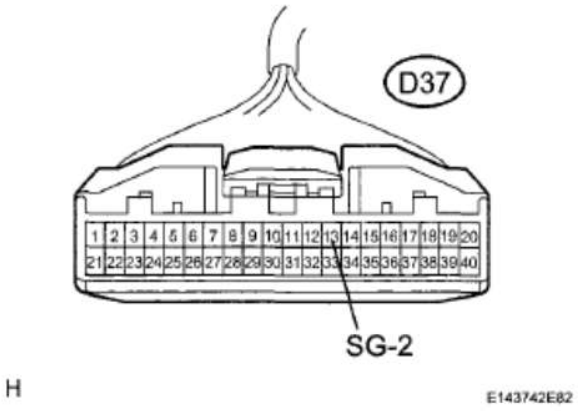


Fig. 65: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

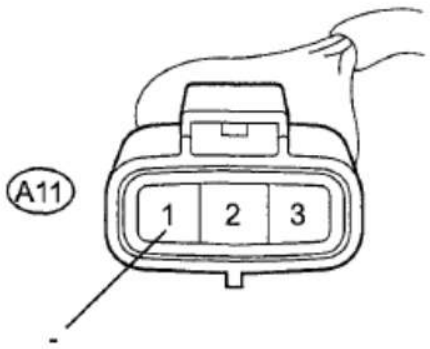
Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A11-1 (-) - D37-13 (SG-2)	Always	Below 1 ohms
D37-13 (SG-2) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Air Conditioning Pressure Sensor)



H E124477E36

Fig. 66: Identifying A/C Pressure Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

7. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - A/C PRESSURE SENSOR)**
   a. Disconnect the connector from the Air Conditioning amplifier.

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Front view of wire harness connector:
(to Air Conditioning Amplifier)

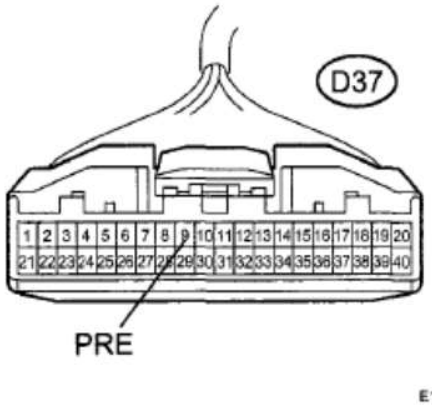


Fig. 67: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A11-2 (PR) - D37-9 (PRE)	Always	Below 1 ohms
D37-9 (PRE) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Air Conditioning Pressure Sensor)

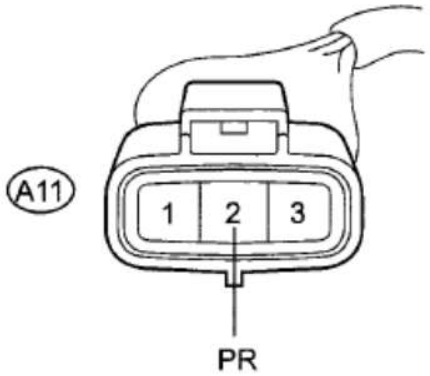


Fig. 68: Identifying A/C Pressure Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

8. **INSPECT FOR A/C SYSTEM LEAK**
   a. Install the manifold gauge set.
   b. Recover the refrigerant from the Air Conditioning system using a refrigerant recovery unit.
   c. Evacuate the Air Conditioning system and check that vacuum can be maintained in it.

OK:

Vacuum can be maintained in the Air Conditioning system.

HINT:

If vacuum cannot be maintained in the Air Conditioning system, refrigerant may be leaking from it. In this case, it is necessary to repair or replace the leaking part of the Air Conditioning system.

NG: Go to step 12

OK: Go to next step

9. **CHARGE REFRIGERANT**
   a. Add an appropriate amount of refrigerant (See **REPLACEMENT**).
10. **RECHECK DTC**
   a. Recheck for the DTC when the following conditions are satisfied.

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DTC CONDITIONS CHART

Item	Condition
Vehicle Doors	Fully open
Temperature Setting	MAX COLD
Blower Speed	HI
A/C Switch	ON
R/F Switch	RECIRCULATION
Interior Temperature	25 to 35°C (77 to 95°F)
Engine Speed	2000 rpm

NOTE: If refrigerant pressure on the high pressure side becomes high, the DTC will be set. It is necessary to measure the voltage for a certain amount of time (approximately 10 minutes) because the DTC may be set after the A/C operates for a while.

HINT:

When the outside air temperature is low (below -1.5°C (29.3°F)), the compressor stops due to operation of the ambient temperature sensor and the evaporator temperature sensor to prevent the evaporator from freezing. In this case, perform the inspection in a warm indoor environment.

Result

RESULT REFERENCE CHART

Result	Proceed to
DTC B1423 is output	A
DTC B1423 is not output	B

NOTE: If the DTC was set due to an insufficient or excessive amount of refrigerant, the problem may have been solved after performing the previous step. However, the root cause of insufficient refrigerant may be refrigerant leaks. The root cause of excessive refrigerant may be adding refrigerant when the level was insufficient. Therefore, identify and repair the area where refrigerant leaks from as necessary.

B: END

A: Go to next step

11. **INSPECT A/C PRESSURE SENSOR**
    a. Install the manifold gauge set.
    b. Disconnect the connector from the A/C pressure sensor.
    c. Connect the three 1.5 V dry cell batteries' positive (+) lead to terminal 3, and the negative (-) lead to terminal 1.

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d. Connect the voltmeter's positive (+) lead to terminal 2, and the negative (-) lead to terminal 1.
e. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
2 - 1	Refrigerant pressure: 0.39 to 3.187 MPa (57 to 463 psi)	1.0 to 4.8 V

NG: REPLACE A/C PRESSURE SENSOR (See **REFRIGERANT LINE**)

Component without harness connected:
(A/C Pressure Sensor)

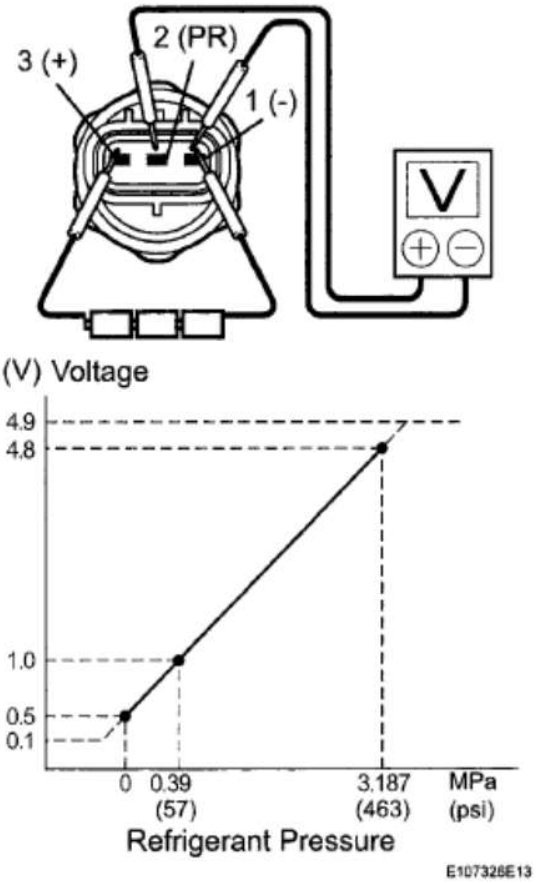


Fig. 69: Inspecting A/C Pressure Sensor Voltage
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

12. **REPAIR A/C SYSTEM LEAK**

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a. Identify the area where refrigerant leaks from (See **REFRIGERANT LINE**).
b. Repair the identified area of the Air Conditioning system.
c. Evacuate the A/C system.

NEXT: CHARGE REFRIGERANT (See **REPLACEMENT**)

13. **INSPECT COOLING FAN SYSTEM**
    a. Check if that the cooling fan operates normally.

    HINT:

    - Cooling Fan Circuit (See **COOLING FAN CIRCUIT**).

NG: REPAIR COOLING FAN SYSTEM

OK: Go to next step

14. **CHARGE REFRIGERANT**
    a. Use a refrigerant recovery unit to recover refrigerant.
    b. Evacuate the Air Conditioning system.
    c. Add an appropriate amount of refrigerant (See **REFRIGERANT LINE**).

    HINT:

    If refrigerant is added and the system has not been properly evacuated (insufficient vacuum time), moisture in the air remaining in the system will freeze in the expansion valve, blocking the flow on the high pressure side. Therefore, in order to confirm the problem, recover the refrigerant and properly evacuate the system. Add an appropriate amount of refrigerant, and check for the DTC.

15. **RECHECK DTC**
    a. Recheck for the DTC when the following conditions are satisfied.

DTC CONDITIONS CHART

Item	Condition
Vehicle Doors	Fully open
Temperature Setting	MAX COLD
Blower Speed	HI
A/C Switch	ON
R/F Switch	RECIRCULATION
Interior Temperature	25 to 35°C (77 to 95°F)
Engine Speed	2000 rpm

NOTE: If refrigerant pressure on the high pressure side becomes high, the DTC

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will be set. It is necessary to measure the voltage for a certain amount of time (approximately 10 minutes) because the DTC may be set after the Air Conditioning operates for a while.

HINT:

- When the outside air temperature is low (below -1.5°C (29.3°F)), the compressor stops due to operation of the ambient temperature sensor and the evaporator temperature sensor to prevent the evaporator from freezing. In this case, perform the inspection in a warm indoor environment.
- If refrigerant is added and the system has not been properly evacuated (insufficient vacuum time), moisture in the air remaining in the system will freeze in the expansion valve, blocking the flow on the high pressure side. Therefore, in order to confirm the problem, recover the refrigerant and properly evacuate the system. Add an appropriate amount of refrigerant, and check for the DTC. If the DTC is not output after this work, it indicates that the cooler dryer in the condenser is not able to absorb moisture in the refrigerant cycle. In this case, in order complete the repair it is necessary to replace the cooler dryer.

Result

RESULT REFERENCE CHART

Result	Proceed to
DTC B1423 is output	A
DTC B1423 is not output	B

B: REPLACE CONDENSER WITH COOLER DRYER (See **DISASSEMBLY**)

16. **REPLACE EXPANSION VALVE**
    a. Replace the expansion valve with a normal one (See **REASSEMBLY**).

       HINT:

       Replace the expansion valve with a normal one because the expansion valve is either stuck or clogged.

       NEXT: CHARGE REFRIGERANT

17. **CHARGE REFRIGERANT**
    a. Add an appropriate amount of refrigerant (See **REFRIGERANT LINE**).
18. **RECHECK DTC**
    a. Recheck for the DTC when the following conditions are satisfied.

DTC CONDITIONS CHART

Item	Condition
Vehicle Doors	Fully open
Temperature Setting	MAX COLD

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Blower Speed	HI
A/C Switch	ON
R/F Switch	RECIRCULATE
Interior Temperature	25 to 35°C (77 to 95°F)
Engine Speed	2000 rpm

NOTE: If refrigerant pressure on the high pressure side becomes high, the DTC will be set. It is necessary to measure the voltage for a certain amount of time (approximately 10 minutes) because the DTC may be set after the Air Conditioning operates for a while.

HINT:

- When the outside air temperature is low (below -1.5°C (29.3°F)), the compressor stops due to operation of the ambient temperature sensor and the evaporator temperature sensor to prevent the evaporator from freezing. In this case, perform the inspection in a warm indoor environment.
- If refrigerant pressure is not normal after replacing the expansion valve with a normal one, the condenser or pipes may be clogged due to dirt, dust or other foreign matter. In this case, clean or replace the condenser or pipes.

Result

RESULT REFERENCE CHART

Result	Proceed to
DTC B1423 is not output	A
DTC B1423 is output	B

B: CLEAN ON REPLACE CONDENSER OR PIPE (See **DISASSEMBLY**)

A: END

DTC B1424/24 SOLAR SENSOR CIRCUIT (DRIVER SIDE)

DESCRIPTION

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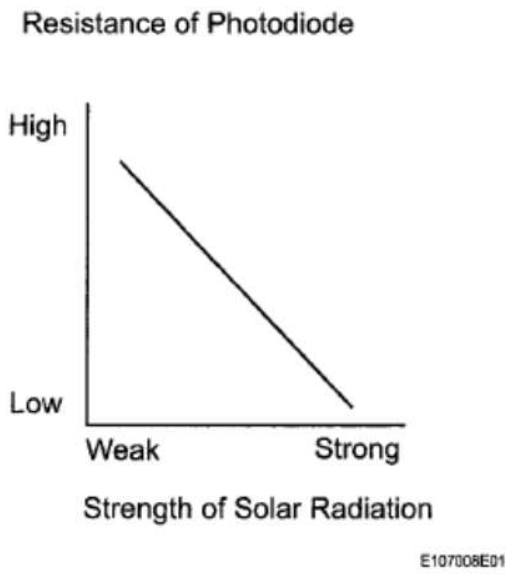


Fig. 70: Solar Radiation And Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

The solar sensor, which is installed on the upper side of the instrument panel, detects sunlight and controls the air conditioning AUTO mode. The output voltage from the solar sensor varies in accordance with the amount of sunlight. When the sunlight increases, the output voltage increases. As the sunlight decreases, the output voltage decreases. The air conditioning amplifier detects changes in the output voltage from the solar sensor.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1424/24	Open or short in driver side solar sensor circuit	• Solar sensor • Wire harness between solar sensor and air conditioning amplifier • Wire harness between solar sensor and main body ECU • Air conditioning amplifier

WIRING DIAGRAM

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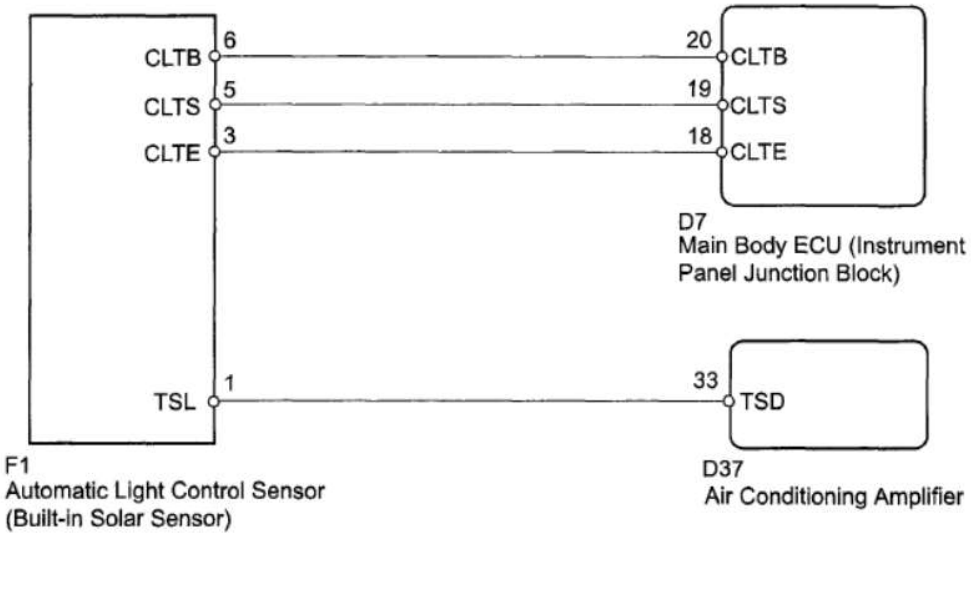


Fig. 71: Solar Sensor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the item below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Solar Sensor (D side)	Driver side solar sensor/Min.: 0, Max.: 255	Driver side solar sensor value increases as brightness increases	-

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B

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OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **CHECK SOLAR SENSOR (SENSOR POWER INPUT)**
   a. Disconnect the F1 solar sensor connector.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
F1-6 (CLTB) - F1-3 (CLTE)	Ignition switch off	Below 1 V
F1-6 (CLTB) - F1-3 (CLTE)	Ignition switch on (IG)	11 to 14 V

OK: Go to step 4

Front view of wire harness connector:
(to Solar Sensor)

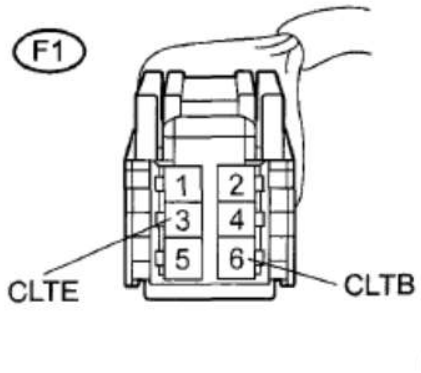


Fig. 72: Identifying F1 Solar Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NG: Go to next step

3. **CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - SOLAR SENSOR)**

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a. Disconnect the D7 in body ECU connector.
b. Disconnect the F1 solar sensor connector.
c. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

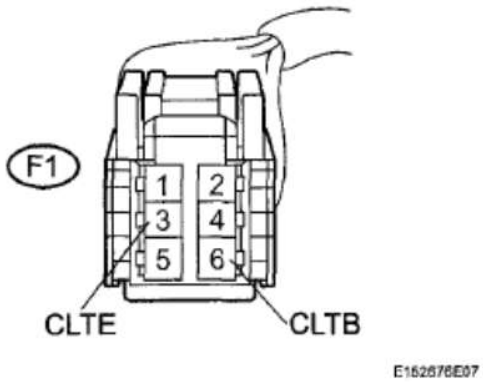
Tester Connection	Condition	Specified Condition
D7-20 (CLTB) - F1-6 (CLTB)	Always	Below 1 ohms
D7-18 (CLTE) - F1-3 (CLTE)	Always	Below 1 ohms
D7-20 (CLTB) - Body ground	Always	10 kohms or higher
D7-18 (CLTE) -Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Main Body ECU)



Front view of wire harness connector:
(to Solar Sensor)



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Fig. 73: Identifying D7 In Body ECU Connector And F1 Solar Sensor Connector Terminals

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE MAIN BODY ECU (INSTRUMENT PANEL JUNCTION BLOCK)

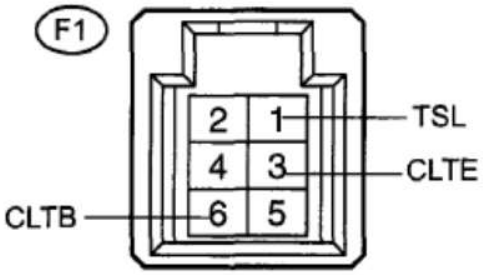
4. **CHECK SOLAR SENSOR**
   a. Remove the solar sensor (See **INSPECTION**) with its connector still connected.
   b. Connect the battery's positive (+) lead to terminal 6 (CLTB) and the negative (-) lead to terminal 3 (CLTE) of the solar sensor.
   c. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
F1-1 (TSL) - F1-3 (CLTE)	Sensor is subjected to electric light	0.8 to 4.3 V
F1-1 (TSL) - F1-3 (CLTE)	Sensor is covered with a cloth	Below 0.8 V

Component with harness connected:
(Solar Sensor)



P E109215E42

Fig. 74: Identifying F1 Solar Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE:

- **The connection procedure for using a digital tester such as a TOYOTA electrical tester is shown above. When using an analog tester, connect the negative (-) lead to terminal 6 and positive (+) lead to terminal 3 of the solar sensor.**
- **While using the battery during inspection, do not bring the positive and negative tester probes too close to each other as a short circuit may occur.**

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HINT:

- Use an incandescent light for inspection. Bring it within about 30 cm (11.8 in.) of the solar sensor.
- As the inspection light is moved away from the sensor, the voltage increases.

NG: REPLACE SOLAR SENSOR (See **INSPECTION**)

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (SOLAR SENSOR - A/C AMPLIFIER)**
   a. Disconnect the F1 solar sensor connector.
   b. Disconnect the D37 air conditioning amplifier connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D37-33 (TSD) - F1-1 (TSL)	Always	Below 1 ohms
D37-33 (TSD) - Body ground	Always	10 kohms or higher

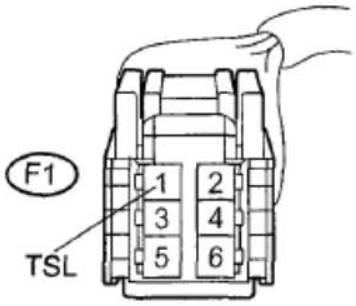
NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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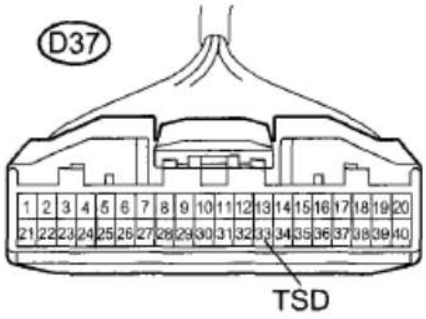
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Front view of wire harness connector:
(to Solar Sensor)



Front view of wire harness connector:
(to Air Conditioning Amplifier)



E152677E10

Fig. 75: Identifying F1 Solar Sensor Connector And D37 Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1441/41 AIR MIX DAMPER CONTROL SERVO MOTOR CIRCUIT (PASSENGER SIDE)

DESCRIPTION

The air mix control servo motor sends pulse signals to indicate the damper position to the air conditioning amplifier. The air conditioning amplifier activates the motor (normal or reverse) based on these signals to move the air mix damper (front passenger side) to the appropriate position. This adjusts the amount of air passing through the heater core after passing the evaporator and controls the temperature of the blown air.

HINT:

Confirm that there are no mechanical problems because this DTC can be set if either a damper link or damper is

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mechanically locked.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1441/41	Air mix damper position does not change even if air conditioning amplifier operates air mix control servo motor	• Air mix control servo motor • Air conditioning harness • Air conditioning amplifier

WIRING DIAGRAM

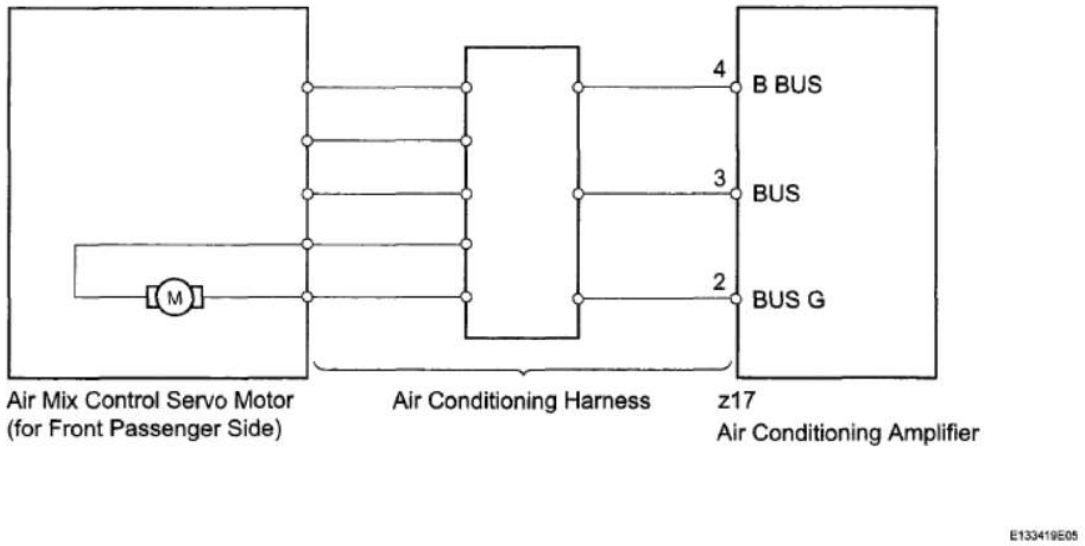


Fig. 76: Air Mix Damper Control Servo Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch ON.
   c. Select the items below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
		MAX. COLD: 105	

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Air Mix Sensor Targ Pulse(P)	Passenger side air mix control servo motor target pulse/Min.: 0, Max.: 255	(pulse) MAX. COLD: 7 (pulse)	-

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **REPLACE AIR MIX CONTROL SERVO MOTOR**
   a. Replace the air mix control servo motor (See **INSTALLATION**).
3. **CHECK DTC OUTPUT**
   a. Clear the DTC (See **DIAGNOSIS SYSTEM**).
   b. Check for DTC (See **DIAGNOSIS SYSTEM**).

OK:

DTC B1441/41 is not output.

NG: REPAIR OR REPLACE AIR CONDITIONING HARNESS

OK: END (AIR MIX CONTROL SERVO MOTOR IS DEFECTIVE)

DTC B1442/42 AIR INLET DAMPER CONTROL SERVO MOTOR CIRCUIT

DESCRIPTION

The air inlet control servo motor sends pulse signals to indicate the damper position to the air conditioning amplifier. The air conditioning amplifier activates the motor (normal or reverse) based on these signals to move the air inlet control damper to the appropriate position, which controls the air inlet modes (FRESH, FRESH/RECIRCULATION and RECIRCULATION).

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HINT:

Confirm that there are no mechanical problems because this DTC can be set if either a damper link or damper is mechanically locked.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1442/42	Air inlet damper position does not change even if air conditioning amplifier operates air inlet damper control servo motor	• Air inlet control servo motor • Air conditioning harness • Air conditioning amplifier

WIRING DIAGRAM

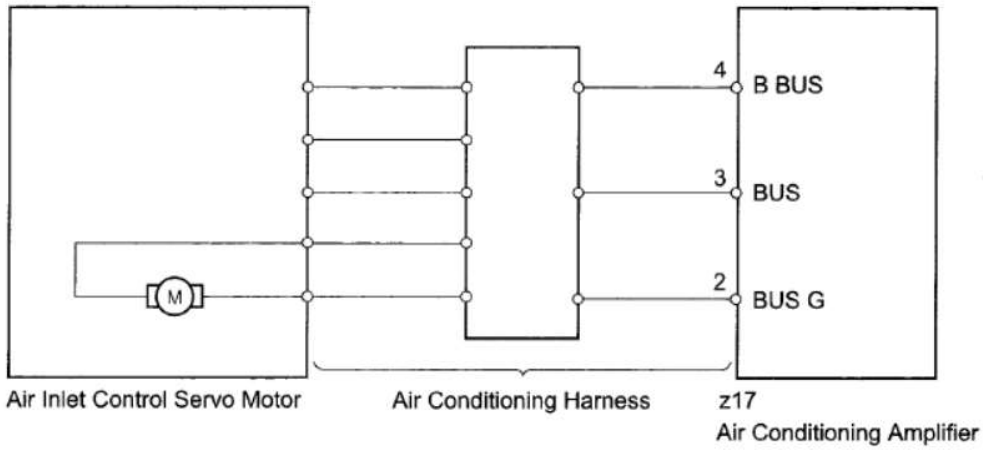


Fig. 77: Air Inlet Damper Control Servo Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the items below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Air Inlet Damper Targ Pulse	Air inlet control servo motor target pulse/Min.: 0, Max.: 255	RECIRCULATION: 7 (pulse) FRESH: 28 (pulse)	-

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **REPLACE AIR INLET CONTROL SERVO MOTOR**
   a. Replace the air inlet control servo motor.
3. **CHECK DTC OUTPUT**
   a. Clear the DTC (See **DIAGNOSIS SYSTEM**).
   b. Check for DTC (See **DIAGNOSIS SYSTEM**).

OK:

DTC B1442/42 is not output.

NG: REPAIR OR REPLACE AIR CONDITIONING HARNESS

OK: END (AIR INLET CONTROL SERVO MOTOR IS DEFECTIVE)

DTC B1443/43 AIR OUTLET DAMPER CONTROL SERVO MOTOR CIRCUIT

DESCRIPTION

The air outlet control servo motor sends pulse signals to indicate the damper position to the air conditioning amplifier. The air conditioning amplifier activates the motor (normal or reverse) based on these signals to move the mode damper to the appropriate position, which controls the air outlet modes.

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HINT:

Confirm that there are no mechanical problems because this DTC can be set if either a damper link or damper is mechanically locked.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1443/43	Air outlet damper position does not change even if air conditioning amplifier operates air outlet control servo motor	• Air outlet control servo motor • Air conditioning harness • Air conditioning amplifier

WIRING DIAGRAM

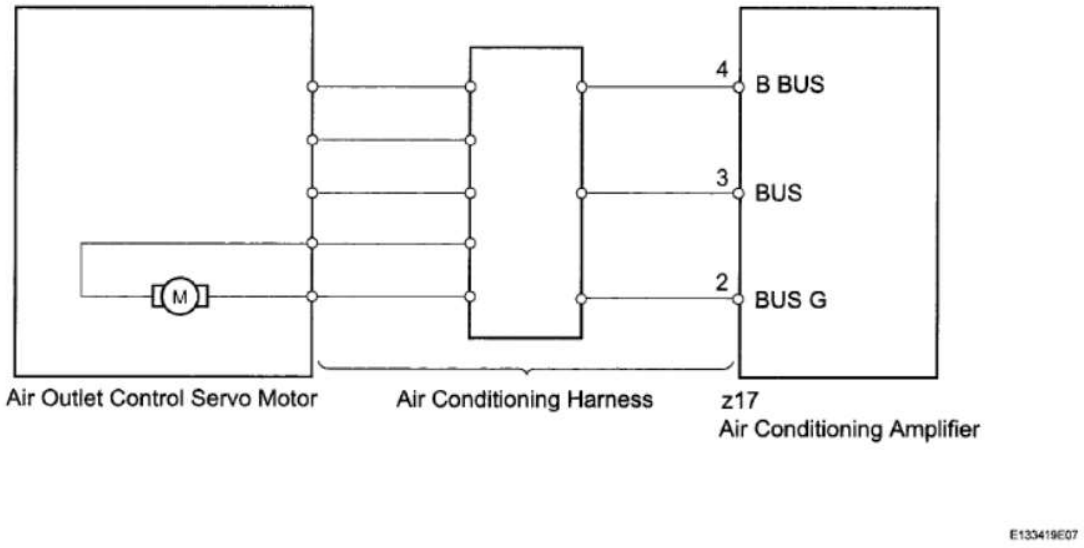


Fig. 78: Air Outlet Damper Control Servo Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the items below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Air Outlet Servo Pulse(D)	Air outlet control servo motor target pulse/Min.: 0, Max.: 255	FACE: 8 (pulse) B/L: 30 (pulse) FOOT: 67 (pulse) FOOT/DEF: 80 (pulse) DEF: 97 (pulse)	-

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **REPLACE AIR OUTLET CONTROL SERVO MOTOR**
   a. Replace the air outlet control servo motor.
3. **CHECK DTC OUTPUT**
   a. Clear the DTC (See **DIAGNOSIS SYSTEM**).
   b. Check for DTC (See **DIAGNOSIS SYSTEM**).

OK:

DTC B1443/43 is not output.

NG: REPAIR OR REPLACE AIR CONDITIONING HARNESS

OK: END (AIR OUTLET CONTROL SERVO MOTOR IS DEFECTIVE)

DTC B1446/46 AIR MIX DAMPER CONTROL SERVO MOTOR CIRCUIT (DRIVER SIDE)

DESCRIPTION

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The air mix control servo motor sends pulse signals to indicate the damper position to the air conditioning amplifier. The air conditioning amplifier activates the motor (normal or reverse) based on these signals to move the air mix damper (driver side) to the appropriate position. This adjusts the amount of air passing through the heater core after passing the evaporator and controls the temperature of the blown air.

HINT:

Confirm that there are no mechanical problems because this DTC can be set if either a damper link or damper is mechanically locked.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1446/46	Air mix damper position does not change even if air conditioning amplifier operates air mix damper control servo motor	• Air mix control servo motor • Air conditioning harness • Air conditioning amplifier

WIRING DIAGRAM

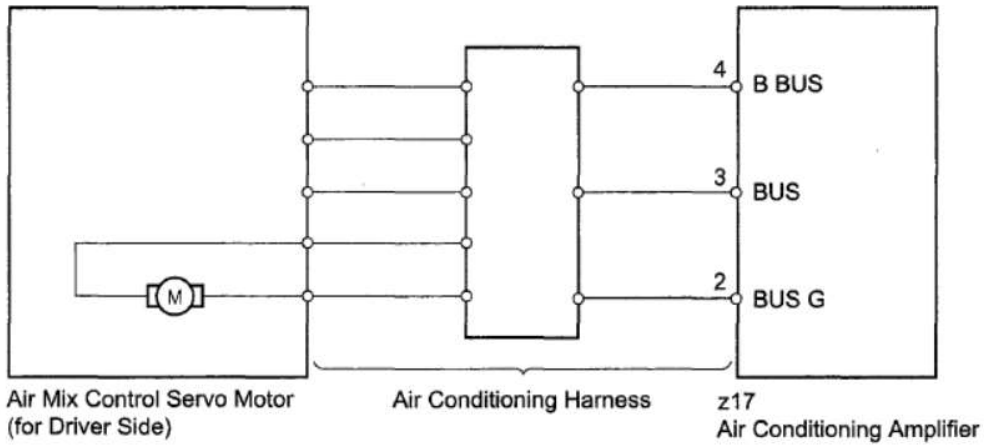


Fig. 79: Air Mix Damper Control Servo Motor Circuit (Driver Side) - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.

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c. Select the items below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Air Mix Sensor Targ Pulse(D)	Driver side air mix control servo motor target pulse/Min.: 0, Max.: 255	MAX. COLD: 5 (pulse) MAX. HOT: 103 ()pulse	-

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **REPLACE AIR MIX CONTROL SERVO MOTOR**
   a. Replace the air mix control servo motor (See **INSTALLATION**).
3. **CHECK DTC OUTPUT**
   a. Clear the DTC (See **DIAGNOSIS SYSTEM**).
   b. Check for DTC (See **DIAGNOSIS SYSTEM**).

OK:

DTC B1446/46 is not output.

NG: REPAIR OR REPLACE AIR CONDITIONING HARNESS

OK: END (AIR MIX CONTROL SERVO MOTOR IS DEFECTIVE)

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DTC B1447/47 REAR AIR MIX DAMPER CONTROL SERVO MOTOR CIRCUIT

DESCRIPTION

The rear air mix control servo motor sends pulse signals to indicate the damper position to the air conditioning amplifier. The air conditioning amplifier activates the motor (normal or reverse) based on these signals to move the rear air mix damper to the appropriate position. This adjusts the amount of air passing through the heater core after passing the evaporator and controls the temperature of the blown air.

HINT:

Confirm that there are no mechanical problems because this DTC can be set if either a damper link or damper is mechanically locked.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1447/47	Rear air mix damper position does not change even if air conditioning amplifier operates rear air mix control servo motor	• Rear air mix control servo motor • Rear air conditioning harness • Wire harness between rear air conditioning harness and air conditioning amplifier • Air conditioning amplifier

WIRING DIAGRAM

w/ Rear Air Conditioning:

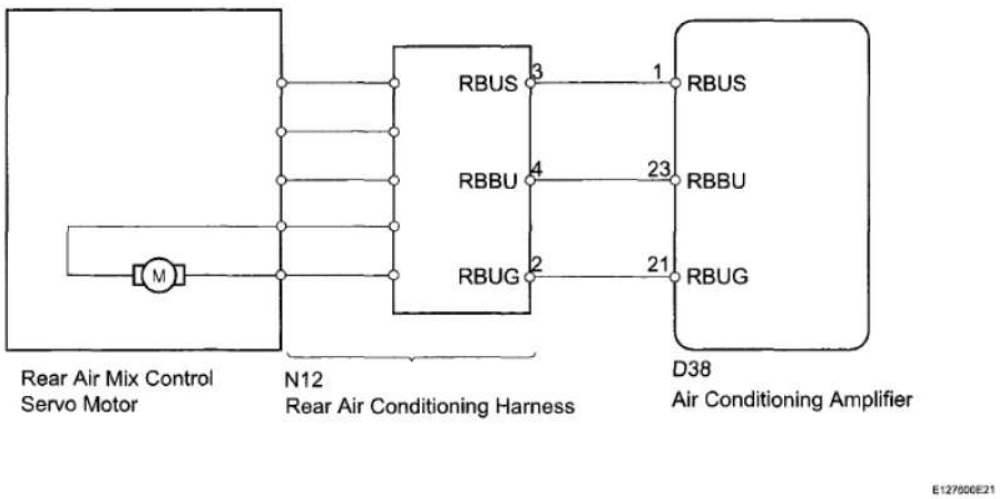


Fig. 80: Rear Air Mix Damper Control Servo Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

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1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the item below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Air Mix Servo Targ Pulse(R)	Rear air mix control servo motor target pulse/Min.: 0, Max.: 255	MAX. COLD: 9 (pulse) MAX. HOT: 54 (pulse)	-

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **CHECK HARNESS AND CONNECTOR (REAR AIR CONDITIONING HARNESS - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the N12 rear air conditioning harness connector.
   b. Disconnect the D38 amplifier connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
N12-2 (RBUG) - D38-21 (RBUG)	Always	Below 1 ohms
N12-3 (RBUS) - D38-1 (RBUS)	Always	Below 1 ohms

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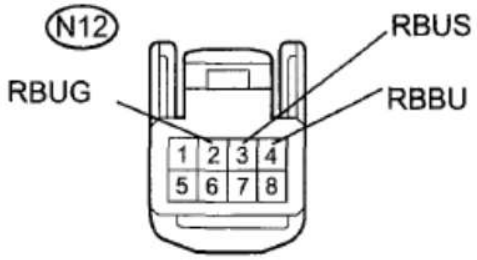
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N12-4 (RBBU) - D38-23 (RBBU)	Always	Below 1 ohms
D38-21 (RBUG) - Body ground	Always	10 kohms or higher
D38-1 (RBUS) - Body ground	Always	10 kohms or higher
D38-23 (RBBU) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Rear Air Conditioning Harness)



Front view of wire harness connector:
(to Air Conditioning Amplifier)

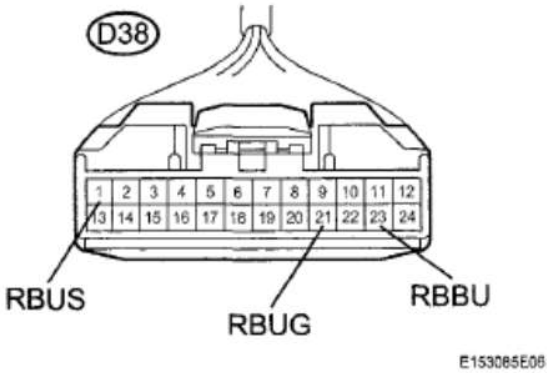


Fig. 81: Identifying N12 Rear Air Conditioning Harness Connector And D38 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **REPLACE REAR AIR MIX CONTROL SERVO MOTOR**
   a. Replace the rear air mix control servo motor (See **REMOVAL**).
4. **CHECK DTC OUTPUT**

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a. Clear the DTC (See **DIAGNOSIS SYSTEM**).
b. Check for DTC (See **DIAGNOSIS SYSTEM**).

OK:

DTC B1447/47 is not output.

NG: REPAIR OR REPLACE REAR AIR CONDITIONING HARNESS

OK: END (REAR AIR MIX CONTROL SERVO MOTOR IS DEFECTIVE)

DTC B1449/49 REAR AIR OUTLET DAMPER CONTROL SERVO MOTOR CIRCUIT

DESCRIPTION

The rear outlet control servo motor sends pulse signals to indicate the damper position to the air conditioning amplifier. The air conditioning amplifier activates the motor (normal or reverse) based on these signals to move the rear outlet damper to the appropriate position, which controls the air outlet modes.

HINT:

Confirm that there are no mechanical problems because this DTC can be set if either a damper link or damper is mechanically locked.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1449/49	Rear air outlet damper position does not change even if air conditioning amplifier operates rear air outlet damper control servo motor	• Rear air outlet control servo motor • Rear air conditioning harness • Wire harness between rear air conditioning harness and air conditioning amplifier • Air conditioning amplifier

WIRING DIAGRAM

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w/ Rear Air Conditioning:

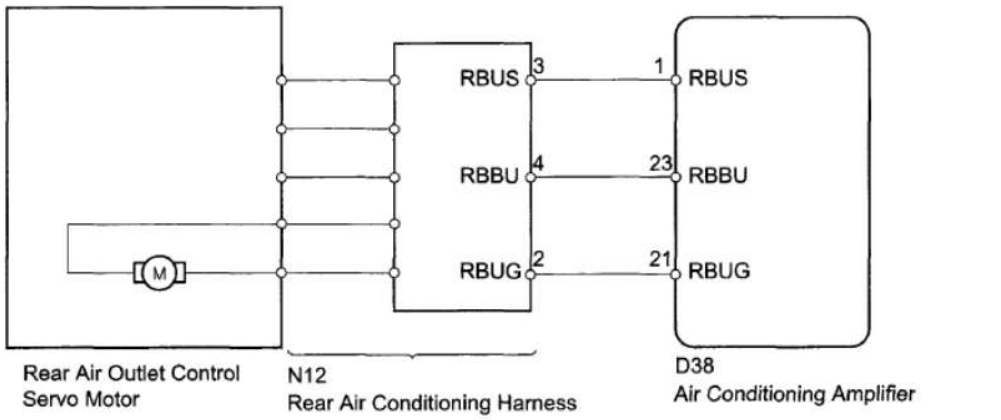


Fig. 82: Rear Air Outlet Damper Control Servo Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the items below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Air Outlet Servo Pulse(R)	Rear air outlet control servo motor target pulse/Min.: 0, Max.: 255	Rr FACE: 83 (pulse) Rr B/L: 38 (pulse) Rr FOOT: 7 (pulse)	-

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

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Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **CHECK HARNESS AND CONNECTOR (REAR AIR CONDITIONING HARNESS - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the N12 rear air conditioning harness connector.
   b. Disconnect the D38 amplifier connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard resistance

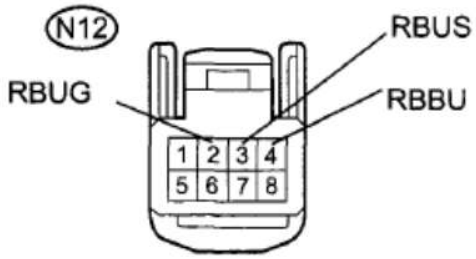
STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
N12-2 (RBUG) -D38-21 (RBUG)	Always	Below 1 ohms
N12-3 (RBUS) - D38-1 (RBUS)	Always	Below 1 ohms
N12-4 (RBBU) - D38-23 (RBBU)	Always	Below 1 ohms
D38-21 (RBUG) - Body ground	Always	10 kohms or higher
D38-1 (RBUS) - Body ground	Always	10 kohms or higher
D38-23 (RBBU) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Rear Air Conditioning Harness)



Front view of wire harness connector:
(to Air Conditioning Amplifier)

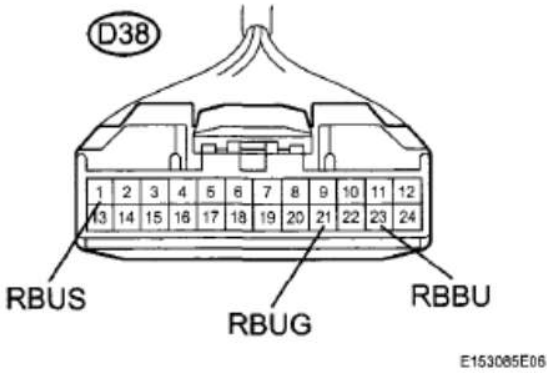


Fig. 83: Identifying N12 Rear Air Conditioning Harness Connector And D38 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **REPLACE REAR AIR OUTLET CONTROL SERVO MOTOR**
   a. Replace the rear air outlet control servo motor.
4. **CHECK DTC OUTPUT**
   a. Clear the DTC (See **DIAGNOSIS SYSTEM**).
   b. Check for DTC (See **DIAGNOSIS SYSTEM**).

OK:

DTC B1449/49 is not output.

NG: REPAIR OR REPLACE REAR AIR CONDITIONING HARNESS

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OK: END (REAR AIR OUTLET CONTROL SERVO MOTOR IS DEFECTIVE)

DTC B1451/51 COMPRESSOR SOLENOID CIRCUIT

DESCRIPTION

In this circuit, the compressor receives a refrigerant compression demand signal from the air conditioning amplifier.

Based on this signal, the compressor changes the degree of refrigerant compression.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1451/51	Open or short in solenoid of externally changeable compressor circuit	• Compressor and magnetic clutch • Wire harness between air conditioning amplifier and compressor and pulley • Air conditioning amplifier

WIRING DIAGRAM

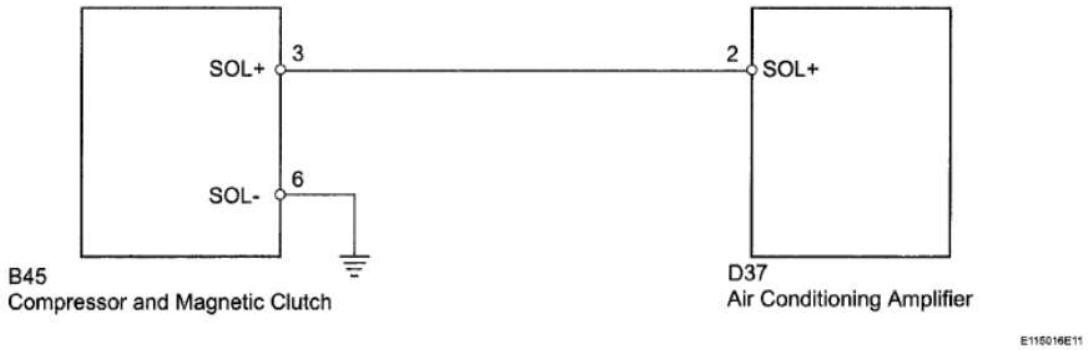


Fig. 84: Compressor Solenoid Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the items below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note

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Regulator Control Current	Regulator control current/Min.: 0A Max.: 0.997 A	Value changes between 0 A and 0.997 A in accordance with compressor operation	-

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **INSPECT COMPRESSOR AND MAGNETIC CLUTCH**
   a. Disconnect the compressor and magnetic clutch connector.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
3-6	25°C (77°F)	10.1 to 11.1 ohms

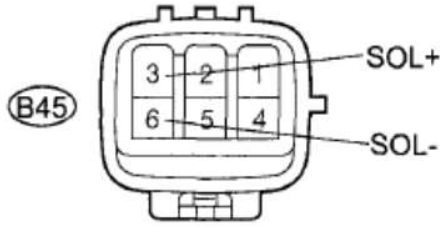
NG: REPLACE COMPRESSOR AND MAGNETIC CLUTCH (See **DISASSEMBLY**)

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Component without harness connected:
(Compressor and Magnetic Clutch)



E152688E04

Fig. 85: Identifying Compressor And Magnetic Clutch Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (COMPRESSOR AND MAGNETIC CLUTCH - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the B45 compressor and magnetic clutch connector.
   b. Disconnect the D37 amplifier connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B45-3 (SOL+) - D37-2 (SOL+)	Always	Below 1 ohms
B45-3 (SOL+) - Body Ground	Always	1 Mohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Compressor and Magnetic Clutch)



Front view of wire harness connector:
(to Air Conditioning Amplifier)

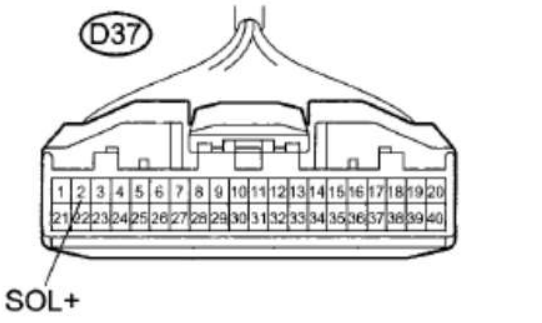


Fig. 86: Identifying B45 Compressor And Magnetic Clutch Connector And D37 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (COMPRESSOR AND MAGNETIC CLUTCH - BODY GROUND)**
   a. Disconnect the B45 compressor and magnetic clutch connector.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B45-6 (SOL-) - Body Ground	Always	Below 1 ohms

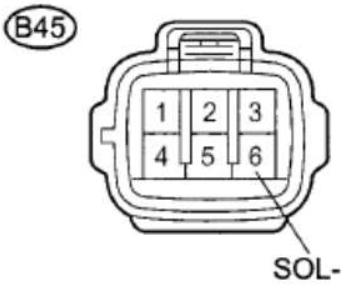
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NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Compressor and Magnetic Clutch)



E152687E05

Fig. 87: Identifying B45 Compressor And Magnetic Clutch Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1497/97 BUS IC COMMUNICATION MALFUNCTION

DESCRIPTION

The air conditioning harness connects the air conditioning amplifier and the servos. The air conditioning amplifier supplies power and sends operation instructions to each servo through the air conditioning harness. Each servo sends damper position information to the air conditioning amplifier.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1497/97	Communication line error or open	• Air conditioning harness • Air conditioning amplifier

WIRING DIAGRAM

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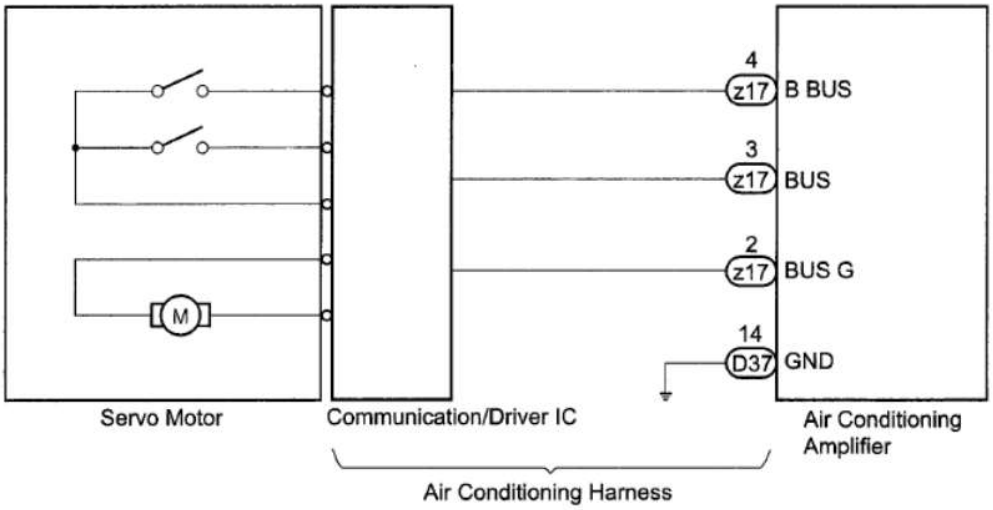


Fig. 88: BUS IC Communication - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK AIR CONDITIONING AMPLIFIER**
   a. Remove the air conditioning amplifier (See **REMOVAL**) with its connectors still connected.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
Z17-2 (BUS G) - Body ground	Always	Below 1 ohms

NG: CHECK GROUND LINE AND AIR CONDITIONING AMPLIFIER

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Component with harness connected:
(Air Conditioning Amplifier)

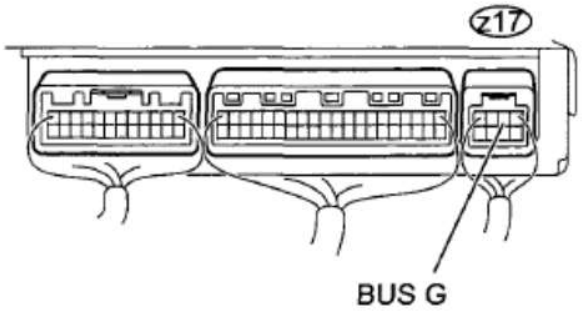


Fig. 89: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

2. **CHECK AIR CONDITIONING AMPLIFIER**
   a. Remove the air conditioning amplifier (See **REMOVAL**) with its connectors still connected.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
z17-2 (BUS G) - z17-4 (B BUS)	Ignition switch on (IG)	11 to 14 V
217-2 (BUS G) - z17-3 (BUS)	Ignition switch on (IG)	Pulse generation

NG: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

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Component with harness connected:
(Air Conditioning Amplifier)

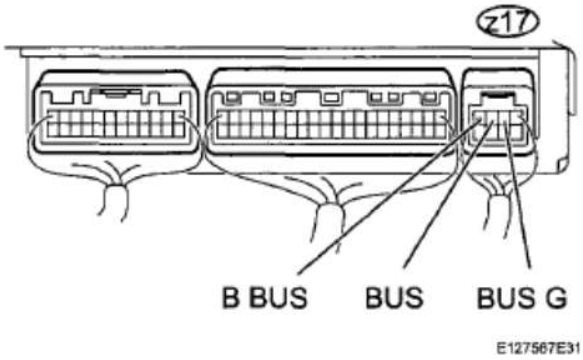


Fig. 90: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING HARNESS ASSEMBLY

DTC B1499/99 MULTIPLEX COMMUNICATION CIRCUIT

DESCRIPTION

The air conditioning amplifier communicates data with the ECM and combination meter through the CAN communication system.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1499/99	Open in CAN communication line	• Air conditioning amplifier • ECM • Combination meter • CAN communication line

WIRING DIAGRAM

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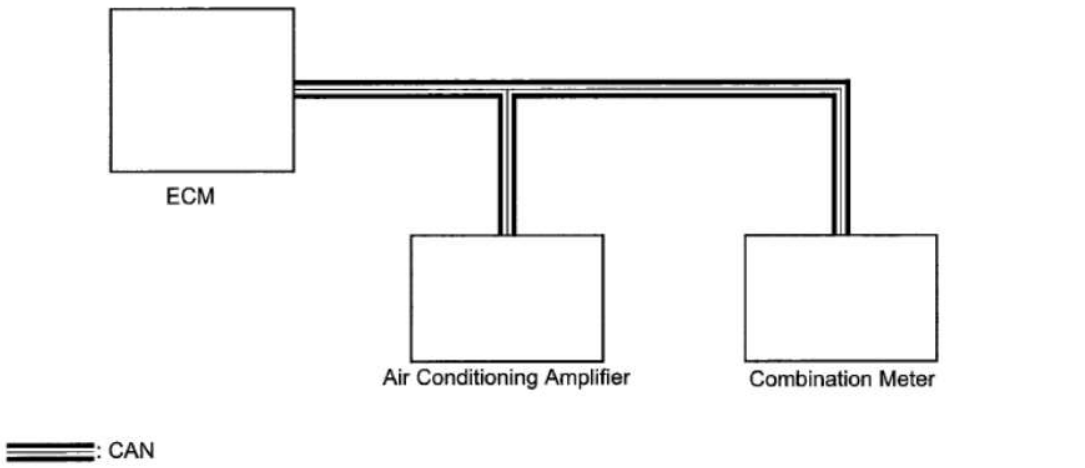


Fig. 91: Multiplex Communication Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK DTC OUTPUT**
   a. Clear the DTC (See **DIAGNOSIS SYSTEM**).
   b. Check for DTC (See **DIAGNOSIS SYSTEM**).

   OK:

   DTC B1499/99 is not output

   NG: GO TO CAN COMMUNICATION SYSTEM (See **HOW TO PROCEED WITH TROUBLESHOOTING**)

   OK: USE SIMULATION METHOD TO CHECK (See **HOW TO PROCEED WITH TROUBLESHOOTING**)

BLOWER MOTOR CIRCUIT

DESCRIPTION

The blower motor is operated by signals from the air conditioning amplifier. Blower motor speed signals are transmitted in accordance with changes in the duty ratio.

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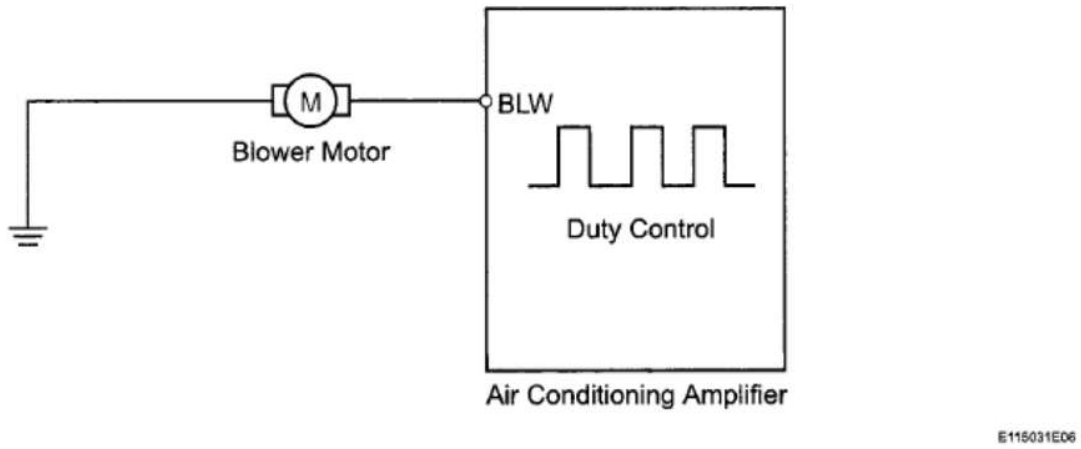


Fig. 92: Identifying Blower Motor Circuit
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

WIRING DIAGRAM

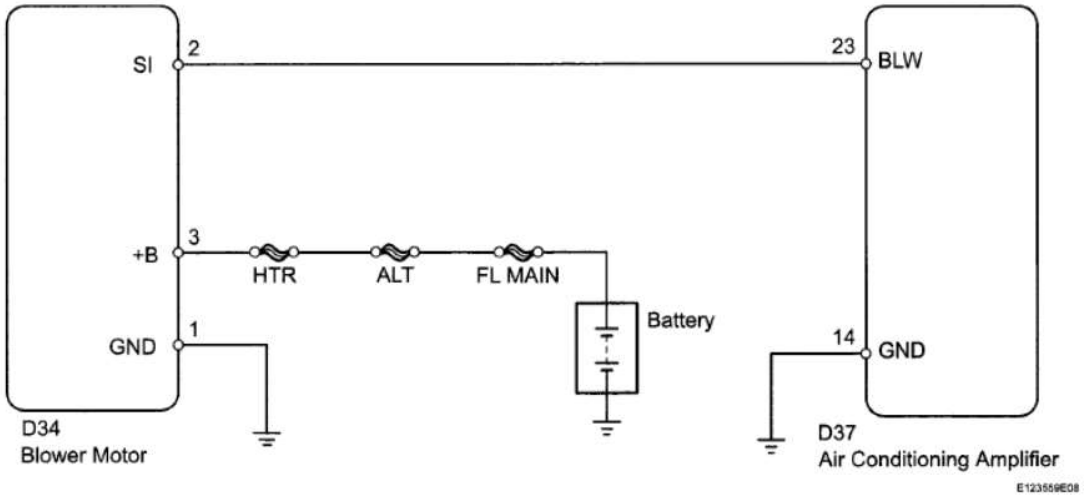


Fig. 93: Blower Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **PERFORM ACTIVE TEST USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the item below in the Active Test, and then check that the blower motor operates.

Active Test/Air Conditioner

ACTIVE TEST/AIR CONDITIONER REFERENCE CHART

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Tester Display	Test Part	Control Range	Diagnostic Note
Blower Motor	Blower motor	Min.: 0, Max.: 31	-

Result

RESULT REFERENCE CHART

Result	Proceed to
NG (blower motor does not operate)	A
NG (blower motor operates but does not change speed)	B
OK	C

B: Go to step 5

C: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE
(See **PROBLEM SYMPTOMS TABLE**)

A: Go to next step

2. **INSPECT FUSE (HTR-H)**
   a. Remove the HTR-H fuse from the main body ECU.
   b. Measure the resistance of the HTR-H fuse.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
HTR-H	Always	Below 1 ohms

NG: REPLACE FUSE

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (BLOWER MOTOR - BODY GROUND)**
   a. Disconnect the D34 motor connector.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D34-1 (GND) - Body ground	Always	Below 1 ohms

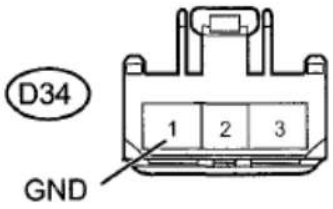
NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Blower Motor)



H E118959E17

Fig. 94: Identifying D34 Motor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (BLOWER MOTOR - BATTERY)**
   a. Disconnect the D34 motor connector.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D34-3 (+B) - Body ground	Always	11 to 14 V

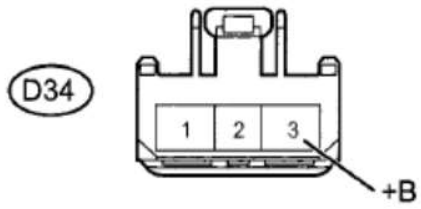
NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Blower Motor)



H

E115959E18

Fig. 95: Identifying D34 Motor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BODY GROUND)**
   a. Disconnect the D37 amplifier connector.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-23 (BLW) - D37-14 (GND)	Ignition switch on (IG) Blower switch OFF	4.5 to 5.5 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Air Conditioning Amplifier)

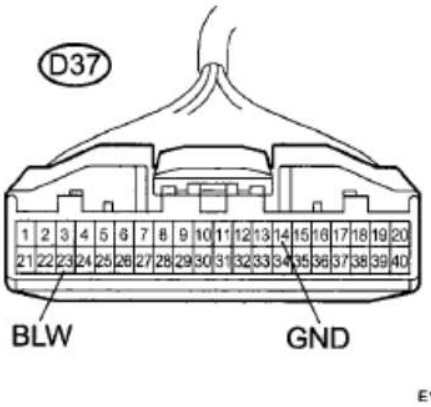


Fig. 96: Identifying D37 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

6. **CHECK AIR CONDITIONING AMPLIFIER**
   a. Remove the air conditioning amplifier with its connectors still connected.
   b. Check the waveform of the amplifier connector.

OK:

Waveform is as shown in the illustration.

HINT:

The waveform varies with the blower level.

WAVEFORM REFERENCE CHART

Item	Content
Tester Connection	BLW (D37-23) - GND (D37-14)
Tool Setting	1 V/DIV., 500 µsec./DIV.
Condition	Ignition switch on (IG) Blower switch LO

NG: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

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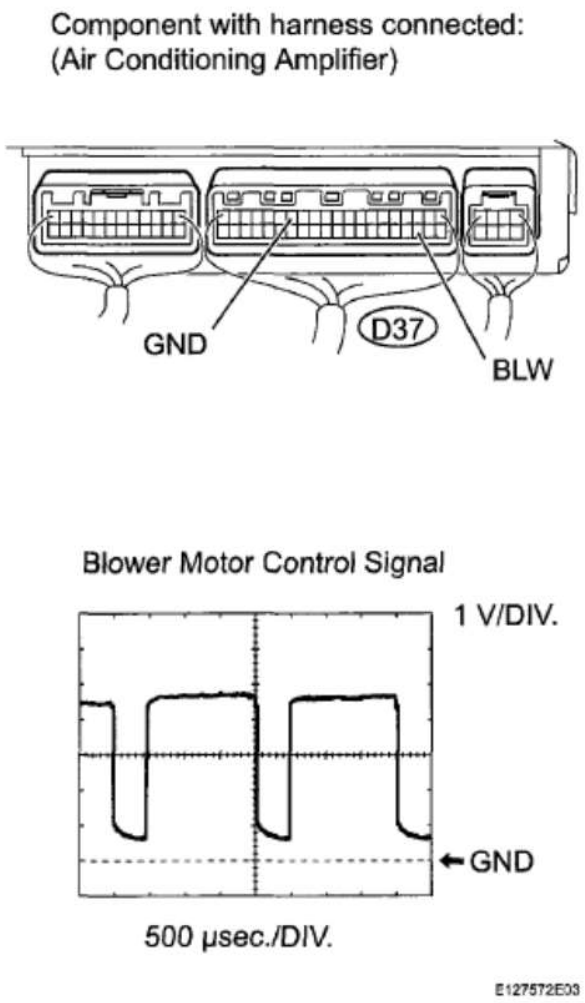


Fig. 97: Identifying D37 Amplifier Connector Terminals And Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE BLOWER W/ FAN MOTOR SUB-ASSEMBLY (See **FRONT BLOWER MOTOR**)

HEATER CONTROL PANEL POWER SOURCE CIRCUIT

DESCRIPTION

Battery voltage is supplied to the heater control panel (A/C control assembly) through the A/C No. 2 fuse.

WIRING DIAGRAM

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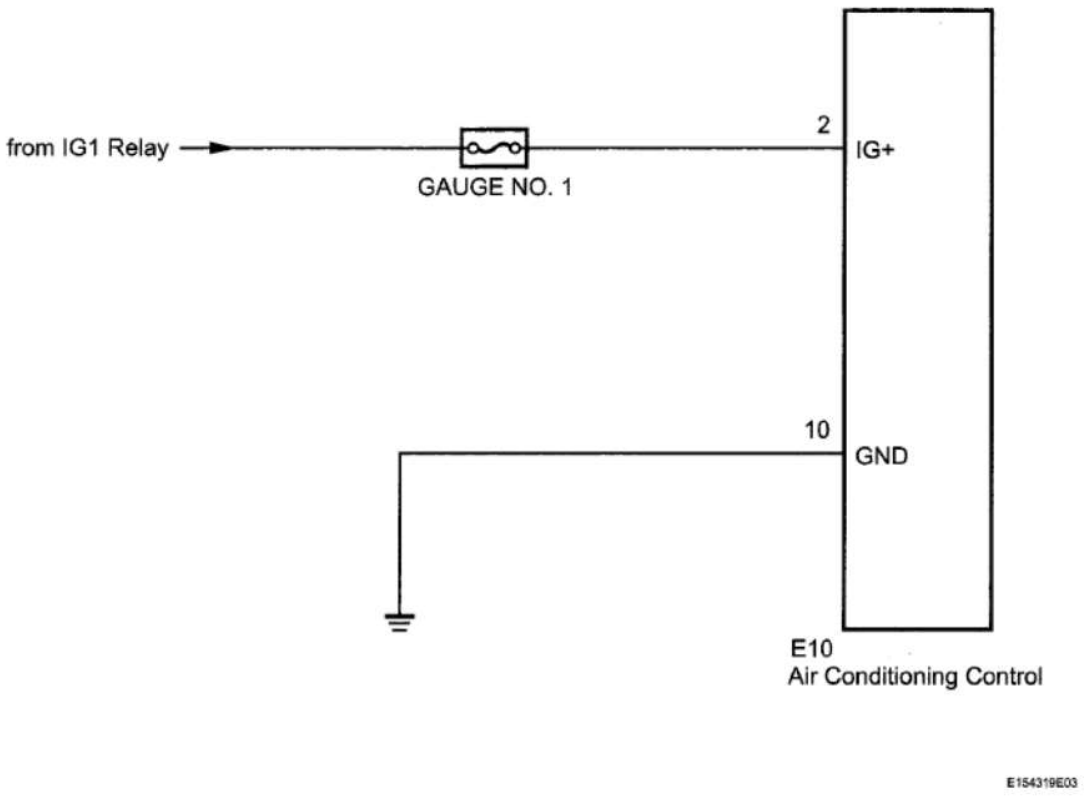


Fig. 98: Heater Control Panel Power Source Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (IG+ - BODY GROUND)**
   a. Disconnect the connector from the heater control panel.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
E10-2 (IG+) - Body ground	Ignition switch on (IG)	11 to 14 V
E10-2 (IG+) - Body ground	Ignition switch off	Below 1 V

Result

RESULT REFERENCE CHART

Result	Proceed to
OK	A
NG (without Smart key system)	B

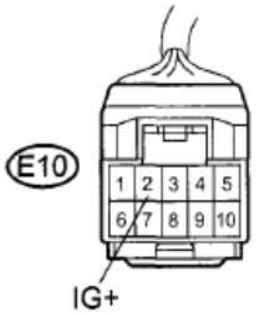
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NG (with Smart key system)	C

B: GO TO STARTING SYSTEM

C: GO TO PUSH BUTTON START SYSTEM

Front view of wire harness connector:
(to Air Conditioning Control (Front))



E152690E20

Fig. 99: Identifying Air Conditioning Control Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

A: Go to next step

2. **HECK HARNESS AND CONNECTOR (GND - BODY GROUND)**
   a. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
E10-10 (GND) -Body ground	Always	Below 1 ohms

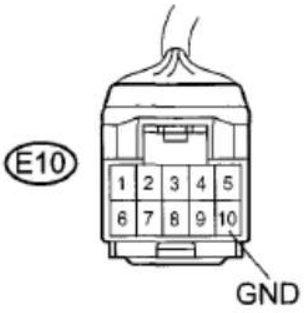
NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Air Conditioning Control (Front))



E152690E09

Fig. 100: Identifying Air Conditioning Control Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

AIR CONDITIONING COMPRESSOR MAGNETIC CLUTCH CIRCUIT

DESCRIPTION

When the A/C amplifier is turned on, a magnetic clutch ON signal is sent from the MGC terminal of the A/C amplifier. Then, the MGC relay turns on to operate the magnetic clutch.

WIRING DIAGRAM

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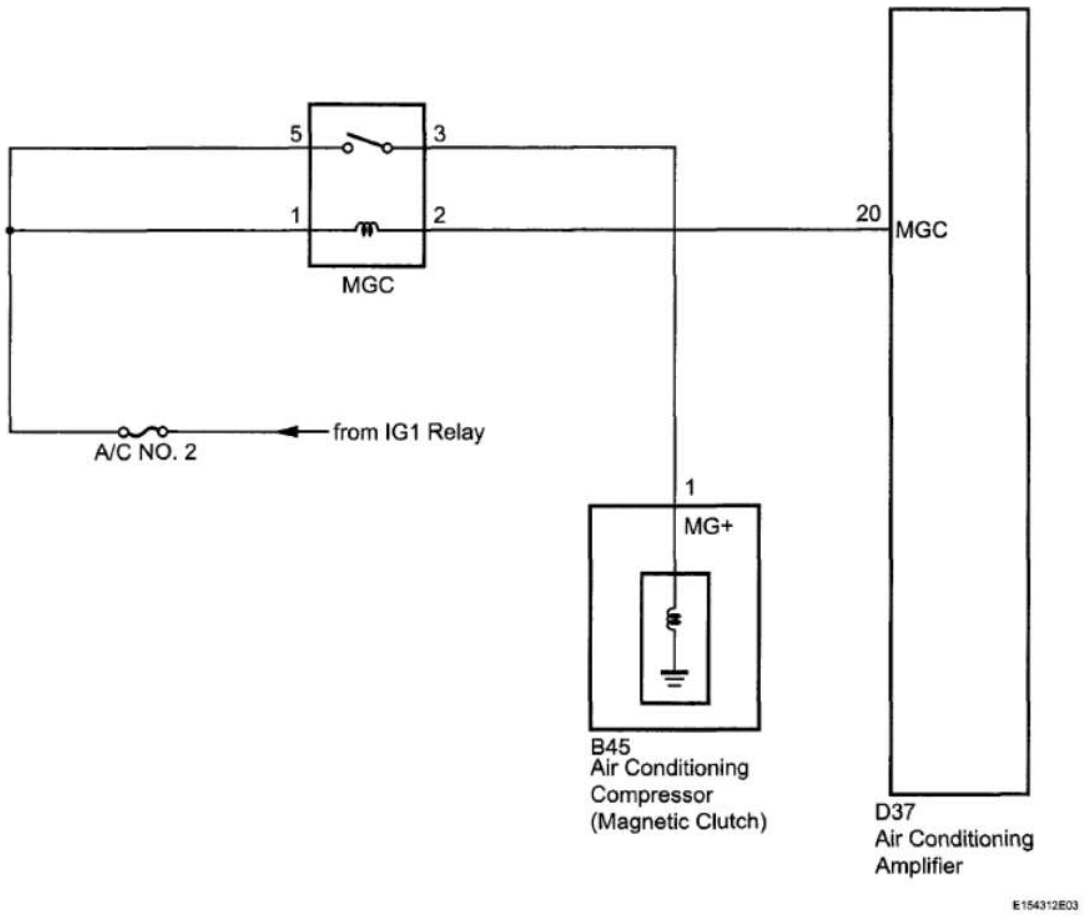


Fig. 101: Air Conditioning Compressor Magnetic Clutch Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Turn the A/C switch on and off.
   d. Select the item below in the Data List, and read the display on Techstream.

Data List/Engine:

DATA LIST REFERENCE

Tester Display	Measure Item/Range	Normal Condition	Diagnostic Note
A/C Signal (A/C Signal)	A/C signal/ON or OFF	ON: A/C ON OFF: A/C OFF	-

OK:

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The display is as specified in the normal condition column.

NG: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

OK: Go to next step

2. **INSPECT FUSE (A/C NO. 2)**
   a. Remove the A/C NO. 2 fuse from the instrument panel junction block.
   b. Measure the resistance of the fuse.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A/C NO. 2	Always	Below 1 ohms

NG: REPLACE FUSE (A/C NO. 2)

OK: Go to next step

3. **INSPECT MAGNET-CLUTCH RELAY (MGC)**
   a. Remove the MGC relay from the engine room relay block and junction block.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
3-5	When battery voltage is not applied to terminals 1 and 2	10 kohms or higher
3-5	When battery voltage is applied to terminals 1 and 2	Below 1 ohms

NG: REPLACE MAGNET-CLUTCH RELAY (MG CLT)

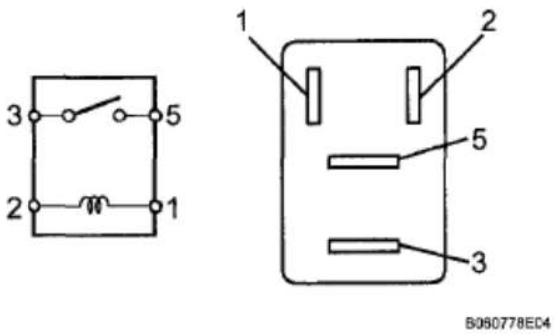


Fig. 102: Identifying Magnet Clutch Relay (MGC)

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (A/C AMPLIFIER - BATTERY)**
   a. Disconnect the connector from the air conditioning amplifier.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-20 (MGC) - Body ground	Ignition switch off	Below 1 V
D37-20 (MGC) - Body ground	Ignition switch on (IG)	11 to 14 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Air Conditioning Amplifier)

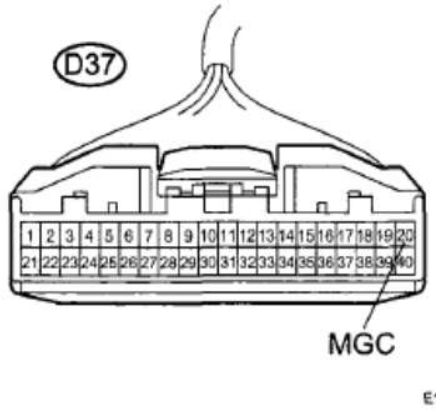


Fig. 103: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

5. **INSPECT AIR CONDITIONING AMPLIFIER**
   a. Reconnect the connector to the air conditioning amplifier.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

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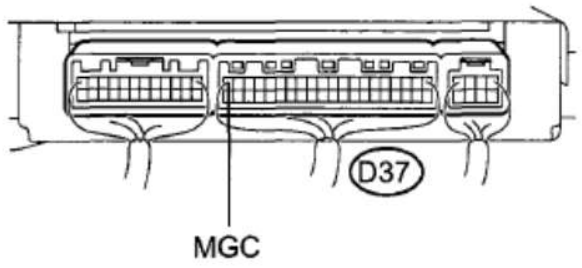
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Tester Connection	Condition	Specified Condition
D37-20 (MGC) - Body ground	Ignition switch on (IG) Air conditioning switch: OFF	11 to 14 V
D37-20 (MGC) - Body ground	Ignition switch on (IG) Air conditioning switch: ON	Below 1 V

NG: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

Component with harness connected:
(Air Conditioning Amplifier)



H E124471E39

Fig. 104: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

6. **INSPECT A/C COMPRESSOR**
   a. Disconnect the connector from the air conditioning compressor.
   b. Measure the resistance of the connector.
   c. When connector terminal 1 (MG+) is connected to the positive (+) battery terminal, and the body ground is connected to the negative (-) battery terminal, check that the following occurs: 1) the magnetic clutch's operating sound is emitted, and 2) the magnetic clutch's hub and rotor lock.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B45-1 (MG+) - Body ground	Always	Below 1 ohms

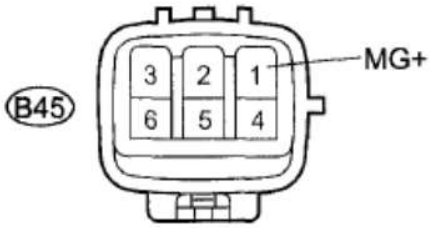
NG: REPLACE AIR CONDITIONING COMPRESSOR (See **DISASSEMBLY**)

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Component without harness connected:
(Air Conditioning Compressor)



E152686E05

Fig. 105: Identifying Air Conditioning Compressor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

7. **CHECK HARNESS AND CONNECTOR (ENGINE ROOM R/B AND J/B - BATTERY)**
   a. Remove the MGC relay from the engine room relay block and junction block.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
Relay block MGC relay terminal 5 - Body ground	Ignition switch on (IG)	11 to 14 V
Relay block MGC relay terminal 1 - Body ground	Ignition switch on (IG)	11 to 14 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR (ENGINE ROOM R/B AND J/B BATTERY)

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Component without relay connected:
(Engine room Relay Block)

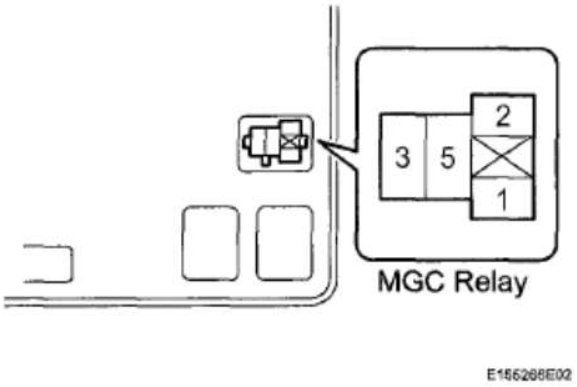


Fig. 106: Identifying MGC Relay Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPAIR OR REPLACE HARNESS OR CONNECTOR (ENGINE ROOM R/B AND J/B - A/C COMPRESSOR)

REAR AIR CONDITIONING CONTROL PANEL CIRCUIT

DESCRIPTION

This circuit consists of the rear air conditioning control and the air conditioning amplifier. When the rear air conditioning control is operated, signals are transmitted to the air conditioning amplifier through the LIN communication system.

If the LIN communication system malfunctions, the air conditioning amplifier does not operate even if the rear air conditioning control is operated.

WIRING DIAGRAM

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w/ Rear Air Conditioning:

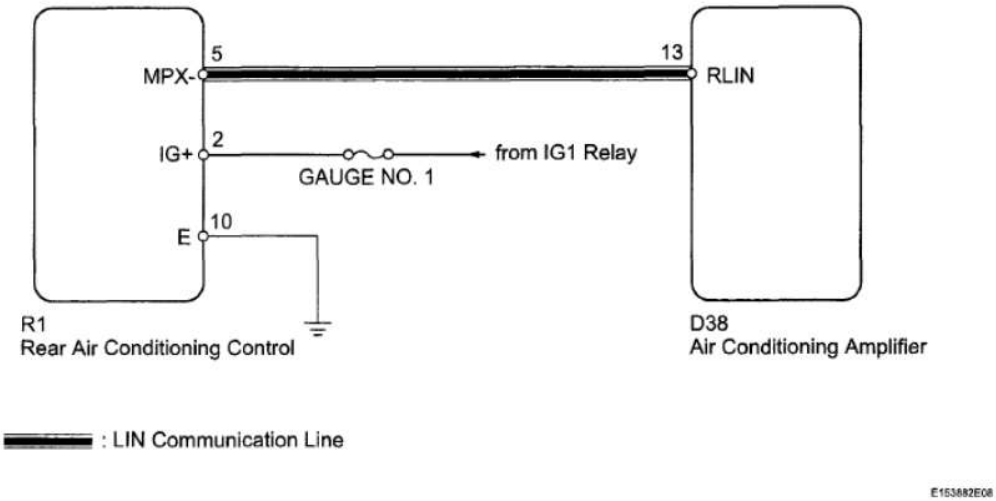


Fig. 107: Rear Air Conditioning Control Panel Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (REAR AIR CONDITIONING CONTROL - BODY GROUND)**
   a. Disconnect the R1 rear air conditioning control connector.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
R1-10 (E) - Body ground	Always	Below 1 ohms

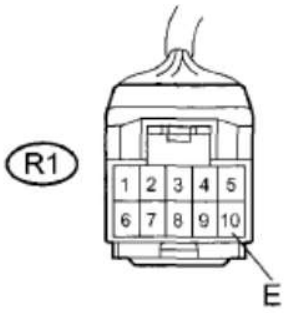
NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Rear Air Conditioning Control)



E152690E13

Fig. 108: Identifying R1 Rear Air Conditioning Control Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (REAR AIR CONDITIONING CONTROL - BATTERY)**
   a. Disconnect the R1 rear air conditioning control connector.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
R1-10 (E) - R1-2 (IG+)	Ignition switch on (IG)	11 to 14 V

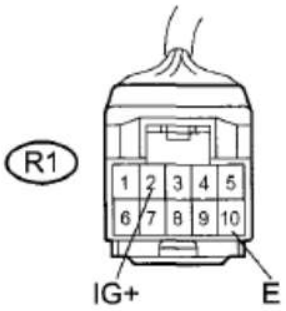
NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Rear Air Conditioning Control)



E152690E14

Fig. 109: Identifying R1 Rear Air Conditioning Control Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - REAR AIR CONDITIONING CONTROL)**
   a. Disconnect the R1 control connector.
   b. Disconnect the D38 amplifier connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D38-13 (RLIN) - R1-5 (MPX-)	Always	Below 1ohms
D38-13 (RLIN) -Body ground	Always	10 kohms or higher

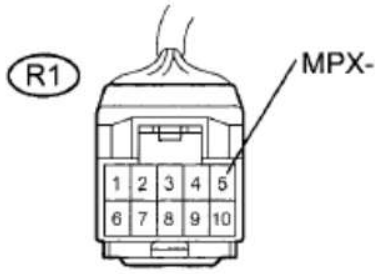
NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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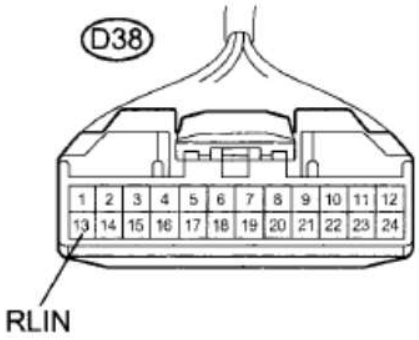
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Front view of wire harness connector:
(to Rear Air Conditioning Control)



Front view of wire harness connector:
(to Air Conditioning Amplifier)



E153374E11

Fig. 110: Identifying R1 Control Connector And D38 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **REPLACE REAR AIR CONDITIONING CONTROL**
   a. Replace the rear air conditioning control (See **INSTALLATION**).
5. **CHECK REAR AIR CONDITIONING CONTROL (OPERATION)**
   a. Operate the rear air conditioning control to check that it functions properly.

OK:

Rear air conditioning control function operates normally.

NG: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

OK: END (REAR AIR CONDITIONING CONTROL IS DEFECTIVE)

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PTC HEATER CIRCUIT

DESCRIPTION

PTC heater relays are closed in accordance with signals from the air conditioning amplifier and power is supplied to the PTC heater.

WIRING DIAGRAM

w/ PTC Heater:

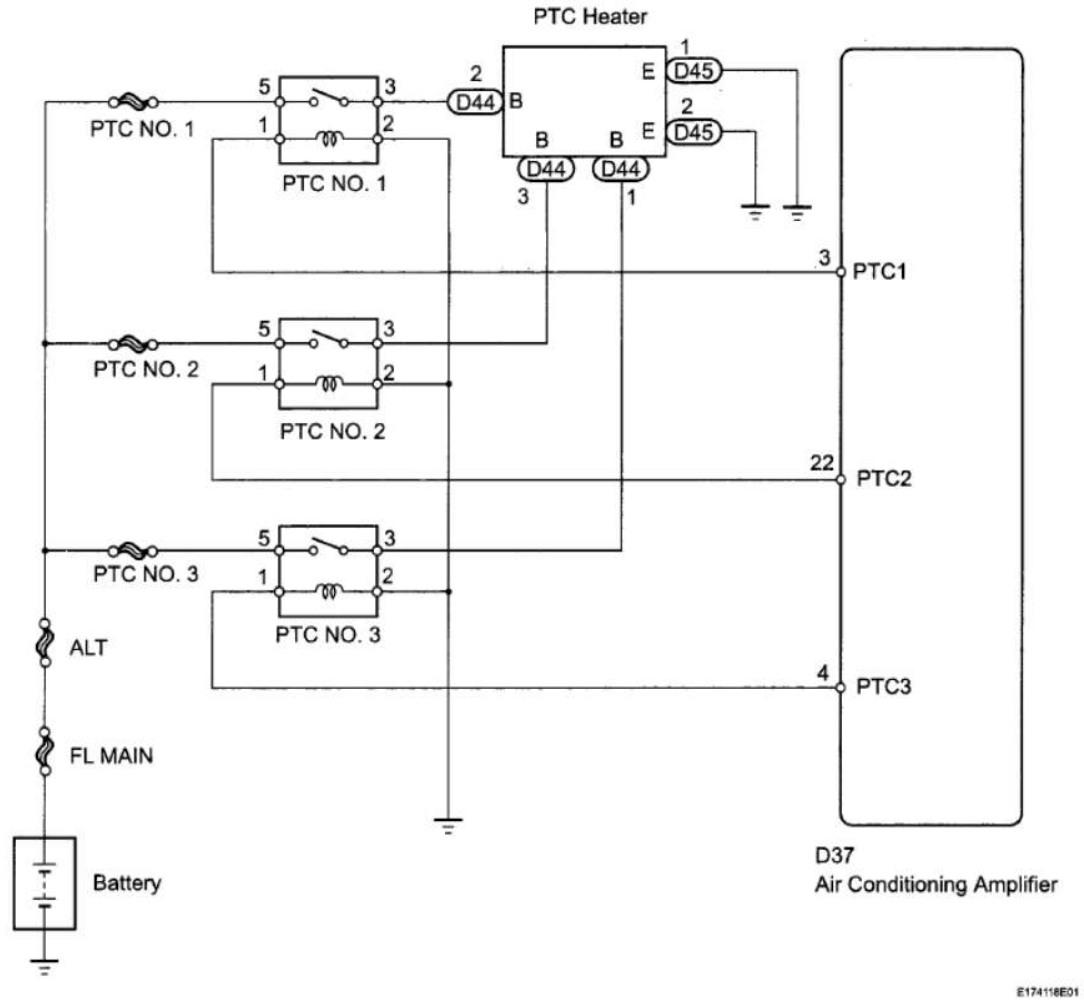


Fig. 111: PTC Heater Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **INSPECT FUSE (PTC NO. 1, PTC NO. 2, PTC NO. 3)**
   a. Remove the PTC NO. 1, PTC NO. 2 and PTC NO. 3 fuses from the engine room No. 2 relay block.
   b. Measure the resistance of the fuses.

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Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
PTC NO. 1	Always	Below 1 ohms
PTC NO. 2	Always	Below 1 ohms
PTC NO. 3	Always	Below 1 ohms

NG: REPLACE FUSE

OK: Go to next step

2. **INSPECT PTC HEATER RELAY**
   a. Remove the No. 1, No. 2 and No. 3 PTC heater relays from the engine room No. 2 relay block.
   b. Measure the resistance of the relays.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
3-5	When battery voltage is not applied to terminals 1 and 2)	10 kohms or higher
3-5	When battery voltage is applied to terminals 1 and 2)	Below 1 ohms

NG: REPLACE PTC HEATER RELAY

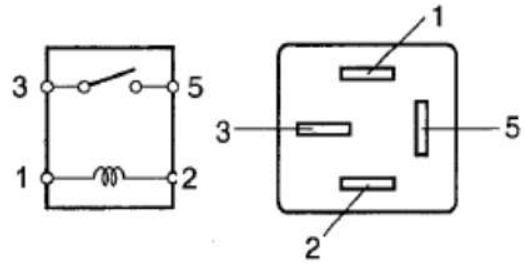


Fig. 112: Identifying PTC Heater Relay
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (PTC HEATER RELAY - BODY GROUND)**
   a. Remove the No. 1, No. 2 and No. 3 PTC heater relays from the engine room No. 2 relay block.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

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STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
No. 1 PTC heater relay terminal 2 - Body ground	Always	Below 1 ohms
No. 2 PTC heater relay terminal 2 - Body ground	Always	Below 1 ohms
No. 3 PTC heater relay terminal 2 - Body ground	Always	Below 1 ohms

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

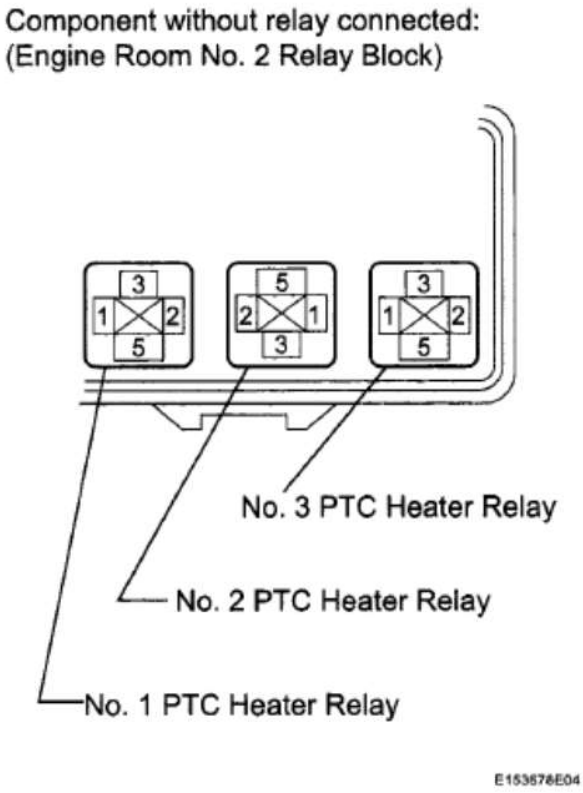


Fig. 113: Identifying No. 1, No. 2 And No. 3 PTC Heater Relays
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - PTC HEATER RELAY)**
   a. Remove the No. 1, No. 2 and No. 3 PTC heater relays from the engine room No. 2 relay block.
   b. Turn the ignition switch on (IG).
   c. When the PTC heater operating conditions are met (engine at idling speed or faster, ambient temperature is 10°C (50°F) or less, engine coolant temperature is 65°C (149°F) or less, set temperature switch is set to MAX HOT), turn the blower switch to the LO setting.
   d. Measure the voltage according to the value(s) in the table below.

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Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
No. 1 PTC heater relay terminal 1 - Body ground	Always	11 to 14 V
No. 2 PTC heater relay terminal 1 - Body ground	Always	11 to 14 V
No. 3 PTC heater relay terminal 1 - Body ground	Always	11 to 14 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Component without relay connected:
(Engine Room No. 2 Relay Block)

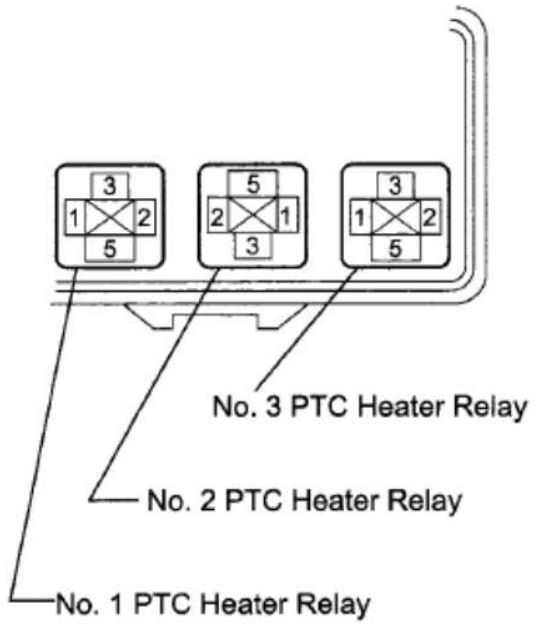


Fig. 114: Identifying No. 1, No. 2 And No. 3 PTC Heater Relays
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (BATTERY - PTC HEATER RELAY)**
   a. Remove the No. 1, No. 2 and No. 3 PTC heater relays from the engine room No. 2 relay block.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

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Tester Connection	Condition	Specified Condition
No. 1 PTC heater relay terminal 5 - Body ground	Always	11 to 14 V
No. 2 PTC heater relay terminal 5 - Body ground	Always	11 to 14 V
No. 3 PTC heater relay terminal 5 - Body ground	Always	11 to 14 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

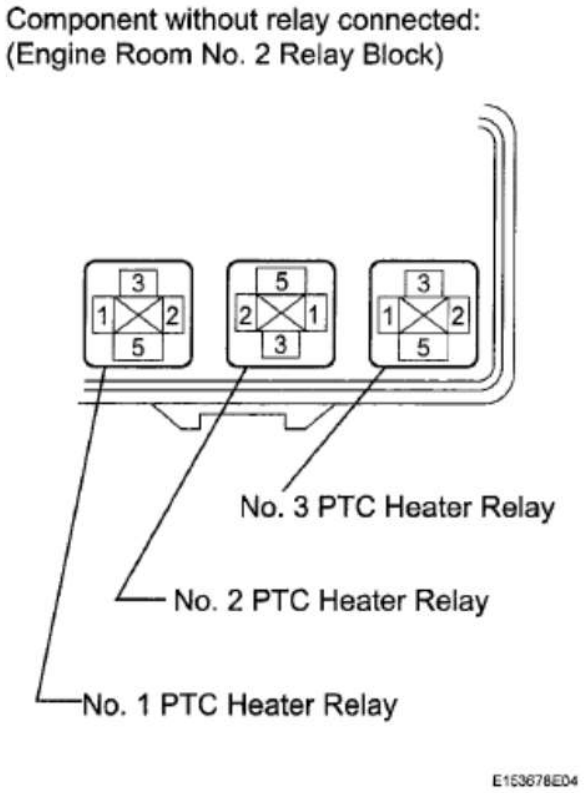


Fig. 115: Identifying No. 1, No. 2 And No. 3 PTC Heater Relays
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

6. **CHECK HARNESS AND CONNECTOR (PTC HEATER RELAY - PTC HEATER)**
   a. Remove the No. 1, No. 2 and No. 3 PTC heater relays from the engine room No. 2 relay block.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
No. 1 PTC heater relay terminal 3 - D44-2 (B)	Always	Below 1 ohms
No. 2 PTC heater relay terminal 3 - D44-3 (B)	Always	Below 1 ohms

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No. 3 PTC heater relay terminal 3 - D44-1 (B)	Always	Below 1 ohms

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

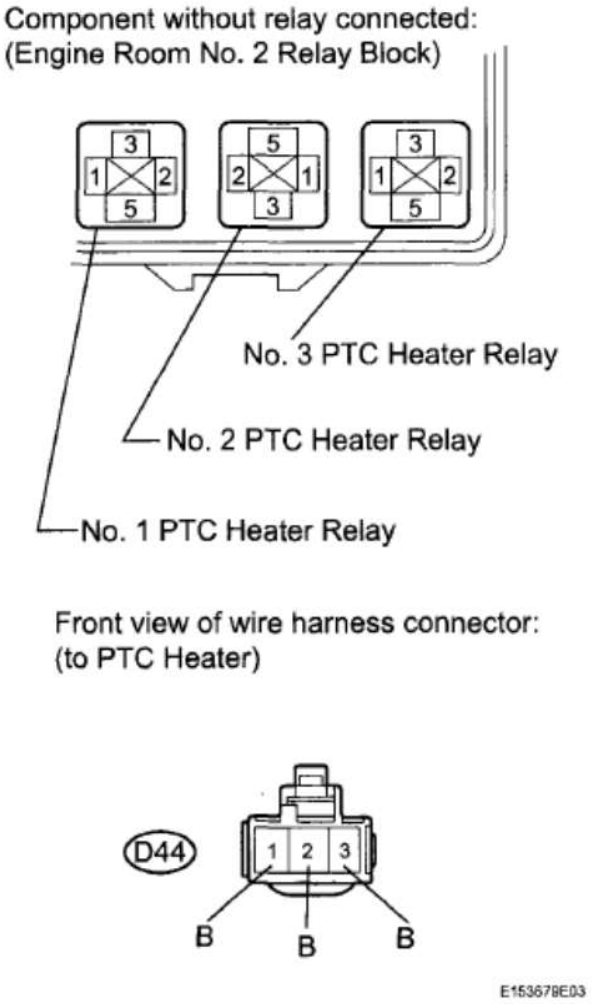


Fig. 116: Identifying No. 1, No. 2 And No. 3 PTC Heater Relays
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

7. **CHECK AIR CONDITIONING AMPLIFIER**
   a. Remove the air conditioning amplifier (See **REMOVAL**) with its connectors still connected.
   b. Turn the ignition switch on (IG).
   c. When the PTC heater operating conditions are met (engine at idling speed or faster, ambient temperature is 10°C (50°F) or less, engine coolant temperature is 65°C (149°F) or less, set temperature switch is set to MAX HOT), turn the blower switch to the Lo setting.
   d. Measure the voltage according to the value(s) in the table below.

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Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-3 (PTC1) - Body ground	Always	11 to 14 V
D37-22 (PTC2) - Body ground	Always	11 to 14 V
D37-4 (PTC3) - Body ground	Always	11 to 14 V

Component with harness connected:
(Air Conditioning Amplifier)

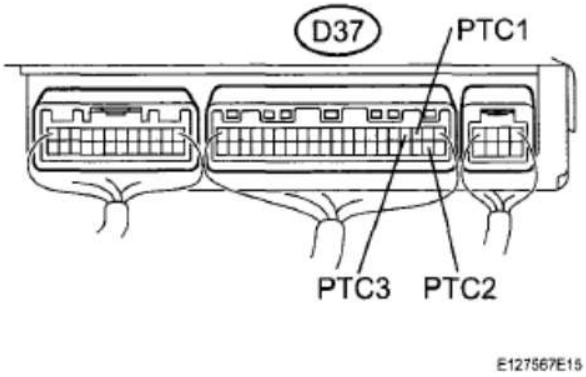


Fig. 117: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NG: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

OK: Go to next step

8. **REPLACE PTC HEATER**
   a. Replace the PTC heater (See **REASSEMBLY**).
9. **CHECK PTC HEATER (OPERATION)**
   a. Operate the PTC heater to check that it functions properly.

OK:

PTC heater function operates normally.

NG: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

OK: END (PTC HEATER IS DEFECTIVE)

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REAR BLOWER MOTOR CIRCUIT

DESCRIPTION

The rear blower motor is operated by signals from the air conditioning amplifier. Rear blower motor speed signals are transmitted in accordance with changes in the duty ratio.

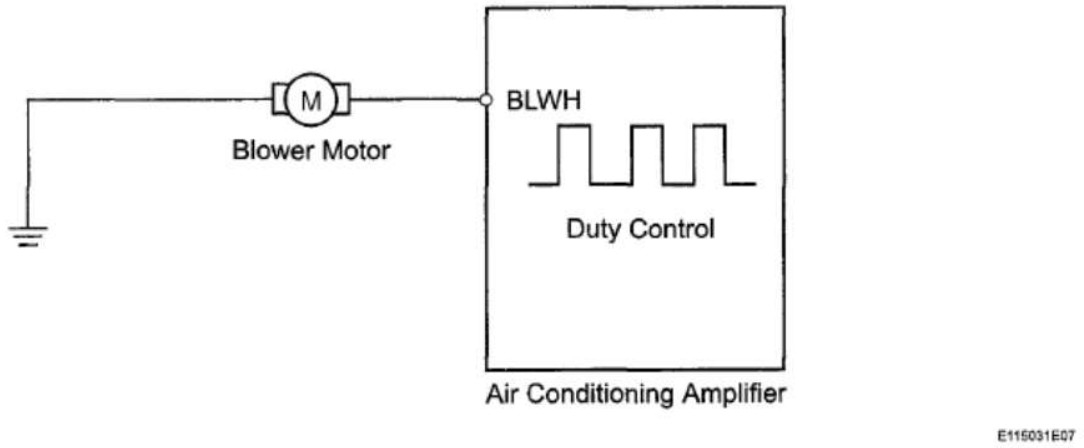


Fig. 118: Identifying Rear Blower Motor Circuit
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

WIRING DIAGRAM

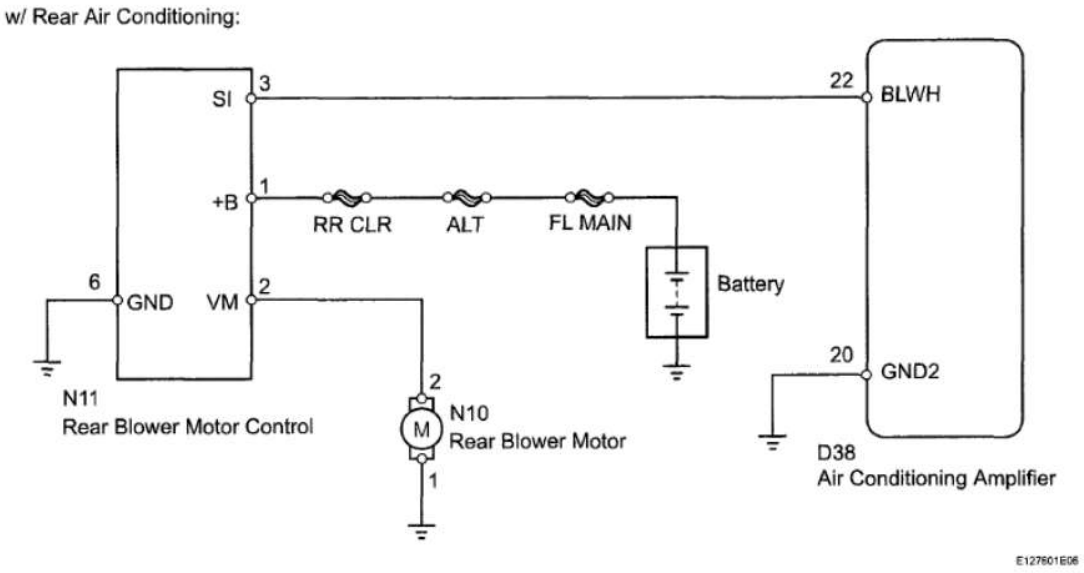


Fig. 119: Rear Blower Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

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1. **PERFORM ACTIVE TEST USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the item below in the Active Test, and then check that the rear blower motor operates.

Active Test/Air Conditioner

ACTIVE TEST REFERENCE CHART

Tester Display	Test Part	Control Range	Diagnostic Note
Rear Blower Motor	Rear blower motor	Min.: 0, Max.: 31	-

Result

RESULT REFERENCE CHART

Result	Proceed to
NG (blower motor does not operate)	A
NG (blower motor operates but does not change speed)	B
OK	C

B: Go to step 6

C: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE
(See **PROBLEM SYMPTOMS TABLE**)

A: Go to next step

2. **INSPECT FUSE (RR CLR)**
   a. Remove the RR CLR H-fuse from the main body ECU.
   b. Measure the resistance of the H-fuse.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
RR CLR H-fuse	Always	Below 1 ohms

NG: REPLACE FUSE

OK: Go to next step

3. **INSPECT REAR BLOWER MOTOR**
   a. Disconnect the N10 motor connector.
   b. Connect the battery's positive (+) lead to terminal 2 and the negative (-) to terminal 1, then check

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that the rear blower motor operates smoothly.

OK: The rear blower motor operates smoothly.

c. Measure the current of the connector.

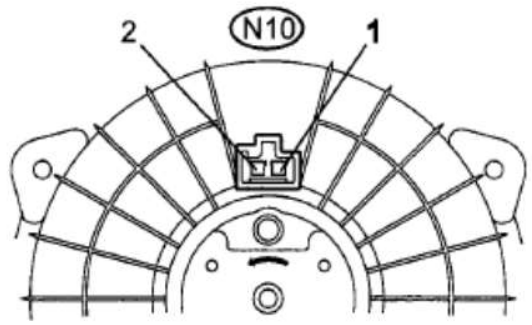
Standard current

STANDARD CURRENT CHART

Tester Connection	Condition	Specified Condition
N10-1-N10-2	Rear blower motor operates	Below 13.5 A

NG: REPLACE REAR BLOWER MOTOR (See **INSTALLATION**)

Component without harness connector:
(Rear Blower Motor)



E153715E01

Fig. 120: Identifying N10 Motor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (REAR BLOWER MOTOR CONTROL - BODY GROUND)**
   a. Disconnect the N11 rear motor control connector.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

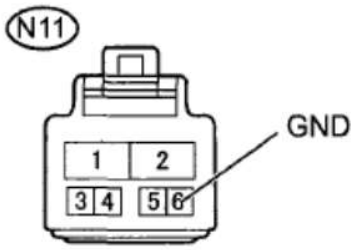
STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
N11-6 (GND) - Body ground	Always	Below 1 ohms

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NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Rear Blower Motor Control)



E153716E01

Fig. 121: Identifying N11 Rear Motor Control Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (REAR BLOWER MOTOR CONTROL - BATTERY)**
   a. Disconnect the N11 rear motor control connector.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

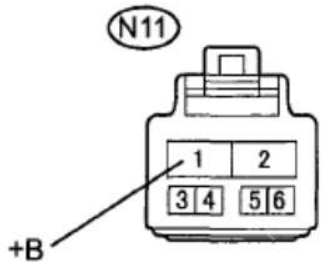
STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
N11-1 (+B) - Body ground	Ignition switch on (IG)	11 to 14 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Rear Blower Motor Control)



E153716E03

Fig. 122: Identifying N11 Rear Motor Control Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

6. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BODY GROUND)**
   a. Disconnect the D38 amplifier connector.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D38-22 (BLWH) - D38-20 (GND2)	Ignition switch on (IG) Blower switch OFF	4.5 to 5.5 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Air Conditioning Amplifier)

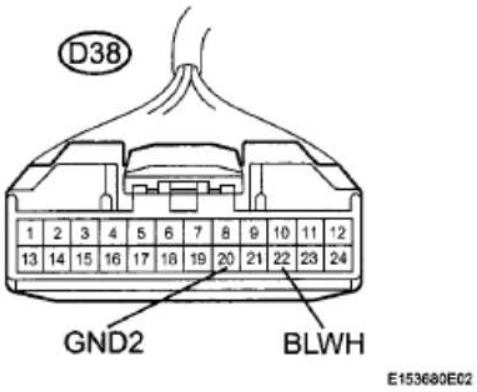


Fig. 123: Identifying D38 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

7. **CHECK AIR CONDITIONING AMPLIFIER**
   a. Remove the air conditioning amplifier with its connectors still connected.
   b. Check the waveform of the amplifier connector.

OK:

Waveform is as shown in the illustration. HINT: The waveform varies with the blower level.

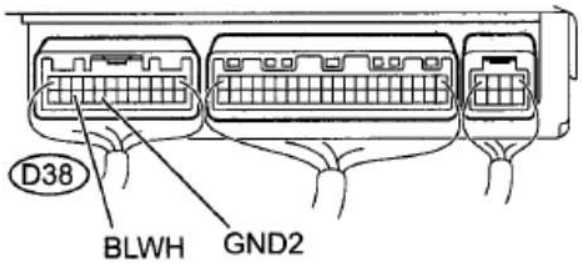
WAVEFORM REFERENCE CHART

Item	Content
Tester Connection	BLWH (D38-22) - GND2 (D38-20)
Tool Setting	1 V/DIV., 500 µsec./DIV.
Condition	Ignition switch on (IG) Blower switch LO

NG: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

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Front view of wire harness connector:
(to Air Conditioning Amplifier)



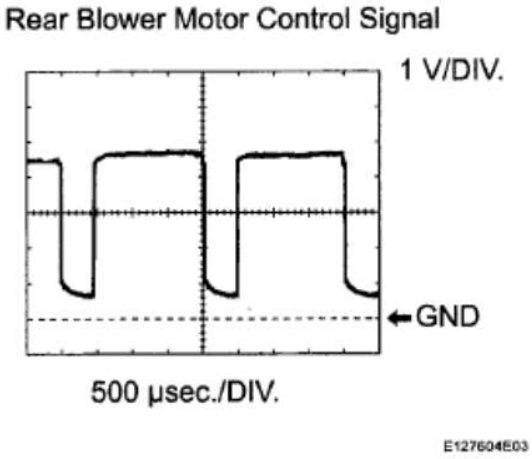


Fig. 124: Identifying D38 Amplifier Connector Terminals And Waveform
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE REAR BLOWER MOTOR (See **INSTALLATION**)

STEERING PAD SWITCH CIRCUIT

DESCRIPTION

AUTO, OFF, TEMP UP (+), and TEMP DOWN (-) switches are located on the steering pad switch. The resistance of the steering pad switch changes in accordance with switch operation. The air conditioning control assembly outputs voltage to the steering pad switch and reads voltage changes due to the resistance changes that result from switch operation.

HINT:

If there is an open in the circuit, the air conditioning system cannot be operated by the steering pad switch assembly.

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If there is a short in the circuit, the resulting condition is the same as if the switch were continuously depressed. Therefore, the air conditioning control assembly cannot be operated by the steering pad switch assembly, and the air conditioning control assembly will not be able to function correctly.

WIRING DIAGRAM

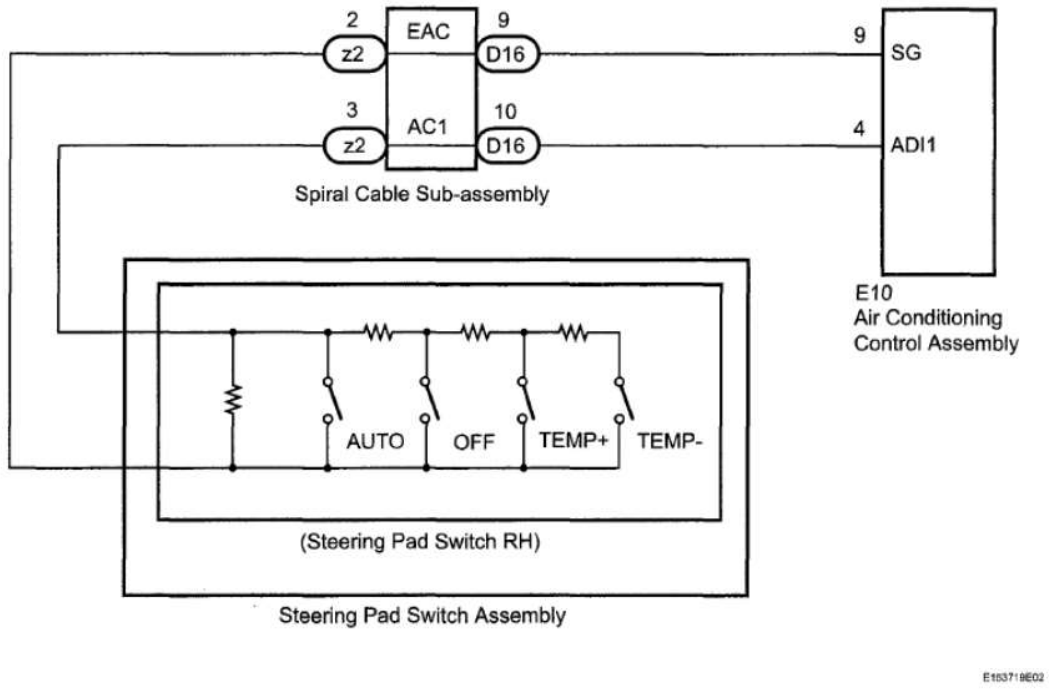


Fig. 125: Steering Pad Switch Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **INSPECT AIR CONDITIONING CONTROL ASSEMBLY**
   a. Remove the air conditioning control assembly (See **REMOVAL**) with the connectors still connected.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
E10-4 (ADI1) - E10-9 (SG)	AUTO switch: ON	Below 2.5 ohms
E10-4 (ADI1) - E10-9 (SG)	OFF switch: ON	Approx. 329 ohms
E10-4 (ADI1) - E10-9 (SG)	TEMP+ switch: ON	Approx. 1000 ohms
E10-4 (ADI1) - E10-9 (SG)	TEMP- switch: ON	Approx. 3110 ohms

NG: Go to step 2

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Component with harness connected:
(Air Conditioning Control Assembly)

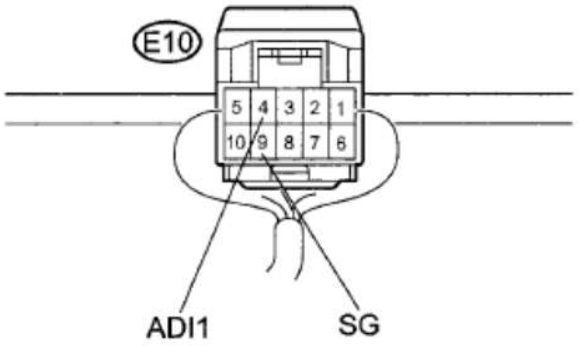


Fig. 126: Identifying Air Conditioning Control Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

2. **INSPECT STEERING PAD SWITCH ASSEMBLY**
   a. Remove the steering pad switch assembly.
   b. Disconnect the connector from the steering pad switch assembly.

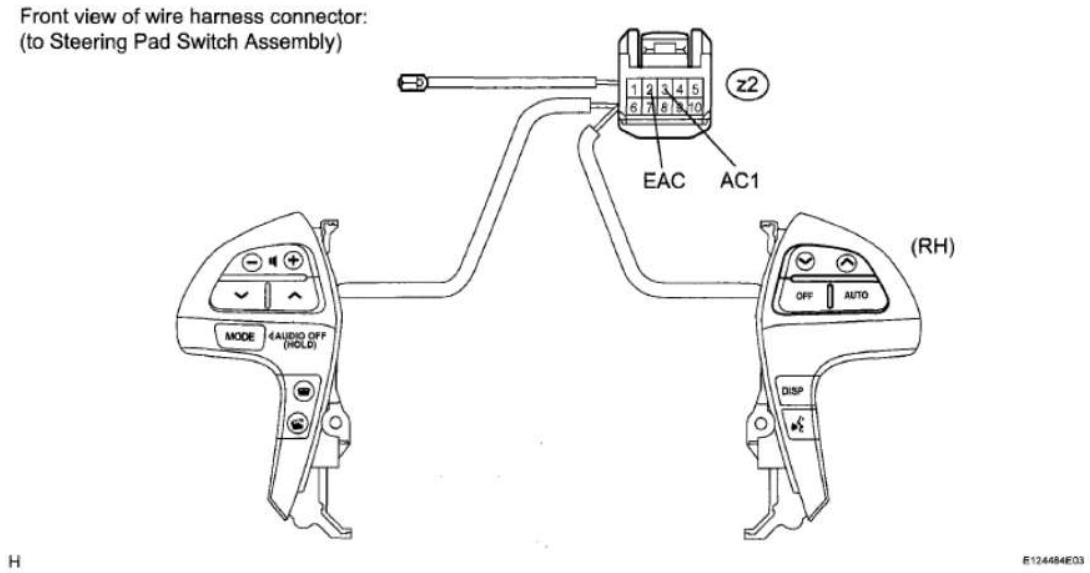


Fig. 127: Inspecting Steering Pad Switch Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection (Symbols)	Condition	Specified Condition
z2-3 (AC1) - z2-2 (EAC)	AUTO switch: ON	Below 2.5 ohms
z2-3 (AC1) - z2-2 (EAC)	OFF switch: ON	Approx. 329 ohms
z2-3 (AC1) - z2-2 (EAC)	TEMP+ switch: ON	Approx. 1000 ohms
z2-3 (AC1) - z2-2 (EAC)	TEMP- switch: ON	Approx. 3110 ohms

NG: REPLACE STEERING PAD SWITCH ASSEMBLY (See **REMOVAL**)

OK: Go to next step

3. **INSPECT SPIRAL CABLE SUB-ASSEMBLY**
   a. Disconnect the connector from the spiral cable sub-assembly.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D16-10 (AC1) - z2-3 (AC1)	Center	Below 1 ohms
D16-10 (AC1) - z2-3 (AC1)	2.5 rotations to the left	Below 1 ohms
D16-10 (AC1) - z2-3 (AC1)	2.5 rotations to the right	Below 1 ohms
D16-9 (EAC) - z2-2 (EAC)	Center	Below 1 ohms
D16-9 (EAC) - z2-2 (EAC)	2.5 rotations to the left	Below 1 ohms
D16-9 (EAC) - z2-2 (EAC)	2.5 rotations to the right	Below 1 ohms

NOTE: **The spiral cable is an important part of the SRS airbag system. Incorrect removal or installation of the spiral cable may prevent the airbag from deploying. Be sure to read the pages shown in the brackets below.**

HINT:

The spiral cable makes a maximum of approximately 5 rotations.

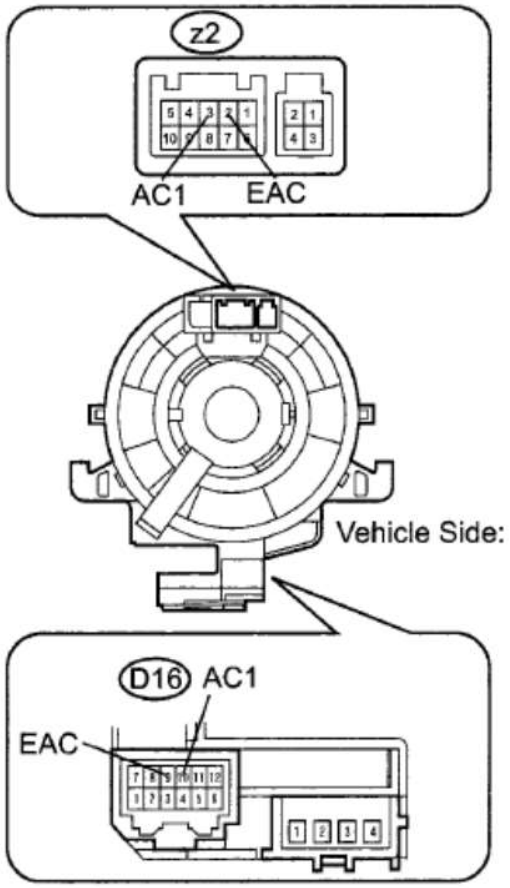
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Component without harness connected:
(Spiral Cable)

Steering Pad Switch Switch Side:



E144333E10

Fig. 128: Identifying Spiral Cable Steering Pad Switch Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NG: REPLACE SPIRAL CABLE SUB-ASSEMBLY (See **REMOVAL**)

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (A/C CONTROL ASSEMBLY - SPIRAL CABLE SUB-ASSEMBLY)**
   a. Disconnect the connector from the air conditioning control assembly.
   b. Disconnect the connector from the spiral cable sub-assembly.

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

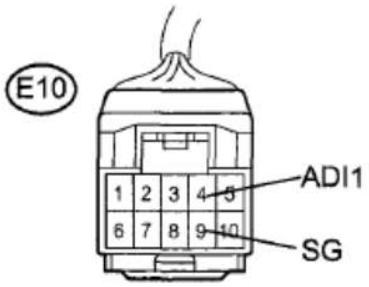
Standard resistance

STANDARD RESISTANCE CHART

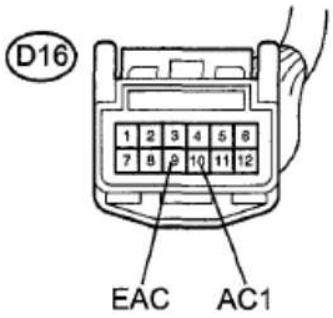
Tester Connection	Condition	Specified Condition
E10-4 (ADI1) - D16-10 (AC1)	Always	Below 1 ohms
E10-9 (SG) - D16-9 (EAC)	Always	Below 1 ohms
E10-4 (ADI1) - D16-10 (AC1)	Always	10 kohms or higher
E10-9 (SG) - D16-9 (EAC)	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Air Conditioning Control (Front))



Front view of wire harness connector:
(to Spiral Cable Sub-assembly)



E153718E02

Fig. 129: Identifying Air Conditioning Control Assembly Connector And Spiral Cable Sub-Assembly Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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OK: REPLACE AIR CONDITIONING CONTROL ASSEMBLY (See **REMOVAL**)

IG POWER SOURCE CIRCUIT

DESCRIPTION

This is the main power source supplied to the air conditioning amplifier when the ignition switch is on (IG). This power source is used for operating components, such as the air conditioning amplifier and servo motors.

WIRING DIAGRAM

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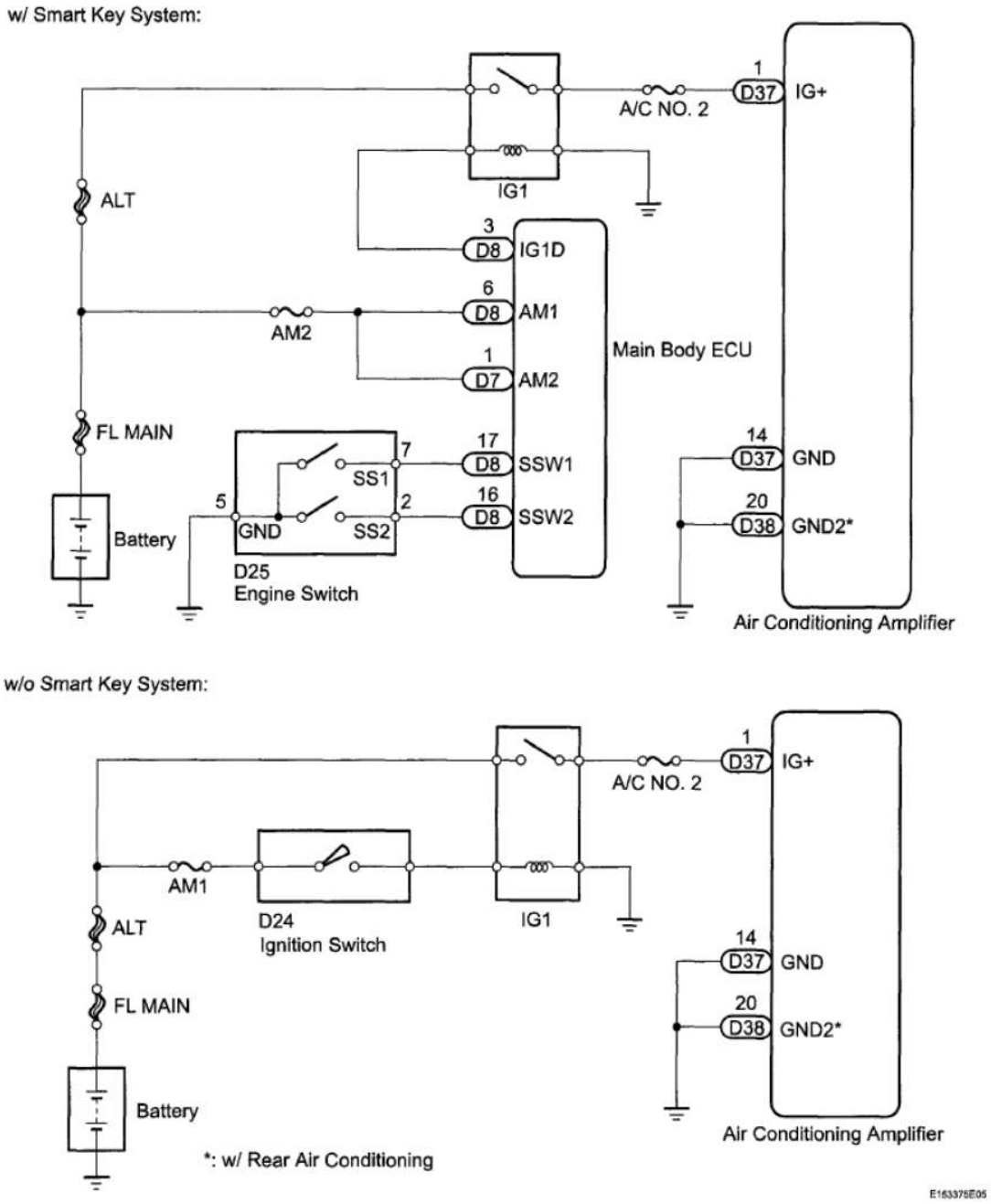


Fig. 130: IG Power Source Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **INSPECT FUSE (A/C NO. 2)**
   a. Remove the A/C NO. 2 fuse from the instrument panel junction block.
   b. Measure the resistance of the fuse.

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Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A/C NO. 2 fuse	Always	Below 1 ohms

NG: REPLACE FUSE

OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BATTERY)**
   a. Disconnect the D37 amplifier connector.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-1 (IG+) - Body ground	Ignition switch on (IG)	11 to 14 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Air Conditioning Amplifier)

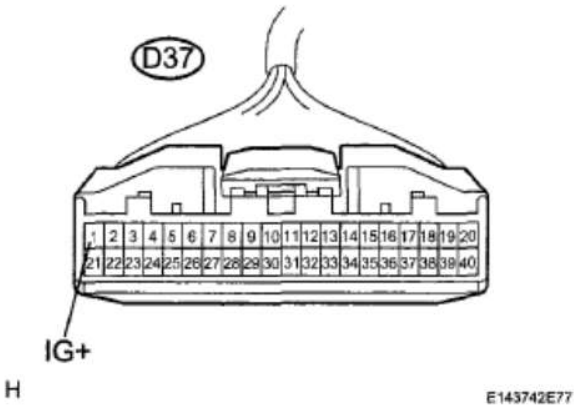


Fig. 131: Identifying D37 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BODY GROUND)**

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a. Disconnect the D37 and D38 amplifier connectors.
b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D37-14 (GND) - Body ground	Always	Below 1 ohms
D38-20 (GND2)* - Body ground	Always	Below 1 ohms

HINT:

*: w/ Rear Air Conditioning

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

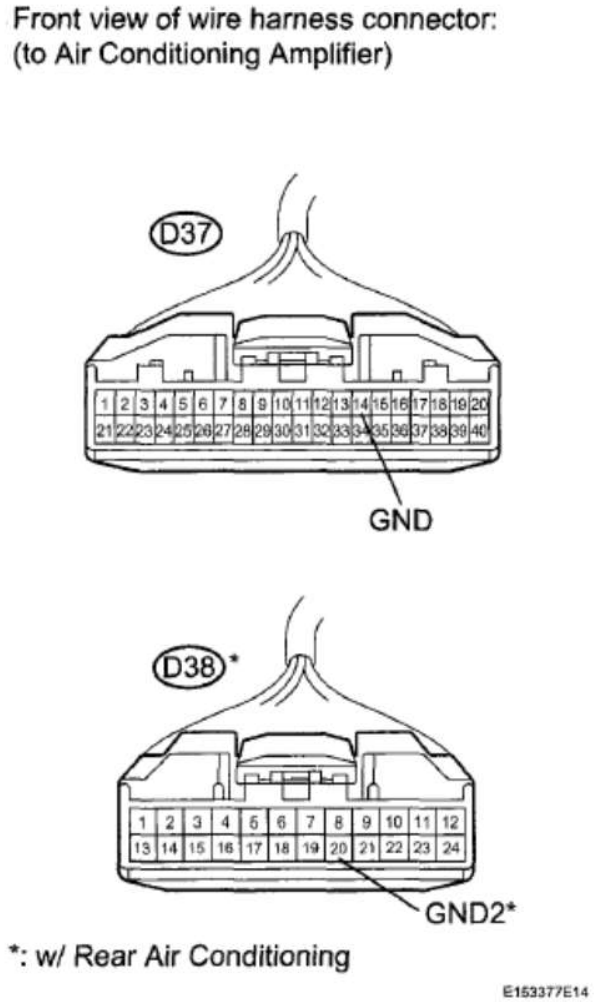


Fig. 132: Identifying D37 And D38 Amplifier Connectors Terminals

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

BACK-UP POWER SOURCE CIRCUIT

DESCRIPTION

This is the back-up power source circuit for the air conditioning amplifier. Power is supplied even when the ignition switch is turned off and is used for functions such as the diagnostic trouble code memory.

WIRING DIAGRAM

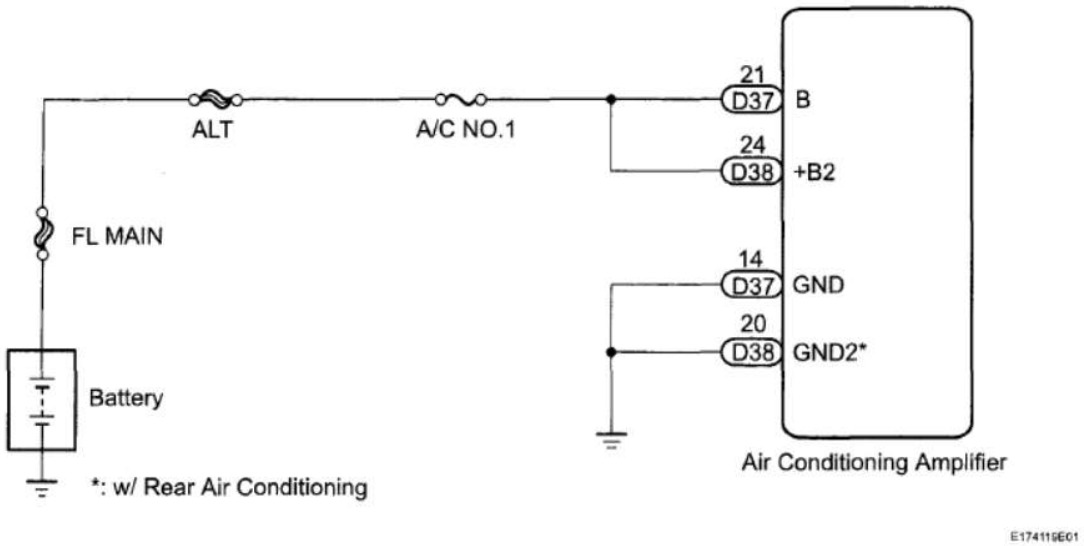


Fig. 133: Back-Up Power Source Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **INSPECT FUSE (A/C NO.1)**
   a. Remove the A/C NO.1 fuse from the instrument panel junction block.
   b. Measure the resistance of the fuse.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A/C NO.1 fuse	Always	Below 1 ohms

NG: REPLACE FUSE

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OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BATTERY)**
   a. Disconnect the D37 and D38 amplifier connectors.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-21 (B) - Body ground	Always	11 to 14 V
D38-24 (+B2) - Body ground	Always	11 to 14 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Air Conditioning Amplifier)

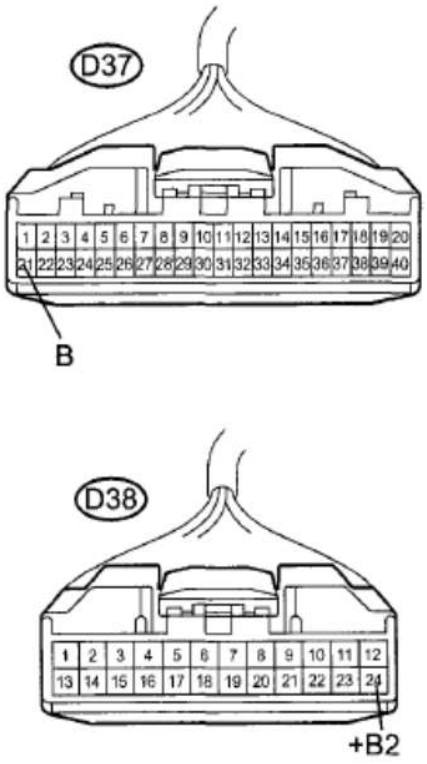


Fig. 134: Identifying D37 And D38 Amplifier Connectors Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BODY GROUND)**
   a. Disconnect the D37 and D38 amplifier connectors.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

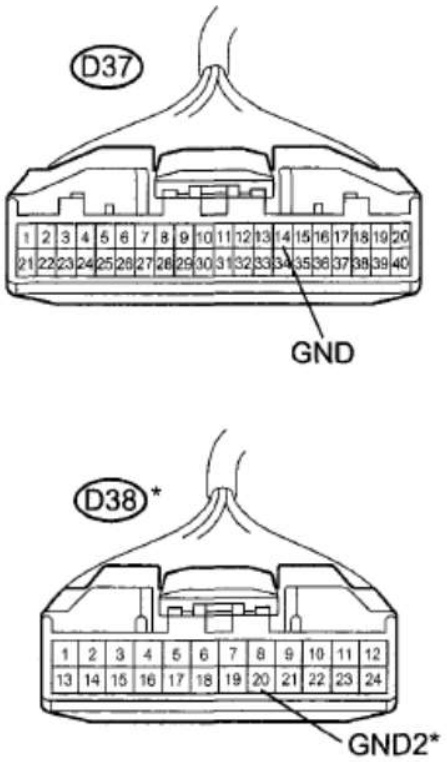
Tester Connection	Condition	Specified Condition
D37-14 (GND) - Body ground	Always	Below 1 ohms
D38-20 (GND2)* - Body ground	Always	Below 1 ohms
HINT: *: w/ Rear air conditioning		

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Air Conditioning Amplifier)



*: w/ Rear Air Conditioning

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Fig. 135: Identifying D37 And D38 Amplifier Connectors Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

LIN COMMUNICATION CIRCUIT

DESCRIPTION

The operation signals of a switch etc. are exchanged between terminal LIN1 of the air conditioning control assembly and terminal LIN1 of the air conditioning amplifier.

WIRING DIAGRAM

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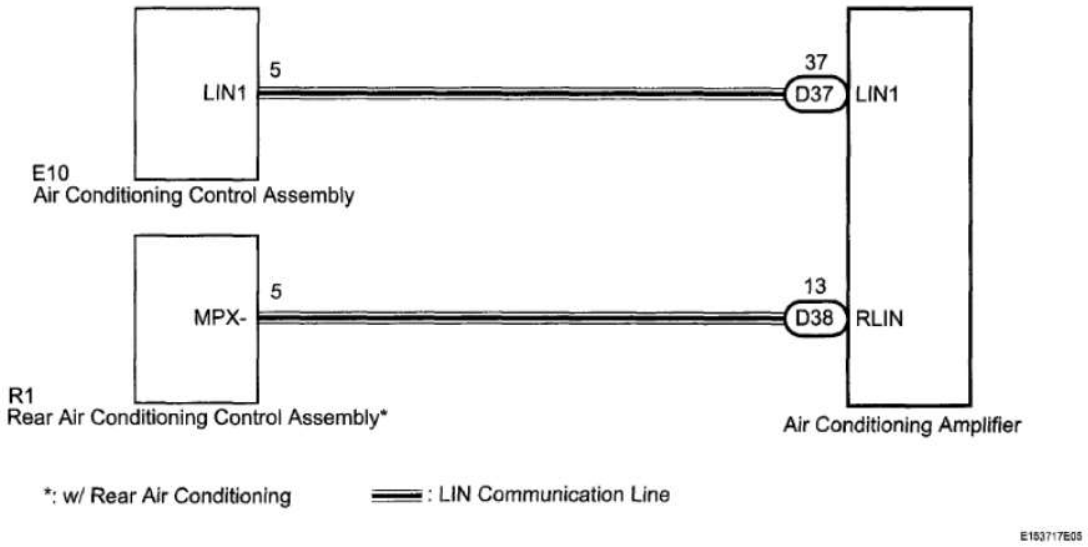


Fig. 136: LIN Communication Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK AIR CONDITIONING SYSTEM (OPERATION)**

   Result

   RESULT REFERENCE CHART

Result	Proceed to
Front air conditioning control malfunctions	A
Rear air conditioning control malfunctions	B

   B: Go to step 3

   A: Go to next step

2. **CHECK HARNESS AND CONNECTOR (A/C CONTROL ASSEMBLY - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the connector from the air conditioning control assembly.
   b. Disconnect the connector from the air conditioning amplifier.
   c. Measure the resistance according to the value(s) in the table below.

   Standard resistance

   STANDARD RESISTANCE CHART

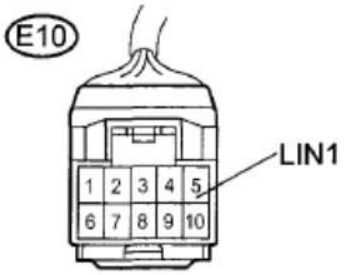
Tester Connection	Condition	Specified Condition
D37-37 (LIN1) - E10-5 (LIN1)	Always	Below 1 ohms

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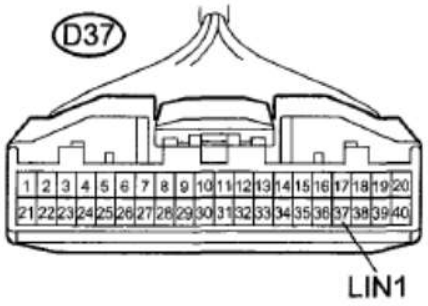
D37-37 (LIN1) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Air Conditioning Control (Front))



Front view of wire harness connector:
(to Air Conditioning Amplifier)



E152691E05

Fig. 137: Identifying Air Conditioning Control Connector And Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

3. **CHECK HARNESS AND CONNECTOR (REAR A/C CONTROL ASSEMBLY - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the connector from the rear air conditioning control assembly.
   b. Disconnect the connector from the air conditioning amplifier.
   c. Measure the resistance according to the value(s) in the table below.

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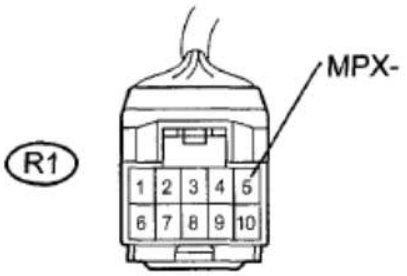
Standard resistance

STANDARD RESISTANCE CHART

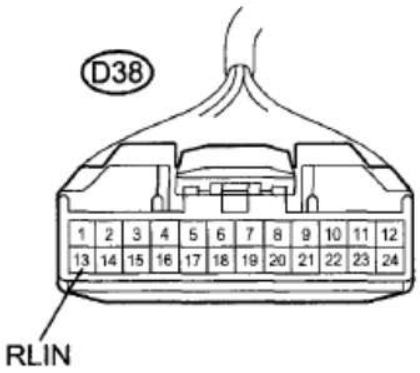
Tester Connection	Condition	Specified Condition
D38-13 (RLIN) - R1-5 (MPX-)	Always	Below 1 ohms
D38-13 (RLIN) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Rear Air Conditioning Control)



Front view of wire harness connector:
(to Air Conditioning Amplifier)



E153374E12

Fig. 138: Identifying Rear Air Conditioning Control Connector And Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

AIR CONDITIONING SYSTEM (FOR MANUAL AIR CONDITIONING SYSTEM)

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PRECAUTION

1. **PRECAUTION FOR DISCONNECTING THE BATTERY CABLE**

   HINT:

   When disconnecting the battery negative (-) terminal, initialize the following systems after the terminal is reconnected:

   SYSTEM REFERENCE CHART

System Name	See Procedure
Power Back Door System	INITIALIZATION

2. **IGNITION SWITCH EXPRESSIONS**

   HINT:

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

   IGNITION SWITCH EXPRESSIONS REFERENCE CHART

Expression	Ignition Switch (position)	Engine Switch (condition)
Ignition Switch off	LOCK	Off
Ignition Switch on (IG)	ON	On (IG)
Ignition Switch on (ACC)	ACC	On (ACC)
Engine Start	START	Start

3. **PRECAUTIONS WHEN USING TECHSTREAM**
   a. When using Techstream to troubleshoot the LIN communication line:

      Connect Techstream to the vehicle, and turn a courtesy light switch on and off at 1.5 second intervals until communication between the tester and vehicle begins.

   b. After all DTCs are cleared, check if the trouble occurs again 6 seconds after the ignition switch is turned on (IG).
4. **IF ANY OF FOLLOWING CONDITIONS ARE MET, KEEP ENGINE IDLING WITH A/C ON (ENGINE SPEED AT LESS THAN 2000 RPM) FOR AT LEAST 1 MINUTE:**
   - Refrigerant gas has been refilled or A/C parts have been replaced.
   - A long time has elapsed since the engine was stopped.

   NOTE: If the engine speed exceeds 2000 rpm, the A/C compressor may be damaged.

5. **DO NOT HANDLE REFRIGERANT IN ENCLOSED AREAS OR NEAR OPEN FLAMES**

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6. **ALWAYS WEAR EYE PROTECTION**



Fig. 139: Precaution For Handle Refrigerant In Enclosed Area
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. **BE CAREFUL NOT TO GET LIQUID REFRIGERANT IN YOUR EYES OR ON YOUR SKIN**

   If liquid refrigerant gets in your eyes or on your skin:

   a. Wash the area with lots of cold water.

      CAUTION: Do not rub your eyes or skin.

   b. Apply clean petroleum jelly to the skin.
   c. Go immediately to a physician or hospital for professional treatment.

8. **NEVER HEAT CONTAINER OR EXPOSE IT TO OPEN FLAME**
9. **BE CAREFUL NOT TO DROP CONTAINER OR SUBJECT IT TO PHYSICAL SHOCKS**

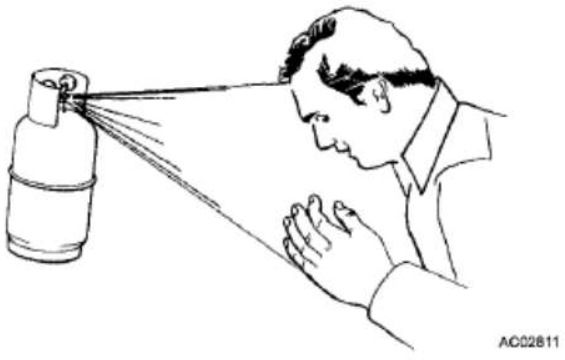


Fig. 140: Precaution For Liquid Refrigerant Eyes On Skin
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

10. **DO NOT OPERATE COMPRESSOR WITH INSUFFICIENT REFRIGERANT IN REFRIGERANT SYSTEM**

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If there is not enough refrigerant in the refrigerant system, oil circulation will be insufficient and compressor burnout may occur. Necessary care should be taken to avoid this.

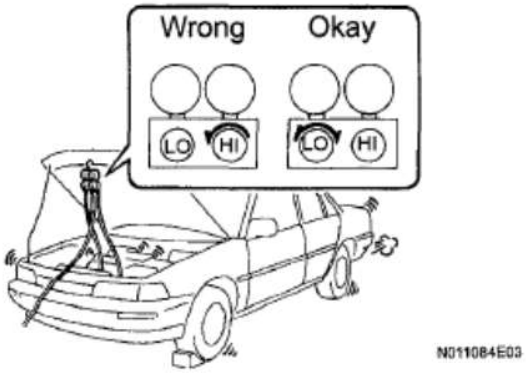


Fig. 141: Identifying Correct And Incorrect Connection Of Valves
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

11. **DO NOT OPEN HIGH PRESSURE MANIFOLD VALVE WHILE COMPRESSOR IS OPERATING**

    Open and close only the low pressure valve. Opening and closing the high pressure valve could cause the charging cylinder to rupture.

12. **BE CAREFUL NOT TO OVERCHARGE SYSTEM WITH REFRIGERANT**

    If the refrigerant is overcharged, it causes problems such as insufficient cooling, poor fuel economy and engine overheating.

13. **DO NOT OPERATE ENGINE AND COMPRESSOR WITHOUT REFRIGERANT**

    NOTE: This may damage the inside of the compressor.

PARTS LOCATION

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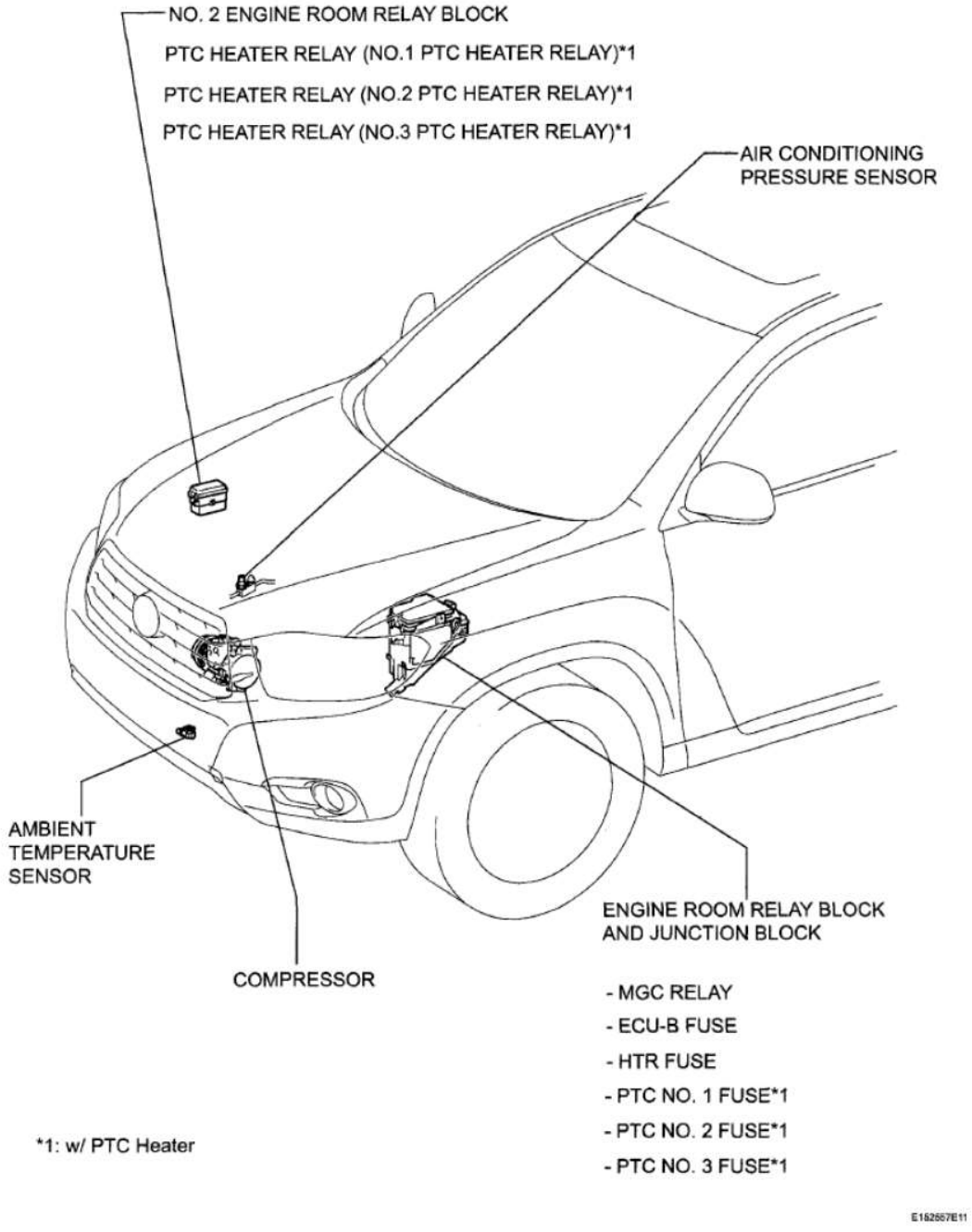


Fig. 142: Identifying Air Conditioning System Parts Location (1 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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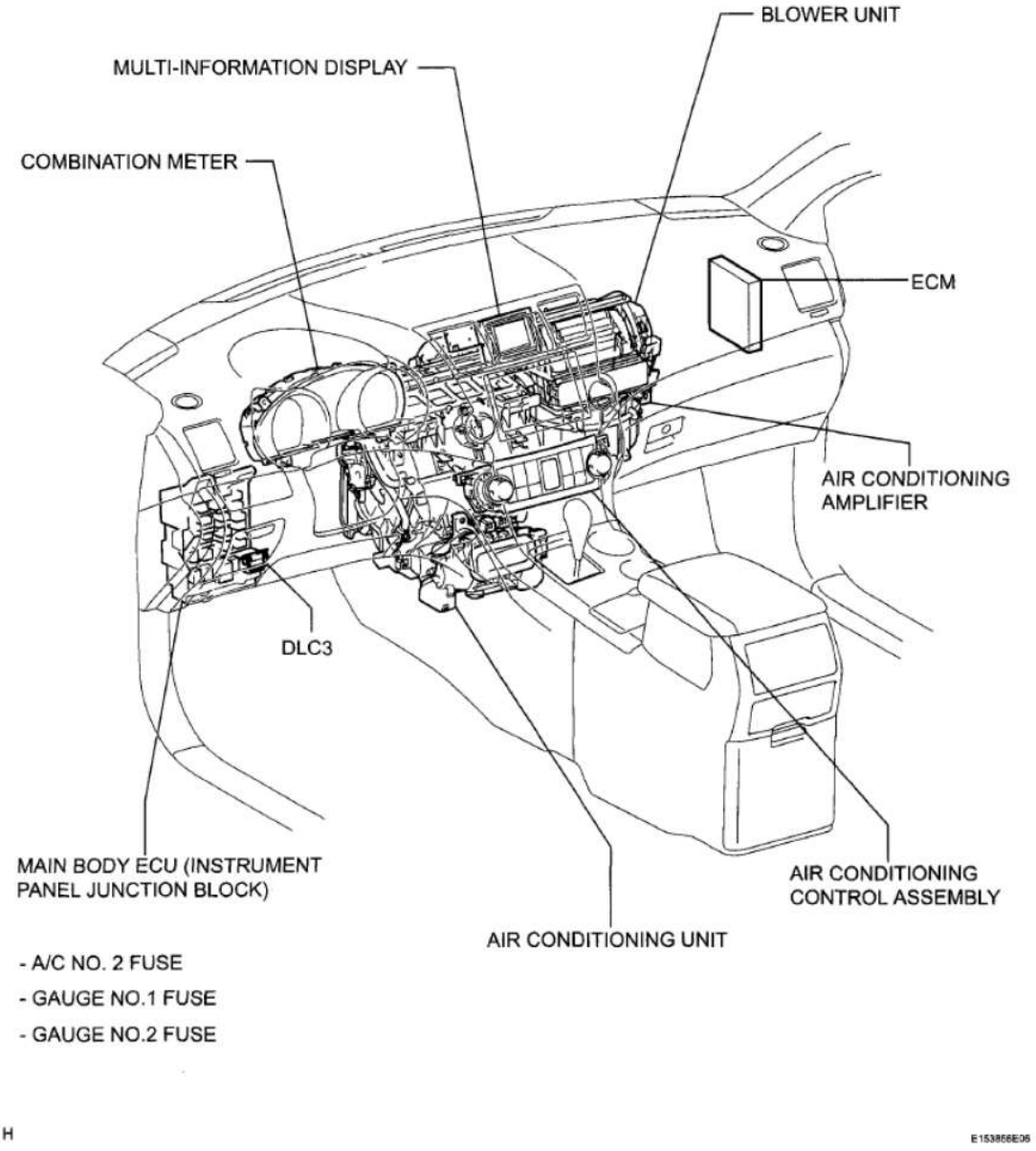


Fig. 143: Identifying Air Conditioning System Parts Location (2 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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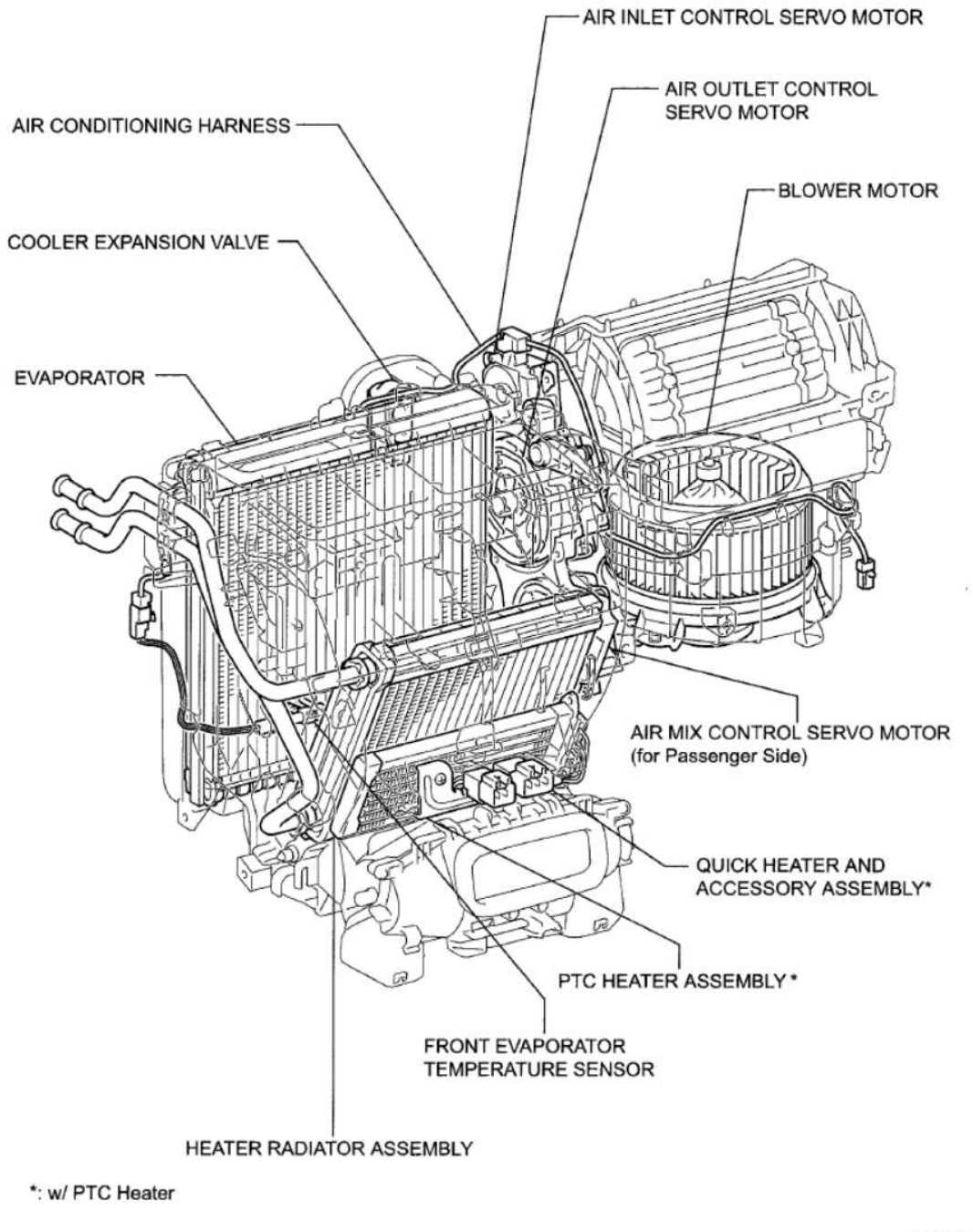


Fig. 144: Identifying Air Conditioning System Parts Location (3 Of 3)
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SYSTEM DIAGRAM

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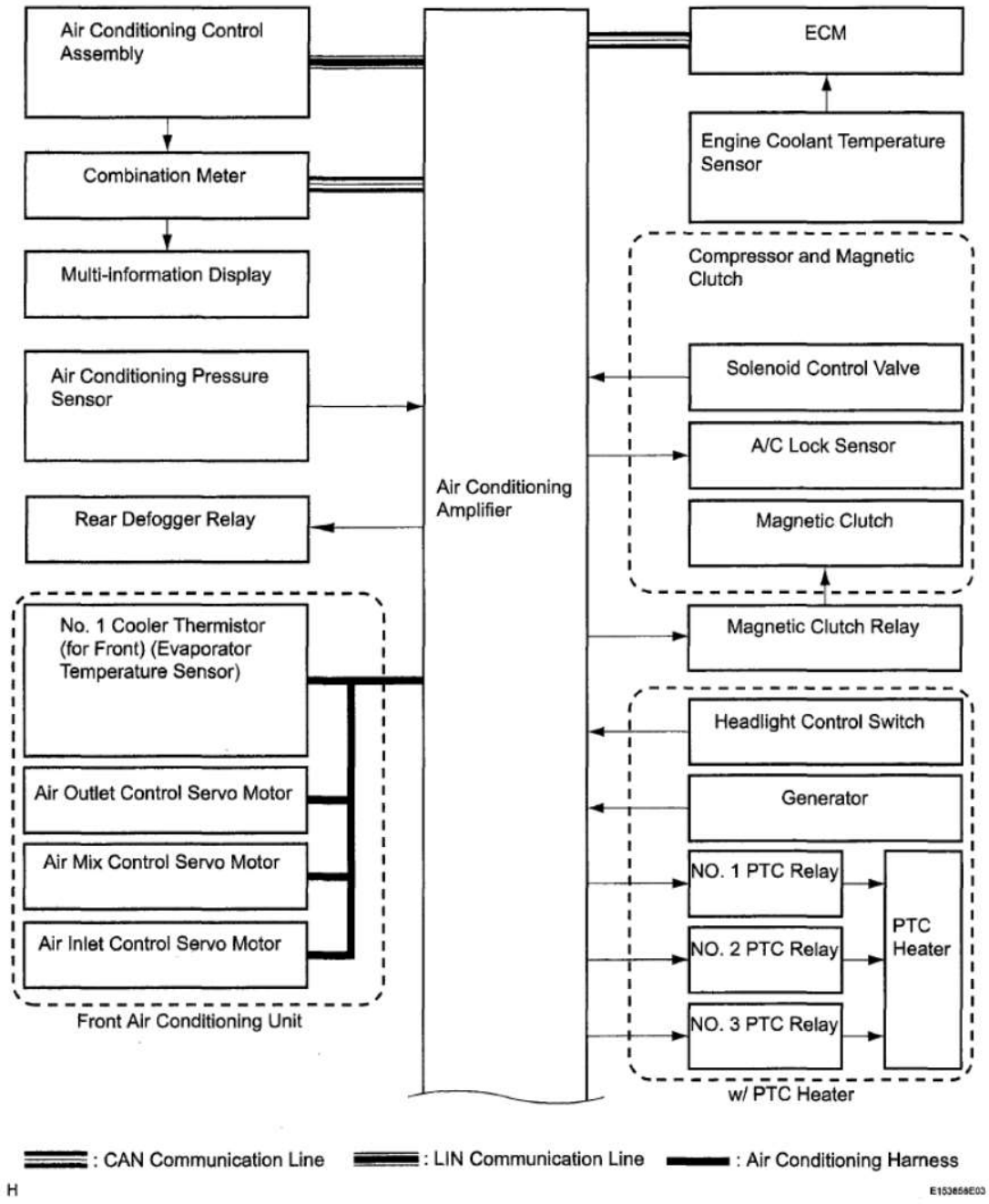
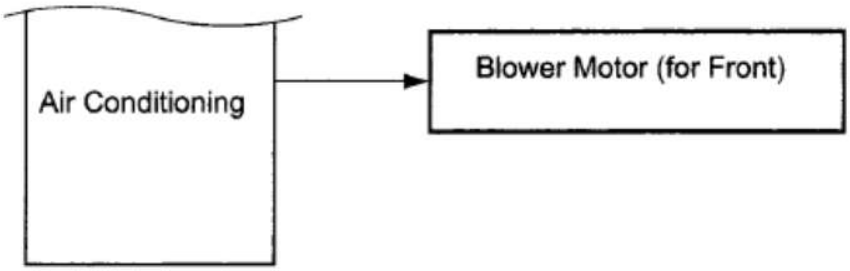


Fig. 145: Air Conditioning System Diagram (1 Of 2)
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Fig. 146: Air Conditioning System Diagram (2 Of 2)
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Communication table

COMMUNICATION CHART

Sender	Receiver	Signal	Communication Line
Air conditioning amplifier	ECM	A/C compressor control signal	CAN
		Idle up request signal	
		External variable control solenoid current signal	
		Cooling fan motor driving request signal	
		PTC heater driving number request signal	
		Ambient temperature signal	
Air conditioning amplifier	Air conditioning control (for Front)	Front panel indication signal	LIN
		A/C indication signal	
		REC indication signal	
		FRS indication signal	
		RDEF indication signal	
Combination meter	Air conditioning amplifier	Vehicle speed signal	CAN
		Ambient temperature signal	
ECM	Air conditioning amplifier	Engine revolution speed signal	CAN
		Engine coolant temperature signal	
		A/C control cut signal	
		Variable control prohibition signal	

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		PTC heater permission number	
Air conditioning control	Air conditioning amplifier	OFF switch signal	LIN
		A/C switch signal	
		DEF switch signal	
		MODE switch signal	
		RDEF switch signal	
		Blower switch signal (FAN+, FAN-)	
		Set temperature switch signal (UP, DOWN)	
Air conditioning amplifier	Multi-information display	Ambient temperature signal	CAN
		MODE indication signal	
		Blower level indication signal	
		Set temperature indication signal	

SYSTEM DESCRIPTION

1. **GENERAL**
   a. The air conditioning system has the following features:
      - Based on the signals from the ambient temperature sensor, this system calculates the outside temperature and indicates it in the multi-information display.
      - The Positive Temperature Coefficient (PTC) heater system contains a PTC heater that heats the air that has passed through the heater core to ensure the proper heater performance.
      - Turns the rear defogger and outside rear mirror heaters on for 15 minutes when the rear defogger switch is pressed. Turns them off if the switch is pressed while they are operating.
      - When a high load is applied to the EPS system, the EPS ECU will send a signal to the air conditioning amplifier. After receiving the signal, the air conditioning amplifier may turn off the rear defogger, front deicer, and seat heaters.
2. **MODE POSITION AND DAMPER OPERATION**

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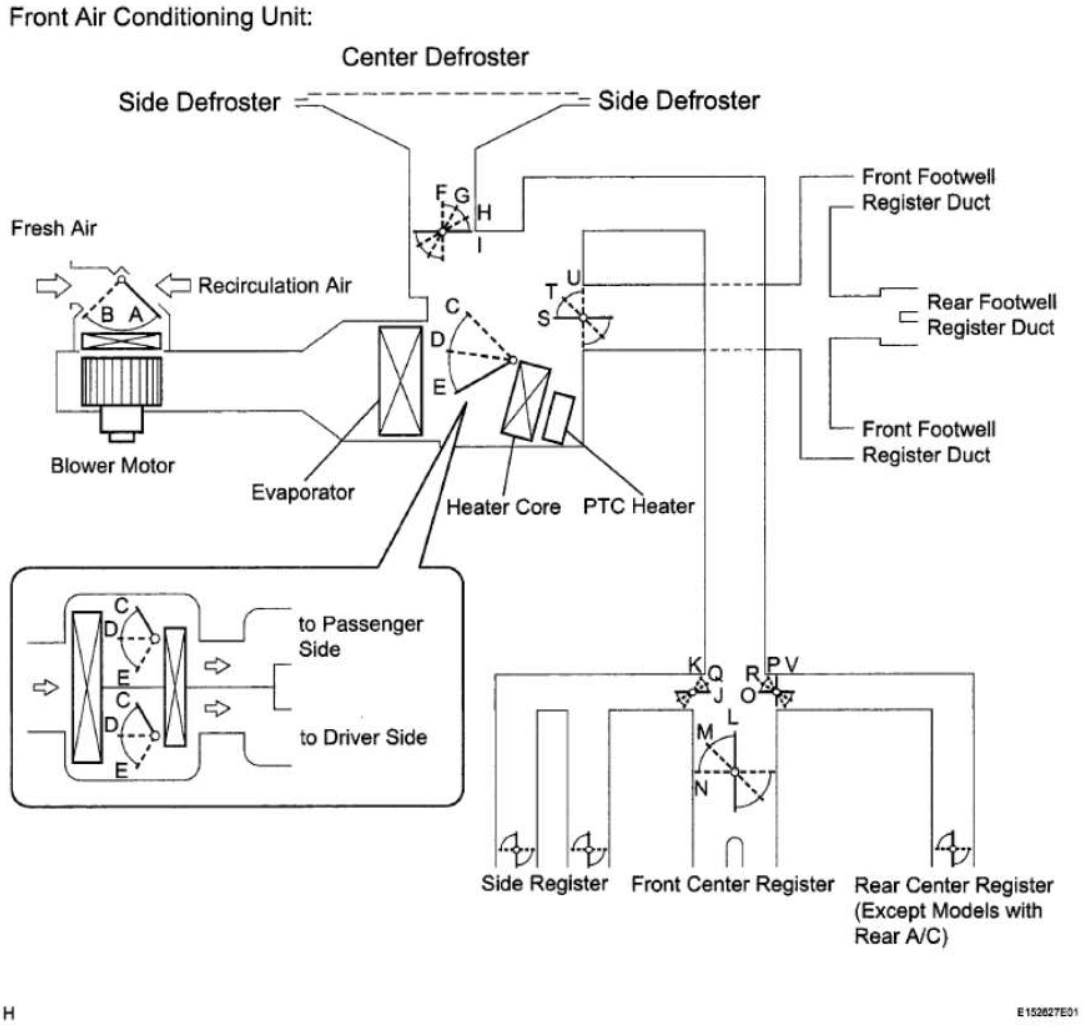


Fig. 147: Mode Position And Damper Operation Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

MODE POSITION AND DAMPER OPERATION REFERENCE CHART

Control Damper		Control Position	Damper Position	Operation
Air Inlet Control Damper		FRESH	A	Brings in fresh air
		RECIRC	B	Recirculates internal air
Air Mix Control Damper (Left/Right Independent Control)	Driver and Front Passenger Side	MAX COOL to MAX HOT	C, D, E	Varies mixture ratio of fresh air and recircuiation air in order to regulate temperature continuously from HOT to COOL
		FACE	I, J, L, 0, U	Air blows out of center registers and side registers.
		BI-LEVEL	I, M, Q, R, T	Air mainly blows out of center registers, side registers, and footwell register ducts.

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Mode Control Film Damper	Driver and Front Passenger Side	FOOT	H, K, N, P, S	Air mainly blows out of front and rear footwell register ducts. In addition, air blows out slightly from front and side defrosters, and side registers.
		FOOT/DEF	G, K, N, P, S	Air mainly blows out of front and side defrosters to defrost windshield. Air also blows out from front and rear footwell register ducts, and side registers.
		DEF	F, K, N, U, V	Air blows out of front and side defrosters and side registers to defrost windshield.

3. **AIR OUTLET AND AIRFLOW VOLUME**

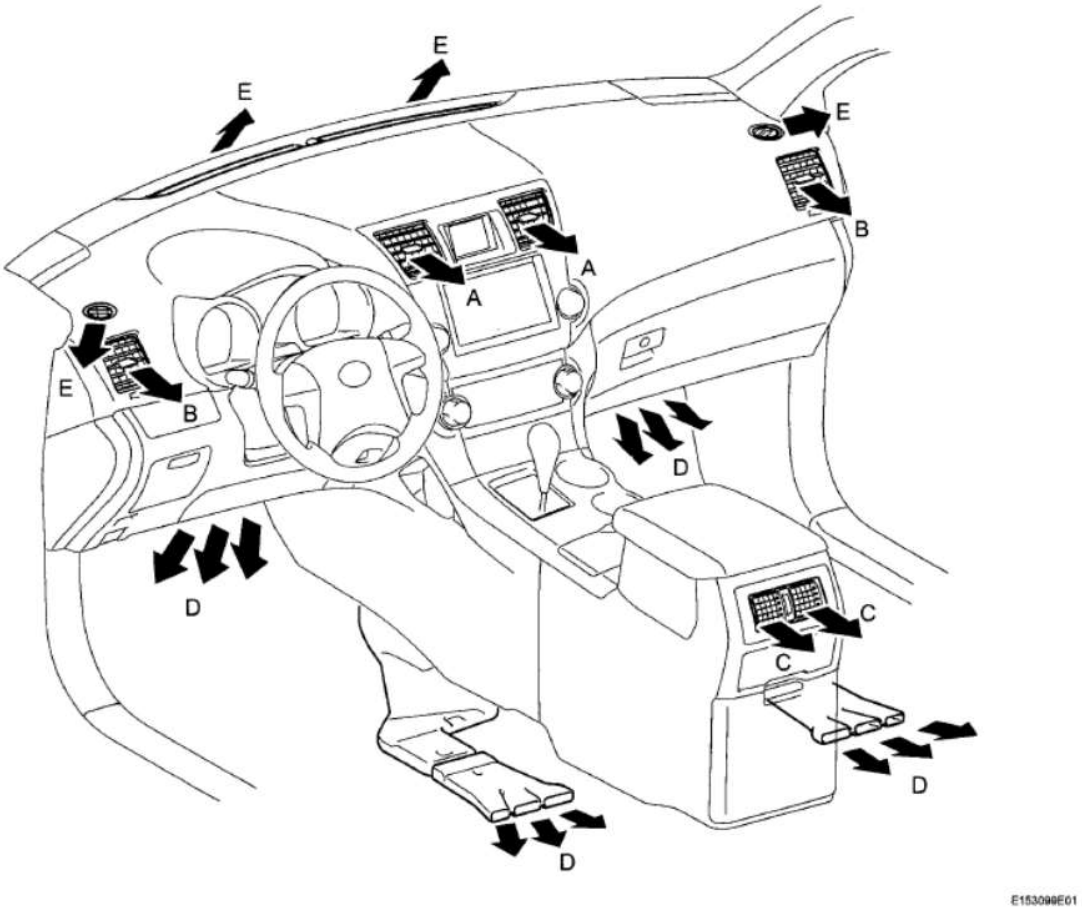


Fig. 148: Air Outlet And Airflow Volume Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

The circle size (O) indicates the proportion of the flow volume.

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Air Outlet Mode		Air Outlet Position Symbol				
		A	B	C	D	E
		Center Face	Side Face	Foot	Footwell	Defroster
	FACE	○	○	X	X	X
	BI-LEVEL	o	o	○	o	X
	FOOT	X	o	○	○	o
	FOOT/DEF	X	o	○	o	○
	DEF	X	○	X	X	○

Fig. 149: Air Outlet And Airflow Volume Reference Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

The size of the circle O indicates the proportion of airflow volume.

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use these procedures to troubleshoot the air conditioning system.
- *: Use Techstream.

1. **VEHICLE BROUGHT TO WORKSHOP**
2. **CUSTOMER PROBLEM ANALYSIS AND SYMPTOM CHECK**
3. **INSPECT BATTERY VOLTAGE**

Standard voltage:

11 to 14 V

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

4. **CHECK CAN COMMUNICATION SYSTEM***
   a. Use Techstream to check if the CAN communication system is functioning.

Result

RESULT REFERENCE CHART

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Result	Proceed to
CAN DTC is not output	A
CAN DTC is output	B (See **DIAGNOSTIC TROUBLE CODE CHART**)

B: GO TO CAN COMMUNICATION SYSTEM

A: Go to next step

5. **CHECK FOR DTC***
   a. Check for DTCs.
      1. Write down the DTCs or sensor check codes.
   b. Clear the DTCs or sensor check codes.
   c. Check whether the DTCs or sensor check codes recur.
      1. Reproduce the problem symptoms in accordance with the DTCs or sensor check codes that were written down, and check whether the DTCs or sensor check codes recur.

         HINT:

         Refer to the DTC chart when any DTCs or sensor check codes are output.

         Result

RESULT REFERENCE CHART

Result	Proceed to
DTC or sensor check code is not output	A
DTC or sensor check code is output	B

B: Go to step 8

A: Go to next step

6. REFER TO **PROBLEM SYMPTOMS TABLE**

Result

RESULT REFERENCE CHART

Result	Proceed to
Fault not listed in problem symptoms table	A
Fault listed in problem symptoms table	B

B: Go to step 8

A: Go to next step

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7. **OVERALL ANALYSIS AND TROUBLESHOOTING***
   a. DATA LIST/ACTIVE TEST (See **DTC CHECK/CLEAR**)
   b. Terminals of ECU (See **TERMINALS OF ECU**)
8. **ADJUST, REPAIR OR REPLACE**
9. **CONFIRMATION TEST**

NEXT: END

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts if necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

Air conditioning system

PROBLEM SYMPTOMS CHART

Symptom	Suspected Area	Refer to
No functions of air conditioning control panel operate	LIN communication line	-
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
No functions of air conditioning system operate	A/C NO. 2 fuse	-
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
	Wire harness or connector	-
Airflow Control: No blower control (Blower motor does not operate)	HTR H-fuse	-
	Blower motor circuit	**BLOWER MOTOR CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	Wire harness or connector	-
Airflow Control: No blower control (Blower motor does not	Blower motor circuit	**BLOWER MOTOR CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**

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change speed)	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
Temperature Control: No cool air comes out	Refrigerant volume	**REPLACEMENT**
	Refrigerant pressure	**REPLACEMENT**
	Air conditioning pressure sensor	**DTC B1423/23 PRESSURE SENSOR CIRCUIT**
	Air conditioning compressor magnetic clutch circuit	**AIR CONDITIONING COMPRESSOR MAGNETIC CLUTCH CIRCUIT**
	Compressor lock sensor circuit	**DTC B1422/22 COMPRESSOR LOCK SENSOR CIRCUIT**
	Compressor solenoid circuit	**DTC B1451/51 COMPRESSOR SOLENOID CIRCUIT**
	Air mix damper control servo motor circuit	**DTC B1441/41 AIR MIX DAMPER CONTROL SERVO MOTOR CIRCUIT (PASSENGER SIDE)**
	Evaporator temperature sensor circuit	**DTC B1413/13 EVAPORATOR TEMPERATURE SENSOR CIRCUIT**
	Ambient temperature sensor circuit	**DTC B1412/12 AMBIENT TEMPERATURE SENSOR CIRCUIT**
	Expansion valve	-
	Air conditioning amplifier	**TERMINALS OF ECU**
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	ECM	**HOW TO PROCEED WITH TROUBLESHOOTING**
	ECM	**HOW TO PROCEED WITH TROUBLESHOOTING**
	LIN communication line	-
	CAN communication system	**PROBLEM SYMPTOMS TABLE**
Temperature Control: No warm air comes out	Air mix damper control servo motor circuit	**DTC B1441/41 AIR MIX DAMPER CONTROL SERVO MOTOR CIRCUIT (PASSENGER SIDE)**
	Air conditioning harness	-
	Air conditioning amplifier	**TERMINALS OF ECU**
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	ECM	**HOW TO PROCEED WITH TROUBLESHOOTING**
	ECM	**HOW TO PROCEED WITH TROUBLESHOOTING**

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	LIN communication line	-
	CAN communication system	**PROBLEM SYMPTOMS TABLE**
Temperature Control: Output air is warmer or cooler than set temperature or response is slow	Air inlet damper control servo motor circuit	**DTC B1442/42 AIR INLET DAMPER CONTROL SERVO MOTOR CIRCUIT**
	Heater radiator	-
	Expansion valve	-
	Air conditioning amplifier	**TERMINALS OF ECU**
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	ECM	**HOW TO PROCEED WITH TROUBLESHOOTING**
	ECM	**HOW TO PROCEED WITH TROUBLESHOOTING**
	LIN communication line	-
	CAN communication system	**PROBLEM SYMPTOMS TABLE**
Temperature Control: No temperature control (Only Max. cool or Max. warm)	Air conditioning amplifier	**TERMINALS OF ECU**
	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	LIN communication line	-
No air inlet control	Air outlet damper control servo motor circuit	**DTC B1443/43 AIR OUTLET DAMPER CONTROL SERVO MOTOR CIRCUIT**
	Air inlet damper control servo motor circuit	**DTC B1442/42 AIR INLET DAMPER CONTROL SERVO MOTOR CIRCUIT**
	evaporator temperature sensor circuit	**DTC B1413/13 EVAPORATOR TEMPERATURE SENSOR CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
No air flow mode control	Air outlet damper control servo motor circuit	**DTC B1443/43 AIR OUTLET DAMPER CONTROL SERVO MOTOR CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
	Air conditioning compressor magnetic clutch circuit	**AIR CONDITIONING COMPRESSOR MAGNETIC CLUTCH CIRCUIT**
	Compressor lock sensor circuit	**DTC B1422/22 COMPRESSOR LOCK SENSOR CIRCUIT**
	Compressor solenoid circuit	**DTC B1451/51 COMPRESSOR SOLENOID CIRCUIT**

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Engine idle up does not occur, or is continuous	Air conditioning control	**HEATER CONTROL PANEL POWER SOURCE CIRCUIT**
	LIN communication line	-
	Air conditioning amplifier	-
	ECM (for 2GR-FE)	**HOW TO PROCEED WITH TROUBLESHOOTING**
	ECM (for 1AR-FE)	**HOW TO PROCEED WITH TROUBLESHOOTING**
A/C indicator blinking	Compressor solenoid circuit	**DTC B1451/51 COMPRESSOR SOLENOID CIRCUIT**
	Air conditioning amplifier	**TERMINALS OF ECU**
Diagnostic trouble codes sre not recorded. Set mode is cleared when ignition switch turnes off	Air comditioning amplifier	**TERMINALS OF ECU**
	Back-up power source circuit	**BACK-UP POWER SOURCE CIRCUIT**

TERMINALS OF ECU

1. **CHECK AIR CONDITIONING AMPLIFIER**

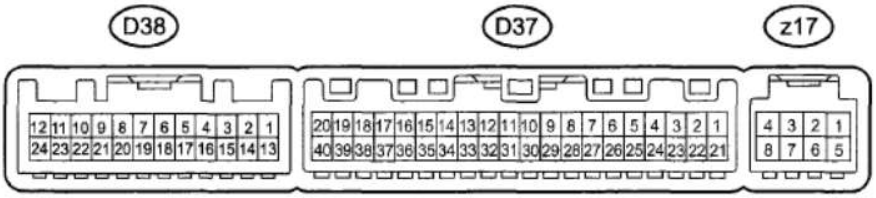


Fig. 150: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Measure the voltage of the connectors.

HINT:

Check from the rear of the connector while it is connected to the air conditioning amplifier.

AIR CONDITIONING AMPLIFIER CONNECTOR TERMINALS REFERENCE CHART

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
D37-1 (IG+) - D37-14 (GND)	GR - W-B	Power source (IG)	Ignition switch on (IG)	11 to 14 V
D37-2 (SOL+) -		A/C compressor	Engine idling	Pulse generation

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D37-14 (GND)	L-W-B	operation signal	Blower switch LO A/C switch ON	(see waveform 1 a)
D37-3 (PTC1) - Body ground (*1)	P - Body ground	PTC NO. 1 heater relay operation signal	Engine idling Set temperature: MAX HOT Engine coolant temperature: Below 65°C (149°F) Ambient temperature: Below 10°C(50°F) Blower switch OFF --> LO	Below 1 V-->11 to 14 V
D37-4 (PTC3) - Body ground (*1)	W - Body ground	PTC NO. 3 heater relay operation signal	Engine idling Set temperature: MAX HOT Engine coolant temperature: Below 65°C (149-F) Ambient temperature: Below 10°C(50°F) Blower switch OFF --> LO	Below 1 V-->11 to 14 V
D37-5 (TAM) - D37-14 (GND)	B-W-B	Ambient temperature sensor signal	Ignition switch on (IG) Ambient temperature: 25°C (77°F)	1.8 to 2.2 V
D37-8 (LOCK) - D37-14 (GND)	V-W-B	Air compressor lock sensor signal	Engine idling A/C switch ON Blower switch LO	Pulse generation (see waveform 5 e)
D37-9 (PRE) - D37-13 (SG-2)	R-SB	Air conditioning pressure sensor signal	Refrigerant pressure: Normal	0.76 to 4.74 V
D37-9 (PRE) - D37-13 (SG-2)	R-SB	Air conditioning pressure sensor signal	Refrigerant pressure: Abnormal (less than 0.196 MPa [2.0 kgf/cm^2 , 28 psi])	0.5 to 4.83 V
D37-9 (PRE) - D37-13 (SG-2)	R-SB	Air conditioning pressure sensor signal	Refrigerant pressure: Abnormal (more than 3.14 MPa [32 kgf/cm^2 , 455 psi])	4.74 V or higher
D37-10 (S5-3) - D37-14 (GND)	O-W-B	Power supply for pressure sensor	Ignition switch on (IG)	4.5 to 5.5 V
D37-11 (CANH) - D37-14 (GND)	LG - W-B	Hi-level CAN bus line	Ignition switch on (IG)	Pulse generation (see waveform 3 c)
D37-12 (CANL) - D37-14 (GND)	W-W-B	Lo-level CAN bus line	Ignition switch on (IG)	Pulse generation (see waveform 4 d)
D37-13 (SG-2) -	SB - Body	Ground for pressure		

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Body ground	ground	sensor	Always	Below 1 V
D37-14 (GND) - Body ground	W-B - Body ground	Ground for main power supply	Always	Below 1 V
D37-20 (MGC) - D37-14 (GND)	V-W-B	A/C compressor magnetic clutch operation signal	Engine idling Blower switch LO A/C switch ON	Below 1 V
D37-21 (B) - D37-14 (GND)	LG - W-B	Power source (Back-up)	Always	11 to 14 V
D37-22 (PTC2) - Body ground (*1)	G - Body ground	PTC NO. 2 heater relay operation signal	Engine idling Set temperature: MAX HOT Engine coolant temperature: Below 65°C (149°F) Ambient temperature: Below 10°C (50°F) Blower switch OFF --> LO	Below 1V--> 11 to 14 V
D37-23 (BLW) - D37-14 (GND)	R-W-B	Blower motor control signal	Ignition switch on (IG) Blower switch LO	Pulse generation (see waveform 2 b)
D37-25 (ALT) - Body ground (*1)	SB - Body ground	Generator signal	Engine idling	Pulse generation
D37-37 (LIN1) - D37-14 (GND)	R-W-B	LIN communication signal	Ignition switch on (IG)	Pulse generation
D37-38 (RDEF) - D37-14 (GND)	W-W-B	Rear defogger switch signal	Ignition switch on (IG) Rear defogger switch OFF	11 to 14 V
D37-38 (RDEF) - D37-14 (GND)	W-W-B	Rear defogger switch signal	Ignition switch on (IG) Rear defogger switch ON	Below 1 V
Z17-2 (BUS G) - Body ground	-	Ground for BUS IC	Always	Below 1 V
z17-3 (BUS) - z17-2 (BUS G)	-	BUS IC control signal	Ignition switch on (IG)	Pulse generation
z17-4 (BBUS) - z17-2 (BUS G)	-	Power supply for BUS IC	Ignition switch on (IG)	11 to 14 V
z17-5 (SGA) - Body ground	-	Ground for evaporator temperature sensor	Always	Below 1 V
z17-6 (TEA) - z17-5 (SGA)	-	Evaporator temperature sensor signal	Ignition switch on (IG) Evaporator temperature: 15°C(59°F)	1.4 to 1.8 V

b. Using an oscilloscope, check waveform 1.

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Compressor and pulley operation signal

WAVEFORM REFERENCE CHART

Item	Content
Tester Connection	D37-2 (SOL+) - D37-14 (GND)
Tool Setting	5 V/DIV., 500 µsec/DIV.
Condition	Engine idling, Blower switch LO, A/C switch ON

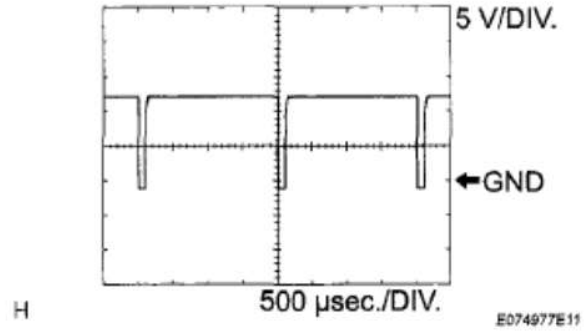


Fig. 151: Waveform 1 Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Using an oscilloscope, check waveform 2.

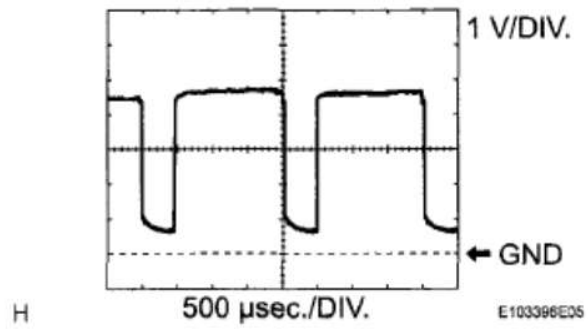
Blower motor control signal

WAVEFORM REFERENCE CHART

Item	Content
Tester Connection	D37-23 (BLW) - D37-14 (GND)
Tool Setting	1 V/DIV., 500 µsec./DIV.
Condition	Ignition switch on (IG), Blower switch LO

HINT:

When the blower level is increased, the duty ratio changes accordingly.



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Fig. 152: Waveform 2 Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Using an oscilloscope, check waveform 3.

CAN communication signal

WAVEFORM REFERENCE CHART

Item	Content
Tester Connection	D37-11 (CANH) - D37-14 (GND)
Tool Setting	1 V/DIV, 10 µsec./DIV.
Condition	Ignition switch on (IG)

HINT:

The waveform varies depending on the CAN communication signal.

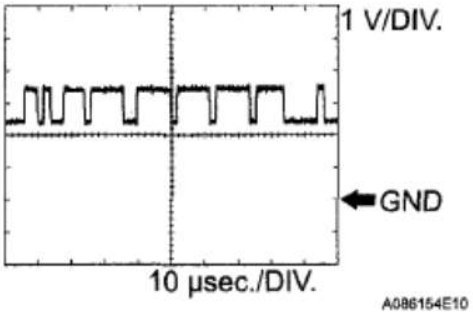


Fig. 153: Waveform 3 Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

e. Using an oscilloscope, check waveform 4.

CAN communication signal

WAVEFORM REFERENCE CHART

Item	Content
Tester Connection	D37-12 (CANL) - D37-14 (GND)
Tool Setting	1 V/DIV., 10 µsec./DIV.
Condition	Ignition switch on (IG)

HINT:

The waveform varies depending on the CAN communication signal.

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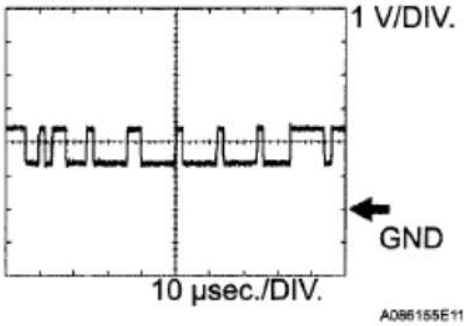


Fig. 154: Waveform 4 Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

f. Using an oscilloscope, check waveform 5.

A/C compressor lock sensor signal

WAVEFORM REFERENCE CHART

Item	Content
Tester Connection	D37-8 (LOCK) - D37-14 (GND)
Tool Setting	200mV/DIV., 10 ms./DIV.
Condition	Engine is running Blower switch: LO A/C switch: ON

HINT:

The waveform varies depending on the CAN communication signal.

*1: w/ PTC Heater

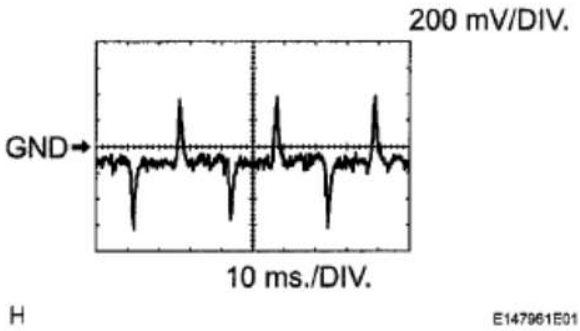


Fig. 155: Waveform 5 Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **CHECK FRONT AIR CONDITIONING CONTROL**

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E152670E01

Fig. 156: Identifying Front Air Conditioning Control Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Measure the voltage of the connectors.

FRONT AIR CONDITIONING CONTROL CONNECTOR TERMINALS REFERENCE CHART

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
E10-2 (IG+) - E10-10 (GND)	V-GR	Power source (IG)	Ignition switch on (IG)	11 to 14 V
E10-5 (LIN1) - E10-10 (GND)	R-GR	LIN communication signal	LIN switch on (IG)	Pulse generation
E10-10 (GND) - Body ground	GR - Body ground	Ground for front air conditioning control	Always	Below 1 V

DIAGNOSIS SYSTEM

1. **DESCRIPTION**
   a. Air conditioning system data and the Diagnostic Trouble Codes (DTCs) can be read through the Data Link Connector 3 (DLC3) of the vehicle. When the system seems to be malfunctioning, use Techstream to check for malfunctions and perform troubleshooting.
2. **CHECK DLC3**

   Check the DLC3 (See **HOW TO TROUBLESHOOT ECU CONTROLLED SYSTEMS**).

DTC CHECK/CLEAR

1. **CHECK DTC**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream on.
   c. Read the DTC by following the prompts on the tester screen.

      HINT:

      Refer to Techstream operator's manual for further details.

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2. **CLEAR DTC**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream on.
   c. Clear the DTC by following the prompts on the tester screen.

   HINT:

   Refer to Techstream operator's manual for further details.

DATA LIST/ACTIVE TEST

1. **READ DATA LIST**

   HINT:

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

   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream on.
   c. Read the Data List by following the prompts on the tester.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Ambient Temp Sensor	Ambient temperature sensor/Min.: -23.3°C (-9.94° F) Max.: 65.95°C (150.71°F)	Actual ambient temperature is displayed	Open in circuit: -23.3°C (-9.94° F) Short in circuit: 65.95°C (150.71°F)
Engine Coolant Temp	Engine coolant temperature sensor/ Min.: 1.3°C (34.34° F) Max.: 90.55°C(194.99°F)	Actual engine coolant temperature is displayed	-
Blower motor speed Level	Blower motor speed level/Min.: 0, Max.: 31	Increases in range between 0 and 31 as blower motor speed increases	-
Adjusted Ambient Temp	Adjusted ambient temperature/Min.: -30.8°C (-23.44°F) Max.: 50.8°C (123.44°F)	Adjusted ambient temperature is displayed	-
	Passenger side air mix servo		

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Air Mix Sensor Targ Pulse(P)	motor target pulse/Min.: 0, Max.: 255	MAX. COLD: 105 (pulse) MAX. HOT: 7 (pulse)	-
Air Mix Sensor Targ Pulse(D)	Driver side air outlet servo motor target/Min.: 0, Max.: 255	FACE: 8 (pulse) B/L: 30 (pulse) FOOT: 67 (pulse) FOOT/DEF: 80 (pulse) DEF: 97 (pulse)	-
Air Inlet Damper Targ Pulse	Air inlet damper target pulse/Min.: 0, Max.: 255	RECIRCULATION: 7 (pulse) FRESH: 28 (pulse)	-
Evaporator Fin Temperature	Evaporator temperature sensor/Min.:-29.7°C(-21.46° F) Max.: 59.55°C (139.19°F)	Actual evaporator temperature is displayed	-
Regulator Pressure Sensor	Regulator pressure sensor/Min.: 0 kgf/cm^2 G Max.: 38.25 kgf/cm^2 G	Actual regulator pressure is displayed	-
Regulator Control Current	Regulator control current/Min.: 0A Max.: 0.997 A	Value changes between 0 A and 0.997 A in accordance with compressor and magnetic clutch operation	-
#Codes	Number of trouble codes/Min.: 0, Max.: 255	Number of DTCs displayed	-

2. **PERFORM ACTIVE TEST**

HINT:

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

a. Connect Techstream to the DLC3.
b. Turn the ignition switch on (IG) and turn Techstream on.
c. Perform the Active Test by following the prompts on the tester.

Active Test/Air Conditioner

ACTIVE TEST/AIR CONDITIONER REFERENCE CHART

Tester Display	Test Part	Control Range	Diagnostic Note
Blower Motor	Blower motor	Min.: 0, Max.: 31	-
Magnetic Clutch Relay	Magnetic clutch relay	OFF, ON	-
Defogger Relay (Rear)	Defogger relay (Rear)	OFF, ON	-

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Electric Heater 1	PTC heater 1	OFF, ON	-
Electric Heater 2	PTC heater 2	OFF, ON	-
Electric Heater 3	PTC heater 3	OFF, ON	-
Air Mix Servo Targ Pulse(P)	Air mix servo motor pulse (P side)	Min.: 7, Max.: 105	-
Air Outlet Servo Targ Pulse(D)	Air outlet servo motor pulse (D side)	Min.: 8, Max.: 97	-
Air Inlet Damper Targ Pulse (D)	Air inlet damper target pulse	Min.: 7, Max.: 28	-

DIAGNOSTIC TROUBLE CODE CHART

Air conditioning system

DIAGNOSTIC TROUBLE CODE CHART

DTC Code	Detection Item	Trouble Area	Memory (2)
B1412/12(1)	Ambient Temperature Sensor Circuit	1. Ambient temperature sensor 2. Wire harness between ambient temperature sensor and air conditioning amplifier 3. Air conditioning amplifier	Memorized (8.5 min. or more)
B1413/13	Evaporator Temperature Sensor Circuit	1. No. 1 cooler thermistor (Evaporator temperature sensor) 2. Air conditioning harness 3. Air conditioning amplifier	Memorized (8.5 min. or more)
B1422/22	Compressor Lock Sensor Circuit	1. A/C compressor (A/C lock sensor) 2. Compressor drive belt 3. Harness or connector between compressor and air conditioning amplifier	-

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		4. Air conditioning amplifier 5. CAN communication system	
B1423/23	Pressure Sensor Circuit	1. Pressure sensor 2. Harness or connector between pressure sensor and A/C amplifier 3. A/C amplifier 4. Expansion valve (blocked, stuck) 5. Condenser (blocked, deterioration of cooling capacity due to dirt) 6. Cooler dryer (moisture in the refrigerant cycle cannot be absorbed) 7. Cooling fan system (condenser cannot be cooled down) 8. A/C system (leaks, blocked)	-
B1441/41	Air Mix Damper Control Servo Motor Circuit (Passenger Side)	1. Air mix control servo motor 2. Air conditioning harness 3. Air conditioning amplifier	Memorized (30 sec.)
B1442/42	Air Inlet Damper Control Servo Motor Circuit	1. Air inlet control servo motor 2. Air conditioning harness 3. Air conditioning amplifier	Memorized (30 sec.)
B1443/43	Air Outlet Damper Control Servo Motor Circuit	1. Air outlet control servo motor	Memorized (30 sec.)

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		2. Air conditioning harness 3. Air conditioning amplifier	
B1451/51	Compressor Solenoid Circuit	1. Compressor and magnetic clutch (for 2GR-FE) 2. Compressor assembly with pulley (for 1AR-FE) 3. Wire harness between air conditioning amplifier and compressor and magnetic clutch 4. Air conditioning amplifier	-
B1497/97	BUS IC Communication Malfunction	1. Air conditioning harness 2. Air conditioning amplifier	-
B1499/99	Multiplex Communication Circuit	1. Air conditioning amplifier 2. ECM 3. Combination meter 4. CAN communication line	-

(1) If the ambient temperature is approximately -52.9°C (-63.22°F) or lower, DTC B1412/12 may be output even though the system is normal.

(2) The A/C amplifier memorizes the DTC of the respective malfunction if it has occurred for the period of time indicated in the brackets.

DTC B1412/12 AMBIENT TEMPERATURE SENSOR CIRCUIT

DESCRIPTION

The ambient temperature sensor is installed in front of the condenser.

The air conditioning amplifier applies a voltage (5 V) to the ambient temperature sensor and reads voltage changes as changes in the resistance of the ambient temperature sensor.

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DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1412/12	Open or short in ambient temperature sensor circuit	• Ambient temperature sensor • Wire harness between ambient temperature sensor and Air conditioning amplifier • Air conditioning amplifier

WIRING DIAGRAM

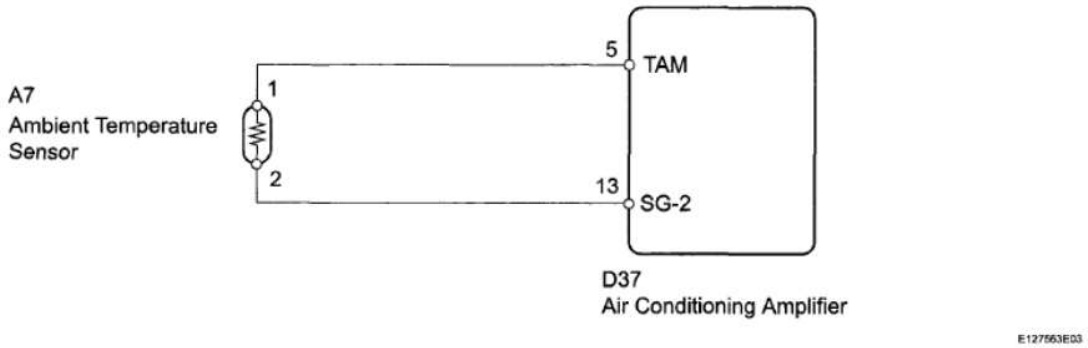


Fig. 157: Ambient Temperature Sensor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the item below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Ambient Temp Sensor	Ambient temperature sensor/Min.: -23.3°C (-9.94-F) Max.: 65.95°C (150.71°F)	Actual ambient temperature is displayed	Open in circuit: -23.3°C (-9.94°F) Short in circuit: 65.95°C (150.71°F)

OK:

The display is as specified in the normal condition column.

Result

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RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **INSPECT AMBIENT TEMPERATURE SENSOR**
   a. Remove the ambient temperature sensor (See **INSPECTION**).
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A7-1 - A7-2	10°C (50°F)	3.00 to 3.73 kohms
A7-1 - A7-2	15°C (50°F)	2.45 to 2.88 kohms
A7-1 - A7-2	20°C (68°F)	1.95 to 2.30 kohms
A7-1 - A7-2	25°C (77°F)	1.60 to 1.80 kohms
A7-1 - A7-2	30°C (86°F)	1.28 to 1.47 kohms
A7-1 - A7-2	35°C (95°F)	1.00 to 1.22 kohms
A7-1 - A7-2	40°C (104°F)	0.80 to 1.00 kohms
A7-1 - A7-2	45°C(113°F)	0.65 to 0.85 kohms
A7-1 - A7-2	50°C (122°F)	0.50 to 0.70 kohms
A7-1 - A7-2	55°C(131°F)	0.44 to 0.60 kohms
A7-1 - A7-2	60°C (140°F)	0.36 to 0.50 kohms

NOTE:

- **Touching the sensor even slightly may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring, the sensor temperature must be the same as the ambient temperature.**

HINT:

As the temperature increases, the resistance decreases (see the graph).

NG: REPLACE AMBIENT TEMPERATURE SENSOR (See **INSPECTION**)

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Component without harness connected:
(Ambient temperature Sensor)

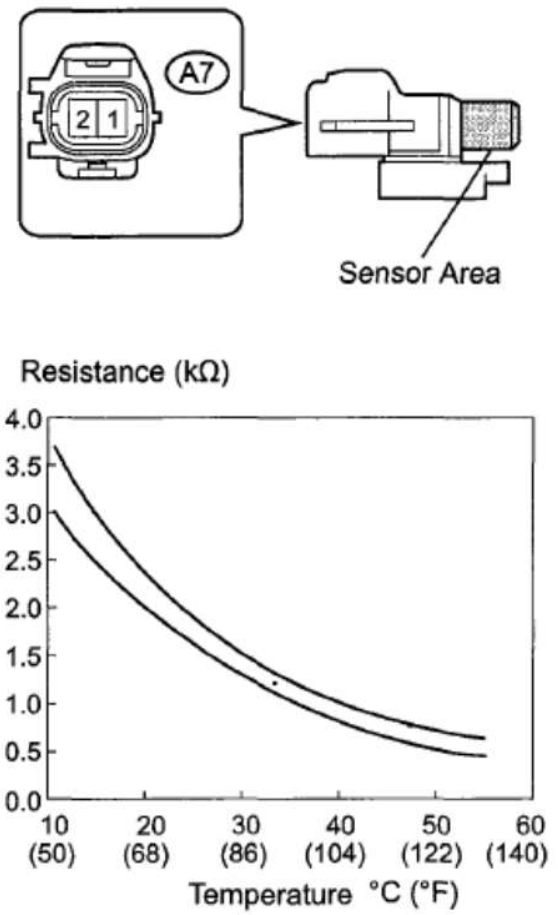


Fig. 158: Identifying Ambient Temperature Sensor Connector Terminals And Temperature/Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (AMBIENT TEMPERATURE SENSOR - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the A7 sensor connector.
   b. Disconnect the D37 amplifier connector.
   c. Measure the resistance according to the value(s) in the table below.

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Standard resistance

STANDARD RESISTANCE CHART

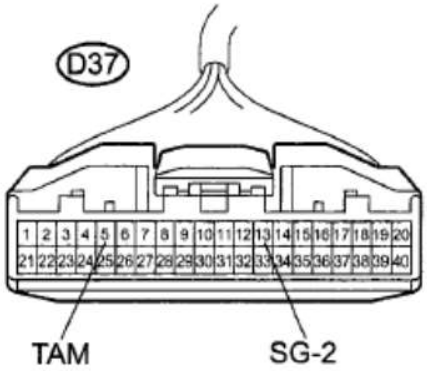
Tester Connection	Condition	Specified Condition
A7-1 - D37-5 (TAM)	Always	Below 1 ohms
A7-2 - D37-13 (SG-2)	Always	Below 1 ohms
D37-5 (TAM) - Body ground	Always	10 kohms or higher
D37-13 (SG-2) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Ambient Temperature Sensor)



Front view of wire harness connector:
(to Air Conditioning Amplifier)



E152597E02

Fig. 159: Identifying A7 Sensor Connector And D37 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1413/13 EVAPORATOR TEMPERATURE SENSOR CIRCUIT

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DESCRIPTION

The No. 1 cooler thermistor (evaporator temperature sensor) is installed on the evaporator in the air conditioning unit to detect the temperature of the cooled air that has passed through the evaporator and to control the air conditioner. It sends signals to the air conditioning amplifier. The signals change in accordance with the resistance of the No. 1 cooler thermistor (evaporator temperature sensor). As the temperature decreases, the resistance increases. As the temperature increases, the resistance decreases. The air conditioning amplifier applies a voltage (5 V) to the No. 1 cooler thermistor (evaporator temperature sensor) and reads voltage changes as changes in the resistance of the No. 1 cooler thermistor (evaporator temperature sensor). This sensor is used for frost prevention.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1413/13	Open or short in evaporator temperature sensor circuit	• No. 1 cooler thermistor (evaporator temperature sensor) • Wire harness between No. 1 cooler thermistor (evaporator temperature sensor) and air conditioning amplifier • Air conditioning amplifier

WIRING DIAGRAM

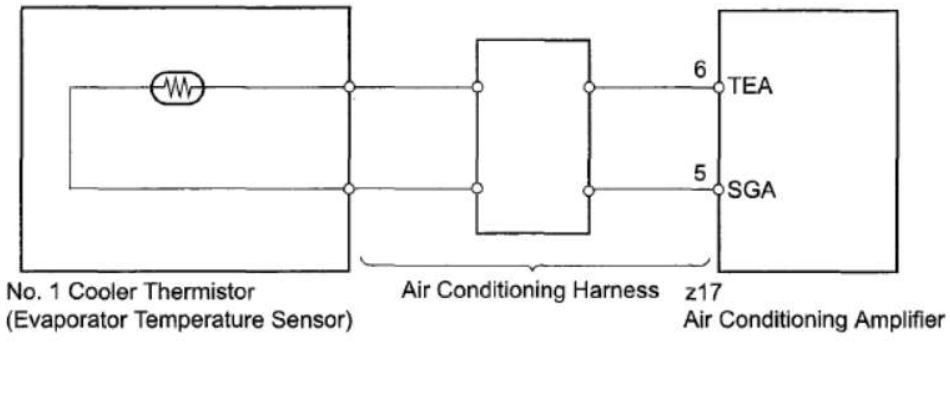


Fig. 160: Evaporator Temperature Sensor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the item below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

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DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Evaporator Fin Temperature	Evaporator temperature sensor/Min.:-29.7°C(-21.46°F) Max.: 59.6°C (139.28°F)	Actual evaporator temperature is displayed	Open in circuit: -29.7° C (-21.46°F) Short in circuit: 59.6° C (139.28°F)

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **INSPECT NO. 1 COOLER THERMISTOR (EVAPORATOR TEMPERATURE SENSOR)**
   a. Remove the No. 1 cooler thermistor.

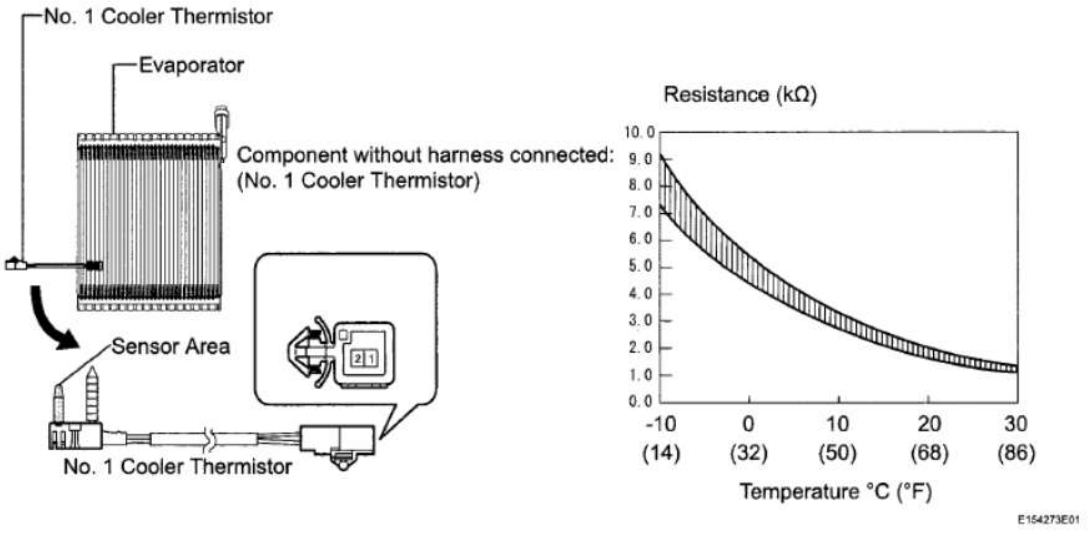


Fig. 161: Identifying No. 1 Cooler Thermistor And Temperature/Resistance Graph

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
1-2	-10°C(14°F)	7.30 to 9.10 kohms
1-2	-5°C (23°F)	5.65 to 6.95 kohms
1-2	0°C (32°F)	4.40 to 5.35 kohms
1-2	5°C(41°F)	3.40 to 4.15 kohms
1-2	10°C (50°F)	2.70 to 3.25 kohms
1-2	15°C(59°F)	2.14 to 2.58 kohms
1-2	20°C (68°F)	1.71 to 2.05 kohms
1-2	25°C (77°F)	1.38 to 1.64 kohms
1-2	30°C (86°F)	1.11 to 1.32 kohms

NOTE:

- **Touching the thermistor even slightly may change the resistance value. Be sure to hold the connector of the thermistor.**
- **When measuring, the thermistor temperature must be the same as the ambient temperature.**

HINT:

As the temperature increases, the resistance decreases (see the graph).

NG: REPLACE NO. 1 COOLER THERMISTOR

OK: Go to next step

3. **INSPECT AIR CONDITIONING HARNESS**
   a. Remove the air conditioning harness.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
z17-6 (TEA) - 2	Always	Below 1 ohms
z17-5 (SGA) - 1	Always	Below 1 ohms
z17-6 (TEA) - Body Ground	Always	10 kohms or higher
z17-5 (SGA) - Body Ground	Always	10 kohms or higher

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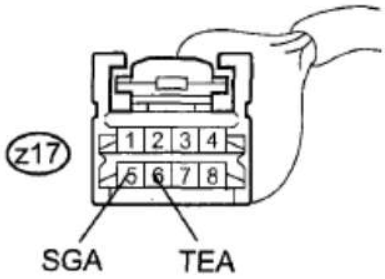
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NG: REPLACE AIR CONDITIONING HARNESS

Front view of wire harness connector:
(to Evaporator Temperature Sensor)



Front view of wire harness connector:
(to Air Conditioning Amplifier)



E135297E04

Fig. 162: Identifying Evaporator Temperature Sensor Connector And Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1422/22 COMPRESSOR LOCK SENSOR CIRCUIT

SYSTEM DESCRIPTION

The ECM sends the engine speed signal to the air conditioning amplifier via CAN communication. The air conditioning amplifier reads the difference between compressor speed and engine speed. When the difference becomes too large, the air conditioning amplifier determines that the compressor is locked, and turns the magnetic clutch off.

DTC DETECTION CONDITION CHART

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DTC No.	DTC Detection Condition	Trouble Area
B1422/22	Open or short in compressor lock sensor circuit	• Air conditioning compressor (Air conditioning lock sensor) • Compressor drive belt • Harness or connector between compressor and air conditioning amplifier • Air conditioning amplifier • CAN communication system

WIRING DIAGRAM

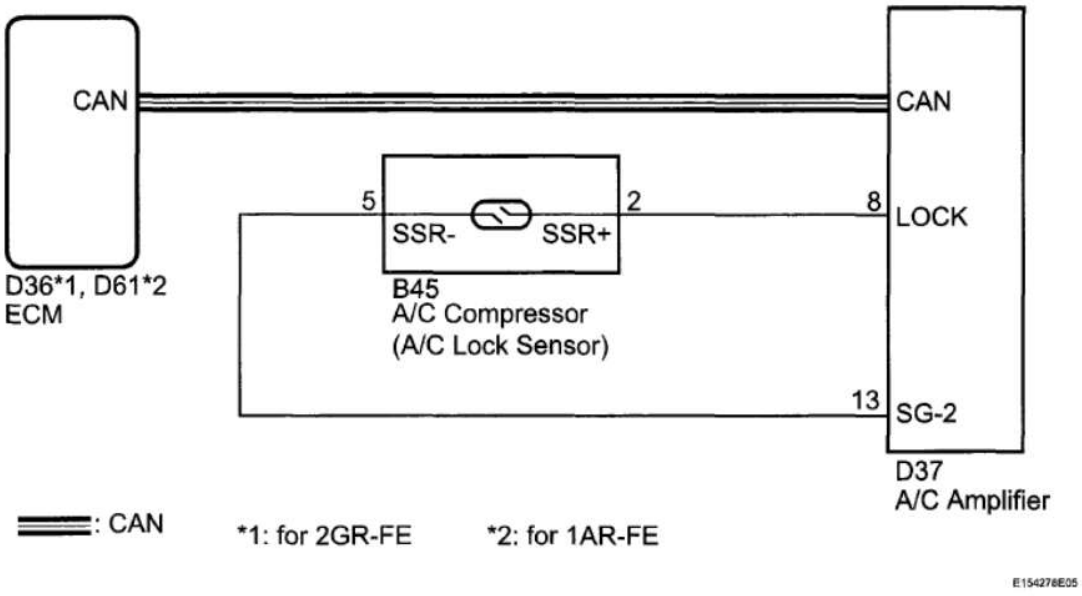


Fig. 163: Compressor Lock Sensor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK CAN COMMUNICATION SYSTEM**
   a. Use Techstream to check if the CAN communication system is functioning normally (See **HOW TO PROCEED WITH TROUBLESHOOTING**).

   OK: CAN DTC is not output.

   NG: GO TO CAN COMMUNICATION SYSTEM (See **DIAGNOSTIC TROUBLE CODE CHART**)

   OK: Go to next step

2. **INSPECT AIR CONDITIONING AMPLIFIER**

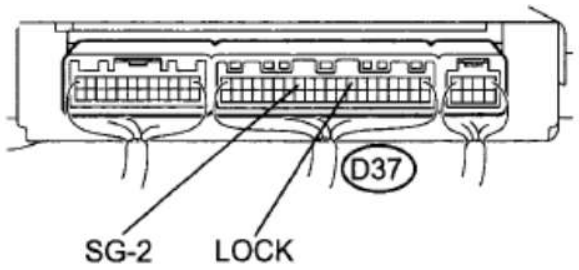
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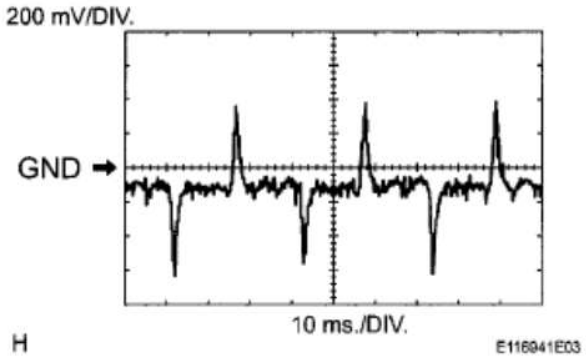
a. Remove the air conditioning amplifier with the connectors still connected (See **REMOVAL**).

Components with harness connected:
(Air Conditioning Amplifier)



H E124471E38

Fig. 164: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



H E116941E03

Fig. 165: Identifying Connector Waveform
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Measure the waveform of the connector.

WAVEFORM REFERENCE CHART

Item	Contents
Tool setting	200mV/DIV., 10 ms./DIV.
Vehicle condition	Engine is running A/C switch: ON Blower switch: LO

Standard

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TESTER CONNECTION AND SPECIFIED CONDITION

Tester Connection	Condition	Specified Condition
D37-8 (LOCK) - D37-13 (SG-2)	Engine is running A/C switch: ON Blower switch: LO	Pulse generation

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (When troubleshooting according to PROBLEM SYMPTOMS TABLE)	B
OK (When troubleshooting according to DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

3. **INSPECT COMPRESSOR AND MAGNETIC CLUTCH (AIR CONDITIONING LOCK SENSOR)**
   a. Disconnect the connector from the air conditioning compressor.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B45-2 (SSR+) - B45-5 (SSR-)	20°C (68°F)	160 to 320 ohms

NG: REPLACE COMPRESSOR AND MAGNETIC CLUTCH (AIR CONDITIONING LOCK SENSOR) (See **DISASSEMBLY**)

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Component without harness connected:
(Air Conditioning Lock Sensor)

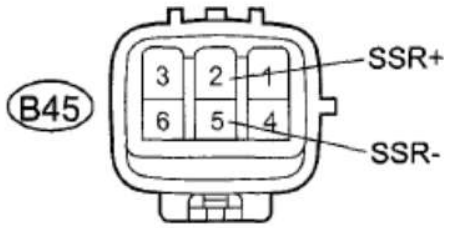


Fig. 166: Identifying Air Conditioning Lock Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - AIR CONDITIONING LOCK SENSOR)**
   a. Disconnect the connector from the air conditioning amplifier.

Front view of wire harness connector:
(to Air Conditioning Amplifier)

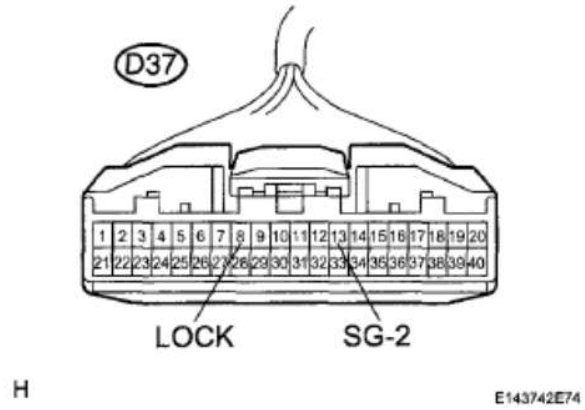


Fig. 167: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

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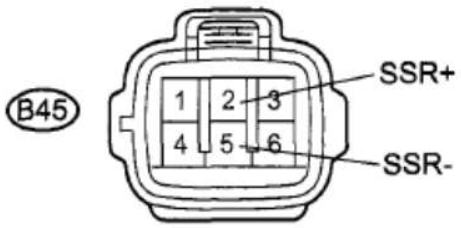
Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D37-8 (LOCK) - B45-2 (SSR+)	Always	Below 1 ohms
D37-13 (SG-2) - B45-5 (SSR-)	Always	Below 1 ohms
D37-8 (LOCK) - Body ground	Always	10 kohms or higher
D37-13 (SG-2) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Compressor and Magnetic Clutch)



E152687E03

Fig. 168: Identifying Air Conditioning Lock Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1423/23 PRESSURE SENSOR CIRCUIT

DESCRIPTION

This DTC is output if refrigerant pressure on the high pressure side is extremely low (0.176 MPa (2.0 kgf/cm^2 , 28 psi) or less) or extremely high (3.03 MPa (32.0 kgf/cm^2 , 455 psi) or more). The pressure sensor, which is installed on the pipe of the high pressure side to detect refrigerant pressure, outputs a refrigerant pressure signal to the Air Conditioning amplifier. The Air Conditioning amplifier converts this signal to pressure according to the sensor characteristics to control the compressor.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area

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B1423/23	• Open or short in pressure sensor circuit • Refrigerant pressure on the high pressure side is extremely low (0.19 MPa (2.0 kgf/cm^2 , 28 psi) or less) or extremely high (3.14 MPa (32.0 kgf/cm^2 , 455 psi) or more).	• Pressure sensor • Harness or connector between pressure sensor and Air Conditioning amplifier • Air Conditioning amplifier • Expansion valve (blocked, stuck) • Condenser (blocked, deterioration of cooling capacity due to dirt) • Cooler dryer (moisture in the refrigerant cycle cannot be absorbed) • Cooling fan system (condenser cannot be cooled down) • Air Conditioning system (leaks, blocked)

WIRING DIAGRAM

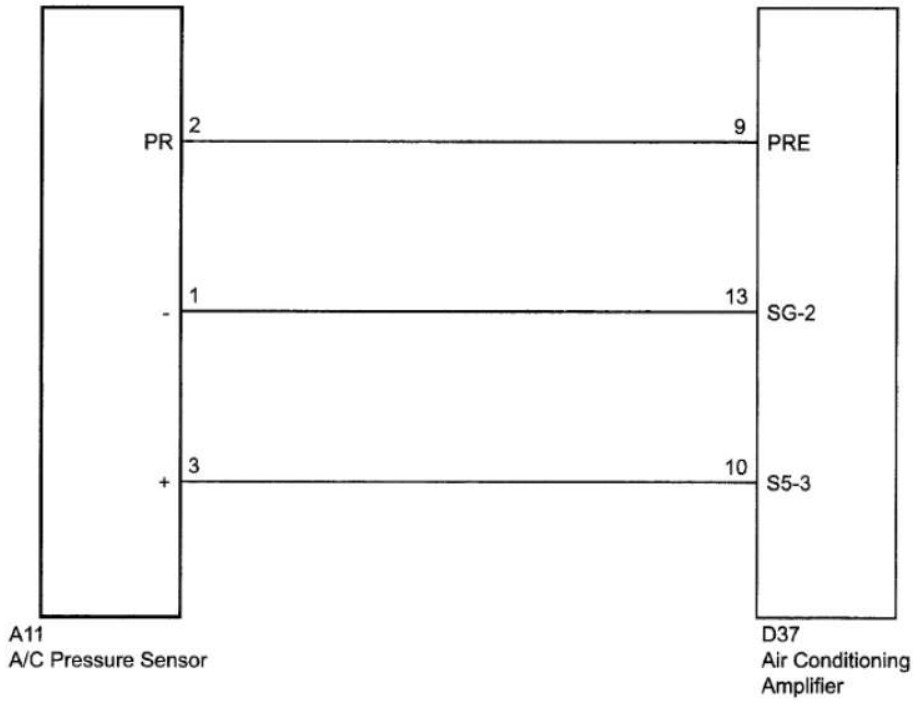


Fig. 169: Pressure Sensor Circuit - Wiring Diagram

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (POWER SOURCE CIRCUIT)**
   a. Disconnect the connector from the A/C pressure sensor.
   b. Measure the voltage according to the value(s) in the table below.

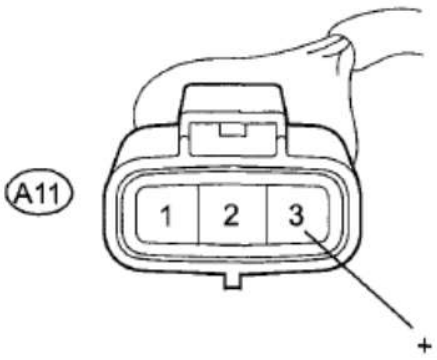
Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
A11-3 (+) - Body ground	Ignition switch on (IG)	Approx. 5 V

NG: Go to step 5

Front view of wire harness connector:
(to Air Conditioning Pressure Sensor)



H E124477E33

Fig. 170: Identifying A/C Pressure Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (GROUND CIRCUIT)**
   a. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

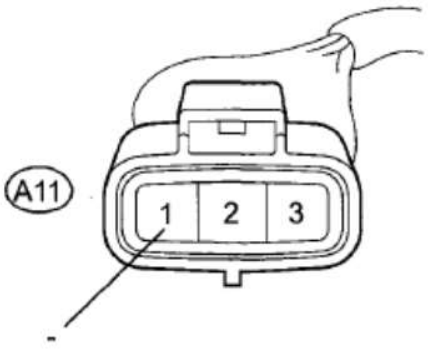
Tester Connection	Condition	Specified Condition

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A11-1 (-) - Body ground	Always	Below 1 ohms

NG: Go to step 6

Front view of wire harness connector:
(to Air Conditioning Pressure Sensor)



H E124477E34

Fig. 171: Identifying A/C Pressure Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **INSPECT A/C PRESSURE SENSOR (SENSOR SIGNAL CIRCUIT)**
   a. Reconnect the connector to the A/C pressure sensor.
   b. Remove the Air Conditioning amplifier with connectors still connected.
   c. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-9 (PRE) - Body ground	Ignition switch on (IG) (A/C: OFF)	0.5 to 4.8 V

HINT:

If the measured voltage is not within the normal range, there may be a malfunction in the Air Conditioning amplifier, A/C pressure sensor, or wire harness. It is also possible that the amount of refrigerant may not be appropriate.

NG: Go to step 7

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Component with harness connected:
(Air Conditioning Amplifier)

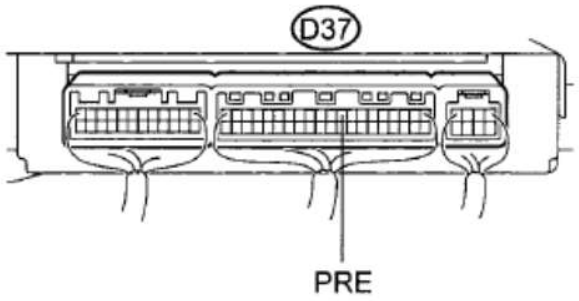


Fig. 172: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **INSPECT A/C PRESSURE SENSOR (SENSOR SIGNAL CIRCUIT)**
   a. Measure the voltage when the following conditions are satisfied.

VOLTAGE CONDITIONS CHART

Item	Condition
Vehicle Doors	Fully open
Temperature Setting	MAX COLD
Blower Speed	HI
A/C Switch	ON
R/F Switch	RECIRCULATION
Interior Temperature	25 to 35°C (77 to 95°F)
Engine Speed	2000 rpm

NOTE:

- **If refrigerant pressure on the high pressure side becomes extremely high during the inspection (if the voltage exceeds 4.8 V), the fail-safe function stops compressor operation. Therefore, measure the voltage before the fail-safe operation.**
- **It is necessary to measure the voltage for a certain amount of time (approximately 10 minutes) because the problem symptom may recur after a while.**

HINT:

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When the outside air temperature is low (below -1.5°C (29.3°F)), the compressor stops due to operation of the ambient temperature sensor and the evaporator temperature sensor to prevent the evaporator from freezing. In this case, perform the inspection in a warm indoor environment.

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

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-9 (PRE) - Body ground	Ignition switch on (IG) (A/C: ON)	0.5 to 4.83 V

Result

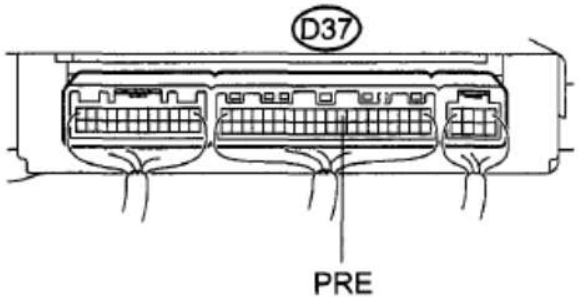
RESULT REFERENCE CHART

Result	Proceed to
OK (When troubleshooting according to DTC)	A
OK (When troubleshooting according to PROBLEM SYMPTOMS TABLE)	B
NG	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE
(See **PROBLEM SYMPTOMS TABLE**)

C: Go to step 13

Component with harness connected:
(Air Conditioning Amplifier)



H E124471E41

Fig. 173: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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A: REPAIR OR REPLACE HARNESS OR CONNECTOR

5. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - A/C PRESSURE SENSOR)**
   a. Disconnect the connector from the Air Conditioning amplifier.

Front view of wire harness connector:
(to Air Conditioning Amplifier)

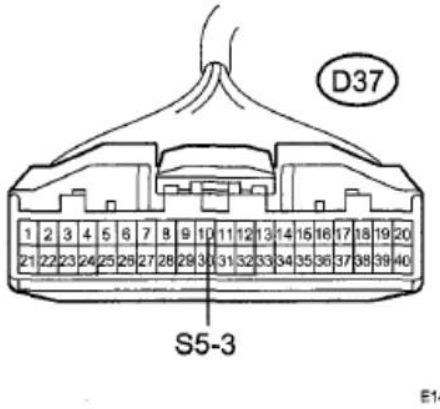


Fig. 174: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A11-3 (+) - D37-10 (S5-3)	Always	Below 1 ohms
D37-10 (S5-3) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Air Conditioning Pressure Sensor)

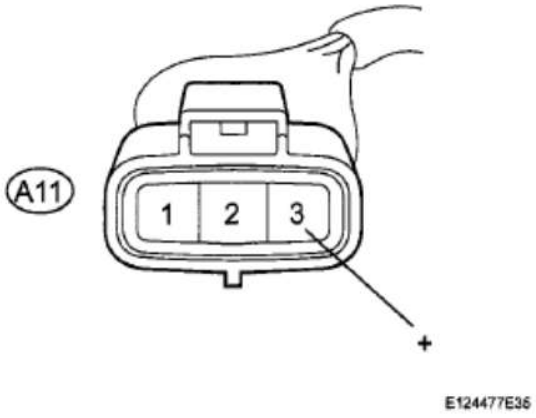


Fig. 175: Identifying A/C Pressure Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

6. **CHECK HARNESS AND CONNECTOR (AIR CONDITONING AMPLIFIER - A/C PRESSURE SENSOR)**
   a. Disconnect the connector from the Air Conditioning amplifier.

Front view of wire harness connector:
(to Air Conditioning Amplifier)

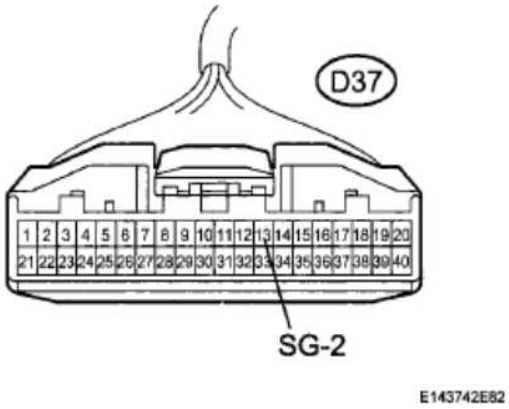


Fig. 176: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

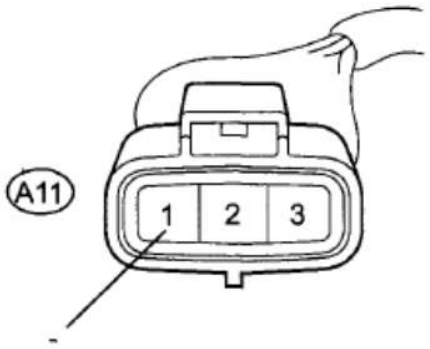
Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A11-1 (-) - D37-13 (SG-2)	Always	Below 1 ohms
D37-13 (SG-2) - Body ground	Always	10 kohms or higher

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Air Conditioning Pressure Sensor)



H E124477E36

Fig. 177: Identifying A/C Pressure Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

7. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - A/C PRESSURE SENSOR)**
   a. Disconnect the connector from the Air Conditioning amplifier.

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Front view of wire harness connector:
(to Air Conditioning Amplifier)

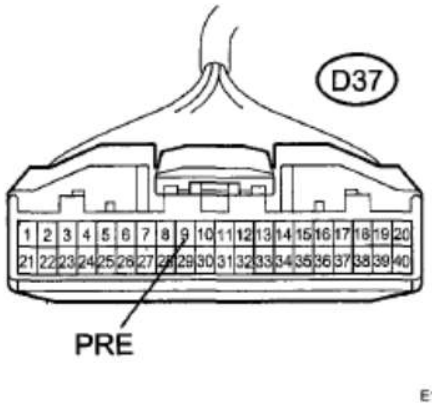


Fig. 178: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A11-2 (PR) - D37-9 (PRE)	Always	Below 1 ohms
D37-9 (PRE) - Body ground	Always	10 kohms or higher

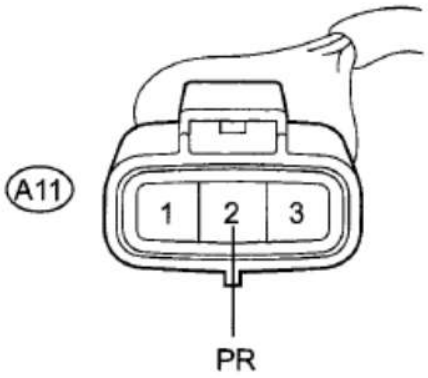
NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Air Conditioning Pressure Sensor)



H E124477E37

Fig. 179: Identifying A/C Pressure Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

8. **INSPECT FOR A/C SYSTEM LEAK**
   a. Install the manifold gauge set.
   b. Recover the refrigerant from the Air Conditioning system using a refrigerant recovery unit.
   c. Evacuate the Air Conditioning system and check that vacuum can be maintained in it.

OK:

Vacuum can be maintained in the Air Conditioning system.

HINT:

If vacuum cannot be maintained in the Air Conditioning system, refrigerant may be leaking from it. In this case, it is necessary to repair or replace the leaking part of the Air Conditioning system.

NG: Go to step 12

OK: Go to next step

9. **CHARGE REFRIGERANT**
   a. Add an appropriate amount of refrigerant (See **REFRIGERANT LINE**).
10. **RECHECK DTC**
   a. Recheck for the DTC when the following conditions are satisfied.

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DTC CONDITIONS CHART

Item	Condition
Vehicle Doors	Fully open
Temperature Setting	MAX COLD
Blower Speed	HI
A/C Switch	ON
R/F Switch	RECIRCULATION
Interior Temperature	25 to 35°C (77 to 95°F)
Engine Speed	2000 rpm

NOTE: If refrigerant pressure on the high pressure side becomes high, the DTC will be set. It is necessary to measure the voltage for a certain amount of time (approximately 10 minutes) because the DTC may be set after the A/C operates for a while.

HINT:

When the outside air temperature is low (below -1.5°C (29.3°F)), the compressor stops due to operation of the ambient temperature sensor and the evaporator temperature sensor to prevent the evaporator from freezing. In this case, perform the inspection in a warm indoor environment.

Result

RESULT REFERENCE CHART

Result	Proceed to
DTC B1423 is output	A
DTC B1423 is not output	B

NOTE: If the DTC was set due to an insufficient or excessive amount of refrigerant, the problem may have been solved after performing the previous step. However, the root cause of insufficient refrigerant may be refrigerant leaks. The root cause of excessive refrigerant may be adding refrigerant when the level was insufficient. Therefore, identify and repair the area where refrigerant leaks from as necessary.

B: END

A: Go to next step

11. **INSPECT A/C PRESSURE SENSOR**
    a. Install the manifold gauge set.
    b. Disconnect the connector from the A/C pressure sensor.
    c. Connect the three 1.5 V dry cell batteries' positive (+) lead to terminal 3, and the negative (-) lead to terminal 1.

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d. Connect the voltmeter's positive (+) lead to terminal 2, and the negative (-) lead to terminal 1.
e. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
2-1	Refrigerant pressure: 0.39 to 3.187 MPa (57 to 463 psi)	1.0 to 4.8 V

NG: REPLACE A/C PRESSURE SENSOR (See **REFRIGERANT LINE**)

Component without harness connected:
(A/C Pressure Sensor)

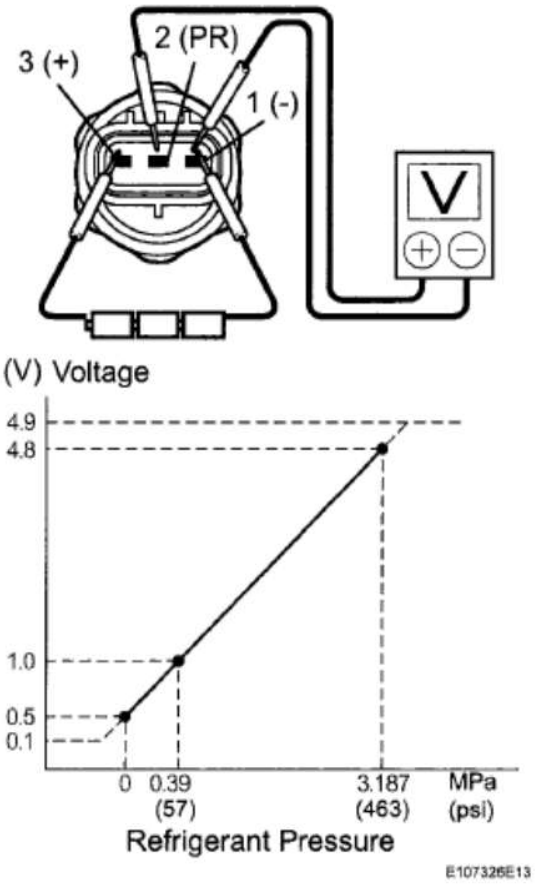


Fig. 180: Inspecting A/C Pressure Sensor Terminals Voltage
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

12. **REPAIR A/C SYSTEM LEAK**

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a. Identify the area where refrigerant leaks from (See **REFRIGERANT LINE**).
b. Repair the identified area of the Air Conditioning system.
c. Evacuate the A/C system.

13. **CHARGE REFRIGERANT**
    a. Check if that the cooling fan operates normally.

    HINT:

    - Cooling Fan Circuit (See **COOLING FAN CIRCUIT**).

NG: REPAIR COOLING FAN SYSTEM

OK: Go to next step

14. **CHARGE REFRIGERANT**
    a. Use a refrigerant recovery unit to recover refrigerant.
    b. Evacuate the Air Conditioning system.
    c. Add an appropriate amount of refrigerant (See **REFRIGERANT LINE**).

    HINT:

    If refrigerant is added and the system has not been properly evacuated (insufficient vacuum time), moisture in the air remaining in the system will freeze in the expansion valve, blocking the flow on the high pressure side. Therefore, in order to confirm the problem, recover the refrigerant and properly evacuate the system. Add an appropriate amount of refrigerant, and check for the DTC.

15. **RECHECK DTC**
    a. Recheck for the DTC when the following conditions are satisfied.

DTC CONDITIONS CHART

Item	Condition
Vehicle Doors	Fully open
Temperature Setting	MAX COLD
Blower Speed	HI
A/C Switch	ON
R/F Switch	RECIRCULATION
Interior Temperature	25 to 35°C (77 to 95°F)
Engine Speed	2000 rpm

NOTE: **If refrigerant pressure on the high pressure side becomes high, the DTC will be set. It is necessary to measure the voltage for a certain amount of time (approximately 10 minutes) because the DTC may be set after the Air Conditioning operates for a while.**

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HINT:

- When the outside air temperature is low (below -1.5°C (29.3°F)), the compressor stops due to operation of the ambient temperature sensor and the evaporator temperature sensor to prevent the evaporator from freezing. In this case, perform the inspection in a warm indoor environment.
- If refrigerant is added and the system has not been properly evacuated (insufficient vacuum time), moisture in the air remaining in the system will freeze in the expansion valve, blocking the flow on the high pressure side. Therefore, in order to confirm the problem, recover the refrigerant and properly evacuate the system. Add an appropriate amount of refrigerant, and check for the DTC. If the DTC is not output after this work, it indicates that the cooler dryer in the condenser is not able to absorb moisture in the refrigerant cycle. In this case, in order to complete the repair it is necessary to replace the cooler dryer.

Result

RESULT REFERENCE CHART

Result	Proceed to
DTC B1423 is output	A
DTC B1423 is not output	B

B: CLEAN ON REPLACE CONDENSER OR PIPE (See **DISASSEMBLY**)

A: Go to next step

16. **REPLACE EXPANSION VALVE**
    a. Replace the expansion valve with a normal one (See **REASSEMBLY**).

       HINT:

       Replace the expansion valve with a normal one because the expansion valve is either stuck or clogged.

NEXT: CHARGE REFRIGERANT

17. **CHARGE REFRIGERANT**
    a. Add an appropriate amount of refrigerant (See **REFRIGERANT LINE**).
18. **RECHECK DTC**
    a. Recheck for the DTC when the following conditions are satisfied.

DTC CONDITIONS CHART

Item	Condition
Vehicle Doors	Fully open
Temperature Setting	MAX COLD
Blower Speed	HI
A/C Switch	ON

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R/F Switch	RECIRCULATE
Interior Temperature	25 to 35°C (77 to 95°F)
Engine Speed	2000 rpm

NOTE: If refrigerant pressure on the high pressure side becomes high, the DTC will be set. Therefore, it is necessary to measure the voltage for a certain amount of time (approximately 10 minutes) because the DTC may be set after the Air Conditioning operates for a while.

HINT:

- When the outside air temperature is low (below -1.5°C (29.3°F)), the compressor stops due to operation of the ambient temperature sensor and the evaporator temperature sensor to prevent the evaporator from freezing. In this case, perform the inspection in a warm indoor environment.
- If refrigerant pressure is not normal after replacing the expansion valve with a normal one, the condenser or pipes may be clogged due to dirt, dust or other contaminants. In this case, clean or replace the condenser or pipes.

Result

RESULT REFERENCE CHART

Result	Proceed to
DTC B1423 is not output	A
DTC B1423 is output	B

B: REPLACE CONDENSER

A: END

DTC B1441/41 AIR MIX DAMPER CONTROL SERVO MOTOR CIRCUIT (PASSENGER SIDE)

DESCRIPTION

The air mix damper servo sends pulse signals to indicate the damper position to the air conditioning amplifier. The air conditioning amplifier activates the motor (normal or reverse) based on these signals to move the air mix damper (passenger seat) to the appropriate position. This adjusts the amount of air passing through the heater core after passing the evaporator and controls the temperature of the blown air.

HINT:

Confirm that there are no mechanical problems because this DTC can be set if either a damper link or damper is mechanically locked.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area

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B1441/41	Air mix damper position does not change even if air conditioning amplifier operates air mix damper control servo motor	• Air mix control servo motor • Air conditioning harness • Air conditioning amplifier

WIRING DIAGRAM

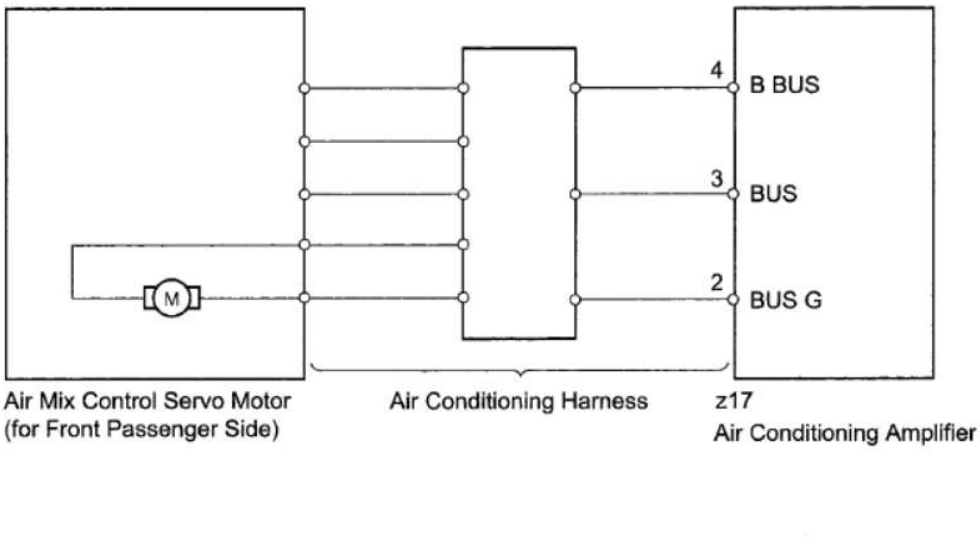


Fig. 181: Air Mix Damper Control Servo Motor Circuit (Passenger Side) - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the items below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Air Mix Sensor Targ Pulse(P)	Passenger side air mix servo motor target pulse/Min.: 0, Max.: 255	MAX. COLD: 105 (pulse) MAX HOT: 7 (pulse)	-

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OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **REPLACE AIR MIX CONTROL SERVO MOTOR**
   a. Replace air mix control servo motor (See **INSTALLATION**).
3. **CHECK DTC OUTPUT**
   a. Check for DTC.

OK: DTC B1441/41 is not output.

NG: REPAIR OR REPLACE AIR CONDITIONING HARNESS

OK: END

DTC B1442/42 AIR INLET DAMPER CONTROL SERVO MOTOR CIRCUIT

DESCRIPTION

The damper servo (air inlet control) sends pulse signals to indicate the damper position to the air conditioning amplifier. The air conditioning amplifier activates the motor (normal or reverse) based on these signals to move the air inlet control damper to the appropriate position, which controls the intake air settings (FRESH, FRESH/RECIRCULATION and RECIRCULATION).

HINT:

Confirm that there are no mechanical problems because this DTC can be set if either a damper link or damper is mechanically locked.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area

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B1442/42	Air inlet damper position does not change even if air conditioning amplifier operates air inlet damper control servo motor	• Air inlet control servo motor • Air conditioning harness • Air conditioning amplifier

WIRING DIAGRAM

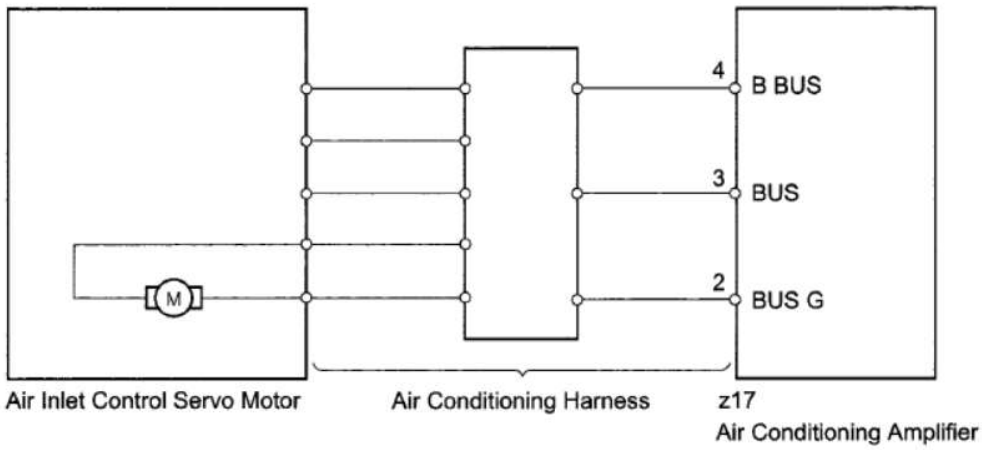


Fig. 182: Air Inlet Damper Control Servo Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the items below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Air Inlet Damper Targ Pulse	Air inlet damper target pulse/Min.: 0, Max.: 255	RECIRCULATION: 7 (pulse) FRESH: 28 (pulse)	-

OK:

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The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **REPLACE AIR INLET CONTROL SERVO MOTOR**

HINT:

Since the servo motor cannot be tested when it is removed from the vehicle, replace the servo motor with a normal one and check that the condition returns to normal.

OK: Same problem does not occur.

3. **CHECK DTC OUTPUT**
   a. Check for DTC.

OK: DTC B1442/42 is not output.

NG: REPAIR OR REPLACE AIR CONDITIONING HARNESS

OK: END

DTC B1443/43 AIR OUTLET DAMPER CONTROL SERVO MOTOR CIRCUIT

DESCRIPTION

The damper servo sends pulse signals to indicate the damper position to the air conditioning amplifier.

The air conditioning amplifier activates the motor (normal or reverse) based on these signals to move the mode damper to the appropriate position, which controls the air outlet modes.

HINT:

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Confirm that there are no mechanical problems because this DTC can be set if either a damper link or damper is mechanically locked.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1443/43	Air outlet damper position does not change even if air conditioning amplifier operates air outlet damper control servo motor	• Air outlet control servo motor • Air conditioning harness • Air conditioning amplifier

WIRING DIAGRAM

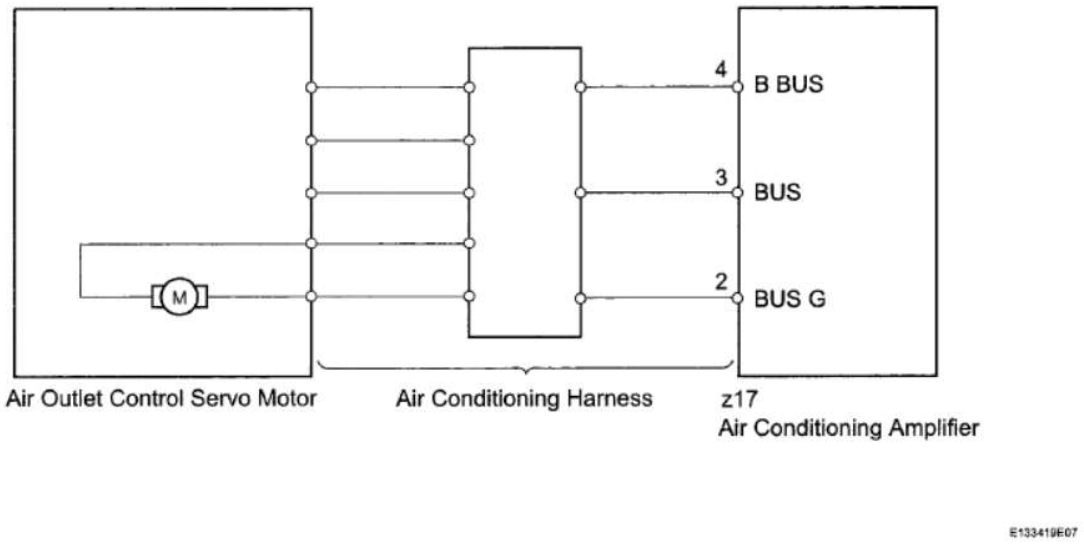


Fig. 183: Air Outlet Damper Control Servo Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the items below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note

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Air Outlet Servo Pulse(D)	Air outlet servo motor target pulse/Min,: 0, Max.: 255	FACE: 8 (pulse) B/L: 30 (pulse) FOOT: 67 (pulse) FOOT/DEF: 80 (pulse) DEF: 97 (pulse)	-

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPAIR OR REPLACE AIR CONDITIONING HARNESS

A: Go to next step

2. **REPLACE AIR OUTLET CONTROL SERVO MOTOR**
   a. Replace air outlet control servo motor (See **INSTALLATION**).
3. **CHECK DTC OUTPUT**
   a. Check for DTC.

OK: DTC B1443/43 is not output.

NG: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

OK: END

DTC B1451/51 COMPRESSOR SOLENOID CIRCUIT

DESCRIPTION

In this circuit, the compressor receives a refrigerant compression demand signal from the air conditioning amplifier.

Based on this signal, the compressor changes the degree of refrigerant compression.

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DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1451/51	Open or short in solenoid of externally changeable compressor circuit	• Compressor and Magnetic clutch (for 2GR-FE) • Compressor Assembly with Pulley (for 1AR-FE) • Wire harness between air conditioning amplifier and compressor and Magnetic clutch • Air conditioning amplifier

WIRING DIAGRAM

for 2GR-FE:

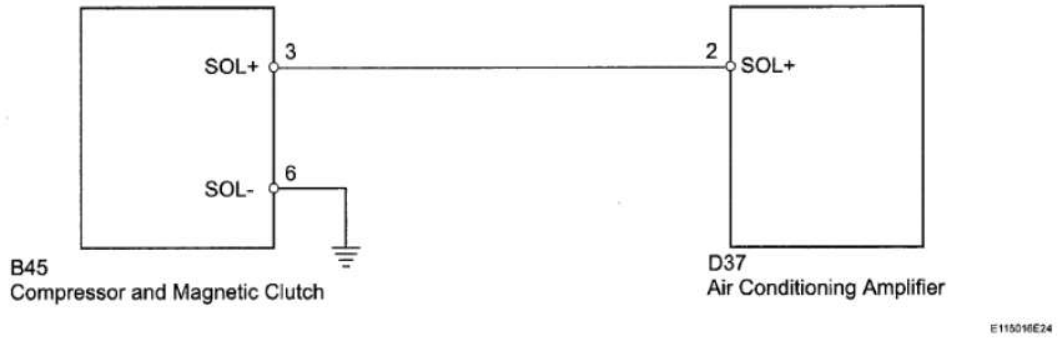


Fig. 184: Compressor Solenoid Circuit (2GR-FE) - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

for 1AR-FE:

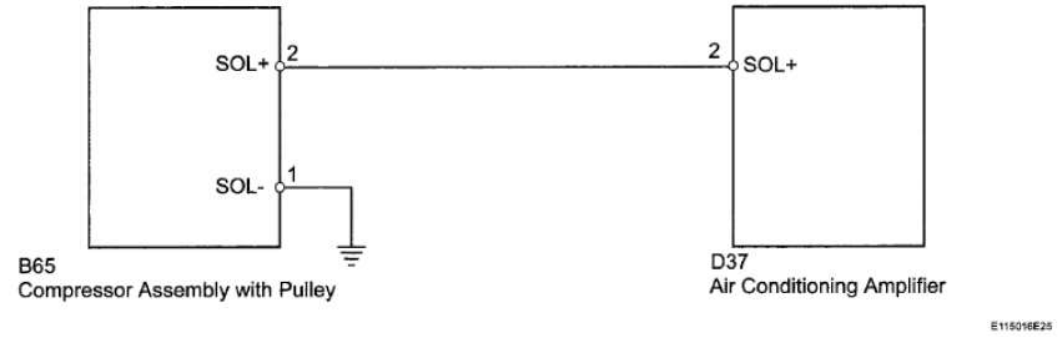


Fig. 185: Compressor Solenoid Circuit (1AR-FE) - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.

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b. Turn the ignition switch on (IG) and turn Techstream main switch on.
c. Select the items below in the Data List, and read the value displayed on Techstream.

Data List/Air Conditioner

DATA LIST/AIR CONDITIONER REFERENCE CHART

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Regulator Control Current	Regulator control current/Min.: 0 A Max.: 0.997 A	Value changes between 0 A and 0.997 A in accordance with compressor operation	-

OK:

The display is as specified in the normal condition column.

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (Checking from PROBLEM SYMPTOMS TABLE)	B
OK (Checking from DTC)	C

B: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

C: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

A: Go to next step

2. **CONFIRM MODEL**

Result

RESULT REFERENCE CHART

Result	Proceed to
for 2GR-FE	A
for 1AR-FE	B

B: Go to step 6

A: Go to next step

3. **INSPECT COMPRESSOR AND MAGNETIC CLUTCH**

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a. Disconnect the compressor and magnetic clutch connector.
b. Measure the resistance according to the value(s) in the table below.

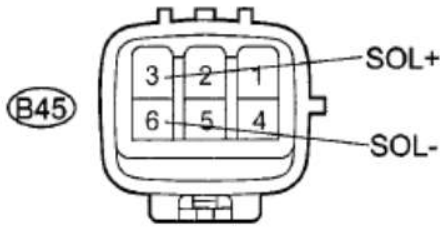
Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B45-3 (SOL+) - B45-6 (SOL-)	25°C (77°F)	10.1 to 11.1 ohms

NG: REPLACE COMPRESSOR AND MAGNETIC CLUTCH (See **DISASSEMBLY**)

Component without harness connected:
(Compressor and Magnetic Clutch)



E152688E04

Fig. 186: Identifying Compressor And Magnetic Clutch Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (COMPRESSOR AND MAGNETIC CLUTCH - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the B45 compressor and magnetic clutch connector.
   b. Disconnect the D37 amplifier connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B45-3 (SOL+) - D37-2 (SOL+)	Always	Below 1 ohms
B45-3 (SOL+) - Body Ground	Always	1 Mohms or higher

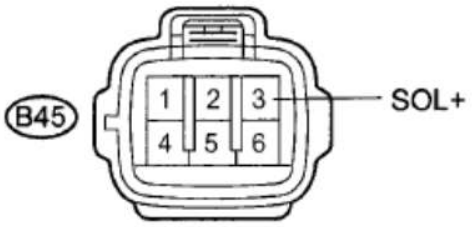
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NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view or wire harness connector
(to Compressor and Magnetic Clutch)



Front view or wire harness connector
(to Air Conditioning Amplifier)

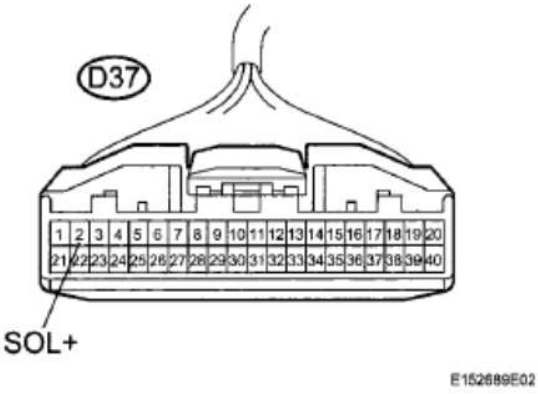


Fig. 187: Identifying B45 Compressor And Magnetic Clutch Connector And D37 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (COMPRESSOR AND PULLEY - BODY GROUND)**
   a. Disconnect the B45 compressor and magnetic clutch connector.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

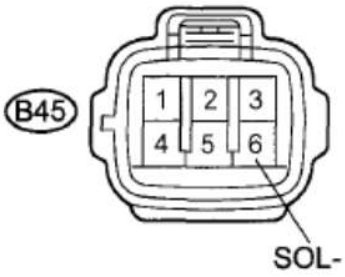
STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B45-6 (SOL-) - Body Ground	Always	Below 1 ohms

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NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Compressor and Magnetic Clutch)



E152687E04

Fig. 188: Identifying B45 Compressor And Magnetic Clutch Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

6. **INSPECT COMPRESSOR ASSEMBLY WITH PULLEY**
   a. Disconnect the compressor assembly with pulley connector.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B65-2 (SOL+) - B65-1 (SOL-)	20°C (68°F)	10 to 11 ohms

NG: REPLACE COMPRESSOR ASSEMBLY WITH PULLEY (See **ON-VEHICLE INSPECTION**)

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Component without harness connected:
(Compressor Assembly with Pulley)

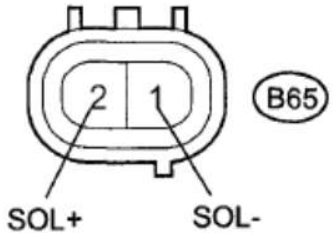


Fig. 189: Identifying Compressor Assembly With Pulley Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

7. **CHECK HARNESS AND CONNECTOR (COMPRESSOR ASSEMBLY WITH PULLEY - A/C AMPLIFIER)**
   a. Disconnect the compressor assembly with pulley connector.

Front view of wire harness connector:
(to Compressor Assembly with Pulley)

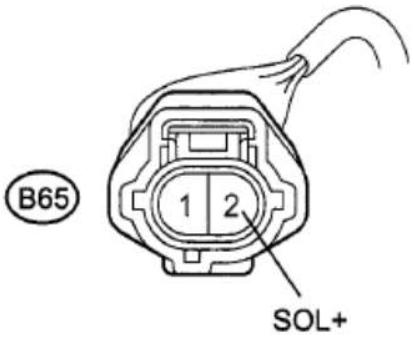


Fig. 190: Identifying Compressor Assembly With Pulley Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Disconnect the A/C amplifier connector.

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

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D37-2 (SOL+) - B65-2 (SOL+)	Always	Below 1 ohms
D37-2 (SOL+) - Body ground	Always	10 kohms or higher

Result

RESULT REFERENCE CHART

Result	Proceed to
NG	A
OK (When troubleshooting according to the Problem Symptoms Table)	B
OK (When troubleshooting according to the DTC)	C

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Air Conditioning Amplifier)

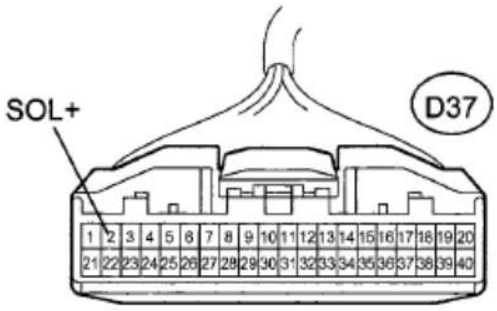


Fig. 191: Identifying A/C Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

8. **CHECK HARNESS AND CONNECTOR (COMPRESSOR ASSEMBLY WITH PULLEY - BODY GROUND)**
   a. Disconnect the compressor assembly with pulley connector.
   b. Measure the resistance according to the value(s) in the table below.

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Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B65-1 (SOL-) - Body ground	Always	Below 1 ohms

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Compressor Assembly with Pulley)

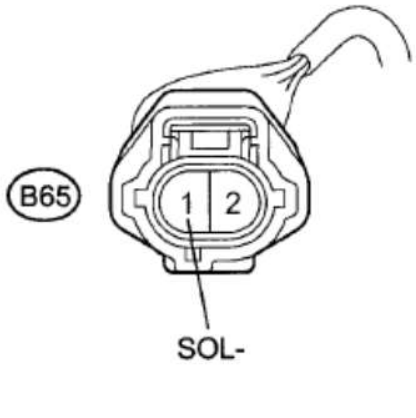


Fig. 192: Identifying Compressor Assembly With Pulley Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

DTC B1497/97 BUS IC COMMUNICATION MALFUNCTION

DESCRIPTION

The air conditioning harness connects the air conditioning amplifier and the servos. The air conditioning amplifier supplies power and sends operation instructions to each servo through the air conditioning harness. Each servo sends damper position information to the air conditioning amplifier.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1497/97	Communication line error or open	• Air conditioning harness • Air conditioning amplifier

WIRING DIAGRAM

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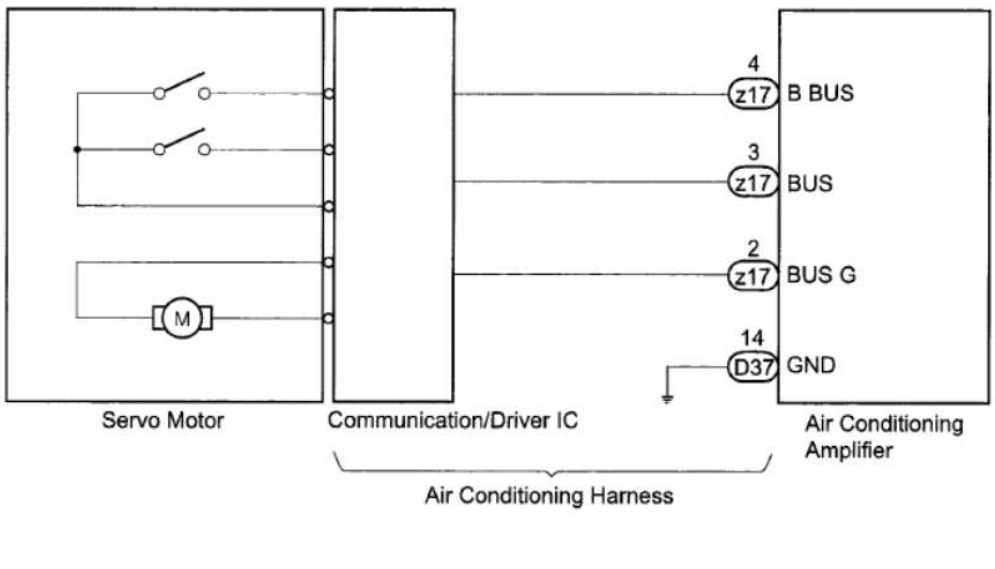


Fig. 193: BUS IC Communication Malfunction - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK AIR CONDITIONING AMPLIFIER**
   a. Remove the air conditioning amplifier with its connectors still connected (See **REMOVAL**).
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
z17-2 (BUS G) - Body ground	Always	Below 1 ohms

NG: CHECK GROUND LINE AND AIR CONDITIONING AMPLIFIER

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Component with harness connected:
(Air Conditioning Amplifier)

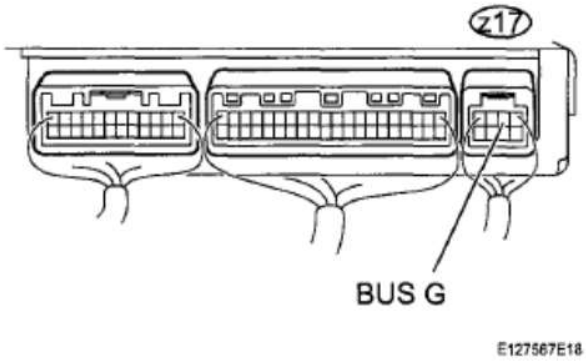


Fig. 194: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

2. **CHECK AIR CONDITIONING AMPLIFIER**
   a. Remove the air conditioning amplifier with its connectors still connected (See **REMOVAL**).
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
z17-2 (BUS G) - z17-4 (B BUS)	Ignition switch on (IG)	11 to 14 V
z17-2 (BUS G) - z17-3 (BUS)	Ignition switch on (IG)	Pulse generation

NG: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

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Component with harness connected:
(Air Conditioning Amplifier)

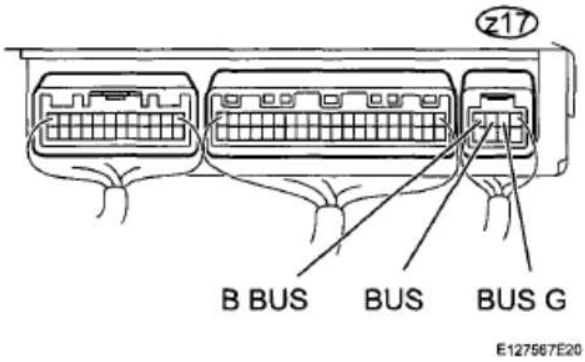


Fig. 195: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE AIR CONDITIONING HARNESS ASSEMBLY

DTC B1499/99 MULTIPLEX COMMUNICATION CIRCUIT

DESCRIPTION

The air conditioning amplifier communicates data with the ECM and combination meter through the CAN communication system.

DTC DETECTION CONDITION CHART

DTC No.	DTC Detection Condition	Trouble Area
B1499/99	Open in CAN communication line	• Air conditioning amplifier • ECM • Combination meter • CAN communication line

WIRING DIAGRAM

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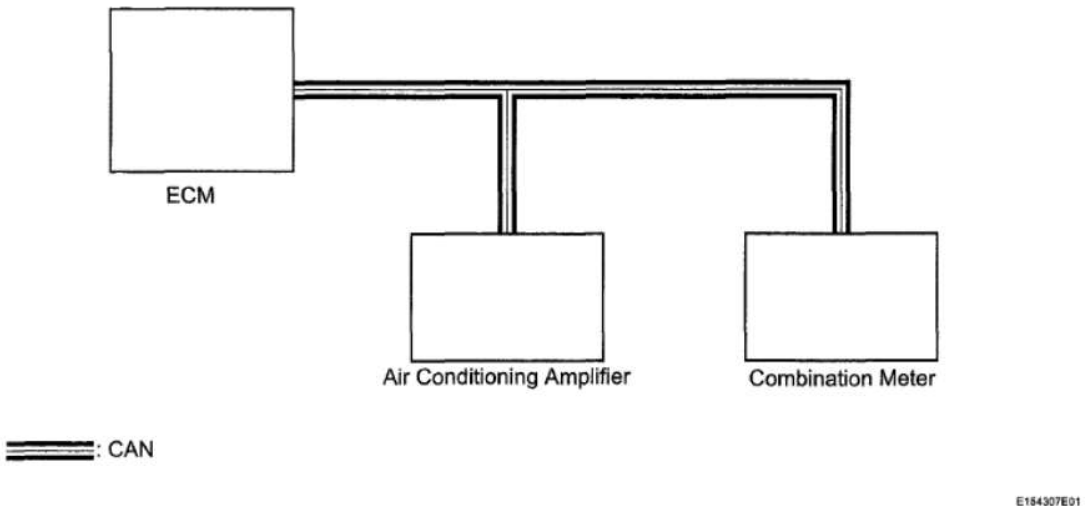


Fig. 196: Multiplex Communication Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK DTC OUTPUT**
   a. Clear the DTC (See **DTC CHECK/CLEAR**).
   b. Check for DTC (See **DTC CHECK/CLEAR**).

   OK:

   DTC B1499/99 is not output.

   NG: GO TO CAN COMMUNICATION SYSTEM (See **DIAGNOSTIC TROUBLE CODE CHART**)

   OK: USE SIMULATION METHOD TO CHECK (See **HOW TO PROCEED WITH TROUBLESHOOTING**)

BLOWER MOTOR CIRCUIT

DESCRIPTION

The blower motor is operated by signals from the air conditioning amplifier. Blower motor speed signals are transmitted in accordance with changes in the duty ratio.

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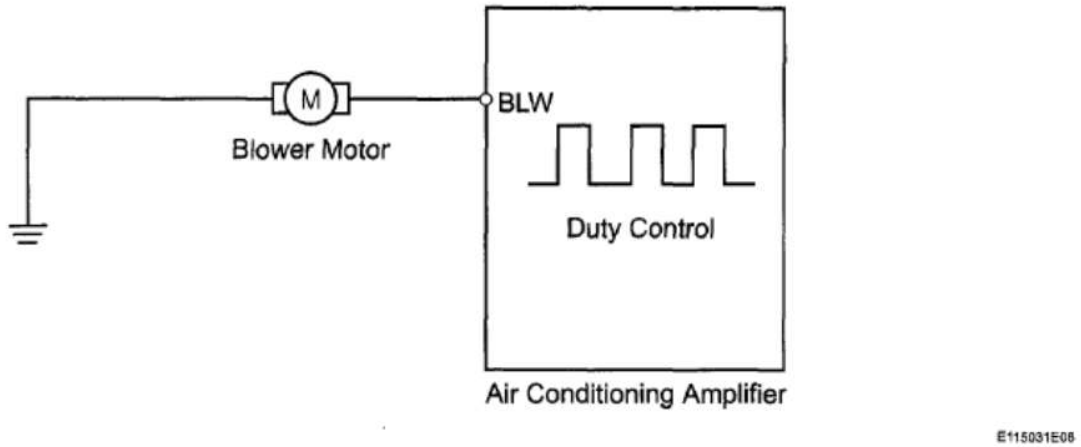


Fig. 197: Identifying Blower Motor Circuit
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

WIRING DIAGRAM

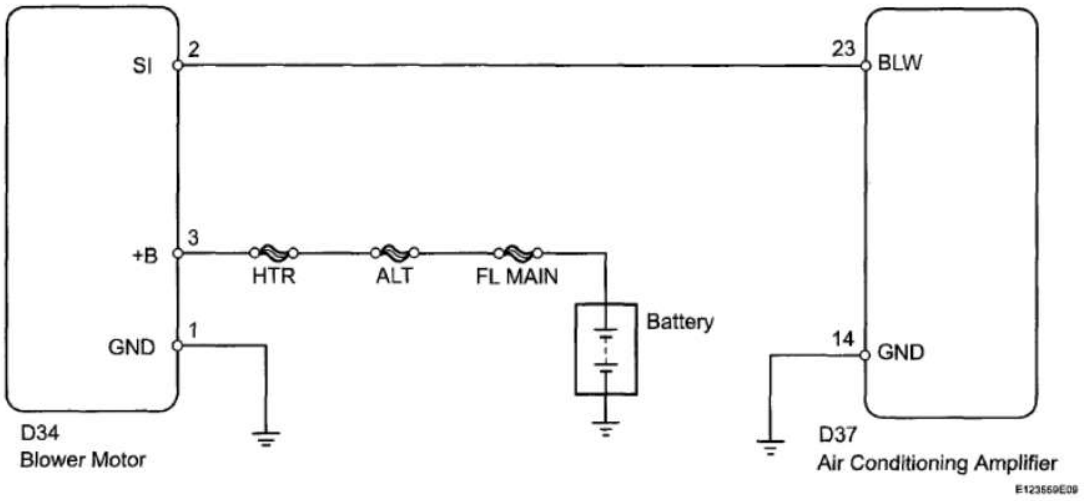


Fig. 198: Blower Motor Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **PERFORM ACTIVE TEST USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Select the item below in the Active Test, and then check that the blower motor operates.

Active Test/Air Conditioner

ACTIVE TEST/AIR CONDITIONER REFERENCE CHART

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Tester Display	Test Part	Control Range	Diagnostic Note
Blower Motor	Blower motor	Min.: 0, Max.: 31	-

Result

RESULT REFERENCE CHART

Result	Proceed to
NG (blower motor does not operate)	A
NG (blower motor operates but does not change speed)	B
OK	C

B: Go to step 5

C: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE
(See **PROBLEM SYMPTOMS TABLE**)

A: Go to next step

2. **INSPECT FUSE (HTR-H)**
   a. Remove the HTR H-fuse from the main body ECU.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
HTR H-fuse	Always	Below 1 ohms

NG: REPLACE FUSE

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (BLOWER MOTOR - BODY GROUND)**
   a. Disconnect the D34 motor connector.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D34-1 (GND) - Body ground	Always	Below 1 ohms

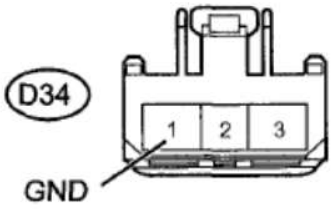
NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Blower Motor)



H E116959E17

Fig. 199: Identifying D34 Motor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (BLOWER MOTOR - BATTERY)**
   a. Disconnect the D34 motor connector.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

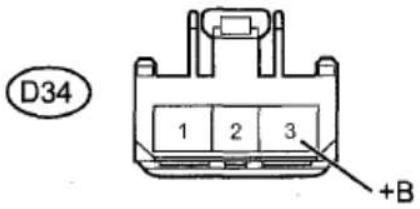
STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D34-3 (+B) - Body ground	Ignition switch on (IG)	11 to 14 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Blower Motor)



H E115959E18

Fig. 200: Identifying D34 Motor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BODY GROUND)**
   a. Disconnect the D37 amplifier connector.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-23 (BLW) - D37-14 (GND)	Ignition switch on (IG) Blower switch OFF	4.5 to 5.5 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Air Conditioning Amplifier)

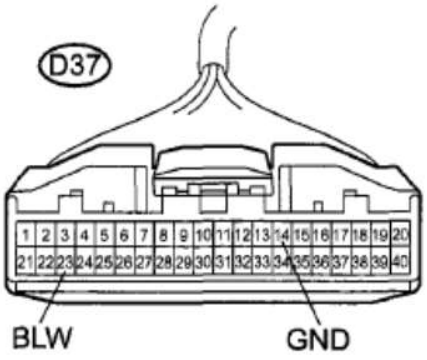


Fig. 201: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

6. **CHECK AIR CONDITIONING AMPLIFIER**
   a. Remove the air conditioning amplifier with its connectors still connected (See **REMOVAL**).
   b. Check the waveform of the amplifier connector.

OK:

Waveform is as shown in the illustration.

HINT:

The waveform varies with the blower level.

WAVEFORM REFERENCE CHART

Item	Content
Tester Connection	D37-23 (BLW) - D37-14 (GND)
Tool Setting	1 V/DIV., 500 μsec./DIV.
Condition	Ignition switch on (IG) Blower switch LO

NG: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

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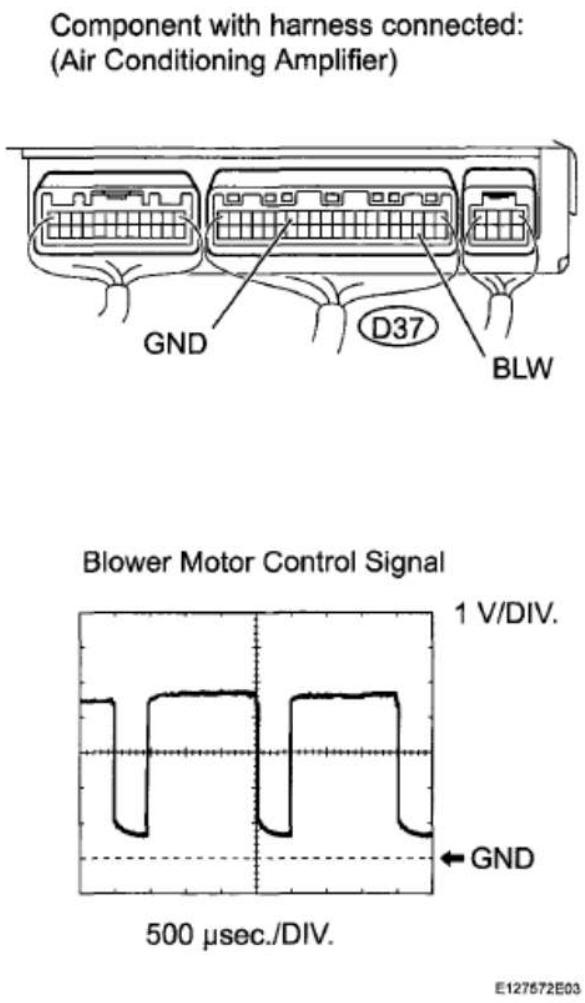


Fig. 202: Identifying Air Conditioning Amplifier Connector Terminals And Waveform
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPLACE BLOWER W/ FAN MOTOR SUB-ASSEMBLY (See **FRONT BLOWER MOTOR**)

HEATER CONTROL PANEL POWER SOURCE CIRCUIT

DESCRIPTION

Battery voltage is supplied to the heater control panel (A/C control assembly) through the A/C No. 2 fuse.

WIRING DIAGRAM

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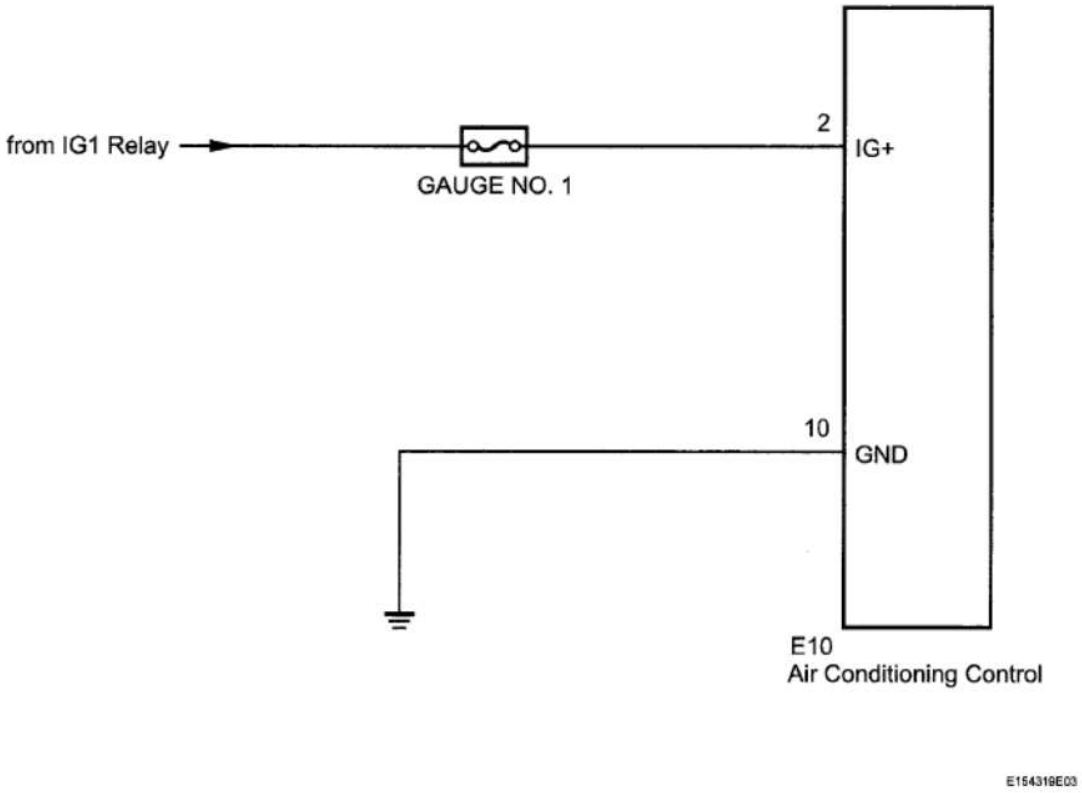


Fig. 203: Heater Control Panel Power Source Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (IG+ - BODY GROUND)**
   a. Disconnect the connector from the heater control panel.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
E10-2 (IG+) - Body ground	Ignition switch on (IG)	11 to 14 V
E10-2 (IG+) - Body ground	Ignition switch off	Below 1 V

Result

RESULT REFERENCE CHART

Result	Proceed to
OK	A
NG (without Smart key system)	B

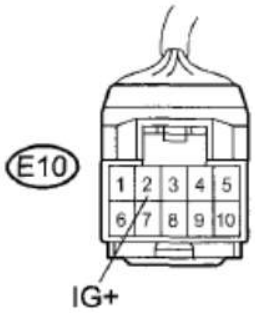
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NG (with Smart key system)	C

B: GO TO STARTING SYSTEM

C: GO TO PUSH BUTTON START SYSTEM

Front view of wire harness connector:
(to Air Conditioning Control (Front))



E152690E20

Fig. 204: Identifying Air Conditioning Control Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

A: Go to next step

2. **CHECK HARNESS AND CONNECTOR (GND - BODY GROUND)**
   a. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
E10-10 (GND) - Body ground	Always	Below 1 ohms

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Air Conditioning Control (Front))



E152690E09

Fig. 205: Identifying Air Conditioning Control Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

AIR CONDITIONING COMPRESSOR MAGNETIC CLUTCH CIRCUIT

DESCRIPTION

When the air conditioning amplifier is turned on, a magnetic clutch ON signal is sent from the MGC terminal of the air conditioning amplifier. Then, the MGC relay turns on to operate the magnetic clutch.

WIRING DIAGRAM

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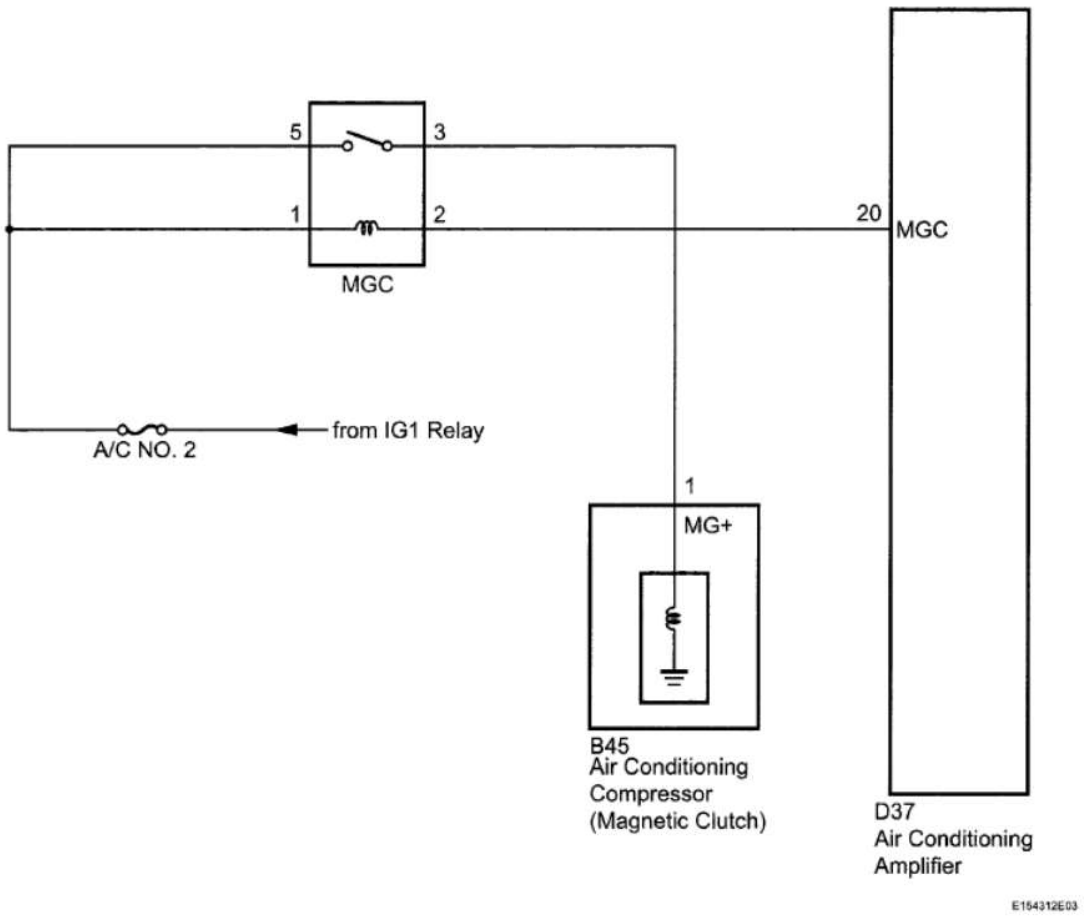


Fig. 206: Air Conditioning Compressor Magnetic Clutch Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **READ VALUE USING TECHSTREAM**
   a. Connect Techstream to the DLC3.
   b. Turn the ignition switch on (IG) and turn Techstream main switch on.
   c. Turn the A/C switch ON and OFF.
   d. Select the item below in the Data List, and read the display on Techstream.

Data List/Engine:

DATA LIST/ENGINE REFERENCE CHART

Tester Display	Measure Item/Range	Normal Condition	Diagnostic Note
A/C Signal (A/C Signal)	A/C signal/ON or OFF	ON: A/C ON OFF: A/C OFF	-

OK:

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The display is as specified in the normal condition column.

NG: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

OK: Go to next step

2. **INSPECT FUSE (A/C NO. 2)**
   a. Remove the A/C NO. 2 fuse from the instrument panel junction block.
   b. Measure the resistance of the fuse.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A/C NO. 2 fuse	Always	Below 1 ohms

NG: REPLACE FUSE (A/C NO. 2)

OK: Go to next step

3. **INSPECT MAGNET-CLUTCH RELAY (MGC)**
   a. Remove the MGC relay from the engine room relay block and junction block.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Specified Condition
3-5	10 kohms or higher
3-5	Below 1 ohms (when battery voltage is applied to terminals 1 and 2)

NG: REPLACE MAGNET-CLUTCH RELAY (MG CLT)

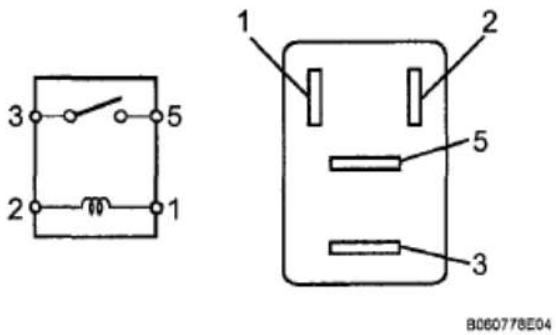


Fig. 207: Inspecting Magnet-Clutch Relay (MGC)

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BATTERY)**
   a. Disconnect the connector from the air conditioning amplifier.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-20 (MGC) - Body ground	Ignition switch off	Below 1 V
D37-20 (MGC) - Body ground	Ignition switch on (IG)	11 to 14 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR (AIR CONDITIONING AMPLIFIER - BATTERY)

Front view of wire harness connector:
(to Air Conditioning Amplifier)

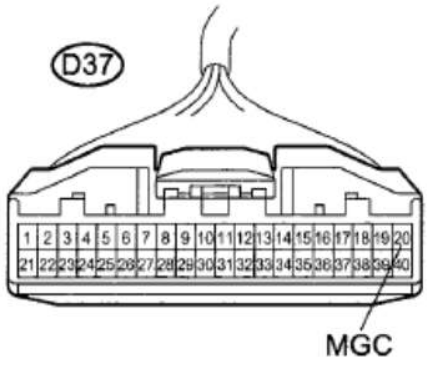


Fig. 208: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

5. **INSPECT AIR CONDITIONING AMPLIFIER**
   a. Reconnect the connector to the air conditioning amplifier.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

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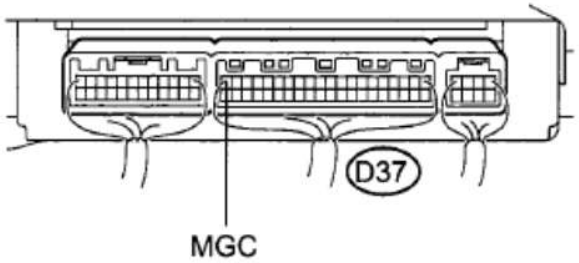
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STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-20 (MGC) - Body ground	Ignition switch on (IG) A/C switch: OFF	11 to 14 V
D37-20 (MGC) - Body ground	Ignition switch on (IG) A/C switch: ON	Below 1 V

NG: REPLACE AIR CONDITIONING AMPLIFIER (See **REMOVAL**)

Component with harness connected:
(Air Conditioning Amplifier)



H E124471E39

Fig. 209: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

6. **INSPECT AIR CONDITIONING COMPRESSOR**
   a. Disconnect the connector from the air conditioning compressor.
   b. Measure the resistance of the connector.
   c. When connector terminal 1 (MG+) is connected to the positive (+) battery terminal, and the body ground is connected to the negative (-) battery terminal, check that the following occurs: 1) the magnetic clutch's operating sound is emitted, and 2) the magnetic clutch's hub and rotor lock.

Standard resistance

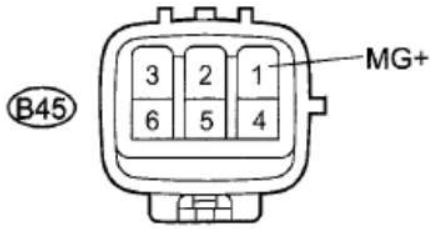
STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B45-1 (MG+) - Body ground	Always	Below 1 ohms

NG: REPLACE AIR CONDITIONING COMPRESSOR (See **DISASSEMBLY**)

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Component without harness connected:
(Air Conditioning Compressor)



E152688E05

Fig. 210: Identifying Air Conditioning Compressor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

7. **CHECK HARNESS AND CONNECTOR (ENGINE ROOM R/B AND J/B - BATTERY)**
   a. Remove the MGC relay from the engine room relay block and junction block.
   b. Turn the ignition switch on (IG).
   c. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
Relay block MGC relay terminal 5 - Body ground	Always	11 to 14 V
Relay block MGC relay terminal 1 - Body ground	Always	11 to 14 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Component without relay connected:
(Engine room Relay Block)

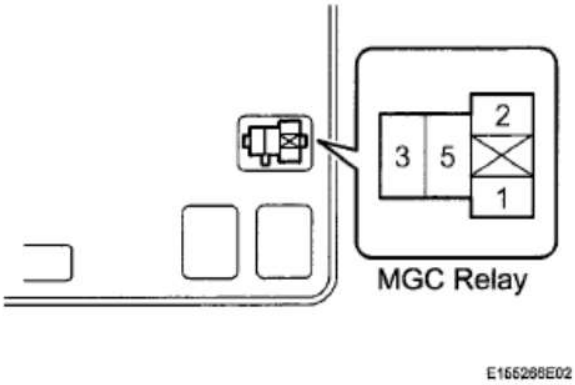


Fig. 211: Identifying MGC Relay Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: REPAIR OR REPLACE HARNESS OR CONNECTOR

PTC HEATER CIRCUIT

DESCRIPTION

PTC heater relays are closed in accordance with signals from the air conditioning amplifier and power is supplied to the PTC heater installed on the radiator heater unit.

WIRING DIAGRAM

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w/ PTC Heater:

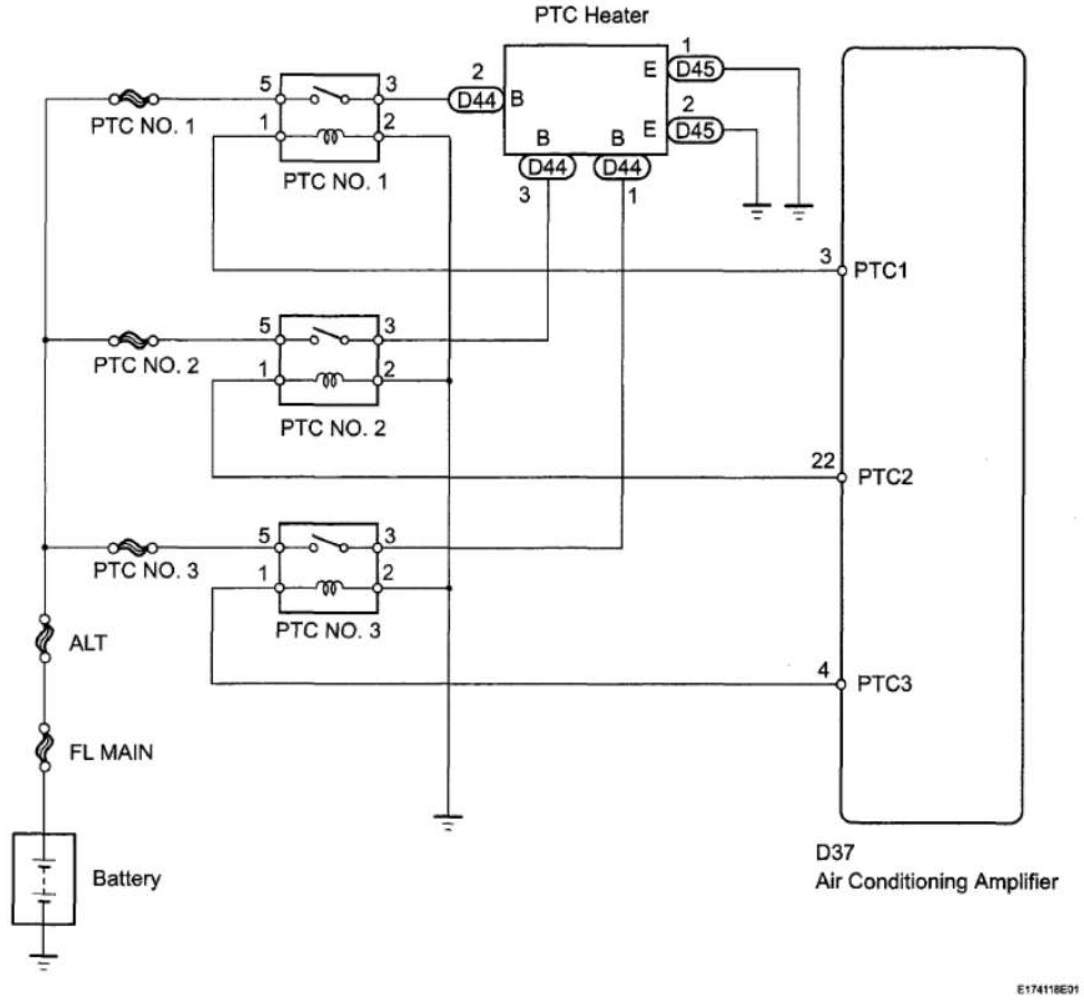


Fig. 212: PTC Heater Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **INSPECT FUSE (PTC NO. 1, PTC NO. 2, PTC NO. 3)**
   a. Remove the PTC NO. 1, PTC NO. 2 and PTC NO. 3 fuses from the engine room No. 2 relay block.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
PTC NO. 1	Always	Below 1ohms
PTC NO. 2	Always	Below 1 ohms
PTC NO. 2	Always	Below 1 ohms

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NG: REPLACE FUSE

OK: Go to next step

2. **INSPECT PTC HEATER RELAY**
   a. Remove the No. 1, No. 2 and No. 3 PTC heater relays from the engine room No. 2 relay block.
   b. Measure the resistance of the relays.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
3-5	when battery voltage is not applied to terminals 1 and 2	10 kohms or higher
3-5	when battery voltage is applied to terminals 1 and 2	Below 1 ohms

NG: REPLACE PTC HEATER RELAY

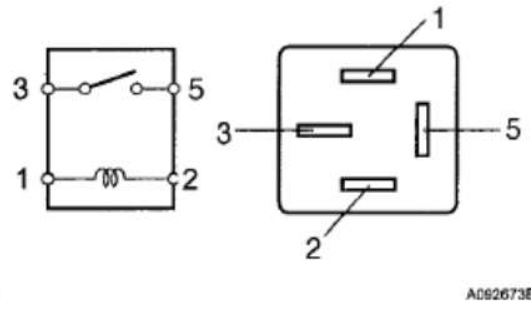


Fig. 213: Inspecting PTC Heater Relay
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (PTC HEATER RELAY - BODY GROUND)**
   a. Remove the No. 1, No. 2 and No. 3 PTC heater relays from the engine room No. 2 relay block.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
No. 1 PTC heater relay terminal 2 - Body ground	Always	Below 1 ohms
No. 2 PTC heater relay terminal 2 - Body ground	Always	Below 1 ohms
No. 3 PTC heater relay terminal 2 - Body ground	Always	Below 1 ohms

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Component without relay connected:
(Engine Room No. 2 Relay Block)

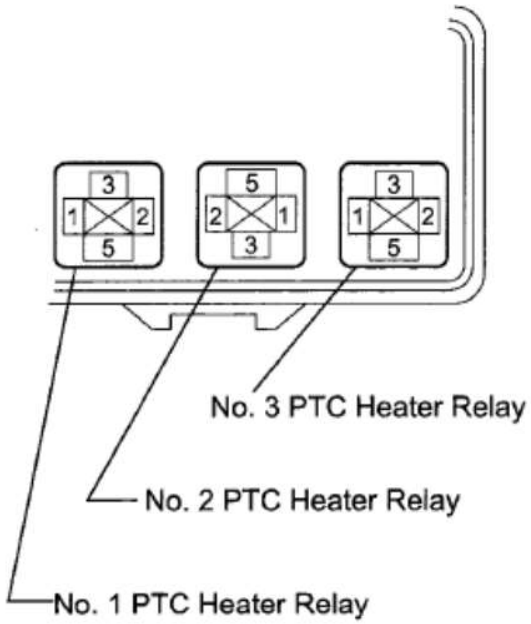


Fig. 214: Identifying No. 1, No. 2 And No. 3 PTC Heater Relays
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - PTC HEATER RELAY)**
   a. Remove the No. 1, No. 2 and No. 3 PTC heater relays from the engine room No. 2 relay block.
   b. Turn the ignition switch on (IG).
   c. When the PTC heater operating conditions are met (engine at idling speed or faster, ambient temperature is 10°C (50°F) or less, engine coolant temperature is 65°C (149°F) or less, set temperature switch is set to MAX HOT), turn the blower switch to the Lo setting.
   d. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
No. 1 PTC heater relay terminal 1 - Body ground	Always	11 to 14 V
No. 2 PTC heater relay terminal 1 - Body ground	Always	11 to 14 V
No. 3 PTC heater relay terminal 1 - Body ground	Always	11 to 14 V

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NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Component without relay connected:
(Engine Room No. 2 Relay Block)

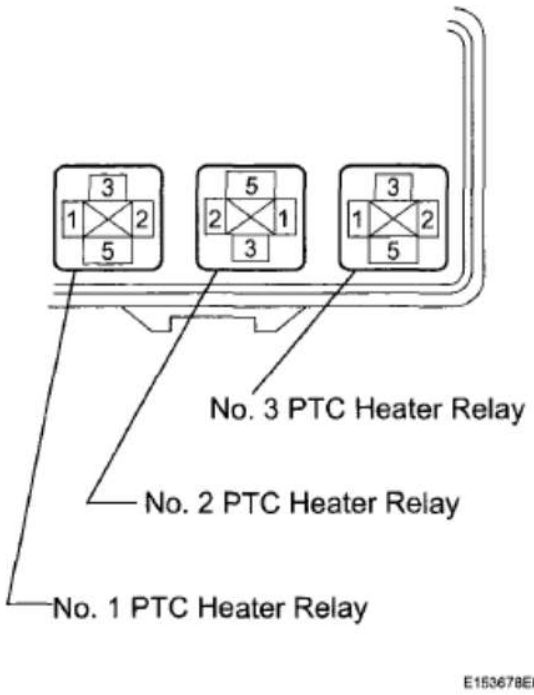


Fig. 215: Identifying No. 1, No. 2 And No. 3 PTC Heater Relays
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (BATTERY - PTC HEATER RELAY)**
   a. Remove the No. 1, No. 2 and No. 3 PTC heater relays from the engine room No. 2 relay block.
   b. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
No. 1 PTC heater relay terminal 5 - Body ground	Always	11 to 14 V
No. 2 PTC heater relay terminal 5 - Body ground	Always	11 to 14 V
No. 3 PTC heater relay terminal 5 - Body ground	Always	11 to 14 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Component without relay connected:
(Engine Room No. 2 Relay Block)

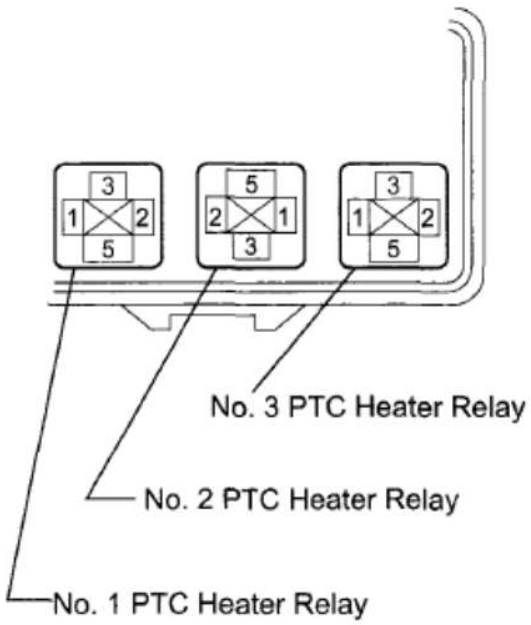


Fig. 216: Identifying No. 1, No. 2 And No. 3 PTC Heater Relays
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

6. **CHECK HARNESS AND CONNECTOR (PTC HEATER RELAY - PTC HEATER)**
   a. Remove the No. 1, No. 2 and No. 3 PTC heater relays from the engine room No. 2 relay block.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
No. 1 PTC heater relay terminal 3 - D44-2 (B)	Always	Below 1 ohms
No. 2 PTC heater relay terminal 3 - D44-3 (B)	Always	Below 1 ohms
No. 3 PTC heater relay terminal 3 - D44-1 (B)	Always	Below 1 ohms

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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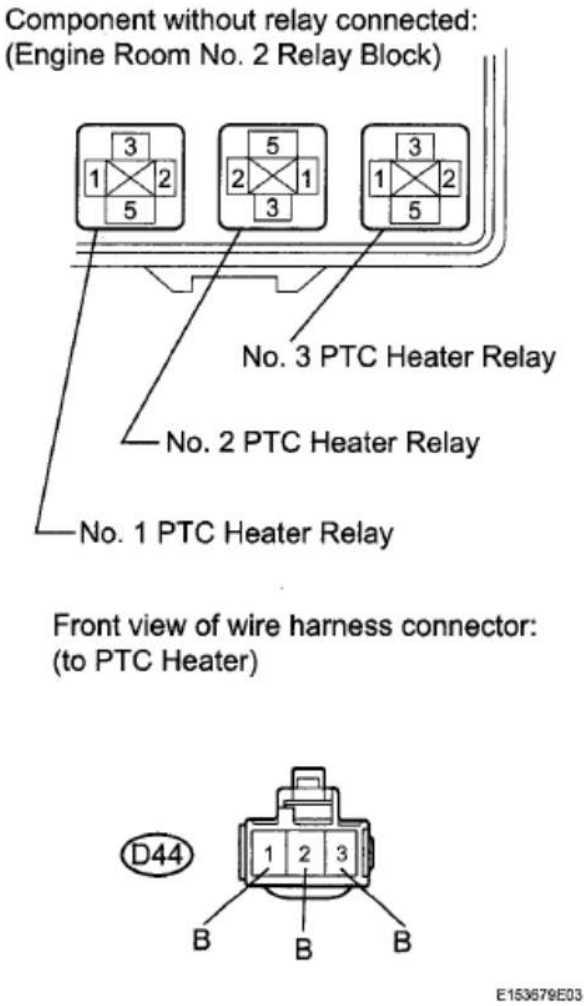


Fig. 217: Identifying No. 1, No. 2 And No. 3 PTC Heater Relays
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

7. **CHECK AIR CONDITIONING AMPLIFIER**
   a. Remove the air conditioning amplifier with its connectors still connected (See **REMOVAL**).
   b. Turn the ignition switch on (IG).
   c. When the PTC heater operating conditions are met (engine at idling speed or faster, ambient temperature is 10°C (50°F) or less, engine coolant temperature is 65°C (149°F) or less, set temperature switch is set to MAX HOT), turn the blower switch to the Lo setting.
   d. Measure the voltage according to the value(s) in the table below.

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Component with harness connected:
(Air Conditioning Amplifier)

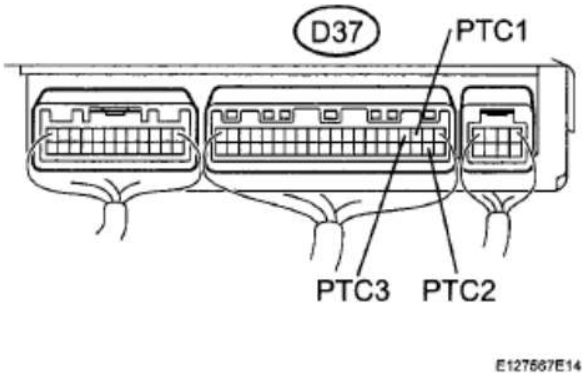


Fig. 218: Identifying Air Conditioning Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-3 (PTC1) - Body ground	Always	11 to 14 V
D37-22 (PTC2) - Body ground	Always	11 to 14 V
D37-4 (PTC3) - Body ground	Always	11 to 14 V

NG: REPLACE AIR CONDITIONING AMPLIFIER

OK: Go to next step

8. **REPLACE PTC HEATER**
   a. Replace the PTC heater (See **INSPECTION**)
9. **CHECK PTC HEATER (OPERATION)**
   a. Operate the PTC heater to check that functions properly.

OK:

PTC heater function operates normally.

NG: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

OK: END (PTC HEATER IS DEFECTIVE)

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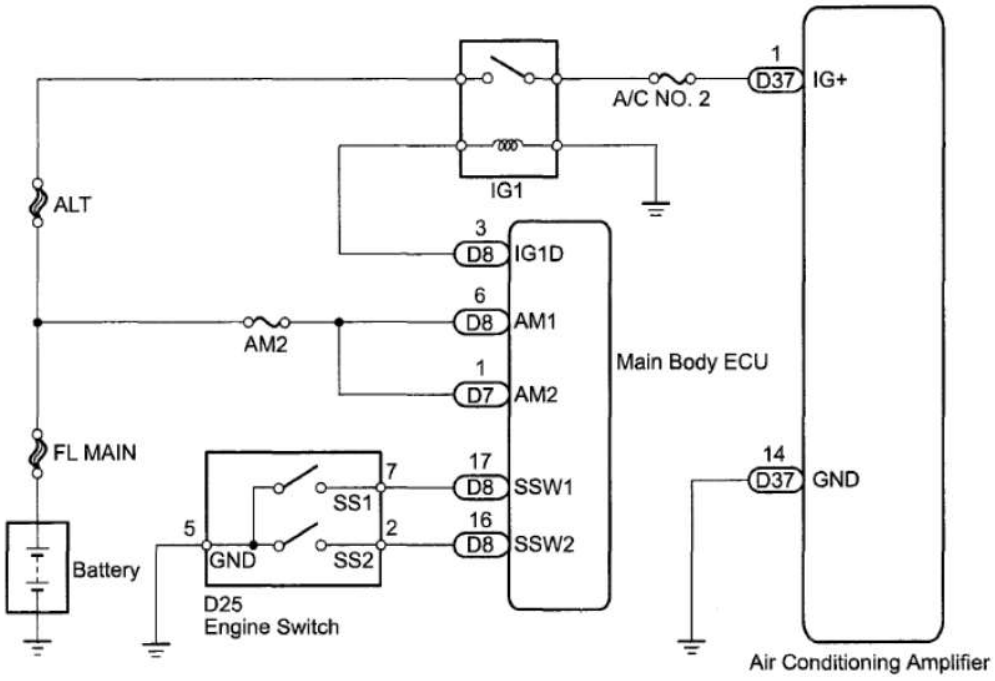
IG POWER SOURCE CIRCUIT

DESCRIPTION

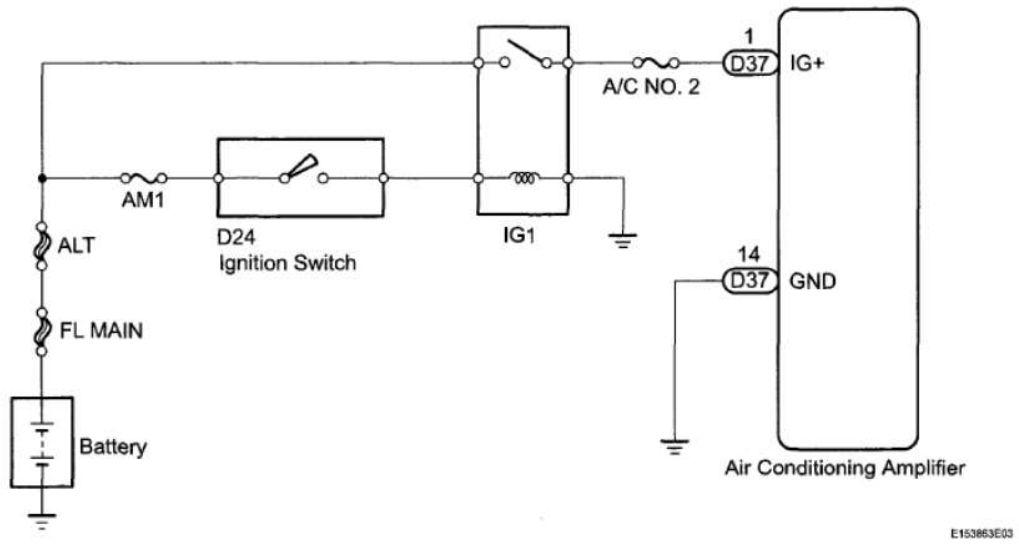
This is the main power source supplied to the air conditioning amplifier when the ignition switch is on (IG). This power source is used for operating components, such as the air conditioning amplifier and servo motors.

WIRING DIAGRAM

w/ Smart Key System:



w/o Smart Key System:



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Fig. 219: IG Power Source Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **INSPECT FUSE (A/C NO. 2)**
   a. Remove the A/C NO. 2 fuse from the instrument panel junction block.
   b. Measure the resistance of the fuse.

   Standard resistance:

   Below 1 ohms

   NG: REPLACE FUSE

   OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BATTERY)**
   a. Disconnect the D37 amplifier connector.
   b. Measure the voltage according to the value(s) in the table below.

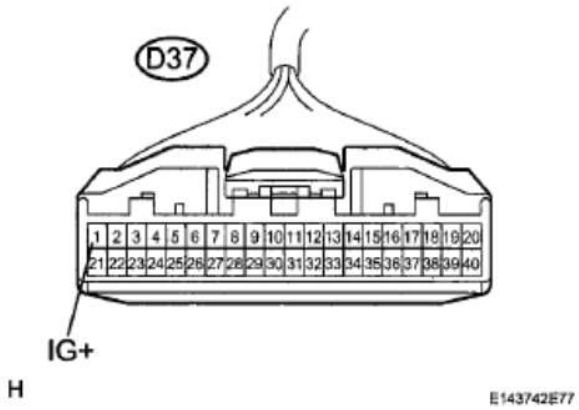
   Standard voltage

   STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
D37-1 (IG+) - Body ground	Ignition switch on (IG)	11 to 14 V

   NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Air Conditioning Amplifier)



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Fig. 220: Identifying D37 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BODY GROUND)**
   a. Disconnect the D37 amplifier connector.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Tester Display	Specified Condition
D37-14 (GND) - Body ground	Measurement Item/ Range	Below 1 ohms

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Air Conditioning Amplifier)

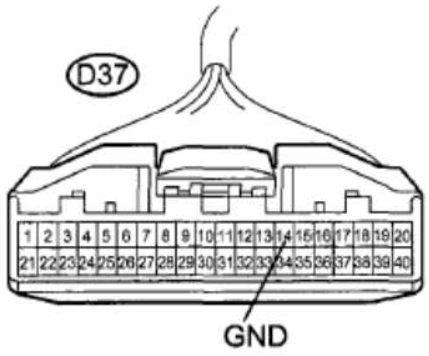


Fig. 221: Identifying D37 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

BACK-UP POWER SOURCE CIRCUIT

DESCRIPTION

This is the back-up power source circuit for the air conditioning amplifier. Power is supplied even when the

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ignition switch is turned off and is used for functions such as the diagnostic trouble code memory.

WIRING DIAGRAM

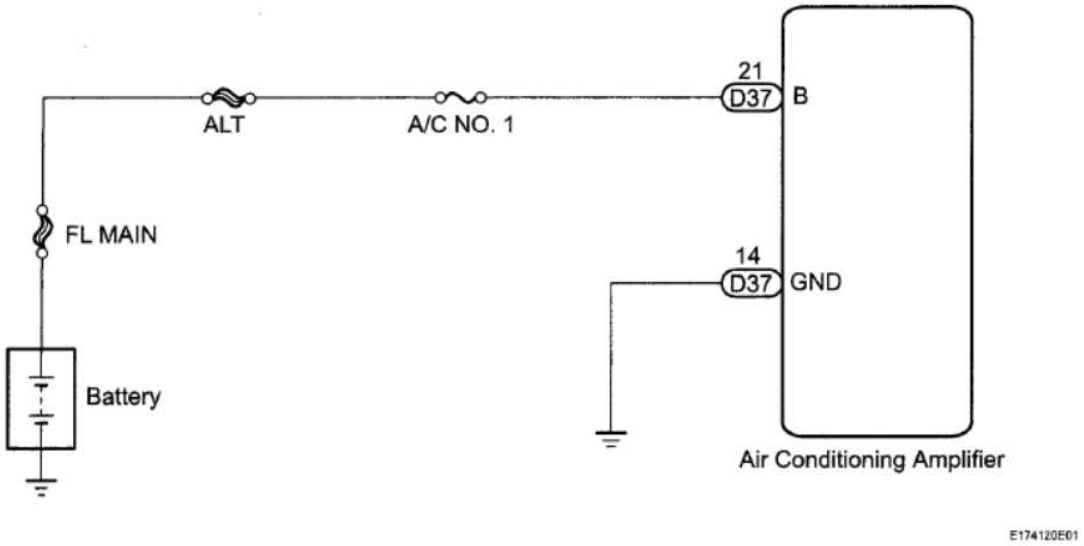


Fig. 222: Back-Up Power Source Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **INSPECT FUSE (A/C NO.1)**
   a. Remove the A/C NO.1 fuse from the instrument panel junction block.
   b. Measure the resistance of the fuse.

   Standard resistance

   STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A/C NO.1 fuse	Always	Below 1 ohms

   NG: REPLACE FUSE

   OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BATTERY)**
   a. Disconnect the D37 amplifier connector.
   b. Measure the voltage according to the value(s) in the table below.

   Standard voltage

   STANDARD VOLTAGE CHART

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Tester Connection	Condition	Specified Condition
D37-21 (B) - Body ground	Always	11 to 14 V

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

Front view of wire harness connector:
(to Air Conditioning Amplifier)

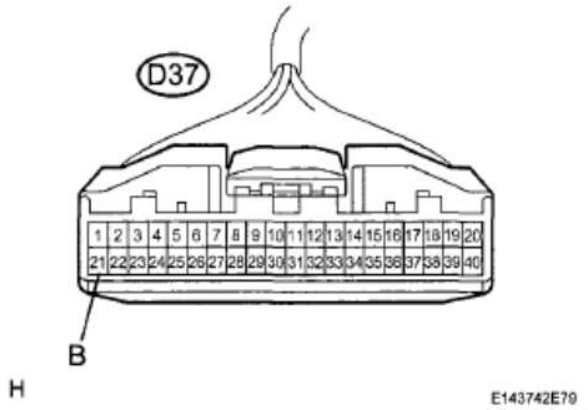


Fig. 223: Identifying D37 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER - BODY GROUND)**
   a. Disconnect the D37 amplifier connector.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D37-14 (GND) - Body ground	Always	Below 1 ohms

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Air Conditioning Amplifier)

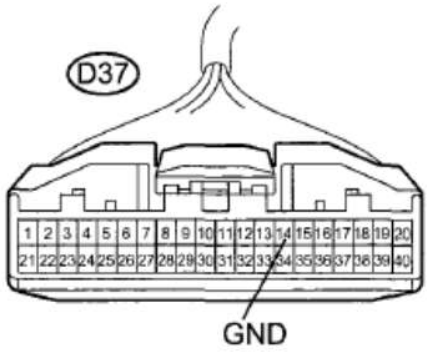


Fig. 224: Identifying D37 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

LIN COMMUNICATION CIRCUIT

DESCRIPTION

The operation signal of a switch etc. is exchanged between terminal LIN1 of the air conditioning control assembly and terminal LIN1 of the air conditioning amplifier.

WIRING DIAGRAM

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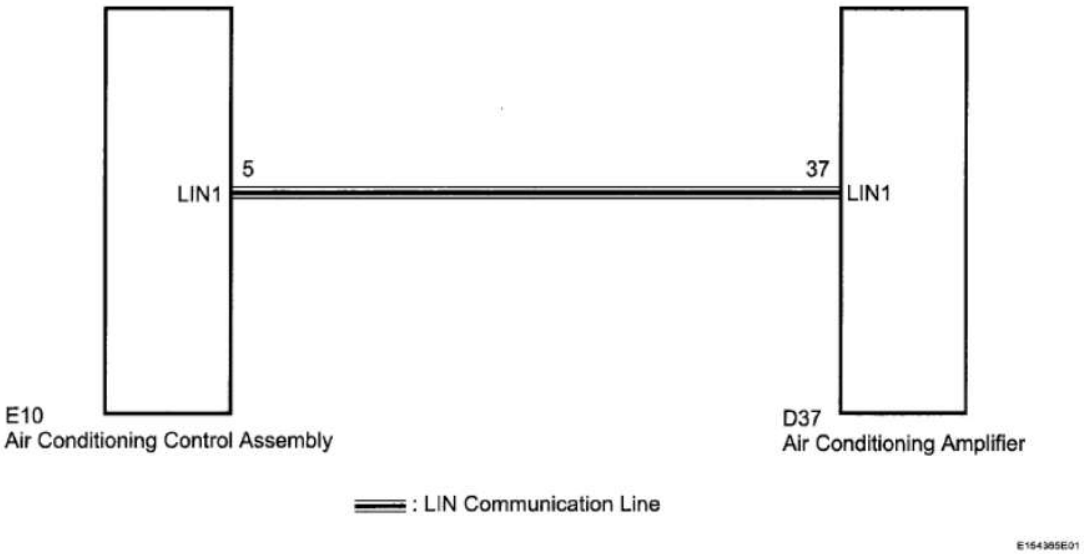


Fig. 225: LIN Communication Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (A/C CONTROL ASSEMBLY - AIR CONDITIONING AMPLIFIER)**
   a. Disconnect the connector from the air conditioning control assembly.
   b. Disconnect the connector from the air conditioning amplifier.
   c. Measure the resistance according to the value(s) in the table below.

Standard resistance

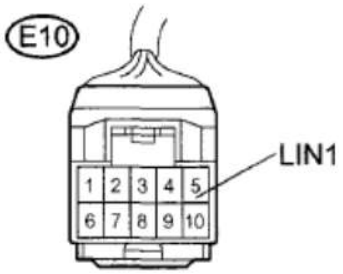
STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D37-37 (LIN1) - E10-5 (LIN1)	Always	Below 1 ohms
D37-37 (LIN1) - Body ground	Always	10 kohms or higher

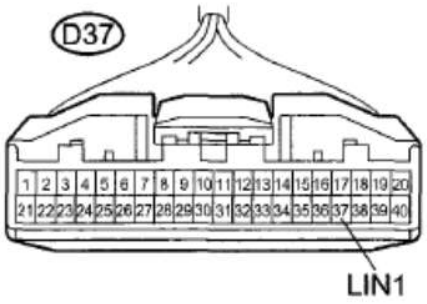
NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

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Front view of wire harness connector:
(to Air Conditioning Control (Front))



Front view of wire harness connector:
(to Air Conditioning Amplifier)



E152691E07

Fig. 226: Identifying Air Conditioning Control Connector And D37 Amplifier Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK: PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (See **PROBLEM SYMPTOMS TABLE**)

REFRIGERANT

ON-VEHICLE INSPECTION

1. **INSPECT REFRIGERANT VOLUME**
   a. Check the sight glass on the air conditioning tube and accessory.
      1. Prepare the vehicle according to the chart below.

ITEM CONDITION CHART

Item	Condition
Vehicle door	Fully open

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Temperature setting	MAX COOL
Blower speed	HI
A/C	ON

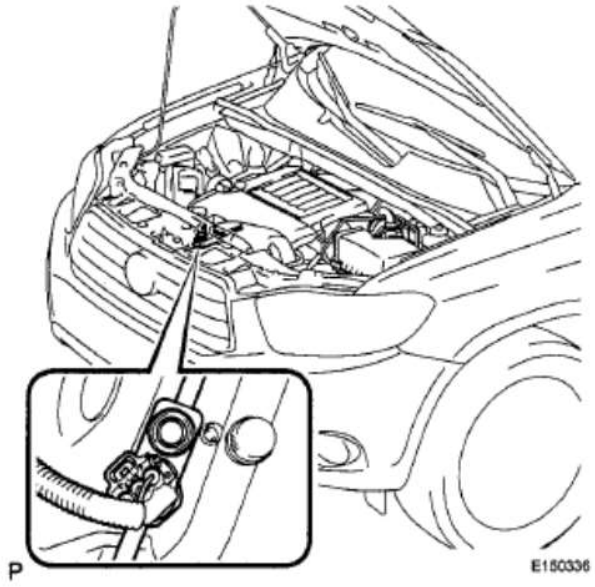


Fig. 227: Inspecting Refrigerant Volume
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Compare the sight glass to the following chart.

SYMPTOM REFERENCE CHART

Item	Symptom	Amount of refrigerant	Corrective Actions
1	Bubbles exist	Insufficient(1)	1. Check for gas leakage and repair if necessary 2. Recharge with proper amount of refrigerant
2	No bubbles exist (DTC 76 is output)	Empty, insufficient, or excessive	Refer to 3 and 4
3	No temperature difference between compressor inlet and outlet	Empty or nearly empty	1. Check for gas leakage and repair if necessary 2. Evacuate the AC system and recharge with proper amount of refrigerant
4	Considerable temperature difference between compressor inlet and outlet	Proper or excessive	Refer to 5 and 6
			1. Recover refrigerant

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5	Immediately after air conditioning is turned off, refrigerant remains clear	Excessive	2. Evacuate the AC system and recharge with proper amount of refrigerant
6	Immediately after air conditioning is turned off, refrigerant foams and then becomes clear	Proper	-
(1) Bubbles in the sight glass with the vehicle's interior temperature above 35°C (95°F) can be considered normal if cooling is sufficient.			

2. **INSPECT REFRIGERANT PRESSURE WITH MANIFOLD GAUGE SET**

HINT:

This is a method where a manifold gauge set is used to help locate the problem.

a. Read the manifold gauge pressure when the following conditions are met:

Test conditions:

- Temperature at the air inlet with the switch set at RECIRC is 30 to 35°C (86 to 95°F).
- The engine is running at 1500 rpm.
- The blower speed control switch position is at "HI".
- The temperature control dial position is at "COOL".
- The A/C switch is on.
- Doors are fully open.
- The ignition switch is in a position that enables the A/C compressor to run.

1. Normally functioning refrigeration system

Gauge reading

GAUGE READING REFERENCE CHART

Pressure side	Refrigerant volume
Low	0.15 to 0.25 MPa (1.5 to 2.5 kgf/cm^2 , 21.3 to 35.5 psi)
High	1.37 to 1.57 MPa (14 to 16 kgf/cm^2 , 199.1 to 227.5 psi)

2. Moisture is present in the refrigeration system.

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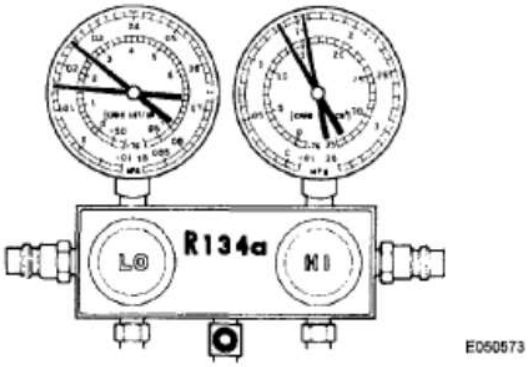


Fig. 228: Identifying Gauge Reading - Normally Functioning Refrigeration System
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Condition: Periodically cools and then fails to cool

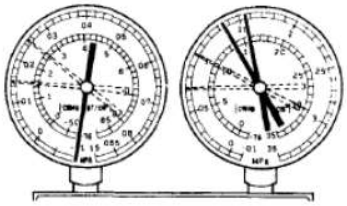


Fig. 229: Identifying Gauge Reading - Moisture Is Present In Refrigeration System
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TROUBLESHOOTING CHART

Symptom	Probable Cause	Diagnosis	Corrective Actions
During operation, pressure on low pressure side cycles between normal and vacuum	• Moisture in the AC system will freeze at the expansion valve orifice, causing the refrigeration cycle to temporarily stop • After the system stops, and warms up again, the ice will melt and normal operation will be temporarily restored	• Cooler dryer (integrated into condenser tank) in oversaturated state • Moisture in refrigeration system freezes at expansion valve orifice and blocks circulation of refrigerant	1. Replace cooler dryer 2. Remove moisture in system by repeatedly evacuating air 3. Supply a proper amount of new refrigerant

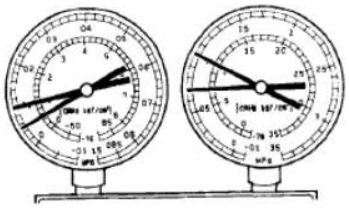
3. Insufficient cooling

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Condition: Cooling system does not function effectively.



I022118E13

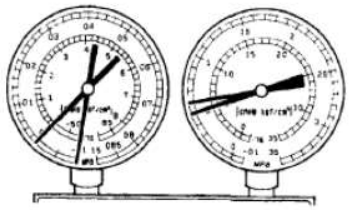
Fig. 230: Identifying Gauge Reading - Insufficient Cooling
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TROUBLESHOOTING CHART

Symptom	Probable Cause	Diagnosis	Corrective Actions
• Pressure is low on both low and high pressure sides • Bubbles are seen through sight glass continuously • Insufficient cooling performance	Gas leakage from the refrigeration system	• Insufficient refrigerant • Refrigerant leaking	1. Check for gas leaks and repair if necessary 2. Supply a proper amount of new refrigerant 3. If the gauge indicates a pressure of close to 0, then it will be necessary to evacuate the system after repairing the leak

4. Poor circulation of refrigerant

Condition: Cooling system does not function effectively.



I022119E14

Fig. 231: Identifying Gauge Reading - Poor Circulation Of Refrigerant
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TROUBLESHOOTING CHART

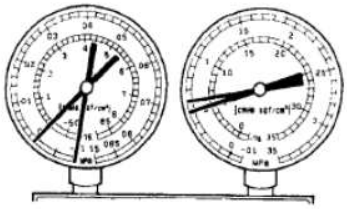
Symptom	Probable Cause	Diagnosis	Corrective Actions
• Pressure is low on both low and high pressure sides	Refrigerant flow is obstructed by dirt inside the pipes of the condenser core	Receiver is clogged	Replace condenser

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• Frost exists on pipe from condenser to unit			

5. Refrigerant does not circulate.

Condition: Cooling system does not function. (Sometimes it may function.)



I022120E14

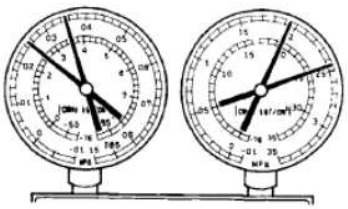
Fig. 232: Identifying Gauge Reading - Refrigerant Does Not Circulate
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TROUBLESHOOTING CHART

Symptom	Probable Cause	Diagnosis	Corrective Actions
• Vacuum is indicated on low pressure side and very low pressure is indicated on high pressure side • Frost or condensation is seen on piping on both sides of receiver/drier or expansion valve	• Refrigerant flow is obstructed by moisture or dirt in refrigeration system • Refrigerant flow is disrupted by gas leaking internally through the expansion valve	Refrigerant does not circulate	1. Check expansion valve 2. Replace expansion valve 3. Replace condenser 4. Evacuate air and supply a proper amount of new refrigerant 5. For internal gas leak at expansion valve, replace expansion valve

6. Refrigerant is overcharged or cooling effectiveness of condenser is insufficient.

Condition: Cooling system does not function.



I022121E14

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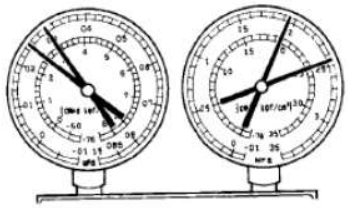
Fig. 233: Identifying Gauge Reading - Refrigerant Is Overcharged Or Cooling Effectiveness Of Condenser Is Insufficient
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TROUBLESHOOTING CHART

Symptom	Probable Cause	Diagnosis	Corrective Actions
• Pressure is too high on both low and high pressure sides • No air bubbles are seen through sight glass even when engine rpm lowers	• Unable to develop sufficient performance due to excessive use of refrigeration system • Cooling effectiveness of condenser is insufficient	• Excessive refrigerant in cycle --> excessive refrigerant was added during recharging • Condenser cooling effectiveness is insufficient --> condenser fins are clogged at cooling fan	1. Clean condenser 2. Check the operation of the condenser cooling fan 3. If 1 and 2 are normal state, check the amount of refrigerant and supply a proper amount of refrigerant

7. Air is present in the refrigeration system.

Condition: Cooling system does not function.



NOTE: These gauge indications occur when the refrigeration system opens and the refrigerant is charged without vacuum purging.

I022122E08

Fig. 234: Identifying Gauge Reading - Air Present In Refrigeration System
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TROUBLESHOOTING CHART

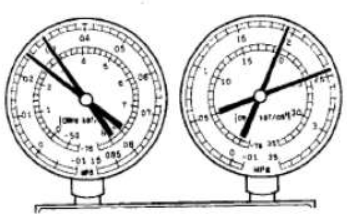
Symptom	Probable Cause	Diagnosis	Corrective Actions
• Pressure is too high on both low and high pressure sides • The low pressure piping is too hot to touch • Bubbles can be	Air in system	• Air present in refrigeration system • Insufficient vacuum purging	1. Check compressor oil to see if it is dirty or insufficient 2. Evacuate the system and recharge it with new or purified refrigerant

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seen through sight glass			

8. Expansion valve malfunction

Condition: Insufficient cooling



I022123E05

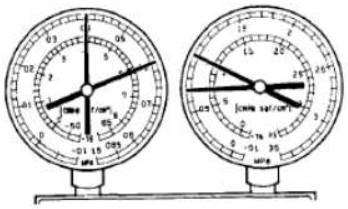
Fig. 235: Identifying Gauge Reading - Expansion Valve Malfunction
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TROUBLESHOOTING CHART

Symptom	Probable Cause	Diagnosis	Corrective Actions
• Pressure is too high on both low and high pressure sides • Frost or a large amount of condensation on piping on low pressure side	Expansion valve may be stuck	• Excessive refrigerant in low pressure piping • Expansion valve opened too wide	Check expansion valve

9. Insufficient compressor compression

Condition: Insufficient cooling



I022124E05

Fig. 236: Identifying Gauge Reading - Insufficient Compressor Compression
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TROUBLESHOOTING CHART

Symptom	Probable Cause	Diagnosis	Corrective Actions
• Pressure is too high on both low and high pressure sides • Pressure is too low on	Internal leak in compressor	• Low compression • Leak from a damaged valve, or parts may be	Replace compressor

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high pressure side		broken	

Gauge readings (Reference)

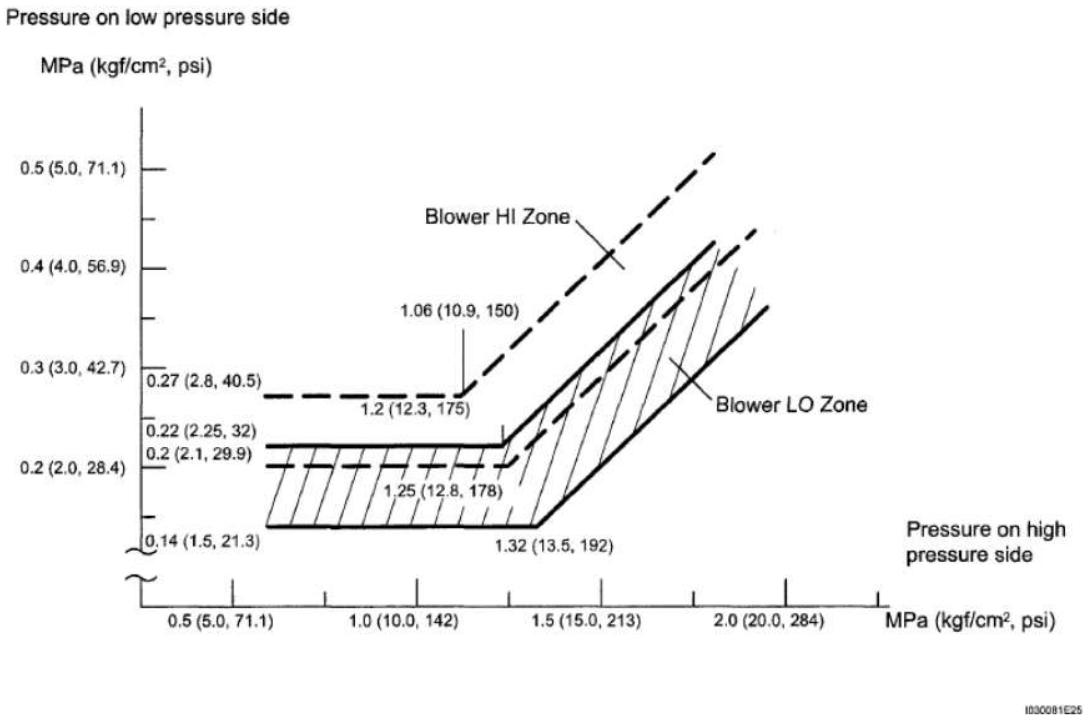


Fig. 237: Gauge Readings (Reference) Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REPLACEMENT

1. **RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM**
   a. Start the engine.
   b. Turn the A/C switch on.
   c. Operate the cooler compressor at an engine speed of approximately 1000 rpm for 5 to 6 minutes to circulate the refrigerant. This causes most of the compressor oil from the various components of the A/C system to collect in the A/C compressor.
   d. Stop the engine.
   e. Recover the refrigerant from the A/C system using a refrigerant recovery unit.
2. **CHARGE WITH REFRIGERANT**
   a. Perform vacuum purging using a vacuum pump.
   b. Charge with refrigerant HFC-134a (R134a).

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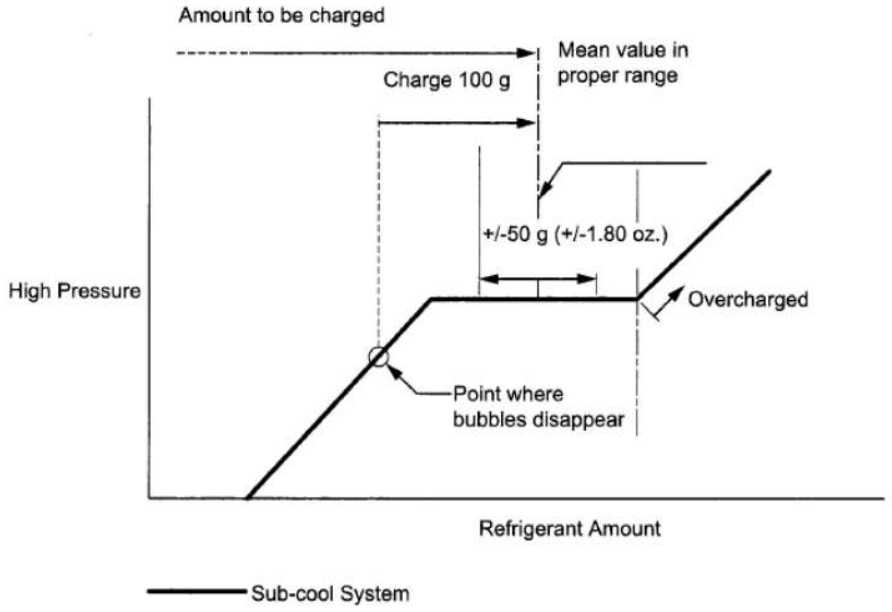


Fig. 238: Refrigerant Charge Reference Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard (w/o Rear Air Conditioning System):

550 to 650 g (19.4 to 22.9 oz.)

Standard (w/ Rear Air Conditioning System):

720 to 820 g (25.4 to 28.9 oz.)

SST 09985-20010 (09985-02130, 09985-02150, 09985-02090, 09985-02110, 09985-02010, 09985-02050, 09985-02060, 09985-02070, 09985-02140, 09985-02080)

NOTE:

- **Do not turn the A/C on before charging with refrigerant. Doing so will cause the cooler compressor to work without refrigerant, resulting in overheating of the cooler compressor.**
- **Approximately 100 g (3.53 oz.) of refrigerant may need to be charged after bubbles disappear. The refrigerant amount should be checked by quantity, not with the sight glass.**

HINT:

Ensure that sufficient refrigerant is available to recharge the system when using a refrigerant recovery unit. Refrigerant recovery units are not always able to recover 100% of the refrigerant from an A/C system.

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3. **WARM UP ENGINE**
   a. Keep the A/C switch on for at least 2 minutes to warm up the compressor.

NOTE: **Be sure to warm up the compressor when turning the A/C on after removing and installing the cooler refrigerant lines (including the compressor), to prevent damage to the compressor.**

4. **INSPECT FOR REFRIGERANT LEAK**
   a. After recharging with refrigerant gas, inspect for refrigerant leak using a halogen leak detector.
   b. Carry out the test under the following conditions:
      - Make sure that the ignition switch is off.
      - Secure good ventilation (the gas leak detector may react to volatile gases which are not refrigerant, such as evaporated gasoline and exhaust gas).
      - Repeat the test 2 or 3 times.
      - Make sure that there is some refrigerant remaining in the refrigeration system.

   When the compressor is off: approx. 392 to 588 kPa (4 to 6 kgf/cm^2 , 57 to 85 psi)

   c. Using a gas leak detector, inspect for refrigerant leak from the refrigerant lines.

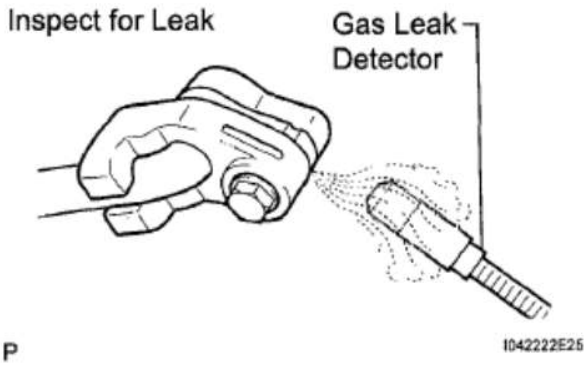


Fig. 239: Inspecting Refrigerant Leak From Refrigerant Lines Using Gas Leak Detector
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   d. Bring the gas leak detector close to the drain hose with the detector's power off, and then turn the detector on.

   HINT:

   - After the blower motor has stopped, let the cooling unit stand for more than 15 minutes.
   - Bring the gas leak detector sensor under the drain hose.
   - When bringing the gas leak detector close to the drain hose, make sure that the gas leak detector does not react to volatile gases.

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If it is not possible to avoid interference from volatile gases, the vehicle should be lifted up to allow testing.

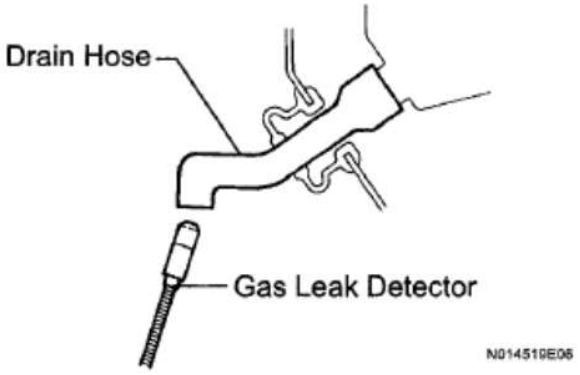


Fig. 240: Bring Gas Leak Detector Close To Drain Hose
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

e. If a gas leak is not detected from the drain hose, remove the blower motor from the cooling unit. Insert the gas leak detector into the unit and perform the test.
f. Disconnect the pressure switch connector and leave it for approximately 20 minutes. Bring the gas leak detector close to the pressure switch and perform the test.

REFRIGERANT LINE

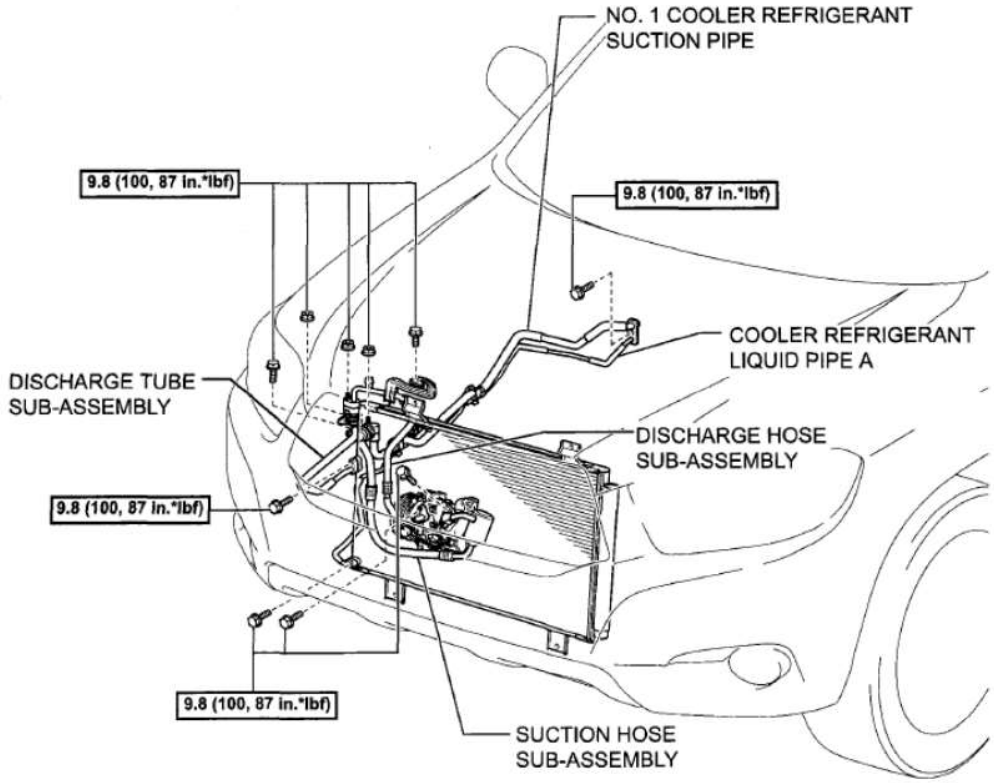
COMPONENTS

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for 1AR-FE without Rear Air Conditioning System:



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

P E174723E01

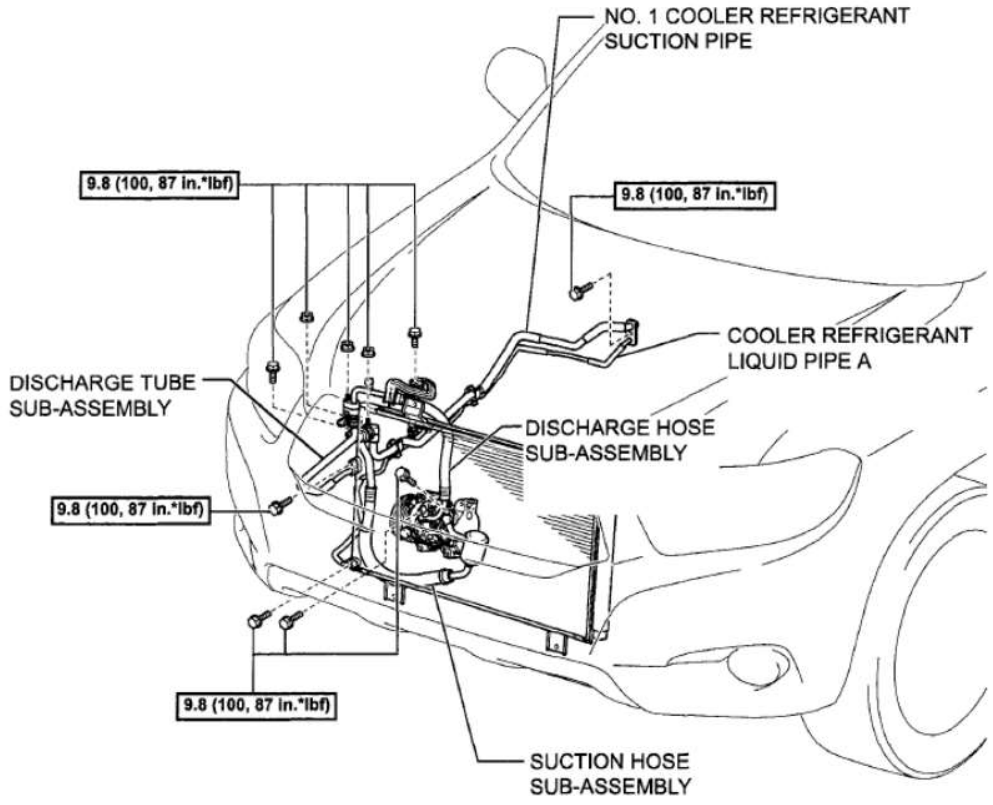
Fig. 241: Identifying Refrigerant Line Components (1 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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for 2GR-FE without Rear Air Conditioning System:



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

P E150329E03

Fig. 242: Identifying Refrigerant Line Components (2 Of 5)
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for 1AR-FE with Rear Air Conditioning System:

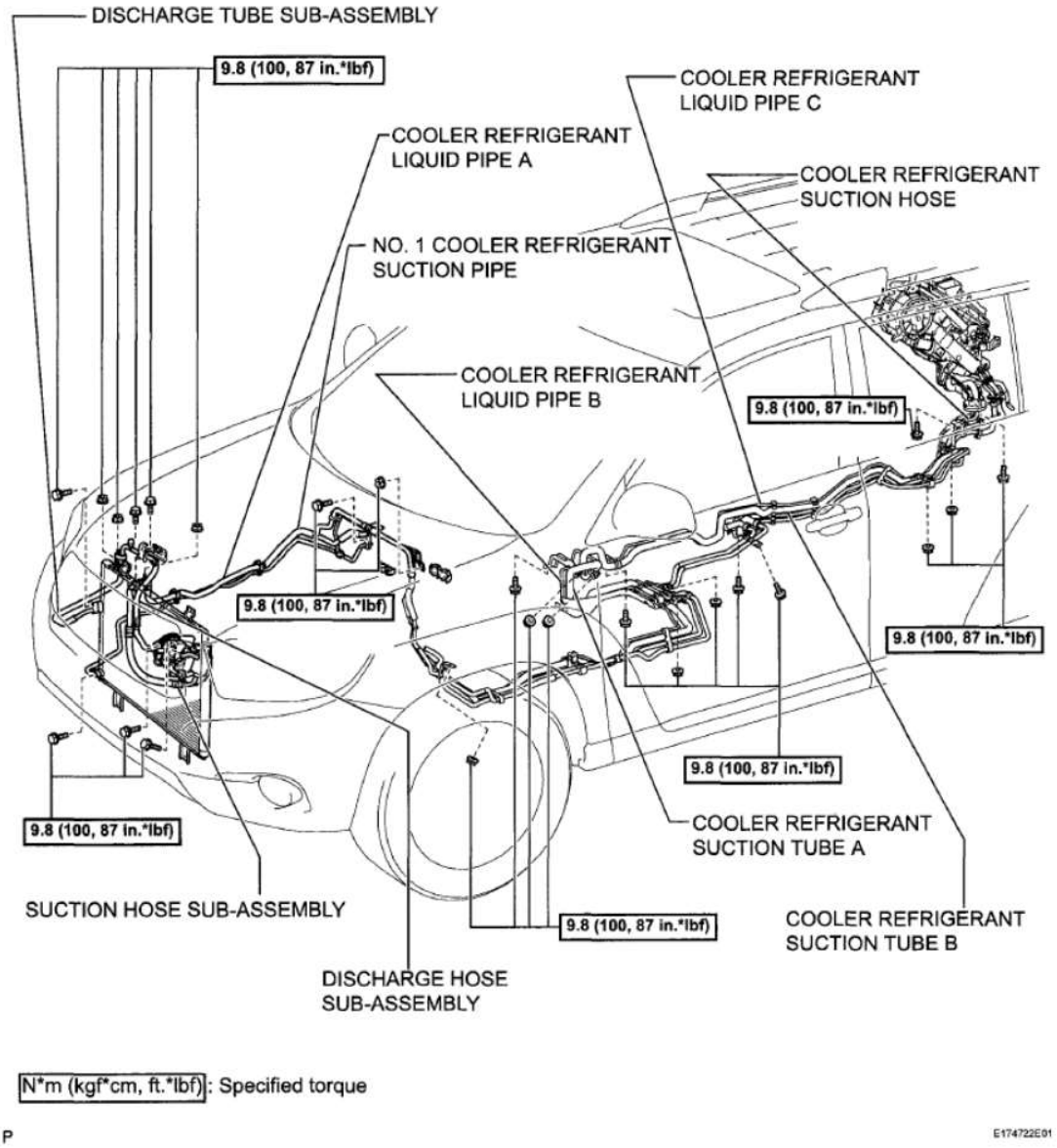


Fig. 243: Identifying Refrigerant Line Components (3 Of 5)
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for 2GR-FE with Rear Air Conditioning System:

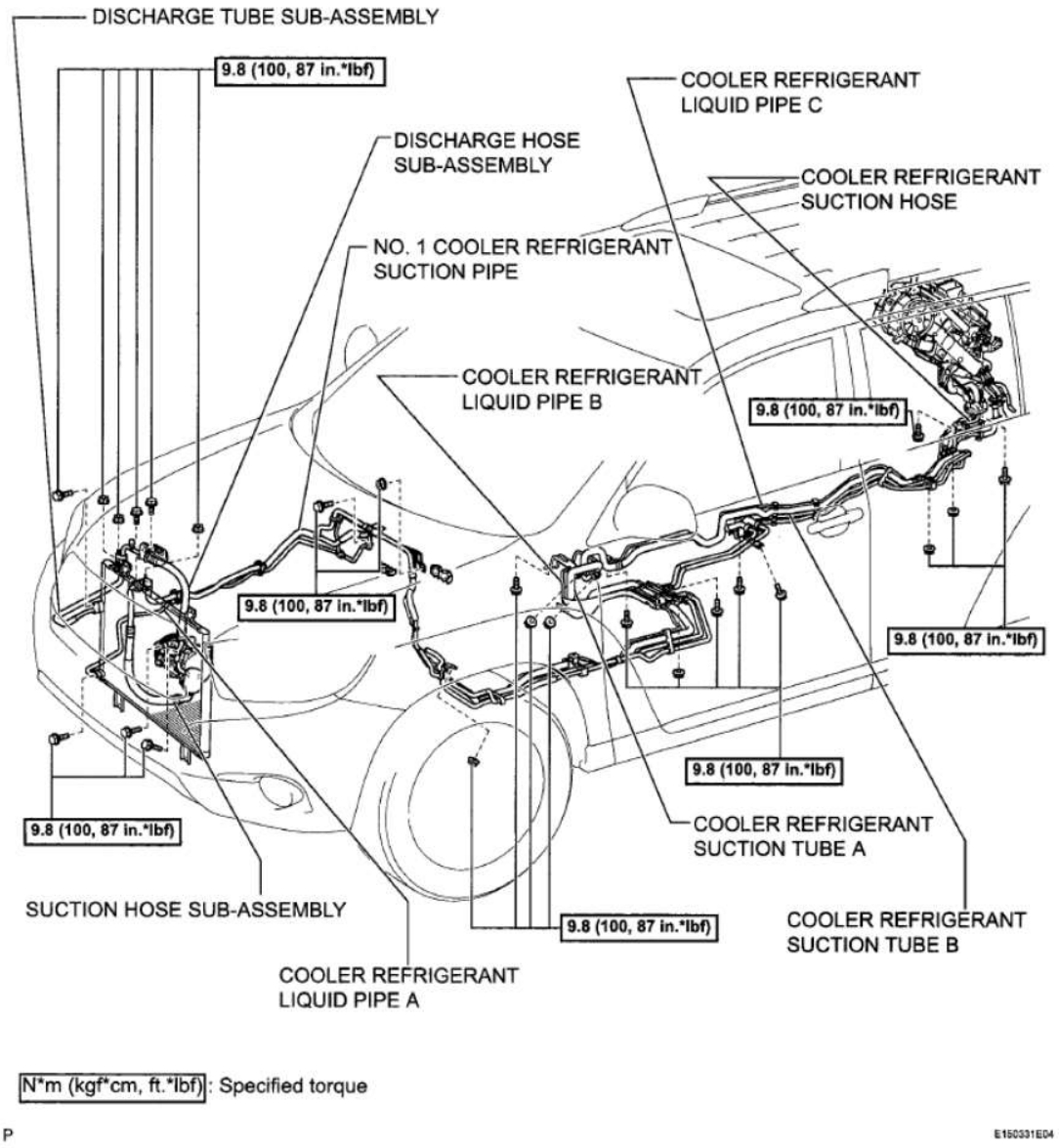


Fig. 244: Identifying Refrigerant Line Components (4 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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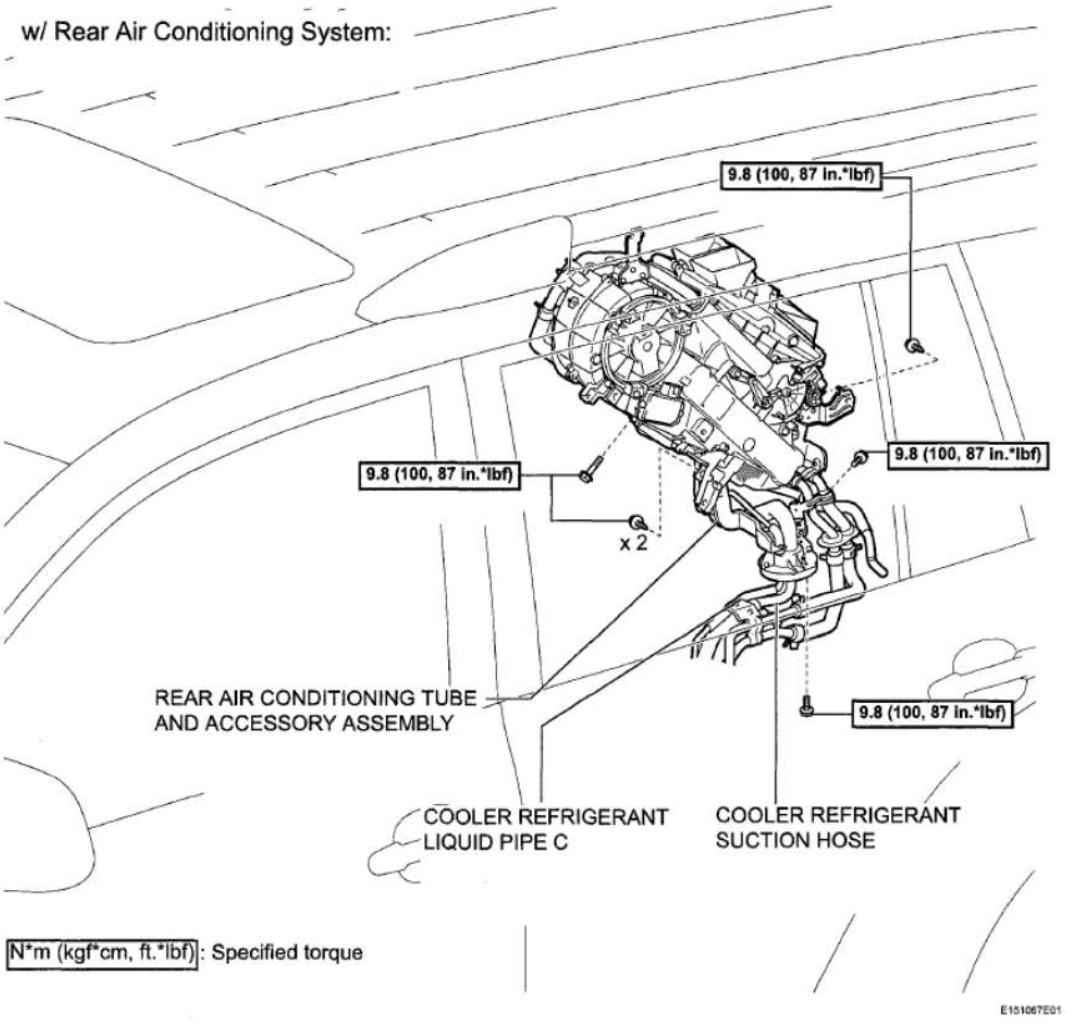


Fig. 245: Identifying Refrigerant Line Components (5 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

FRONT COOLING UNIT

COMPONENTS

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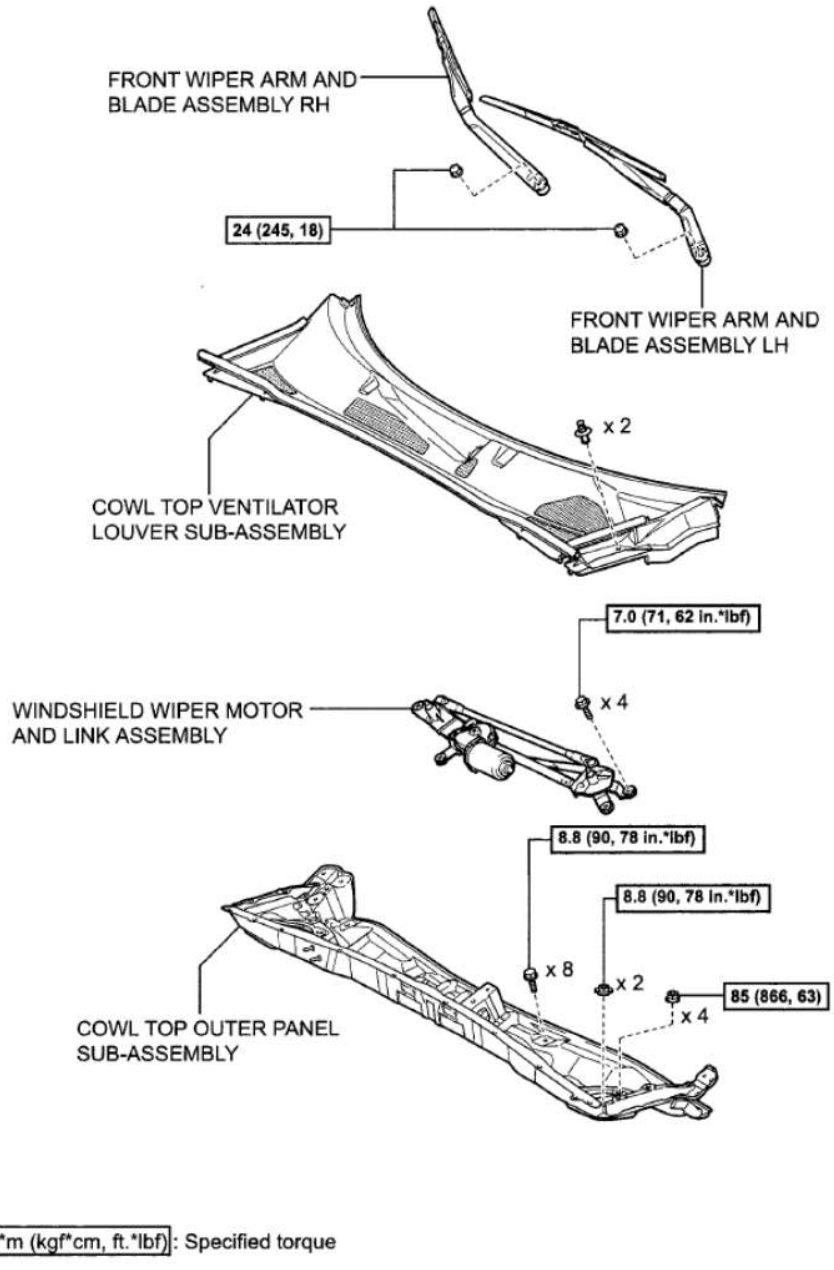


Fig. 246: Identifying Front Cooling Unit Components (1 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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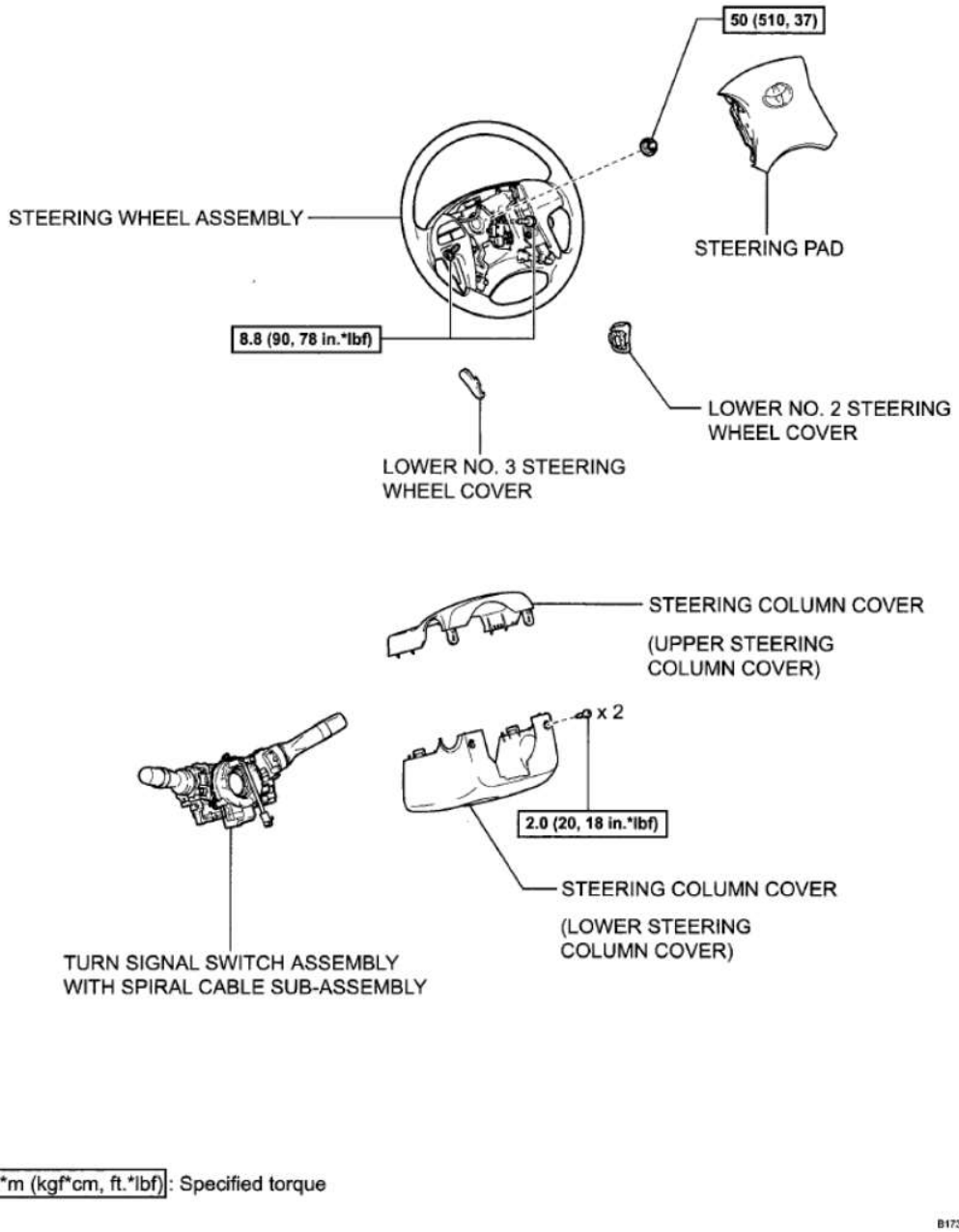


Fig. 247: Identifying Front Cooling Unit Components (2 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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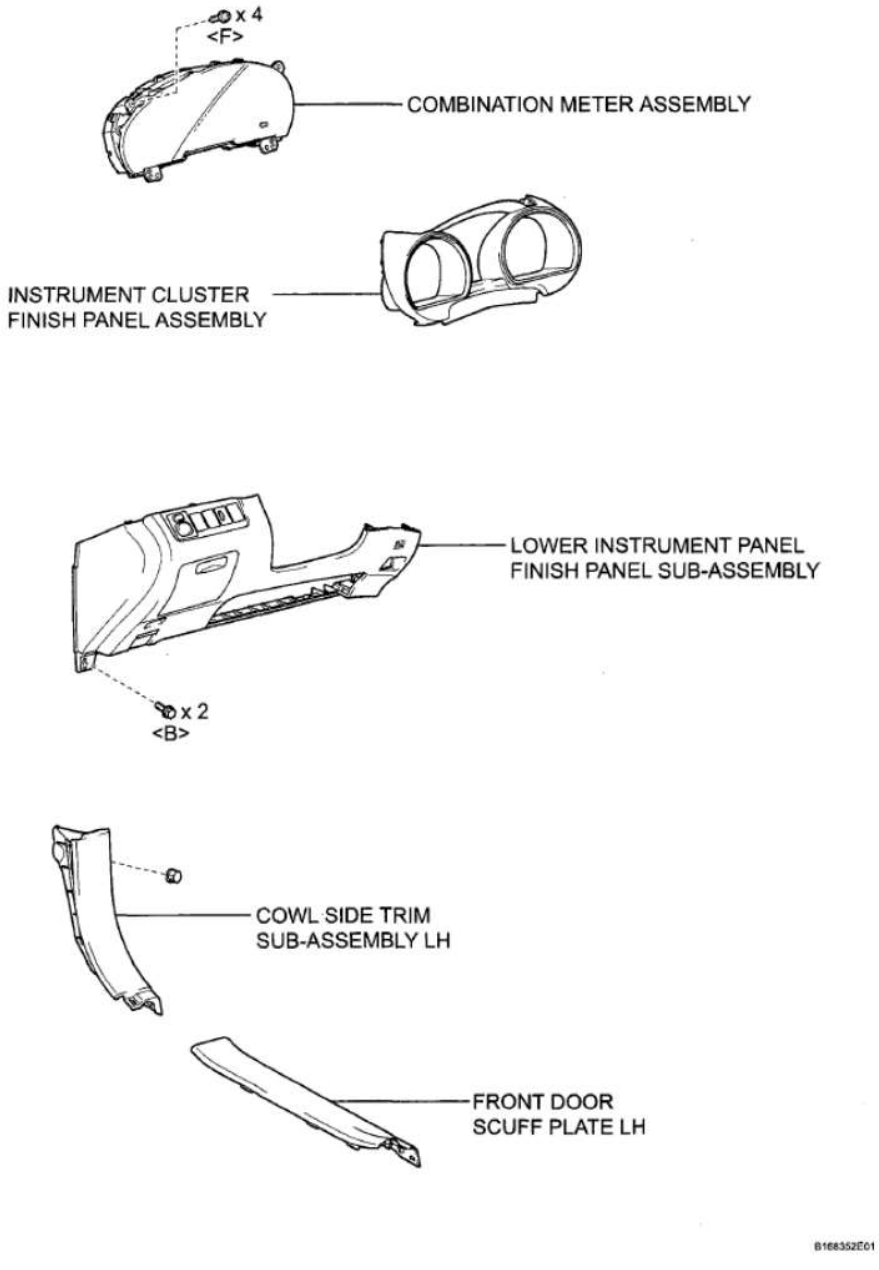


Fig. 248: Identifying Front Cooling Unit Components (3 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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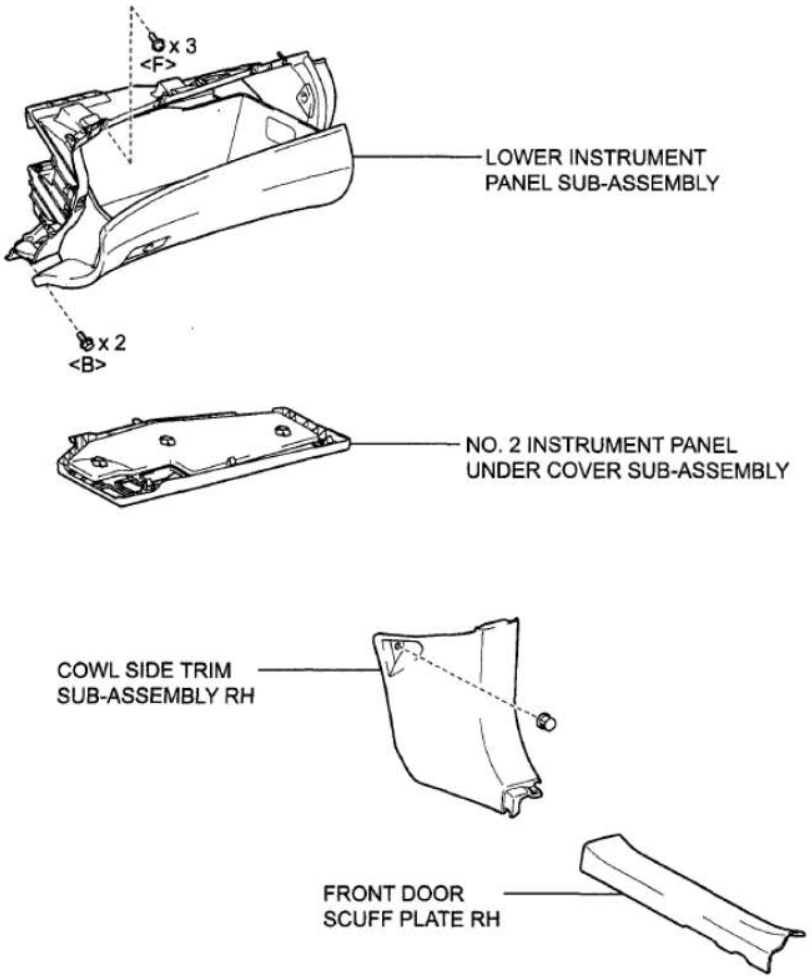


Fig. 249: Identifying Front Cooling Unit Components (4 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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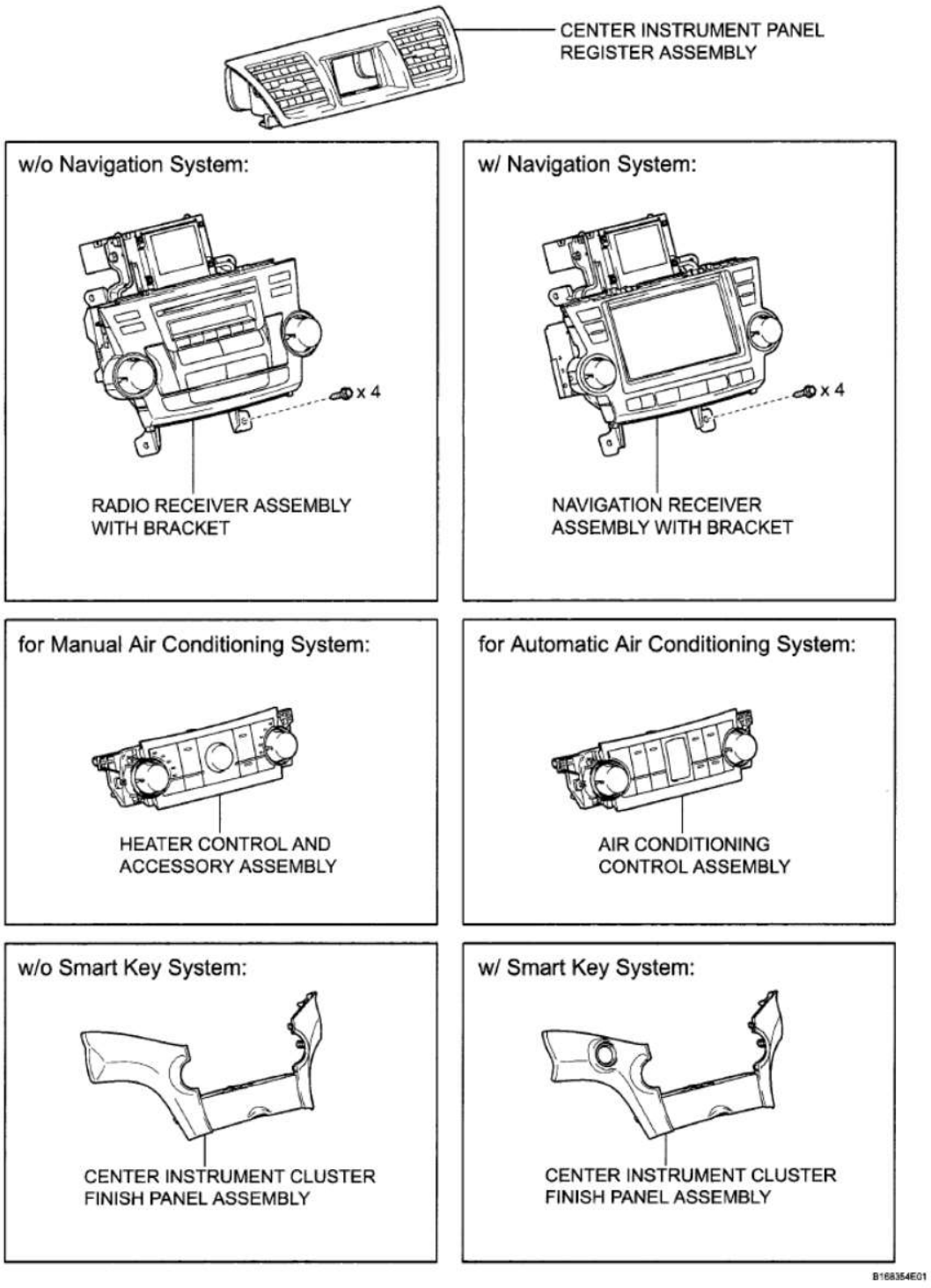


Fig. 250: Identifying Front Cooling Unit Components (5 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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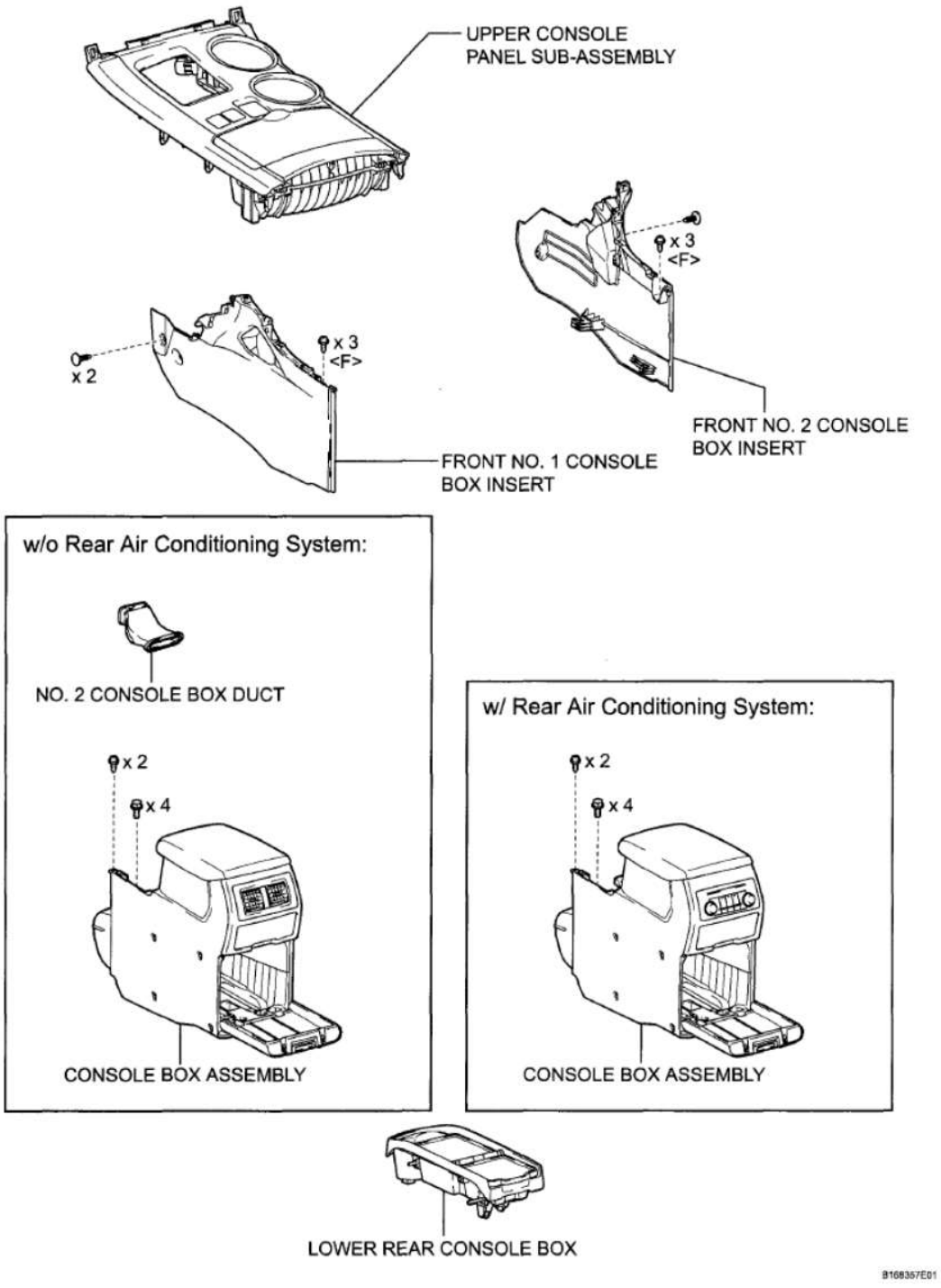


Fig. 251: Identifying Front Cooling Unit Components (6 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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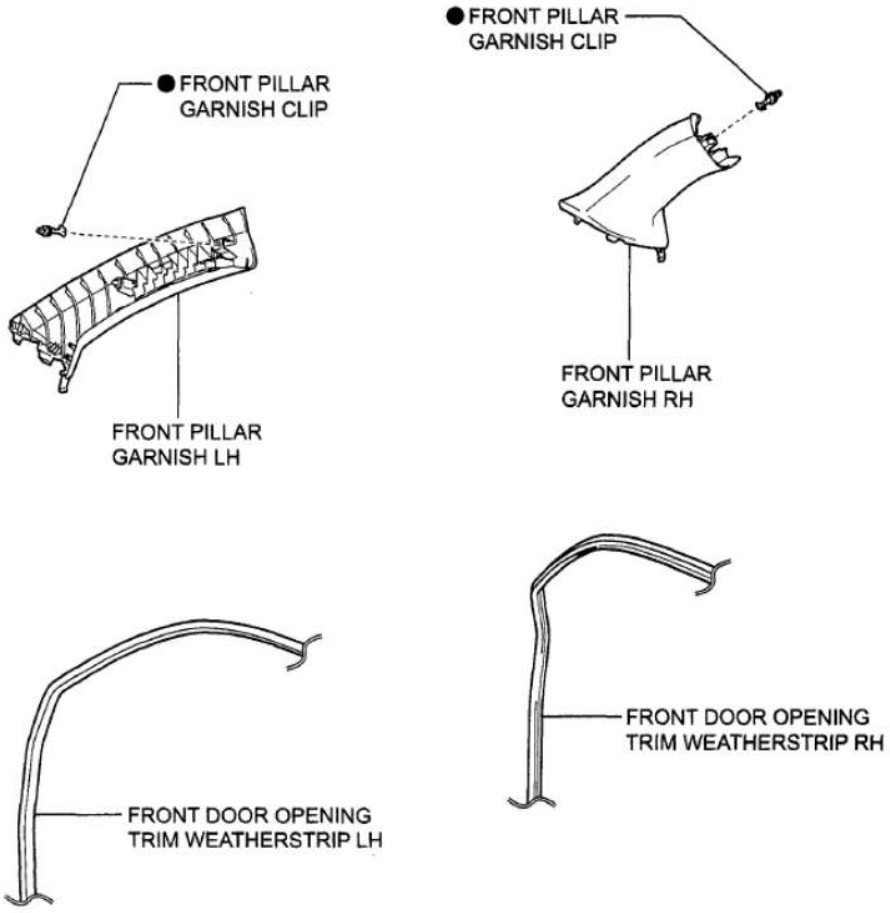


Fig. 252: Identifying Front Cooling Unit Components (7 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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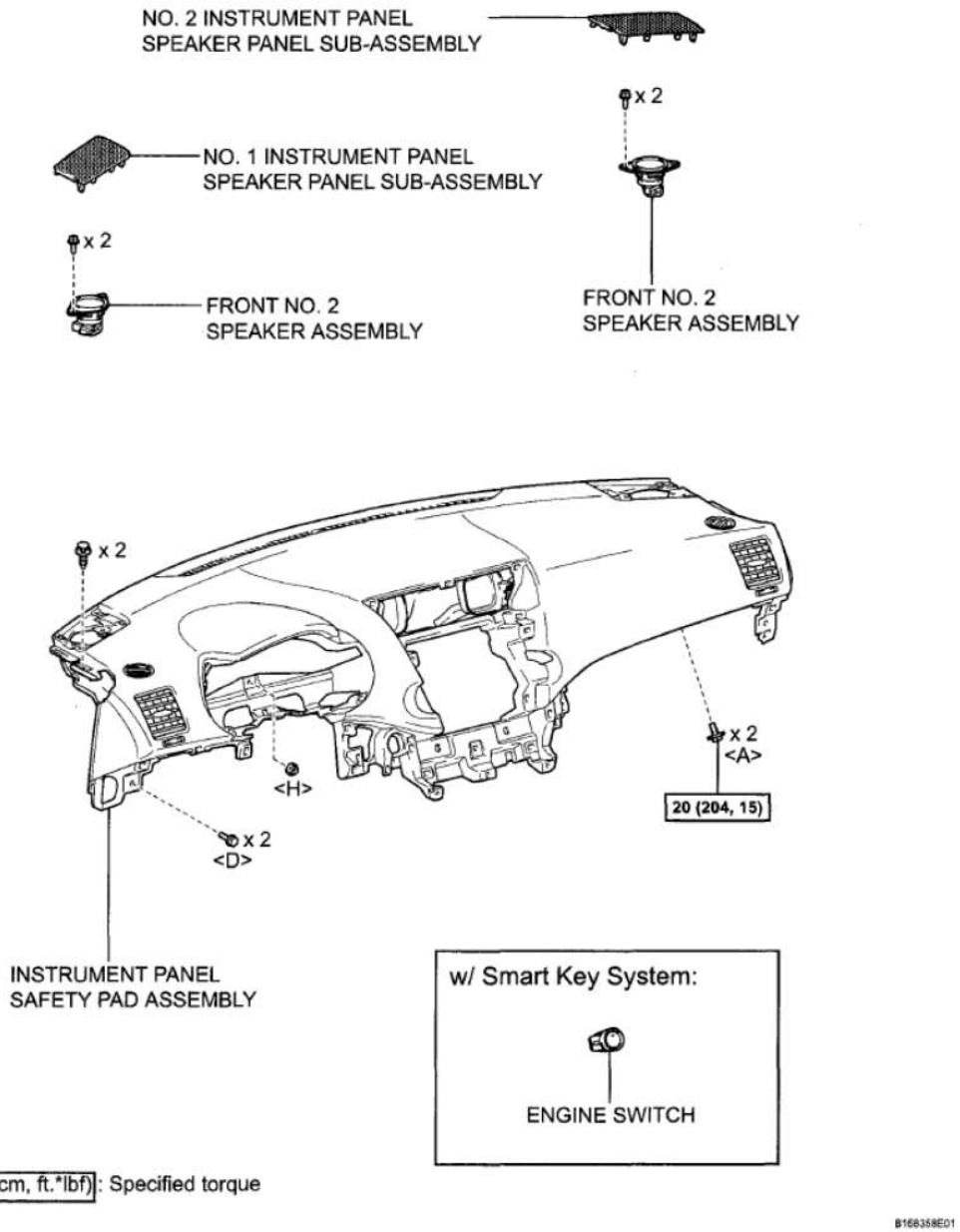


Fig. 253: Identifying Front Cooling Unit Components (8 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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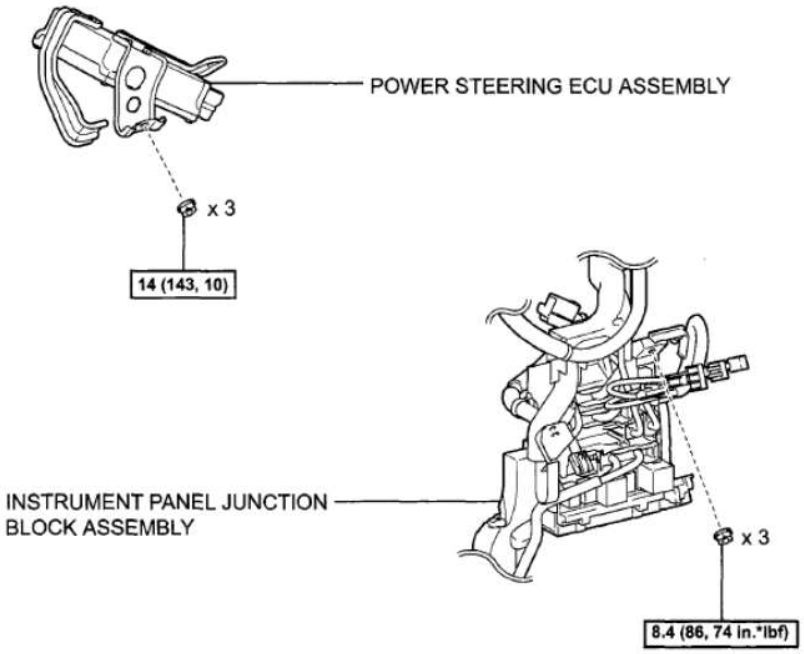


Fig. 254: Identifying Front Cooling Unit Components (9 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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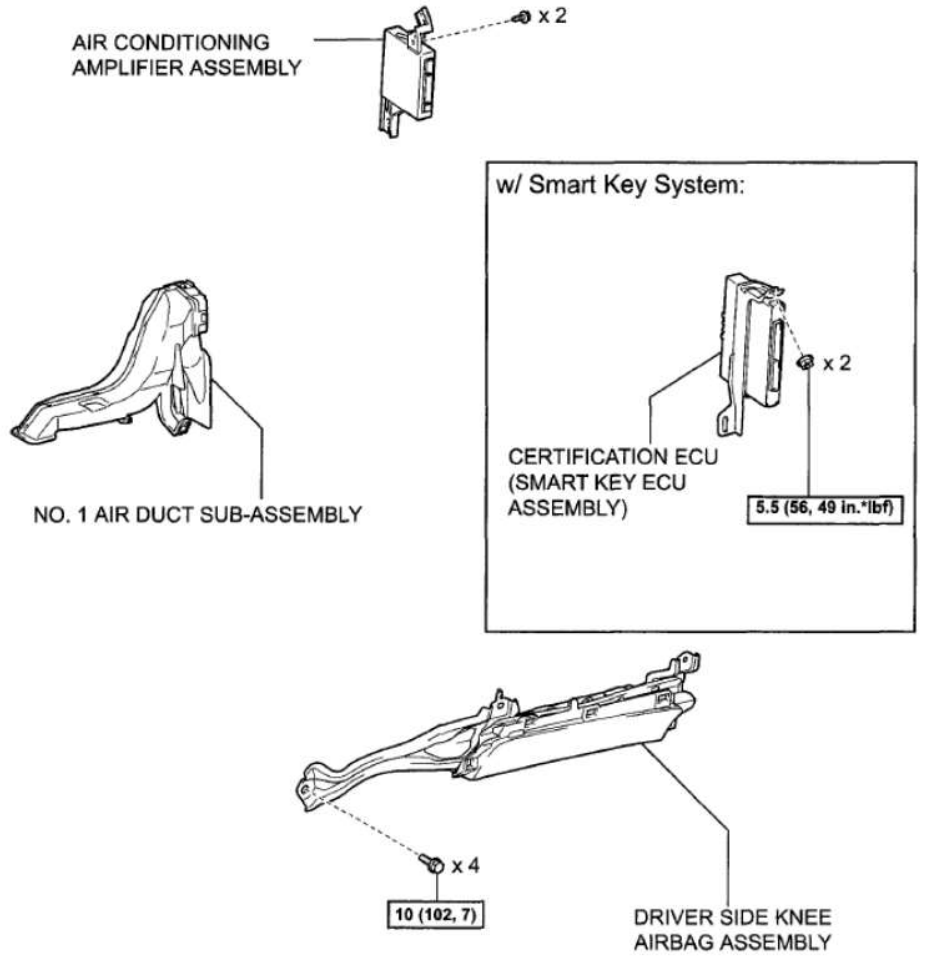


Fig. 255: Identifying Front Cooling Unit Components (10 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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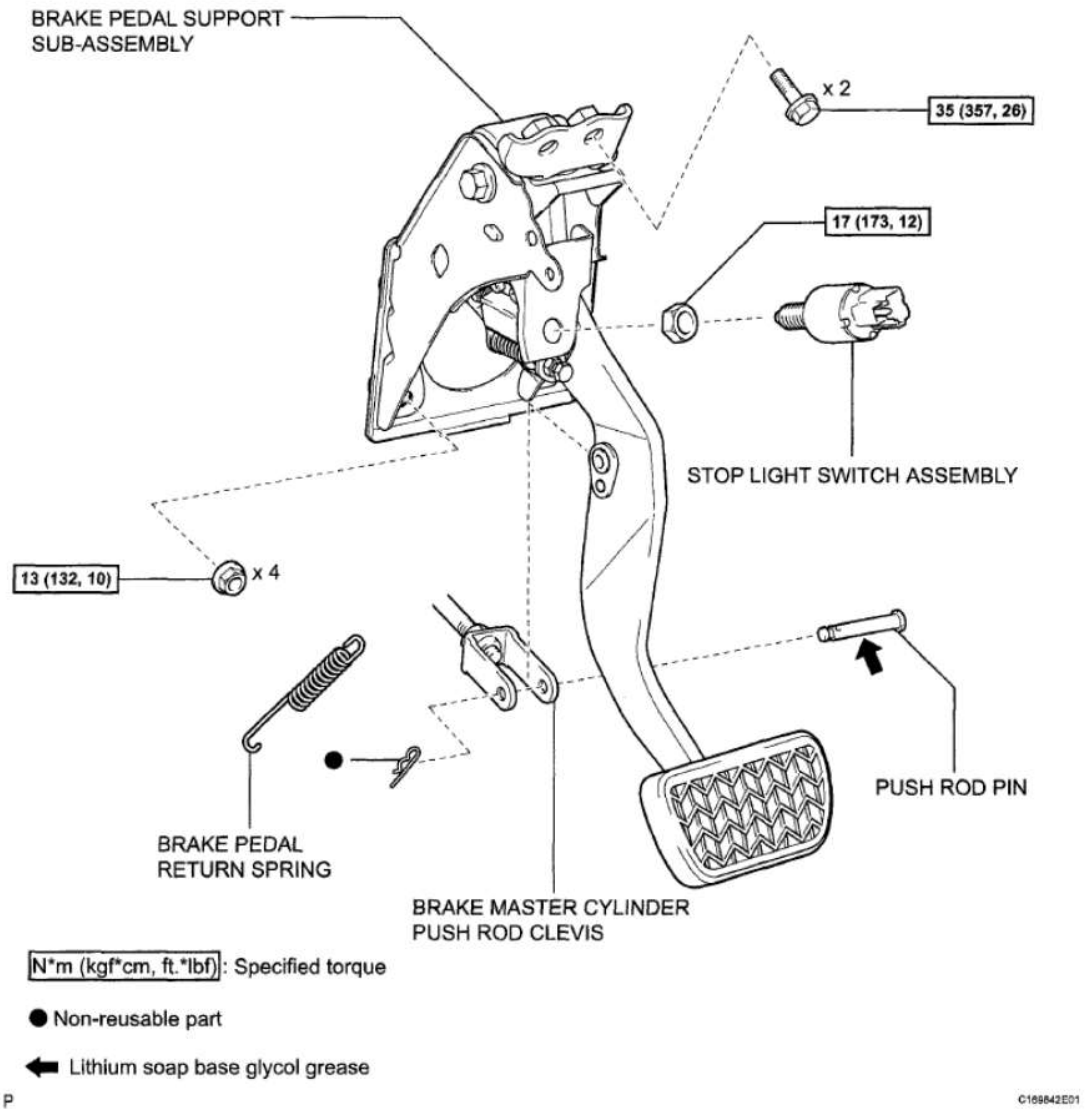


Fig. 256: Identifying Front Cooling Unit Components (11 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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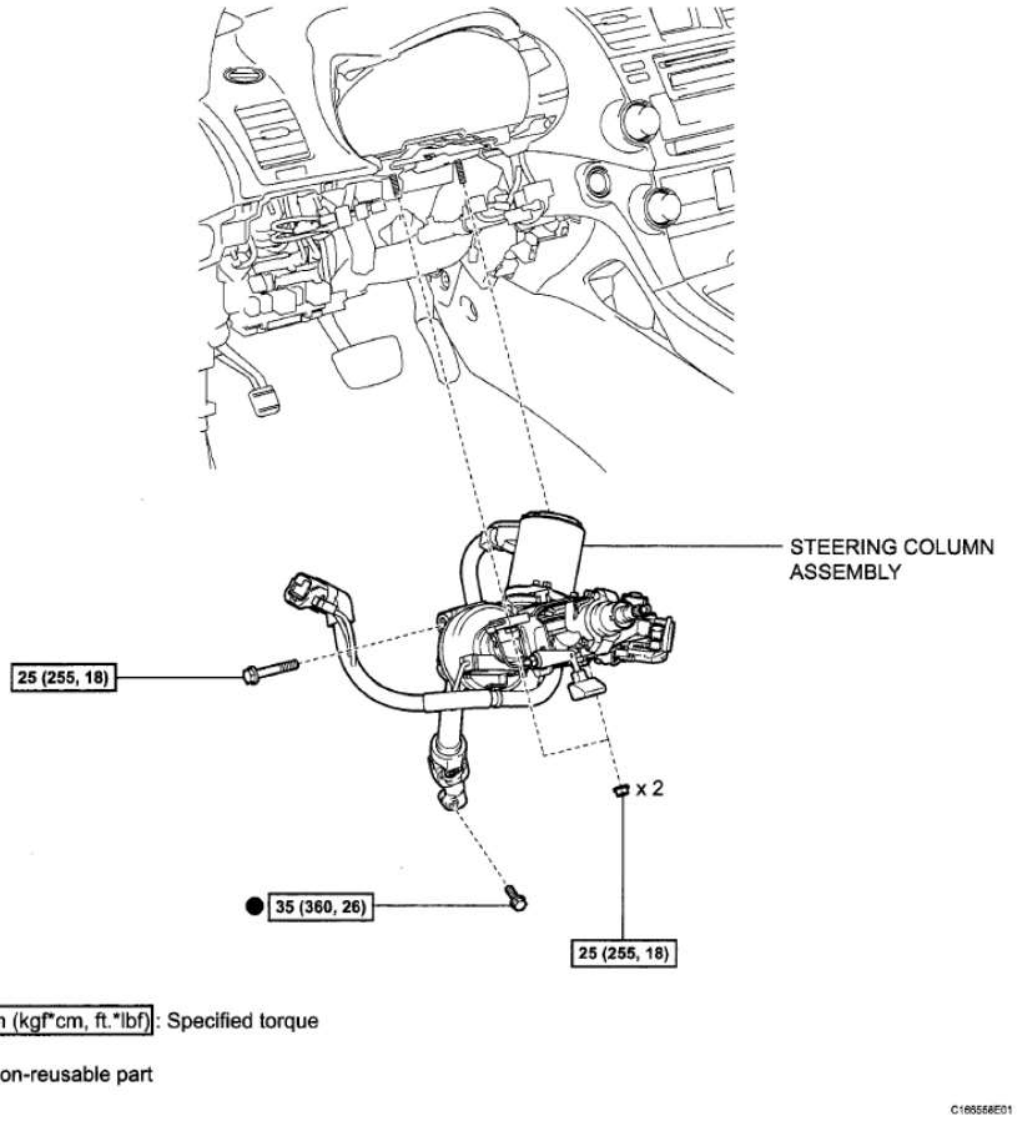


Fig. 257: Identifying Front Cooling Unit Components (12 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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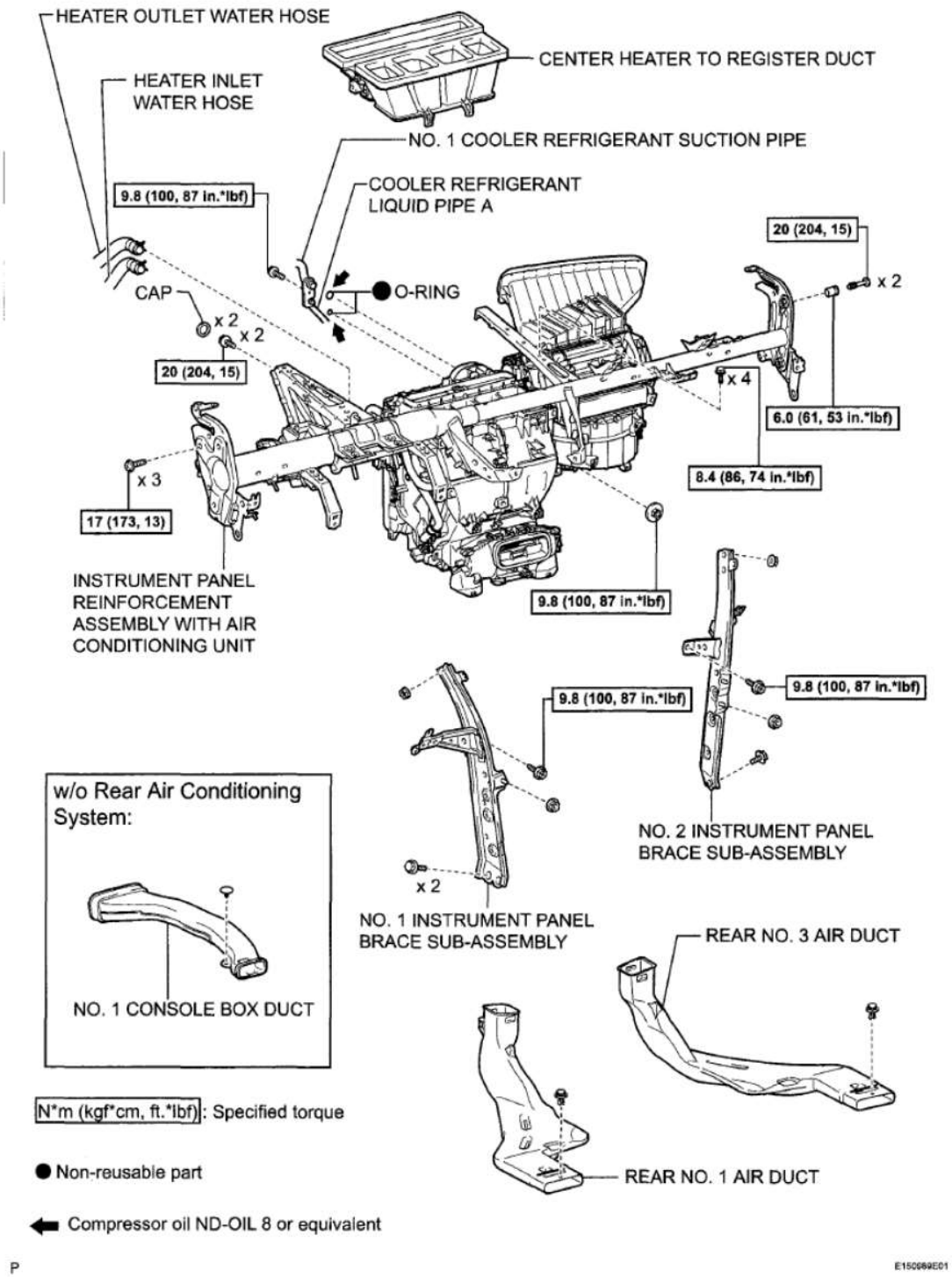


Fig. 258: Identifying Front Cooling Unit Components (13 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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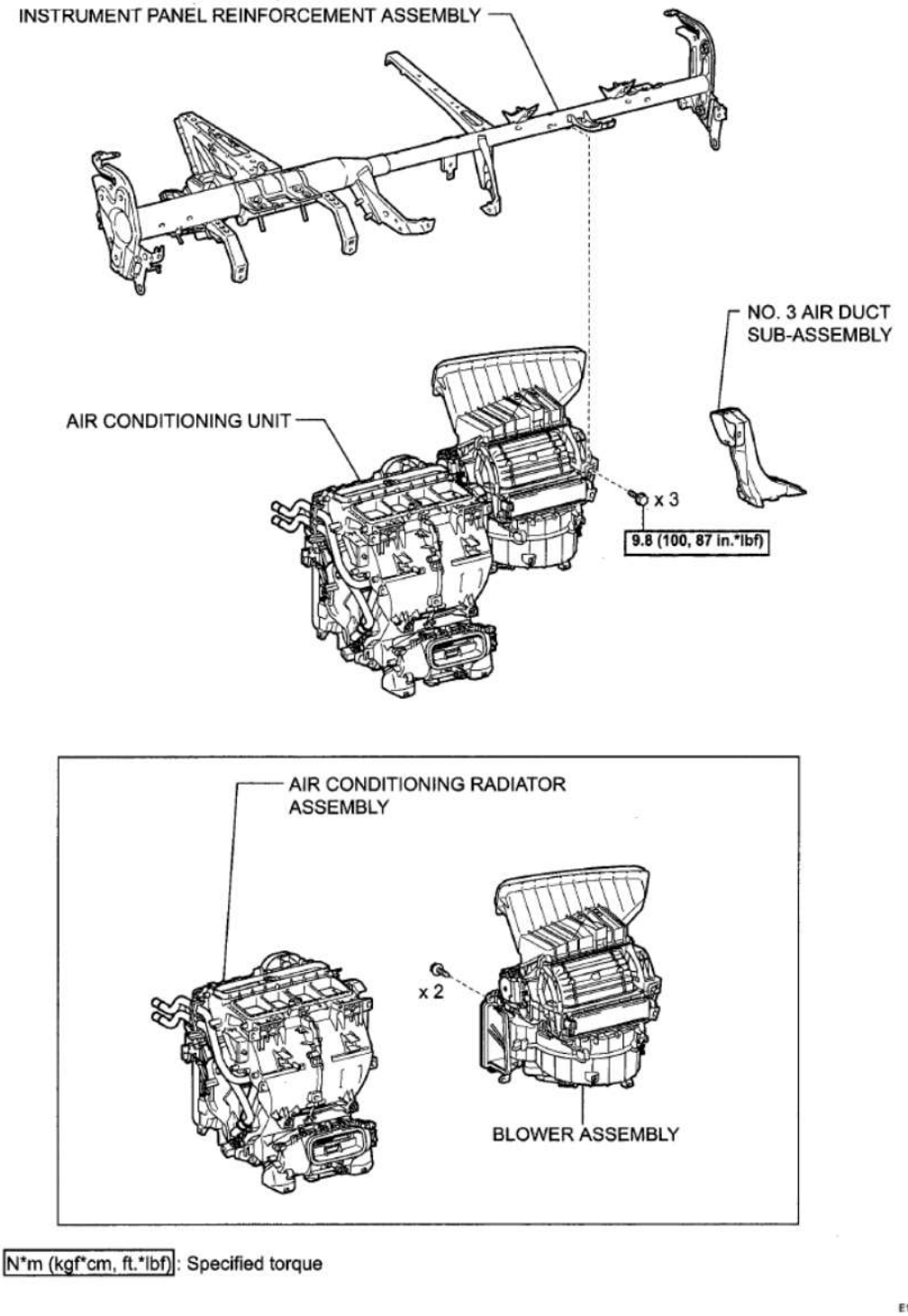


Fig. 259: Identifying Front Cooling Unit Components (14 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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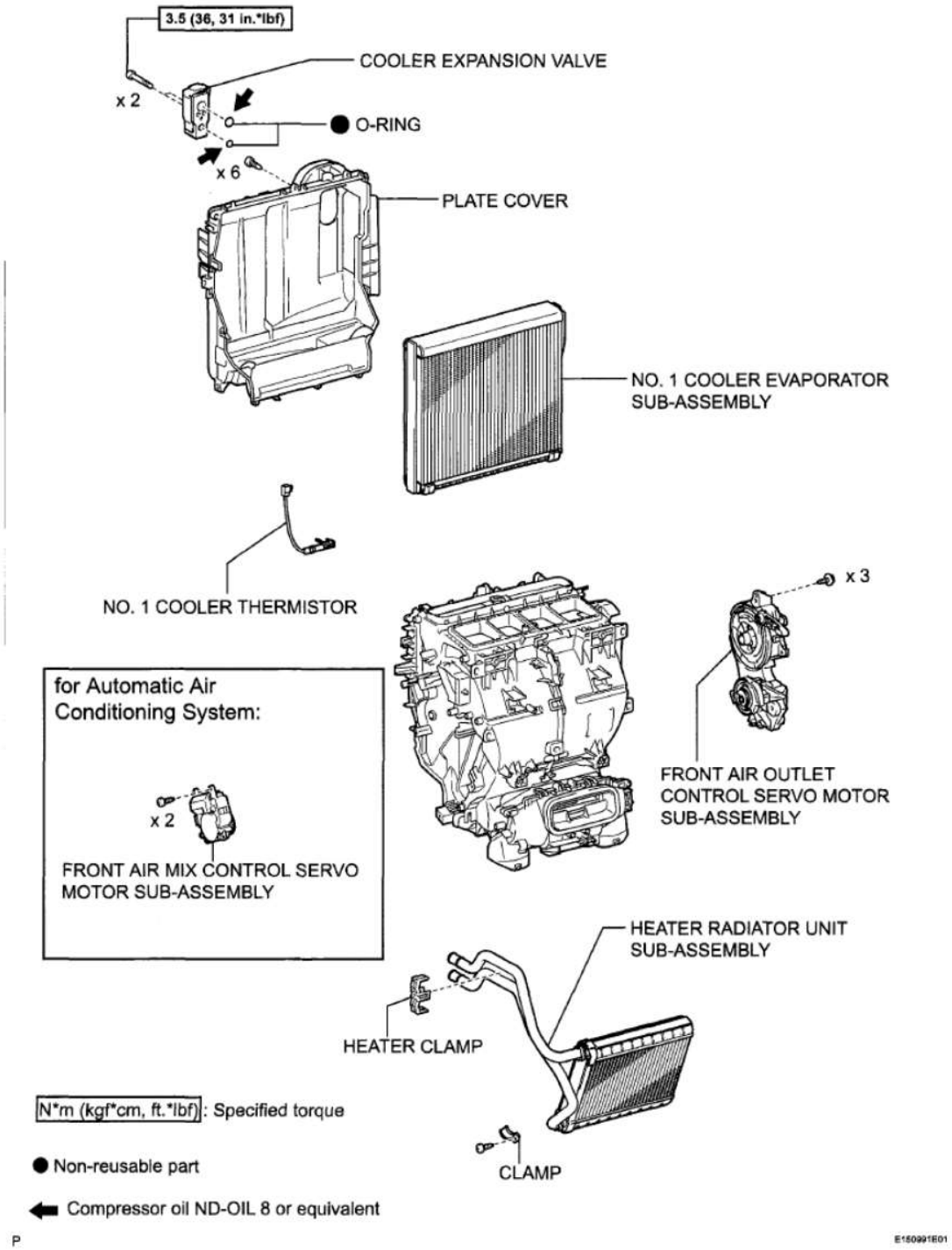


Fig. 260: Identifying Front Cooling Unit Components (15 Of 16)
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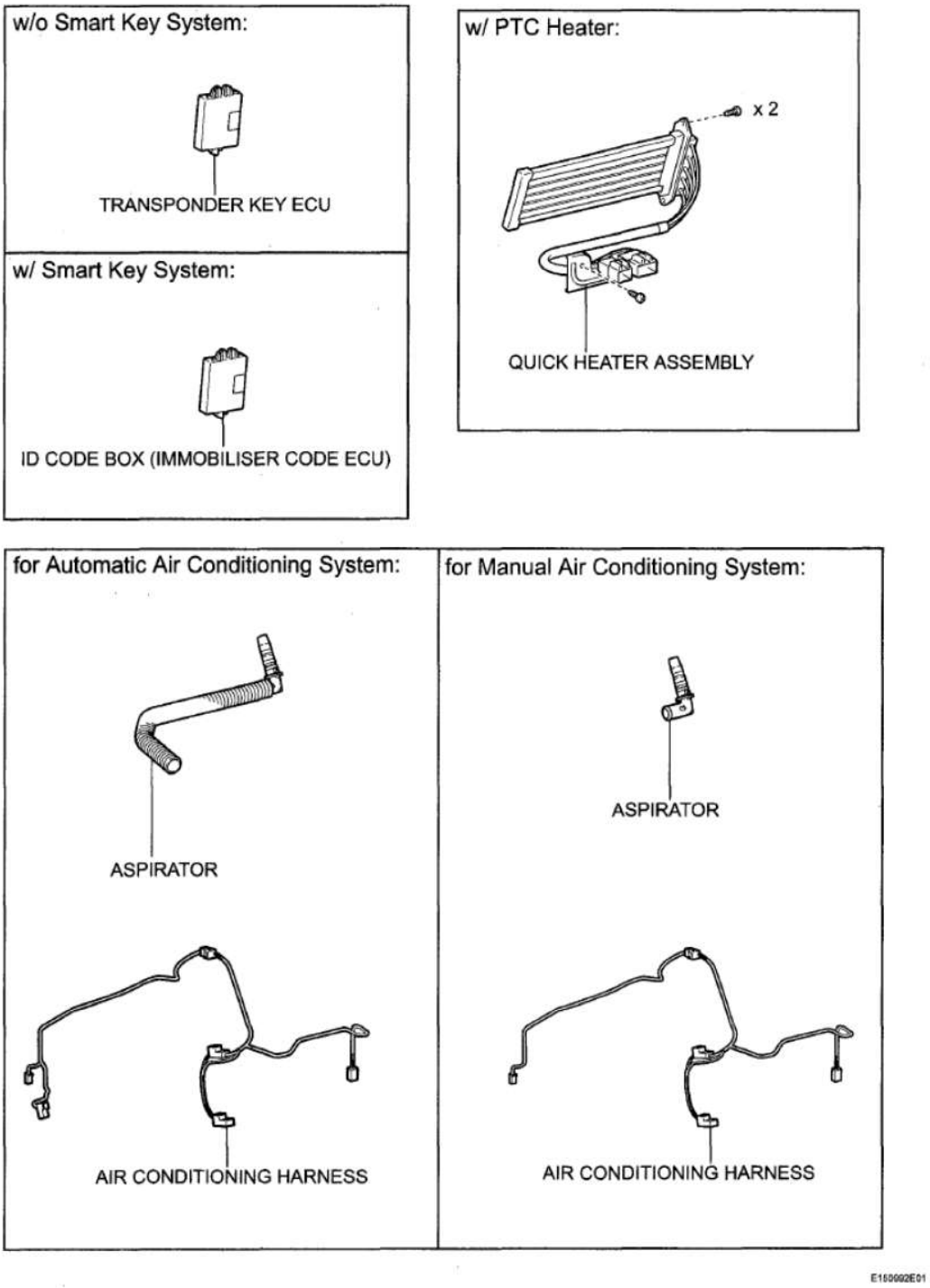


Fig. 261: Identifying Front Cooling Unit Components (16 Of 16)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **PRECAUTION**

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(See **INSTRUMENT PANEL SAFETY PAD**)

2. **RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM** (See **REPLACEMENT**)
3. **POSITION FRONT WHEELS STRAIGHT AHEAD**
4. **REMOVE FRONT WHEEL LH**
5. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

CAUTION: Wait for 90 seconds after disconnecting the cable to prevent the airbag from deploying (See AIRBAG SYSTEM).

NOTE: When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).

6. **REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY LH** (See **REMOVAL**)
7. **REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY RH** (See **REMOVAL**)
8. **REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY** (See **REMOVAL**)
9. **REMOVE WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY** (See **REMOVAL**)
10. **REMOVE COWL TOP OUTER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
11. **DISCONNECT HEATER WATER HOSE OUTLET**
    a. Using pliers, grip the claws of the clip and slide the clip to disconnect the heater outlet water hose.

NOTE:

- **Do not apply excessive force to the heater outlet water hose.**
- **Prepare a drain pan or cloth in case the coolant leaks.**

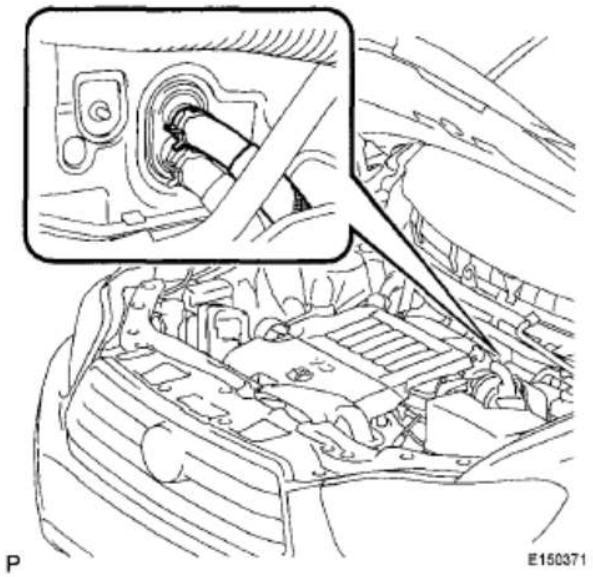


Fig. 262: Identifying Heater Outlet Water Hose And Clip
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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12. **DISCONNECT HEATER WATER HOSE INLET**
    a. Using pliers, grip the claws of the clip and slide the clip to disconnect the heater inlet water hose.

NOTE:
- **Do not apply excessive force to the heater inlet water hose.**
- **Prepare a drain pan or cloth in case the coolant leaks.**

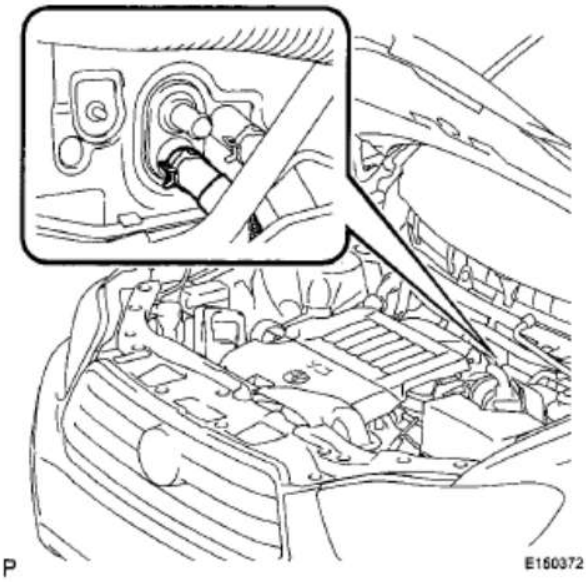


Fig. 263: Identifying Heater Inlet Water Hose And Clip
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

13. **DISCONNECT COOLER REFRIGERANT LIQUID PIPE A**
    a. Remove the bolt, and slide the hook connector.
    b. (b). Disconnect the cooler refrigerant liquid pipe A.
    c. Remove the O-ring from the cooler refrigerant liquid pipe A.

NOTE: **Seal the openings of the disconnected parts using vinyl tape to prevent entry of moisture and foreign matter.**

14. **DISCONNECT NO. 1 COOLER REFRIGERANT SUCTION PIPE**
    a. Disconnect the No. 1 cooler refrigerant suction pipe.
    b. Remove the O-ring from the No. 1 cooler refrigerant suction pipe.

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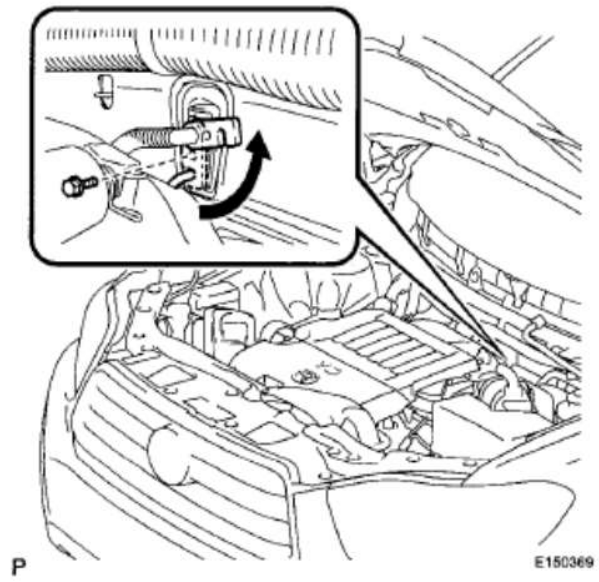


Fig. 264: Identifying Cooler Refrigerant Liquid Pipe A And Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: **Seal the openings of the disconnected parts using vinyl tape to prevent entry of moisture and foreign matter.**

15. **REMOVE LOWER NO. 3 STEERING WHEEL COVER** (See **REMOVAL**)
16. **REMOVE LOWER NO. 2 STEERING WHEEL COVER** (See **REMOVAL**)
17. **REMOVE STEERING PAD** (See **REMOVAL**)
18. **REMOVE STEERING WHEEL ASSEMBLY** (See **DISASSEMBLY**)
19. **REMOVE STEERING COLUMN COVER** (See **REMOVAL**)
20. **REMOVE TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **REMOVAL**)
21. **REMOVE INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REMOVAL**)
22. **REMOVE COMBINATION METER ASSEMBLY** (See **REMOVAL**)
23. **REMOVE CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **REMOVAL**)
24. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **REMOVAL**)
25. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **REMOVAL**)
26. **REMOVE HEATER CONTROL AND ACCESSORY ASSEMBLY (for Manual Air Conditioning System)** (See **AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)**)
27. **REMOVE AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
28. **REMOVE RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **REMOVAL**)

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29. **REMOVE NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **REMOVAL**)
30. **REMOVE FRONT DOOR SCUFF PLATE LH** (See **REMOVAL**)
31. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH** (See **REMOVAL**)
32. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Manual Air Conditioning System)** (See **REMOVAL**)
33. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
34. **REMOVE FRONT DOOR SCUFF PLATE RH** (See **REMOVAL**)
35. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH** (See **REMOVAL**)
36. **REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **REMOVAL**)
37. **REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **REMOVAL**)
38. **REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **REMOVAL**)
39. **REMOVE NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **REMOVAL**)
40. **REMOVE LOWER REAR CONSOLE BOX** (See **REMOVAL**)
41. **REMOVE CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **REMOVAL**)
42. **REMOVE CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **DISASSEMBLY**)
43. **REMOVE FRONT NO. 1 CONSOLE BOX INSERT** (See **REMOVAL**)
44. **REMOVE FRONT NO. 2 CONSOLE BOX INSERT** (See **REMOVAL**)
45. **REMOVE ENGINE SWITCH (w/ Smart Key System)** (See **INSPECTION**)
46. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **REMOVAL**)
47. **REMOVE FRONT PILLAR GARNISH LH** (See **REMOVAL**)
48. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)
49. **REMOVE FRONT PILLAR GARNISH RH** (See **REMOVAL**)
50. **REMOVE NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
51. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
52. **REMOVE NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
53. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
54. **DISCONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **REMOVAL**)
55. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **REMOVAL**)
56. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **REMOVAL**)
57. **REMOVE BRAKE PEDAL RETURN SPRING** (See **REMOVAL**)
58. **REMOVE STOP LIGHT SWITCH ASSEMBLY** (See **INSPECTION**)
59. **SEPARATE BRAKE MASTER CYLINDER PUSH ROD CLEVIS** (See **REMOVAL**)

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60. **REMOVE BRAKE PEDAL SUPPORT SUB-ASSEMBLY** (See **REMOVAL**)
61. **REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY** (See **REMOVAL**)
62. **REMOVE NO. 1 AIR DUCT SUB-ASSEMBLY** (See **REMOVAL**)
63. **SEPARATE STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY** (See **REMOVAL**)
64. **REMOVE STEERING COLUMN ASSEMBLY** (See **REMOVAL**)

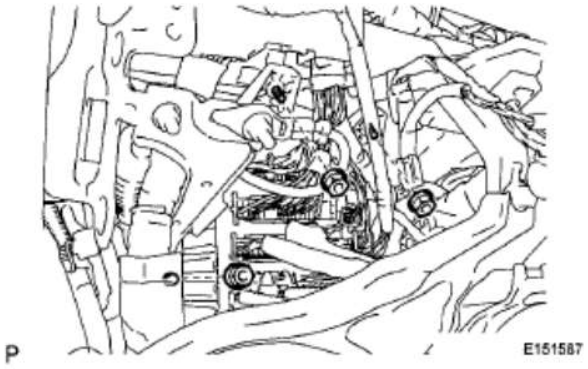


Fig. 265: Identifying Nuts And Instrument Panel Junction Block Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

65. **DISCONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY**
    a. Remove the 3 nuts and disconnect the instrument panel junction block assembly.
66. **REMOVE POWER STEERING ECU ASSEMBLY** (See **INSTALLATION**)
67. **REMOVE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)
68. **REMOVE AIR CONDITIONING AMPLIFIER ASSEMBLY** (See **REMOVAL**)
69. **REMOVE REAR NO. 1 AIR DUCT**
    a. Disengage the claw.
    b. Turn back the floor carpet as shown in the illustration.

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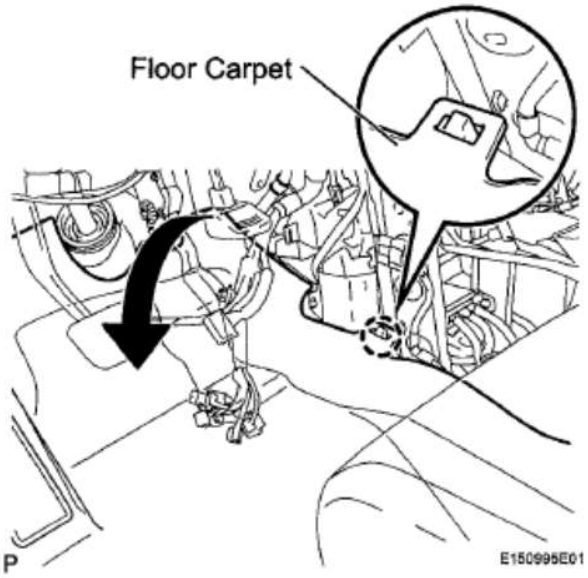


Fig. 266: Identifying Floor Carpet Claw
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Remove the clip.
d. Disengage the clamp.
e. Disengage the 2 claws and remove the rear No. 1 air duct.

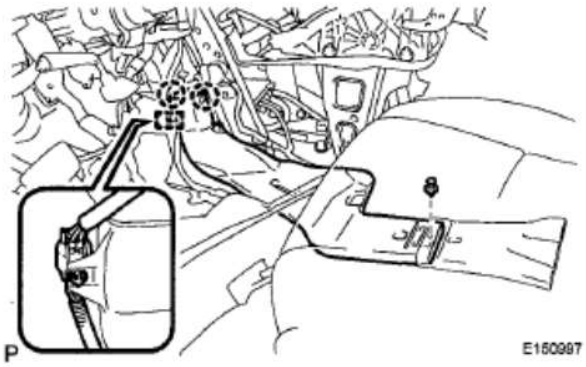


Fig. 267: Identifying Claws And Rear No. 1 Air Duct
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

70. **REMOVE REAR NO. 3 AIR DUCT**
    a. Disengage the claw.
    b. Turn back the floor carpet as shown in the illustration.

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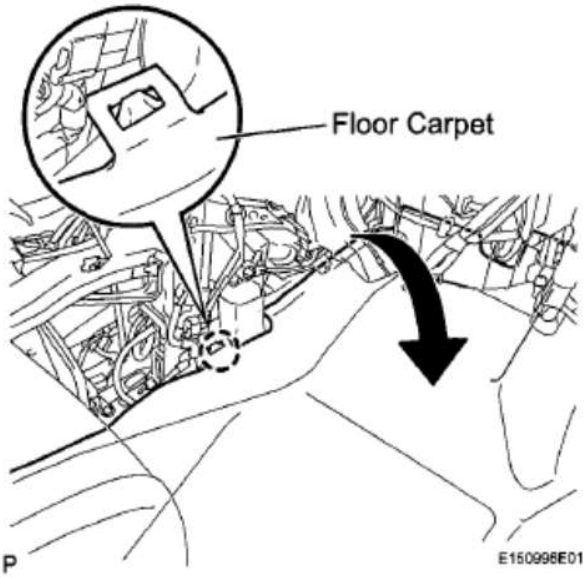


Fig. 268: Identifying Floor Carpet Claw
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Remove the clip.
d. Disengage the 2 claws and remove the rear No. 3 air duct.

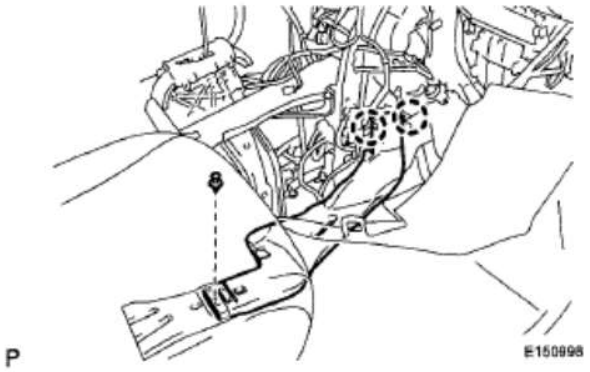


Fig. 269: Identifying Rear No. 3 Air Duct Claws And Clip
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

71. **REMOVE NO. 1 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)**
    a. Remove the clip and the No. 1 console box duct.

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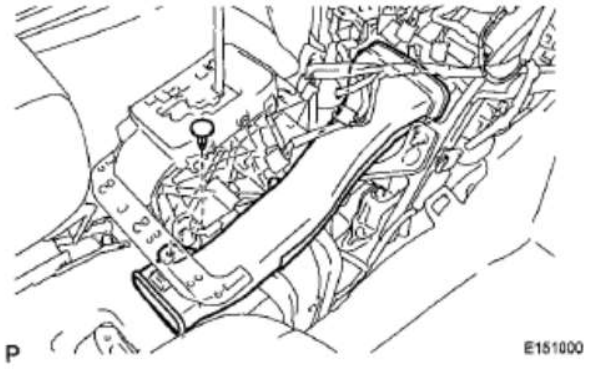


Fig. 270: Identifying Clip And No. 1 Console Box Duct
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

72. **REMOVE CENTER HEATER TO REGISTER DUCT**
    a. Disengage the clamp.
    b. Disengage the 4 claws and remove the center heater to register duct.

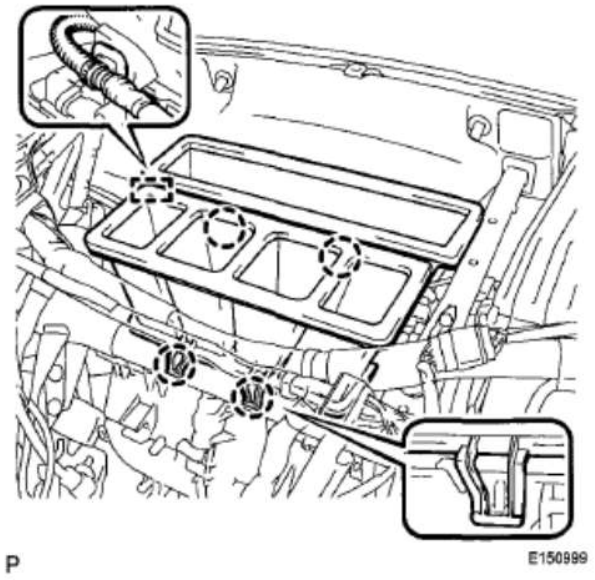


Fig. 271: Identifying Claws And Center Heater To Register Duct
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

73. **REMOVE NO. 1 INSTRUMENT PANEL BRACE SUB-ASSEMBLY**
    a. Remove the bolt and disconnect the earth wire.
    b. Disengage each clamp.

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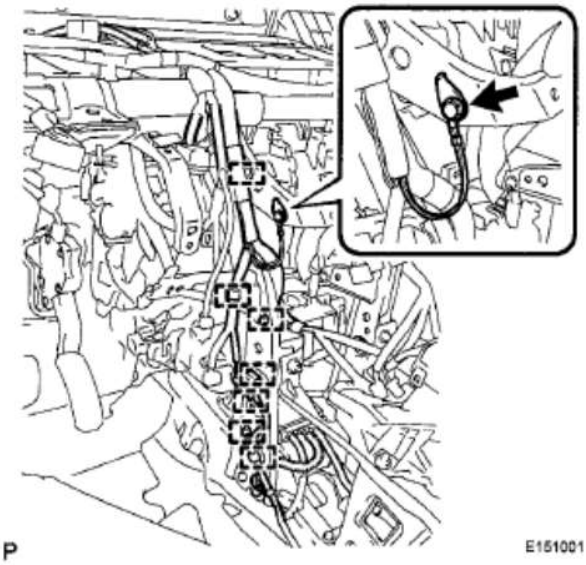


Fig. 272: Locating Earth Wire Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Remove the 2 bolts.
d. Remove the screw.
e. Remove the 3 nuts and the No. 1 instrument panel brace sub-assembly.



Fig. 273: Identifying No. 1 Instrument Panel Brace Sub-Assembly Screw, Nuts And Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

74. **REMOVE NO. 2 INSTRUMENT PANEL BRACE SUB-ASSEMBLY**
    a. Remove the bolt and disconnect the earth wire.

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b. Disengage each clamp.

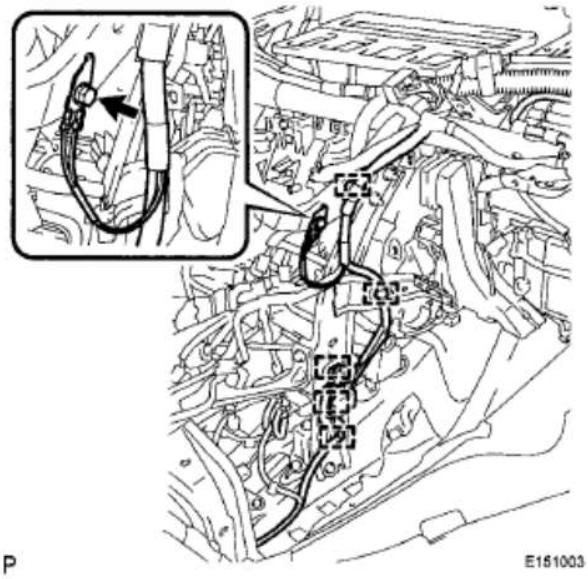


Fig. 274: Locating Earth Wire Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Remove the bolt.
d. Remove the screw.
e. Remove the 3 nuts and the No. 2 instrument panel brace sub-assembly.

75. **REMOVE INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/o PTC Heater)**
    a. Disengage each clamp.
    b. Remove the 2 bolts and disconnect the 2 earth wires.
    c. Disconnect each connector.
    d. Remove the 2 nuts and bolt.
    e. Disconnect the blower motor connector.

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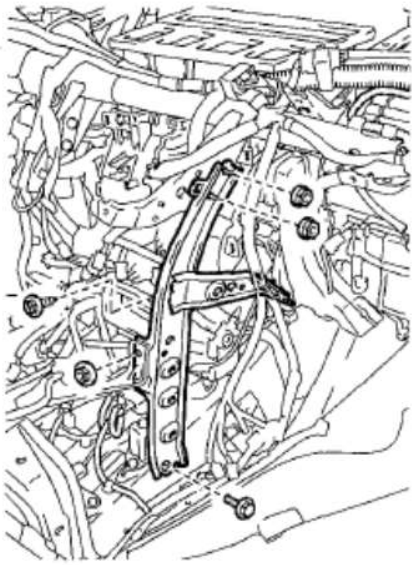


Fig. 275: Identifying No. 2 Instrument Panel Brace Sub-Assembly Screw, Nuts And Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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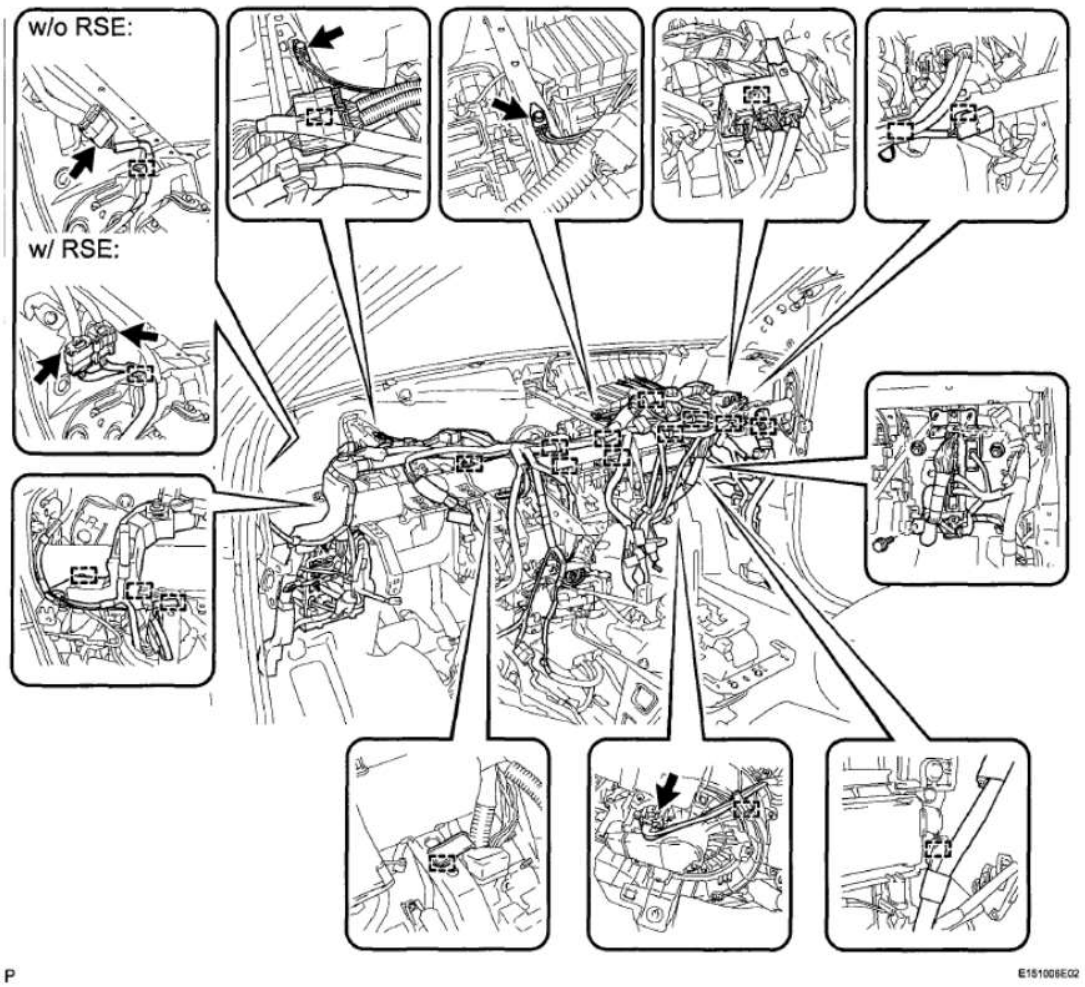


Fig. 276: Identifying Blower Motor Connector, Nuts And Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

f. Remove the 2 caps and the 2 bolts from the engine compartment side.
g. Disconnect the cooler drain hose.
h. Remove the nut.

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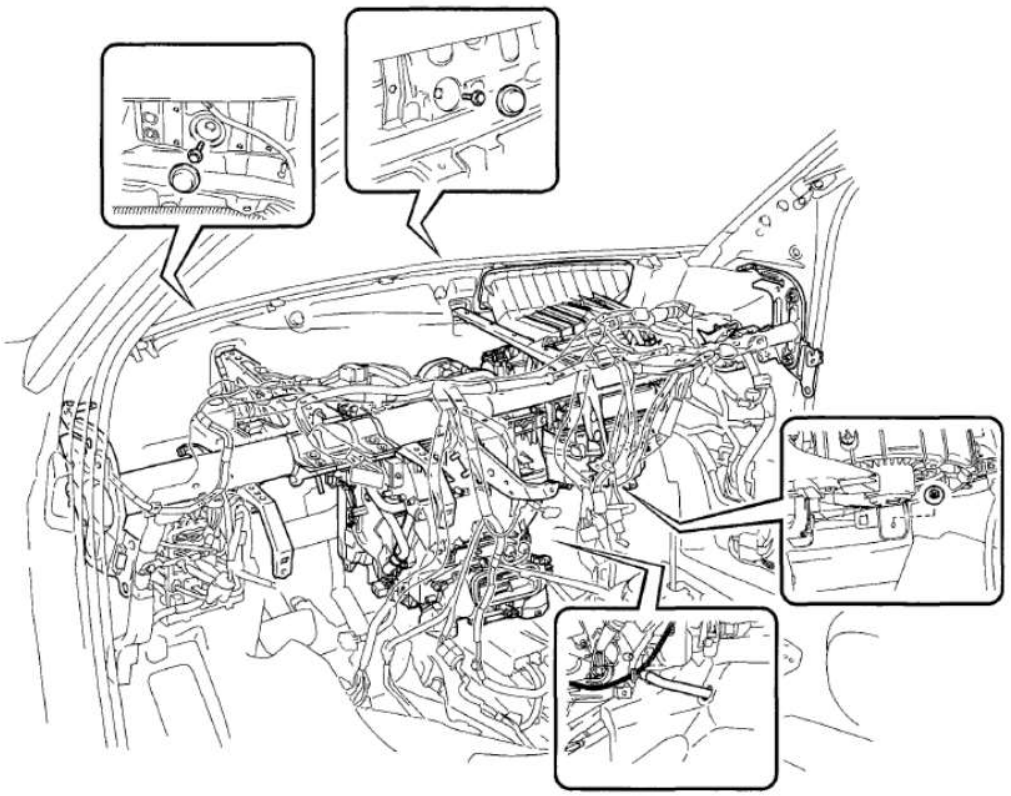


Fig. 277: Identifying Engine Compartment Side Caps And Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

i. Using a "TORX" socket wrench (T40), remove the 5 "TORX" bolts.

HINT:

The "TORX" bolts on the passenger side can be removed with the collars for adjustment.

j. Using a 12 mm hexagon wrench, remove the 2 collars and the instrument panel reinforcement assembly with air conditioning unit.

k. Disconnect the connector.

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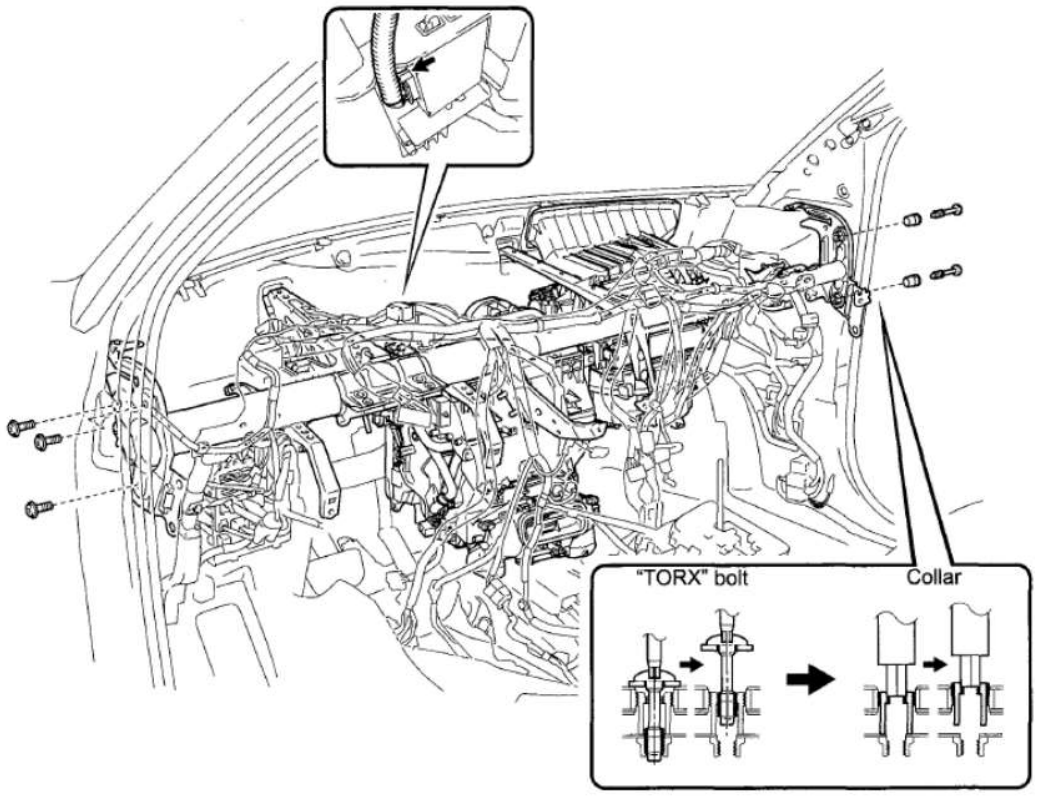


Fig. 278: Identifying Passenger Side TORX Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

76. **REMOVE INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/ PTC Heater)**
    a. Disengage each clamp.
    b. Remove the 2 bolts and disconnect the 2 earth wires.
    c. Disconnect each connector.
    d. Remove the 2 nuts and bolt.
    e. Disconnect the blower motor connector.
    f. Disconnect the 2 quick heater connectors.

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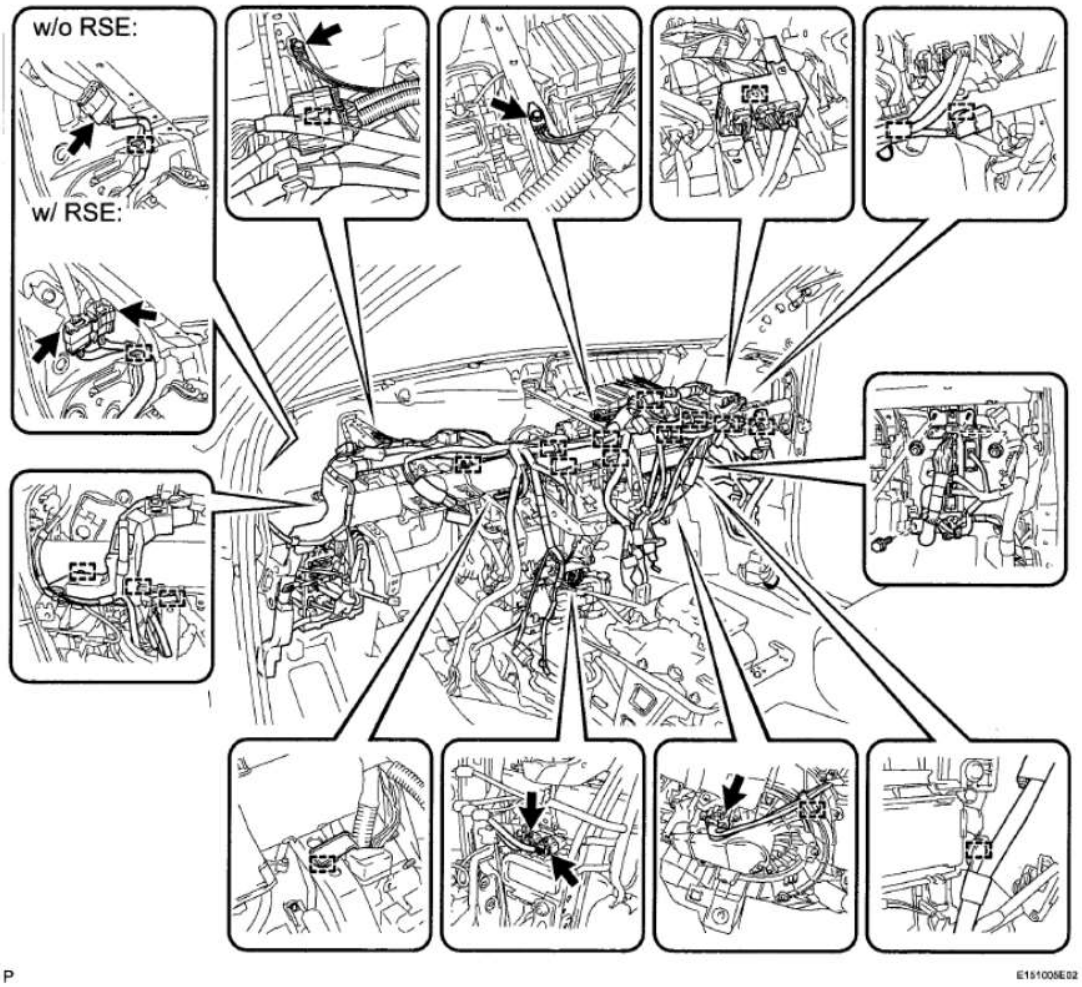


Fig. 279: Identifying Blower Motor Connector, Nuts And Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

g. Remove the 2 caps and the 2 bolts from the engine compartment side.
h. Disconnect the cooler drain hose.
i. Remove the nut.

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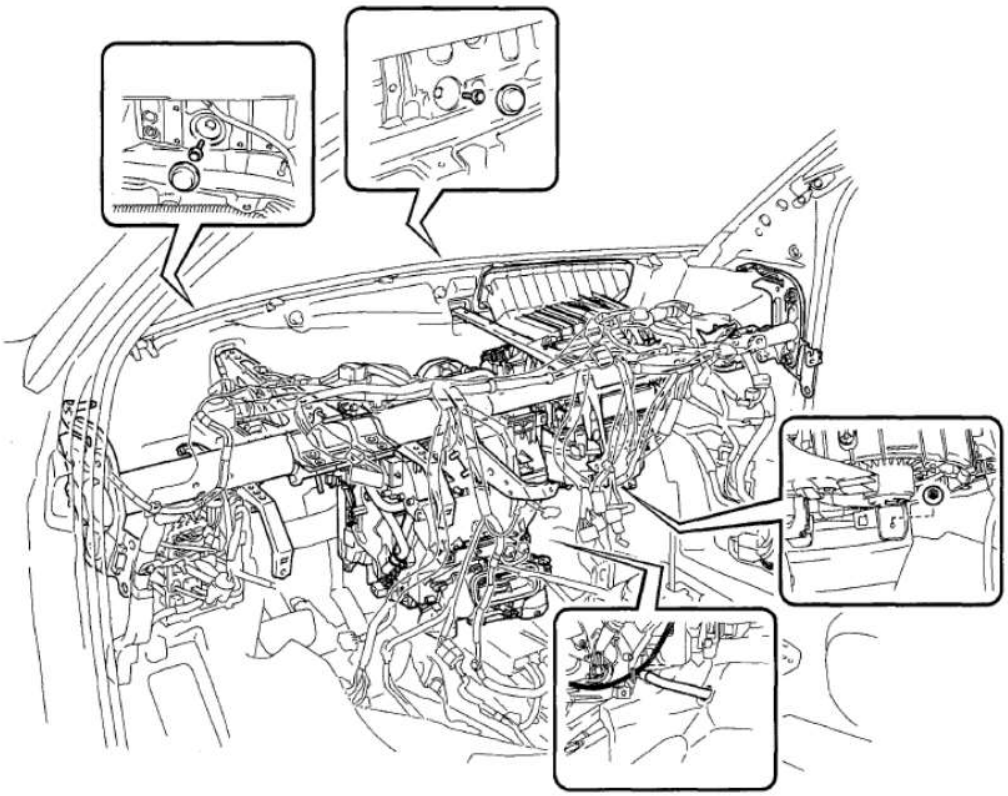


Fig. 280: Identifying Engine Compartment Side Caps And Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

j. Using a "TORX" socket wrench (T40), remove the 5 "TORX" bolts.

HINT:

The "TORX" bolts on the passenger side can be removed with the collars for adjustment.

k. Using a 12 mm hexagon wrench, remove the 2 collars and the instrument panel reinforcement assembly with air conditioning unit.

l. Disconnect the connector.

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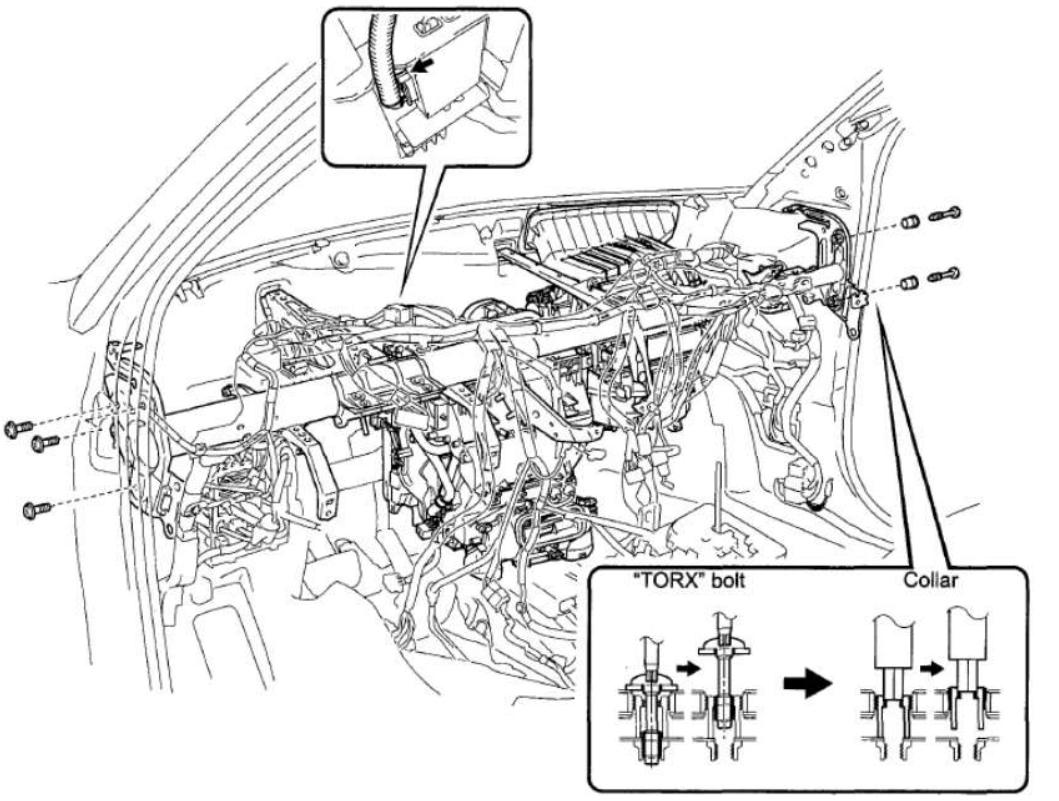


Fig. 281: Identifying TORX Bolts On Passenger Side
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

77. **REMOVE AIR CONDITIONING UNIT**

a. Remove the 3 bolts and the air conditioning unit from the instrument panel reinforcement assembly.

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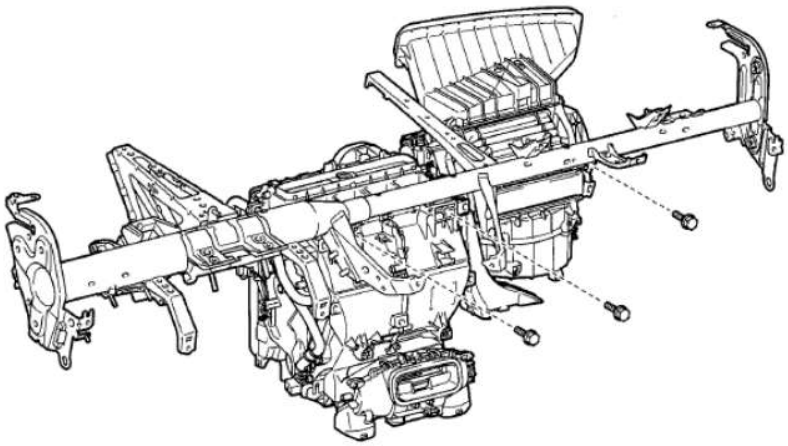


Fig. 282: Identifying Air Conditioning Unit Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

DISASSEMBLY

1. **REMOVE TRANSPONDER KEY ECU (w/o Smart Key System)** (See **REASSEMBLY**)
2. **REMOVE ID CODE BOX (IMMOBILISER CODE ECU) (w/ Smart Key System)** (See **COMPONENTS**)
3. **REMOVE NO. 3 AIR DUCT SUB-ASSEMBLY**
   a. Disengage the 3 claws and remove the No. 3 air duct sub-assembly as shown in the illustration.



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Fig. 283: Identifying No. 3 Air Duct Sub-Assembly Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **REMOVE QUICK HEATER ASSEMBLY (w/ PTC Heater)**
   a. Remove the 3 screws.
   b. Remove the quick heater assembly as shown in the illustration.

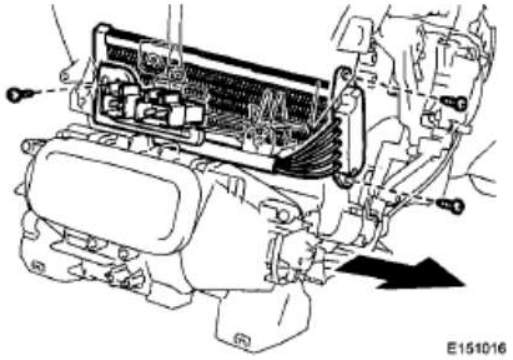


Fig. 284: Identifying Quick Heater Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **REMOVE BLOWER ASSEMBLY**
   a. Disconnect the connector.
   b. Remove the 2 screws.
   c. Disengage the 2 claws and remove the blower assembly.

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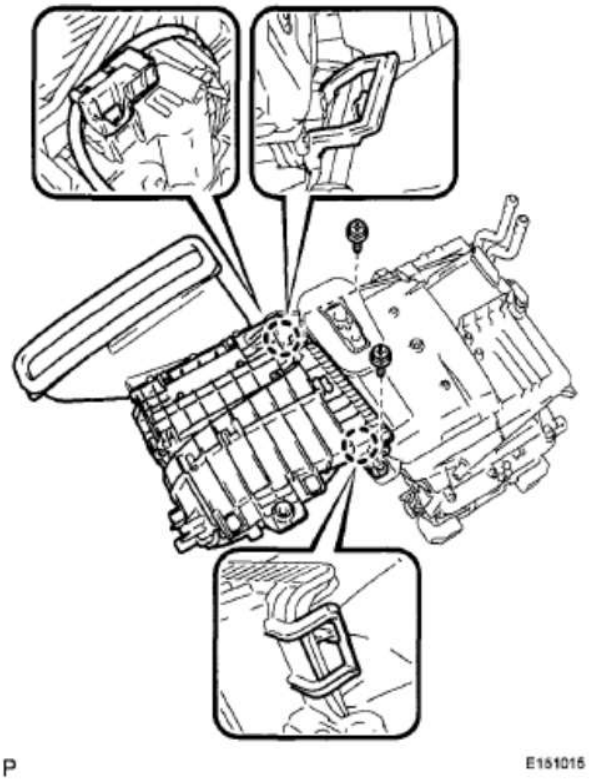
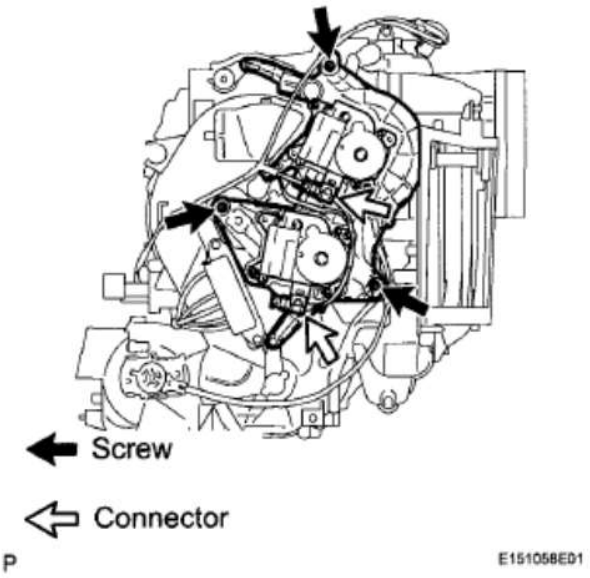


Fig. 285: Identifying Blower Assembly Claws And Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. **REMOVE FRONT AIR OUTLET CONTROL SERVO MOTOR SUB-ASSEMBLY**
   a. Disconnect the 2 connectors.
   b. Remove the 3 screws and the front air outlet control servo motor sub-assembly.



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Fig. 286: Identifying Front Air Outlet Control Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. **REMOVE FRONT AIR MIX CONTROL SERVO MOTOR SUB-ASSEMBLY**
   a. Disconnect the connector.
   b. Remove the 2 screws and front air mix control servo motor sub-assembly.

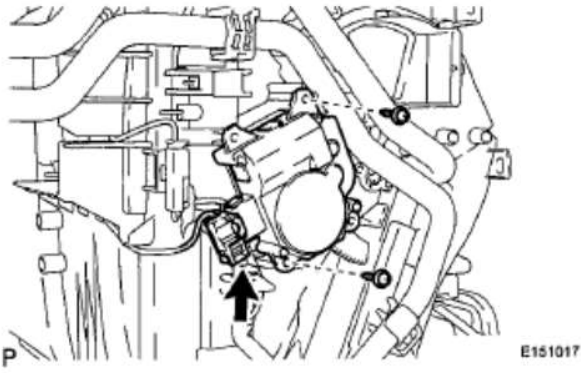


Fig. 287: Identifying Front Air Mix Control Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. **REMOVE HEATER CLAMP**
   a. Remove the screw and the clamp.
   b. Disengage the 3 claws and remove the heater clamp.

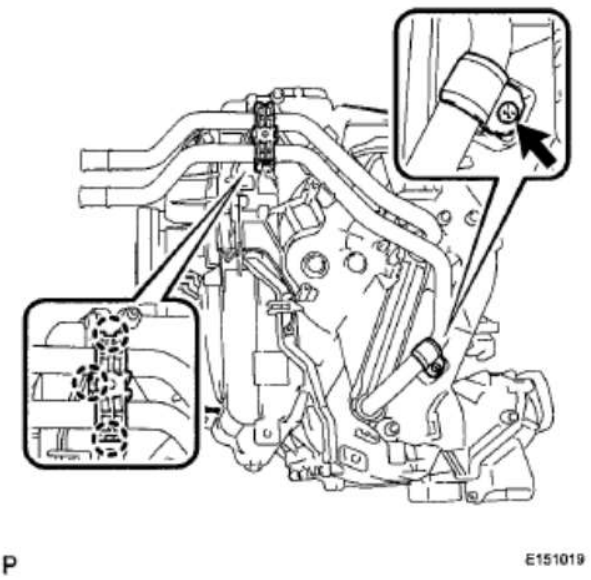


Fig. 288: Identifying Heater Clamp Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. **REMOVE HEATER RADIATOR UNIT SUB-ASSEMBLY**

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a. Remove the heater radiator unit sub-assembly as shown in the illustration.

NOTE: Prepare a drain pan or cloth in case the cooling water leaks.

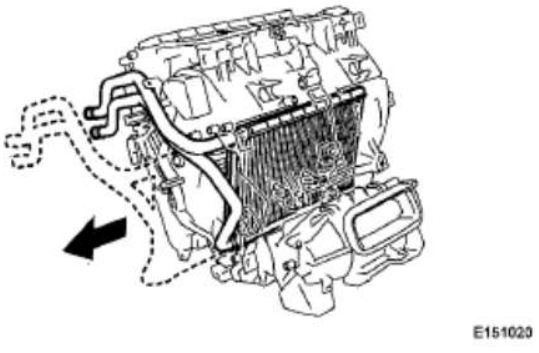


Fig. 289: Identifying Heater Radiator Unit Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

10. **REMOVE ASPIRATOR (for Manual Air Conditioning System)**
    a. Disengage the 2 claws and remove the aspirator.

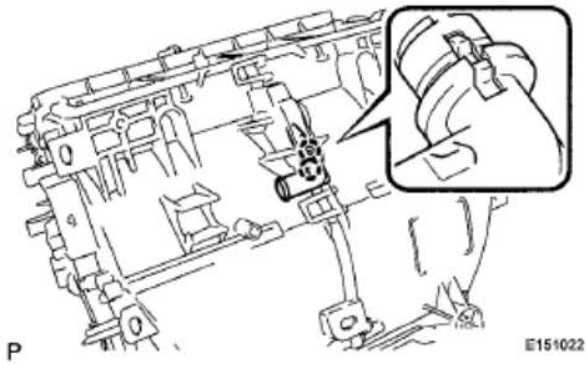


Fig. 290: Identifying Aspirator Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

11. **REMOVE ASPIRATOR (for Automatic Air Conditioning System)**
    a. Disengage the clamp.
    b. Disengage the 2 claws and remove the aspirator.

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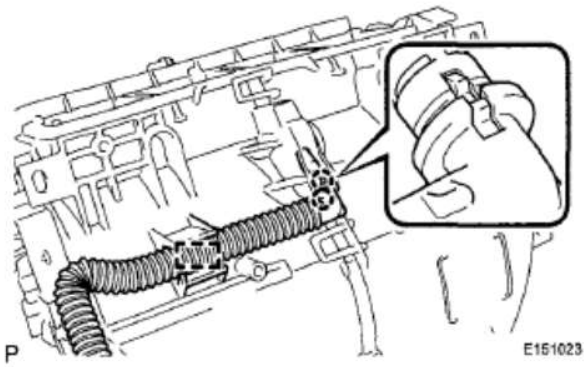


Fig. 291: Identifying Aspirator Claws And Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

12. **REMOVE COOLER EXPANSION VALVE**
    a. Using a 4 mm hexagon wrench, remove the 2 hexagon bolts and cooler expansion valve.

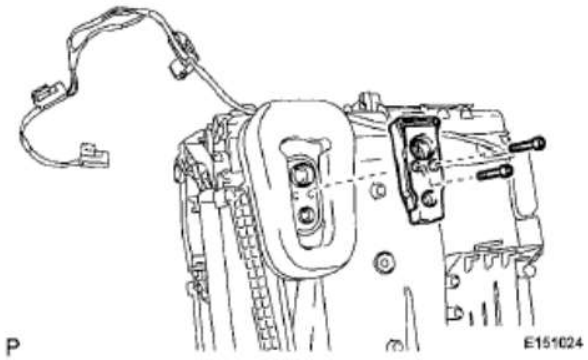


Fig. 292: Identifying Cooler Expansion Valve Hexagon Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

13. **REMOVE NO. 1 COOLER EVAPORATOR SUB-ASSEMBLY**
    a. Disconnect the connector.
    b. Remove the 6 screws.
    c. Disengage the 5 claws and remove the plate cover.

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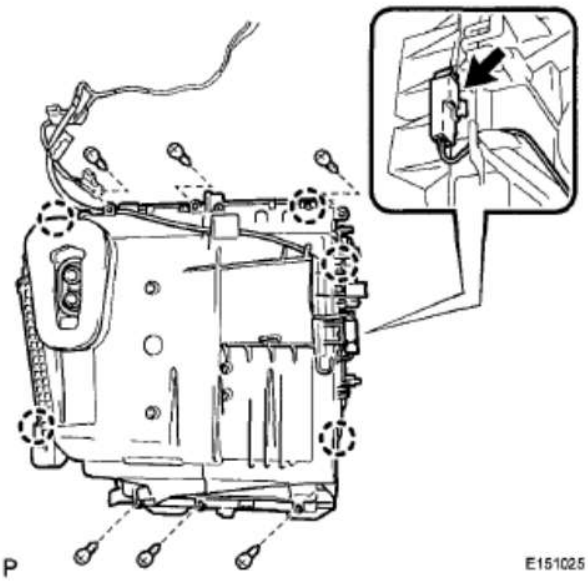


Fig. 293: Identifying Plate Cover Claws And Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Disengage the clamp and remove the No. 1 cooler evaporator sub-assembly with the No. 1 cooler thermistor.

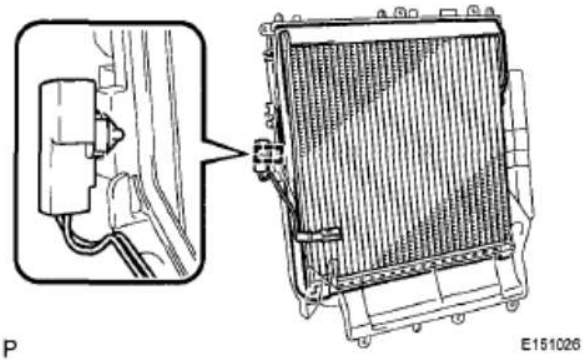


Fig. 294: Identifying Clamp And No. 1 Cooler Evaporator Sub-Assembly With No. 1 Cooler Thermistor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

e. Remove the 2 O-rings from the No. 1 cooler evaporator sub-assembly.

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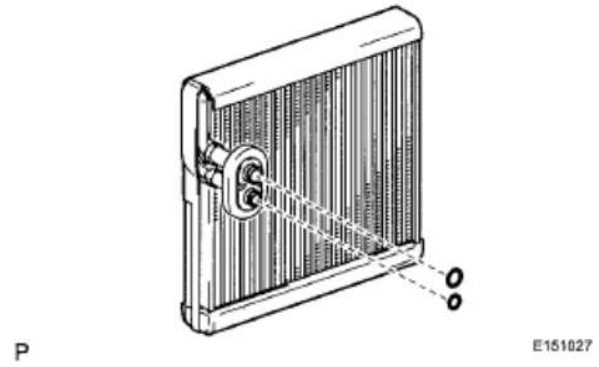


Fig. 295: Identifying No. 1 Cooler Evaporator Sub-Assembly O-Rings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

14. **REMOVE NO. 1 COOLER THERMISTOR**
    a. Remove the No. 1 cooler thermistor.

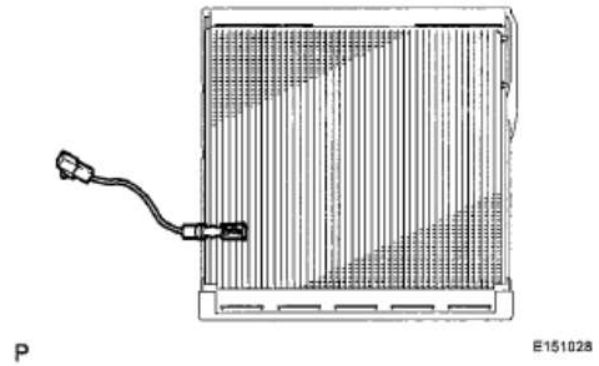


Fig. 296: Identifying No. 1 Cooler Thermistor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REASSEMBLY

1. **INSTALL NO. 1 COOLER THERMISTOR**
    a. Install the No. 1 cooler thermistor as shown in the illustration.

NO. 1 COOLER THERMISTOR REFERENCE CHART

Part	Length	
A	34.3 mm	1.35 in.
B	20.9 mm	0.82 in.
C	50 mm	1.96 in.

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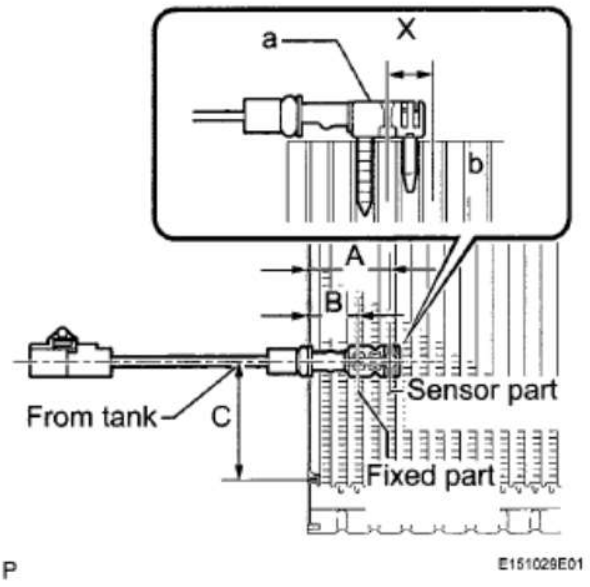


Fig. 297: Installing No. 1 Cooler Thermistor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE:

- **Be sure to insert the thermistor only once because reinserting it into the same position will not allow it to be firmly secured.**
- **When reusing the evaporator, insert the thermistor one row next to the one that has been used previously (X in the illustration).**
- **After inserting the thermistor, do not apply excessive force to the wire.**
- **Directly insert the thermistor until the edge of plastic case "a" comes into contact with evaporator "b".**

2. **INSTALL NO. 1 COOLER EVAPORATOR SUB-ASSEMBLY**
   a. Sufficiently apply compressor oil to 2 new O-rings and the fitting surfaces.
   b. Install the 2 O-rings to the No. 1 cooler evaporator sub-assembly.

Compressor oil:

ND-OIL 8 or equivalent

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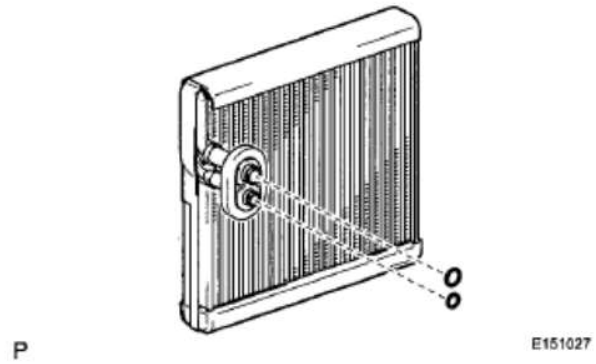


Fig. 298: Identifying No. 1 Cooler Evaporator Sub-Assembly O-Rings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Install the No. 1 cooler evaporator sub-assembly.
d. Engage the clamp.

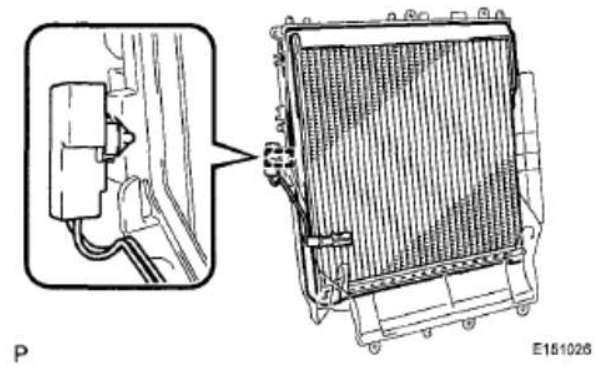


Fig. 299: Identifying No. 1 Cooler Evaporator Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

e. Engage the 5 claws.
f. Install the plate cover with the 6 screws.
g. Connect the connector.

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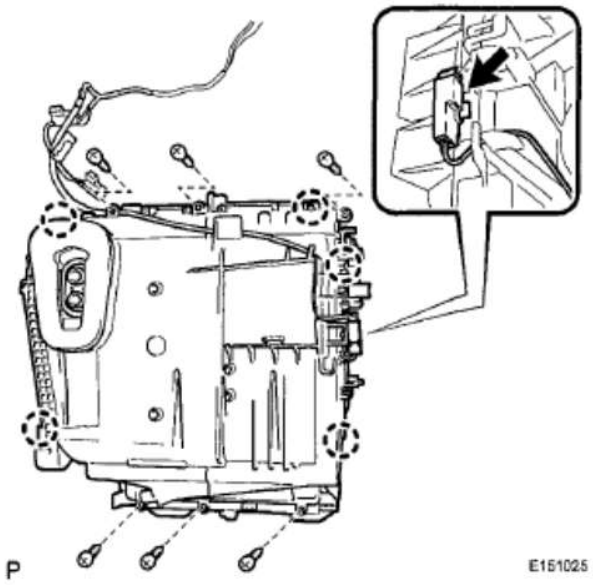


Fig. 300: Identifying Plate Cover Screws And Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **INSTALL COOLER EXPANSION VALVE**
   a. Using a 4 mm hexagon wrench, install the cooler expansion valve with the 2 hexagon bolts.

Torque: 3.5 N*m (36 kgf*cm, 31 in.*lbf)

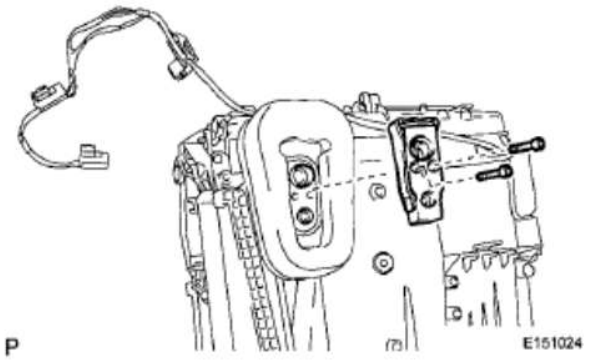


Fig. 301: Identifying Cooler Expansion Valve Hexagon Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **INSTALL ASPIRATOR (for Manual Air Conditioning System)**
   a. Engage the 2 claws and install the aspirator.

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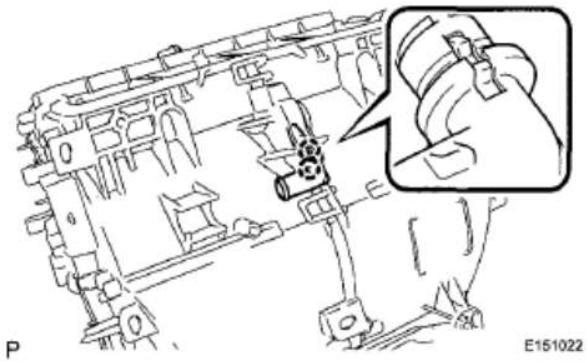


Fig. 302: Identifying Aspirator Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **INSTALL ASPIRATOR (for Automatic Air Conditioning System)**
   a. Engage the 2 claws.
   b. Engage the clamp and install the aspirator.

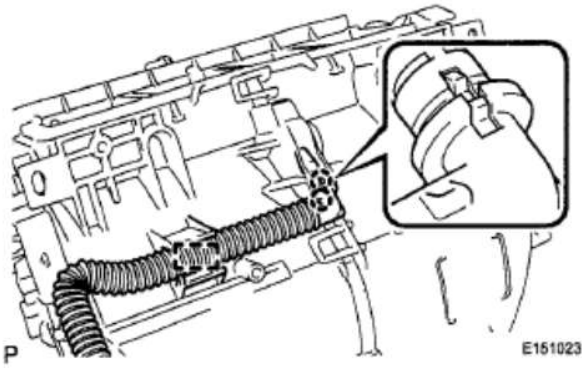
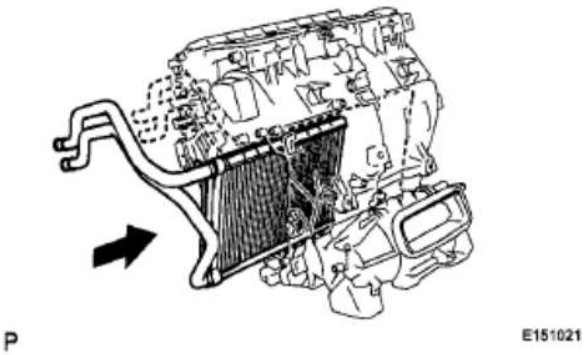


Fig. 303: Identifying Aspirator Clamp And Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. **INSTALL HEATER RADIATOR UNIT SUB-ASSEMBLY**
   a. Install the heater radiator unit sub-assembly as shown in the illustration.



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Fig. 304: Identifying Heater Radiator Unit Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. **INSTALL HEATER CLAMP**
   a. Install the clamp with the screw.
   b. Engage the 3 claws and install the heater clamp.

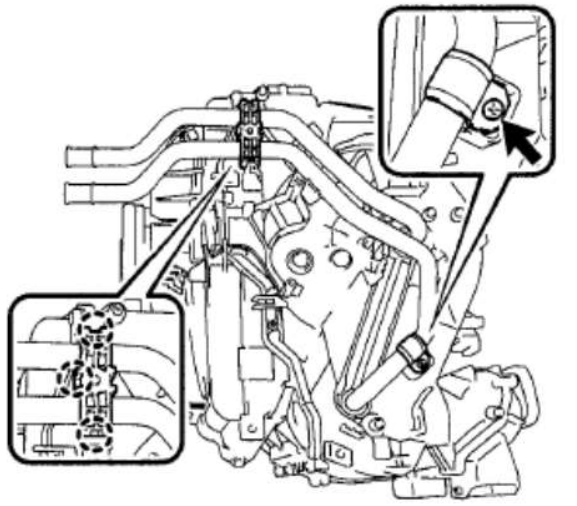


Fig. 305: Identifying Heater Clamp Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. **INSTALL FRONT AIR MIX CONTROL SERVO MOTOR SUB-ASSEMBLY**
   a. Using the reference point, install the front air mix control servo motor sub-assembly with the 2 screws.
   b. Connect the connector.

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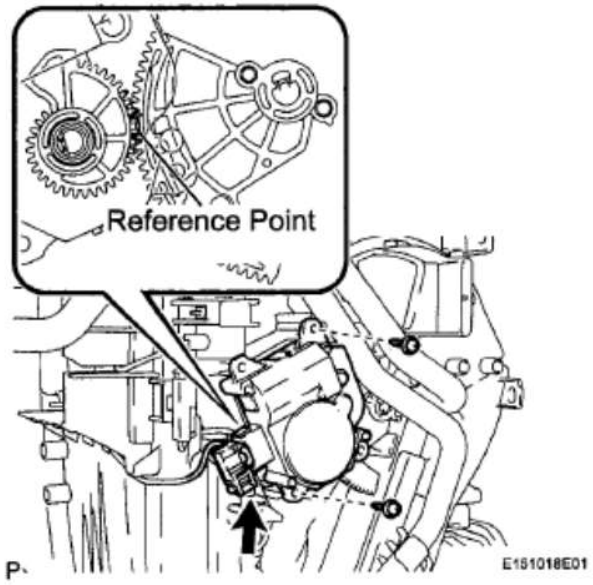


Fig. 306: Identifying Reference Point, Front Air Mix Control Servo Motor Sub-Assembly And Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. **INSTALL FRONT AIR OUTLET CONTROL SERVO MOTOR SUB-ASSEMBLY**
   a. Install the front air outlet control servo motor sub-assembly with the 3 screws.
   b. Connect the 2 connectors.

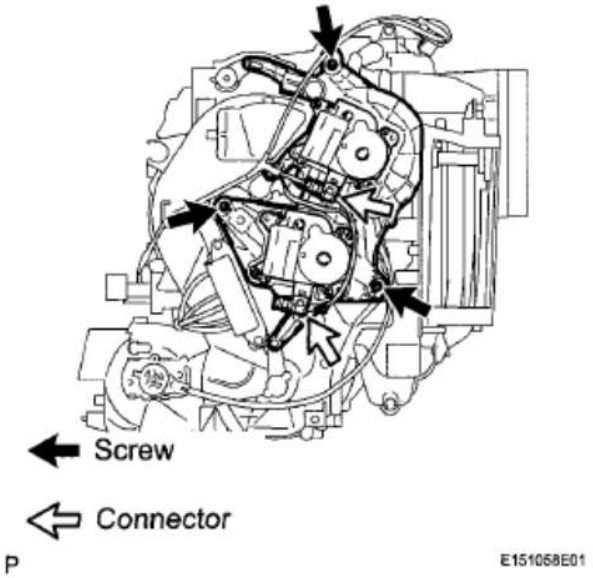


Fig. 307: Identifying Front Air Outlet Control Servo Motor Sub-Assembly And Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

10. **INSTALL BLOWER ASSEMBLY**

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a. Engage the 2 claws.
b. Install the blower assembly with the 2 screws.
c. Connect the connector.

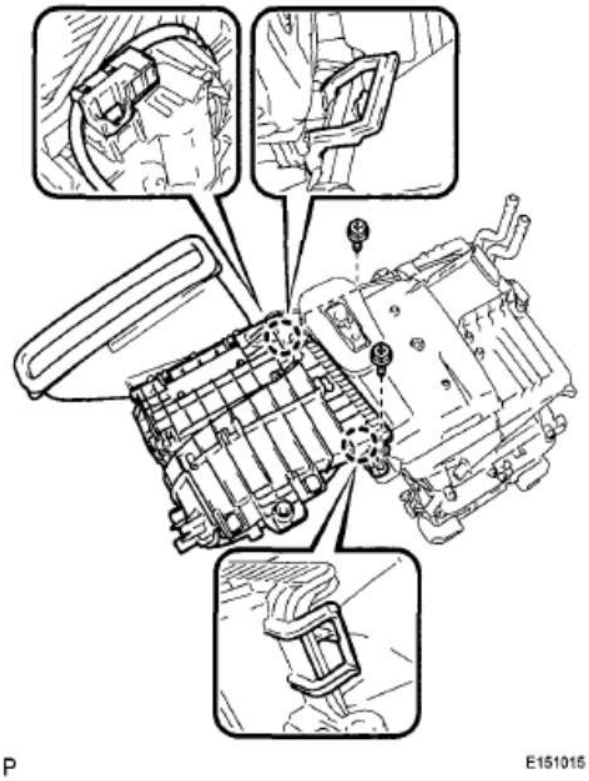


Fig. 308: Identifying Blower Assembly Screws And Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

11. **INSTALL QUICK HEATER ASSEMBLY (w/ PTC Heater)**
    a. Install the quick heater assembly as shown in the illustration.
    b. Install the 3 screws.

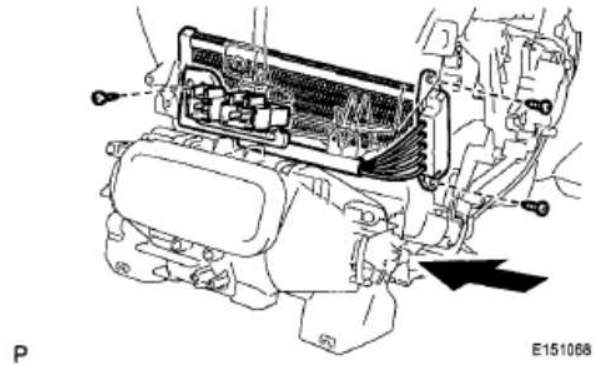


Fig. 309: Identifying Quick Heater Assembly Screws

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

12. **INSTALL NO. 3 AIR DUCT SUB-ASSEMBLY**
    a. Engage the 3 claws and install the No. 3 air duct sub-assembly as shown in the illustration.
13. **INSTALL TRANSPONDER KEY ECU (w/o Smart Key System)** (See **INSTALLATION**)
14. **INSTALL ID CODE BOX (IMMOBILISER CODE ECU) (w/ Smart Key System)** (See **INSTALLATION**)



Fig. 310: Identifying No. 3 Air Duct Sub-Assembly Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

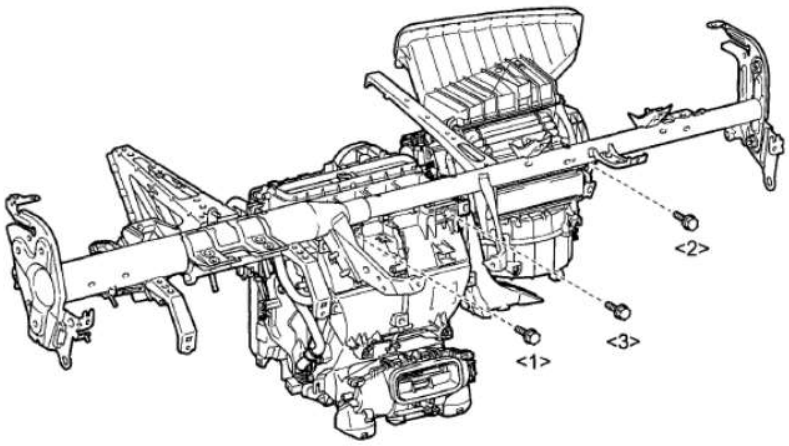
INSTALLATION

1. **INSTALL AIR CONDITIONING UNIT**
    a. Install the air conditioning unit with the 3 bolts.

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Fig. 311: Identifying Air Conditioning Unit Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

NOTE: Tighten the bolts in the order shown in the illustration to install the air conditioning unit assembly.

2. **INSTALL INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/o PTC Heater)**
   a. Driver Side:
      1. Using a "TORX" socket wrench (T40), install the instrument panel reinforcement assembly with the 3 "TORX" bolts.

      Torque: 17 N*m (173 kgf*cm, 13 ft.*lbf)

   b. Passenger Side:
      1. Using a 12 mm hexagon wrench, adjust the position of the 2 collars.

      Torque: 6.0 N*m (61 kgf*cm, 53 in.*lbf)

      2. Using a "TORX" socket wrench (T40), install the instrument panel reinforcement assembly with the 2 "TORX" bolts.

      Torque: 20 N*m (204 kgf*cm, 15 ft.*lbf)

   c. Connect the connector.

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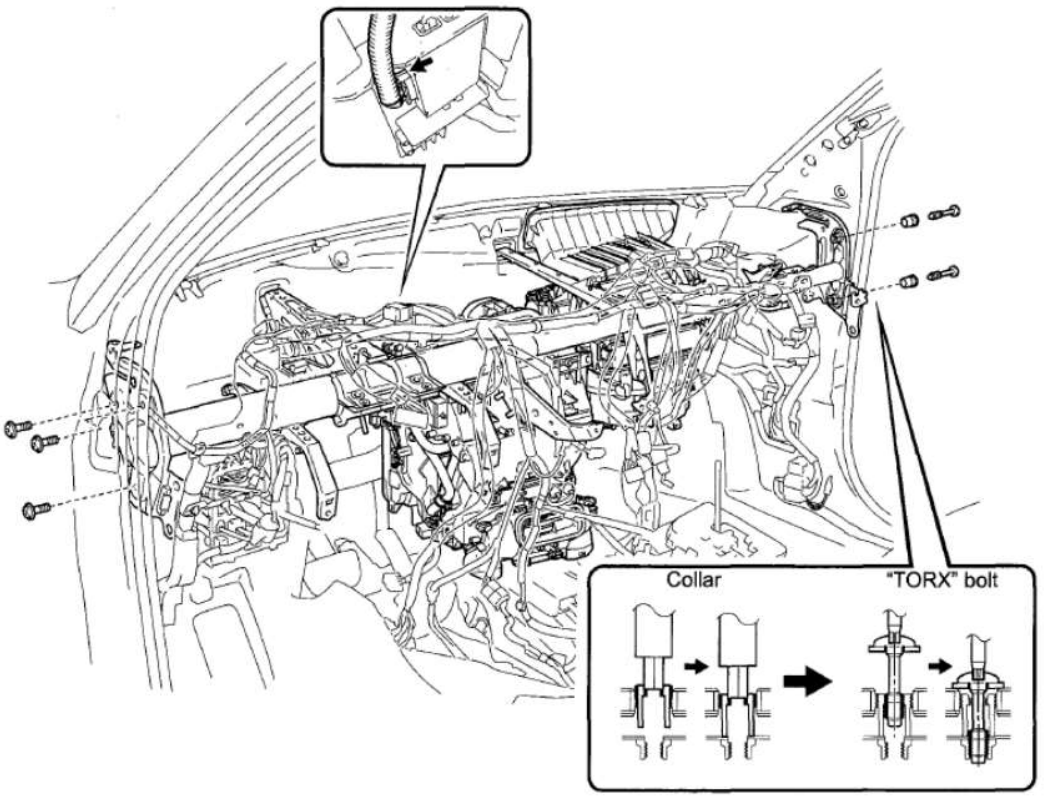


Fig. 312: Identifying Instrument Panel Reinforcement Assembly TORX Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Install the 2 bolts and 2 caps to the engine compartment side.

Torque: 20 N*m (204 kgf*cm, 15 ft.*lbf)

e. Install the instrument panel reinforcement assembly with air conditioning unit with the nut.

Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

f. Engage the cooler drain hose.

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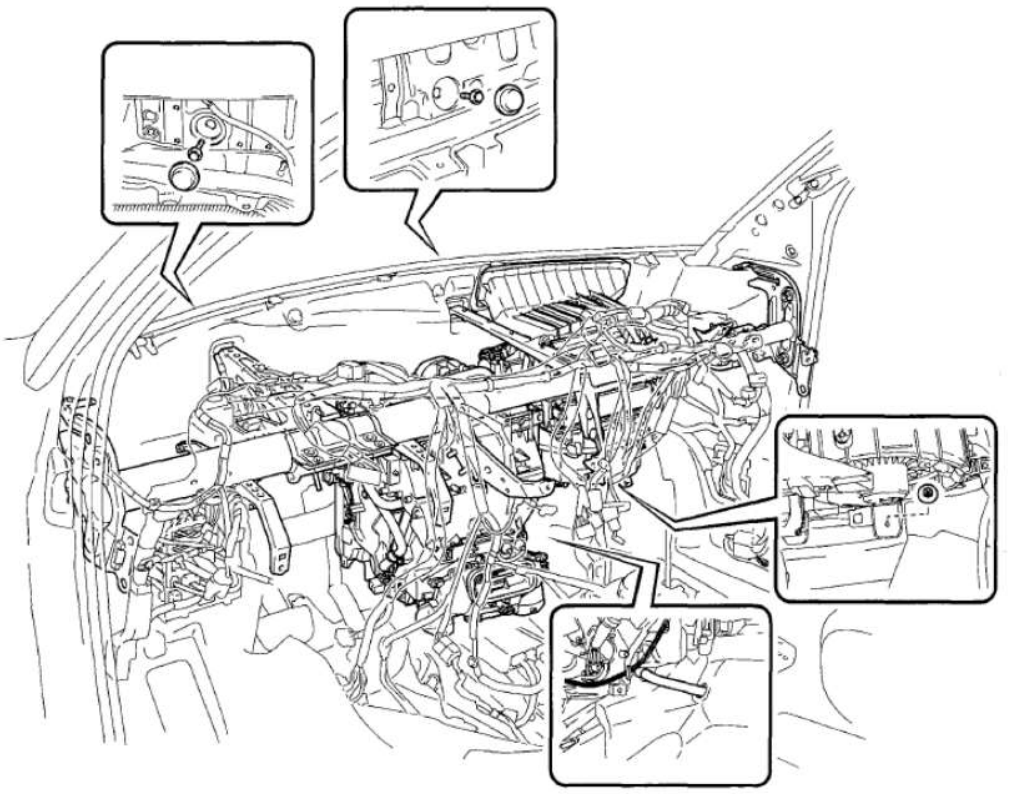


Fig. 313: Identifying Engine Compartment Side Bolts And Caps
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

g. Connect the blower motor connector.
h. Install the 2 nuts and bolt.
i. Connect each connector.
j. Connect the 2 earth wires with the 2 bolts < A >.

Torque: 8.4 N*m (86 kgf*cm, 74 in.*lbf)

k. Engage each clamp.

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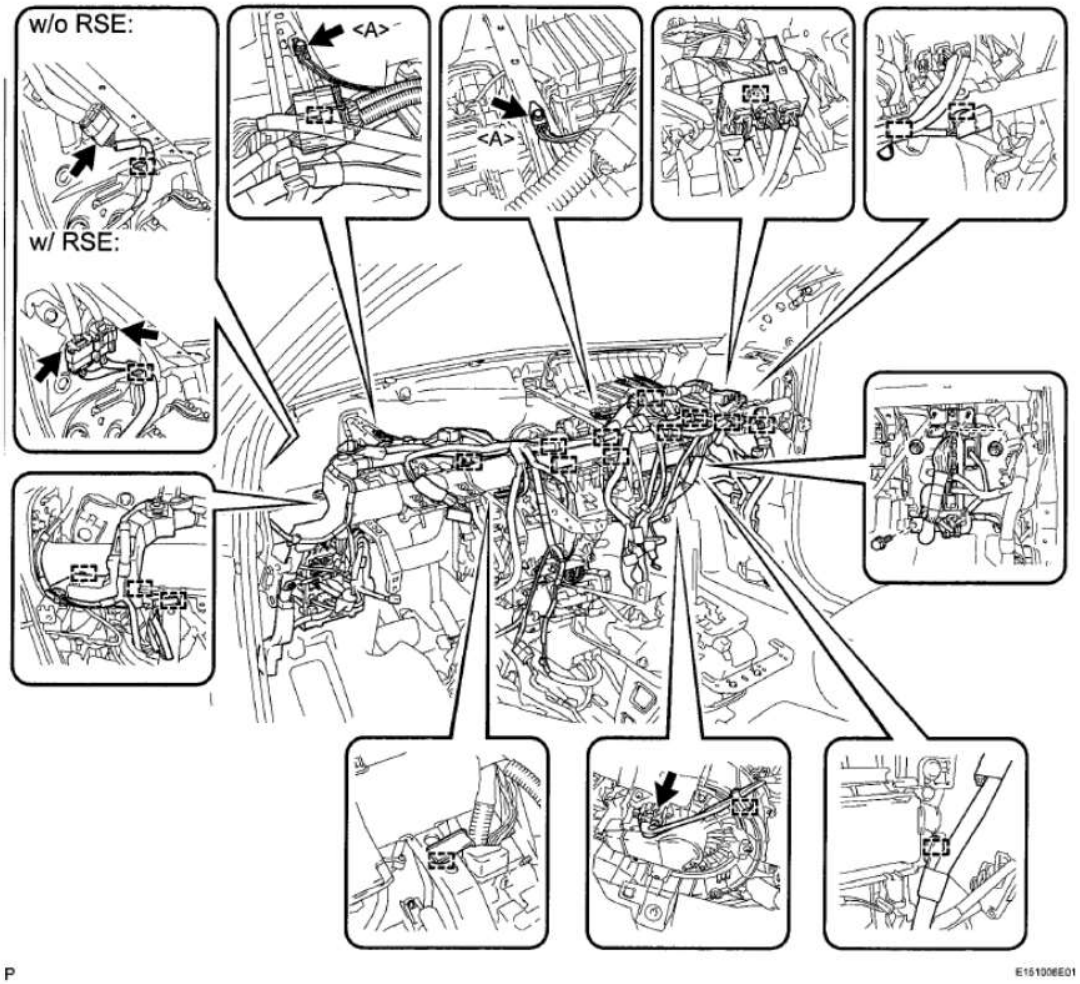


Fig. 314: Identifying Blower Motor Connector, Nuts And Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **INSTALL INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/ PTC Heater)**
   a. Driver Side:
      1. Using a "TORX" socket wrench (T40), install the instrument panel reinforcement assembly with the 3 "TORX" bolts.

         Torque: 17 N*m (173 kgf*cm, 13 ft.*lbf)

   b. Passenger Side:
      1. Using a 12 mm hexagon wrench, adjust the position of the 2 collars.

         Torque: 6.0 N*m (61 kgf*cm, 53 in.*lbf)

      2. Using a "TORX" socket wrench (T40), install the instrument panel reinforcement assembly with the 2 "TORX" bolts.

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Torque: 20 N*m (204 kgf*cm, 15 ft.*lbf)

c. Connect the connector.

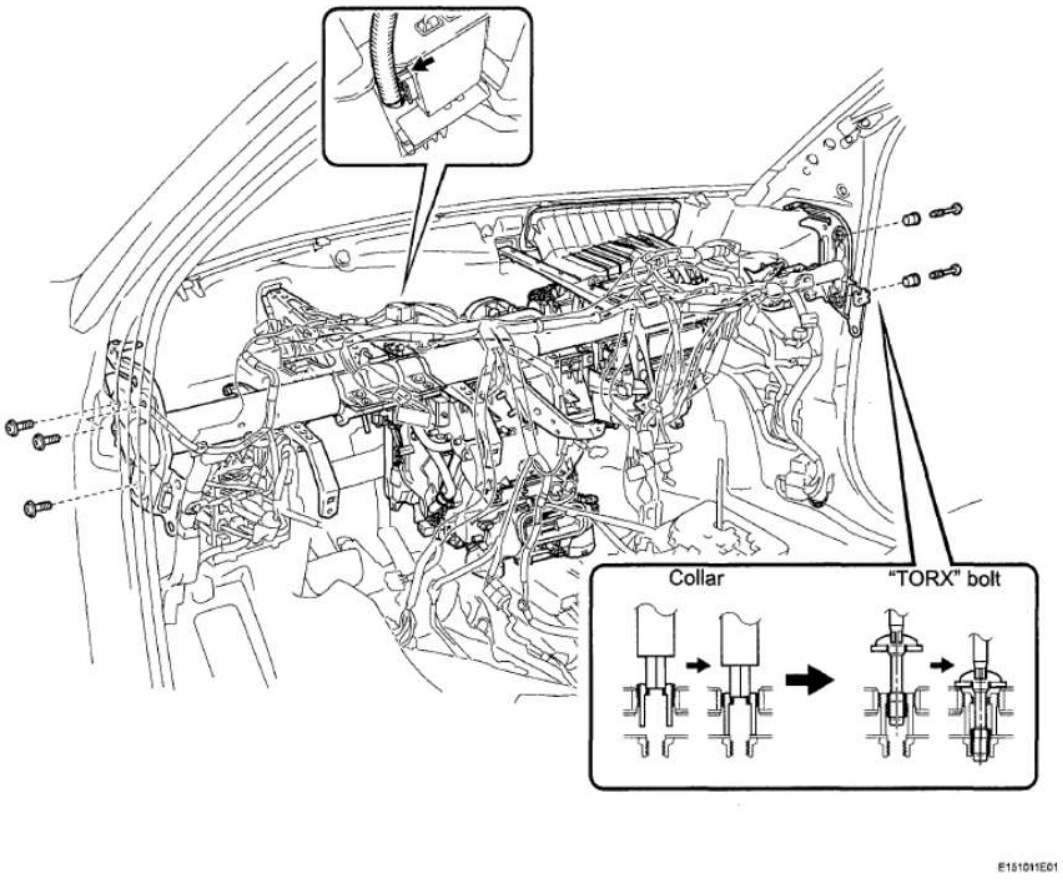


Fig. 315: Identifying Instrument Panel Reinforcement Assembly TORX Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Install the 2 bolts and 2 caps to the engine compartment side.

Torque: 20 N*m (204 kgf*cm, 15 ft.*lbf)

e. Install the instrument panel reinforcement assembly with air conditioning unit with the nut.

Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

f. Engage the cooler drain hose.

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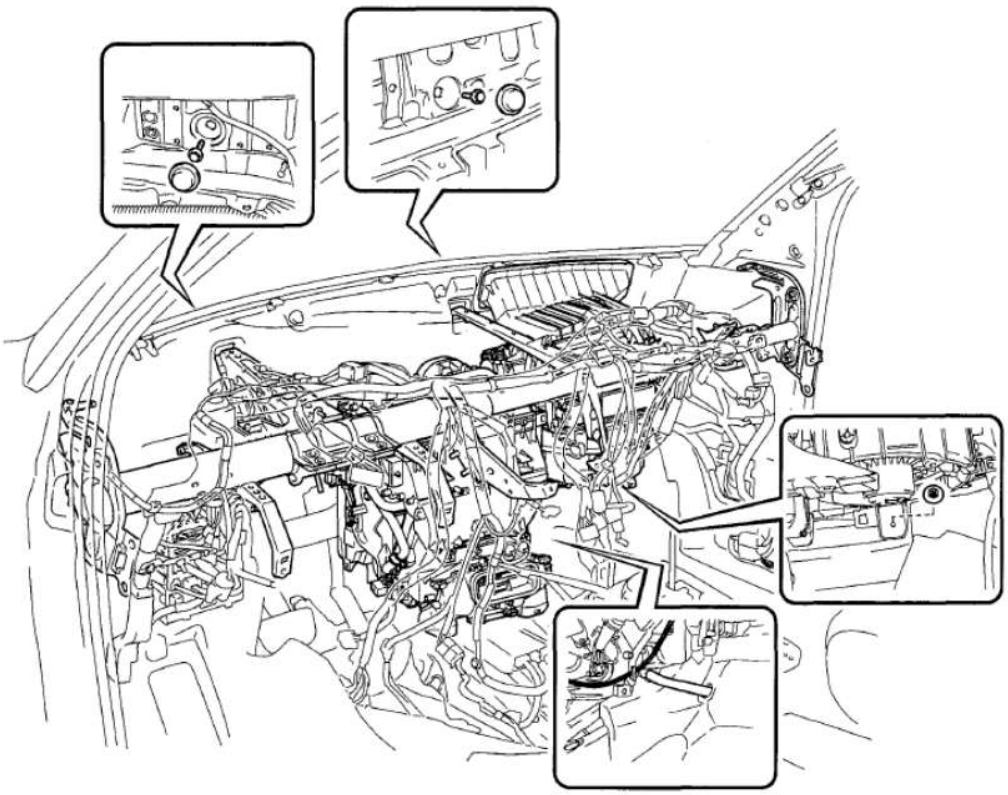


Fig. 316: Identifying Instrument Panel Reinforcement Assembly With Air Conditioning Unit Nut
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

g. Connect the 2 quick heater connectors.
h. Connect the blower motor connector.
i. Install the 2 nuts and bolt.
j. Connect each connector.
k. Connect the 2 earth wires with the 2 bolts < A >.

Torque: 8.4 N*m (86 kgf*cm, 74 in.*lbf)

l. Engage each clamp.

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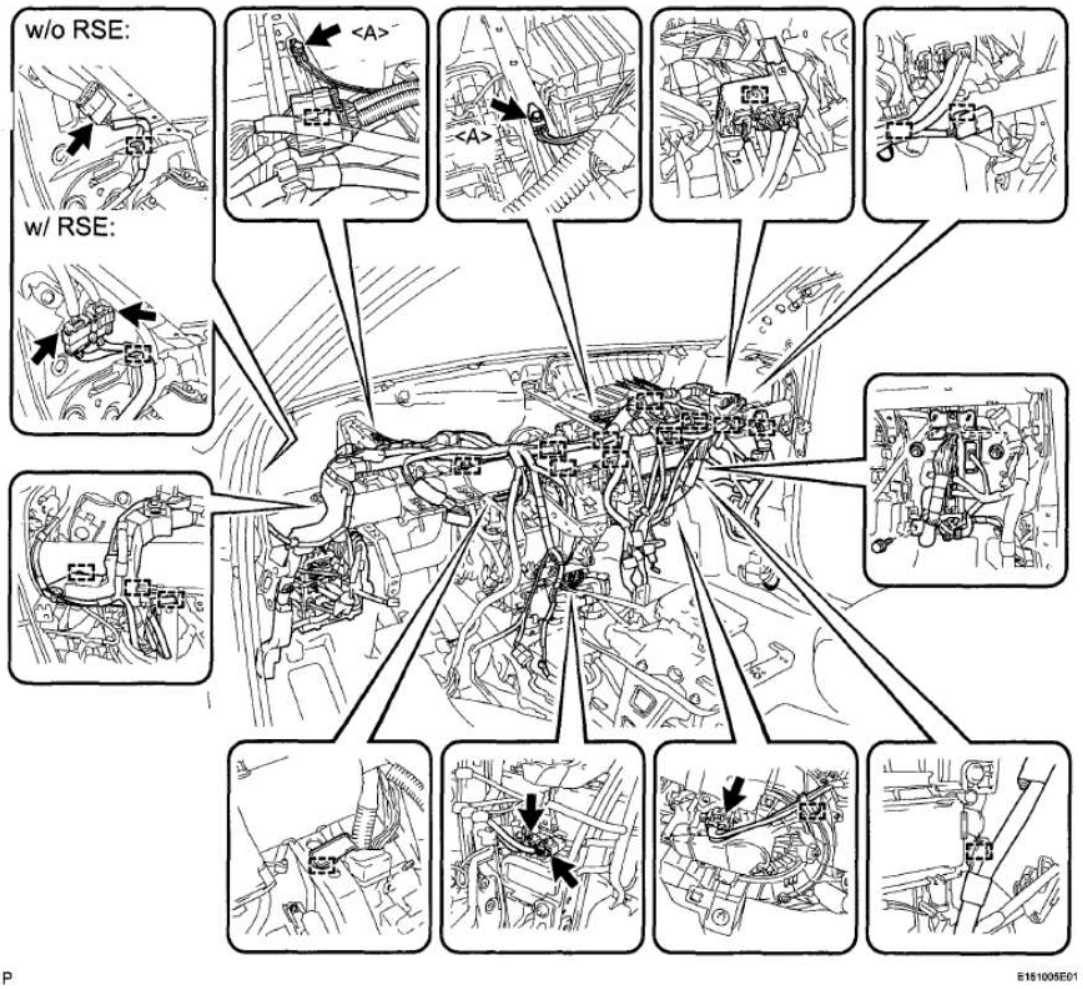


Fig. 317: Identifying Blower Motor Connector, Nuts And Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **INSTALL NO. 1 INSTRUMENT PANEL BRACE SUB-ASSEMBLY**
   a. Install the 3 nuts.
   b. Install the 2 bolts.
   c. Install the No. 1 instrument panel brace sub-assembly with the screw.

   Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

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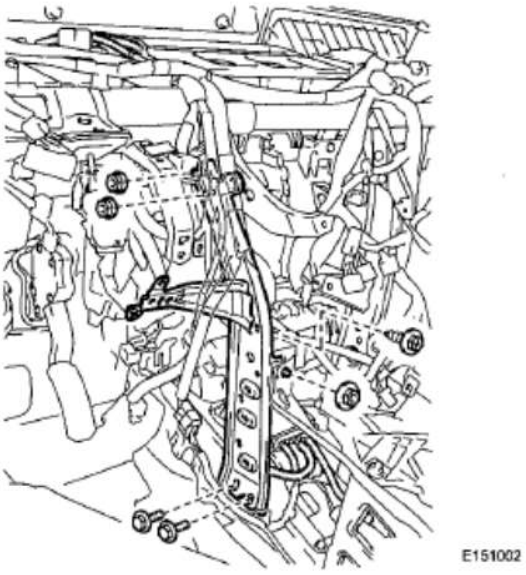


Fig. 318: Identifying No. 1 Instrument Panel Brace Sub-Assembly Screw, Nuts And Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Engage each clamp.
e. Connect the earth wire with the bolt.

Torque: 8.4 N*m (86 kgf*cm, 74 in.*lbf)

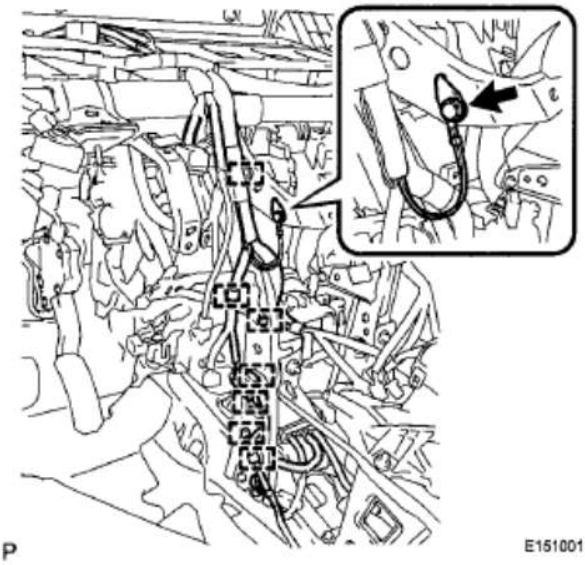


Fig. 319: Locating Earth Wire Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **INSTALL NO. 2 INSTRUMENT PANEL BRACE SUB-ASSEMBLY**

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a. Install the 3 nuts.
b. Install the bolt.
c. Install the No. 2 instrument panel brace sub-assembly with the screw.

Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

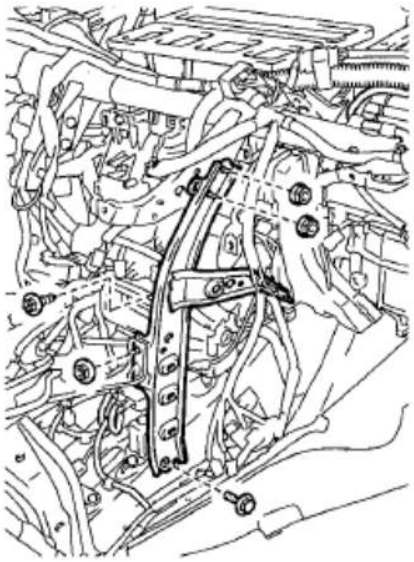


Fig. 320: Identifying Instrument Panel Brace Sub-Assembly Screw, Bolt And Nuts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Engage each clamp.
e. Connect the earth wire with the bolt.

Torque: 8.4 N*m (86 kgf*cm, 74 in.*lbf)

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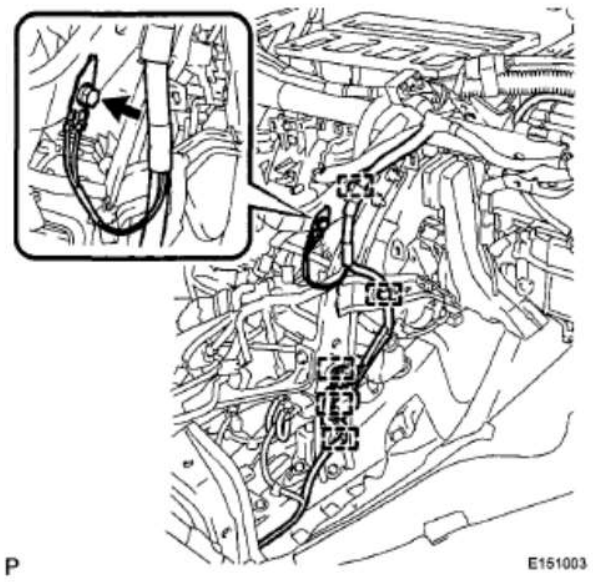


Fig. 321: Locating Earth Wire Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. **INSTALL CENTER HEATER TO REGISTER DUCT**
   a. Engage the 4 claws and install the center heater to register duct.
   b. Engage the clamp.

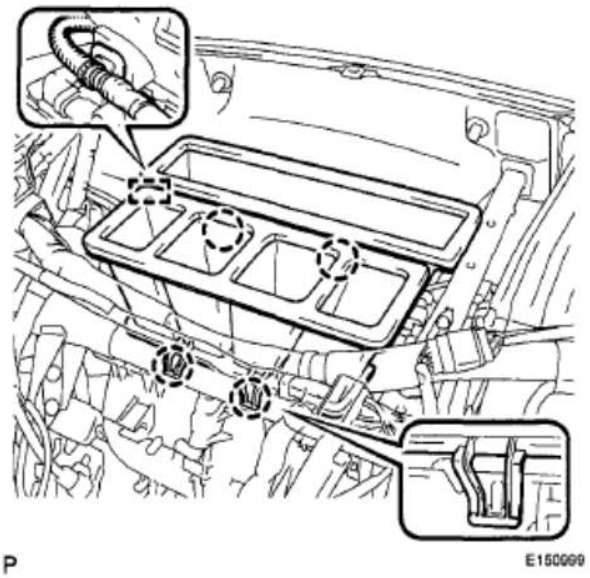


Fig. 322: Identifying Center Heater To Register Duct Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. **INSTALL NO. 1 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)**
   a. Install the clip and the No. 1 console box duct.

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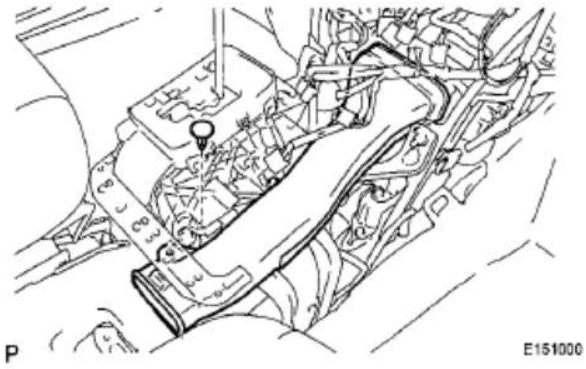


Fig. 323: Identifying No. 1 Console Box Duct Clip
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. **INSTALL REAR NO. 3 AIR DUCT**
   a. Engage the 2 claws and install the rear No. 3 air duct.
   b. Install the clip.

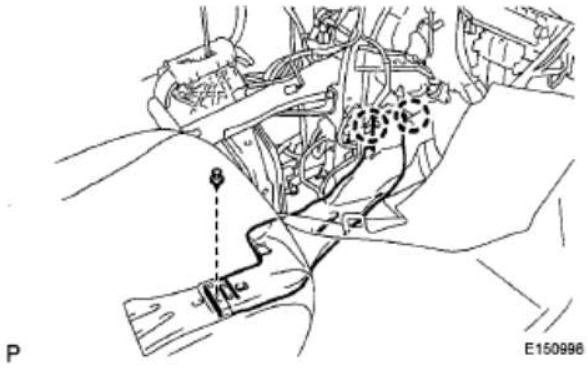


Fig. 324: Identifying Rear No. 3 Air Duct Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   c. Engage the claw and install the floor carpet.

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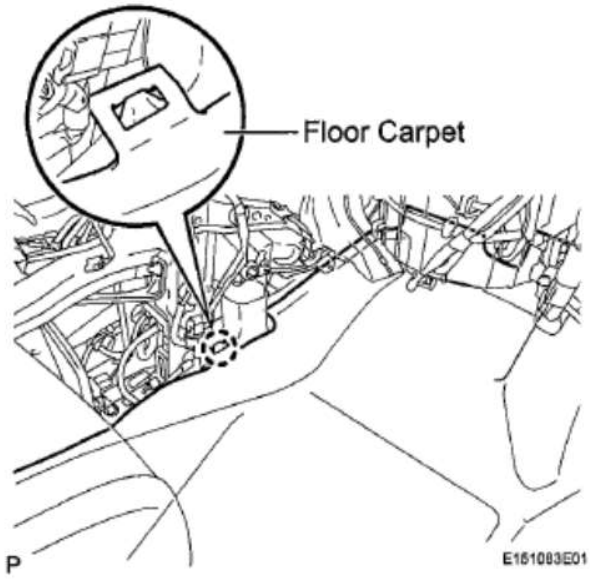


Fig. 325: Identifying Floor Carpet Claw
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. **INSTALL REAR NO. 1 AIR DUCT**
   a. Engage the 2 claws and install the rear No. 1 air duct.
   b. Install the clip.
   c. Engage the clamp.

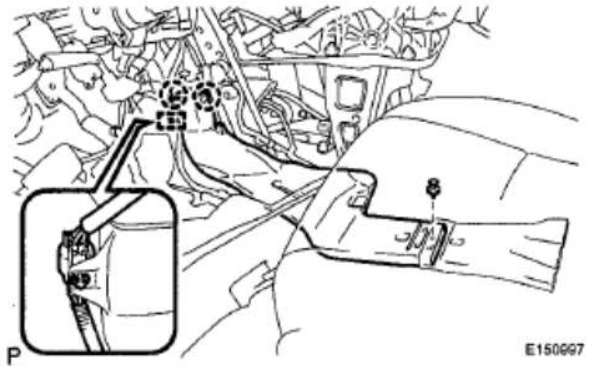


Fig. 326: Identifying Rear No. 1 Air Duct Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   d. Engage the claw and install the floor carpet.
10. **INSTALL AIR CONDITIONING AMPLIFIER ASSEMBLY** (See **REMOVAL**)
11. **INSTALL CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)
12. **INSTALL POWER STEERING ECU ASSEMBLY** (See **INSTALLATION**)

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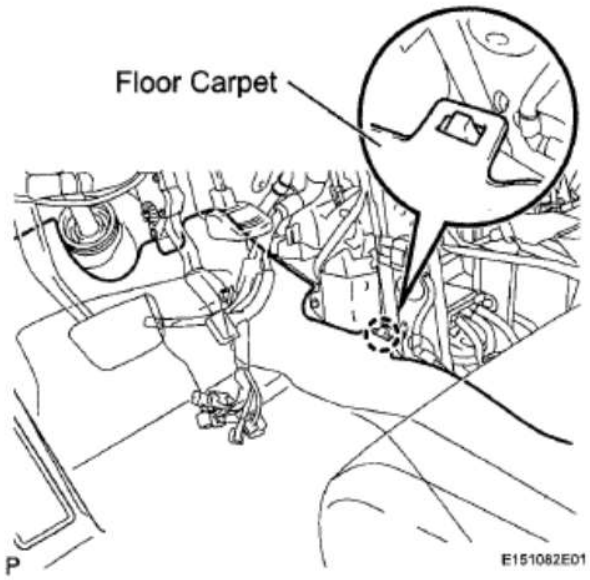


Fig. 327: Identifying Floor Carpet Claw
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

13. **CONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY**
    a. Connect the instrument panel junction block assembly with the 3 nuts.

Torque: 8.4 N*m (86 kgf*cm, 74 in.*lbf)

14. **INSTALL STEERING COLUMN ASSEMBLY** (See **INSTALLATION**)
15. **CONNECT STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY** (See **INSTALLATION**)

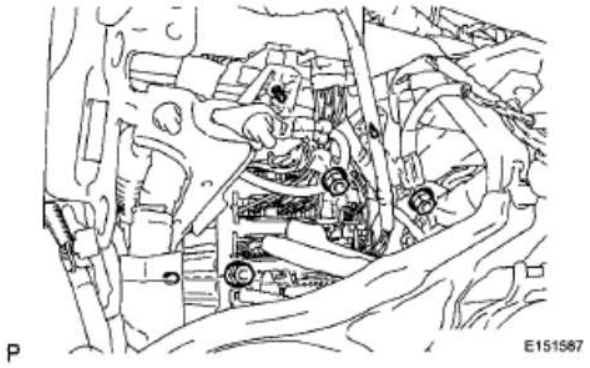


Fig. 328: Identifying Instrument Panel Junction Block Assembly Nuts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

16. **INSTALL NO. 1 AIR DUCT SUB-ASSEMBLY** (See **INSTALLATION**)
17. **INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY** (See **INSTALLATION**)
18. **INSTALL BRAKE PEDAL SUPPORT SUB-ASSEMBLY** (See **INSTALLATION**)

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19. **CONNECT BRAKE MASTER CYLINDER PUSH ROD CLEVIS** (See **INSTALLATION**)
20. **INSTALL BRAKE PEDAL RETURN SPRING** (See **INSTALLATION**)
21. **INSTALL STOP LIGHT SWITCH ASSEMBLY** (See **INSTALLATION**)
22. **INSPECT AND ADJUST BRAKE PEDAL HEIGHT** (See **ADJUSTMENT**)
23. **INSPECT BRAKE PEDAL FREE PLAY** (See **ADJUSTMENT**)
24. **INSPECT BRAKE PEDAL RESERVE DISTANCE** (See **ADJUSTMENT**)
25. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **INSTALLATION**)
26. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **INSTALLATION**)
27. **CONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **INSTALLATION**)
28. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
29. **INSTALL NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
30. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
31. **INSTALL NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
32. **INSTALL FRONT PILLAR GARNISH RH** (See **INSTALLATION**)
33. **CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
34. **INSTALL FRONT PILLAR GARNISH LH** (See **INSTALLATION**)
35. **CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **INSTALLATION**)
36. **INSTALL ENGINE SWITCH (w/ Smart Key System)** (See **INSTALLATION**)
37. **INSTALL FRONT NO. 2 CONSOLE BOX INSERT** (See **INSTALLATION**)
38. **INSTALL FRONT NO. 1 CONSOLE BOX INSERT** (See **INSTALLATION**)
39. **INSTALL CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
40. **INSTALL CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **INSTALLATION**)
41. **INSTALL LOWER REAR CONSOLE BOX** (See **INSTALLATION**)
42. **INSTALL NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
43. **INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
44. **INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
45. **INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **INSTALLATION**)
46. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH** (See **INSTALLATION**)
47. **INSTALL FRONT DOOR SCUFF PLATE RH** (See **INSTALLATION**)
48. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Manual Air Conditioning System)** (See **INSTALLATION**)
49. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Automatic**

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Air Conditioning System) (See **INSTALLATION**)

50. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH** (See **INSTALLATION**)
51. **INSTALL FRONT DOOR SCUFF PLATE LH** (See **INSTALLATION**)
52. **INSTALL RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **INSTALLATION**)
53. **INSTALL NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **INSTALLATION**)
54. **INSTALL HEATER CONTROL AND ACCESSORY ASSEMBLY (for Manual Air Conditioning System)** (See **AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)**)
55. **INSTALL AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
56. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **INSTALLATION**)
57. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **INSTALLATION**)
58. **INSTALL CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **INSTALLATION**)
59. **INSTALL COMBINATION METER ASSEMBLY** (See **REASSEMBLY**)
60. **INSTALL INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REASSEMBLY**)
61. **POSITION FRONT WHEELS STRAIGHT AHEAD**
62. **INSTALL TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
63. **INSTALL STEERING COLUMN COVER** (See **INSTALLATION**)
64. **ADJUST SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
65. **INSTALL STEERING WHEEL ASSEMBLY** (See **INSTALLATION**)
66. **INSPECT STEERING WHEEL CENTER POINT**
67. **INSTALL STEERING PAD** (See **INSTALLATION**)
68. **INSTALL LOWER NO. 2 STEERING WHEEL COVER** (See **INSTALLATION**)
69. **INSTALL LOWER NO. 3 STEERING WHEEL COVER** (See **INSTALLATION**)
70. **INSTALL FRONT WHEEL LH** (See **INSTALLATION**)
71. **CONNECT COOLER REFRIGERANT LIQUID PIPE A**
    a. Remove the attached vinyl tape from the pipe.
    b. Sufficiently apply compressor oil to a new O-ring and fitting surface of the cooler refrigerant liquid pipe A.

       Compressor oil:

       ND-OIL 8 or equivalent

    c. Install the O-ring on the cooler refrigerant liquid pipe A.
    d. Install the cooler refrigerant liquid pipe A.
72. **CONNECT NO. 1 COOLER REFRIGERANT SUCTION PIPE**

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a. Remove the attached vinyl tape from the pipe.
b. Sufficiently apply compressor oil to a new O-ring and the fitting surface of the No. 1 cooler refrigerant suction pipe.

Compressor oil:

ND-OIL 8 or equivalent

c. Install the O-ring on the No. 1 cooler refrigerant suction pipe.
d. Move the hook connector in the direction indicated by the arrow in the illustration.
e. Insert the pipe joint into the fitting hole securely and tighten the bolt.

Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

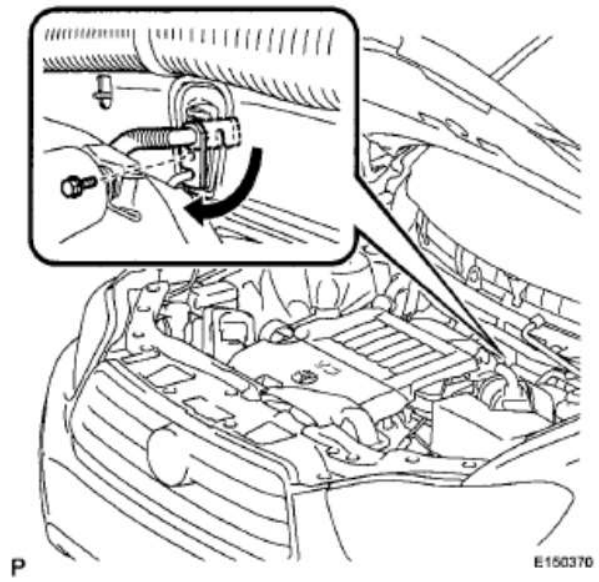


Fig. 329: Identifying Pipe Joint And Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

73. **CONNECT HEATER WATER HOSE INLET**
    a. Install the heater inlet water hose and attach the clip.

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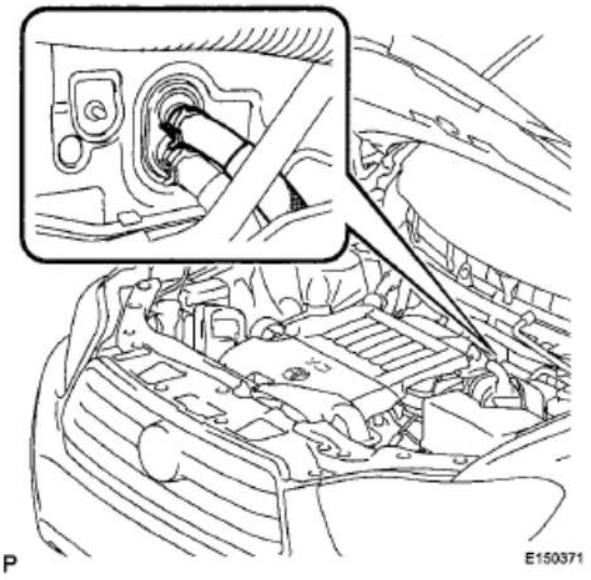
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Fig. 330: Identifying Heater Inlet Water Hose And Clip
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

74. **CONNECT HEATER WATER HOSE OUTLET**
    a. Install the heater outlet water hose and attach the clip.
75. **INSTALL COWL TOP OUTER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
76. **INSTALL WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY** (See **INSTALLATION**)
77. **INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY** (See **INSTALLATION**)
78. **INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY RH** (See **INSTALLATION**)
79. **INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY LH** (See **INSTALLATION**)



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Fig. 331: Identifying Heater Outlet Water Hose And Clip
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

80. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**

NOTE: **When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).**

81. **INSPECT STEERING PAD** (See **INSTALLATION**)
82. **INSPECT SRS WARNING LIGHT**
    a. Inspect the SRS warning light (See **DIAGNOSIS SYSTEM**).
83. **ADD ENGINE COOLANT (for 1AR-FE)** (See **COOLANT**)
84. **ADD ENGINE COOLANT (for 2GR-FE)** (See **REPLACEMENT**)
85. **INSPECT FOR COOLANT LEAK (for 1AR-FE)** (See **COOLING SYSTEM**)
86. **INSPECT FOR COOLANT LEAK (for 2GR-FE)** (See **COOLING SYSTEM**)
87. **CHARGE WITH REFRIGERANT** (See **REFRIGERANT LINE**)
88. **WARM UP ENGINE** (See **REFRIGERANT LINE**)
89. **INSPECT FOR REFRIGERANT LEAK** (See **REFRIGERANT LINE**)

REAR COOLING UNIT

COMPONENTS

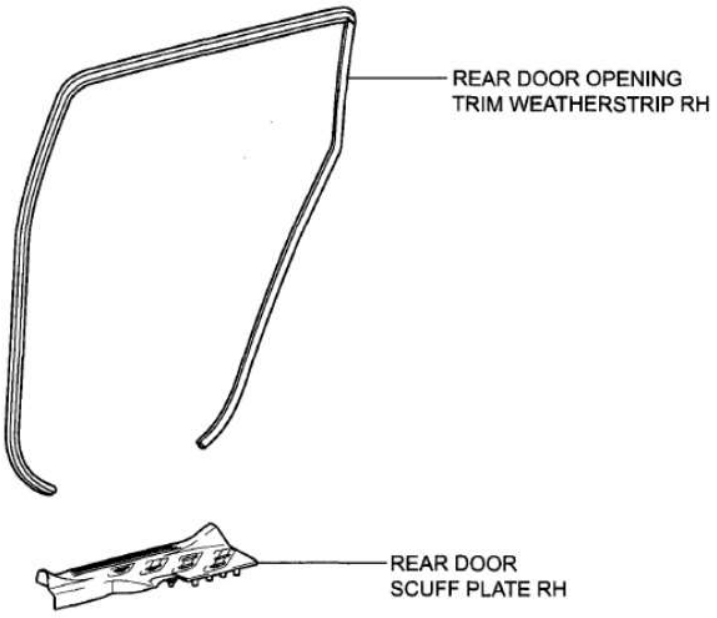


Fig. 332: Identifying Rear Cooling Unit Components (1 Of 7)

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

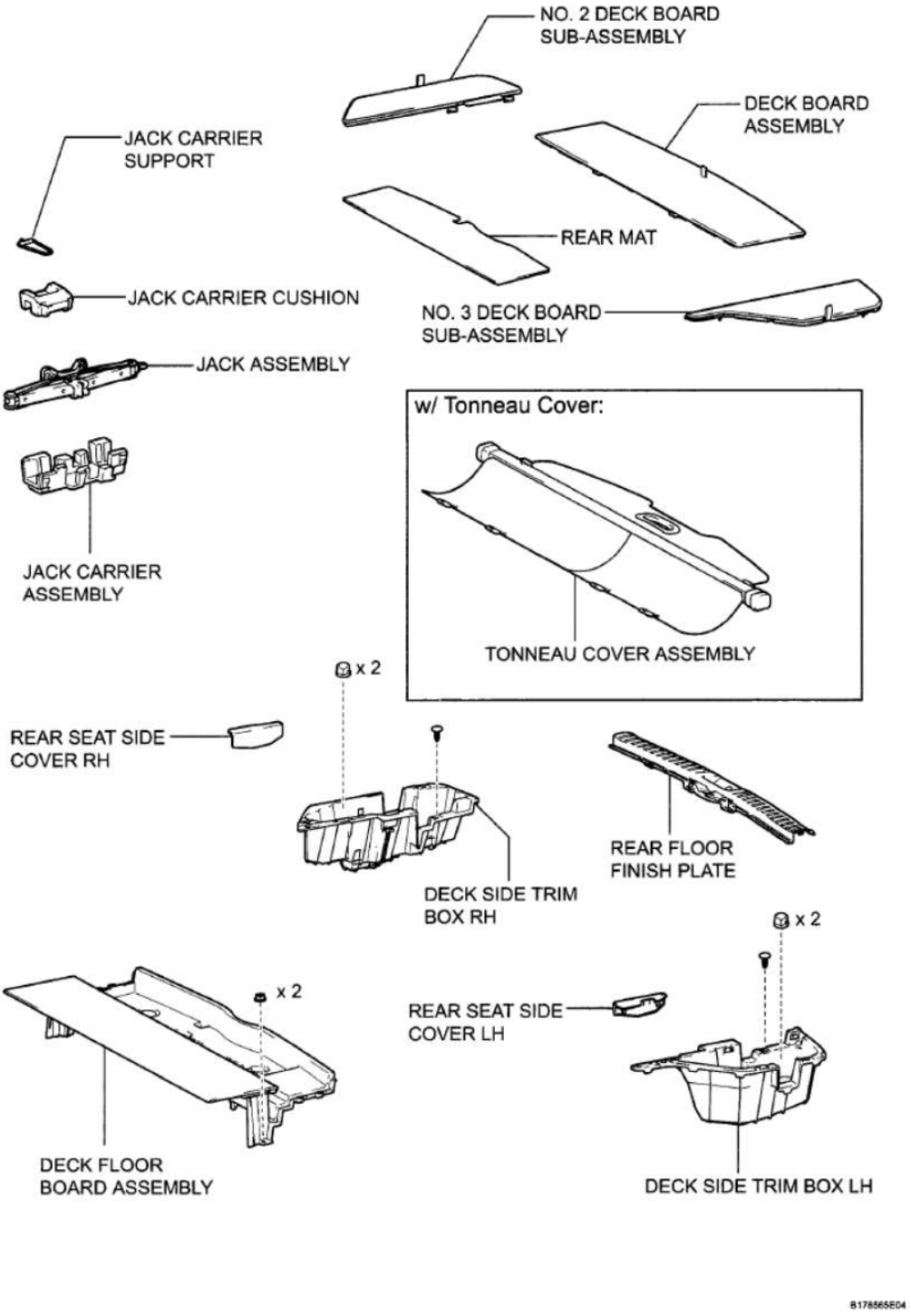


Fig. 333: Identifying Rear Cooling Unit Components (2 Of 7)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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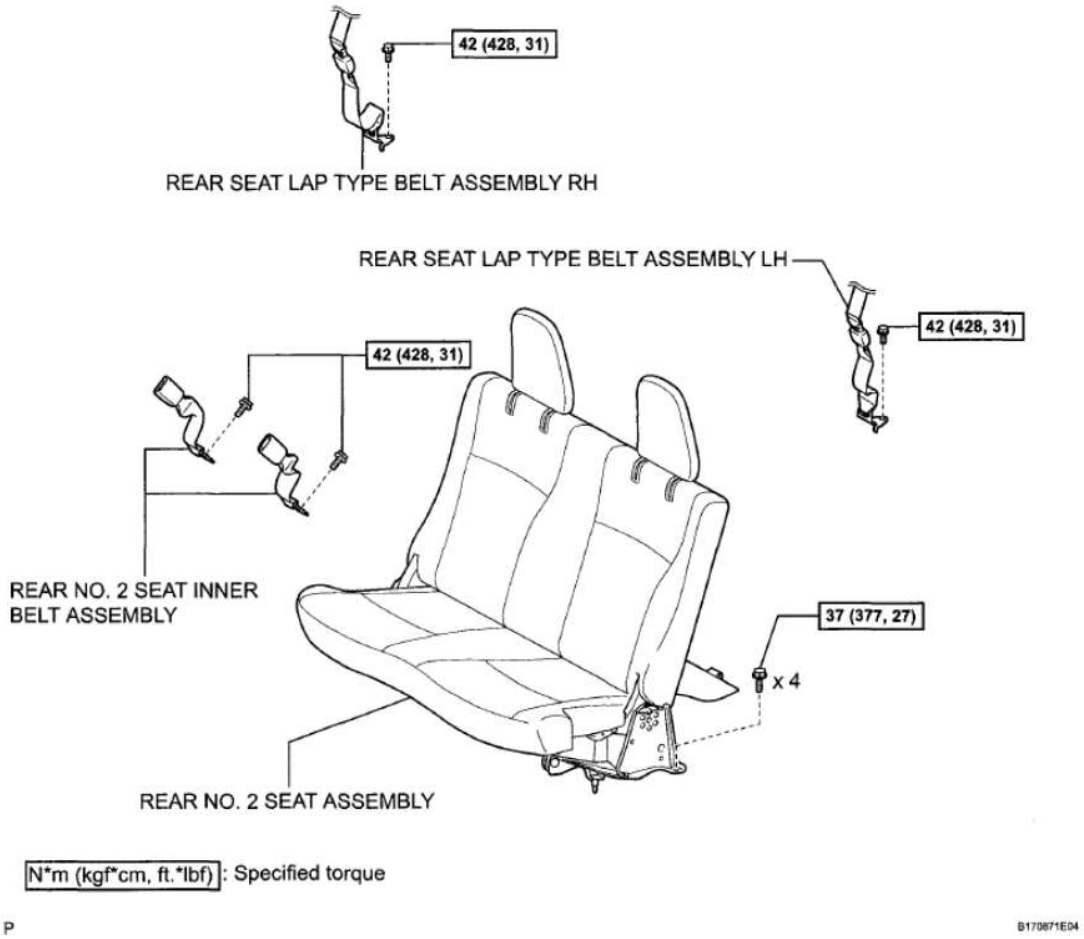


Fig. 334: Identifying Rear Cooling Unit Components (3 Of 7)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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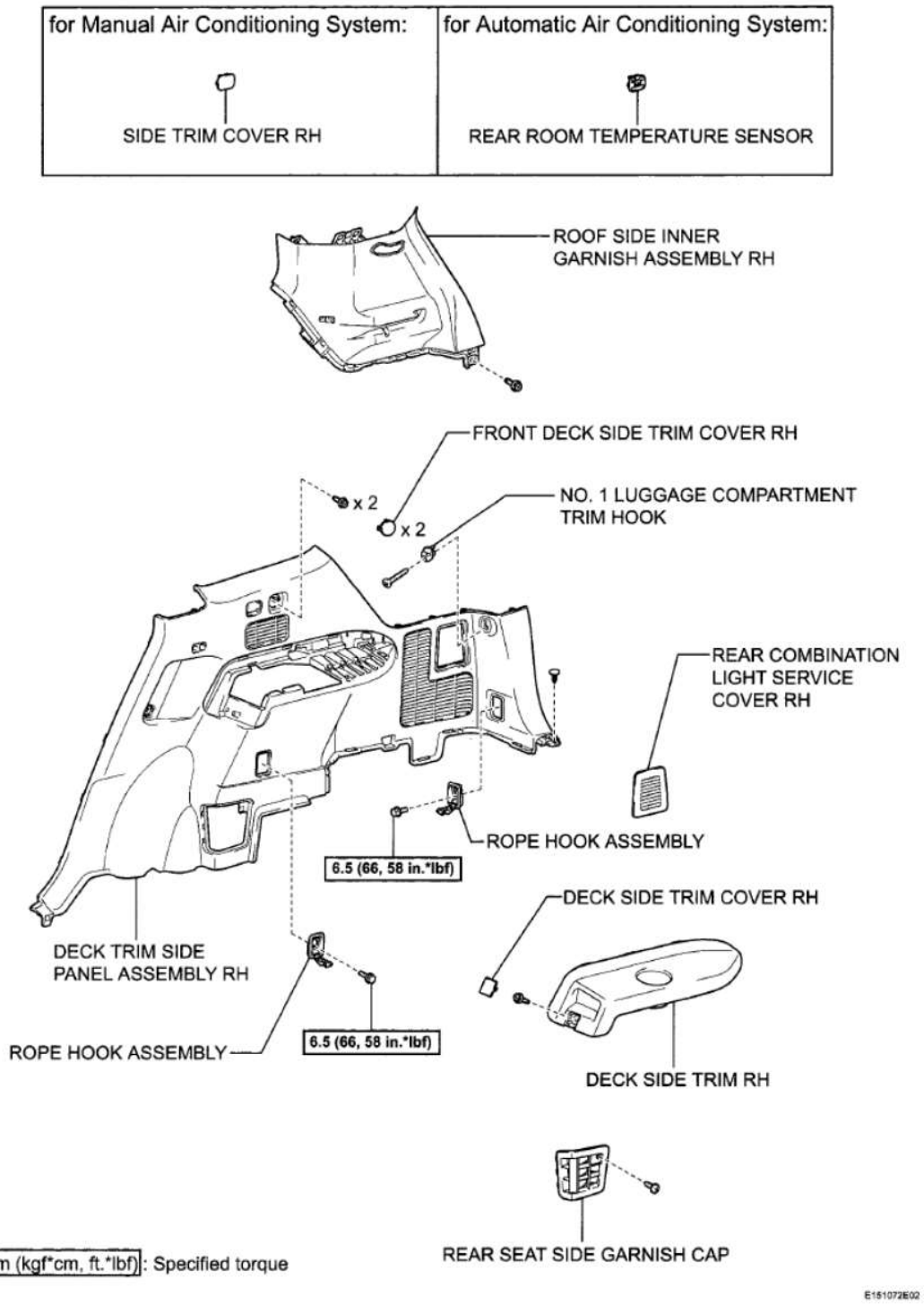


Fig. 335: Identifying Rear Cooling Unit Components (4 Of 7)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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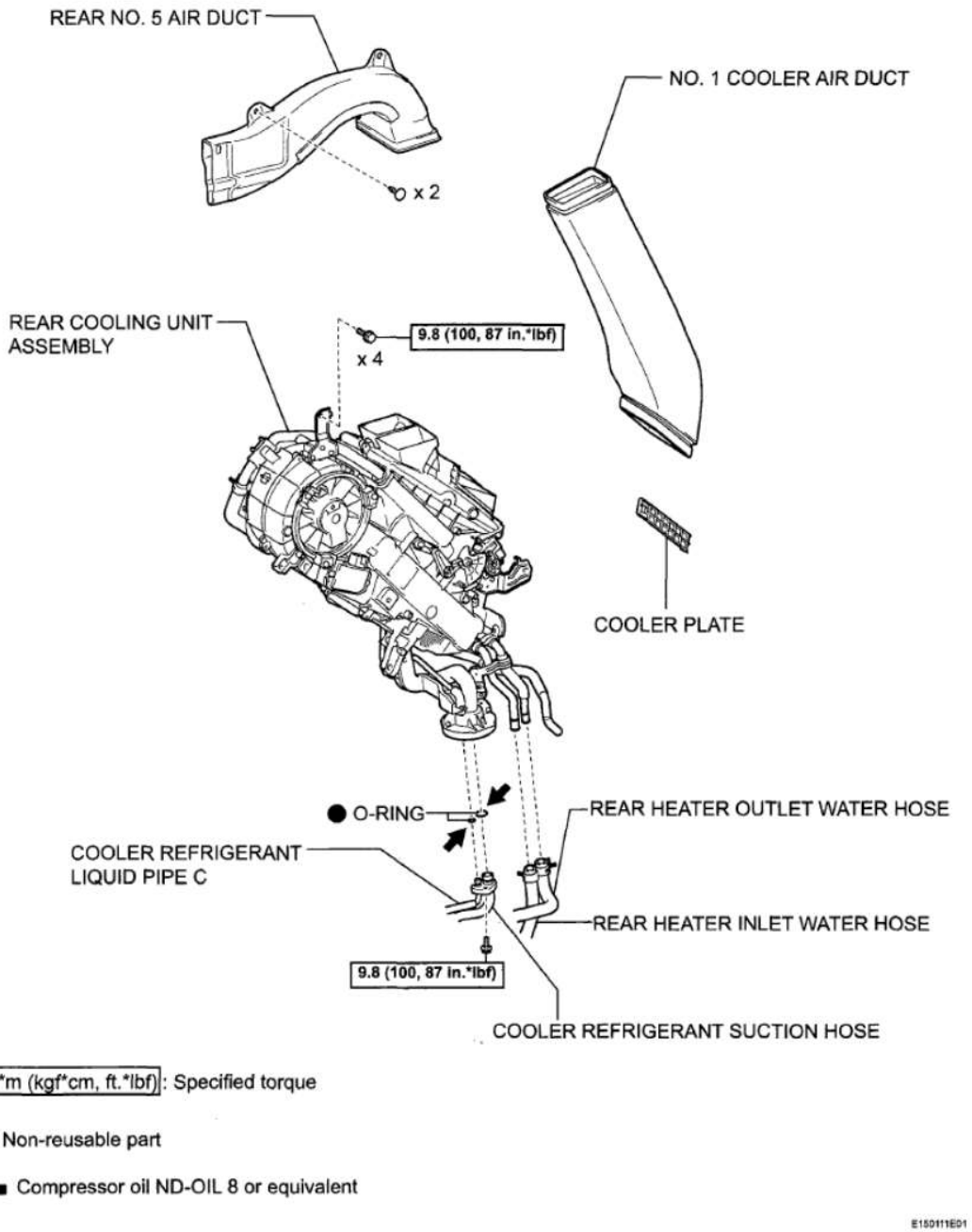


Fig. 336: Identifying Rear Cooling Unit Components (5 Of 7)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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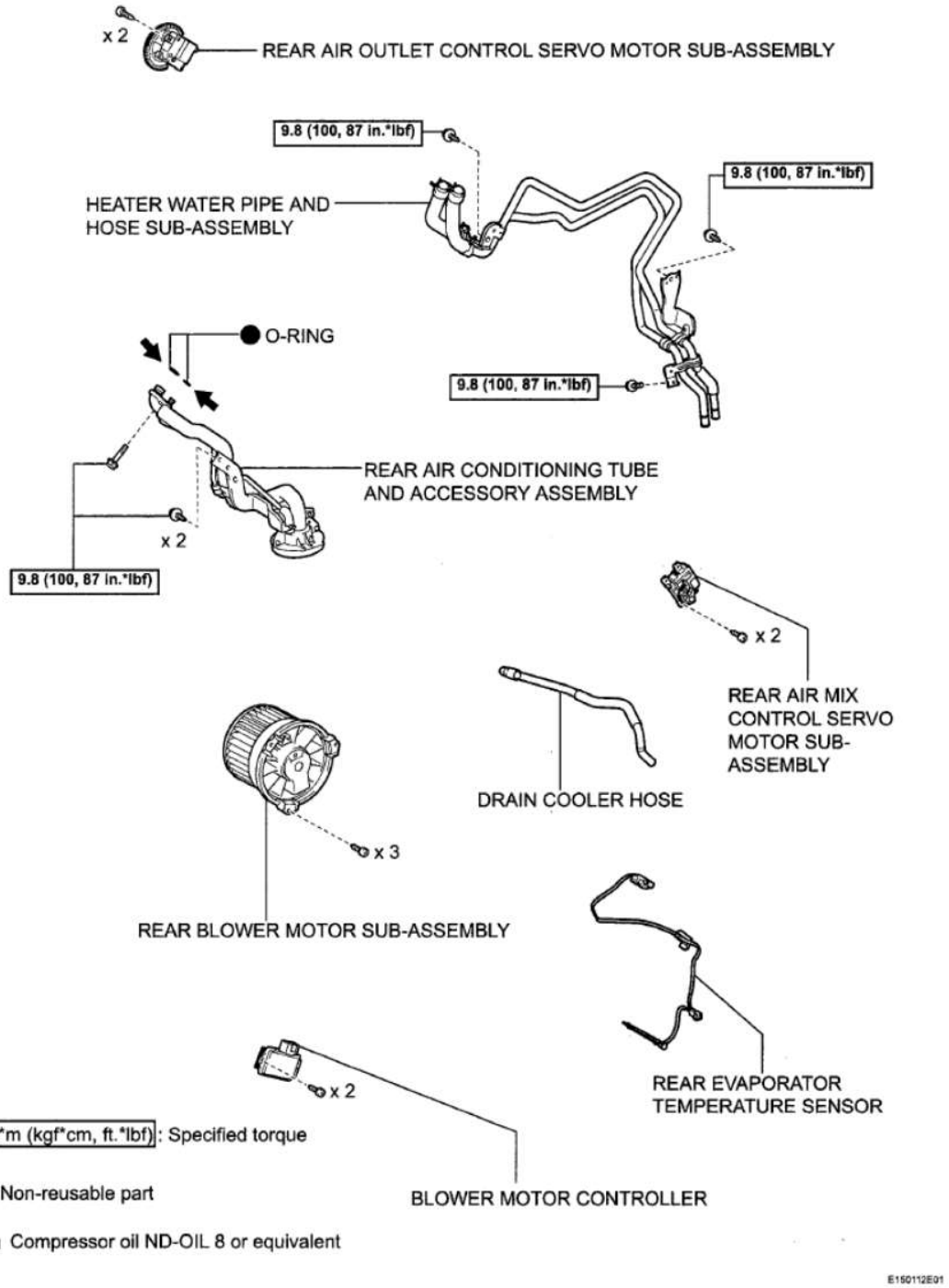


Fig. 337: Identifying Rear Cooling Unit Components (6 Of 7)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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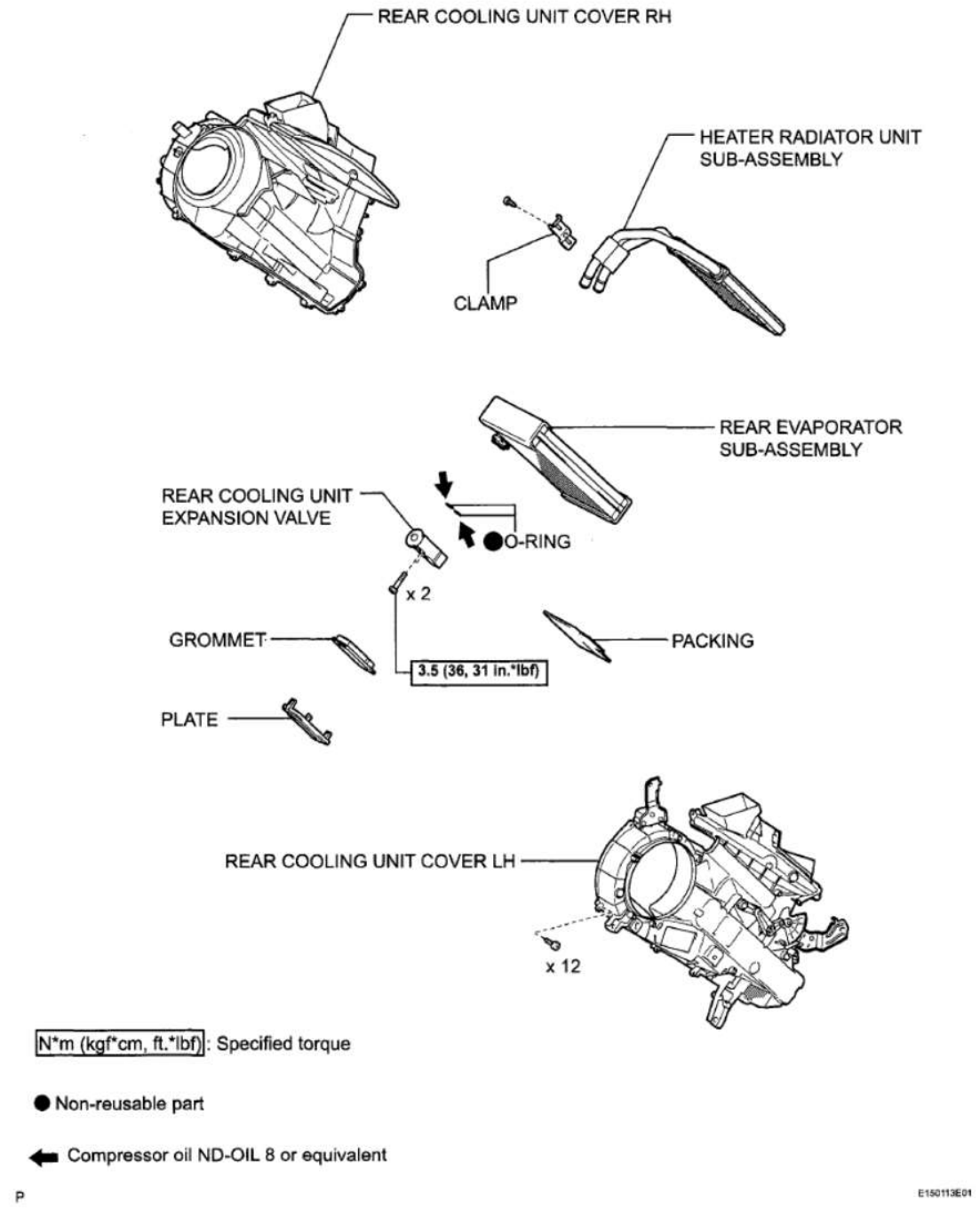


Fig. 338: Identifying Rear Cooling Unit Components (7 Of 7)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

HINT:

Adjust the air outlet mode setting to FOOT.

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1. **RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM** (See **REPLACEMENT**)
2. **DISCONNECT REAR HEATER OUTLET WATER HOSE**
   a. Using pliers, grip the claws of the clip and slide the clip to disconnect the rear heater outlet water hose.

NOTE:

- **Do not apply excessive force to the rear heater outlet water hose.**
- **Prepare a drain pan or cloth in case the coolant leaks.**

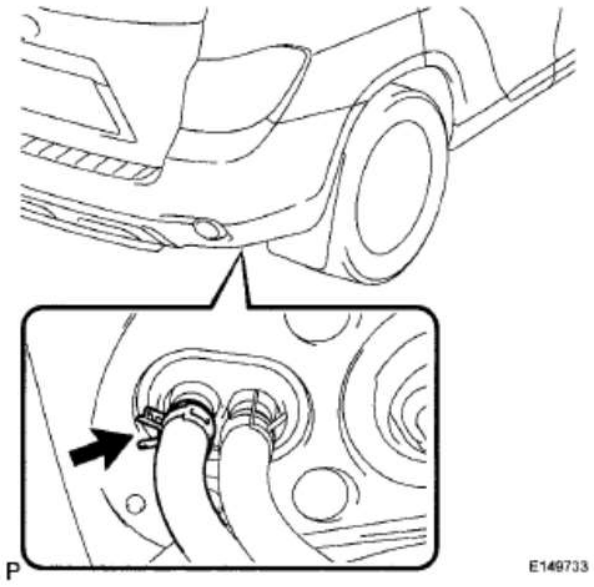


Fig. 339: Locating Rear Heater Outlet Water Hose Clip
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **DISCONNECT REAR HEATER INLET WATER HOSE**
   a. Using pliers, grip the claws of the clip and slide the clip to disconnect the rear heater inlet water hose.

NOTE:

- **Do not apply excessive force to the rear heater inlet water hose.**
- **Prepare a drain pan or cloth in case the coolant leaks.**

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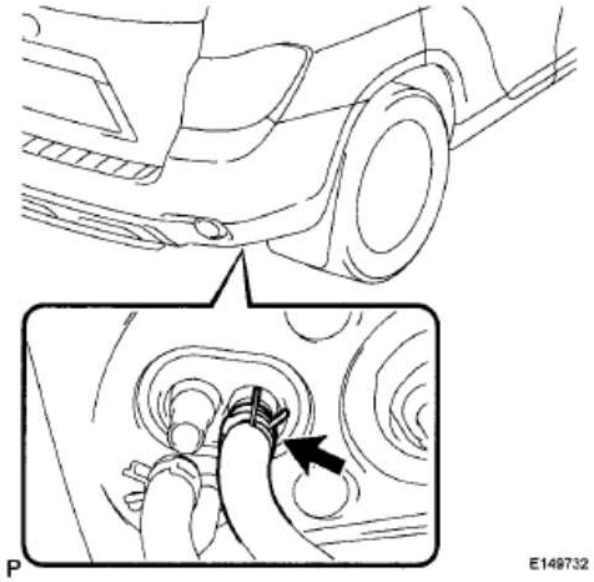


Fig. 340: Locating Rear Heater Inlet Water Hose Clip
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **DISCONNECT COOLER REFRIGERANT LIQUID PIPE C**
   a. Remove the bolt, and slide the hook connector.
   b. Disconnect the cooler refrigerant liquid pipe C.
   c. Remove the O-ring from the cooler refrigerant liquid pipe C.

NOTE: Seal the openings of the disconnected parts using vinyl tape to prevent entry of moisture and foreign matter.

5. **DISCONNECT COOLER REFRIGERANT SUCTION HOSE**
   a. Disconnect the rear cooler refrigerant suction hose.
   b. Remove the O-ring from the rear cooler refrigerant suction hose.

NOTE: Seal the openings of the disconnected parts using vinyl tape to prevent entry of moisture and foreign matter.

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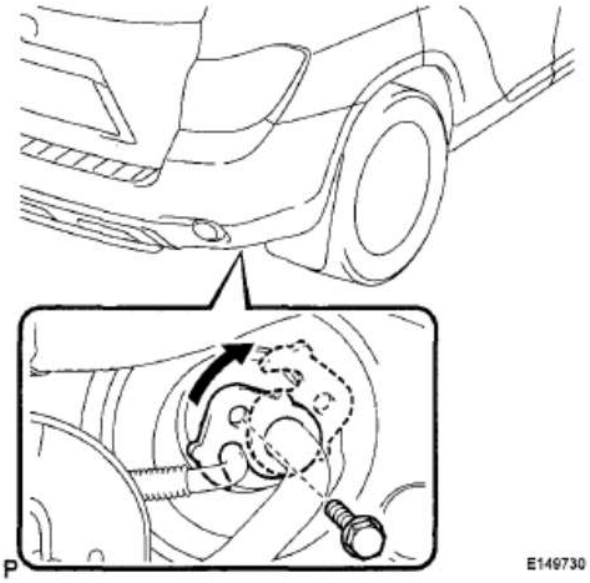


Fig. 341: Identifying Bolt And Cooler Refrigerant Liquid Pipe C
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. **REMOVE REAR DOOR SCUFF PLATE RH** (See **REMOVAL**)
7. **REMOVE REAR DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)
8. **REMOVE DECK BOARD ASSEMBLY** (See **REMOVAL**)
9. **REMOVE NO. 3 DECK BOARD SUB-ASSEMBLY** (See **REMOVAL**)
10. **REMOVE NO. 2 DECK BOARD SUB-ASSEMBLY** (See **REMOVAL**)
11. **REMOVE TONNEAU COVER ASSEMBLY (w/Tonneau Cover)** (See **REMOVAL**)
12. **REMOVE REAR SEAT SIDE COVER LH** (See **REMOVAL**)
13. **REMOVE DECK SIDE TRIM BOX LH** (See **REMOVAL**)
14. **REMOVE REAR SEAT SIDE COVER RH** (See **REMOVAL**)
15. **REMOVE JACK CARRIER SUPPORT**
16. **REMOVE JACK CARRIER CUSHION** (See **REMOVAL**)
17. **REMOVE JACK ASSEMBLY** (See **REMOVAL**)
18. **REMOVE JACK CARRIER ASSEMBLY** (See **REMOVAL**)
19. **REMOVE DECK SIDE TRIM BOX RH** (See **REMOVAL**)
20. **REMOVE REAR MAT** (See **REMOVAL**)
21. **REMOVE DECK FLOOR BOARD ASSEMBLY** (See **REMOVAL**)
22. **REMOVE REAR NO. 2 SEAT INNER BELT ASSEMBLY** (See **INSTALLATION**)
23. **DISCONNECT REAR SEAT LAP TYPE BELT ASSEMBLY LH** (See **REMOVAL**)
24. **DISCONNECT REAR SEAT LAP TYPE BELT ASSEMBLY RH** (See **REMOVAL**)
25. **REMOVE REAR NO. 2 SEAT ASSEMBLY** (See **DISASSEMBLY**)
26. **REMOVE REAR FLOOR FINISH PLATE** (See **REMOVAL**)

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27. **REMOVE REAR SEAT SIDE GARNISH CAP** (See **REMOVAL**)
28. **REMOVE DECK SIDE TRIM COVER RH** (See **REMOVAL**)
29. **REMOVE DECK SIDE TRIM RH** (See **REMOVAL**)
30. **REMOVE SIDE TRIM COVER RH (for Manual Air Conditioning System)** (See **REMOVAL**)
31. **REMOVE REAR ROOM TEMPERATURE SENSOR (for Automatic Air Conditioning System)** (See **ROOM TEMPERATURE SENSOR (FOR REAR)**)
32. **REMOVE REAR COMBINATION LIGHT SERVICE COVER RH** (See **REMOVAL**)
33. **REMOVE ROPE HOOK ASSEMBLY (for RH Side)** (See **REMOVAL**)
34. **REMOVE NO. 1 LUGGAGE COMPARTMENT TRIM HOOK** (See **REMOVAL**)
35. **REMOVE FRONT DECK SIDE TRIM COVER RH** (See **REMOVAL**)
36. **REMOVE DECK TRIM SIDE PANEL ASSEMBLY RH** (See **REMOVAL**)
37. **REMOVE ROOF SIDE INNER GARNISH ASSEMBLY RH** (See **REMOVAL**)
38. **REMOVE COOLER PLATE**
    a. Disengage the 2 claws and remove the cooler plate.

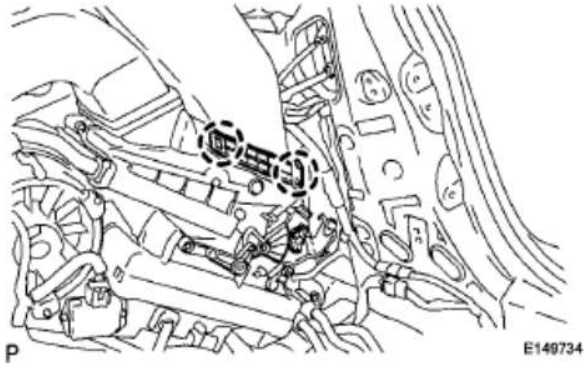


Fig. 342: Identifying Cooler Plate Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

39. **REMOVE NO. 1 COOLER AIR DUCT**
    a. Remove the No. 1 cooler air duct as shown in the illustration.

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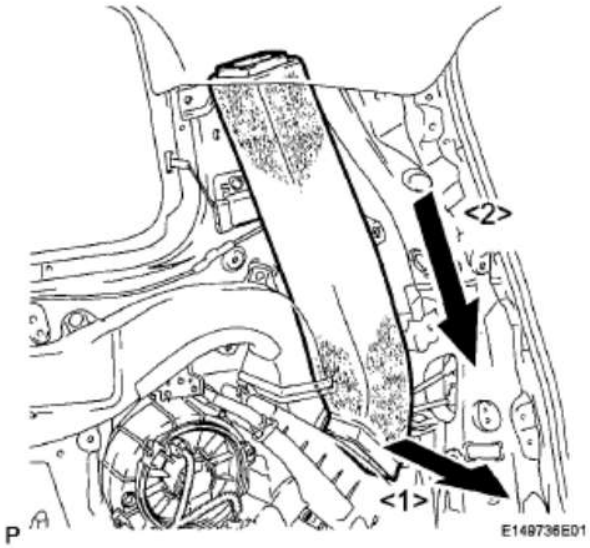


Fig. 343: Removing No. 1 Cooler Air Duct
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

40. **REMOVE REAR NO. 5 AIR DUCT**
    a. Remove the 2 clips and the rear No. 5 air duct.

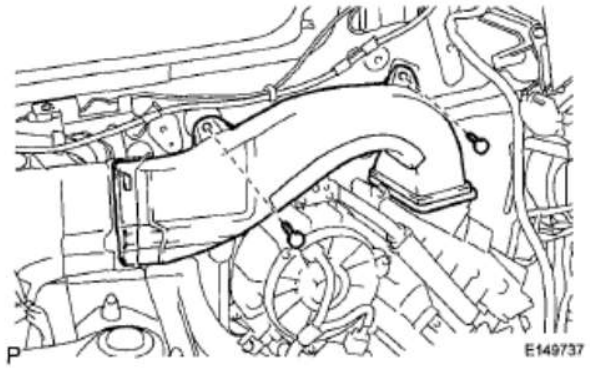


Fig. 344: Identifying Rear No. 5 Air Duct Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

41. **REMOVE REAR COOLING UNIT ASSEMBLY**
    a. Disengage each clamp.
    b. Disconnect each connector.

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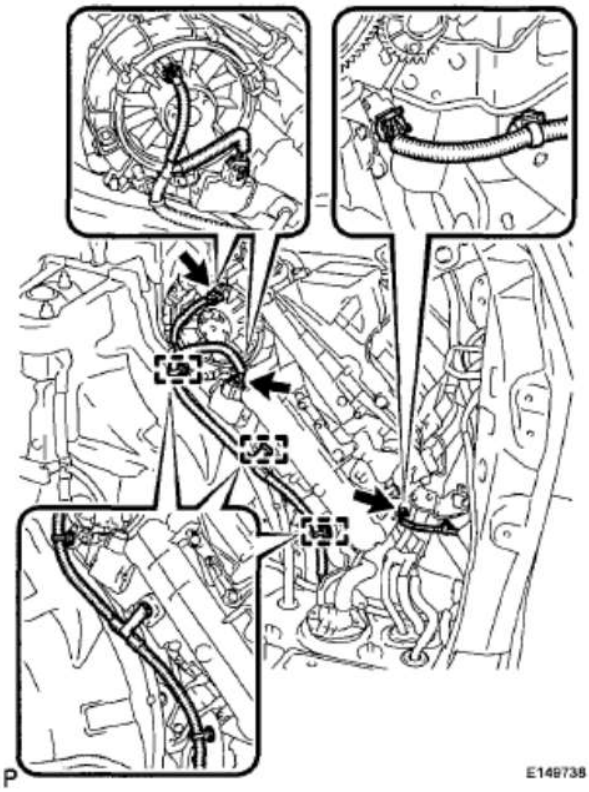


Fig. 345: Identifying Rear Cooling Unit Connector And Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Remove the 4 bolts and the rear cooling unit assembly.

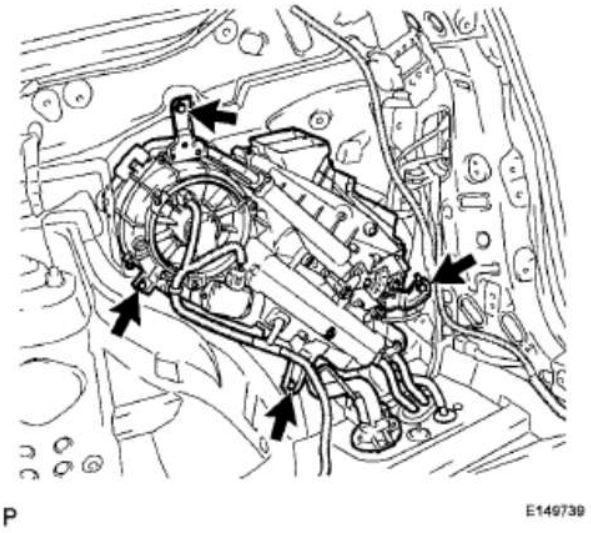


Fig. 346: Locating Rear Cooling Unit Assembly Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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DISASSEMBLY

1. **REMOVE DRAIN COOLER HOSE**
   a. Remove the drain cooler hose.

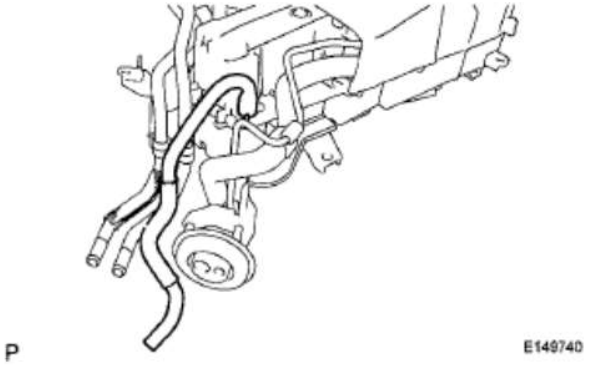


Fig. 347: Identifying Drain Cooler Hose
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **REMOVE REAR AIR MIX CONTROL SERVO MOTOR SUB-ASSEMBLY**
   a. Disconnect the connector.
   b. Remove the 2 screws and rear air mix control servo motor sub-assembly.

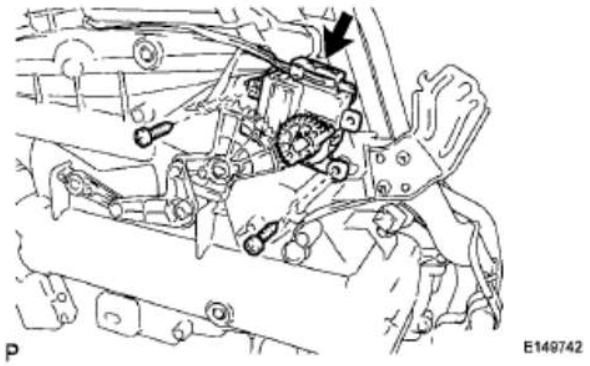


Fig. 348: Identifying Rear Air Mix Control Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **REMOVE REAR AIR OUTLET CONTROL SERVO MOTOR SUB-ASSEMBLY**
   a. Disconnect the connector.
   b. Remove the 2 screws and rear air outlet control servo motor sub-assembly.

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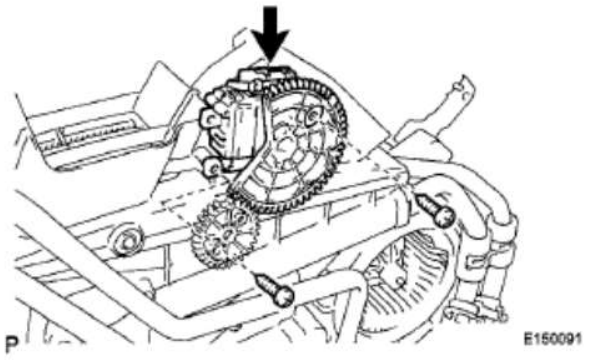


Fig. 349: Identifying Rear Air Outlet Control Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **REMOVE REAR AIR CONDITIONING TUBE AND ACCESSORY ASSEMBLY**
   a. Remove the packing.

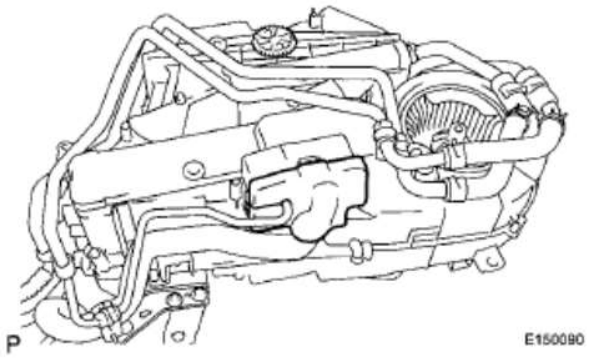
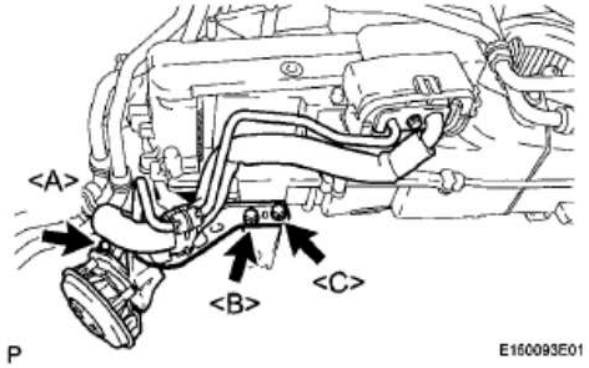


Fig. 350: Identifying Packing
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Remove the screw <C>.
   c. Remove the screw <B>.
   d. Remove the bolt <A>.



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Fig. 351: Locating Bolt And Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

e. Remove the bolt and slide the hook connector.
f. Remove the rear air conditioning tube and accessory assembly.

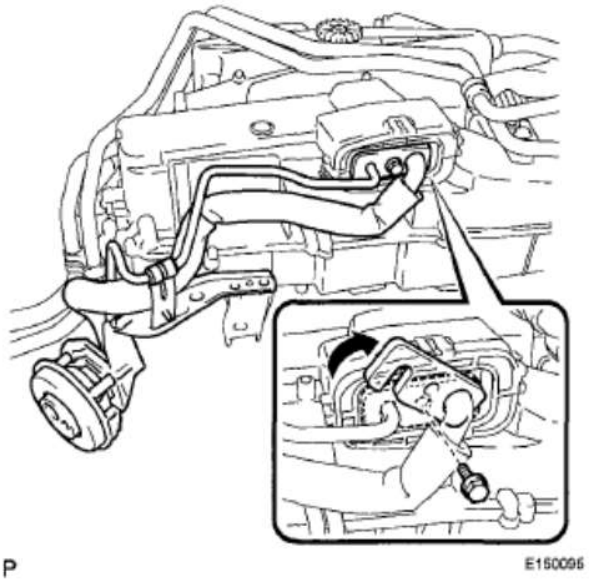


Fig. 352: Identifying Bolt And Hook Connector
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

g. Remove the 2 O-rings from the rear air conditioning tube and accessory assembly.

5. **REMOVE HEATER WATER PIPE AND HOSE SUB-ASSEMBLY**
   a. Using pliers, grip the claws of the 2 clips and slide the clips to disconnect the heater water hose.

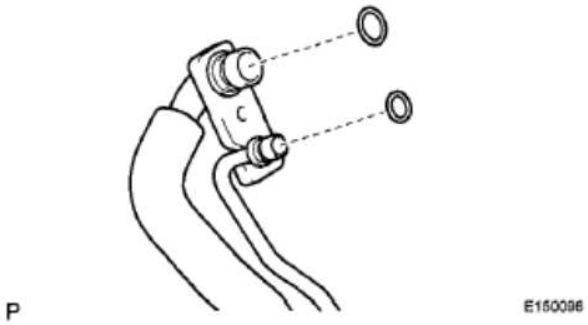


Fig. 353: Identifying Rear Air Conditioning Tube And Accessory Assembly O-Rings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Remove the 2 screws and the heater water pipe and hose sub-assembly.

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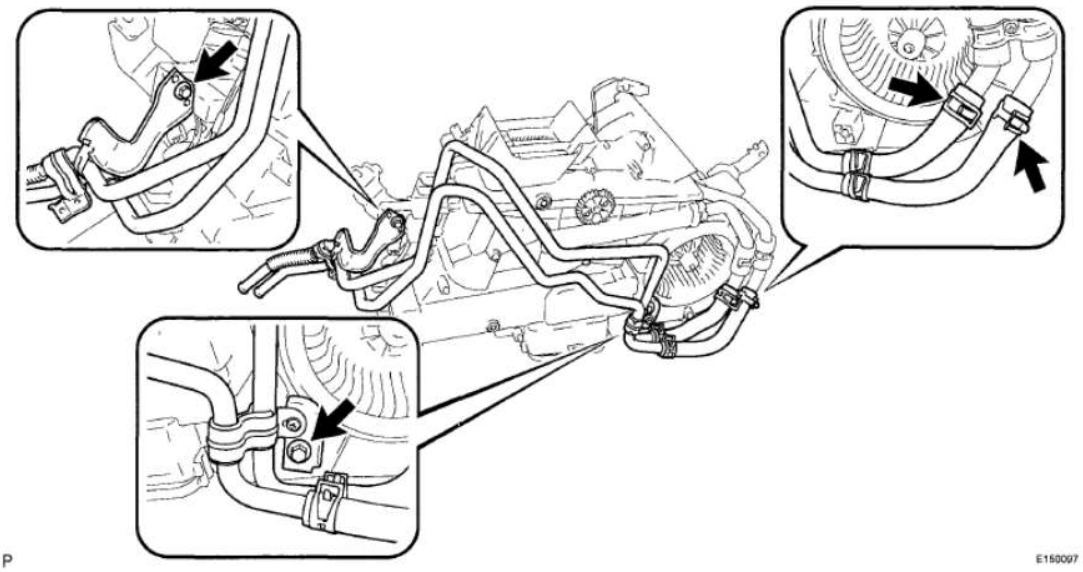


Fig. 354: Locating Heater Water Pipe And Hose Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. **REMOVE HEATER RADIATOR UNIT SUB-ASSEMBLY**
   a. Remove the screw and the heater clamp.

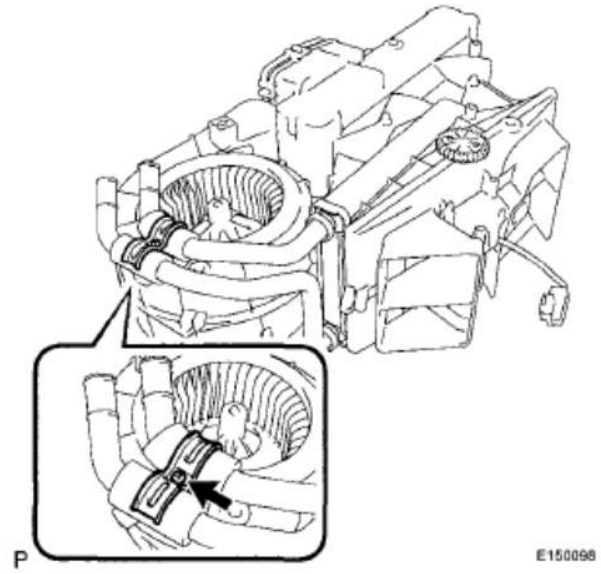


Fig. 355: Locating Heater Clamp Screw
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Remove the heater radiator unit sub-assembly from the rear cooling unit as shown in the illustration.

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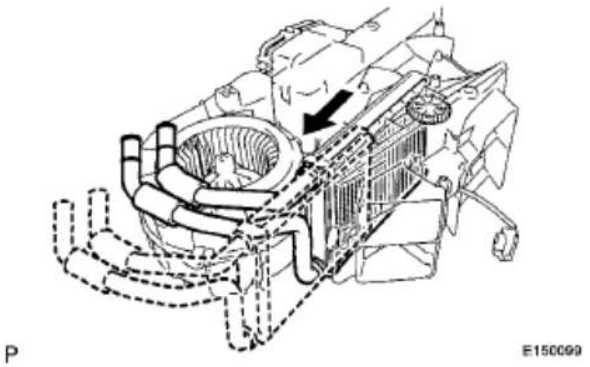


Fig. 356: Identifying Heater Radiator Unit Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. **REMOVE REAR BLOWER MOTOR SUB-ASSEMBLY**
   a. Remove the 3 screws and the rear blower motor sub-assembly.

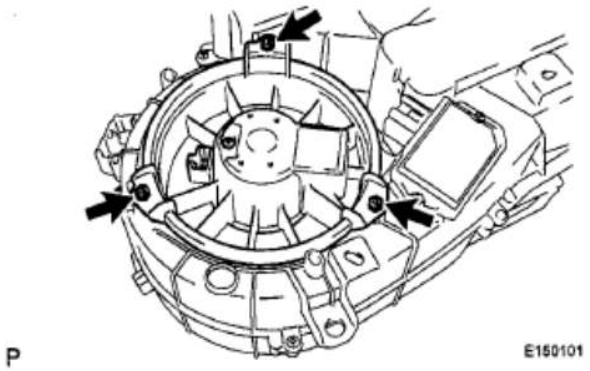
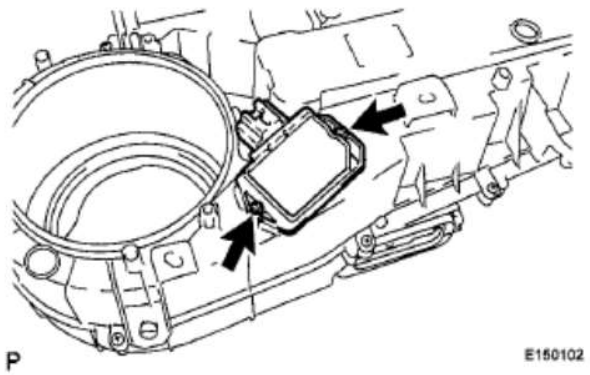


Fig. 357: Locating Rear Blower Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. **REMOVE BLOWER MOTOR CONTROLLER**
   a. Remove the 2 screws and the blower motor controller.



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Fig. 358: Locating Blower Motor Controller Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. **REMOVE REAR COOLING UNIT EXPANSION VALVE**
   a. Disengage the 3 claws and remove the plate.

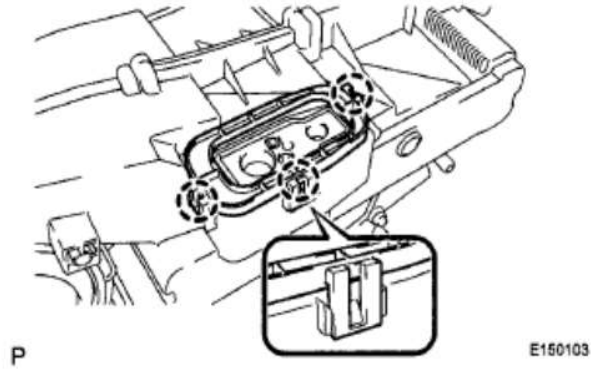


Fig. 359: Identifying Plate Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Remove the grommet.

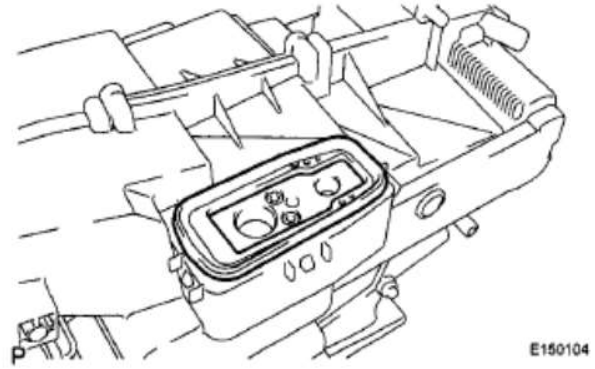


Fig. 360: Identifying Grommet
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   c. Using a 4 mm hexagon wrench, remove the 2 hexagon bolts and rear cooling unit expansion valve.

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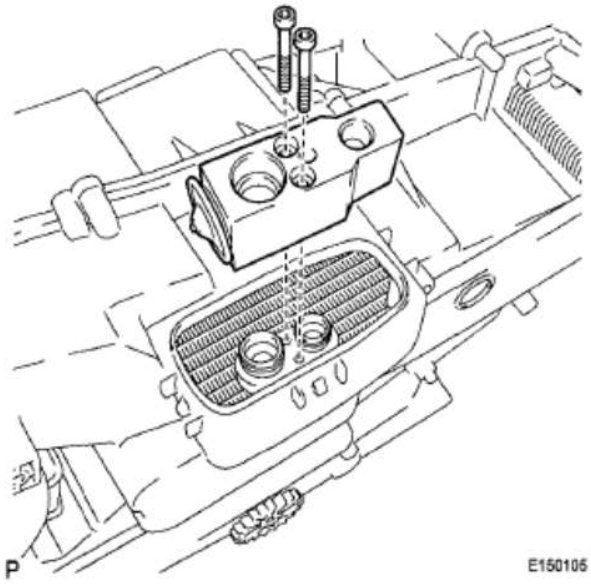


Fig. 361: Identifying Rear Cooling Unit Expansion Valve Hexagon Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

10. **REMOVE REAR EVAPORATOR SUB-ASSEMBLY**
    a. Remove the 12 screws.

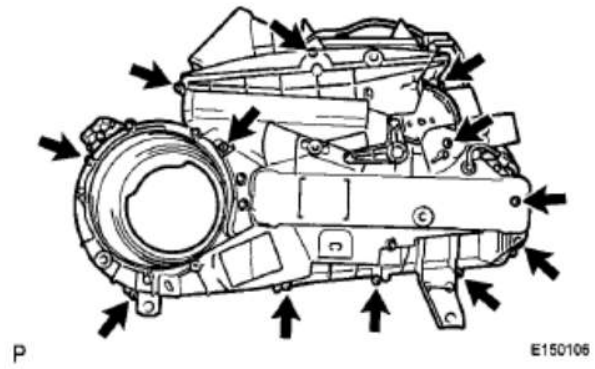


Fig. 362: Locating Rear Evaporator Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

    b. Remove the rear evaporator sub-assembly as shown in the illustration.

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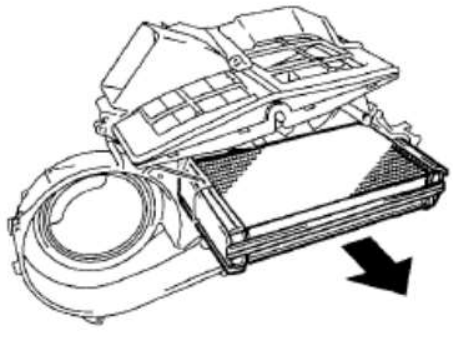


Fig. 363: Identifying Rear Evaporator Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Remove the 2 O-rings from the rear evaporator sub-assembly.

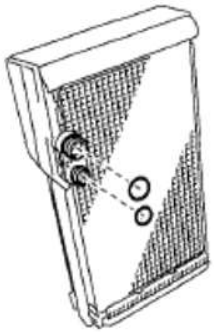


Fig. 364: Identifying Rear Evaporator Sub-Assembly O-Rings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

11. **REMOVE REAR EVAPORATOR TEMPERATURE SENSOR**
    a. Disengage the clamp.
    b. Disengage the claw and the rear evaporator temperature sensor.

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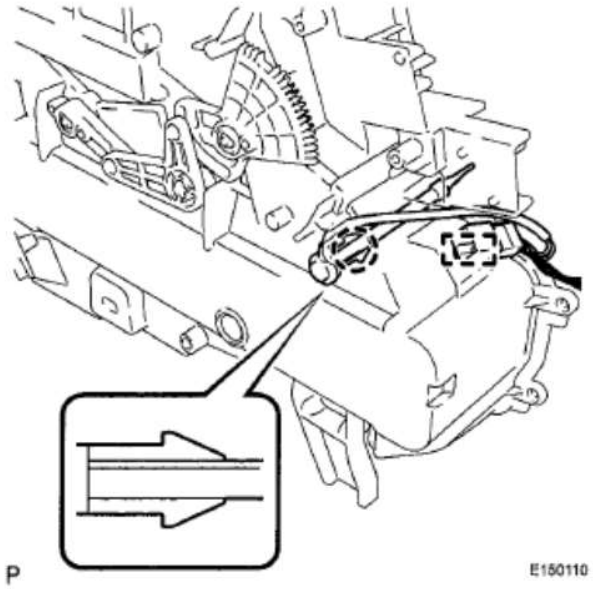


Fig. 365: Identifying Rear Evaporator Temperature Sensor Claw And Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REASSEMBLY

1. **INSTALL REAR EVAPORATOR TEMPERATURE SENSOR**
   a. Engage the claw and install the rear evaporator temperature sensor.
   b. Engage the clamp to the rear cooling unit.

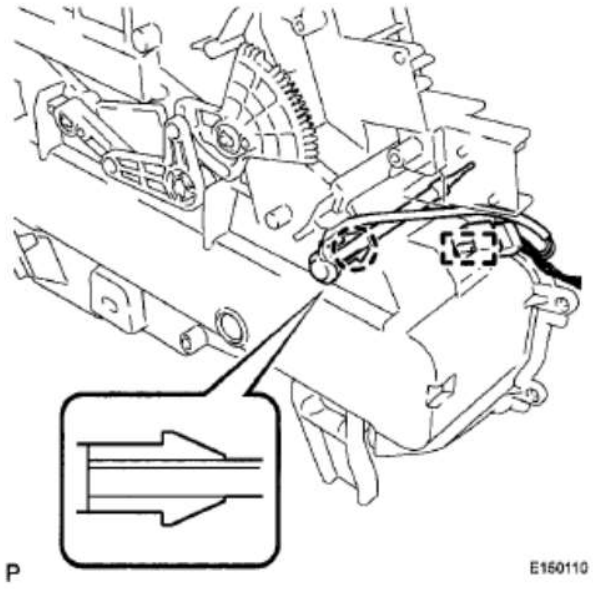


Fig. 366: Identifying Rear Evaporator Temperature Sensor Claw And Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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2. **INSTALL REAR EVAPORATOR SUB-ASSEMBLY**

a. Sufficiently apply compressor oil to 2 new O-rings and the fitting surfaces. Install the 2 O-rings to the rear evaporator sub-assembly.

Compressor oil:

ND-OIL 8 or equivalent

NOTE: Keep the O-rings and O-ring fitting surfaces clean from dirt or any foreign objects.

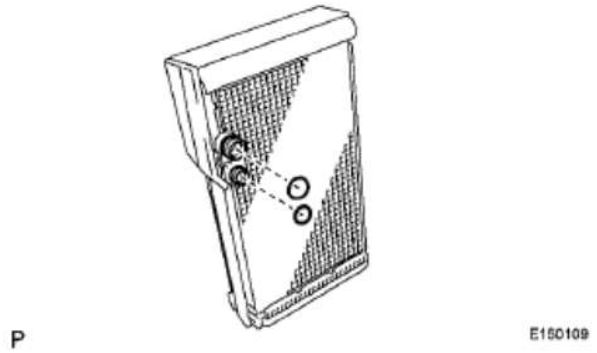


Fig. 367: Identifying Rear Evaporator Sub-Assembly O-Rings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Install the rear evaporator sub-assembly as shown in the illustration.

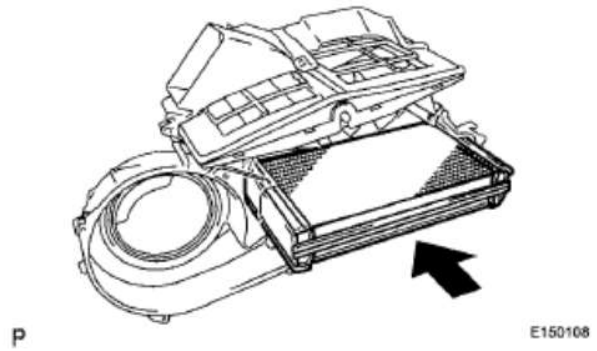


Fig. 368: Identifying Rear Evaporator Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Install the 12 screws.

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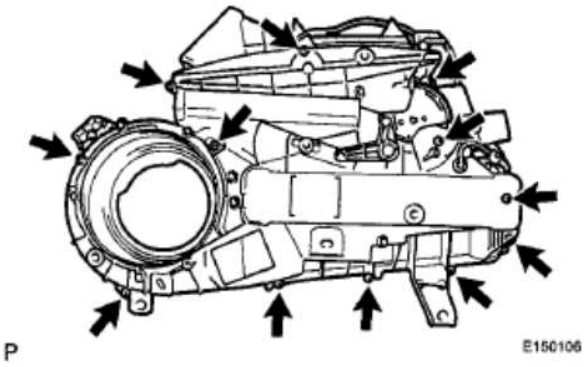


Fig. 369: Locating Rear Evaporator Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **INSTALL REAR COOLING UNIT EXPANSION VALVE**
   a. Using a 4 mm hexagon wrench, install the rear cooling unit expansion valve with the 2 hexagon bolts.

      Torque: 3.5 N*m (36 kgf*cm, 31 in.*lbf)

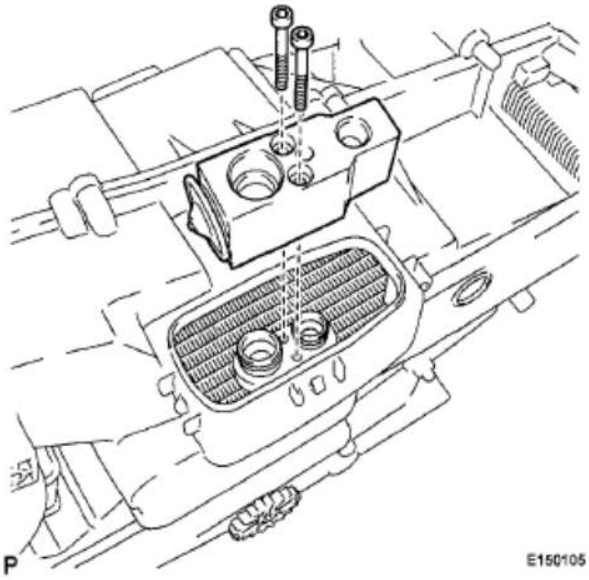


Fig. 370: Identifying Rear Cooling Unit Expansion Valve Hexagon Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Install the grommet.

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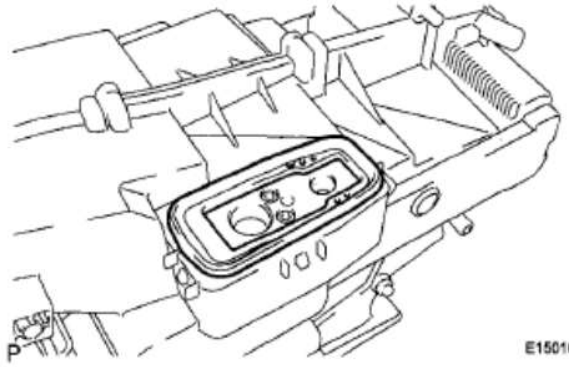


Fig. 371: Identifying Grommet
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Engage the 3 claws and install the plate.

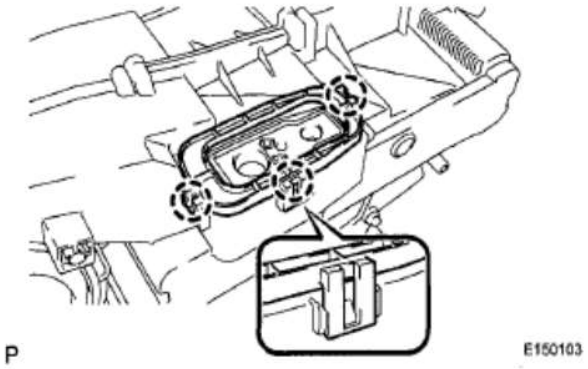


Fig. 372: Identifying Plate Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **INSTALL BLOWER MOTOR CONTROLLER**
   a. Install the blower motor controller with the 2 screws.

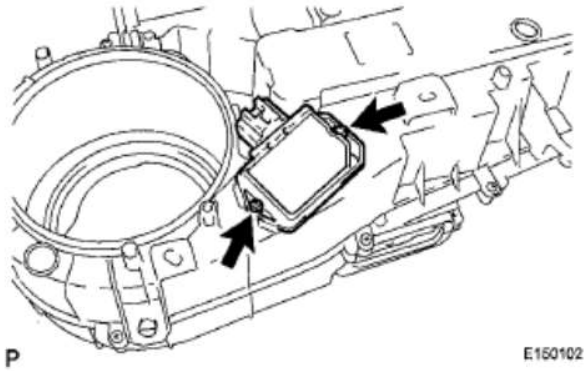


Fig. 373: Locating Blower Motor Controller Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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5. **INSTALL REAR BLOWER MOTOR SUB-ASSEMBLY**
   a. Install the rear blower motor sub-assembly with the 3 screws.

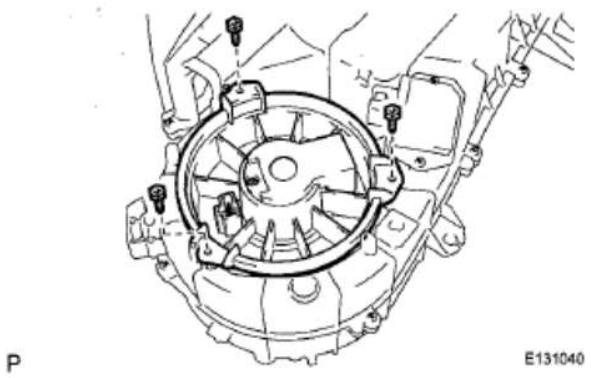


Fig. 374: Identifying Rear Blower Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. **INSTALL HEATER RADIATOR UNIT SUB-ASSEMBLY**
   a. Install the heater radiator unit sub-assembly as shown in the illustration.

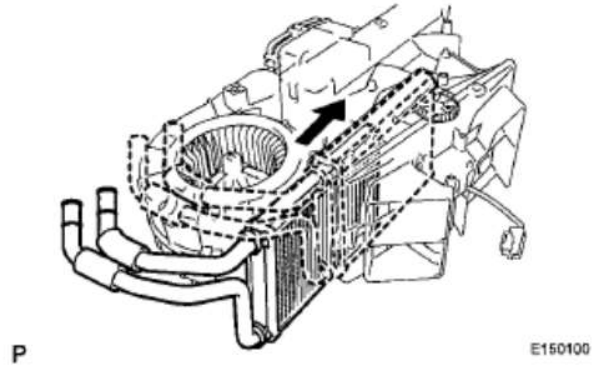


Fig. 375: Identifying Heater Radiator Unit Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Install the clamp with the screw.
7. **INSTALL HEATER WATER PIPE AND HOSE SUB-ASSEMBLY**
   a. Install the screw <A>.

      Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

   b. Install the heater water pipe and hose sub-assembly with the screw <B>.

      Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

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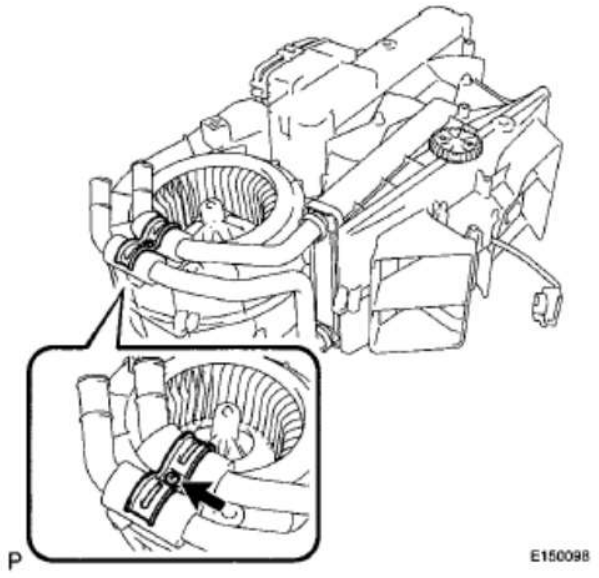


Fig. 376: Locating Clamp With Screw
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Using pliers, grip the claws of the 2 clips and slide the clips to connect the heater water hose.

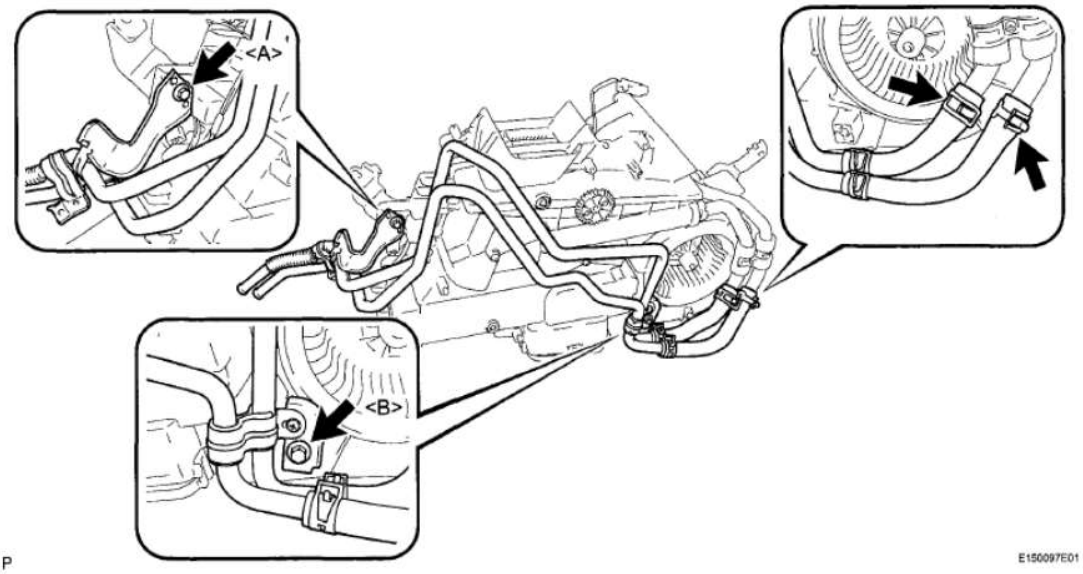


Fig. 377: Locating Heater Water Hose Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. **INSTALL REAR AIR CONDITIONING TUBE AND ACCESSORY ASSEMBLY**

a. Sufficiently apply compressor oil to 2 new O-rings and the fitting surfaces of the rear air conditioning tube and accessory assembly.

Compressor oil:

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ND-OIL 8 or equivalent

b. Install the 2 new O-rings on the rear air conditioning tube and accessory assembly.

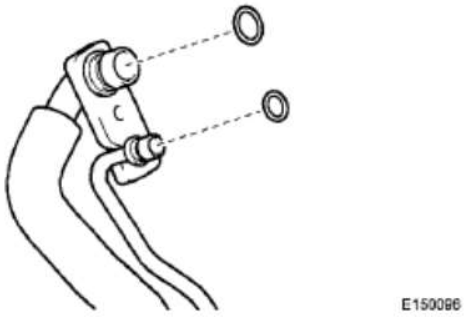


Fig. 378: Identifying O-Rings Of Rear Air Conditioning Tube And Accessory Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Move the hook connector in the direction indicated by the arrow in the illustration.
d. Insert the pipe joint into the fitting hole securely and tighten the bolt.

Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

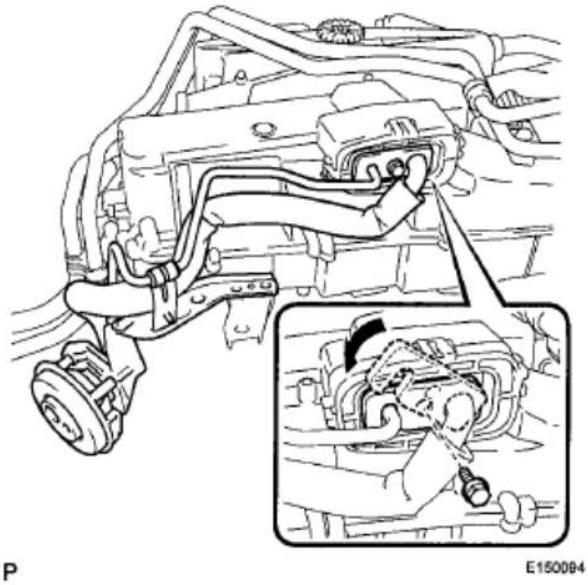


Fig. 379: Identifying Pipe Joint And Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

e. Install the bolt <A>.

Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

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f. Install the screw <B>.

Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

g. Install the rear air conditioning tube and accessory assembly with the screw <C>.

Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

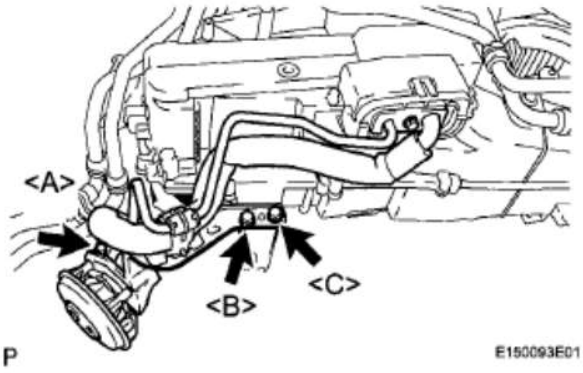


Fig. 380: Locating Rear Air Conditioning Tube And Accessory Assembly Screw
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

h. Install the packing.

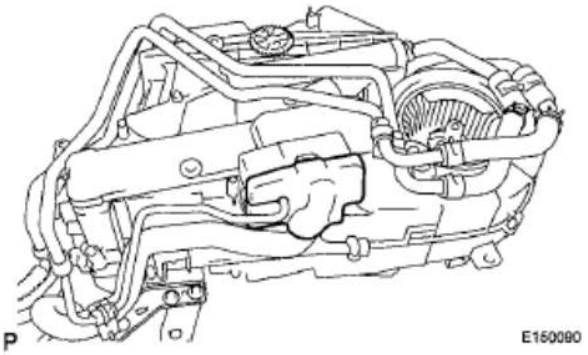


Fig. 381: Identifying Packing
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. **INSTALL REAR AIR OUTLET CONTROL SERVO MOTOR SUB-ASSEMBLY**
   a. Using the reference point, install the rear air outlet control servo motor sub-assembly with the 2 screws.
   b. Connect the connector.

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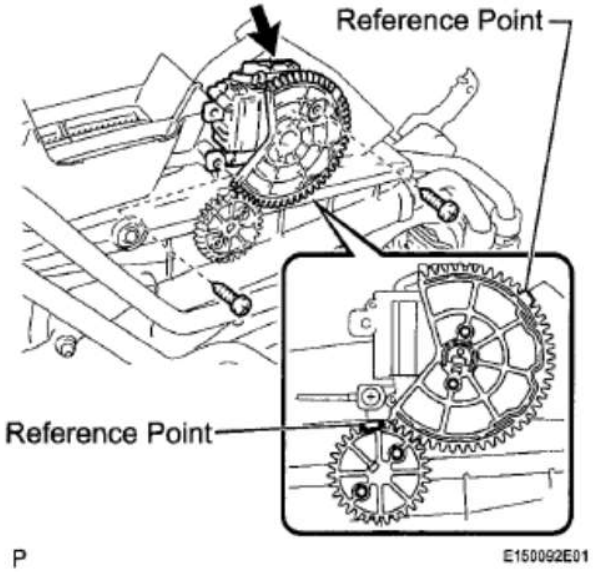


Fig. 382: Identifying Reference Point, Rear Air Outlet Control Servo Motor Sub-Assembly And Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

10. **INSTALL REAR AIR MIX CONTROL SERVO MOTOR SUB-ASSEMBLY**
    a. Using the reference point, install the rear air mix control servo motor sub-assembly with the 2 screws.
    b. Connect the connector.

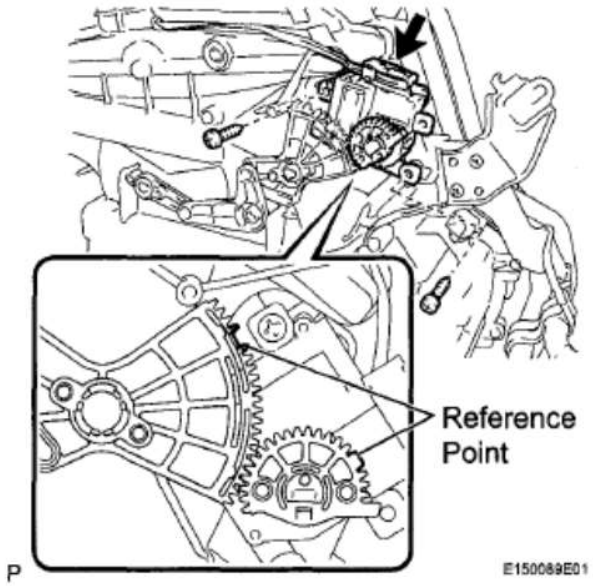


Fig. 383: Identifying Reference Point, Rear Air Mix Control Servo Motor Sub-Assembly And Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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11. **INSTALL DRAIN COOLER HOSE**
    a. Using the reference point, install the drain cooler hose.

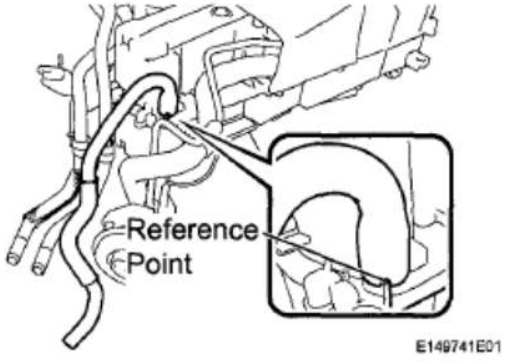


Fig. 384: Identifying Drain Cooler Hose Reference Point
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL REAR COOLING UNIT ASSEMBLY**
    a. Install the rear cooling unit assembly with the 4 bolts.

    Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

    HINT:

    Tighten the bolts in the order shown in the illustration.

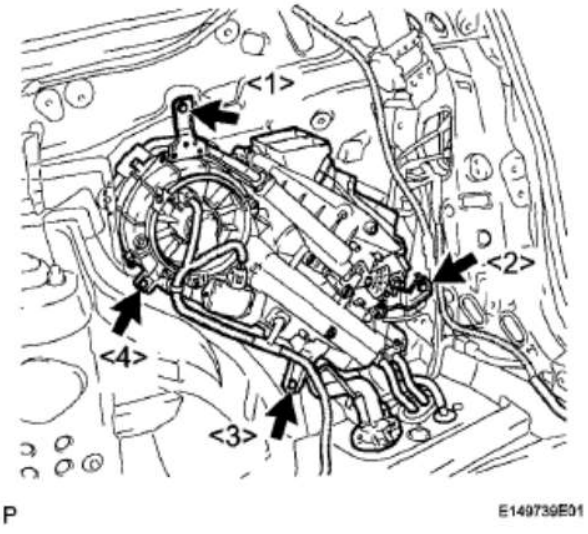


Fig. 385: Identifying Rear Cooling Unit Assembly Bolts Tighten Order
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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b. Connect each connector.

c. Engage each clamp.

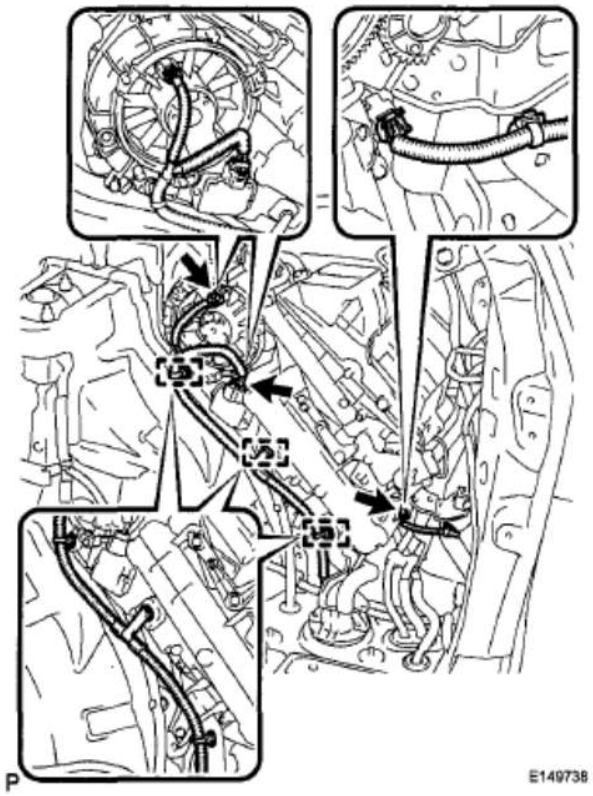


Fig. 386: Identifying Connector And Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **INSTALL REAR NO. 5 AIR DUCT**

a. Install the rear No. 5 air duct with the 2 clips.

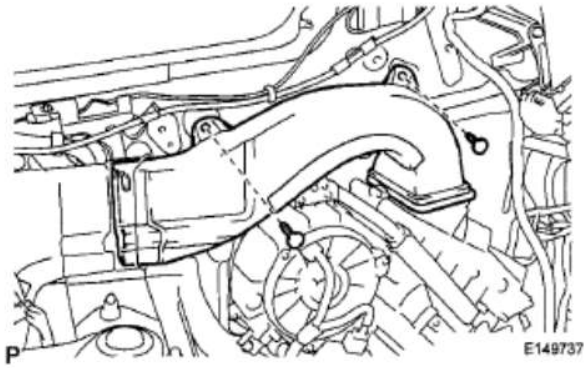


Fig. 387: Identifying Rear No. 5 Air Duct Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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3. **INSTALL NO. 1 COOLER AIR DUCT**
   a. Install the No. 1 cooler air duct as shown in the illustration.

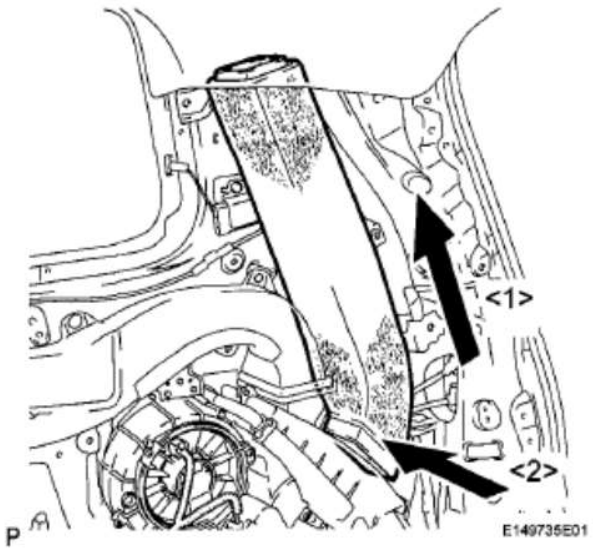


Fig. 388: Identifying No. 1 Cooler Air Duct
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **INSTALL COOLER PLATE**
   a. Engage the 2 claws and install the cooler plate.
5. **INSTALL ROOF SIDE INNER GARNISH ASSEMBLY RH** (See **INSTALLATION**)
6. **INSTALL DECK TRIM SIDE PANEL ASSEMBLY RH** (See **INSTALLATION**)
7. **INSTALL FRONT DECK SIDE TRIM COVER RH** (See **INSTALLATION**)

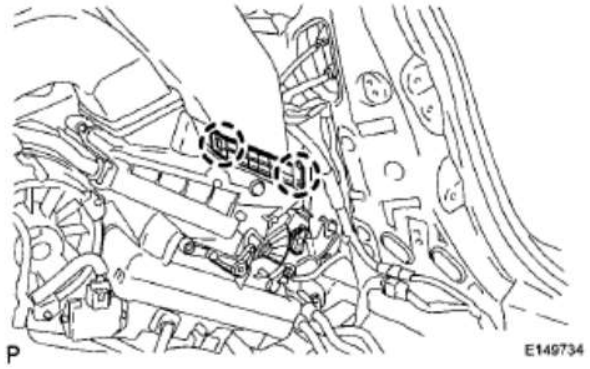


Fig. 389: Identifying Cooler Plate Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. **INSTALL NO. 1 LUGGAGE COMPARTMENT TRIM HOOK** (See **INSTALLATION**)
9. **INSTALL ROPE HOOK ASSEMBLY (for RH Side)** (See **INSTALLATION**)

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10. **INSTALL REAR COMBINATION LIGHT SERVICE COVER RH** (See **INSTALLATION**)
11. **INSTALL SIDE TRIM COVER RH (for Manual Air Conditioning System)** (See **INSTALLATION**)
12. **INSTALL REAR ROOM TEMPERATURE SENSOR (for Automatic Air Conditioning System)** (See **INSPECTION**)
13. **INSTALL DECK SIDE TRIM RH** (See **INSTALLATION**)
14. **INSTALL DECK SIDE TRIM COVER RH** (See **INSTALLATION**)
15. **INSTALL REAR SEAT SIDE GARNISH CAP** (See **INSTALLATION**)
16. **INSTALL REAR FLOOR FINISH PLATE** (See **INSTALLATION**)
17. **INSTALL REAR NO. 2 SEAT ASSEMBLY** (See **INSTALLATION**)
18. **CONNECT REAR SEAT LAP TYPE BELT ASSEMBLY LH** (See **INSTALLATION**)
19. **CONNECT REAR SEAT LAP TYPE BELT ASSEMBLY RH** (See **INSTALLATION**)
20. **INSTALL REAR NO. 2 SEAT INNER BELT ASSEMBLY** (See **INSTALLATION**)
21. **INSTALL REAR MAT** (See **INSTALLATION**)
22. **INSTALL DECK FLOOR BOARD ASSEMBLY** (See **INSTALLATION**)
23. **INSTALL DECK SIDE TRIM BOX LH** (See **INSTALLATION**)
24. **INSTALL REAR SEAT SIDE COVER LH** (See **INSTALLATION**)
25. **INSTALL DECK SIDE TRIM BOX RH** (See **INSTALLATION**)
26. **INSTALL JACK CARRIER ASSEMBLY** (See **INSTALLATION**)
27. **INSTALL JACK ASSEMBLY** (See **INSTALLATION**)
28. **INSTALL JACK CARRIER CUSHION** (See **INSTALLATION**)
29. **INSTALL JACK CARRIER SUPPORT**
30. **INSTALL REAR SEAT SIDE COVER RH** (See **INSTALLATION**)
31. **INSTALL TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)** (See **INSTALLATION**)
32. **INSTALL NO. 2 DECK BOARD SUB-ASSEMBLY** (See **INSTALLATION**)
33. **INSTALL NO. 3 DECK BOARD SUB-ASSEMBLY** (See **INSTALLATION**)
34. **INSTALL DECK BOARD ASSEMBLY** (See **INSTALLATION**)
35. **INSTALL REAR DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
36. **INSTALL REAR DOOR SCUFF PLATE RH** (See **INSTALLATION**)
37. **CONNECT COOLER REFRIGERANT LIQUID PIPE C**
    a. Remove the attached vinyl tape from the tube.
    b. Sufficiently apply compressor oil to a new O-ring and the fitting surface of the cooler refrigerant liquid pipe C.

       Compressor oil:

       ND-OIL 8 or equivalent

    c. Install the O-ring on the cooler refrigerant liquid pipe C.

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d. Install the cooler refrigerant liquid pipe C.

38. **CONNECT COOLER REFRIGERANT SUCTION HOSE**

a. Remove the attached vinyl tape from the hose.

b. Sufficiently apply compressor oil to a new O-ring and the fitting surface of the cooler refrigerant suction hose.

Compressor oil:

ND-OIL 8 or equivalent

c. Install the O-ring on the cooler refrigerant suction hose.

d. Move the hook connector in the direction indicated by the arrow in the illustration.

e. Insert the pipe joint into the fitting hole securely and tighten the bolt.

Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

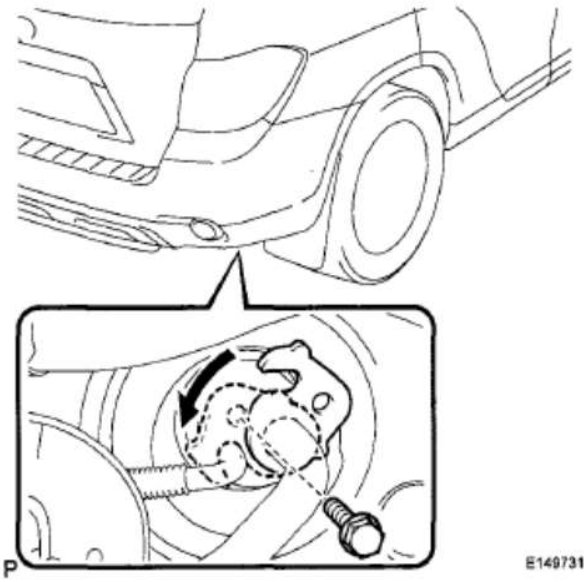


Fig. 390: Identifying Pipe Joint And Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

39. **CONNECT REAR HEATER INLET WATER HOSE**

a. Install the water hose and attach the clip.

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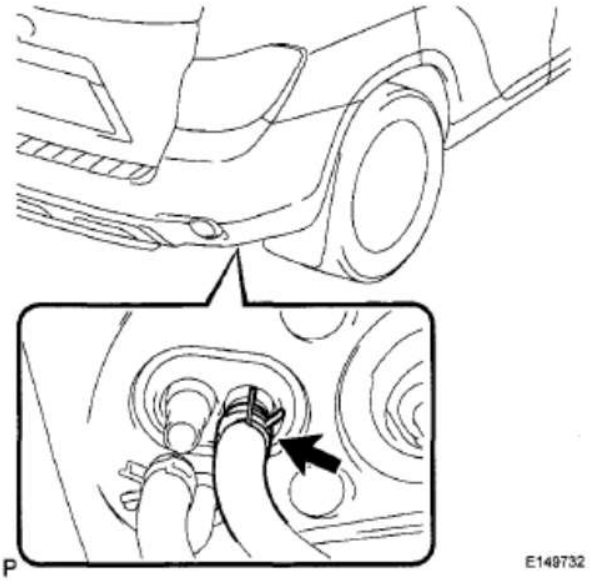


Fig. 391: Locating Water Hose Clip
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

40. **CONNECT REAR HEATER OUTLET WATER HOSE**
    a. Install the water hose and attach the clip.
41. **CHARGE WITH REFRIGERANT** (See **REFRIGERANT LINE**)
42. **ADD ENGINE COOLANT (for 1AR-FE)** (See **COOLANT**)
43. **ADD ENGINE COOLANT (for 2GR-FE)** (See **REPLACEMENT**)
44. **INSPECT FOR COOLANT LEAK (for 1AR-FE)** (See **COOLING SYSTEM**)
45. **INSPECT FOR COOLANT LEAK (for 2GR-FE)** (See **COOLING SYSTEM**)
46. **WARM UP ENGINE** (See **REFRIGERANT LINE**)
47. **INSPECT FOR REFRIGERANT LEAK** (See **REFRIGERANT LINE**)

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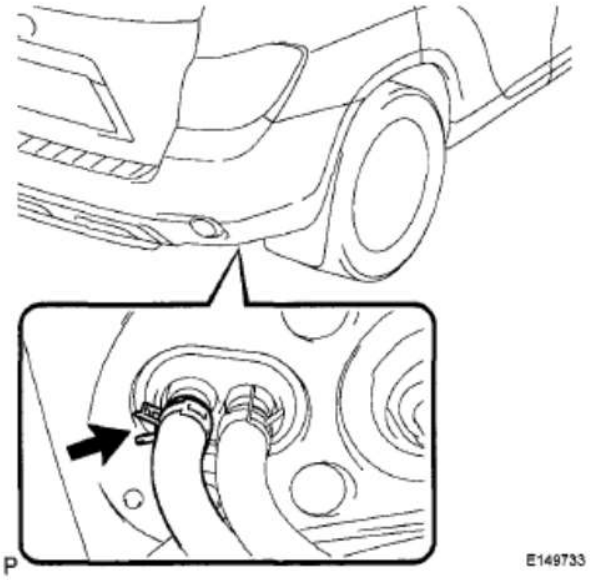


Fig. 392: Locating Water Hose Clip
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

BLOWER UNIT

COMPONENTS

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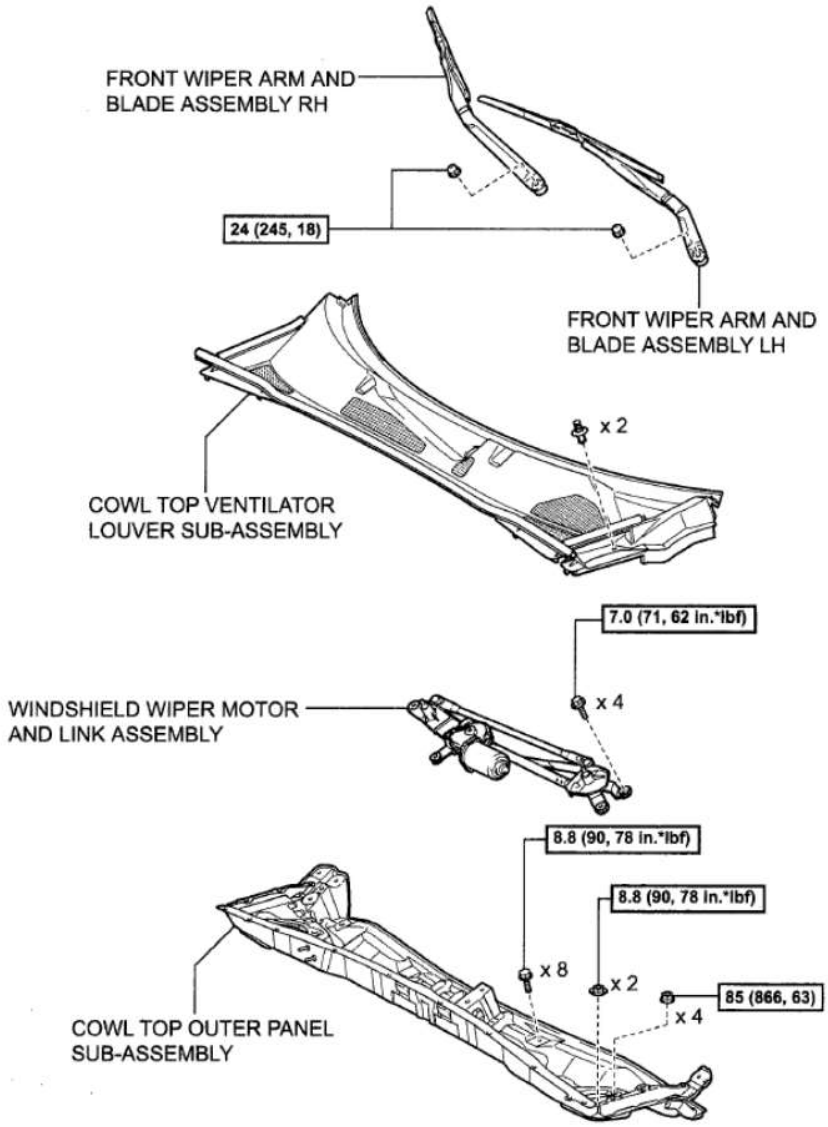


Fig. 393: Identifying Blower Unit Components (1 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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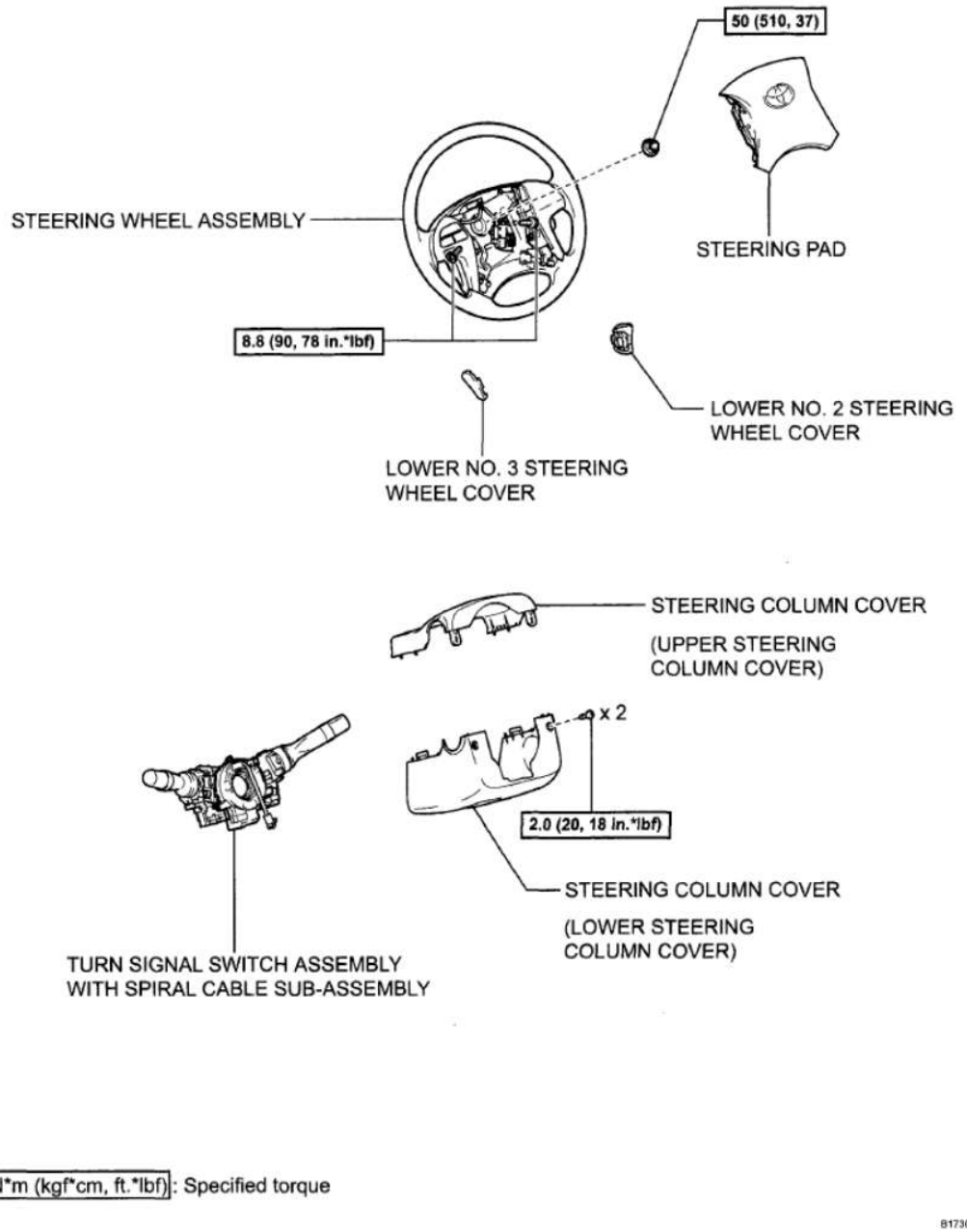


Fig. 394: Identifying Blower Unit Components (2 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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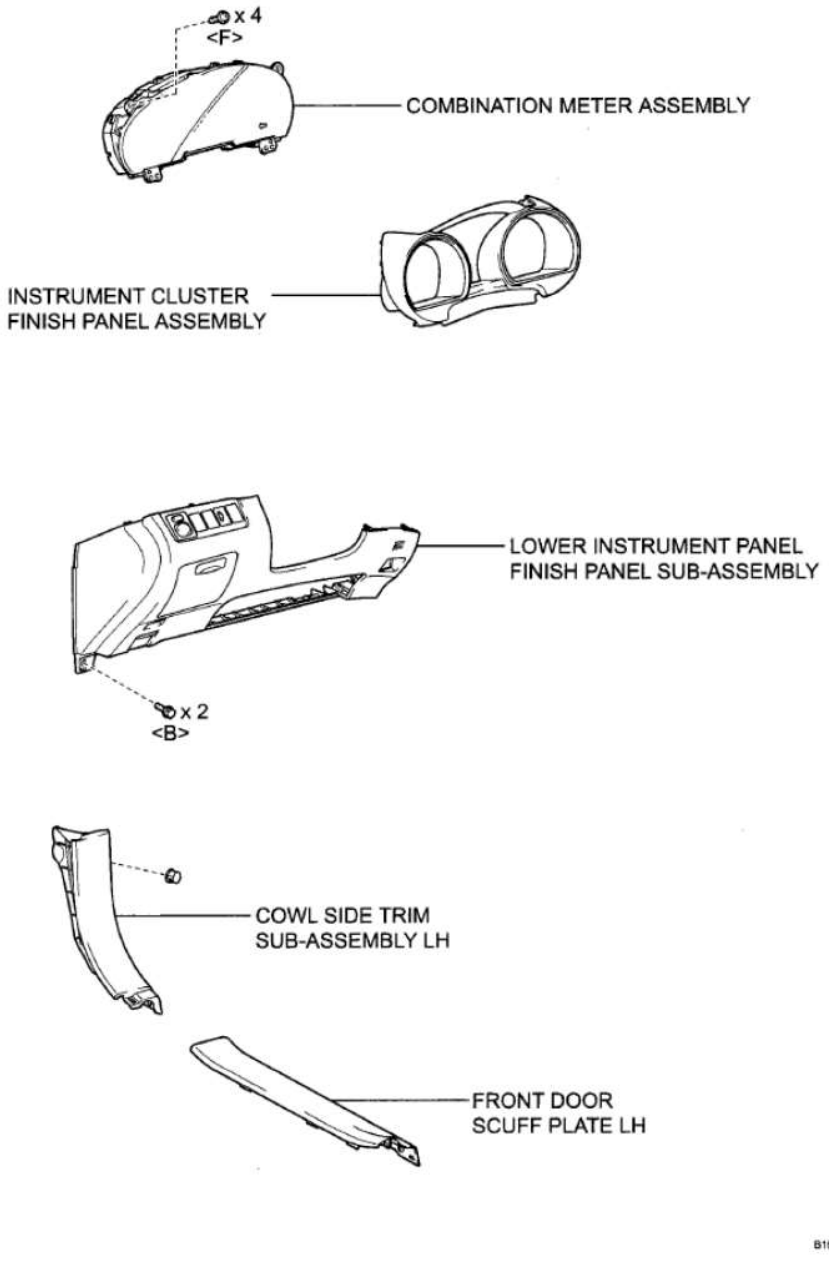


Fig. 395: Identifying Blower Unit Components (3 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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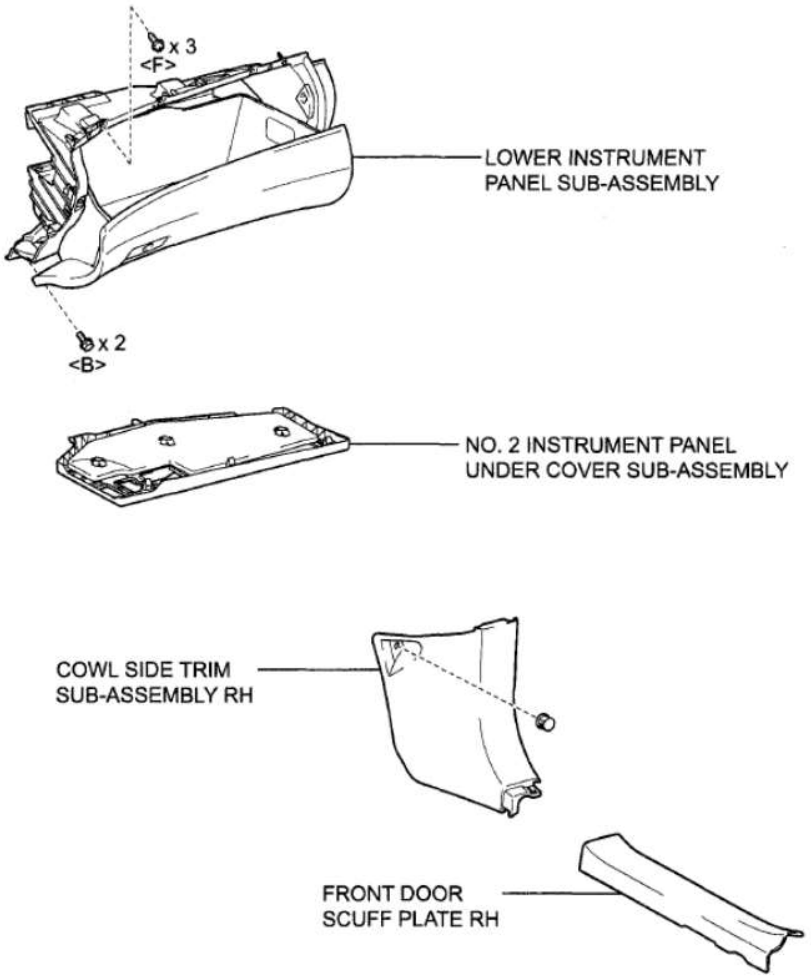


Fig. 396: Identifying Blower Unit Components (4 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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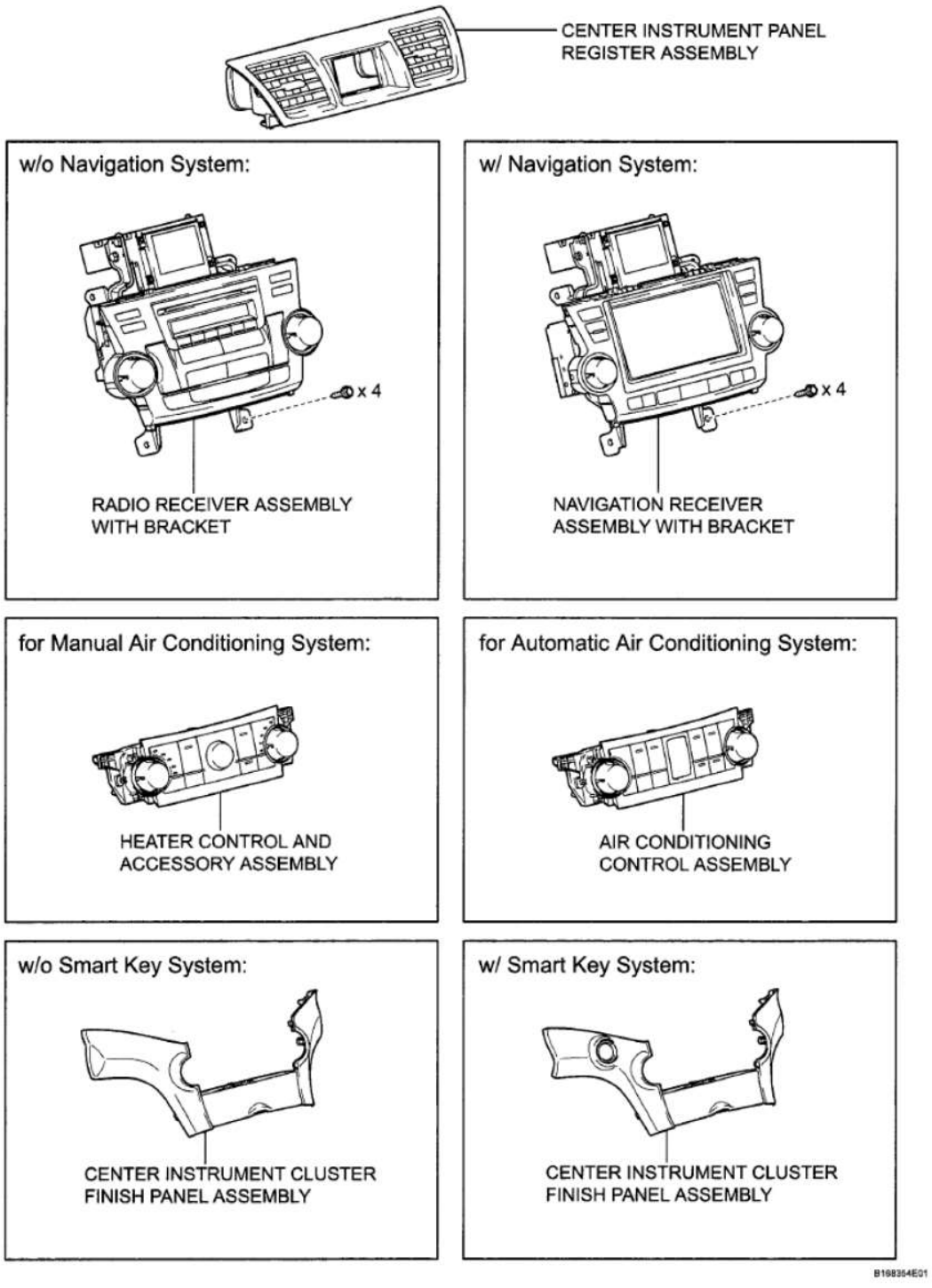


Fig. 397: Identifying Blower Unit Components (5 Of 15)
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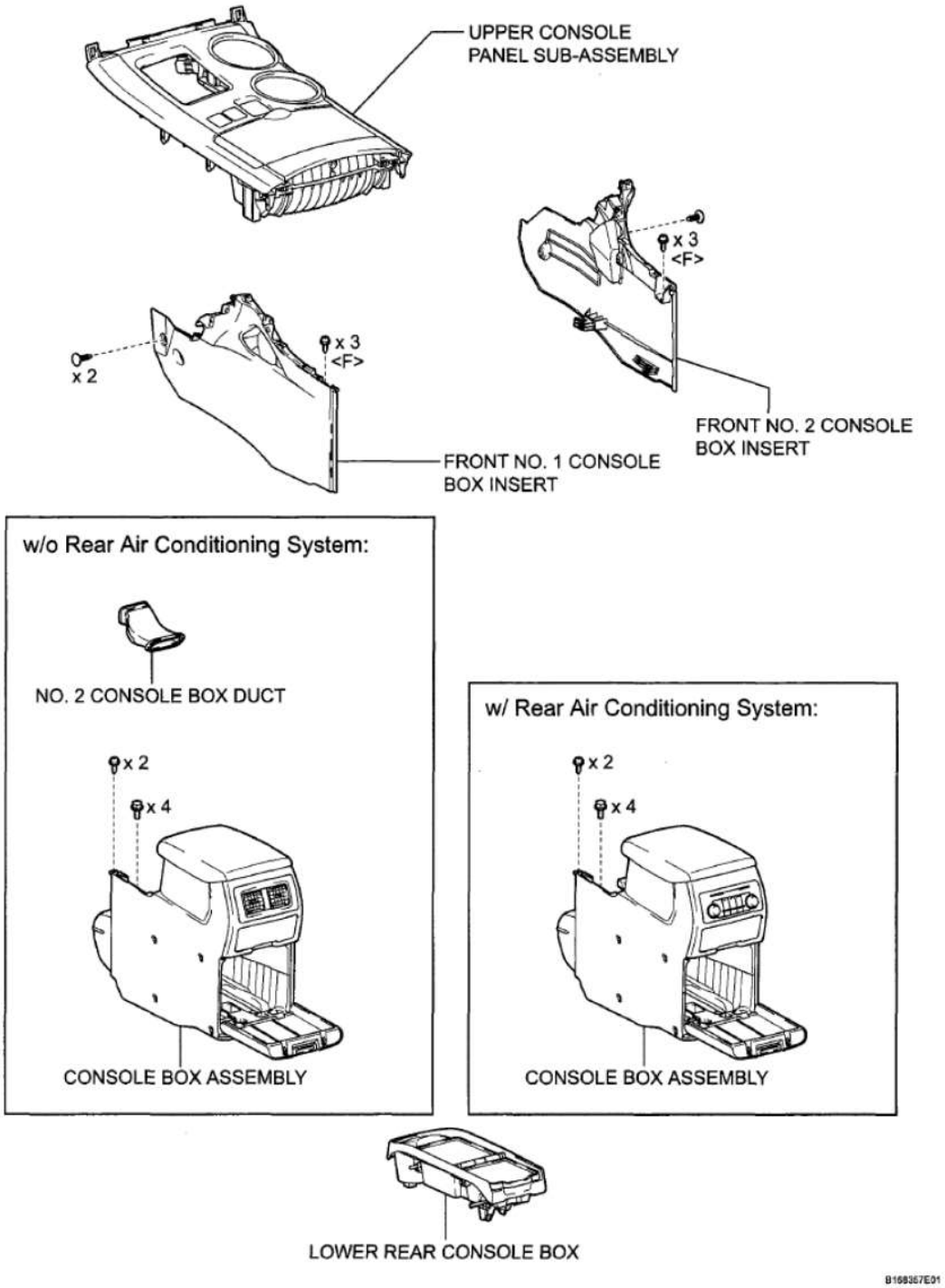


Fig. 398: Identifying Blower Unit Components (6 Of 15)
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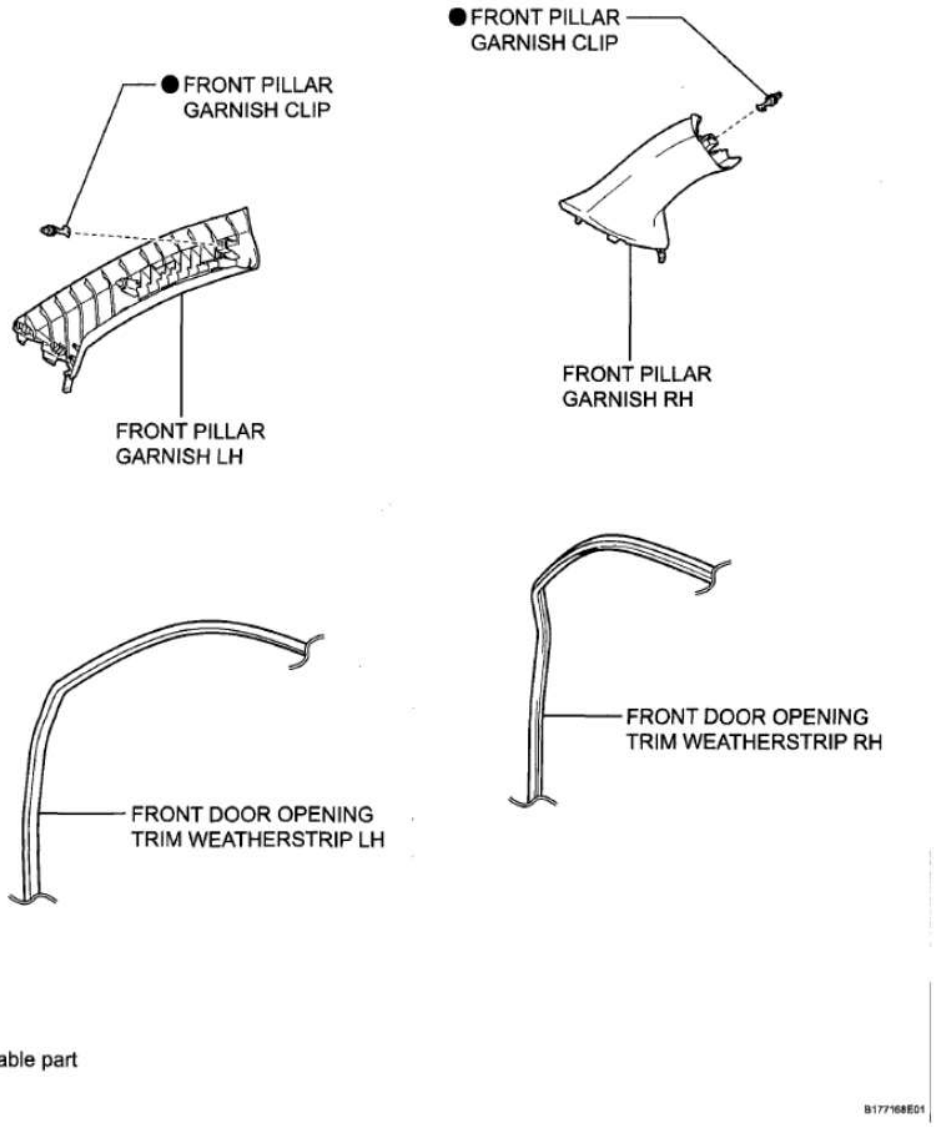


Fig. 399: Identifying Blower Unit Components (7 Of 15)
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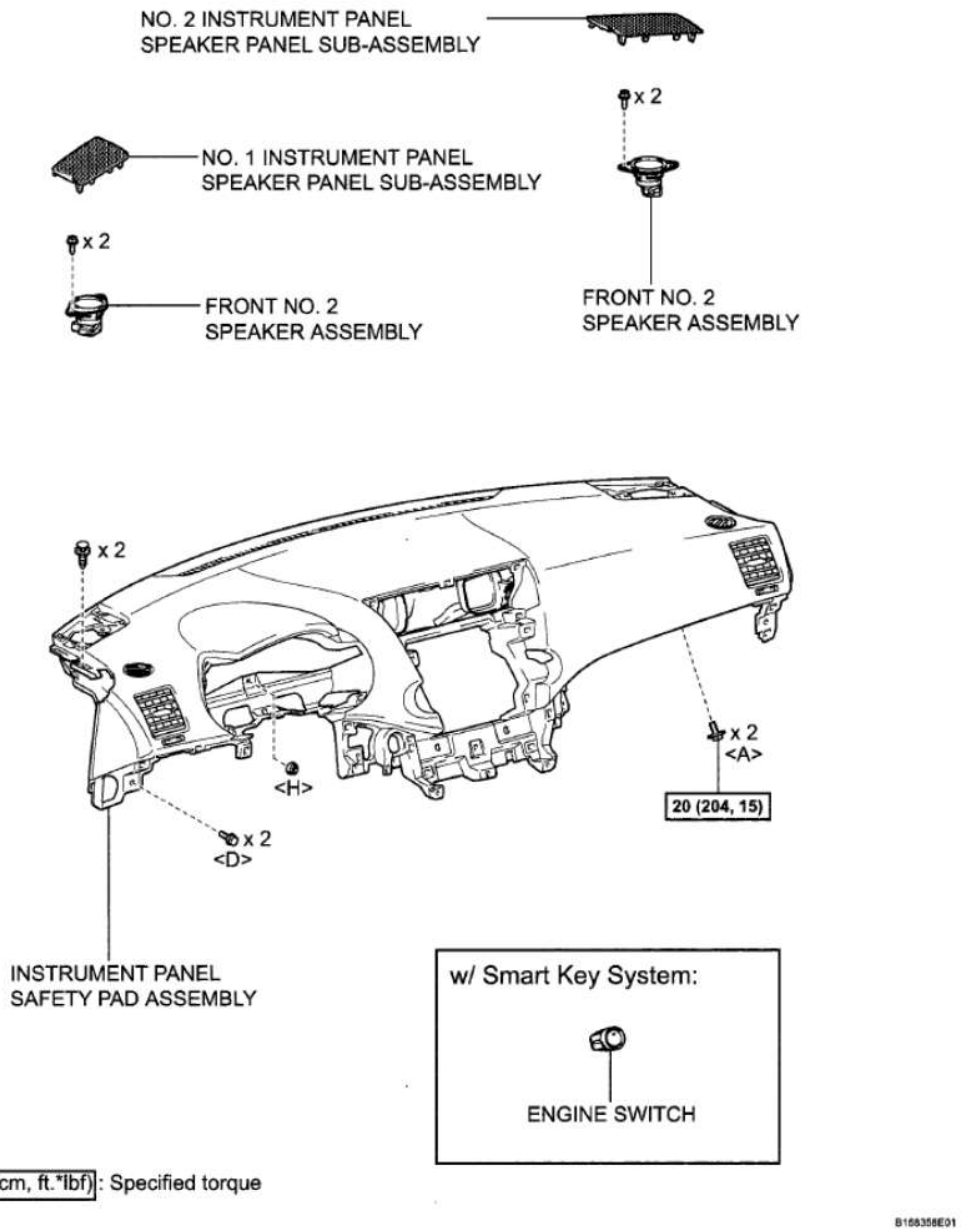


Fig. 400: Identifying Blower Unit Components (8 Of 15)
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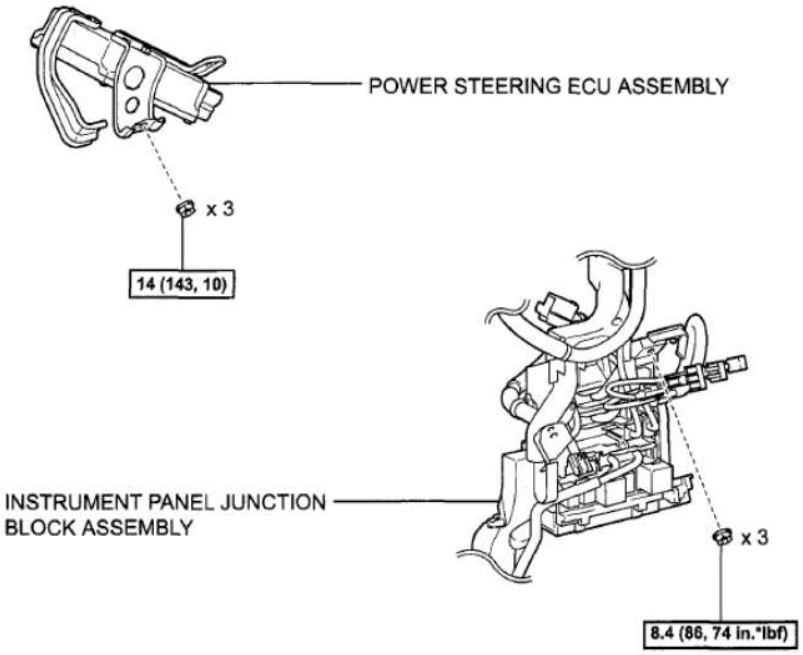


Fig. 401: Identifying Blower Unit Components (9 Of 15)
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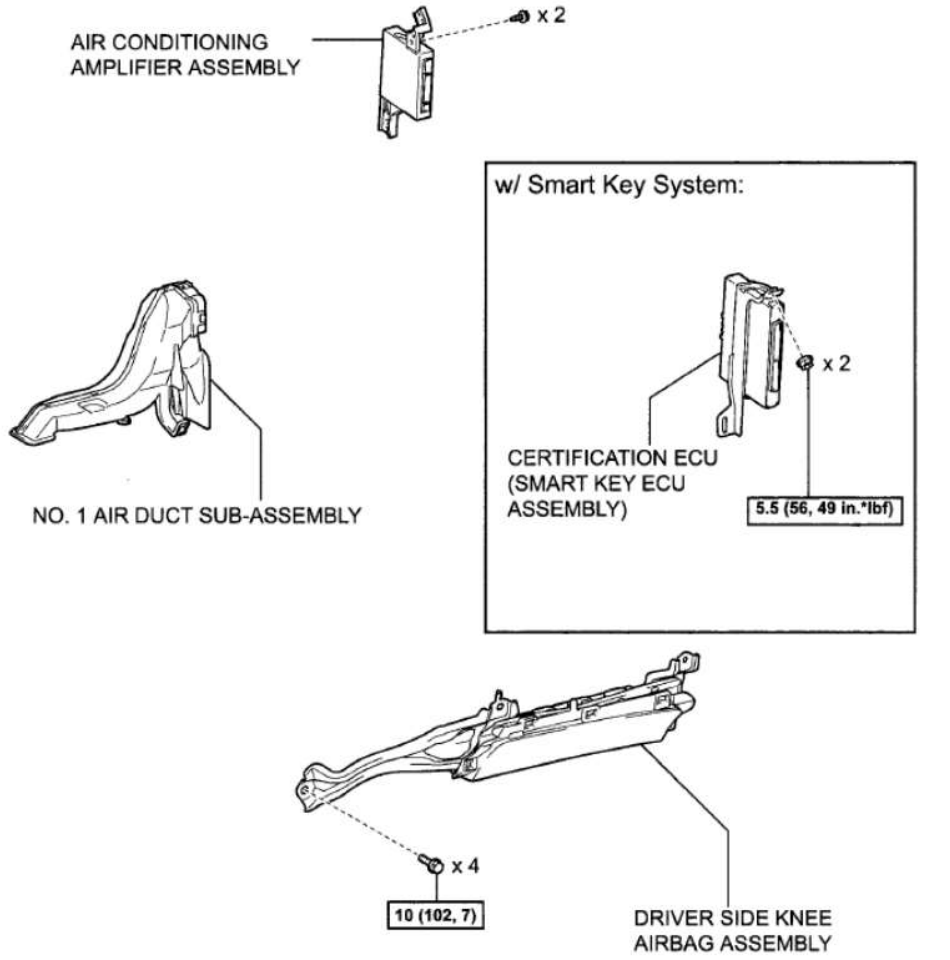


Fig. 402: Identifying Blower Unit Components (10 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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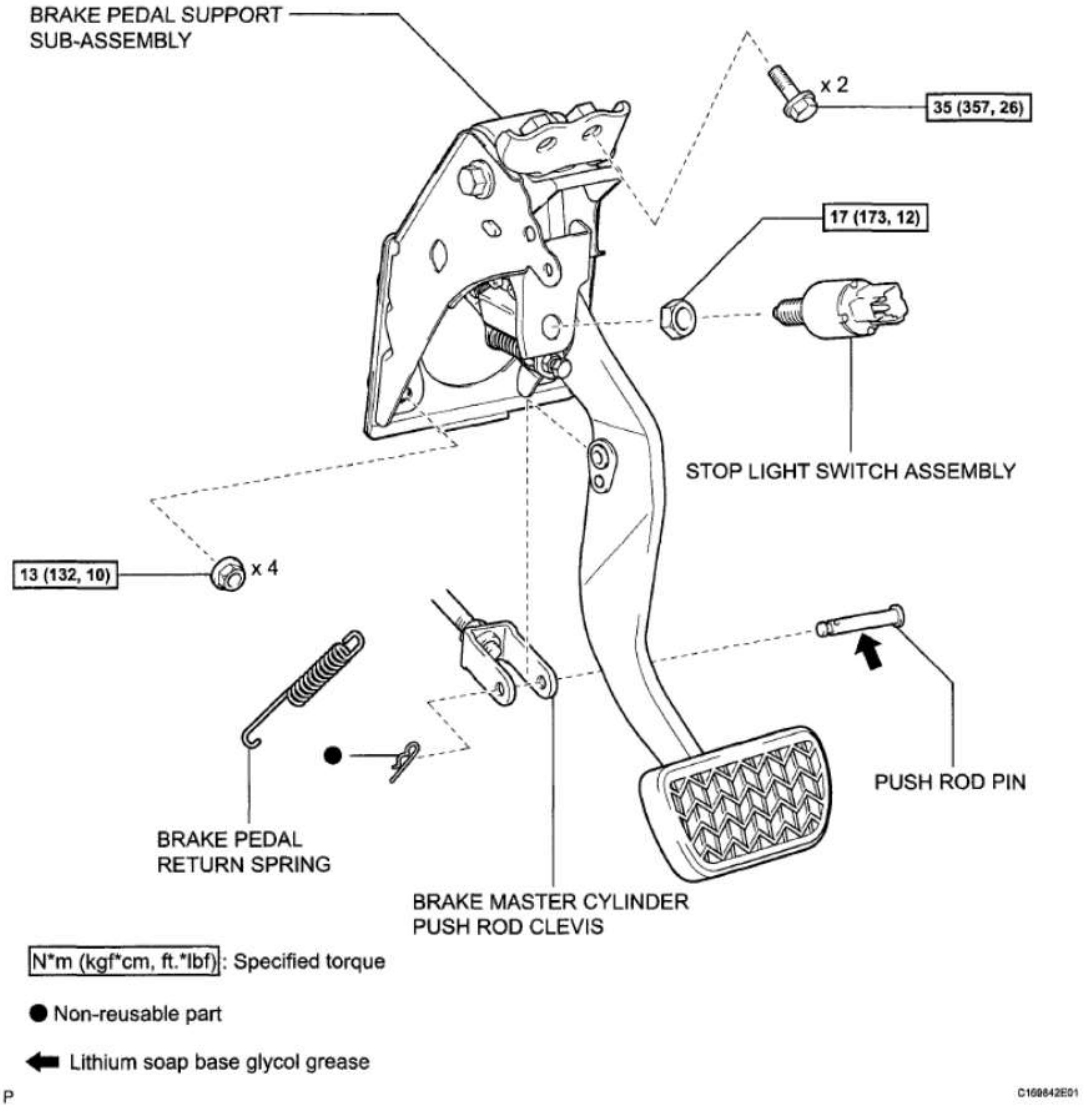


Fig. 403: Identifying Blower Unit Components (11 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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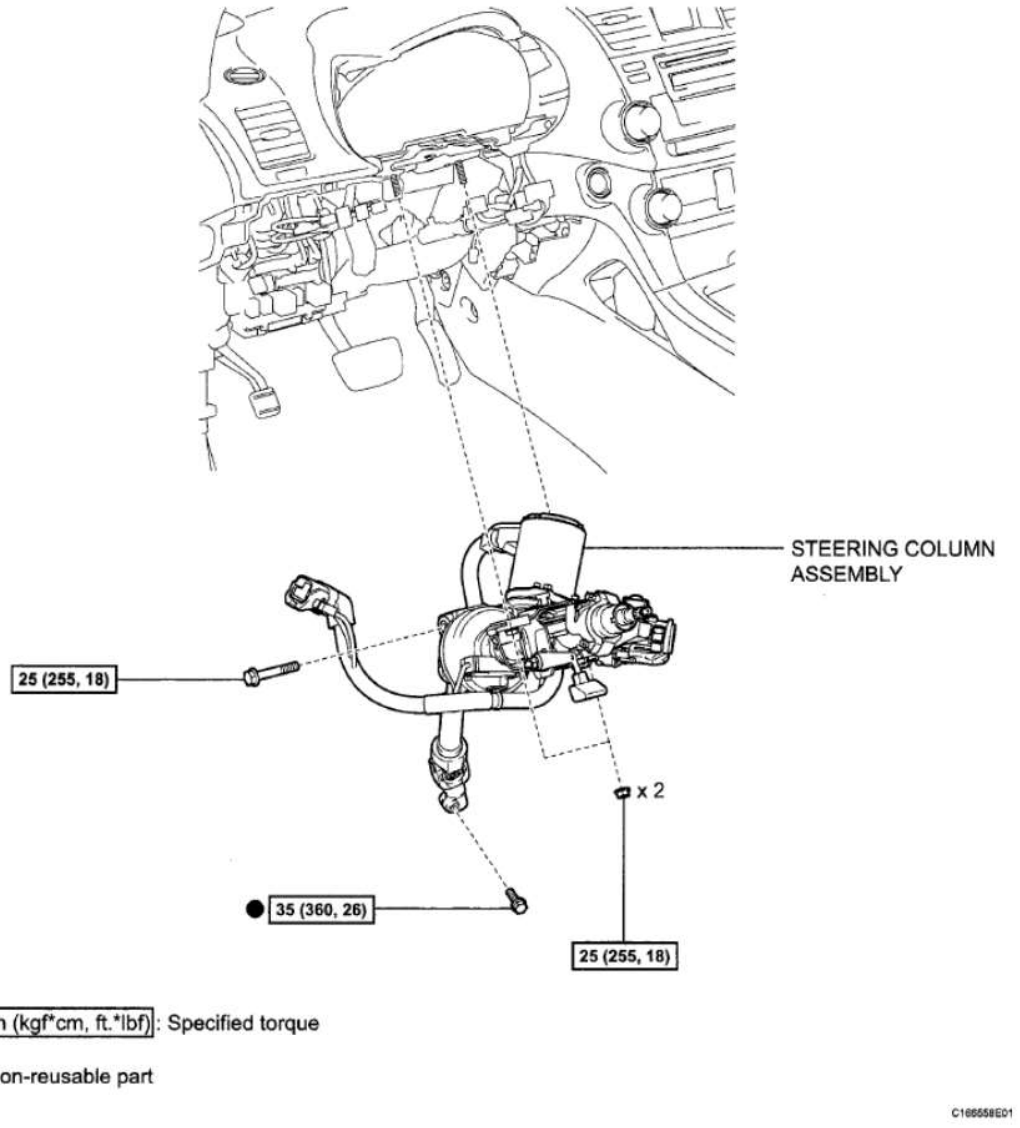


Fig. 404: Identifying Blower Unit Components (12 Of 15)
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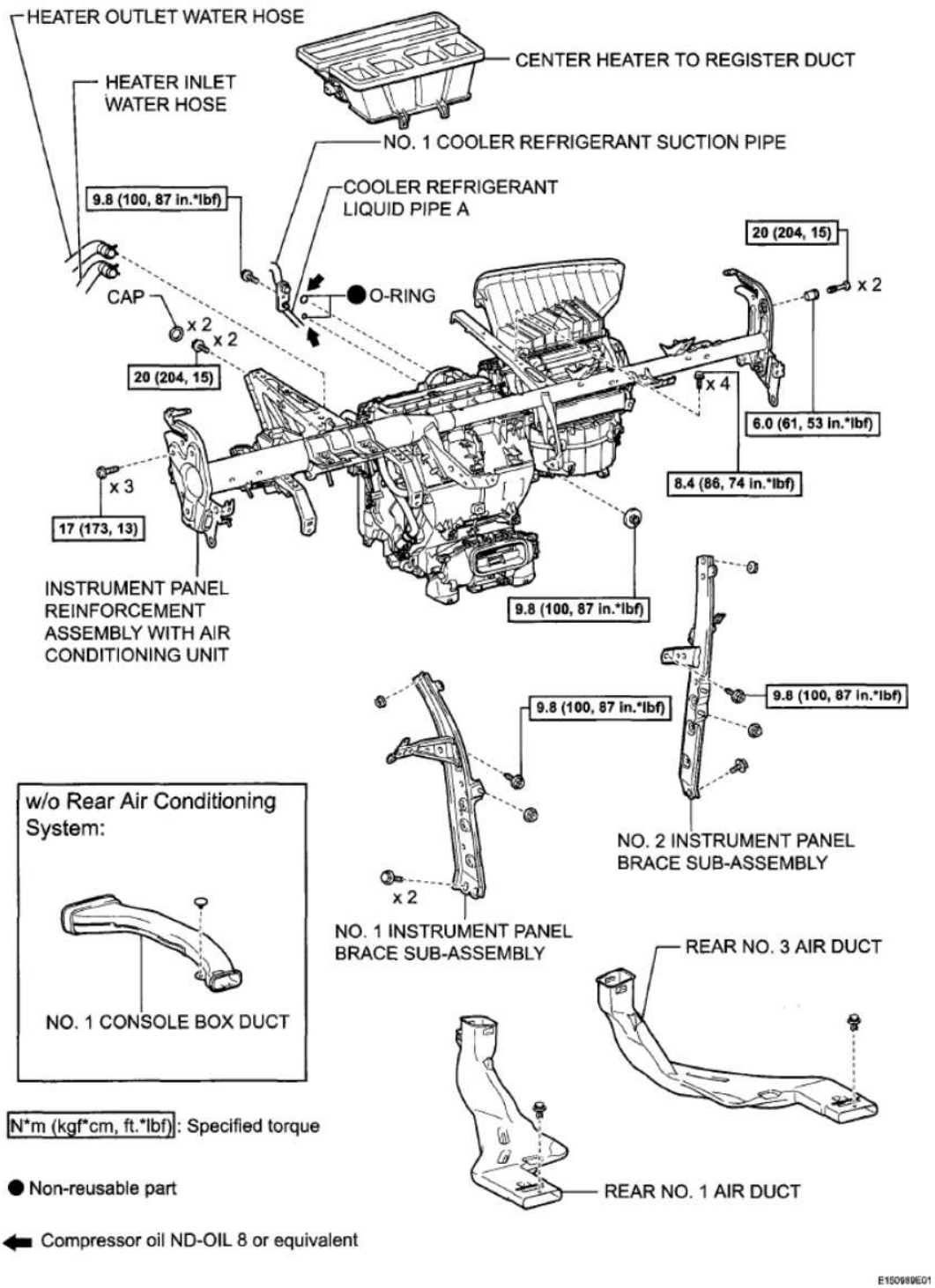


Fig. 405: Identifying Blower Unit Components (13 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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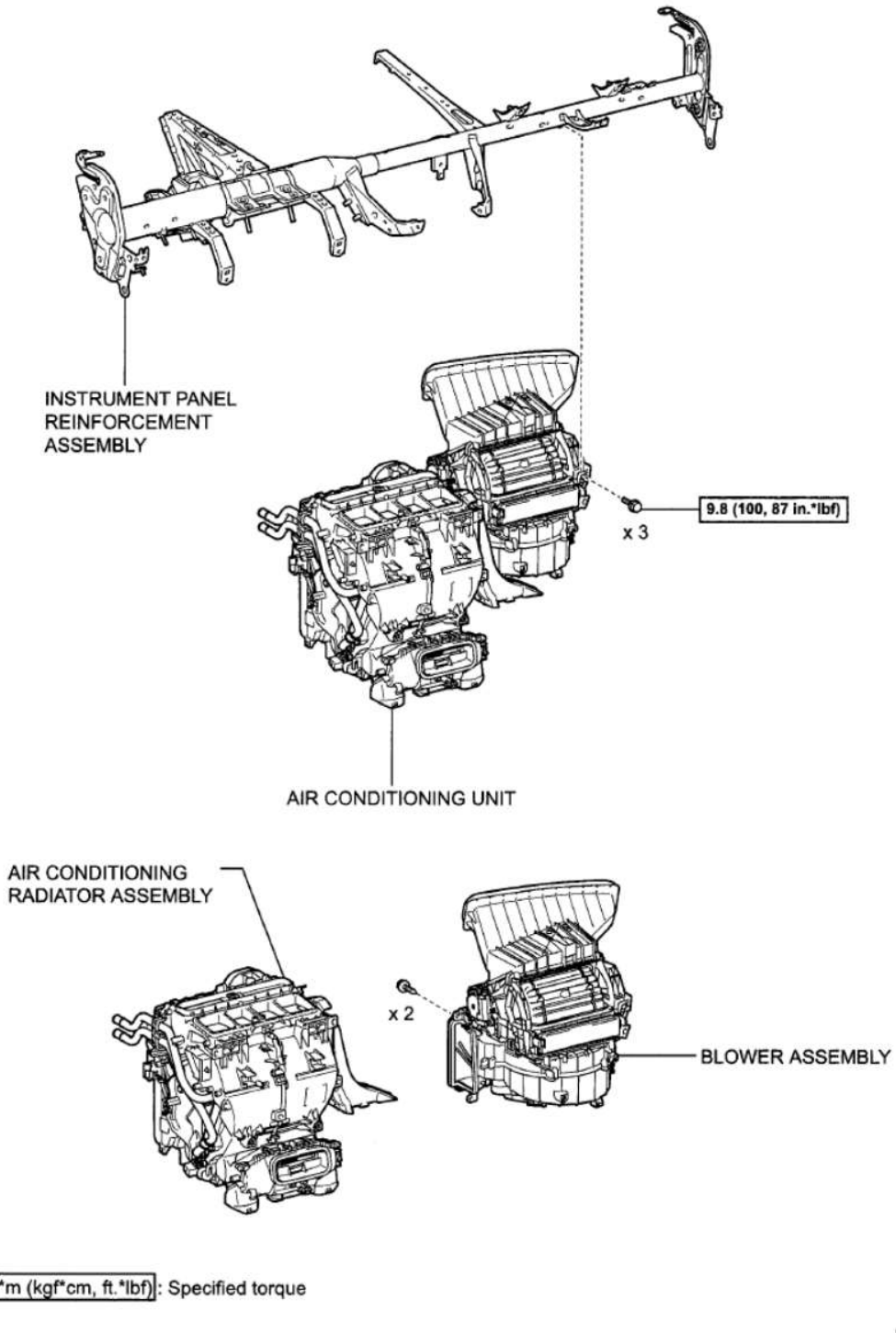


Fig. 406: Identifying Blower Unit Components (14 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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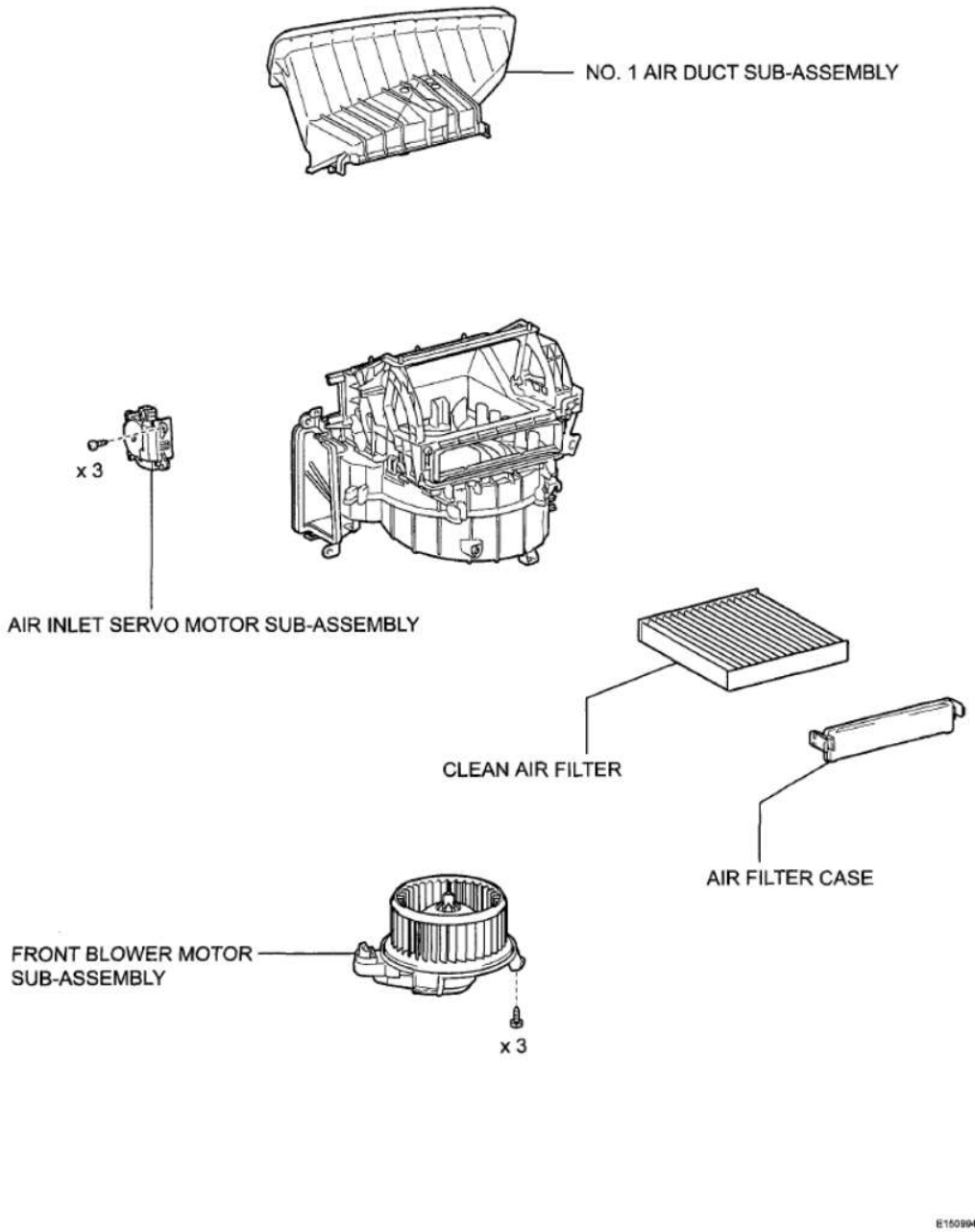


Fig. 407: Identifying Blower Unit Components (15 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **PRECAUTION**

   (See **INSTRUMENT PANEL SAFETY PAD**)

2. **RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM** (See **REPLACEMENT**)

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3. **POSITION FRONT WHEELS STRAIGHT AHEAD**
4. **REMOVE FRONT WHEEL LH**
5. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

CAUTION: Wait for 90 seconds after disconnecting the cable to prevent the airbag from deploying (See AIRBAG SYSTEM).

NOTE: When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).

6. **REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY LH** (See **REMOVAL**)
7. **REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY RH** (See **REMOVAL**)
8. **REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY** (See **REMOVAL**)
9. **REMOVE WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY** (See **REMOVAL**)
10. **REMOVE COWL TOP OUTER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
11. **DISCONNECT HEATER WATER HOSE OUTLET** (See **REMOVAL**)
12. **DISCONNECT HEATER WATER HOSE INLET** (See **DISASSEMBLY**)
13. **DISCONNECT COOLER REFRIGERANT LIQUID PIPE A** (See **DISASSEMBLY**)
14. **DISCONNECT NO. 1 COOLER REFRIGERANT SUCTION PIPE** (See **DISASSEMBLY**)
15. **REMOVE LOWER NO. 3 STEERING WHEEL COVER** (See **REMOVAL**)
16. **REMOVE LOWER NO. 2 STEERING WHEEL COVER** (See **REMOVAL**)
17. **REMOVE STEERING PAD** (See **REMOVAL**)
18. **REMOVE STEERING WHEEL ASSEMBLY** (See **DISASSEMBLY**)
19. **REMOVE STEERING COLUMN COVER** (See **REMOVAL**)
20. **REMOVE TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **REMOVAL**)
21. **REMOVE INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REMOVAL**)
22. **REMOVE COMBINATION METER ASSEMBLY** (See **REMOVAL**)
23. **REMOVE CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **REMOVAL**)
24. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **REMOVAL**)
25. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **REMOVAL**)
26. **REMOVE HEATER CONTROL AND ACCESSORY ASSEMBLY (for Manual Air Conditioning System)** (See **AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)**)
27. **REMOVE AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
28. **REMOVE RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **REMOVAL**)
29. **REMOVE NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)**

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(See **REMOVAL**)

30. **REMOVE FRONT DOOR SCUFF PLATE LH** (See **REMOVAL**)
31. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH** (See **REMOVAL**)
32. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Manual Air Conditioning System)** (See **REMOVAL**)
33. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
34. **REMOVE FRONT DOOR SCUFF PLATE RH** (See **REMOVAL**)
35. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH** (See **REMOVAL**)
36. **REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **REMOVAL**)
37. **REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **REMOVAL**)
38. **REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **REMOVAL**)
39. **REMOVE NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **REMOVAL**)
40. **REMOVE LOWER REAR CONSOLE BOX** (See **REMOVAL**)
41. **REMOVE CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **REMOVAL**)
42. **REMOVE CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **DISASSEMBLY**)
43. **REMOVE FRONT NO. 1 CONSOLE BOX INSERT** (See **REMOVAL**)
44. **REMOVE FRONT NO. 2 CONSOLE BOX INSERT** (See **REMOVAL**)
45. **REMOVE ENGINE SWITCH (w/ Smart Key System)** (See **INSPECTION**)
46. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **REMOVAL**)
47. **REMOVE FRONT PILLAR GARNISH LH** (See **REMOVAL**)
48. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)
49. **REMOVE FRONT PILLAR GARNISH RH** (See **REMOVAL**)
50. **REMOVE NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
51. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
52. **REMOVE NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
53. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
54. **DISCONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **REMOVAL**)
55. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **REMOVAL**)
56. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **REMOVAL**)
57. **REMOVE BRAKE PEDAL RETURN SPRING** (See **REMOVAL**)
58. **REMOVE STOP LIGHT SWITCH ASSEMBLY** (See **INSPECTION**)
59. **SEPARATE BRAKE MASTER CYLINDER PUSH ROD CLEVIS** (See **REMOVAL**)
60. **REMOVE BRAKE PEDAL SUPPORT SUB-ASSEMBLY** (See **REMOVAL**)

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61. **REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY** (See **REMOVAL**)
62. **REMOVE NO. 1 AIR DUCT SUB-ASSEMBLY** (See **REMOVAL**)
63. **SEPARATE STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY** (See **REMOVAL**)
64. **REMOVE STEERING COLUMN ASSEMBLY** (See **REMOVAL**)
65. **DISCONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY** (See **DISASSEMBLY**)
66. **REMOVE POWER STEERING ECU ASSEMBLY** (See **INSTALLATION**)
67. **REMOVE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)
68. **REMOVE AIR CONDITIONING AMPLIFIER ASSEMBLY** (See **REMOVAL**)
69. **REMOVE REAR NO. 1 AIR DUCT** (See **DISASSEMBLY**)
70. **REMOVE REAR NO. 3 AIR DUCT** (See **DISASSEMBLY**)
71. **REMOVE NO. 1 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **DISASSEMBLY**)
72. **REMOVE CENTER HEATER TO REGISTER DUCT** (See **DISASSEMBLY**)
73. **REMOVE NO. 1 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **DISASSEMBLY**)
74. **REMOVE NO. 2 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **DISASSEMBLY**)
75. **REMOVE INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/o PTC Heater)** (See **DISASSEMBLY**)
76. **REMOVE INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/ PTC Heater)** (See **DISASSEMBLY**)
77. **REMOVE AIR CONDITIONING UNIT** (See **DISASSEMBLY**)
78. **REMOVE BLOWER ASSEMBLY**
    a. Disconnect the connector.
    b. Remove the 2 screws.
    c. Disengage the 2 claws and remove the blower assembly.

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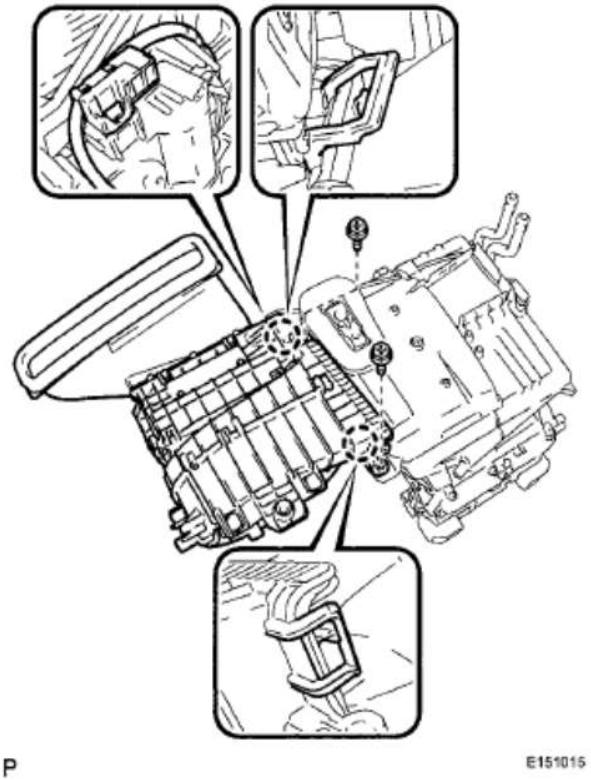


Fig. 408: Identifying Blower Assembly Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

DISASSEMBLY

1. **REMOVE NO. 1 AIR DUCT SUB-ASSEMBLY**
   a. Disengage the 4 claws and remove the No. 1 air duct sub-assembly.

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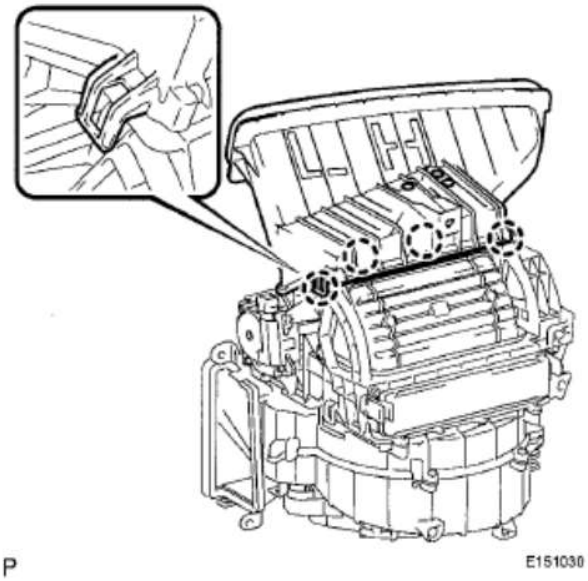


Fig. 409: Identifying No. 1 Air Duct Sub-Assembly Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **REMOVE AIR FILTER CASE**
   a. Disengage the 2 claws and remove the air filter case.

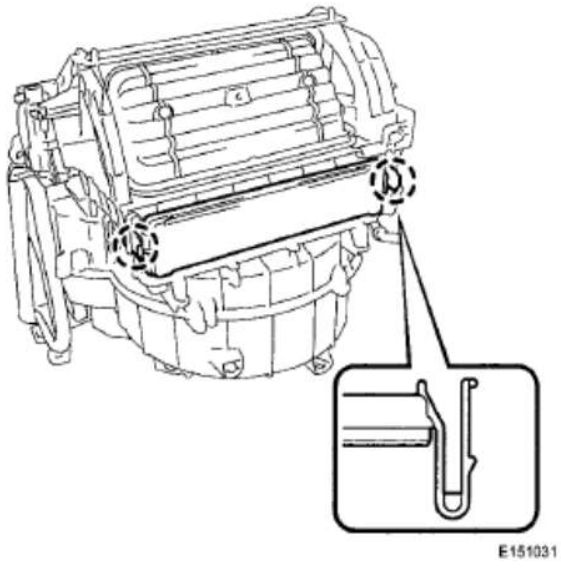


Fig. 410: Identifying Air Filter Case Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **REMOVE CLEAN AIR FILTER**
   a. Remove the clean air filter as shown in the illustration.

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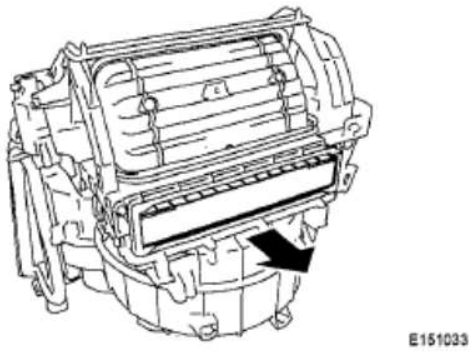


Fig. 411: Identifying Clean Air Filter
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **REMOVE AIR INLET SERVO MOTOR SUB-ASSEMBLY**
   a. Remove the 3 screws and air inlet servo motor sub-assembly.

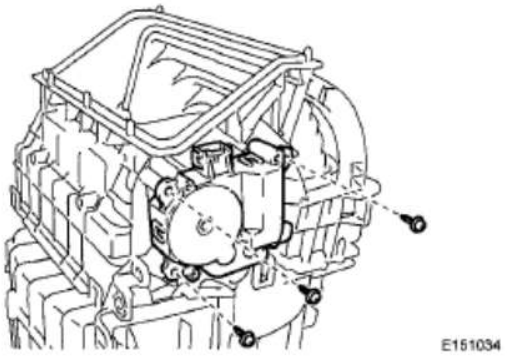


Fig. 412: Identifying Air Inlet Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **REMOVE FRONT BLOWER MOTOR SUB-ASSEMBLY**
   a. Remove the 3 screws and front blower motor sub-assembly.

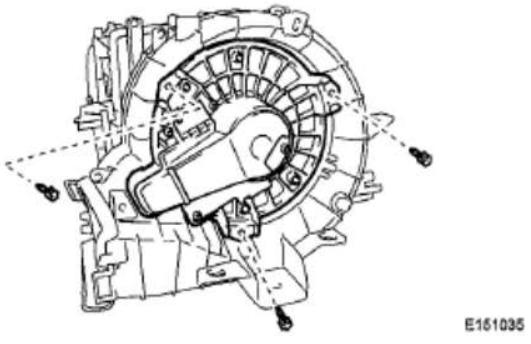


Fig. 413: Identifying Front Blower Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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REASSEMBLY

1. **INSTALL FRONT BLOWER MOTOR SUB-ASSEMBLY**
   a. Install the front blower motor sub-assembly with the 3 screws.

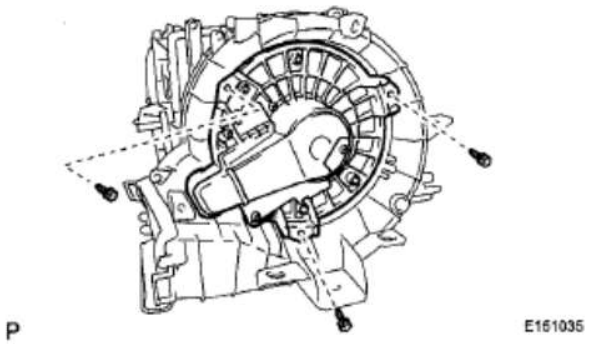


Fig. 414: Identifying Front Blower Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **INSTALL AIR INLET SERVO MOTOR SUB-ASSEMBLY**
   a. Install the air inlet servo motor sub-assembly with the 3 screws.

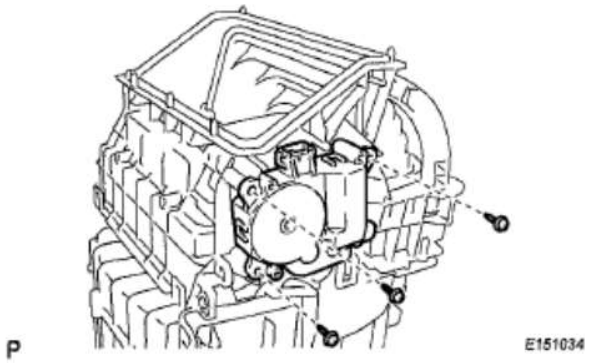


Fig. 415: Identifying Air Inlet Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **INSTALL CLEAN AIR FILTER**
   a. Install the clean air filter as shown in the illustration.

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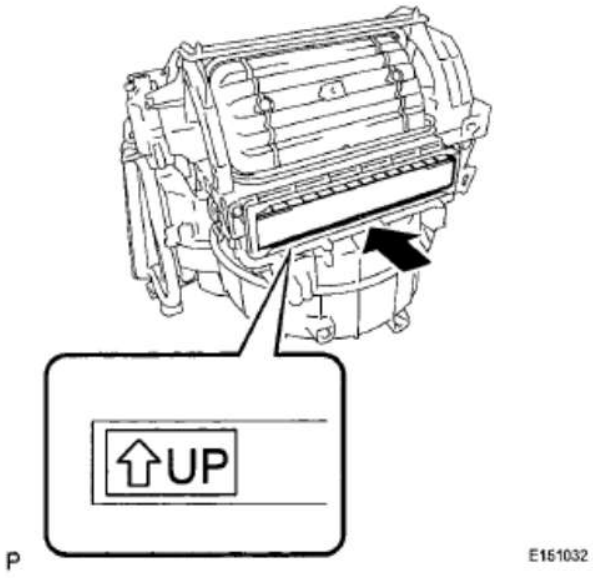


Fig. 416: Identifying Clean Air Filter
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **INSTALL AIR FILTER CASE**
   a. Engage the 2 claws to install the air filter case.

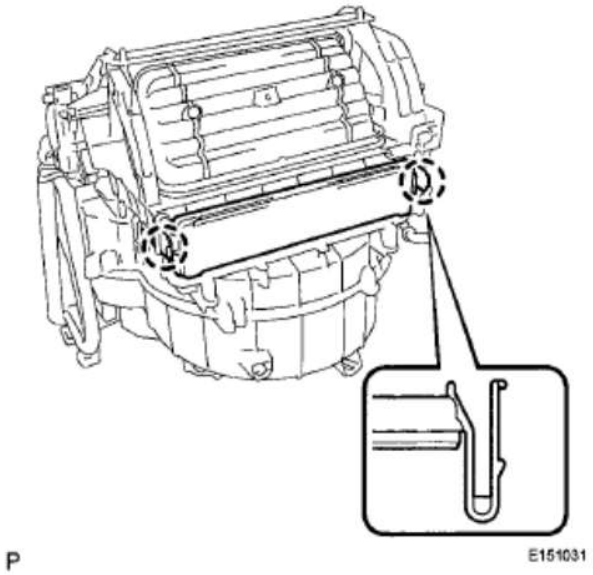


Fig. 417: Identifying Air Filter Case Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **INSTALL NO. 1 AIR DUCT SUB-ASSEMBLY**
   a. Engage the 4 claws to install the air duct sub-assembly.

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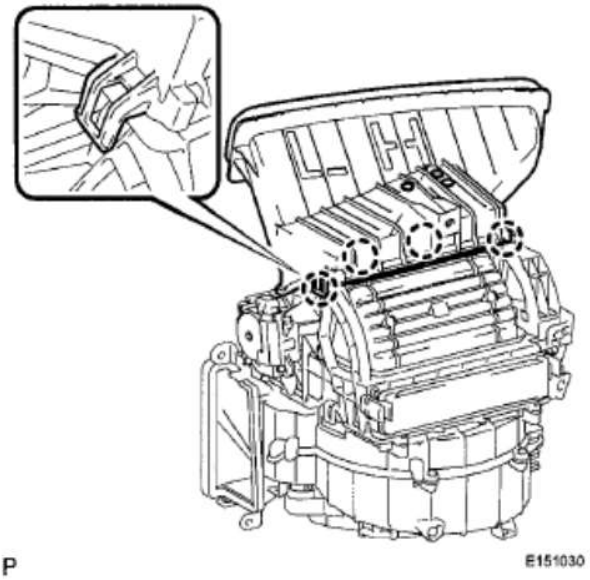


Fig. 418: Identifying Air Duct Sub-Assembly Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL BLOWER ASSEMBLY**
   a. Engage the 2 claws.
   b. Install the blower assembly with the 2 screws.
   c. Connect the connector.
2. **INSTALL AIR CONDITIONING UNIT** (See **INSTALLATION**)
3. **INSTALL INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/o PTC Heater)** (See **REAR COOLING UNIT**)
4. **INSTALL INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/ PTC Heater)** (See **REAR COOLING UNIT**)
5. **INSTALL NO. 1 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **REAR COOLING UNIT**)
6. **INSTALL NO. 2 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **REAR COOLING UNIT**)

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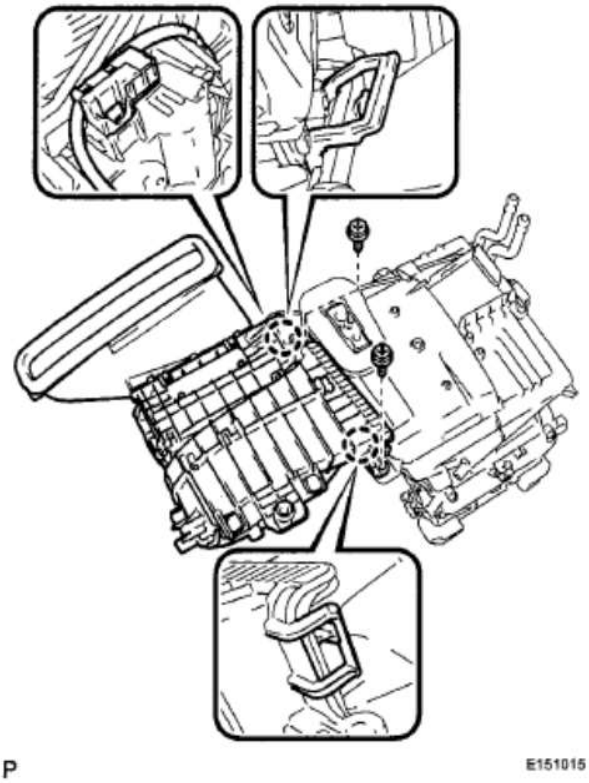


Fig. 419: Identifying Blower Assembly Screws And Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. **INSTALL CENTER HEATER TO REGISTER DUCT** (See **REAR COOLING UNIT**)
8. **INSTALL NO. 1 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **REAR COOLING UNIT**)
9. **INSTALL REAR NO. 3 AIR DUCT** (See **REAR COOLING UNIT**)
10. **INSTALL REAR NO. 1 AIR DUCT** (See **REAR COOLING UNIT**)
11. **INSTALL AIR CONDITIONING AMPLIFIER ASSEMBLY** (See **REMOVAL**)
12. **INSTALL CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)
13. **INSTALL POWER STEERING ECU ASSEMBLY** (See **INSTALLATION**)
14. **CONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY** (See **REAR COOLING UNIT**)
15. **INSTALL STEERING COLUMN ASSEMBLY** (See **INSTALLATION**)
16. **CONNECT STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY** (See **INSTALLATION**)
17. **INSTALL NO. 1 AIR DUCT SUB-ASSEMBLY** (See **INSTALLATION**)
18. **INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY** (See **INSTALLATION**)
19. **INSTALL BRAKE PEDAL SUPPORT SUB-ASSEMBLY** (See **INSTALLATION**)
20. **CONNECT BRAKE MASTER CYLINDER PUSH ROD CLEVIS** (See **INSTALLATION**)
21. **INSTALL BRAKE PEDAL RETURN SPRING** (See **INSTALLATION**)

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22. **INSTALL STOP LIGHT SWITCH ASSEMBLY** (See **INSTALLATION**)
23. **INSPECT AND ADJUST BRAKE PEDAL HEIGHT** (See **ADJUSTMENT**)
24. **INSPECT BRAKE PEDAL FREE PLAY** (See **ADJUSTMENT**)
25. **INSPECT BRAKE PEDAL RESERVE DISTANCE** (See **ADJUSTMENT**)
26. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **INSTALLATION**)
27. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **INSTALLATION**)
28. **CONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **INSTALLATION**)
29. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
30. **INSTALL NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
31. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
32. **INSTALL NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
33. **INSTALL FRONT PILLAR GARNISH RH** (See **INSTALLATION**)
34. **CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
35. **INSTALL FRONT PILLAR GARNISH LH** (See **INSTALLATION**)
36. **CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **INSTALLATION**)
37. **INSTALL ENGINE SWITCH (w/ Smart Key System)** (See **INSTALLATION**)
38. **INSTALL FRONT NO. 2 CONSOLE BOX INSERT** (See **INSTALLATION**)
39. **INSTALL FRONT NO. 1 CONSOLE BOX INSERT** (See **INSTALLATION**)
40. **INSTALL CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
41. **INSTALL CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **INSTALLATION**)
42. **INSTALL LOWER REAR CONSOLE BOX** (See **INSTALLATION**)
43. **INSTALL NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
44. **INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
45. **INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
46. **INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **INSTALLATION**)
47. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH** (See **INSTALLATION**)
48. **INSTALL FRONT DOOR SCUFF PLATE RH** (See **INSTALLATION**)
49. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Manual Air Conditioning System)** (See **INSTALLATION**)
50. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Automatic Air Conditioning System)** (See **INSTALLATION**)
51. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH** (See **INSTALLATION**)

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52. **INSTALL FRONT DOOR SCUFF PLATE LH** (See **INSTALLATION**)
53. **INSTALL RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **INSTALLATION**)
54. **INSTALL NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **INSTALLATION**)
55. **INSTALL HEATER CONTROL AND ACCESSORY ASSEMBLY (for Manual Air Conditioning System)** (See **AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)**)
56. **INSTALL AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
57. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **INSTALLATION**)
58. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **INSTALLATION**)
59. **INSTALL CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **INSTALLATION**)
60. **INSTALL COMBINATION METER ASSEMBLY** (See **REASSEMBLY**)
61. **INSTALL INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REASSEMBLY**)
62. **POSITION FRONT WHEELS STRAIGHT AHEAD**
63. **INSTALL TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
64. **INSTALL STEERING COLUMN COVER** (See **INSTALLATION**)
65. **ADJUST SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
66. **INSTALL STEERING WHEEL ASSEMBLY** (See **INSTALLATION**)
67. **INSPECT STEERING WHEEL CENTER POINT**
68. **INSTALL STEERING PAD** (See **INSTALLATION**)
69. **INSTALL LOWER NO. 2 STEERING WHEEL COVER** (See **INSTALLATION**)
70. **INSTALL LOWER NO. 3 STEERING WHEEL COVER** (See **INSTALLATION**)
71. **INSTALL FRONT WHEEL LH** (See **INSTALLATION**)
72. **CONNECT COOLER REFRIGERANT LIQUID PIPE A** (See **REAR COOLING UNIT**)
73. **CONNECT NO. 1 COOLER REFRIGERANT SUCTION PIPE** (See **REAR COOLING UNIT**)
74. **CONNECT HEATER WATER HOSE INLET** (See **REAR COOLING UNIT**)
75. **CONNECT HEATER WATER HOSE OUTLET** (See **REAR COOLING UNIT**)
76. **INSTALL COWL TOP OUTER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
77. **INSTALL WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY** (See **INSTALLATION**)
78. **INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY** (See **INSTALLATION**)
79. **INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY RH** (See **INSTALLATION**)
80. **INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY LH** (See **INSTALLATION**)
81. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**

NOTE: **When disconnecting the cable, some systems need to be initialized after**

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the cable is reconnected (See INITIALIZATION).

82. **INSPECT STEERING PAD** (See **INSTALLATION**)
83. **INSPECT SRS WARNING LIGHT**
    a. Inspect the SRS warning light (See **DIAGNOSIS SYSTEM**).
84. **ADD ENGINE COOLANT (for 1AR-FE)** (See **COOLANT**)
85. **ADD ENGINE COOLANT (for 2GR-FE)** (See **REPLACEMENT**)
86. **INSPECT FOR COOLANT LEAK (for 1AR-FE)** (See **COOLING SYSTEM**)
87. **INSPECT FOR COOLANT LEAK (for 2GR-FE)** (See **COOLING SYSTEM**)
88. **CHARGE WITH REFRIGERANT** (See **REFRIGERANT LINE**)
89. **WARM UP ENGINE** (See **REFRIGERANT LINE**)
90. **INSPECT FOR REFRIGERANT LEAK** (See **REFRIGERANT LINE**)

FRONT BLOWER MOTOR

COMPONENTS

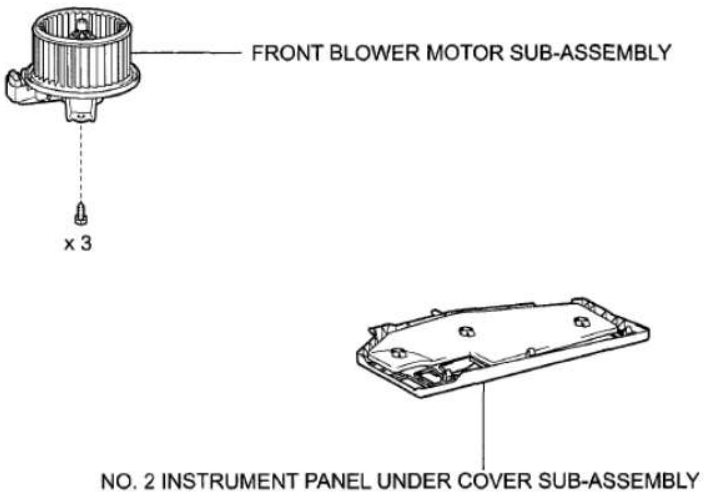


Fig. 420: Identifying Front Blower Motor Components
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **REMOVAL**)
2. **REMOVE FRONT BLOWER MOTOR SUB-ASSEMBLY**
    a. Disconnect the connector.
    b. Remove the 3 screws and the front blower motor sub-assembly.

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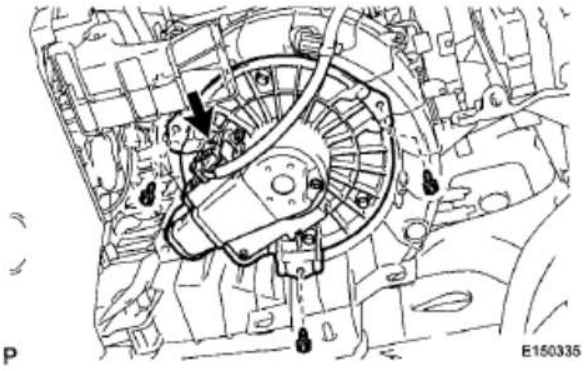


Fig. 421: Identifying Front Blower Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL FRONT BLOWER MOTOR SUB-ASSEMBLY**
   a. Install the front blower motor sub-assembly with the 3 screws.
   b. Connect the connector.
2. **INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **INSTALLATION**)

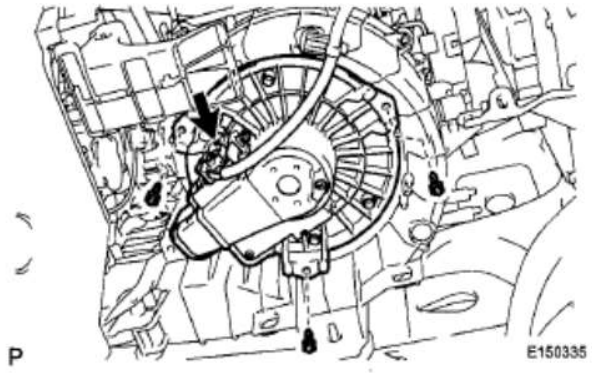


Fig. 422: Identifying Front Blower Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REAR BLOWER MOTOR

COMPONENTS

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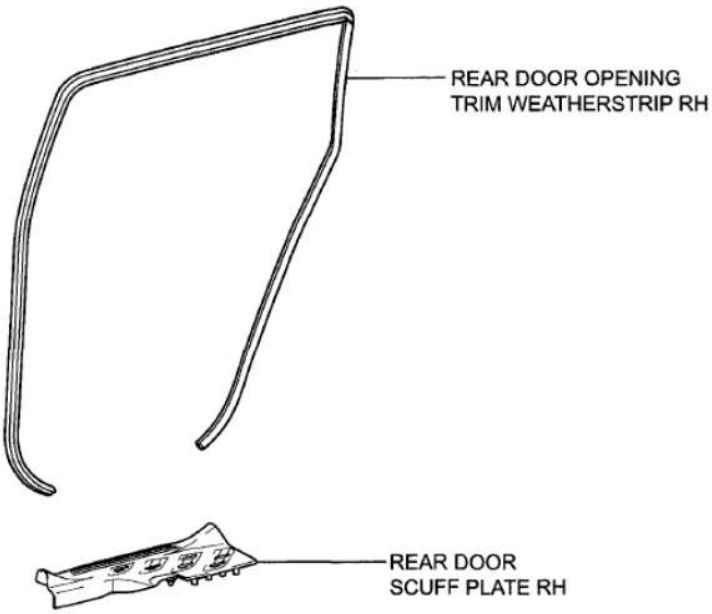


Fig. 423: Identifying Rear Blower Motor Components (1 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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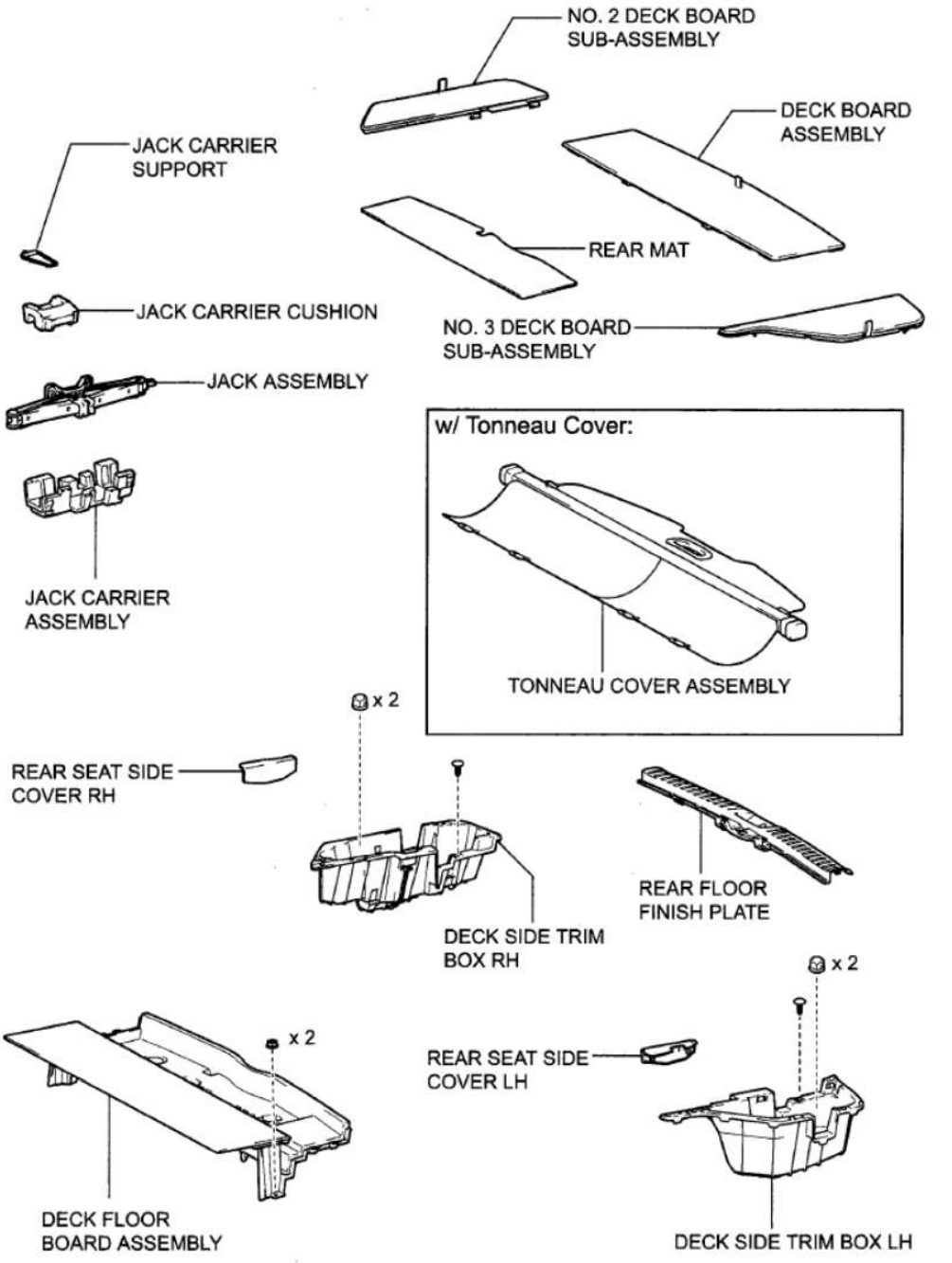


Fig. 424: Identifying Rear Blower Motor Components (2 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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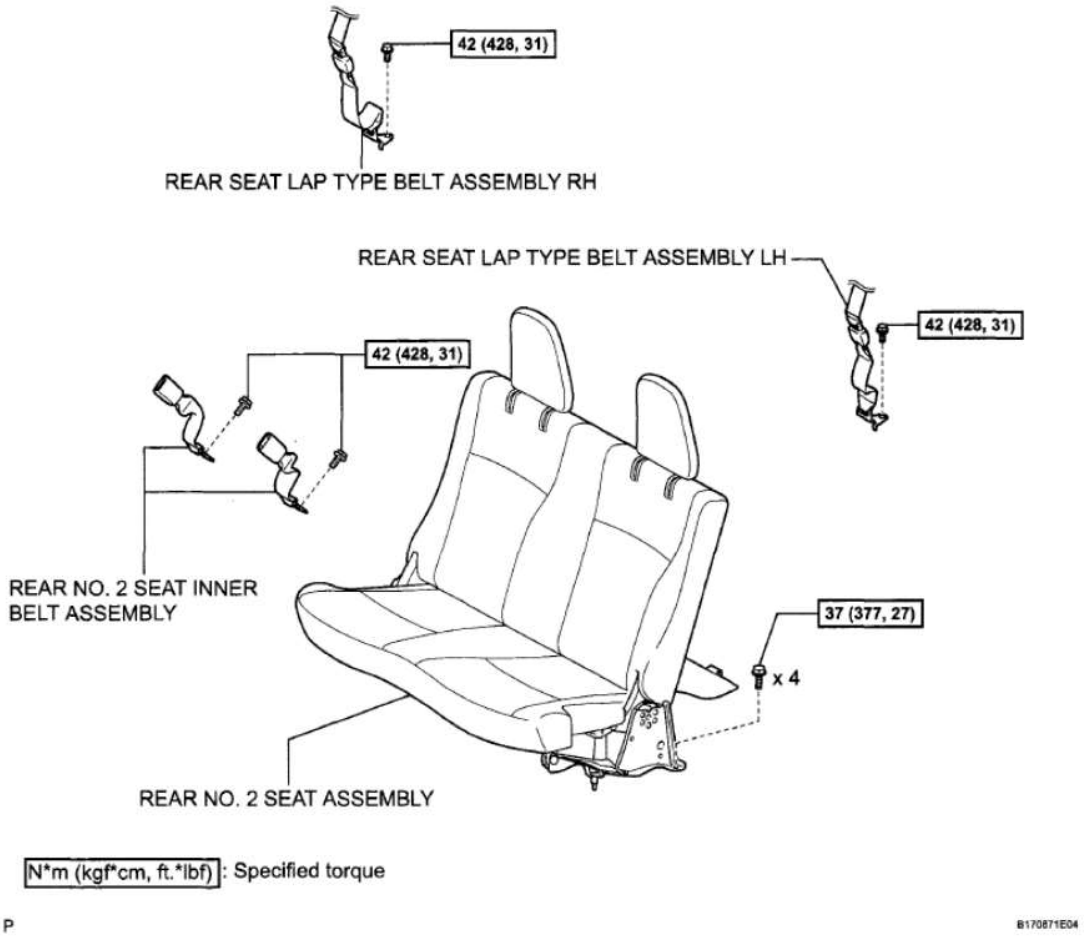


Fig. 425: Identifying Rear Blower Motor Components (3 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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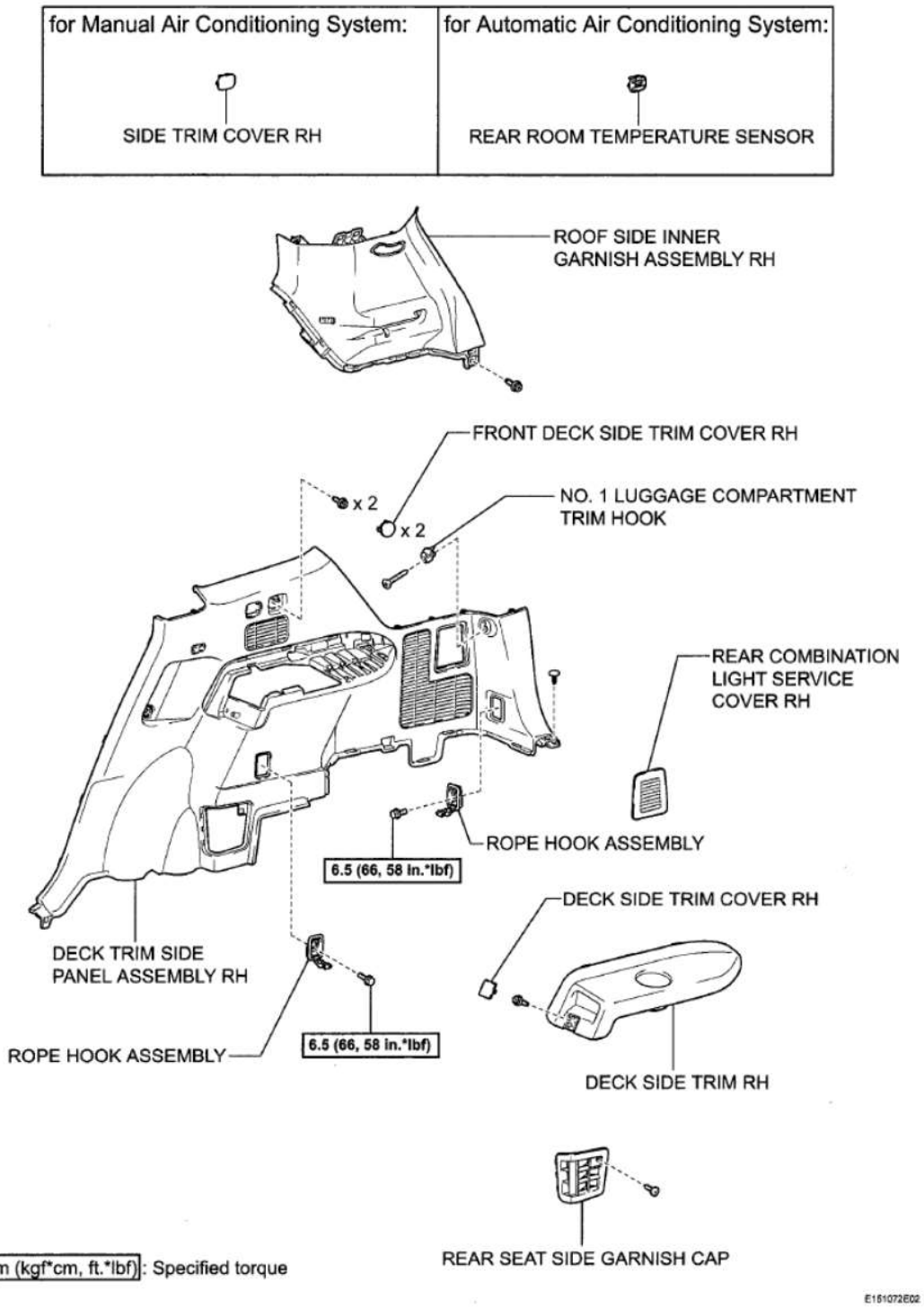


Fig. 426: Identifying Rear Blower Motor Components (4 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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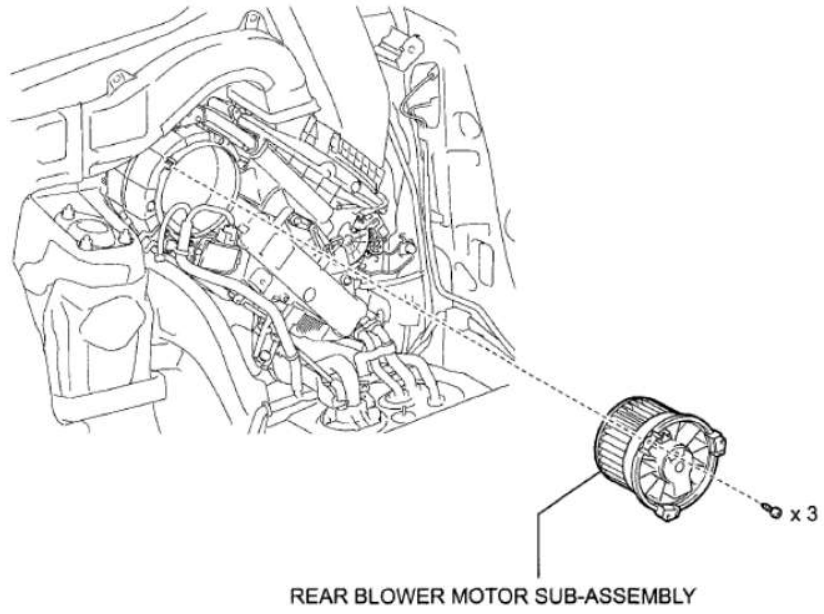


Fig. 427: Identifying Rear Blower Motor Components (5 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ON-VEHICLE INSPECTION

1. **INSPECT COOLING UNIT MOTOR SUB-ASSEMBLY WITH FAN**
   a. Connect the positive (+) lead from the battery to terminal 1 and negative (-) to terminal 2, then check that the motor operates smoothly. If operation is not as specified, replace the blower motor. If operation is not as specified, replace the rear blower motor.

REMOVAL

1. **REMOVE REAR DOOR SCUFF PLATE RH** (See **REMOVAL**)
2. **REMOVE REAR DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)

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Component without harness connector:
(Rear Blower Motor)

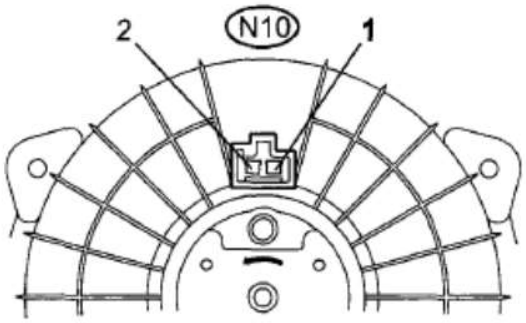


Fig. 428: Identifying Rear Blower Motor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **REMOVE DECK BOARD ASSEMBLY** (See **REMOVAL**)
4. **REMOVE NO. 3 DECK BOARD SUB-ASSEMBLY** (See **REMOVAL**)
5. **REMOVE NO. 2 DECK BOARD SUB-ASSEMBLY** (See **REMOVAL**)
6. **REMOVE TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)** (See **REMOVAL**)
7. **REMOVE REAR SEAT SIDE COVER LH** (See **REMOVAL**)
8. **REMOVE DECK SIDE TRIM BOX LH** (See **REMOVAL**)
9. **REMOVE REAR SEAT SIDE COVER RH** (See **REMOVAL**)
10. **REMOVE JACK CARRIER SUPPORT**
11. **REMOVE JACK CARRIER CUSHION** (See **REMOVAL**)
12. **REMOVE JACK ASSEMBLY** (See **REMOVAL**)
13. **REMOVE JACK CARRIER ASSEMBLY** (See **REMOVAL**)
14. **REMOVE DECK SIDE TRIM BOX RH** (See **REMOVAL**)
15. **REMOVE REAR MAT** (See **REMOVAL**)
16. **REMOVE DECK FLOOR BOARD ASSEMBLY** (See **REMOVAL**)
17. **REMOVE REAR NO. 2 SEAT INNER BELT ASSEMBLY** (See **INSTALLATION**)
18. **DISCONNECT REAR SEAT LAP TYPE BELT ASSEMBLY LH** (See **REMOVAL**)
19. **DISCONNECT REAR SEAT LAP TYPE BELT ASSEMBLY RH** (See **REMOVAL**)
20. **REMOVE REAR NO. 2 SEAT ASSEMBLY** (See **DISASSEMBLY**)
21. **REMOVE REAR FLOOR FINISH PLATE** (See **REMOVAL**)
22. **REMOVE REAR SEAT SIDE GARNISH CAP** (See **REMOVAL**)
23. **REMOVE DECK SIDE TRIM COVER RH** (See **REMOVAL**)
24. **REMOVE DECK SIDE TRIM RH** (See **REMOVAL**)

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25. **REMOVE SIDE TRIM COVER RH (for Manual Air Conditioning System)** (See **REMOVAL**)
26. **REMOVE REAR ROOM TEMPERATURE SENSOR (for Automatic Air Conditioning System)** (See **ROOM TEMPERATURE SENSOR (FOR REAR)**)
27. **REMOVE REAR COMBINATION LIGHT SERVICE COVER RH** (See **REMOVAL**)
28. **REMOVE ROPE HOOK ASSEMBLY (for RH Side)** (See **REMOVAL**)
29. **REMOVE NO. 1 LUGGAGE COMPARTMENT TRIM HOOK** (See **REMOVAL**)
30. **REMOVE FRONT DECK SIDE TRIM COVER RH** (See **REMOVAL**)
31. **REMOVE DECK TRIM SIDE PANEL ASSEMBLY RH** (See **REMOVAL**)
32. **REMOVE ROOF SIDE INNER GARNISH ASSEMBLY RH** (See **REMOVAL**)
33. **REMOVE REAR BLOWER MOTOR SUB-ASSEMBLY**
    a. Disconnect the connector.
    b. Remove the 3 screws and the rear blower motor sub-assembly.

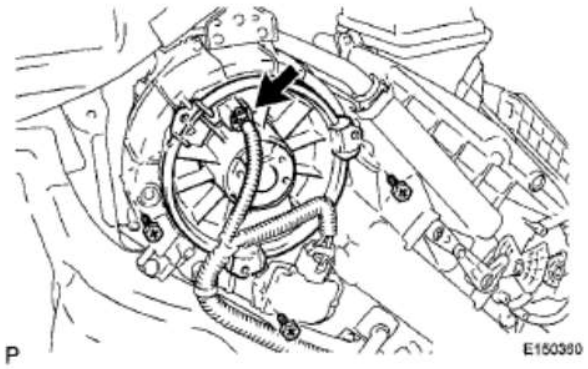


Fig. 429: Identifying Rear Blower Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL REAR BLOWER MOTOR SUB-ASSEMBLY**
    a. Install the rear blower motor sub-assembly with the 3 screws.
    b. Connect the connector.
2. **INSTALL ROOF SIDE INNER GARNISH ASSEMBLY RH** (See **INSTALLATION**)
3. **INSTALL DECK TRIM SIDE PANEL ASSEMBLY RH** (See **INSTALLATION**)

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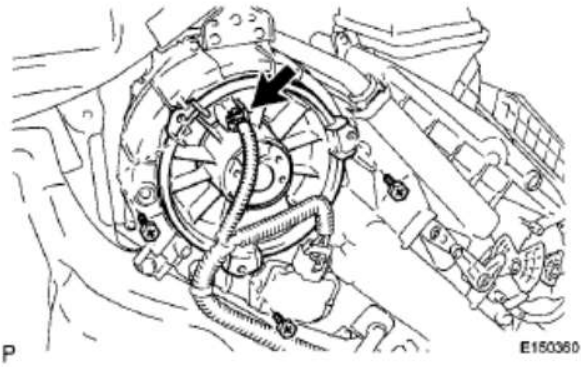


Fig. 430: Identifying Rear Blower Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **INSTALL FRONT DECK SIDE TRIM COVER RH** (See **INSTALLATION**)
5. **INSTALL NO. 1 LUGGAGE COMPARTMENT TRIM HOOK** (See **INSTALLATION**)
6. **INSTALL ROPE HOOK ASSEMBLY (for RH Side)** (See **INSTALLATION**)
7. **INSTALL REAR COMBINATION LIGHT SERVICE COVER RH** (See **INSTALLATION**)
8. **INSTALL SIDE TRIM COVER RH (for Manual Air Conditioning System)** (See **INSTALLATION**)
9. **INSTALL REAR ROOM TEMPERATURE SENSOR (for Automatic Air Conditioning System)** (See **INSPECTION**)
10. **INSTALL DECK SIDE TRIM RH** (See **INSTALLATION**)
11. **INSTALL DECK SIDE TRIM COVER RH** (See **INSTALLATION**)
12. **INSTALL REAR SEAT SIDE GARNISH CAP** (See **INSTALLATION**)
13. **INSTALL REAR FLOOR FINISH PLATE** (See **INSTALLATION**)
14. **INSTALL REAR NO. 2 SEAT ASSEMBLY** (See **INSTALLATION**)
15. **CONNECT REAR SEAT LAP TYPE BELT ASSEMBLY LH** (See **INSTALLATION**)
16. **CONNECT REAR SEAT LAP TYPE BELT ASSEMBLY RH** (See **INSTALLATION**)
17. **INSTALL REAR NO. 2 SEAT INNER BELT ASSEMBLY** (See **INSTALLATION**)
18. **INSTALL REAR MAT** (See **INSTALLATION**)
19. **INSTALL DECK FLOOR BOARD ASSEMBLY** (See **INSTALLATION**)
20. **INSTALL DECK SIDE TRIM BOX LH** (See **INSTALLATION**)
21. **INSTALL REAR SEAT SIDE COVER LH** (See **INSTALLATION**)
22. **INSTALL DECK SIDE TRIM BOX RH** (See **INSTALLATION**)
23. **INSTALL JACK CARRIER ASSEMBLY** (See **INSTALLATION**)
24. **INSTALL JACK ASSEMBLY** (See **INSTALLATION**)
25. **INSTALL JACK CARRIER CUSHION** (See **INSTALLATION**)
26. **INSTALL JACK CARRIER SUPPORT**
27. **INSTALL REAR SEAT SIDE COVER RH** (See **INSTALLATION**)
28. **INSTALL TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)** (See **INSTALLATION**)

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29. **INSTALL NO. 2 DECK BOARD SUB-ASSEMBLY** (See **INSTALLATION**)
30. **INSTALL NO. 3 DECK BOARD SUB-ASSEMBLY** (See **INSTALLATION**)
31. **INSTALL DECK BOARD ASSEMBLY** (See **INSTALLATION**)
32. **INSTALL REAR DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
33. **INSTALL REAR DOOR SCUFF PLATE RH** (See **INSTALLATION**)

BLOWER MOTOR CONTROLLER (FOR REAR)

COMPONENTS

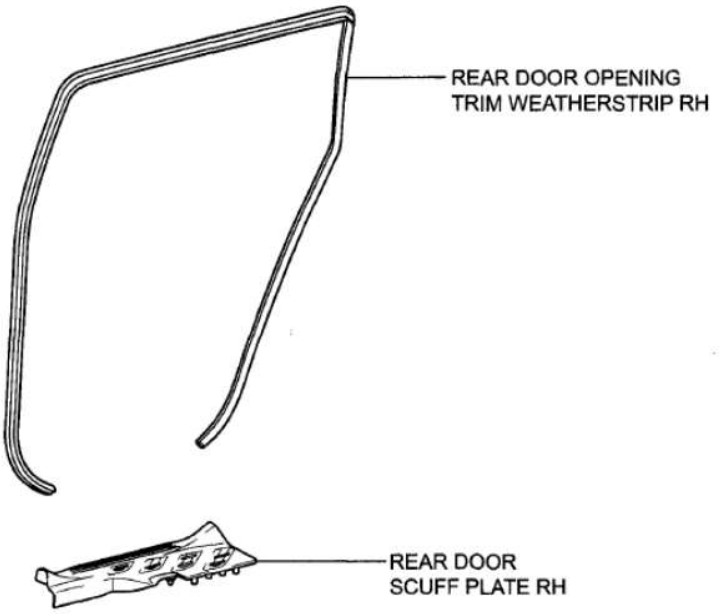


Fig. 431: Blower Motor Controller Components - For Rear (1 Of 5)
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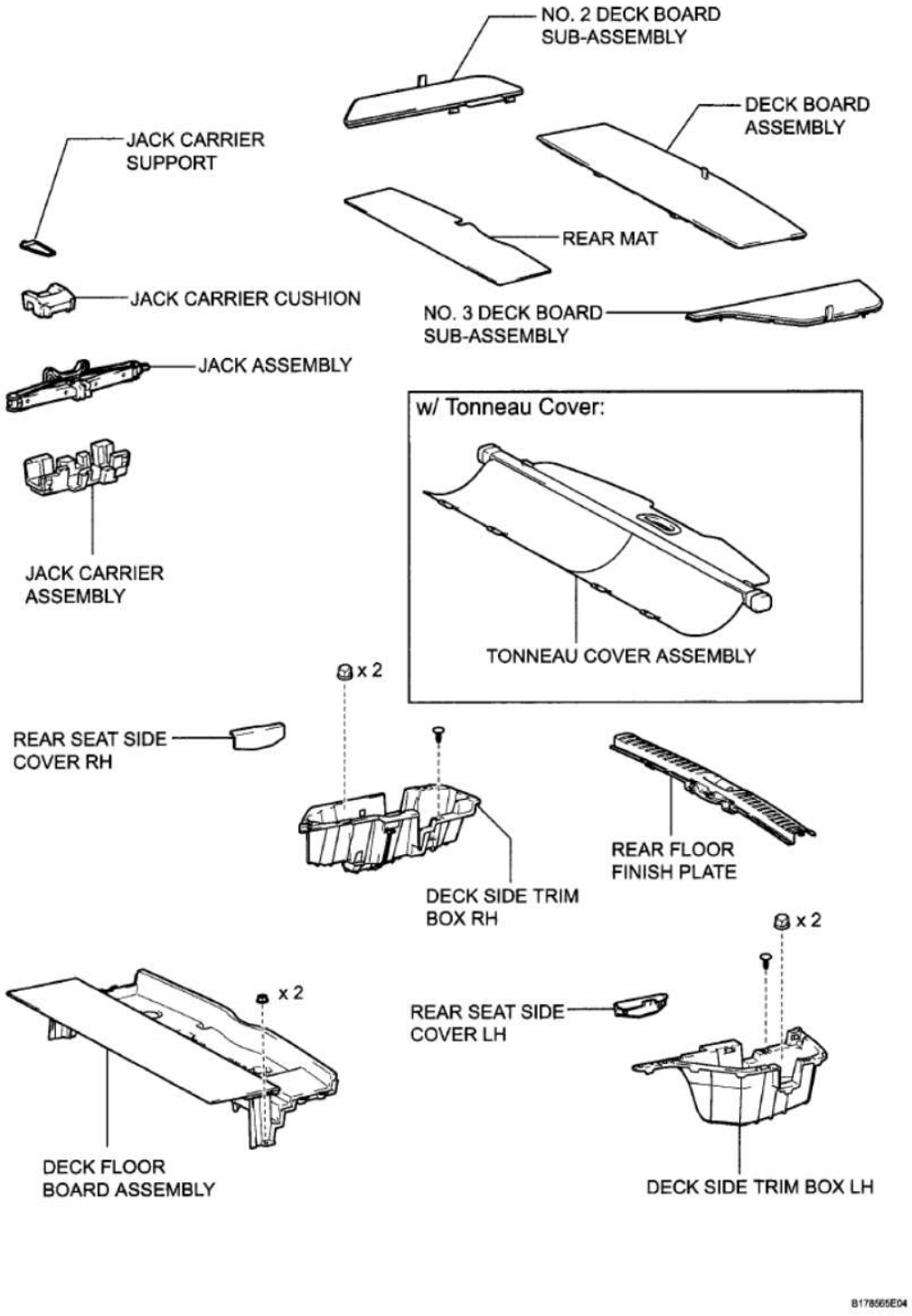


Fig. 432: Blower Motor Controller Components - For Rear (2 Of 5)
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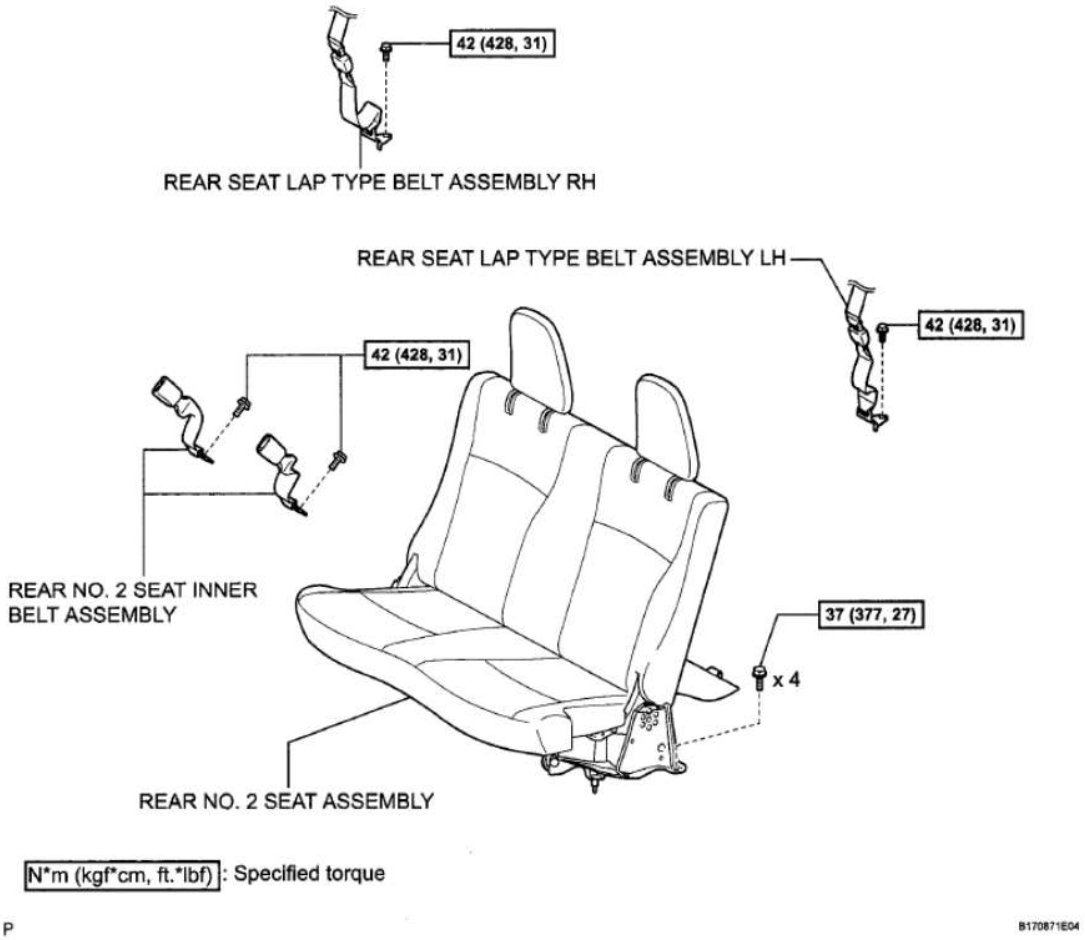


Fig. 433: Blower Motor Controller Components - For Rear (3 Of 5)
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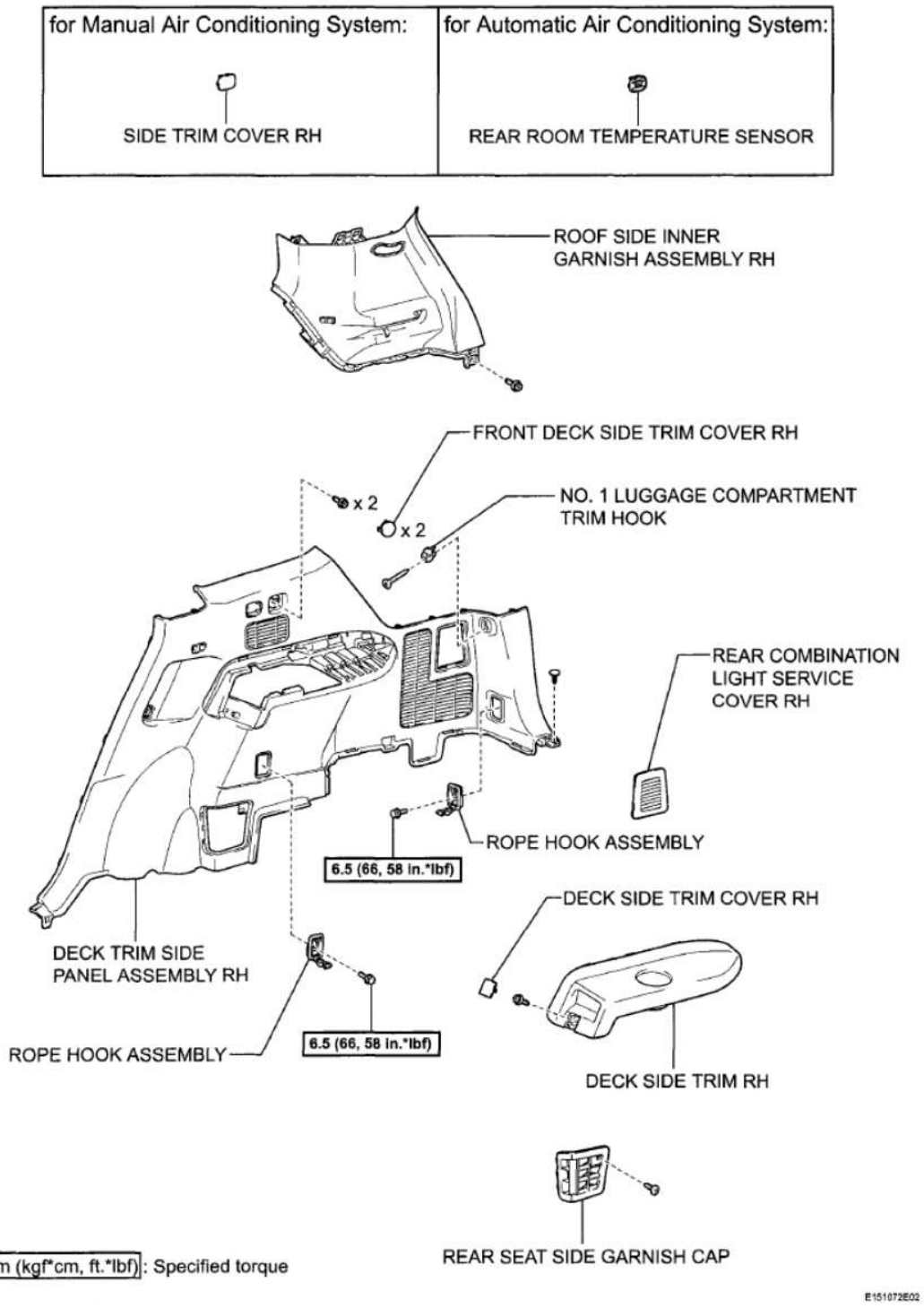


Fig. 434: Blower Motor Controller Components - For Rear (4 Of 5)
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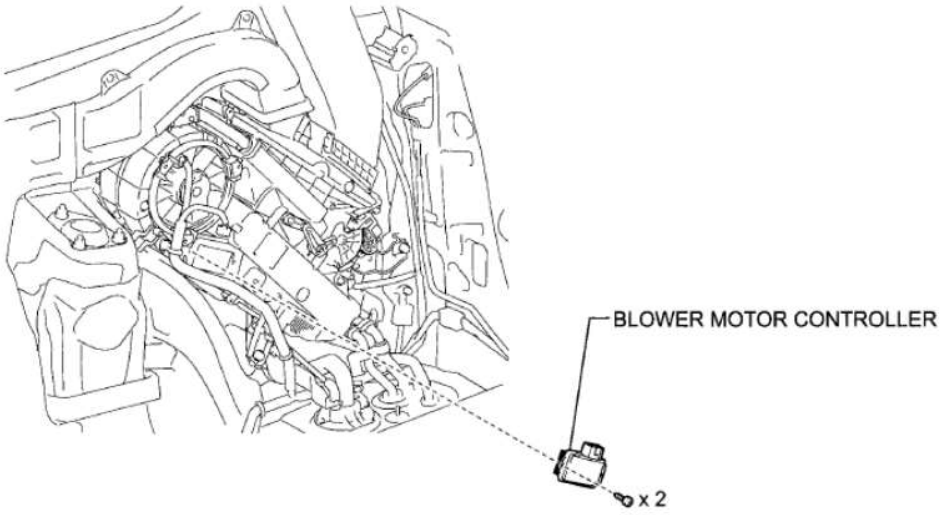


Fig. 435: Blower Motor Controller Components - For Rear (5 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE REAR DOOR SCUFF PLATE RH** (See **REMOVAL**)
2. **REMOVE REAR DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)
3. **REMOVE DECK BOARD ASSEMBLY** (See **REMOVAL**)
4. **REMOVE NO. 3 DECK BOARD SUB-ASSEMBLY** (See **REMOVAL**)
5. **REMOVE NO. 2 DECK BOARD SUB-ASSEMBLY** (See **REMOVAL**)
6. **REMOVE TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)** (See **REMOVAL**)
7. **REMOVE REAR SEAT SIDE COVER LH** (See **REMOVAL**)
8. **REMOVE DECK SIDE TRIM BOX LH** (See **REMOVAL**)
9. **REMOVE REAR SEAT SIDE COVER RH** (See **REMOVAL**)
10. **REMOVE JACK CARRIER SUPPORT**
11. **REMOVE JACK CARRIER CUSHION** (See **REMOVAL**)
12. **REMOVE JACK ASSEMBLY** (See **REMOVAL**)
13. **REMOVE JACK CARRIER ASSEMBLY** (See **REMOVAL**)
14. **REMOVE DECK SIDE TRIM BOX RH** (See **REMOVAL**)
15. **REMOVE REAR MAT** (See **REMOVAL**)
16. **REMOVE DECK FLOOR BOARD ASSEMBLY** (See **REMOVAL**)
17. **REMOVE REAR NO. 2 SEAT INNER BELT ASSEMBLY** (See **INSTALLATION**)
18. **DISCONNECT REAR SEAT LAP TYPE BELT ASSEMBLY LH** (See **REMOVAL**)

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19. **DISCONNECT REAR SEAT LAP TYPE BELT ASSEMBLY RH** (See **REMOVAL**)
20. **REMOVE REAR NO. 2 SEAT ASSEMBLY** (See **DISASSEMBLY**)
21. **REMOVE REAR FLOOR FINISH PLATE** (See **REMOVAL**)
22. **REMOVE REAR SEAT SIDE GARNISH CAP** (See **REMOVAL**)
23. **REMOVE DECK SIDE TRIM COVER RH** (See **REMOVAL**)
24. **REMOVE DECK SIDE TRIM RH** (See **REMOVAL**)
25. **REMOVE SIDE TRIM COVER RH (for Manual Air Conditioning System)** (See **REMOVAL**)
26. **REMOVE REAR ROOM TEMPERATURE SENSOR (for Automatic Air Conditioning System)** (See **ROOM TEMPERATURE SENSOR (FOR REAR)**)
27. **REMOVE REAR COMBINATION LIGHT SERVICE COVER RH** (See **REMOVAL**)
28. **REMOVE ROPE HOOK ASSEMBLY (for RH Side)** (See **REMOVAL**)
29. **REMOVE NO. 1 LUGGAGE COMPARTMENT TRIM HOOK** (See **REMOVAL**)
30. **REMOVE FRONT DECK SIDE TRIM COVER RH** (See **REMOVAL**)
31. **REMOVE DECK TRIM SIDE PANEL ASSEMBLY RH** (See **REMOVAL**)
32. **REMOVE ROOF SIDE INNER GARNISH ASSEMBLY RH** (See **REMOVAL**)
33. **REMOVE BLOWER MOTOR CONTROLLER**
    a. Disconnect the connector.
    b. Remove the 2 screws and the blower motor controller.

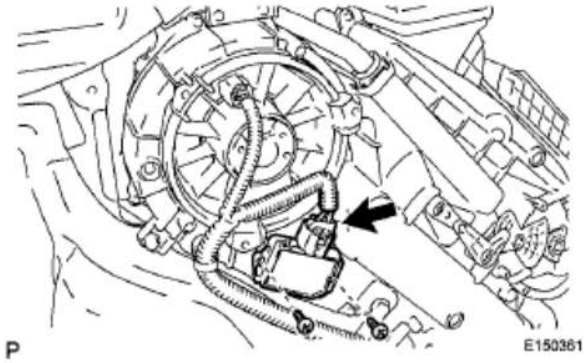


Fig. 436: Identifying Blower Motor Controller Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL BLOWER MOTOR CONTROLLER**
    a. Install the blower motor controller with the 2 screws.
    b. Connect the connector.
2. **INSTALL ROOF SIDE INNER GARNISH ASSEMBLY RH** (See **INSTALLATION**)
3. **INSTALL DECK TRIM SIDE PANEL ASSEMBLY RH** (See **INSTALLATION**)

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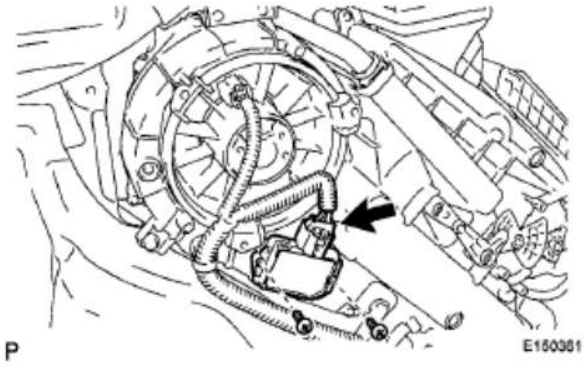


Fig. 437: Identifying Blower Motor Controller Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **INSTALL FRONT DECK SIDE TRIM COVER RH** (See **INSTALLATION**)
5. **INSTALL NO. 1 LUGGAGE COMPARTMENT TRIM HOOK** (See **INSTALLATION**)
6. **INSTALL ROPE HOOK ASSEMBLY (for RH Side)** (See **INSTALLATION**)
7. **INSTALL REAR COMBINATION LIGHT SERVICE COVER RH** (See **INSTALLATION**)
8. **INSTALL SIDE TRIM COVER RH (for Manual Air Conditioning System)** (See **INSTALLATION**)
9. **INSTALL REAR ROOM TEMPERATURE SENSOR (for Automatic Air Conditioning System)** (See **INSPECTION**)
10. **INSTALL DECK SIDE TRIM RH** (See **INSTALLATION**)
11. **INSTALL DECK SIDE TRIM COVER RH** (See **INSTALLATION**)
12. **INSTALL REAR SEAT SIDE GARNISH CAP** (See **INSTALLATION**)
13. **INSTALL REAR FLOOR FINISH PLATE** (See **INSTALLATION**)
14. **INSTALL REAR NO. 2 SEAT ASSEMBLY** (See **INSTALLATION**)
15. **CONNECT REAR SEAT LAP TYPE BELT ASSEMBLY LH** (See **INSTALLATION**)
16. **CONNECT REAR SEAT LAP TYPE BELT ASSEMBLY RH** (See **INSTALLATION**)
17. **INSTALL REAR NO. 2 SEAT INNER BELT ASSEMBLY** (See **INSTALLATION**)
18. **INSTALL REAR MAT** (See **INSTALLATION**)
19. **INSTALL DECK FLOOR BOARD ASSEMBLY** (See **INSTALLATION**)
20. **INSTALL DECK SIDE TRIM BOX LH** (See **INSTALLATION**)
21. **INSTALL REAR SEAT SIDE COVER LH** (See **INSTALLATION**)
22. **INSTALL DECK SIDE TRIM BOX RH** (See **INSTALLATION**)
23. **INSTALL JACK CARRIER ASSEMBLY** (See **INSTALLATION**)
24. **INSTALL JACK ASSEMBLY** (See **INSTALLATION**)
25. **INSTALL JACK CARRIER CUSHION** (See **INSTALLATION**)
26. **INSTALL JACK CARRIER SUPPORT**
27. **INSTALL REAR SEAT SIDE COVER RH** (See **INSTALLATION**)
28. **INSTALL TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)** (See **INSTALLATION**)

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29. **INSTALL NO. 2 DECK BOARD SUB-ASSEMBLY** (See **INSTALLATION**)
30. **INSTALL NO. 3 DECK BOARD SUB-ASSEMBLY** (See **INSTALLATION**)
31. **INSTALL DECK BOARD ASSEMBLY** (See **INSTALLATION**)
32. **INSTALL REAR DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
33. **INSTALL REAR DOOR SCUFF PLATE RH** (See **INSTALLATION**)

AIR INLET CONTROL SERVO MOTOR

COMPONENTS

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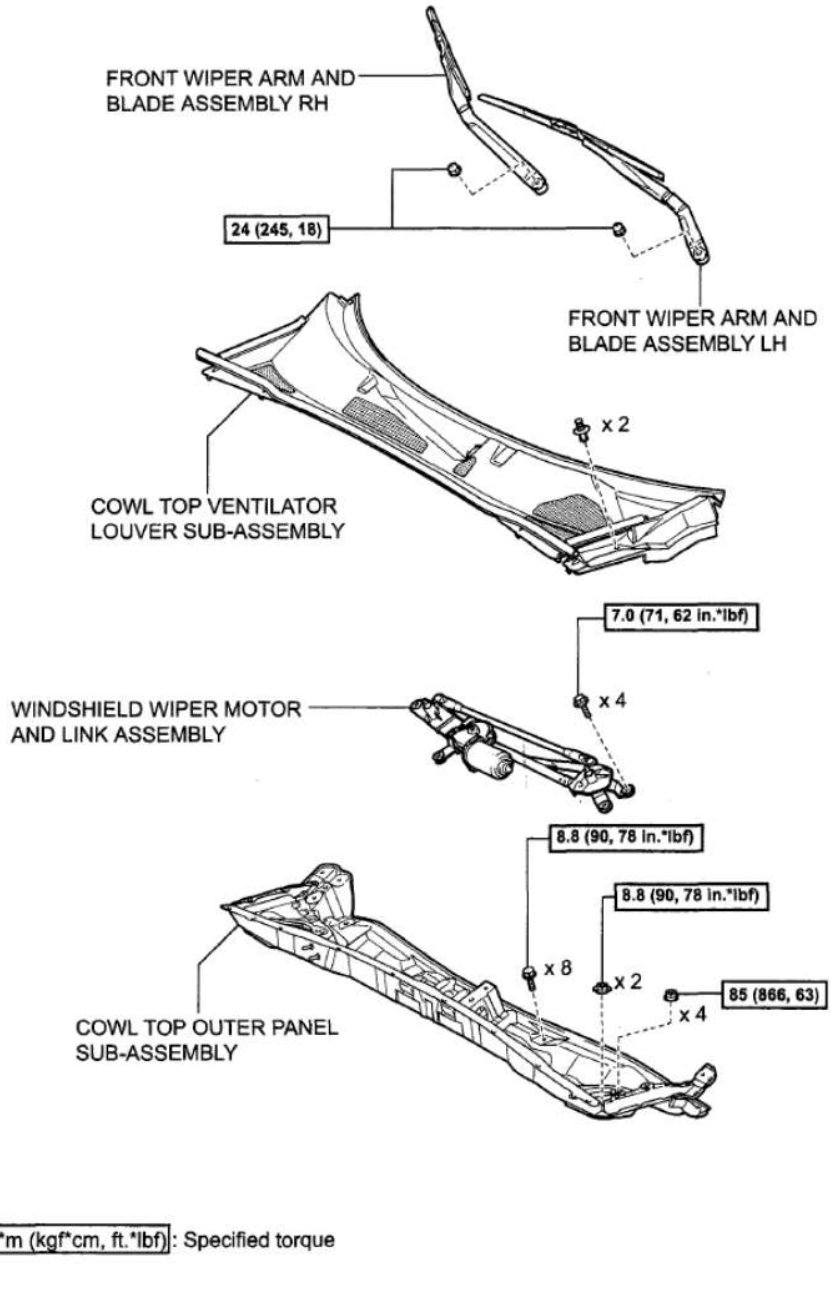


Fig. 438: Identifying Air Inlet Control Servo Motor Components (1 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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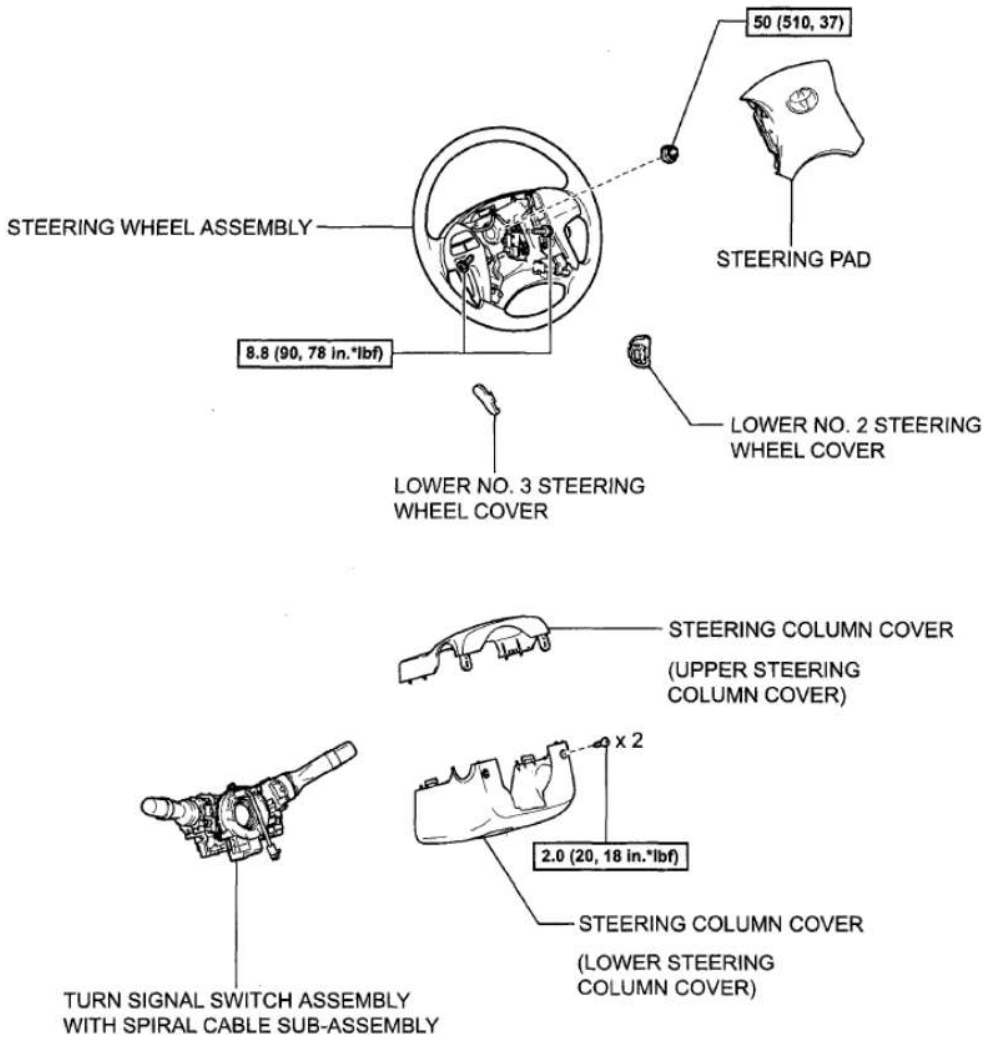


Fig. 439: Identifying Air Inlet Control Servo Motor Components (2 Of 15)
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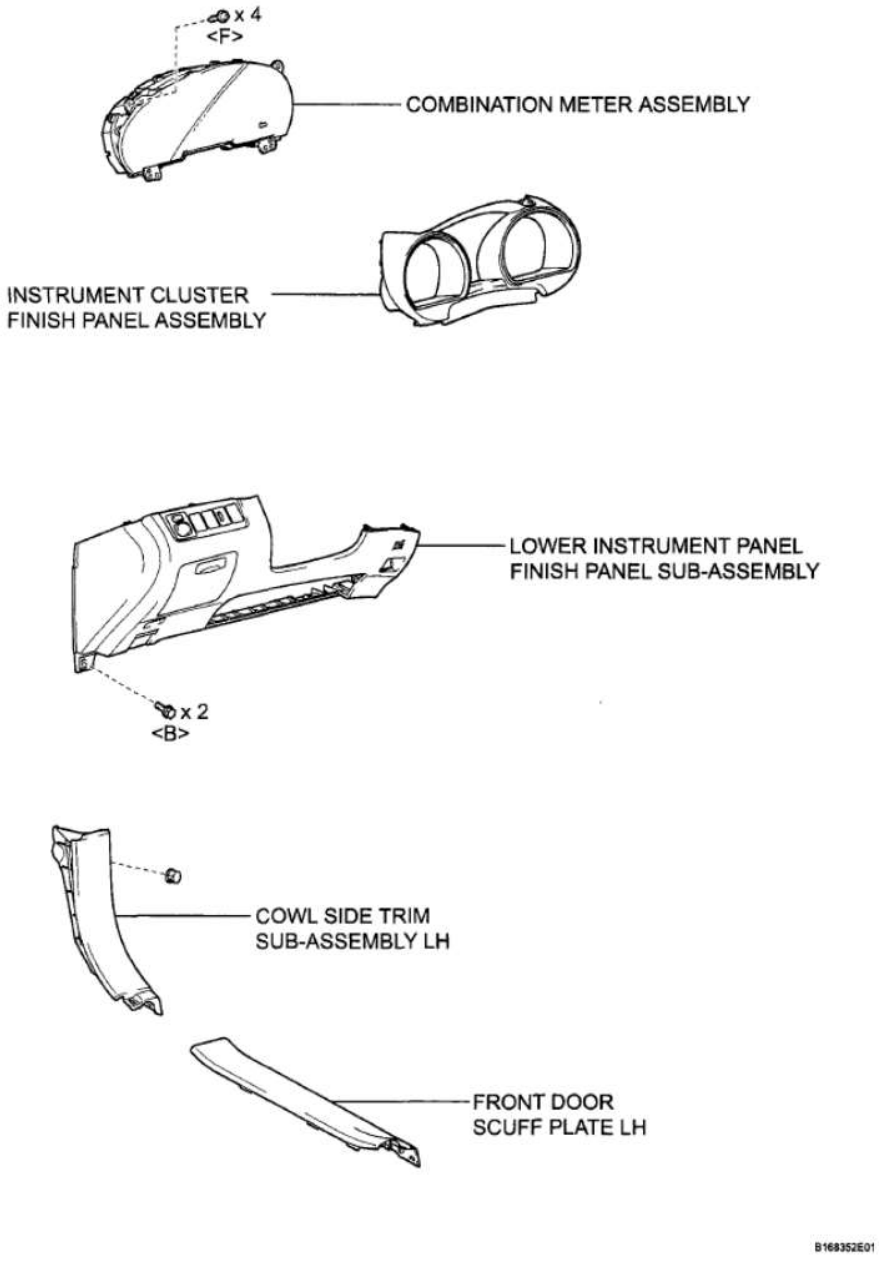


Fig. 440: Identifying Air Inlet Control Servo Motor Components (3 Of 15)
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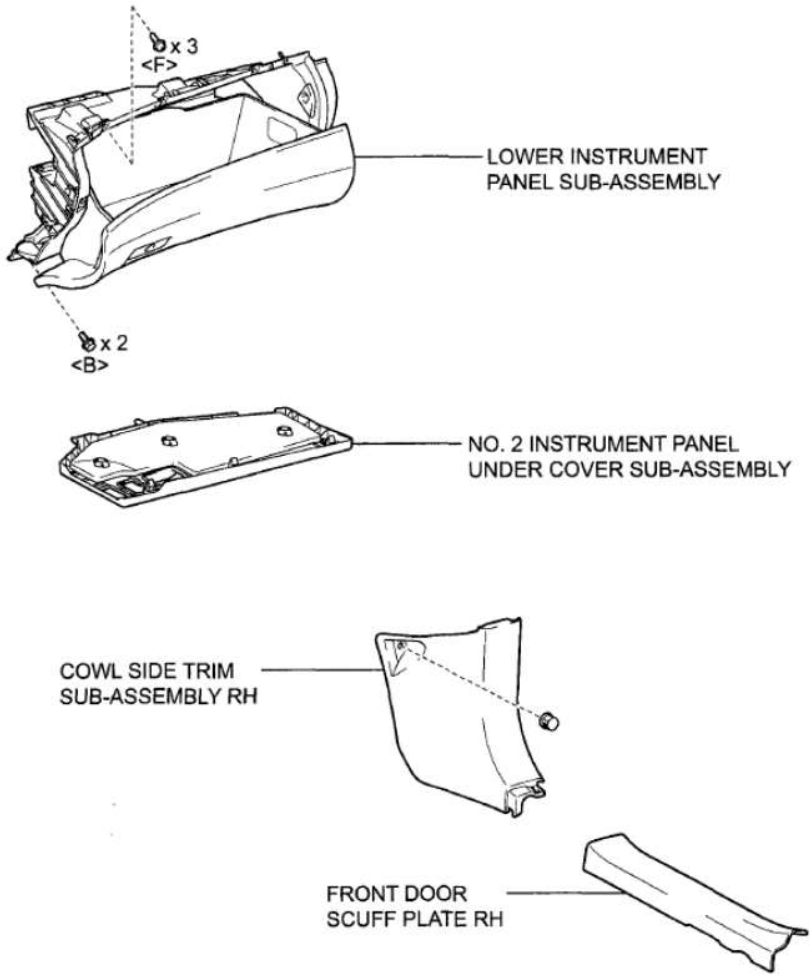


Fig. 441: Identifying Air Inlet Control Servo Motor Components (4 Of 15)
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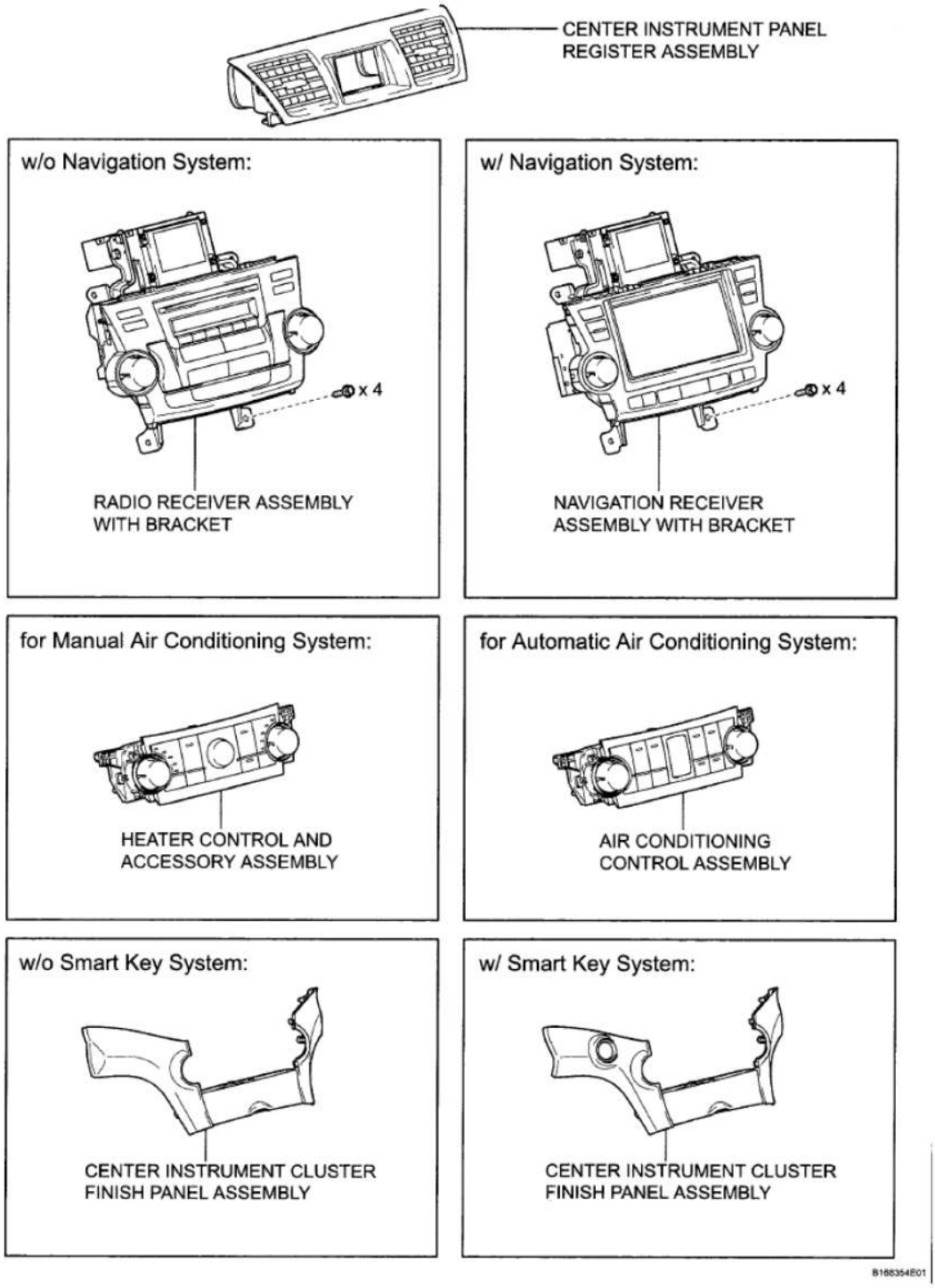


Fig. 442: Identifying Air Inlet Control Servo Motor Components (5 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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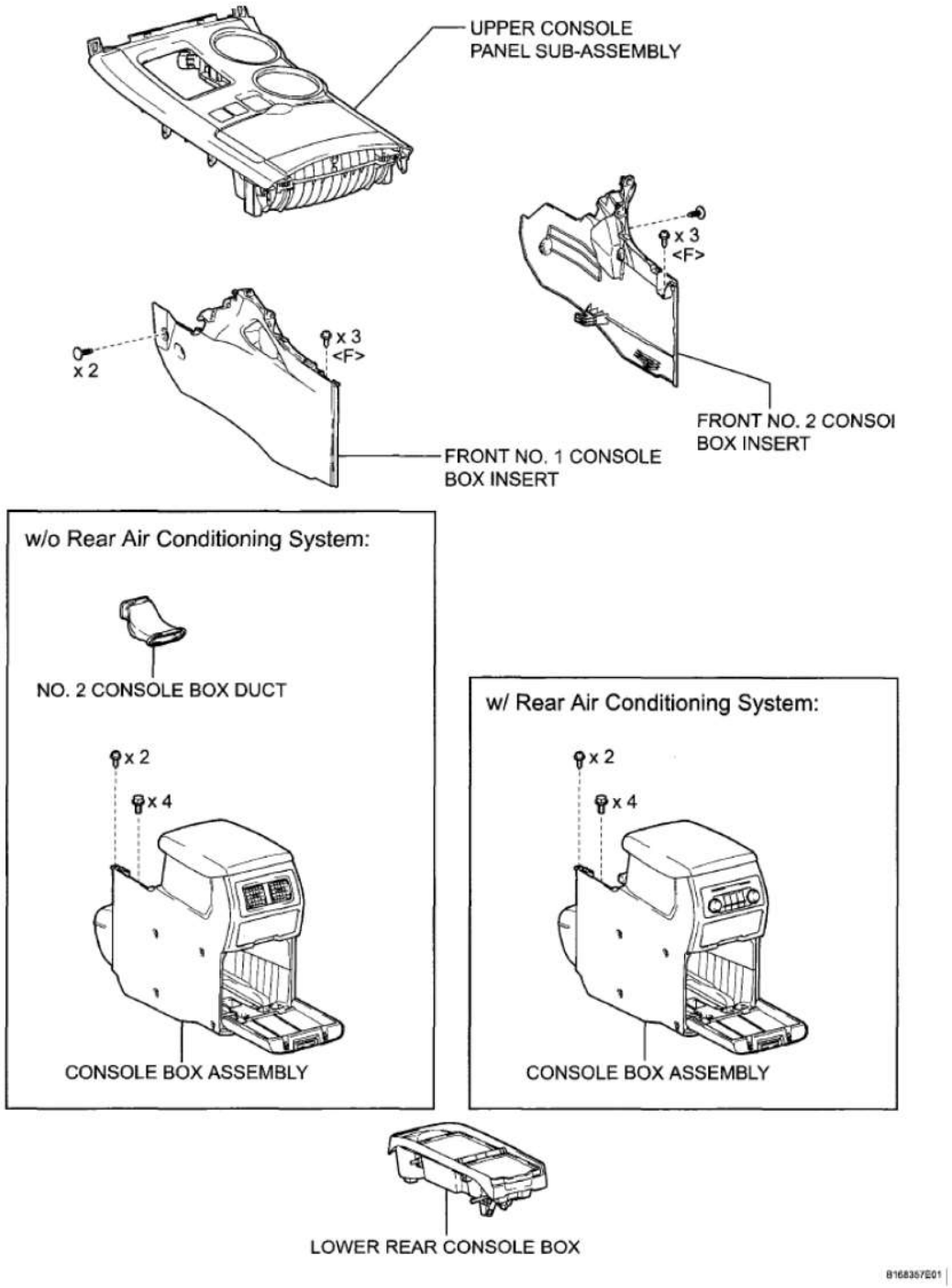


Fig. 443: Identifying Air Inlet Control Servo Motor Components (6 Of 15)
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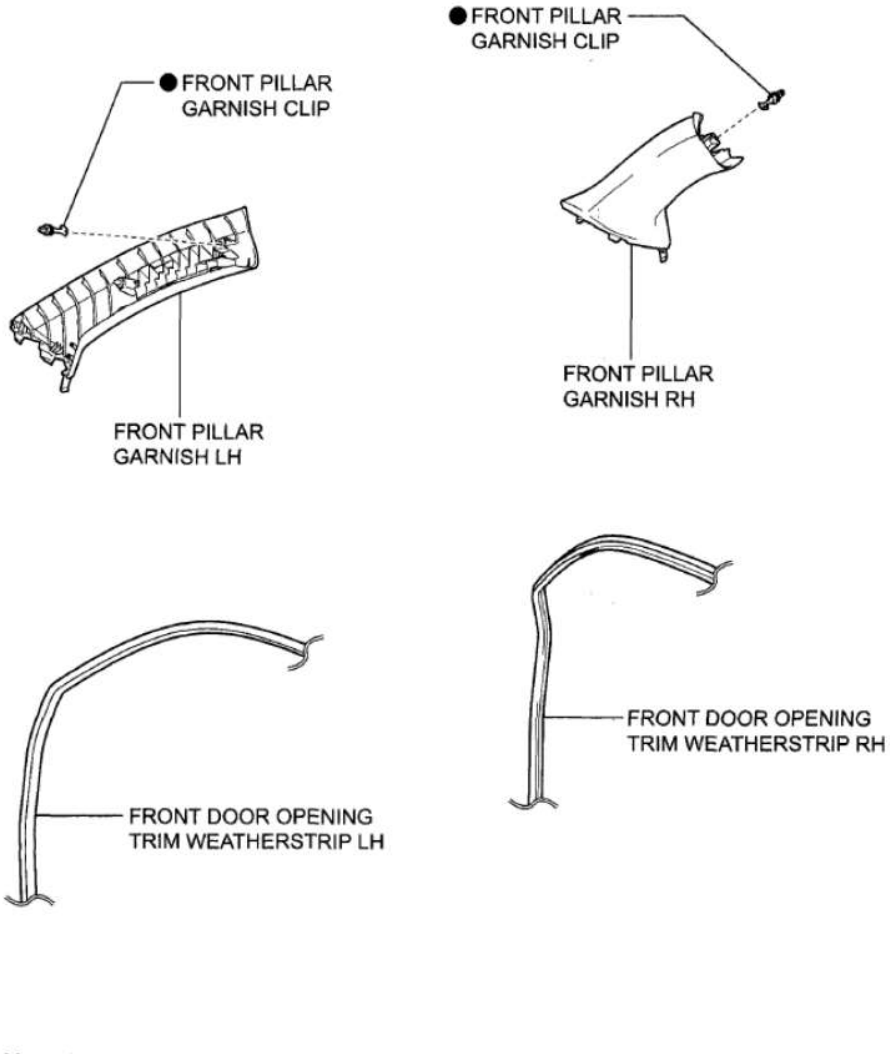


Fig. 444: Identifying Air Inlet Control Servo Motor Components (7 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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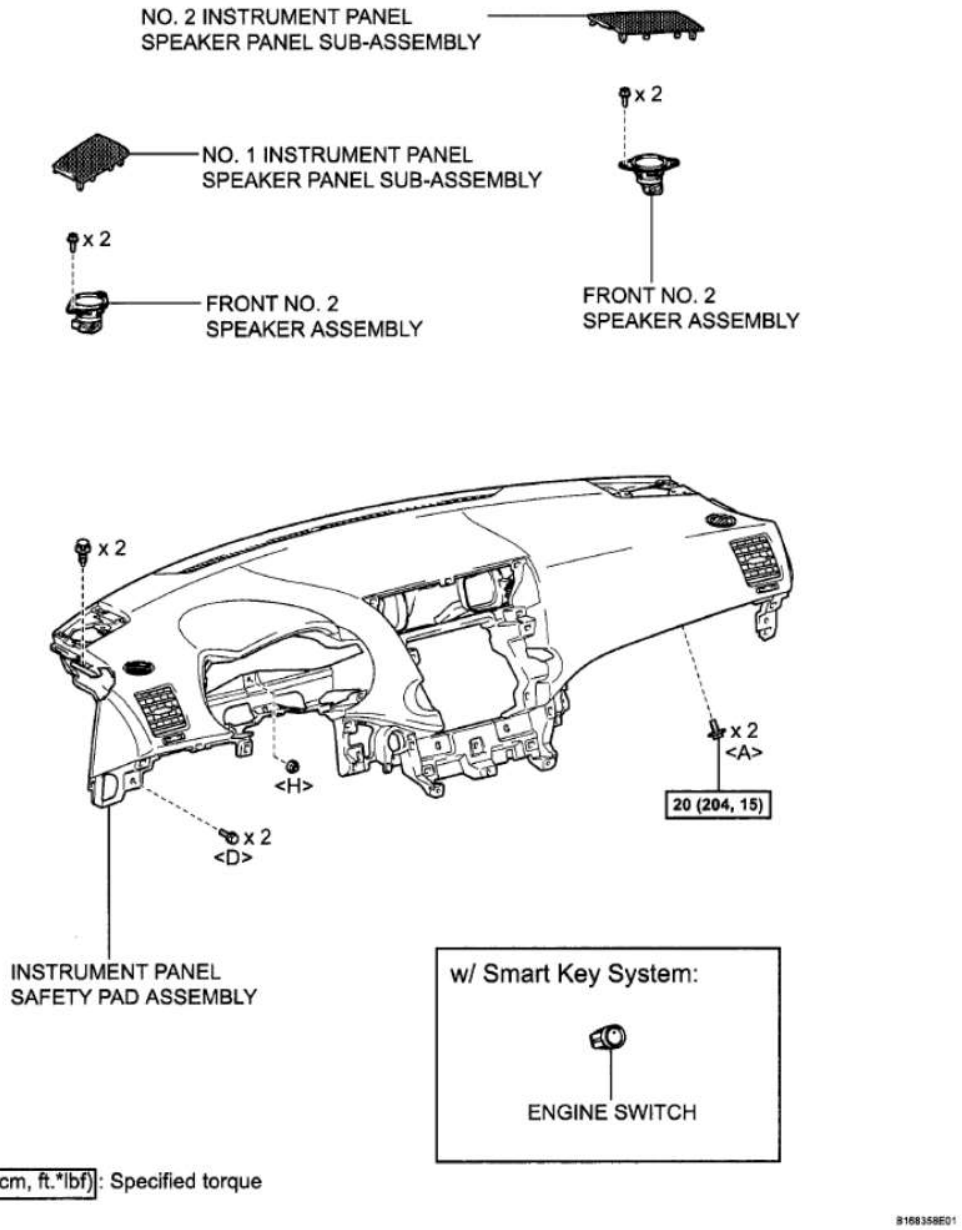


Fig. 445: Identifying Air Inlet Control Servo Motor Components (8 Of 15)
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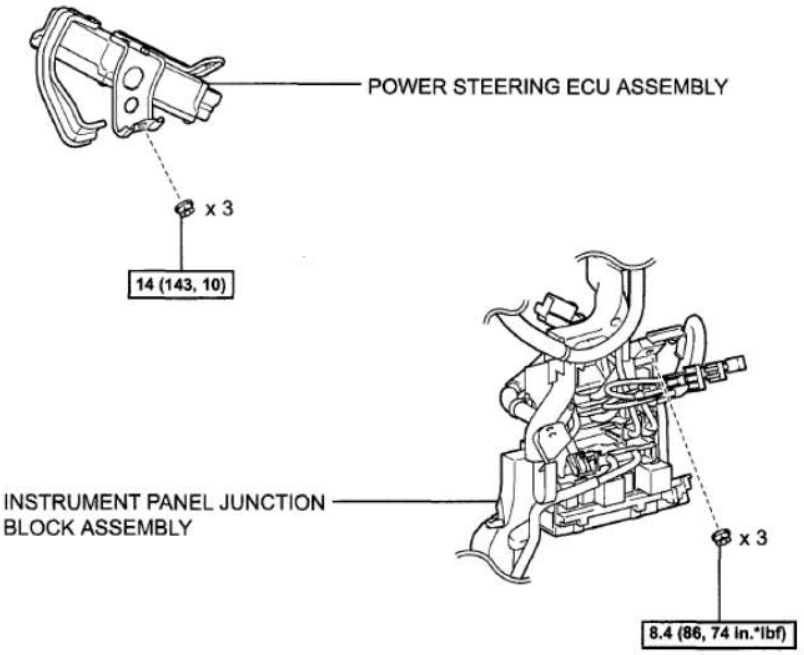


Fig. 446: Identifying Air Inlet Control Servo Motor Components (9 Of 15)
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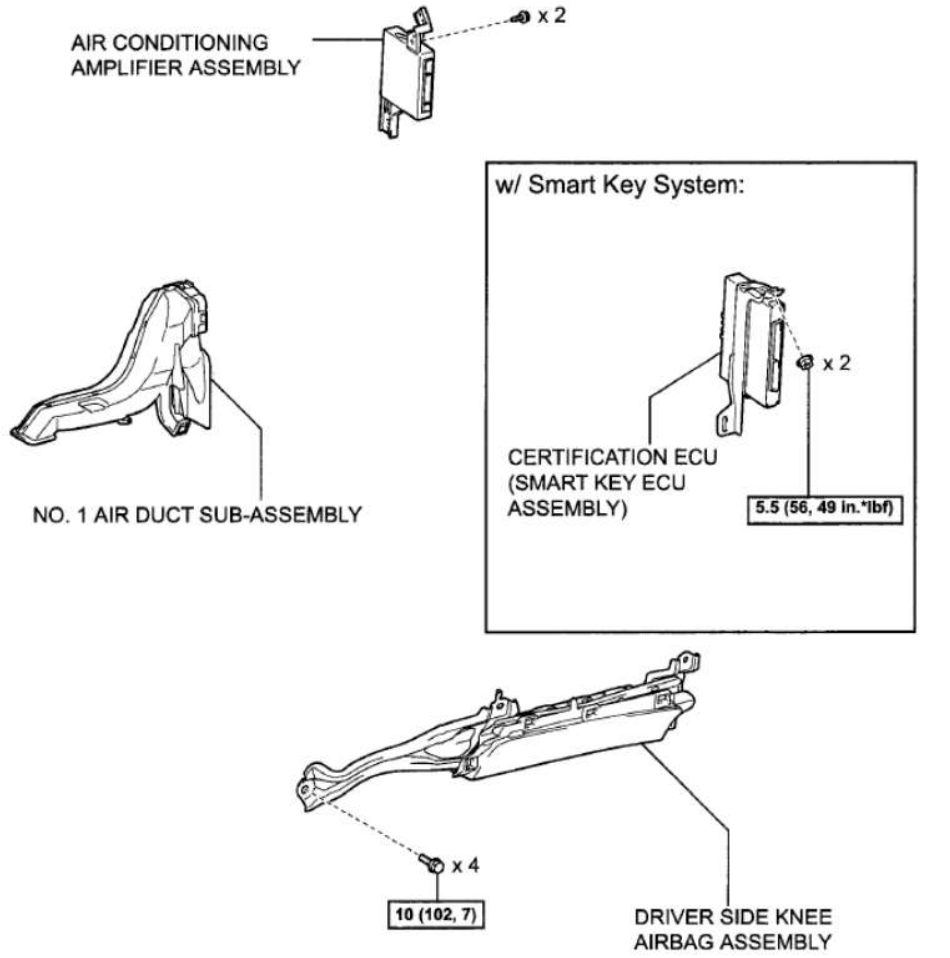


Fig. 447: Identifying Air Inlet Control Servo Motor Components (10 Of 15)
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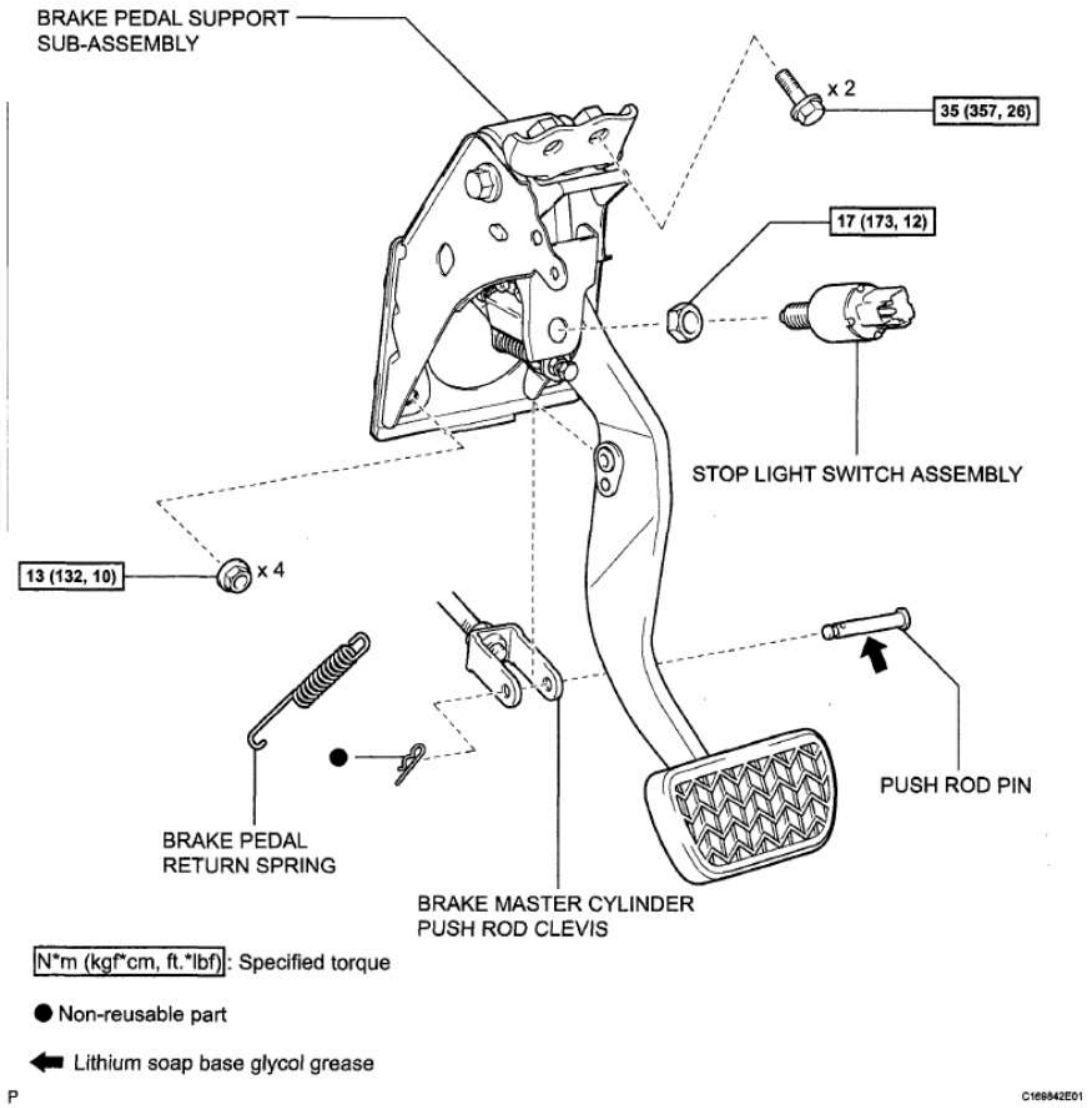


Fig. 448: Identifying Air Inlet Control Servo Motor Components (11 Of 15)
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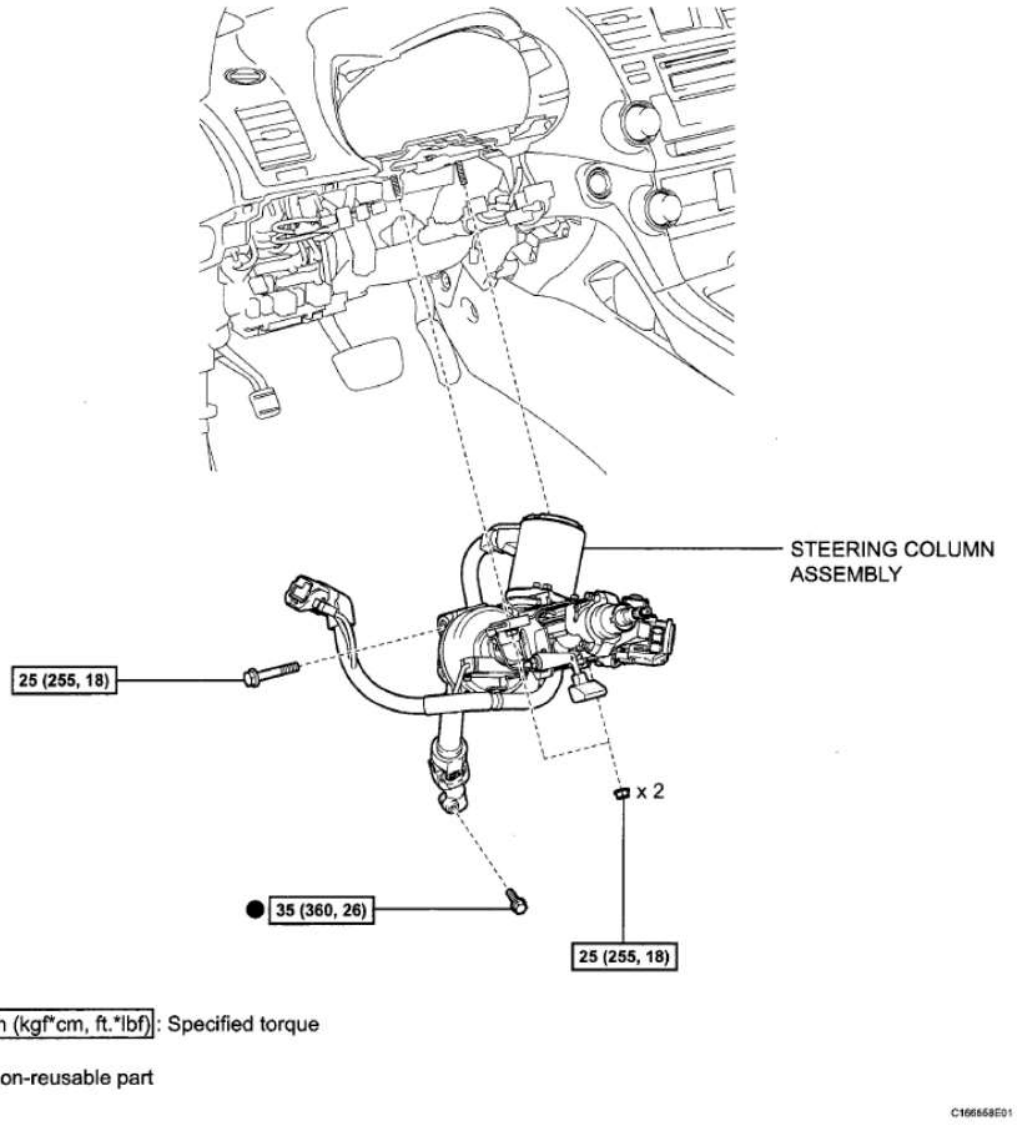


Fig. 449: Identifying Air Inlet Control Servo Motor Components (12 Of 15)
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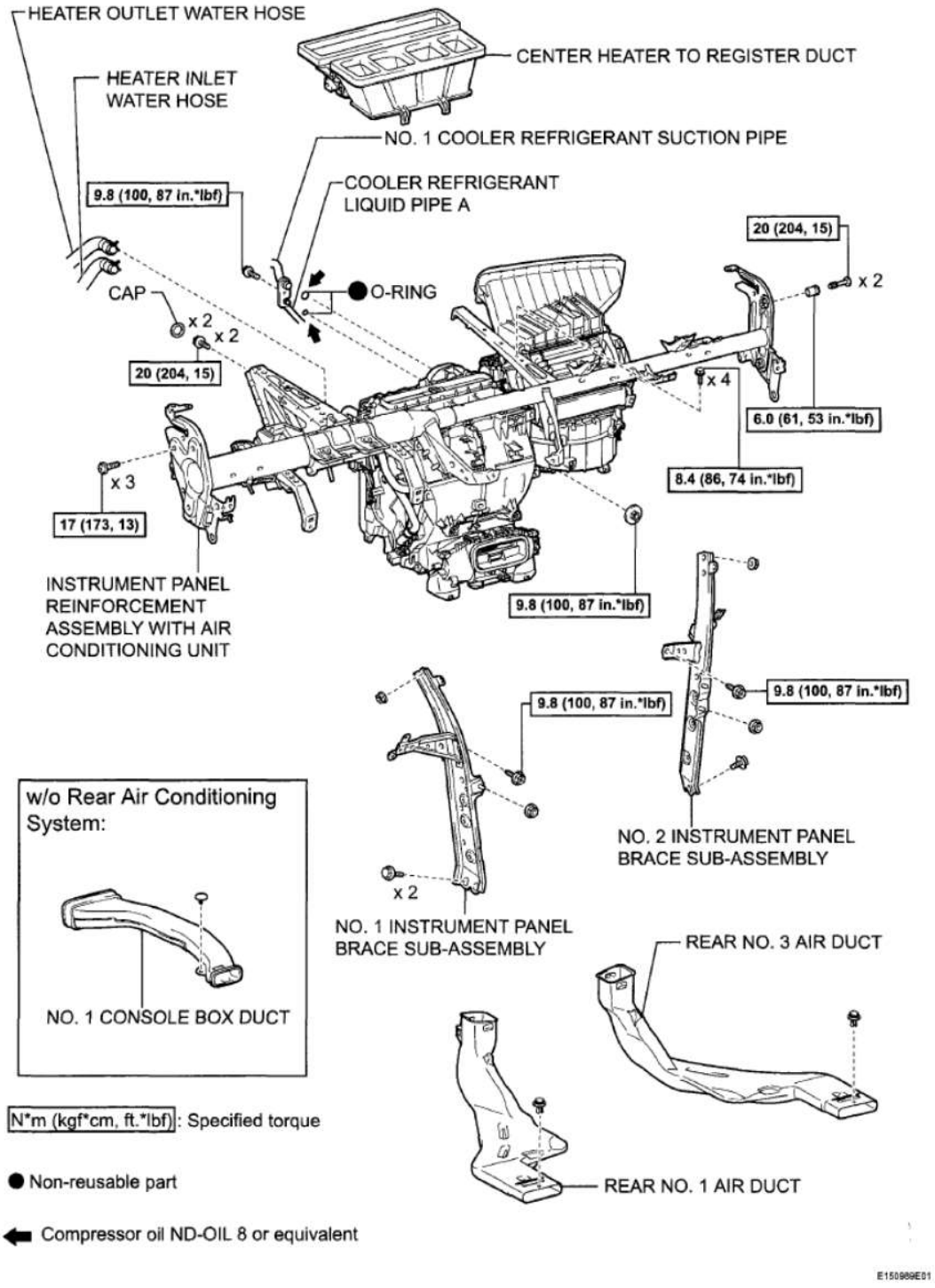


Fig. 450: Identifying Air Inlet Control Servo Motor Components (13 Of 15)
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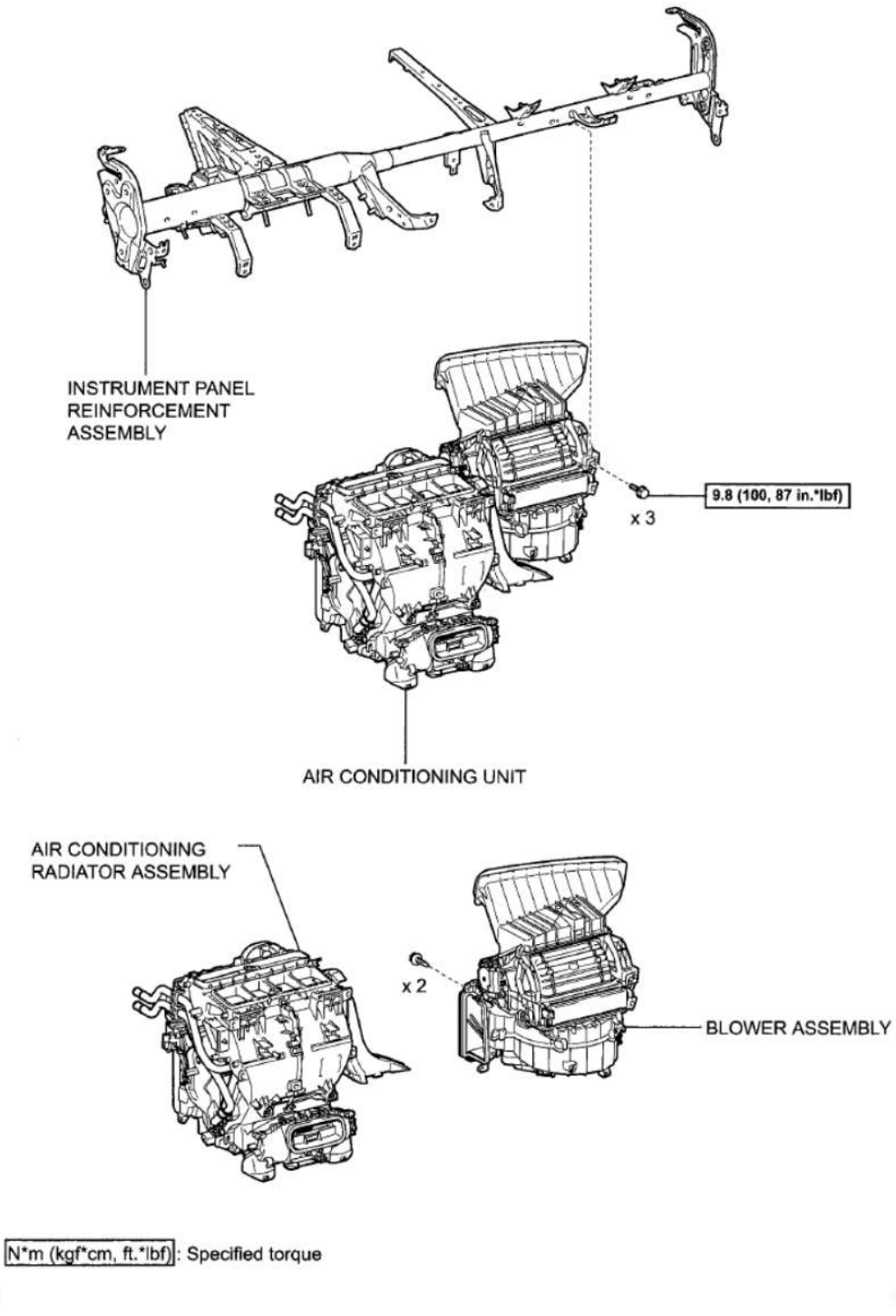


Fig. 451: Identifying Air Inlet Control Servo Motor Components (14 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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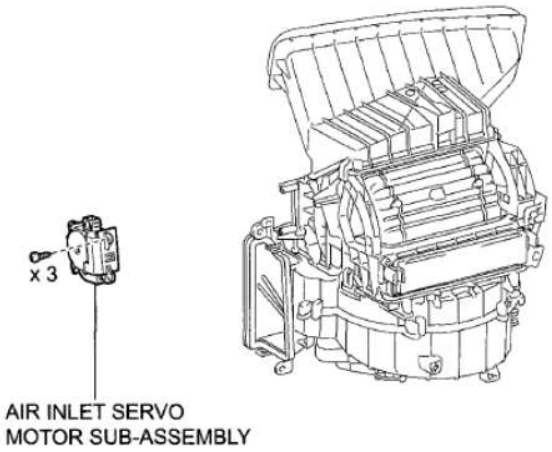


Fig. 452: Identifying Air Inlet Control Servo Motor Components (15 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **PRECAUTION**

   (See **INSTRUMENT PANEL SAFETY PAD**)

2. **RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM** (See **REPLACEMENT**)
3. **POSITION FRONT WHEELS STRAIGHT AHEAD**
4. **REMOVE FRONT WHEEL LH**
5. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

CAUTION: Wait for 90 seconds after disconnecting the cable to prevent the airbag from deploying (See AIRBAG SYSTEM).

NOTE: When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).

6. **REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY LH** (See **REMOVAL**)
7. **REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY RH** (See **REMOVAL**)
8. **REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY** (See **REMOVAL**)
9. **REMOVE WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY** (See **REMOVAL**)
10. **REMOVE COWL TOP OUTER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
11. **DISCONNECT HEATER WATER HOSE OUTLET** (See **REMOVAL**)
12. **DISCONNECT HEATER WATER HOSE INLET** (See **DISASSEMBLY**)

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13. **DISCONNECT COOLER REFRIGERANT LIQUID PIPE A** (See **DISASSEMBLY**)
14. **DISCONNECT NO. 1 COOLER REFRIGERANT SUCTION PIPE** (See **DISASSEMBLY**)
15. **REMOVE LOWER NO. 3 STEERING WHEEL COVER** (See **REMOVAL**)
16. **REMOVE LOWER NO. 2 STEERING WHEEL COVER** (See **REMOVAL**)
17. **REMOVE STEERING PAD** (See **REMOVAL**)
18. **REMOVE STEERING WHEEL ASSEMBLY** (See **DISASSEMBLY**)
19. **REMOVE STEERING COLUMN COVER** (See **REMOVAL**)
20. **REMOVE TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **REMOVAL**)
21. **REMOVE INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REMOVAL**)
22. **REMOVE COMBINATION METER ASSEMBLY** (See **REMOVAL**)
23. **REMOVE CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **REMOVAL**)
24. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **REMOVAL**)
25. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **REMOVAL**)
26. **REMOVE HEATER CONTROL AND ACCESSORY ASSEMBLY (for Manual Air Conditioning System)** (See **AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)**)
27. **REMOVE AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
28. **REMOVE RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **REMOVAL**)
29. **REMOVE NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **REMOVAL**)
30. **REMOVE FRONT DOOR SCUFF PLATE LH** (See **REMOVAL**)
31. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH** (See **REMOVAL**)
32. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Manual Air Conditioning System)** (See **REMOVAL**)
33. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
34. **REMOVE FRONT DOOR SCUFF PLATE RH** (See **REMOVAL**)
35. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH** (See **REMOVAL**)
36. **REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **REMOVAL**)
37. **REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **REMOVAL**)
38. **REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **REMOVAL**)
39. **REMOVE NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **REMOVAL**)
40. **REMOVE LOWER REAR CONSOLE BOX** (See **REMOVAL**)
41. **REMOVE CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **REMOVAL**)
42. **REMOVE CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **DISASSEMBLY**)

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43. **REMOVE FRONT NO. 1 CONSOLE BOX INSERT** (See **REMOVAL**)
44. **REMOVE FRONT NO. 2 CONSOLE BOX INSERT** (See **REMOVAL**)
45. **REMOVE ENGINE SWITCH (w/ Smart Key System)** (See **INSPECTION**)
46. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **REMOVAL**)
47. **REMOVE FRONT PILLAR GARNISH LH** (See **REMOVAL**)
48. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)
49. **REMOVE FRONT PILLAR GARNISH RH** (See **REMOVAL**)
50. **REMOVE NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
51. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
52. **REMOVE NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
53. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
54. **DISCONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **REMOVAL**)
55. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **REMOVAL**)
56. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **REMOVAL**)
57. **REMOVE BRAKE PEDAL RETURN SPRING** (See **REMOVAL**)
58. **REMOVE STOP LIGHT SWITCH ASSEMBLY** (See **INSPECTION**)
59. **SEPARATE BRAKE MASTER CYLINDER PUSH ROD CLEVIS** (See **REMOVAL**)
60. **REMOVE BRAKE PEDAL SUPPORT SUB-ASSEMBLY** (See **REMOVAL**)
61. **REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY** (See **REMOVAL**)
62. **REMOVE NO. 1 AIR DUCT SUB-ASSEMBLY** (See **REMOVAL**)
63. **SEPARATE STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY** (See **REMOVAL**)
64. **REMOVE STEERING COLUMN ASSEMBLY** (See **REMOVAL**)
65. **DISCONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY** (See **DISASSEMBLY**)
66. **REMOVE POWER STEERING ECU ASSEMBLY** (See **INSTALLATION**)
67. **REMOVE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)
68. **REMOVE AIR CONDITIONING AMPLIFIER ASSEMBLY** (See **REMOVAL**)
69. **REMOVE REAR NO. 1 AIR DUCT** (See **DISASSEMBLY**)
70. **REMOVE REAR NO. 3 AIR DUCT** (See **DISASSEMBLY**)
71. **REMOVE NO. 1 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **DISASSEMBLY**)
72. **REMOVE CENTER HEATER TO REGISTER DUCT** (See **DISASSEMBLY**)
73. **REMOVE NO. 1 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **DISASSEMBLY**)
74. **REMOVE NO. 2 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **DISASSEMBLY**)
75. **REMOVE INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR**

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CONDITIONING UNIT (w/o PTC Heater) (See **DISASSEMBLY**)

76. **REMOVE INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/ PTC Heater)** (See **DISASSEMBLY**)
77. **REMOVE AIR CONDITIONING UNIT** (See **DISASSEMBLY**)
78. **REMOVE BLOWER ASSEMBLY** (See **DISASSEMBLY**)
79. **REMOVE AIR INLET SERVO MOTOR SUB-ASSEMBLY**
    a. Remove the 3 screws and air inlet servo motor sub-assembly.

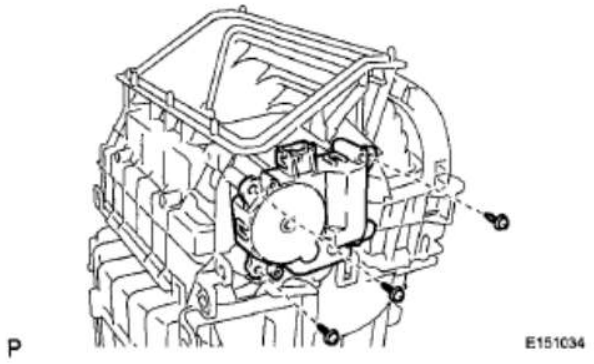


Fig. 453: Identifying Air Inlet Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL AIR INLET SERVO MOTOR SUB-ASSEMBLY**
    a. Install the air inlet servo motor sub-assembly with the 3 screws.
2. **INSTALL BLOWER ASSEMBLY** (See **INSTALLATION**)
3. **INSTALL AIR CONDITIONING UNIT** (See **INSTALLATION**)

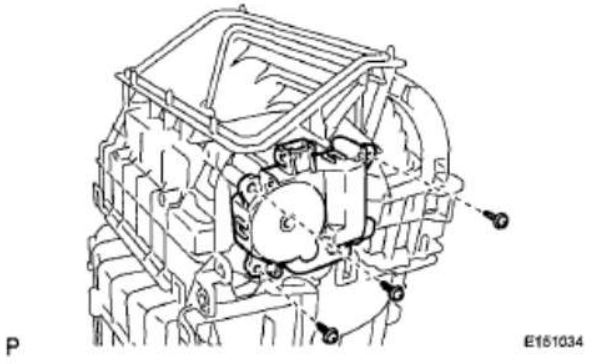


Fig. 454: Identifying Air Inlet Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **INSTALL INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/o PTC Heater)** (See **REAR COOLING UNIT**)

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5. **INSTALL INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/ PTC Heater)** (See **REAR COOLING UNIT**)
6. **INSTALL NO. 1 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **REAR COOLING UNIT**)
7. **INSTALL NO. 2 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **REAR COOLING UNIT**)
8. **INSTALL CENTER HEATER TO REGISTER DUCT** (See **REAR COOLING UNIT**)
9. **INSTALL NO. 1 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **REAR COOLING UNIT**)
10. **INSTALL REAR NO. 3 AIR DUCT** (See **REAR COOLING UNIT**)
11. **INSTALL REAR NO. 1 AIR DUCT** (See **REAR COOLING UNIT**)
12. **INSTALL AIR CONDITIONING AMPLIFIER ASSEMBLY** (See **REMOVAL**)
13. **INSTALL CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)
14. **INSTALL POWER STEERING ECU ASSEMBLY** (See **INSTALLATION**)
15. **CONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY** (See **REAR COOLING UNIT**)
16. **INSTALL STEERING COLUMN ASSEMBLY** (See **INSTALLATION**)
17. **CONNECT STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY** (See **INSTALLATION**)
18. **INSTALL NO. 1 AIR DUCT SUB-ASSEMBLY** (See **INSTALLATION**)
19. **INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY** (See **INSTALLATION**)
20. **INSTALL BRAKE PEDAL SUPPORT SUB-ASSEMBLY** (See **INSTALLATION**)
21. **CONNECT BRAKE MASTER CYLINDER PUSH ROD CLEVIS** (See **INSTALLATION**)
22. **INSTALL BRAKE PEDAL RETURN SPRING** (See **INSTALLATION**)
23. **INSTALL STOP LIGHT SWITCH ASSEMBLY** (See **INSTALLATION**)
24. **INSPECT AND ADJUST BRAKE PEDAL HEIGHT** (See **ADJUSTMENT**)
25. **INSPECT BRAKE PEDAL FREE PLAY** (See **ADJUSTMENT**)
26. **INSPECT BRAKE PEDAL RESERVE DISTANCE** (See **ADJUSTMENT**)
27. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **INSTALLATION**)
28. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **INSTALLATION**)
29. **CONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **INSTALLATION**)
30. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
31. **INSTALL NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
32. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
33. **INSTALL NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
34. **INSTALL FRONT PILLAR GARNISH RH** (See **INSTALLATION**)

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35. **INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
36. **INSTALL FRONT PILLAR GARNISH LH** (See **INSTALLATION**)
37. **INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **INSTALLATION**)
38. **INSTALL ENGINE SWITCH (w/ Smart Key System)** (See **INSTALLATION**)
39. **INSTALL FRONT NO. 2 CONSOLE BOX INSERT** (See **INSTALLATION**)
40. **INSTALL FRONT NO. 1 CONSOLE BOX INSERT** (See **INSTALLATION**)
41. **INSTALL CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
42. **INSTALL CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **INSTALLATION**)
43. **INSTALL LOWER REAR CONSOLE BOX** (See **INSTALLATION**)
44. **INSTALL NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
45. **INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
46. **INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
47. **INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **INSTALLATION**)
48. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH** (See **INSTALLATION**)
49. **INSTALL FRONT DOOR SCUFF PLATE RH** (See **INSTALLATION**)
50. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Manual Air Conditioning System)** (See **INSTALLATION**)
51. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Automatic Air Conditioning System)** (See **INSTALLATION**)
52. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH** (See **INSTALLATION**)
53. **INSTALL FRONT DOOR SCUFF PLATE LH** (See **INSTALLATION**)
54. **INSTALL RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **INSTALLATION**)
55. **INSTALL NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **INSTALLATION**)
56. **INSTALL HEATER CONTROL AND ACCESSORY ASSEMBLY (for Manual Air Conditioning System)** (See **AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)**)
57. **INSTALL AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
58. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **INSTALLATION**)
59. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **INSTALLATION**)
60. **INSTALL CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **INSTALLATION**)
61. **INSTALL COMBINATION METER ASSEMBLY** (See **REASSEMBLY**)
62. **INSTALL INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REASSEMBLY**)

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63. **POSITION FRONT WHEELS STRAIGHT AHEAD**
64. **INSTALL TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
65. **INSTALL STEERING COLUMN COVER** (See **INSTALLATION**)
66. **ADJUST SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
67. **INSTALL STEERING WHEEL ASSEMBLY** (See **INSTALLATION**)
68. **INSPECT STEERING WHEEL CENTER POINT**
69. **INSTALL STEERING PAD** (See **INSTALLATION**)
70. **INSTALL LOWER NO. 2 STEERING WHEEL COVER** (See **INSTALLATION**)
71. **INSTALL LOWER NO. 3 STEERING WHEEL COVER** (See **INSTALLATION**)
72. **INSTALL FRONT WHEEL LH** (See **INSTALLATION**)
73. **CONNECT COOLER REFRIGERANT LIQUID PIPE A** (See **REAR COOLING UNIT**)
74. **CONNECT NO. 1 COOLER REFRIGERANT SUCTION PIPE** (See **REAR COOLING UNIT**)
75. **CONNECT HEATER WATER HOSE INLET** (See **REAR COOLING UNIT**)
76. **CONNECT HEATER WATER HOSE OUTLET** (See **REAR COOLING UNIT**)
77. **INSTALL COWL TOP OUTER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
78. **INSTALL WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY** (See **INSTALLATION**)
79. **INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY** (See **INSTALLATION**)
80. **INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY RH** (See **INSTALLATION**)
81. **INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY LH** (See **INSTALLATION**)
82. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**

NOTE: **When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).**

83. **INSPECT STEERING PAD** (See **INSTALLATION**)
84. **INSPECT SRS WARNING LIGHT**
    a. Inspect the SRS warning light (See **DIAGNOSIS SYSTEM**).
85. **ADD ENGINE COOLANT (for 1AR-FE)** (See **COOLANT**)
86. **ADD ENGINE COOLANT (for 2GR-FE)** (See **REPLACEMENT**)
87. **INSPECT FOR COOLANT LEAK (for 1AR-FE)** (See **COOLING SYSTEM**)
88. **INSPECT FOR COOLANT LEAK (for 2GR-FE)** (See **COOLING SYSTEM**)
89. **CHARGE WITH REFRIGERANT** (See **REFRIGERANT LINE**)
90. **WARM UP ENGINE** (See **REFRIGERANT LINE**)
91. **INSPECT FOR REFRIGERANT LEAK** (See **REFRIGERANT LINE**)

AIR OUTLET CONTROL SERVO MOTOR (FOR FRONT)

COMPONENTS

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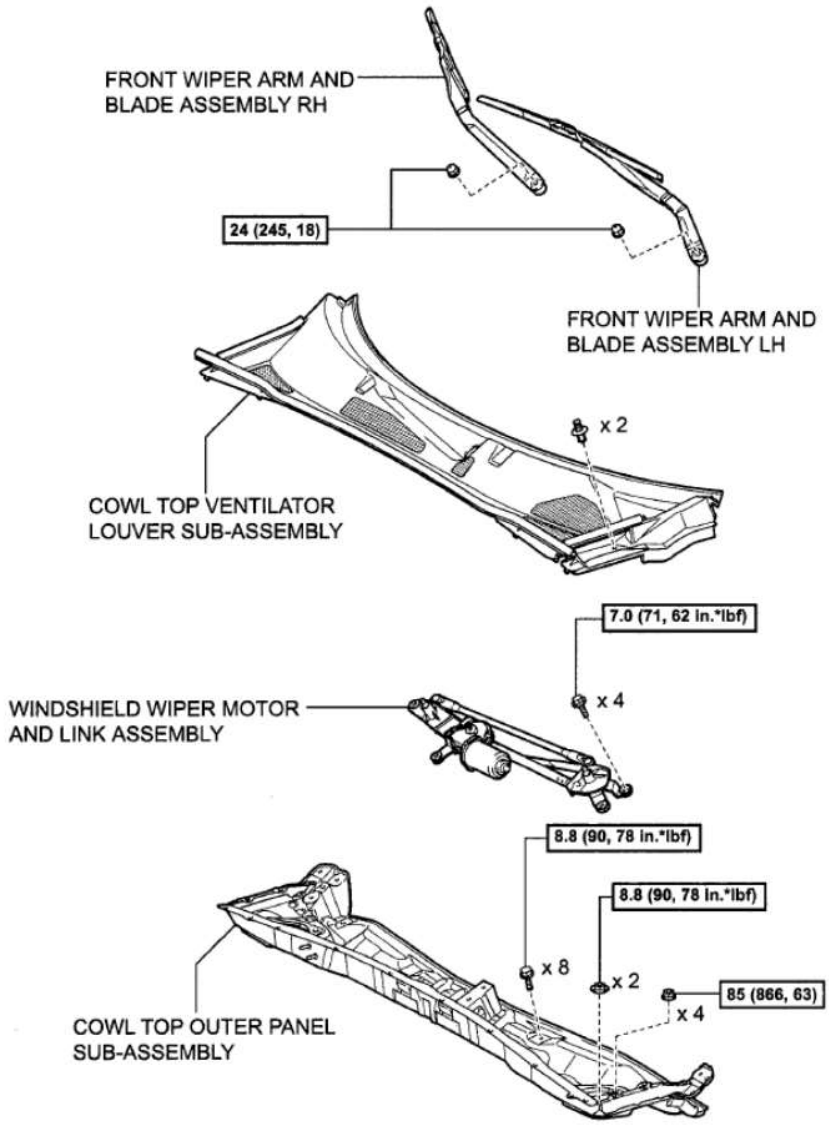


Fig. 455: Identifying Air Outlet Control Servo Motor Components - For Front (1 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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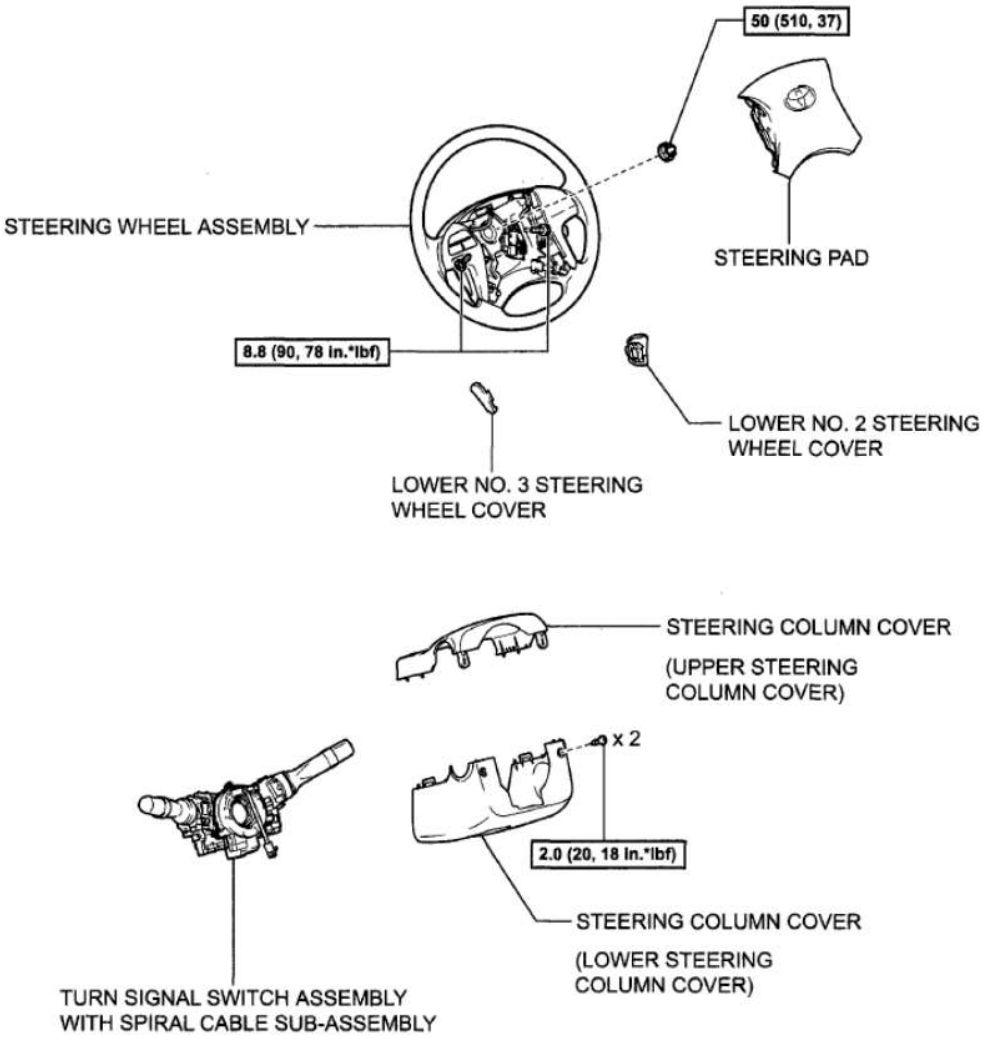


Fig. 456: Identifying Air Outlet Control Servo Motor Components - For Front (2 Of 15)
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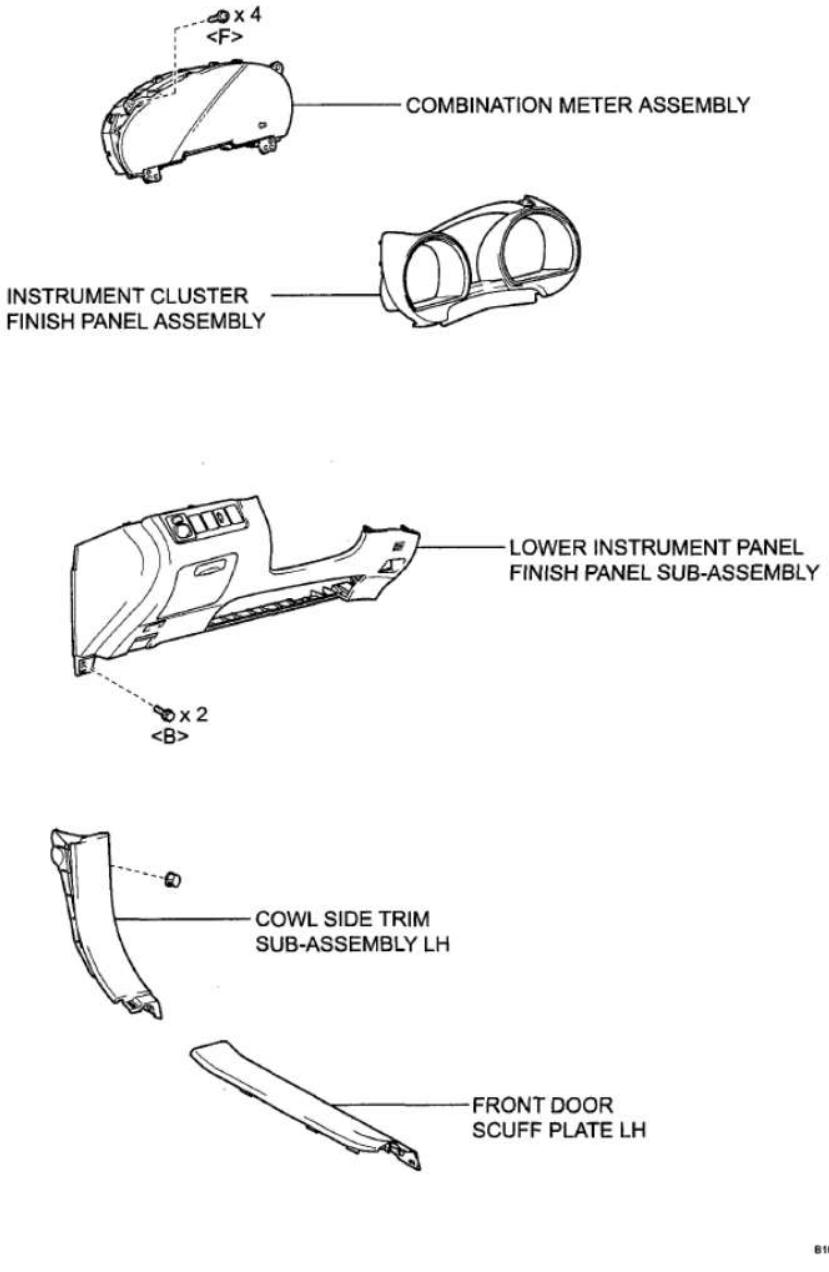


Fig. 457: Identifying Air Outlet Control Servo Motor Components - For Front (3 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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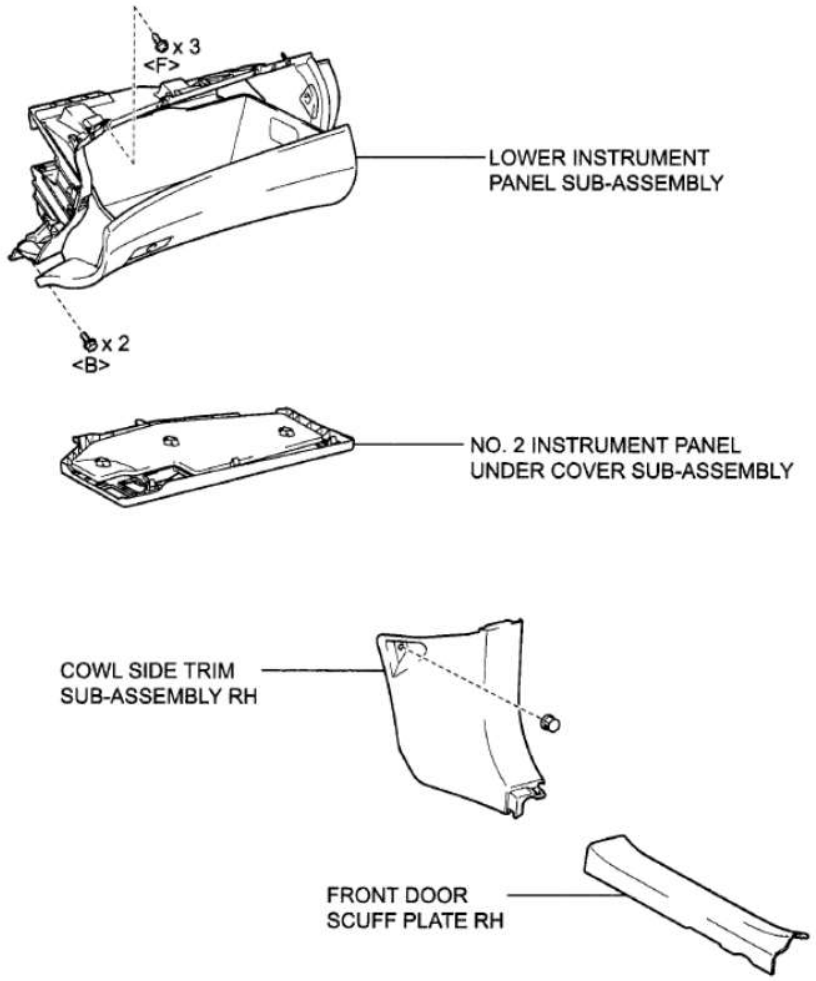


Fig. 458: Identifying Air Outlet Control Servo Motor Components - For Front (4 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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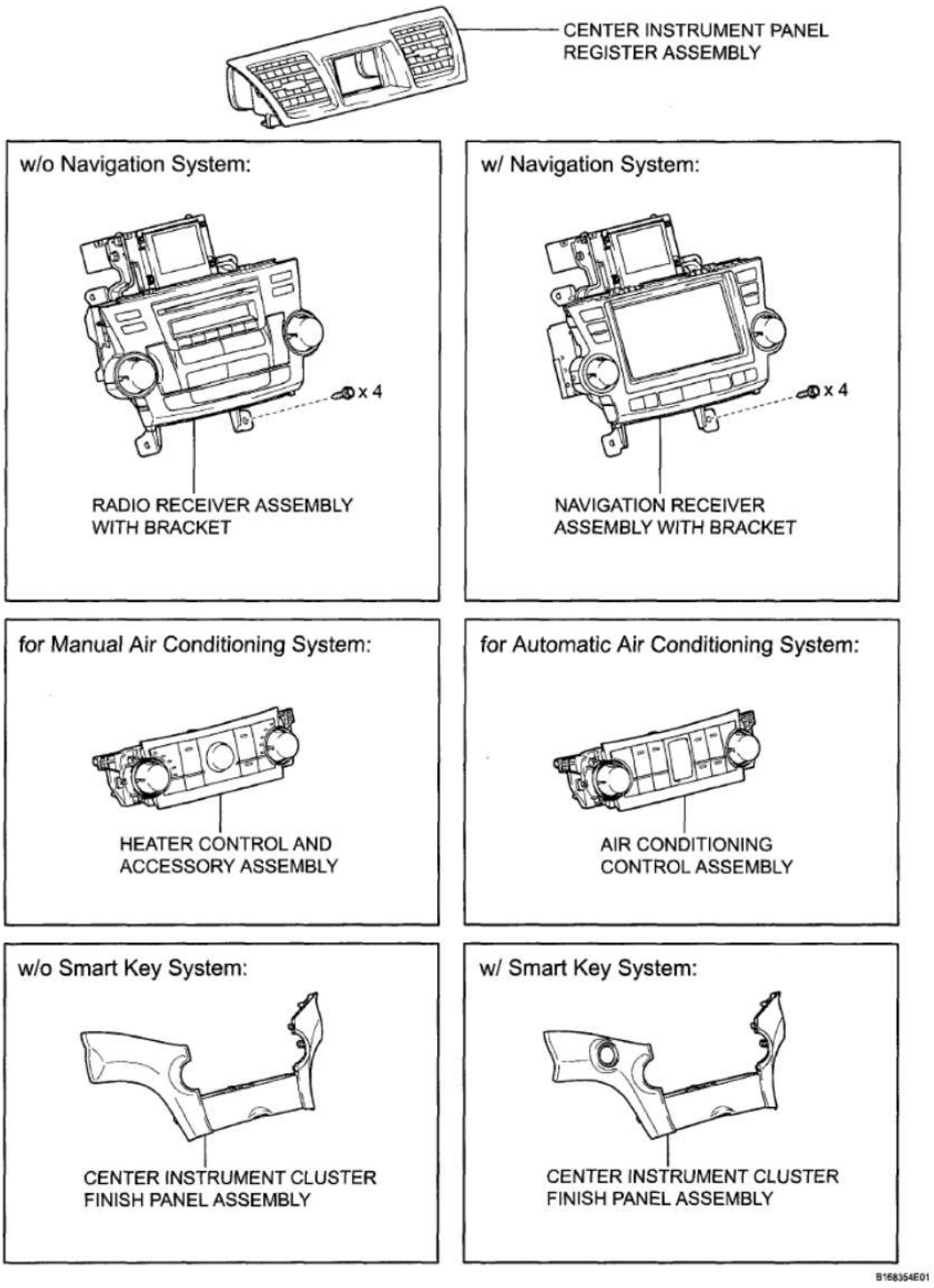


Fig. 459: Identifying Air Outlet Control Servo Motor Components - For Front (5 Of 15)
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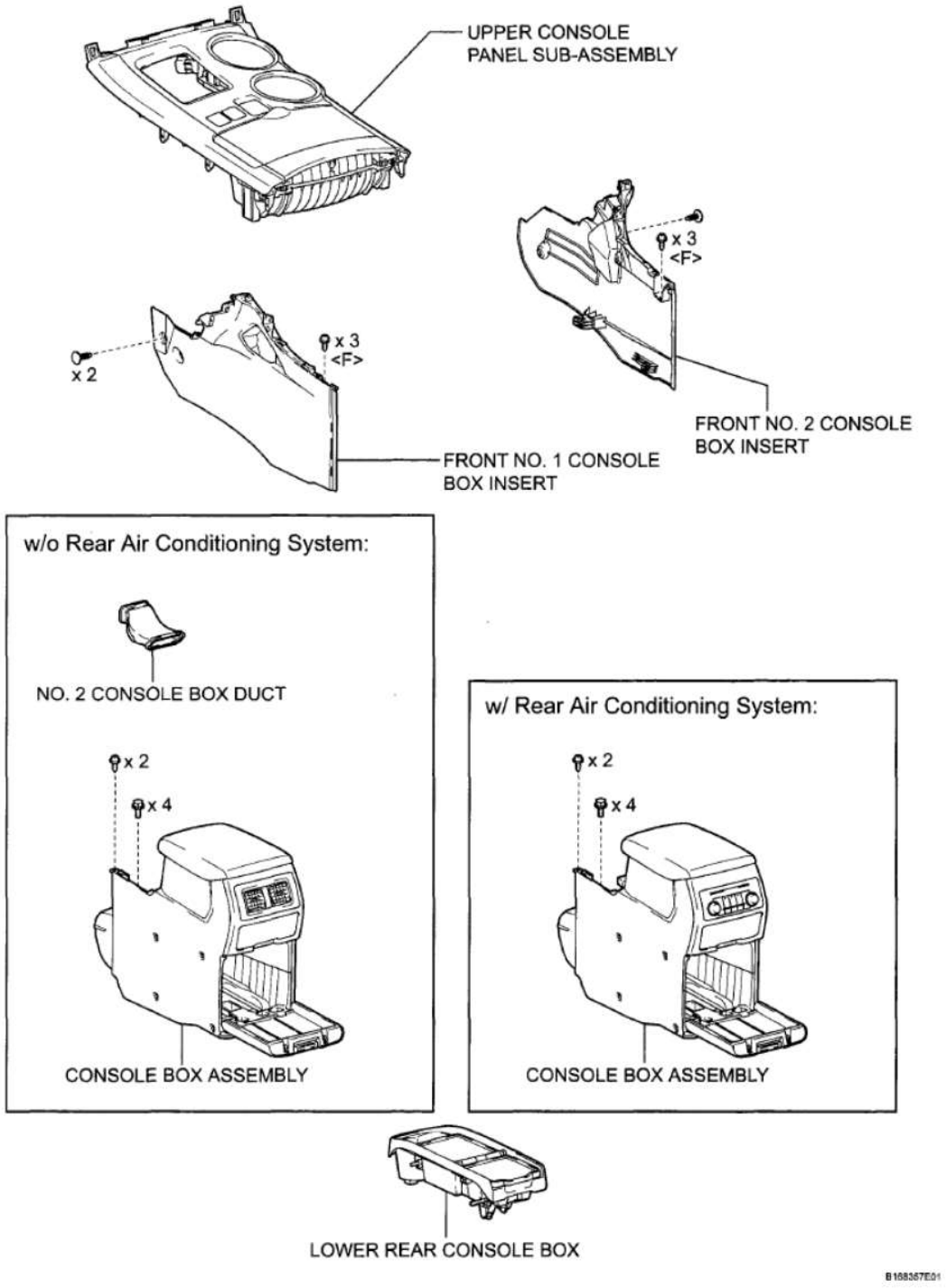


Fig. 460: Identifying Air Outlet Control Servo Motor Components - For Front (6 Of 15)
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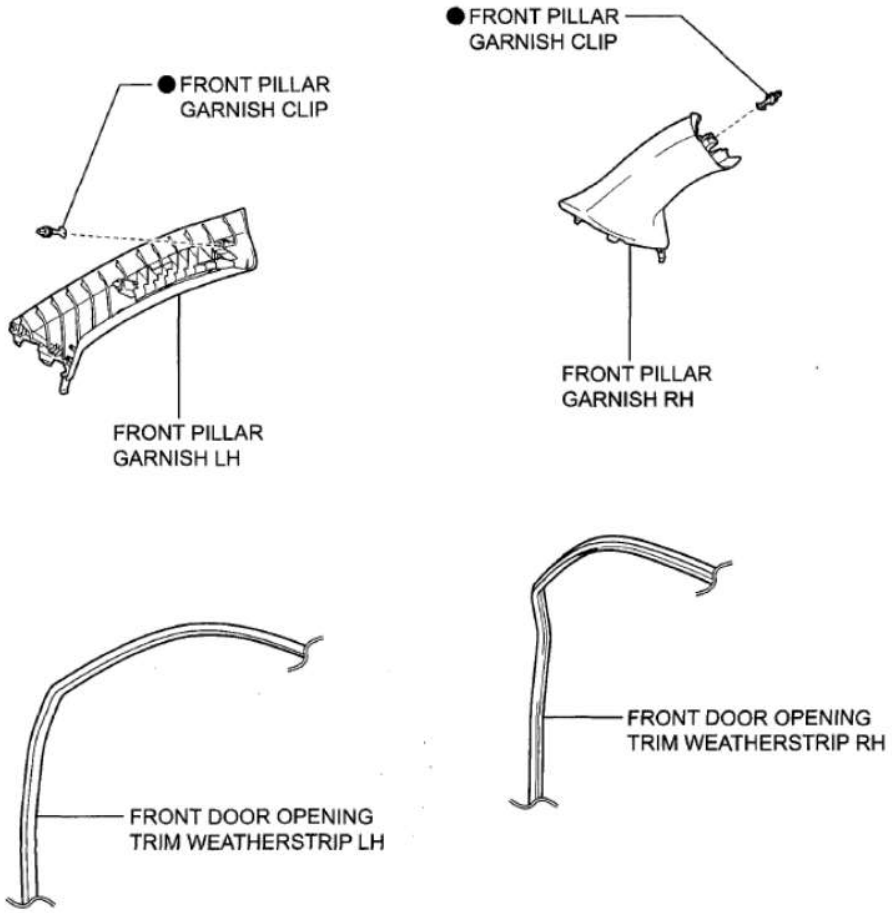


Fig. 461: Identifying Air Outlet Control Servo Motor Components - For Front (7 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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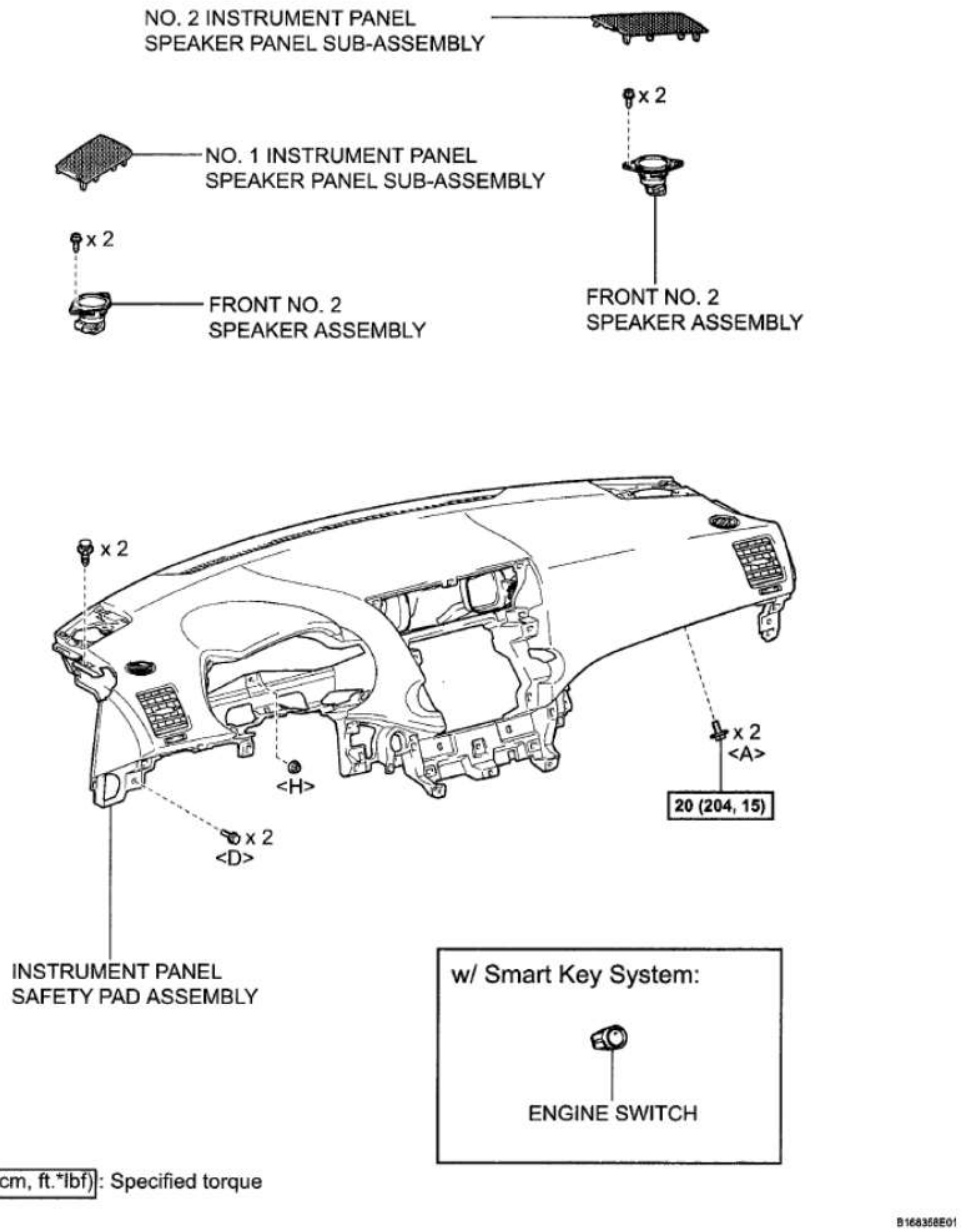


Fig. 462: Identifying Air Outlet Control Servo Motor Components - For Front (8 Of 15)
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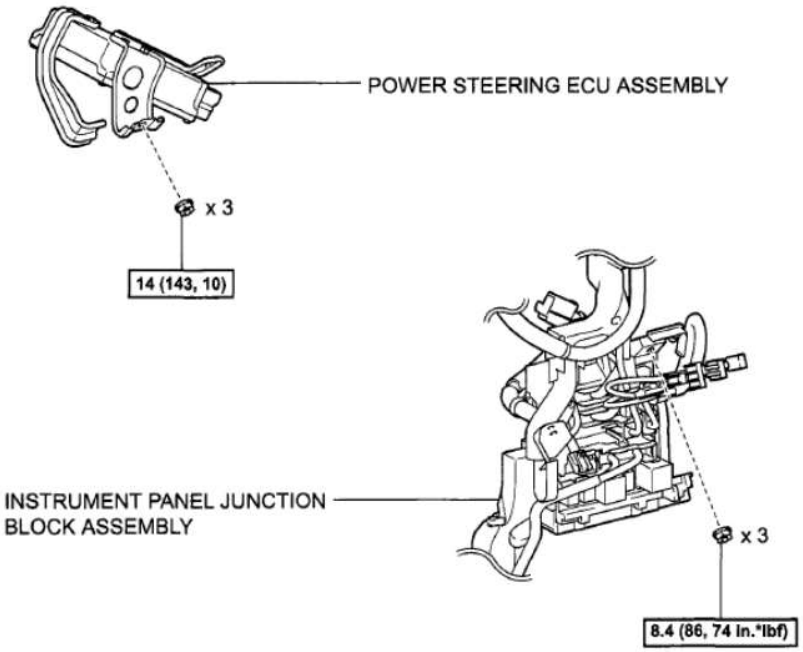


Fig. 463: Identifying Air Outlet Control Servo Motor Components - For Front (9 Of 15)
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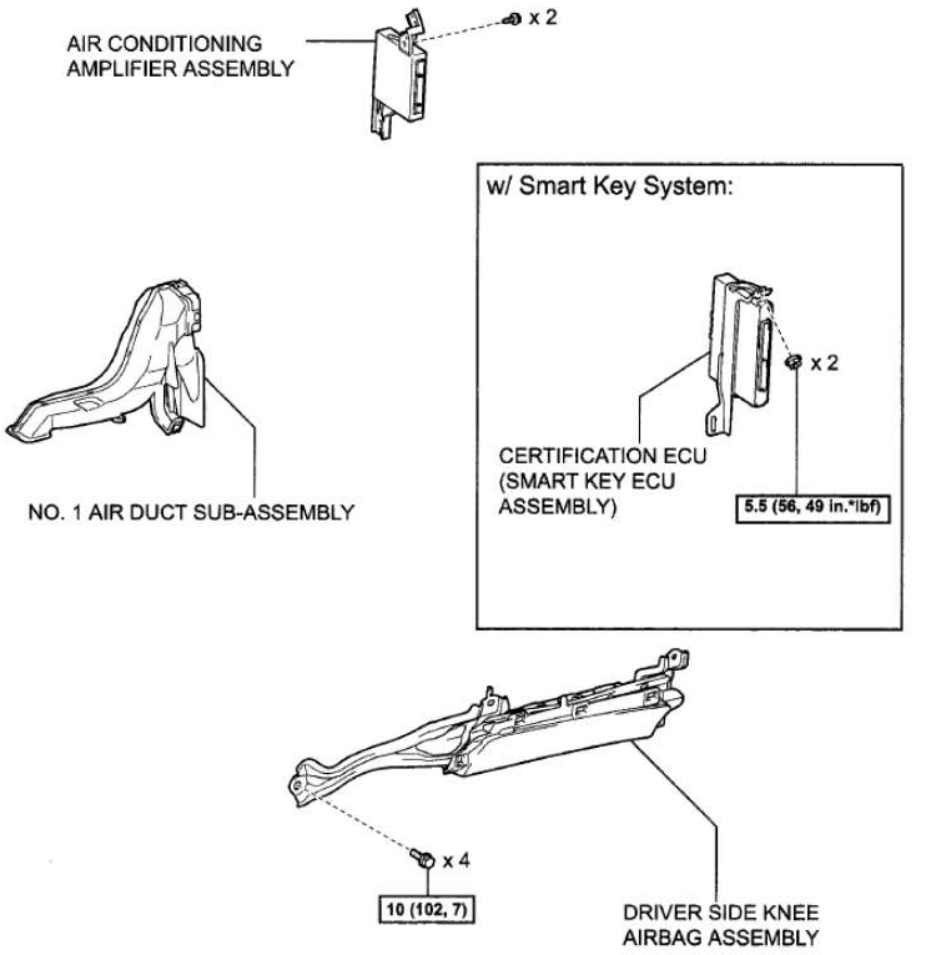


Fig. 464: Identifying Air Outlet Control Servo Motor Components - For Front (10 Of 15)
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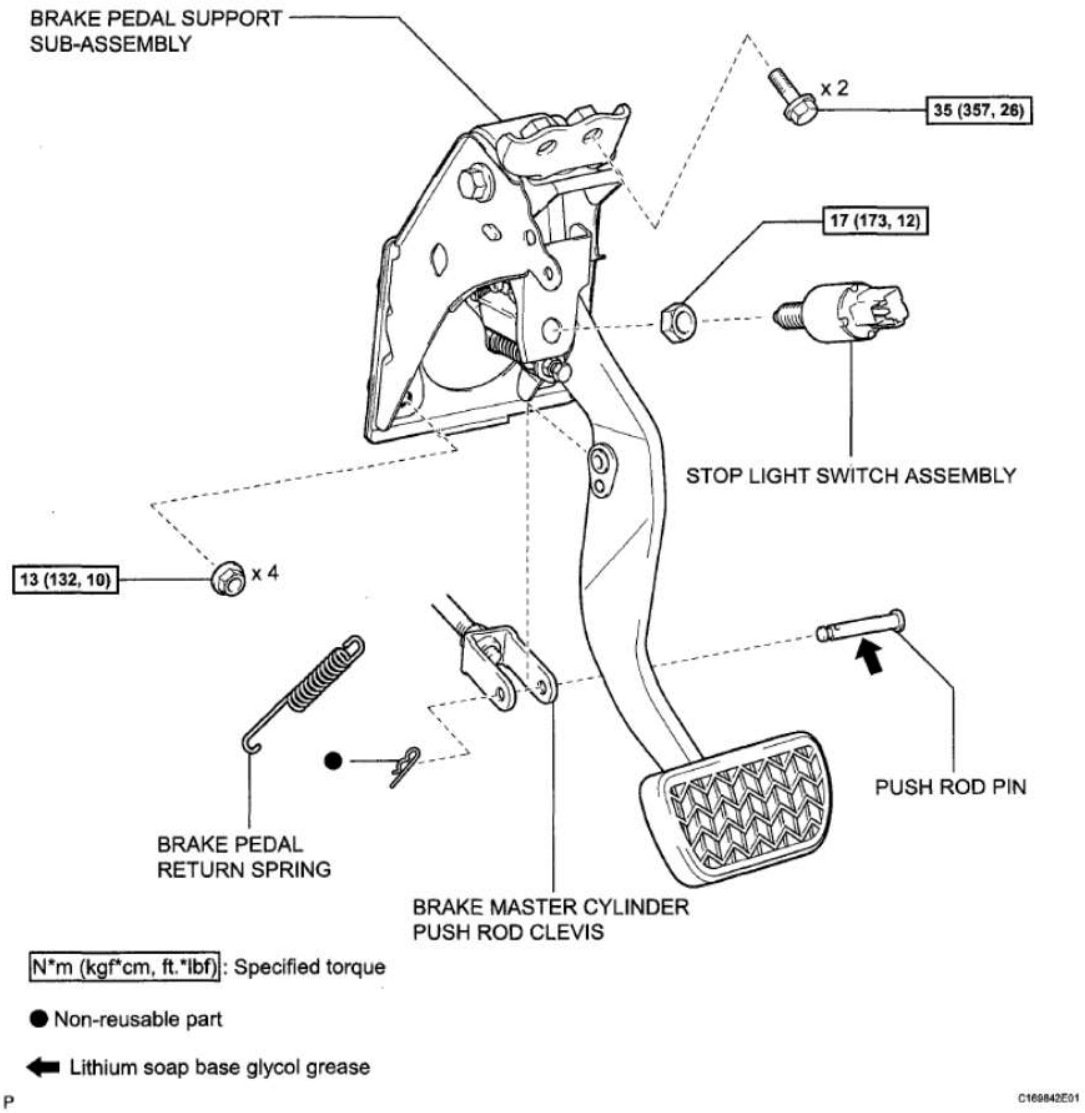


Fig. 465: Identifying Air Outlet Control Servo Motor Components - For Front (11 Of 15)
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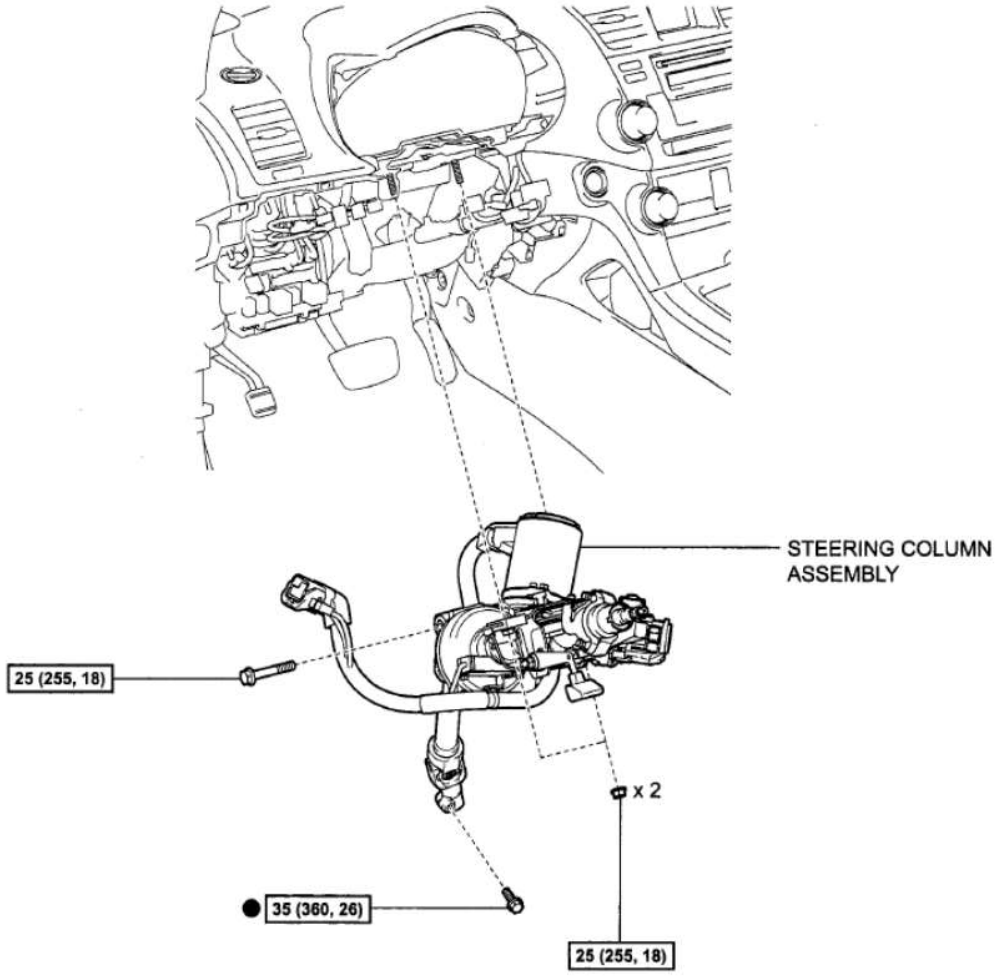


Fig. 466: Identifying Air Outlet Control Servo Motor Components - For Front (12 Of 15)
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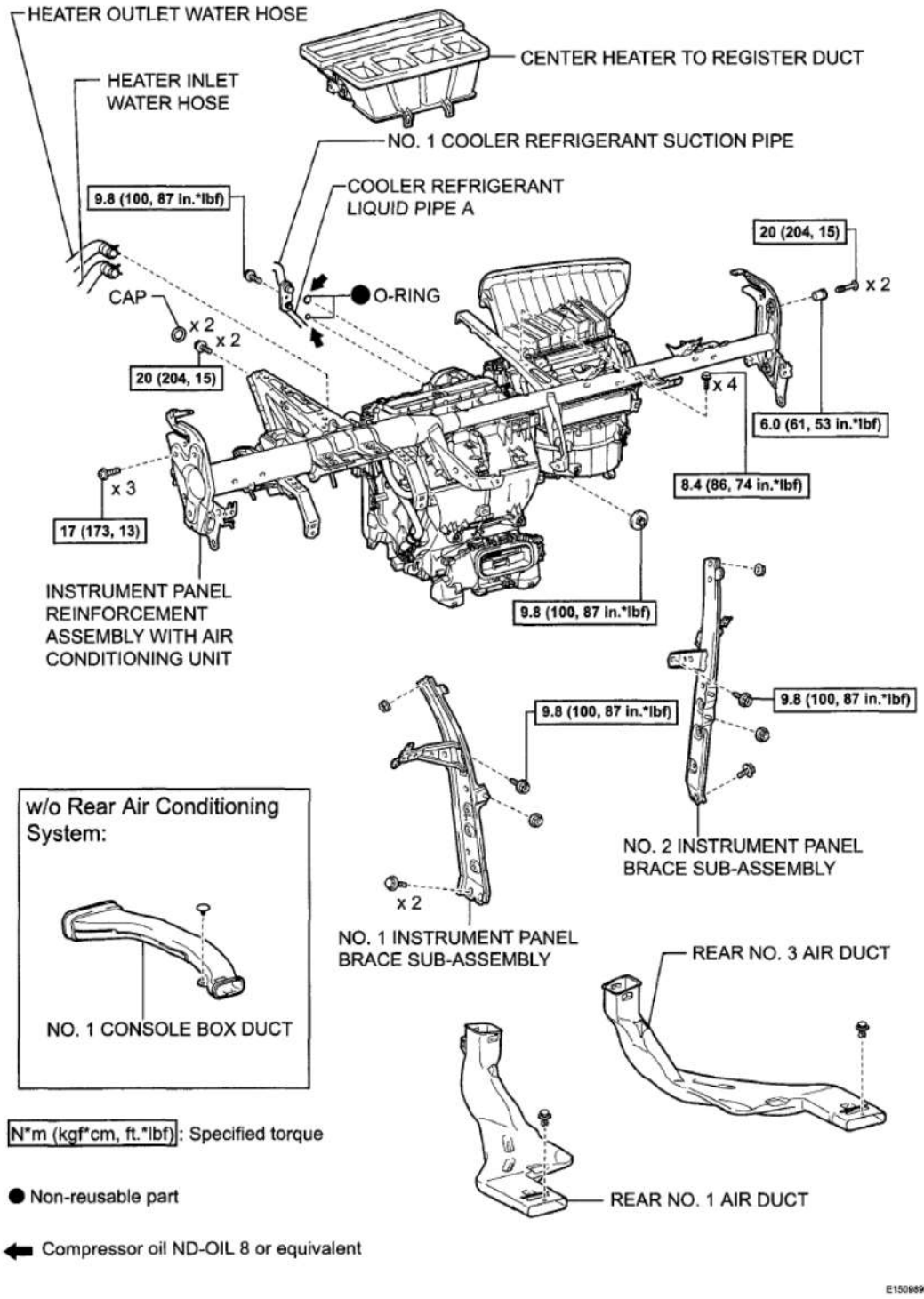


Fig. 467: Identifying Air Outlet Control Servo Motor Components - For Front (13 Of 15)
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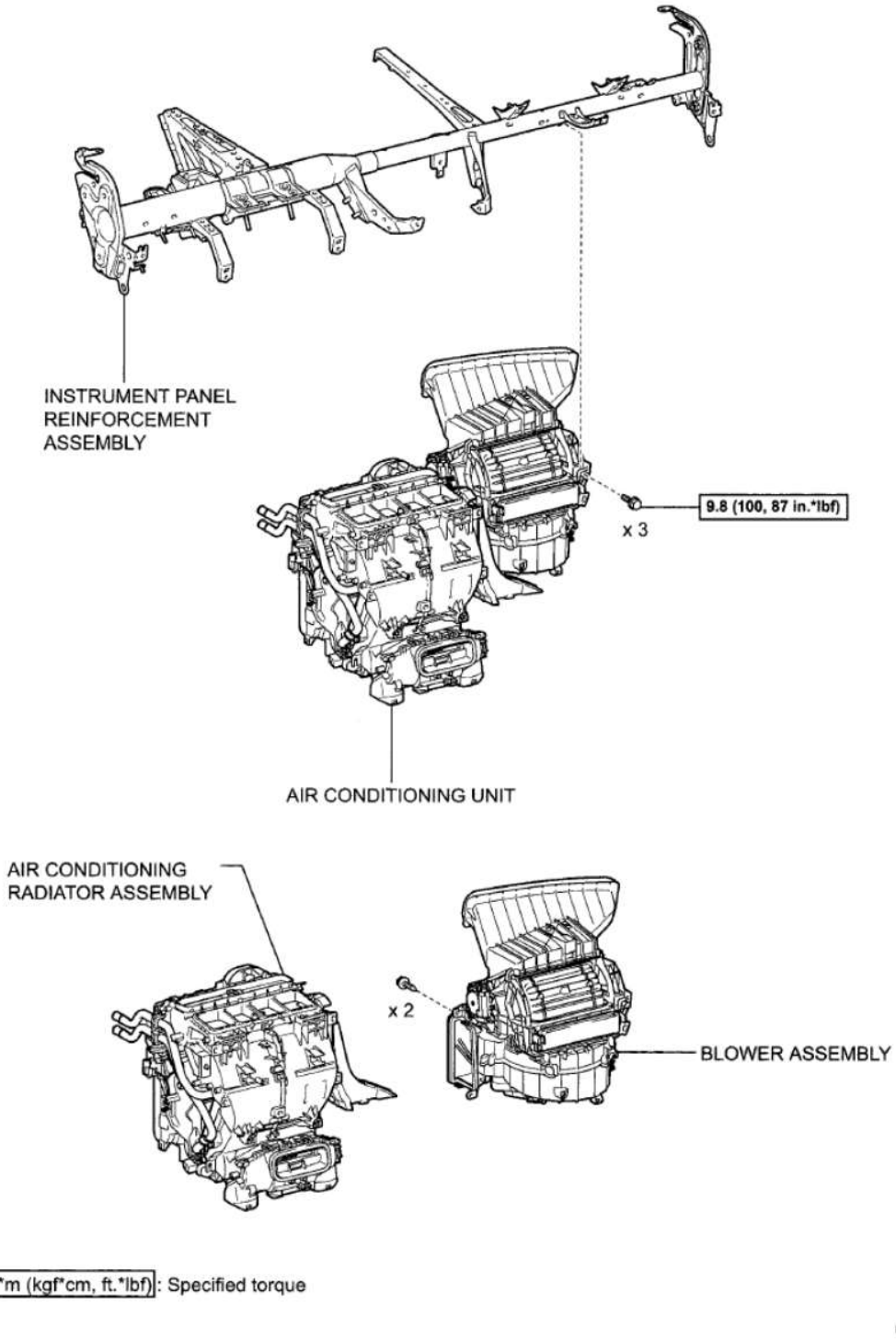


Fig. 468: Identifying Air Outlet Control Servo Motor Components - For Front (14 Of 15)
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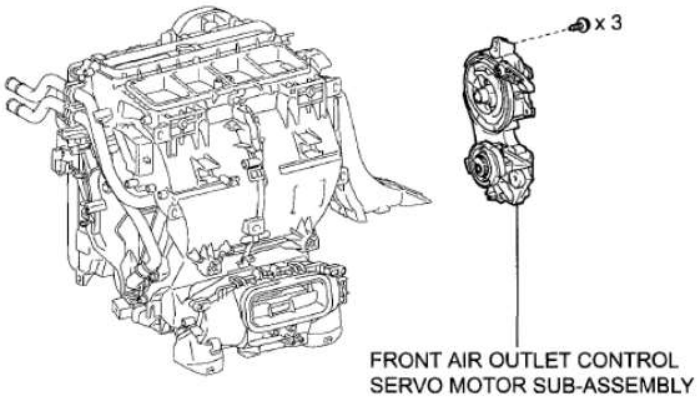


Fig. 469: Identifying Air Outlet Control Servo Motor Components - For Front (15 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **PRECAUTION**

   (See **INSTRUMENT PANEL SAFETY PAD**)

2. **RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM** (See **REPLACEMENT**)
3. **POSITION FRONT WHEELS STRAIGHT AHEAD**
4. **REMOVE FRONT WHEEL LH**
5. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

CAUTION: Wait for 90 seconds after disconnecting the cable to prevent the airbag from deploying (See AIRBAG SYSTEM).

NOTE: When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).

6. **REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY LH** (See **REMOVAL**)
7. **REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY RH** (See **REMOVAL**)
8. **REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY** (See **REMOVAL**)
9. **REMOVE WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY** (See **REMOVAL**)
10. **REMOVE COWL TOP OUTER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
11. **DISCONNECT HEATER WATER HOSE OUTLET** (See **REMOVAL**)
12. **DISCONNECT HEATER WATER HOSE INLET** (See **DISASSEMBLY**)
13. **DISCONNECT COOLER REFRIGERANT LIQUID PIPE A** (See **DISASSEMBLY**)

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14. **DISCONNECT NO. 1 COOLER REFRIGERANT SUCTION PIPE** (See **DISASSEMBLY**)
15. **REMOVE LOWER NO. 3 STEERING WHEEL COVER** (See **REMOVAL**)
16. **REMOVE LOWER NO. 2 STEERING WHEEL COVER** (See **REMOVAL**)
17. **REMOVE STEERING PAD** (See **REMOVAL**)
18. **REMOVE STEERING WHEEL ASSEMBLY** (See **DISASSEMBLY**)
19. **REMOVE STEERING COLUMN COVER** (See **REMOVAL**)
20. **REMOVE TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **REMOVAL**)
21. **REMOVE INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REMOVAL**)
22. **REMOVE COMBINATION METER ASSEMBLY** (See **REMOVAL**)
23. **REMOVE CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **REMOVAL**)
24. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **REMOVAL**)
25. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **REMOVAL**)
26. **REMOVE HEATER CONTROL AND ACCESSORY ASSEMBLY (for Manual Air Conditioning System)** (See **AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)**)
27. **REMOVE AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
28. **REMOVE RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **REMOVAL**)
29. **REMOVE NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **REMOVAL**)
30. **REMOVE FRONT DOOR SCUFF PLATE LH** (See **REMOVAL**)
31. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH** (See **REMOVAL**)
32. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Manual Air Conditioning System)** (See **REMOVAL**)
33. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
34. **REMOVE FRONT DOOR SCUFF PLATE RH** (See **REMOVAL**)
35. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH** (See **REMOVAL**)
36. **REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **REMOVAL**)
37. **REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **REMOVAL**)
38. **REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **REMOVAL**)
39. **REMOVE NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **REMOVAL**)
40. **REMOVE LOWER REAR CONSOLE BOX** (See **REMOVAL**)
41. **REMOVE CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **REMOVAL**)
42. **REMOVE CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **DISASSEMBLY**)
43. **REMOVE FRONT NO. 1 CONSOLE BOX INSERT** (See **REMOVAL**)

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44. **REMOVE FRONT NO. 2 CONSOLE BOX INSERT** (See **REMOVAL**)
45. **REMOVE ENGINE SWITCH (w/Smart Key System)** (See **INSPECTION**)
46. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **REMOVAL**)
47. **REMOVE FRONT PILLAR GARNISH LH** (See **REMOVAL**)
48. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)
49. **REMOVE FRONT PILLAR GARNISH RH** (See **REMOVAL**)
50. **REMOVE NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
51. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
52. **REMOVE NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
53. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
54. **DISCONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **REMOVAL**)
55. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **REMOVAL**)
56. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **REMOVAL**)
57. **REMOVE BRAKE PEDAL RETURN SPRING** (See **REMOVAL**)
58. **REMOVE STOP LIGHT SWITCH ASSEMBLY** (See **INSPECTION**)
59. **SEPARATE BRAKE MASTER CYLINDER PUSH ROD CLEVIS** (See **REMOVAL**)
60. **REMOVE BRAKE PEDAL SUPPORT SUB-ASSEMBLY** (See **REMOVAL**)
61. **REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY** (See **REMOVAL**)
62. **REMOVE NO. 1 AIR DUCT SUB-ASSEMBLY** (See **REMOVAL**)
63. **SEPARATE STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY** (See **REMOVAL**)
64. **REMOVE STEERING COLUMN ASSEMBLY** (See **REMOVAL**)
65. **DISCONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY** (See **DISASSEMBLY**)
66. **REMOVE POWER STEERING ECU ASSEMBLY** (See **INSTALLATION**)
67. **REMOVE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)
68. **REMOVE AIR CONDITIONING AMPLIFIER ASSEMBLY** (See **REMOVAL**)
69. **REMOVE REAR NO. 1 AIR DUCT** (See **DISASSEMBLY**)
70. **REMOVE REAR NO. 3 AIR DUCT** (See **DISASSEMBLY**)
71. **REMOVE NO. 1 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **DISASSEMBLY**)
72. **REMOVE CENTER HEATER TO REGISTER DUCT** (See **DISASSEMBLY**)
73. **REMOVE NO. 1 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **DISASSEMBLY**)
74. **REMOVE NO. 2 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **DISASSEMBLY**)
75. **REMOVE INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/o PTC Heater)** (See **DISASSEMBLY**)

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76. **REMOVE INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/ PTC Heater)** (See **DISASSEMBLY**)
77. **REMOVE AIR CONDITIONING UNIT** (See **DISASSEMBLY**)
78. **REMOVE BLOWER ASSEMBLY** (See **DISASSEMBLY**)
79. **REMOVE FRONT AIR OUTLET CONTROL SERVO MOTOR SUB-ASSEMBLY**
    a. Disconnect the 2 connectors.
    b. Remove the 3 screws and remove the front air outlet control servo motor sub-assembly.

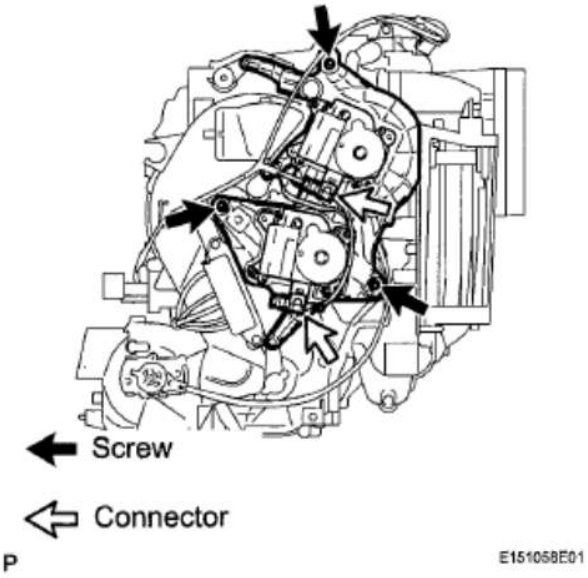


Fig. 470: Identifying Front Air Outlet Control Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL FRONT AIR OUTLET CONTROL SERVO MOTOR SUB-ASSEMBLY**
    a. Install the front air outlet control servo motor sub-assembly with the 3 screws.
    b. Connect the 2 connectors.
2. **INSTALL BLOWER ASSEMBLY** (See **INSTALLATION**)
3. **INSTALL AIR CONDITIONING UNIT** (See **INSTALLATION**)
4. **INSTALL INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/o PTC Heater)** (See **REAR COOLING UNIT**)

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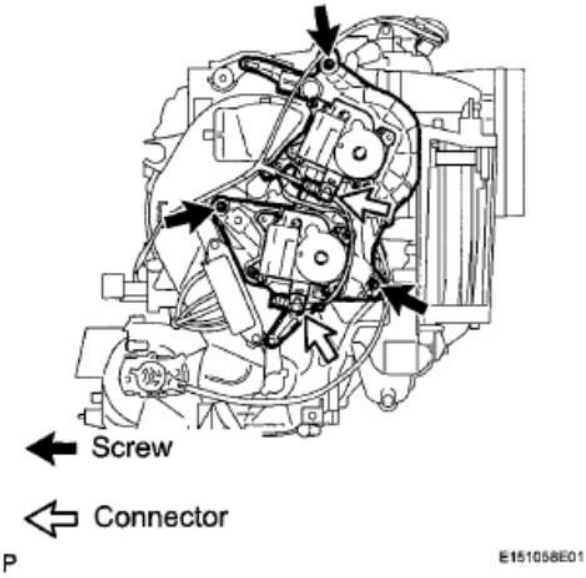


Fig. 471: Identifying Front Air Outlet Control Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **INSTALL INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/ PTC Heater)** (See **REAR COOLING UNIT**)
6. **INSTALL NO. 1 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **REAR COOLING UNIT**)
7. **INSTALL NO. 2 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **REAR COOLING UNIT**)
8. **INSTALL CENTER HEATER TO REGISTER DUCT** (See **REAR COOLING UNIT**)
9. **INSTALL NO. 1 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **REAR COOLING UNIT**)
10. **INSTALL REAR NO. 3 AIR DUCT** (See **REAR COOLING UNIT**)
11. **INSTALL REAR NO. 1 AIR DUCT** (See **REAR COOLING UNIT**)
12. **INSTALL AIR CONDITIONING AMPLIFIER ASSEMBLY** (See **REMOVAL**)
13. **INSTALL CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)
14. **INSTALL POWER STEERING ECU ASSEMBLY** (See **INSTALLATION**)
15. **CONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY** (See **REAR COOLING UNIT**)
16. **INSTALL STEERING COLUMN ASSEMBLY** (See **INSTALLATION**)
17. **CONNECT STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY** (See **INSTALLATION**)
18. **INSTALL NO. 1 AIR DUCT SUB-ASSEMBLY** (See **INSTALLATION**)
19. **INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY** (See **INSTALLATION**)
20. **INSTALL BRAKE PEDAL SUPPORT SUB-ASSEMBLY** (See **INSTALLATION**)
21. **CONNECT BRAKE MASTER CYLINDER PUSH ROD CLEVIS** (See **INSTALLATION**)

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22. **INSTALL BRAKE PEDAL RETURN SPRING** (See **INSTALLATION**)
23. **INSTALL STOP LIGHT SWITCH ASSEMBLY** (See **INSTALLATION**)
24. **INSPECT AND ADJUST BRAKE PEDAL HEIGHT** (See **ADJUSTMENT**)
25. **INSPECT BRAKE PEDAL FREE PLAY** (See **ADJUSTMENT**)
26. **INSPECT BRAKE PEDAL RESERVE DISTANCE** (See **ADJUSTMENT**)
27. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **INSTALLATION**)
28. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **INSTALLATION**)
29. **CONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **INSTALLATION**)
30. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
31. **INSTALL NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
32. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
33. **INSTALL NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
34. **INSTALL FRONT PILLAR GARNISH RH** (See **INSTALLATION**)
35. **CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
36. **INSTALL FRONT PILLAR GARNISH LH** (See **INSTALLATION**)
37. **CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **INSTALLATION**)
38. **INSTALL ENGINE SWITCH (w/ Smart Key System)** (See **INSTALLATION**)
39. **INSTALL FRONT NO. 2 CONSOLE BOX INSERT** (See **INSTALLATION**)
40. **INSTALL FRONT NO. 1 CONSOLE BOX INSERT** (See **INSTALLATION**)
41. **INSTALL CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
42. **INSTALL CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **INSTALLATION**)
43. **INSTALL LOWER REAR CONSOLE BOX** (See **INSTALLATION**)
44. **INSTALL NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
45. **INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
46. **INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
47. **INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **INSTALLATION**)
48. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH** (See **INSTALLATION**)
49. **INSTALL FRONT DOOR SCUFF PLATE RH** (See **INSTALLATION**)
50. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Manual Air Conditioning System)** (See **INSTALLATION**)
51. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Automatic Air Conditioning System)** (See **INSTALLATION**)

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52. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH** (See **INSTALLATION**)
53. **INSTALL FRONT DOOR SCUFF PLATE LH** (See **INSTALLATION**)
54. **INSTALL RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **INSTALLATION**)
55. **INSTALL NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **INSTALLATION**)
56. **INSTALL HEATER CONTROL AND ACCESSORY ASSEMBLY (for Manual Air Conditioning System)** (See **AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)**)
57. **INSTALL AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
58. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **INSTALLATION**)
59. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **INSTALLATION**)
60. **INSTALL CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **INSTALLATION**)
61. **INSTALL COMBINATION METER ASSEMBLY** (See **REASSEMBLY**)
62. **INSTALL INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REASSEMBLY**)
63. **POSITION FRONT WHEELS STRAIGHT AHEAD**
64. **INSTALL TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
65. **INSTALL STEERING COLUMN COVER** (See **INSTALLATION**)
66. **ADJUST SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
67. **INSTALL STEERING WHEEL ASSEMBLY** (See **INSTALLATION**)
68. **INSPECT STEERING WHEEL CENTER POINT**
69. **INSTALL STEERING PAD** (See **INSTALLATION**)
70. **INSTALL LOWER NO. 2 STEERING WHEEL COVER** (See **INSTALLATION**)
71. **INSTALL LOWER NO. 3 STEERING WHEEL COVER** (See **INSTALLATION**)
72. **INSTALL FRONT WHEEL LH** (See **INSTALLATION**)
73. **CONNECT COOLER REFRIGERANT LIQUID PIPE A** (See **REAR COOLING UNIT**)
74. **CONNECT NO. 1 COOLER REFRIGERANT SUCTION PIPE** (See **REAR COOLING UNIT**)
75. **CONNECT HEATER WATER HOSE INLET** (See **REAR COOLING UNIT**)
76. **CONNECT HEATER WATER HOSE OUTLET** (See **REAR COOLING UNIT**)
77. **INSTALL COWL TOP OUTER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
78. **INSTALL WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY** (See **INSTALLATION**)
79. **INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY** (See **INSTALLATION**)
80. **INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY RH** (See **INSTALLATION**)
81. **INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY LH** (See **INSTALLATION**)
82. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**

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NOTE: **When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).**

83. **INSPECT STEERING PAD** (See **INSTALLATION**)
84. **INSPECT SRS WARNING LIGHT**
    a. Inspect the SRS warning light (See **DIAGNOSIS SYSTEM**).
85. **ADD ENGINE COOLANT (for 1AR-FE)** (See **COOLANT**)
86. **ADD ENGINE COOLANT (for 2GR-FE)** (See **REPLACEMENT**)
87. **INSPECT FOR COOLANT LEAK (for 1AR-FE)** (See **COOLING SYSTEM**)
88. **INSPECT FOR COOLANT LEAK (for 2GR-FE)** (See **COOLING SYSTEM**)
89. **CHARGE WITH REFRIGERANT** (See **REFRIGERANT LINE**)
90. **WARM UP ENGINE** (See **REFRIGERANT LINE**)
91. **INSPECT FOR REFRIGERANT LEAK** (See **REFRIGERANT LINE**)

AIR OUTLET CONTROL SERVO MOTOR (FOR REAR)

COMPONENTS

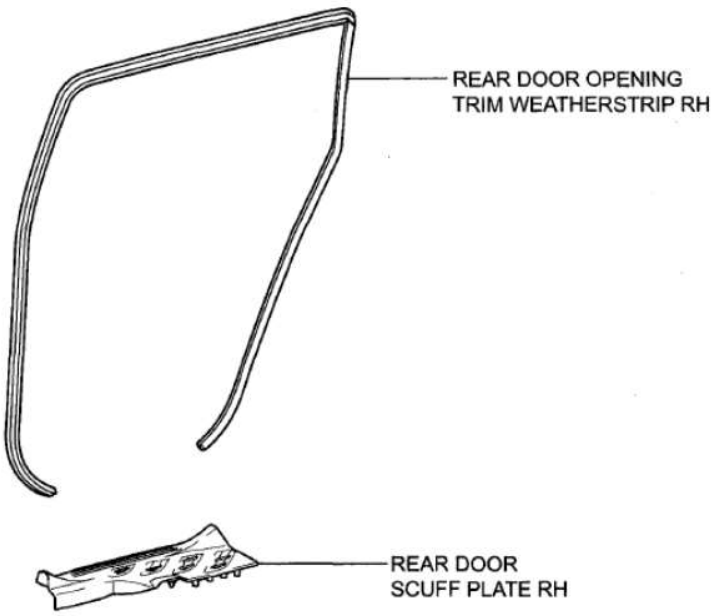


Fig. 472: Identifying Air Outlet Control Servo Motor Components - For Rear (1 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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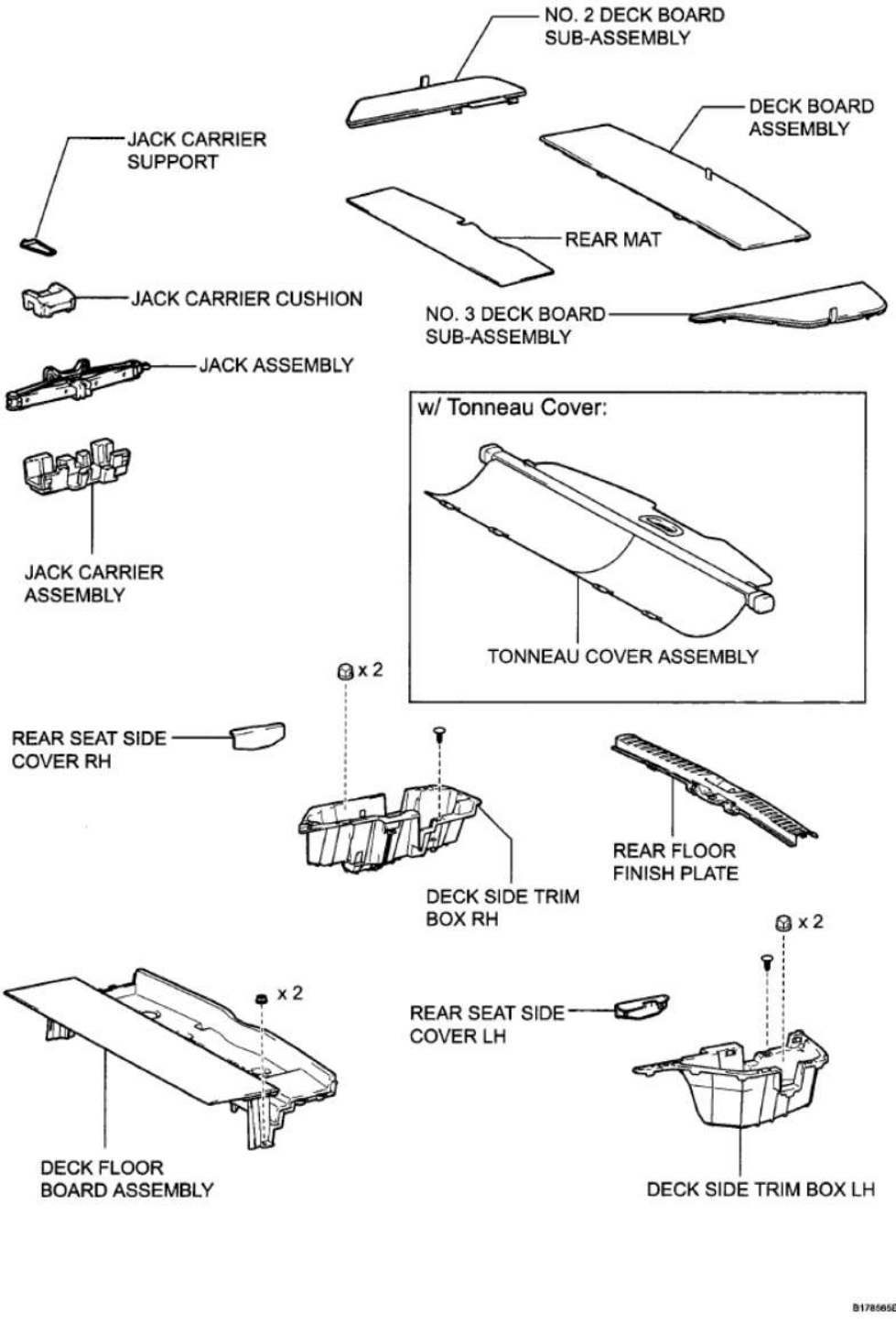


Fig. 473: Identifying Air Outlet Control Servo Motor Components - For Rear (2 Of 5)
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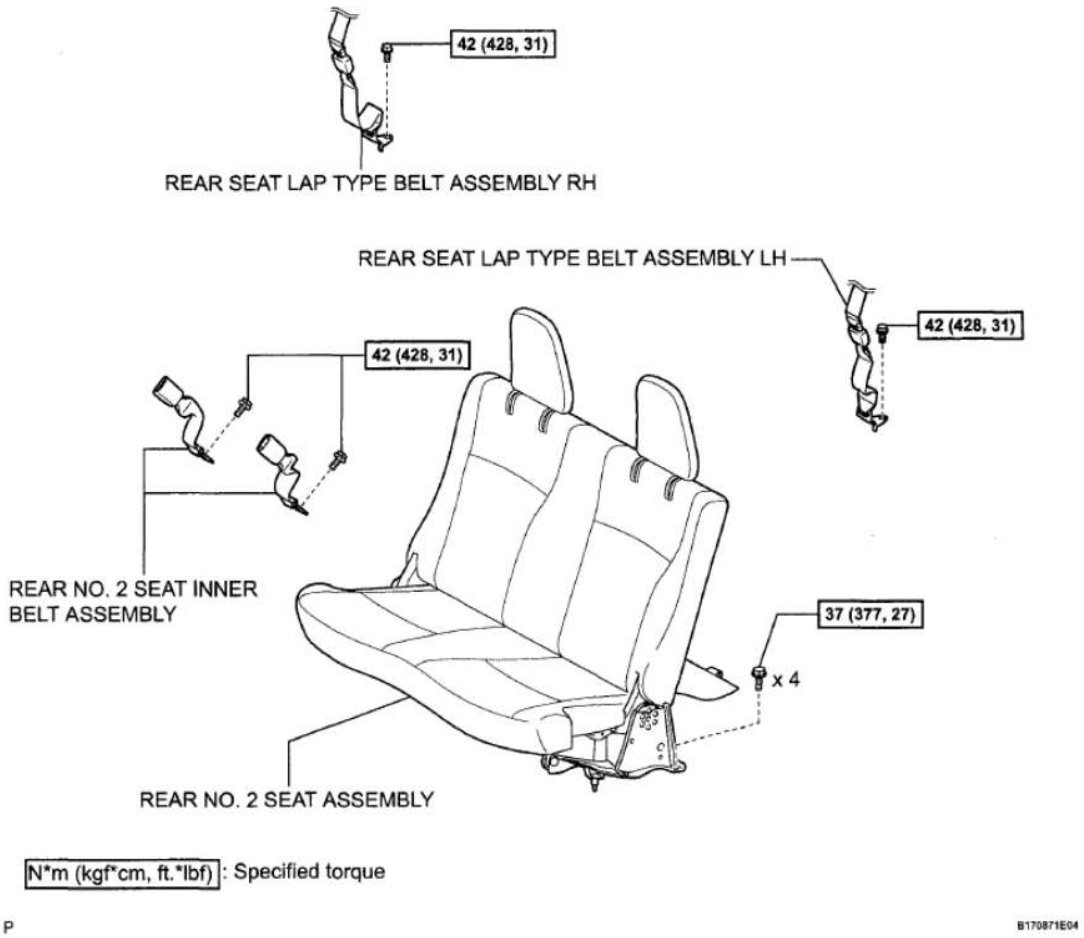


Fig. 474: Identifying Air Outlet Control Servo Motor Components - For Rear (3 Of 5)
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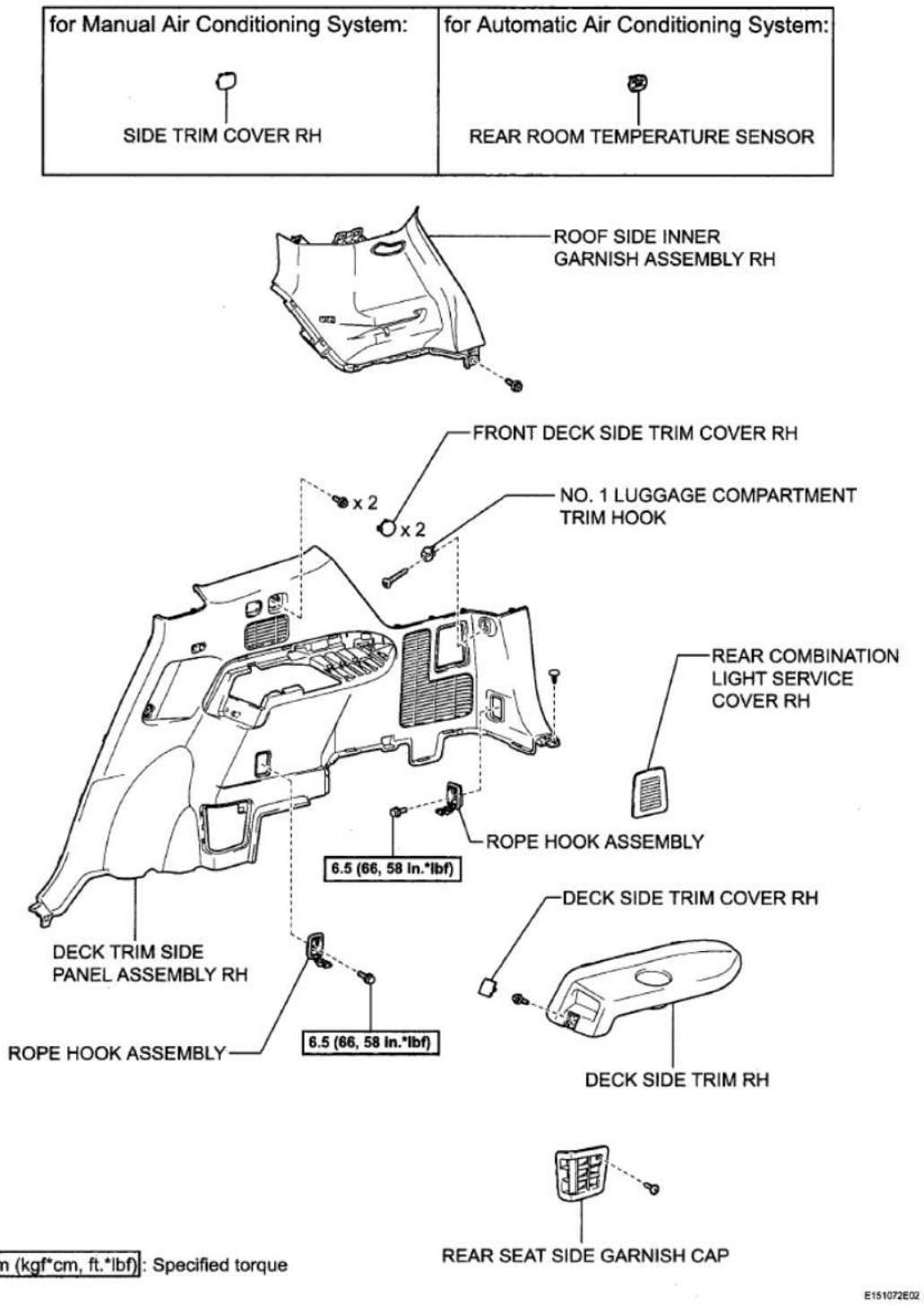


Fig. 475: Identifying Air Outlet Control Servo Motor Components - For Rear (4 Of 5)
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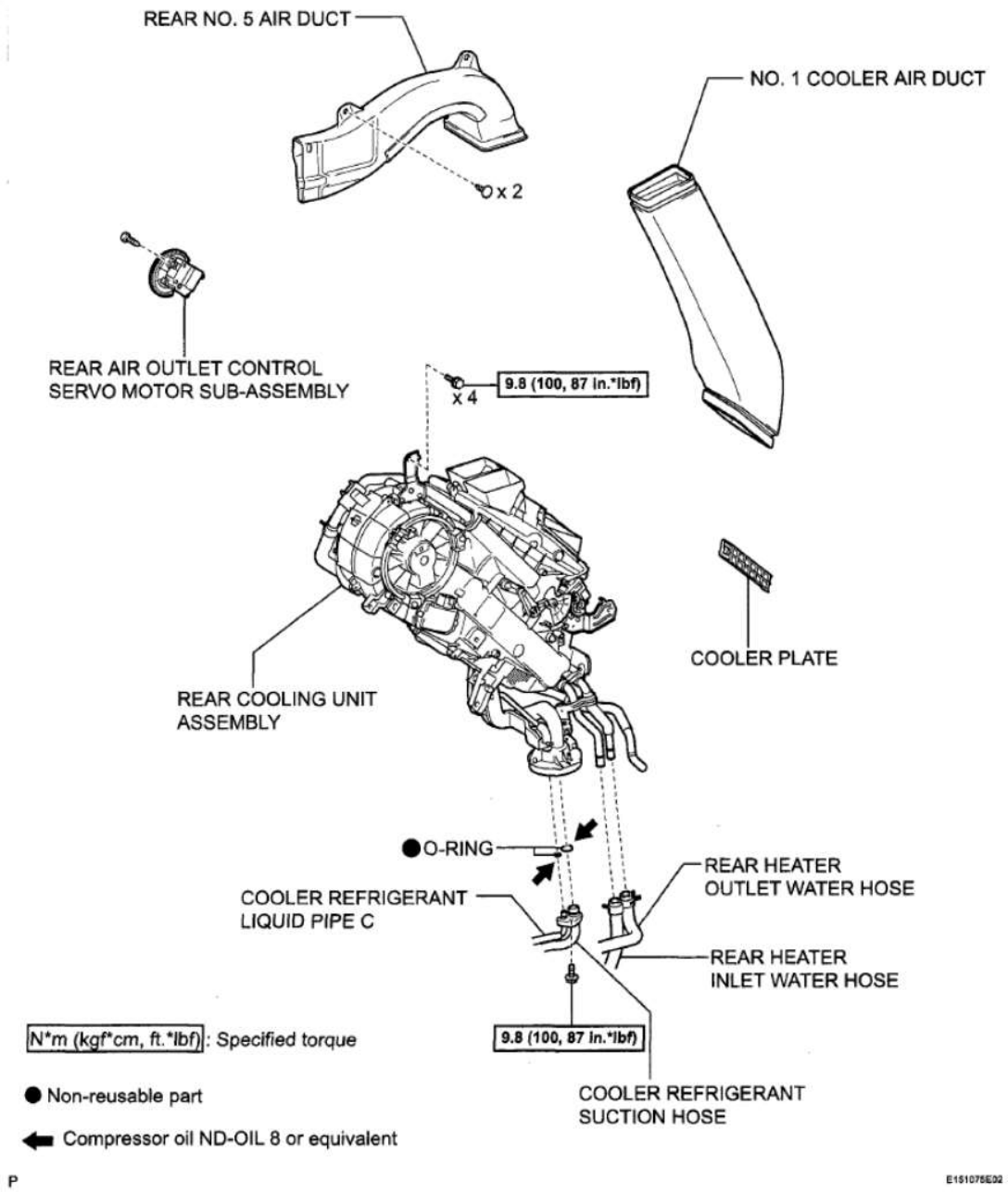


Fig. 476: Identifying Air Outlet Control Servo Motor Components - For Rear (5 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

HINT:

Adjust the air outlet mode setting to FOOT.

1. **RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM** (See **REPLACEMENT**)

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2. **DISCONNECT REAR HEATER OUTLET WATER HOSE** (See **REMOVAL**)
3. **DISCONNECT REAR HEATER INLET WATER HOSE** (See **REMOVAL**)
4. **DISCONNECT COOLER REFRIGERANT LIQUID PIPE C** (See **DISASSEMBLY**)
5. **DISCONNECT COOLER REFRIGERANT SUCTION HOSE** (See **DISASSEMBLY**)
6. **REMOVE REAR DOOR SCUFF PLATE RH** (See **REMOVAL**)
7. **REMOVE REAR DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)
8. **REMOVE DECK BOARD ASSEMBLY** (See **REMOVAL**)
9. **REMOVE NO. 3 DECK BOARD SUB-ASSEMBLY** (See **REMOVAL**)
10. **REMOVE NO. 2 DECK BOARD SUB-ASSEMBLY** (See **REMOVAL**)
11. **REMOVE TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)** (See **REMOVAL**)
12. **REMOVE REAR SEAT SIDE COVER LH** (See **REMOVAL**)
13. **REMOVE DECK SIDE TRIM BOX LH** (See **REMOVAL**)
14. **REMOVE REAR SEAT SIDE COVER RH** (See **REMOVAL**)
15. **REMOVE JACK CARRIER SUPPORT**
16. **REMOVE JACK CARRIER CUSHION** (See **REMOVAL**)
17. **REMOVE JACK ASSEMBLY** (See **REMOVAL**)
18. **REMOVE JACK CARRIER ASSEMBLY** (See **REMOVAL**)
19. **REMOVE DECK SIDE TRIM BOX RH** (See **REMOVAL**)
20. **REMOVE REAR MAT** (See **REMOVAL**)
21. **REMOVE DECK FLOOR BOARD ASSEMBLY** (See **REMOVAL**)
22. **REMOVE REAR NO. 2 SEAT INNER BELT ASSEMBLY** (See **INSTALLATION**)
23. **DISCONNECT REAR SEAT LAP TYPE BELT ASSEMBLY LH** (See **REMOVAL**)
24. **DISCONNECT REAR SEAT LAP TYPE BELT ASSEMBLY RH** (See **REMOVAL**)
25. **REMOVE REAR NO. 2 SEAT ASSEMBLY** (See **DISASSEMBLY**)
26. **REMOVE REAR FLOOR FINISH PLATE** (See **REMOVAL**)
27. **REMOVE REAR SEAT SIDE GARNISH CAP** (See **REMOVAL**)
28. **REMOVE DECK SIDE TRIM COVER RH** (See **REMOVAL**)
29. **REMOVE DECK SIDE TRIM RH** (See **REMOVAL**)
30. **REMOVE SIDE TRIM COVER RH (for Manual Air Conditioning System)** (See **REMOVAL**)
31. **REMOVE REAR ROOM TEMPERATURE SENSOR (for Automatic Air Conditioning System)** (See **ROOM TEMPERATURE SENSOR (FOR REAR)**)
32. **REMOVE REAR COMBINATION LIGHT SERVICE COVER RH** (See **REMOVAL**)
33. **REMOVE ROPE HOOK ASSEMBLY (for RH Side)** (See **REMOVAL**)
34. **REMOVE NO. 1 LUGGAGE COMPARTMENT TRIM HOOK** (See **REMOVAL**)
35. **REMOVE FRONT DECK SIDE TRIM COVER RH** (See **REMOVAL**)
36. **REMOVE DECK TRIM SIDE PANEL ASSEMBLY RH** (See **REMOVAL**)
37. **REMOVE ROOF SIDE INNER GARNISH ASSEMBLY RH** (See **REMOVAL**)
38. **REMOVE COOLER PLATE** (See **DISASSEMBLY**)

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39. **REMOVE NO. 1 COOLER AIR DUCT** (See **DISASSEMBLY**)
40. **REMOVE REAR NO. 5 AIR DUCT** (See **DISASSEMBLY**)
41. **REMOVE REAR COOLING UNIT ASSEMBLY** (See **DISASSEMBLY**)
42. **REMOVE REAR AIR OUTLET CONTROL SERVO MOTOR SUB-ASSEMBLY**
    a. Disconnect the connector.
    b. Remove the 2 screws and rear air outlet control servo motor sub-assembly.

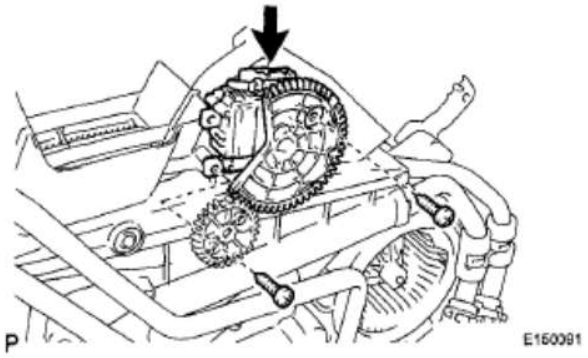


Fig. 477: Identifying Rear Air Outlet Control Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL REAR AIR OUTLET CONTROL SERVO MOTOR SUB-ASSEMBLY**
    a. Using the reference point, install the rear air outlet control servo motor sub-assembly with the 2 screws.
    b. Connect the connector.
2. **INSTALL REAR COOLING UNIT ASSEMBLY** (See **INSTALLATION**)
3. **INSTALL REAR NO. 5 AIR DUCT** (See **BLOWER UNIT**)
4. **INSTALL NO. 1 COOLER AIR DUCT** (See **BLOWER UNIT**)
5. **INSTALL COOLER PLATE** (See **BLOWER UNIT**)

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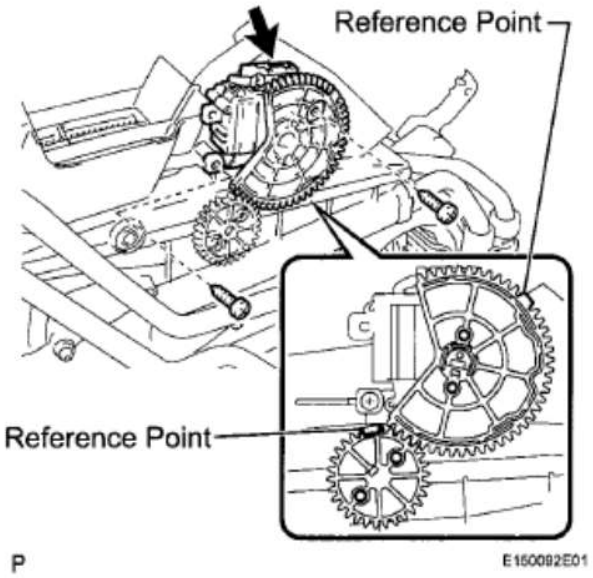


Fig. 478: Identifying Rear Air Outlet Control Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. **INSTALL ROOF SIDE INNER GARNISH ASSEMBLY RH** (See **INSTALLATION**)
7. **INSTALL DECK TRIM SIDE PANEL ASSEMBLY RH** (See **INSTALLATION**)
8. **INSTALL FRONT DECK SIDE TRIM COVER RH** (See **INSTALLATION**)
9. **INSTALL NO. 1 LUGGAGE COMPARTMENT TRIM HOOK** (See **INSTALLATION**)
10. **INSTALL ROPE HOOK ASSEMBLY (for RH Side)** (See **INSTALLATION**)
11. **INSTALL REAR COMBINATION LIGHT SERVICE COVER RH** (See **INSTALLATION**)
12. **INSTALL SIDE TRIM COVER RH (for Manual Air Conditioning System)** (See **INSTALLATION**)
13. **INSTALL REAR ROOM TEMPERATURE SENSOR (for Automatic Air Conditioning System)** (See **INSPECTION**)
14. **INSTALL DECK SIDE TRIM RH** (See **INSTALLATION**)
15. **INSTALL DECK SIDE TRIM COVER RH** (See **INSTALLATION**)
16. **INSTALL REAR SEAT SIDE GARNISH CAP** (See **INSTALLATION**)
17. **INSTALL REAR FLOOR FINISH PLATE** (See **INSTALLATION**)
18. **INSTALL REAR NO. 2 SEAT ASSEMBLY** (See **INSTALLATION**)
19. **CONNECT REAR SEAT LAP TYPE BELT ASSEMBLY LH** (See **INSTALLATION**)
20. **CONNECT REAR SEAT LAP TYPE BELT ASSEMBLY RH** (See **INSTALLATION**)
21. **INSTALL REAR NO. 2 SEAT INNER BELT ASSEMBLY** (See **INSTALLATION**)
22. **INSTALL REAR MAT** (See **INSTALLATION**)
23. **INSTALL DECK FLOOR BOARD ASSEMBLY** (See **INSTALLATION**)
24. **INSTALL DECK SIDE TRIM BOX LH** (See **INSTALLATION**)
25. **INSTALL REAR SEAT SIDE COVER LH** (See **INSTALLATION**)

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26. **INSTALL DECK SIDE TRIM BOX RH** (See **INSTALLATION**)
27. **INSTALL JACK CARRIER ASSEMBLY** (See **INSTALLATION**)
28. **INSTALL JACK ASSEMBLY** (See **INSTALLATION**)
29. **INSTALL JACK CARRIER CUSHION** (See **INSTALLATION**)
30. **INSTALL JACK CARRIER SUPPORT**
31. **INSTALL REAR SEAT SIDE COVER RH** (See **INSTALLATION**)
32. **INSTALL TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)** (See **INSTALLATION**)
33. **INSTALL NO. 2 DECK BOARD SUB-ASSEMBLY** (See **INSTALLATION**)
34. **INSTALL NO. 3 DECK BOARD SUB-ASSEMBLY** (See **INSTALLATION**)
35. **INSTALL DECK BOARD ASSEMBLY** (See **INSTALLATION**)
36. **INSTALL REAR DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
37. **INSTALL REAR DOOR SCUFF PLATE RH** (See **INSTALLATION**)
38. **CONNECT COOLER REFRIGERANT LIQUID PIPE C** (See **BLOWER UNIT**)
39. **CONNECT COOLER REFRIGERANT SUCTION HOSE** (See **BLOWER UNIT**)
40. **CONNECT REAR HEATER INLET WATER HOSE** (See **BLOWER UNIT**)
41. **CONNECT REAR HEATER OUTLET WATER HOSE** (See **BLOWER UNIT**)
42. **CHARGE WITH REFRIGERANT** (See **REFRIGERANT LINE**)
43. **ADD ENGINE COOLANT (for 1AR-FE)** (See **COOLANT**)
44. **ADD ENGINE COOLANT (for 2GR-FE)** (See **REPLACEMENT**)
45. **INSPECT FOR COOLANT LEAK (for 1AR-FE)** (See **COOLING SYSTEM**)
46. **INSPECT FOR COOLANT LEAK (for 2GR-FE)** (See **COOLING SYSTEM**)
47. **WARM UP ENGINE** (See **REFRIGERANT LINE**)
48. **INSPECT FOR REFRIGERANT LEAK** (See **REFRIGERANT LINE**)

AIR MIX CONTROL SERVO MOTOR (FOR FRONT)

COMPONENTS

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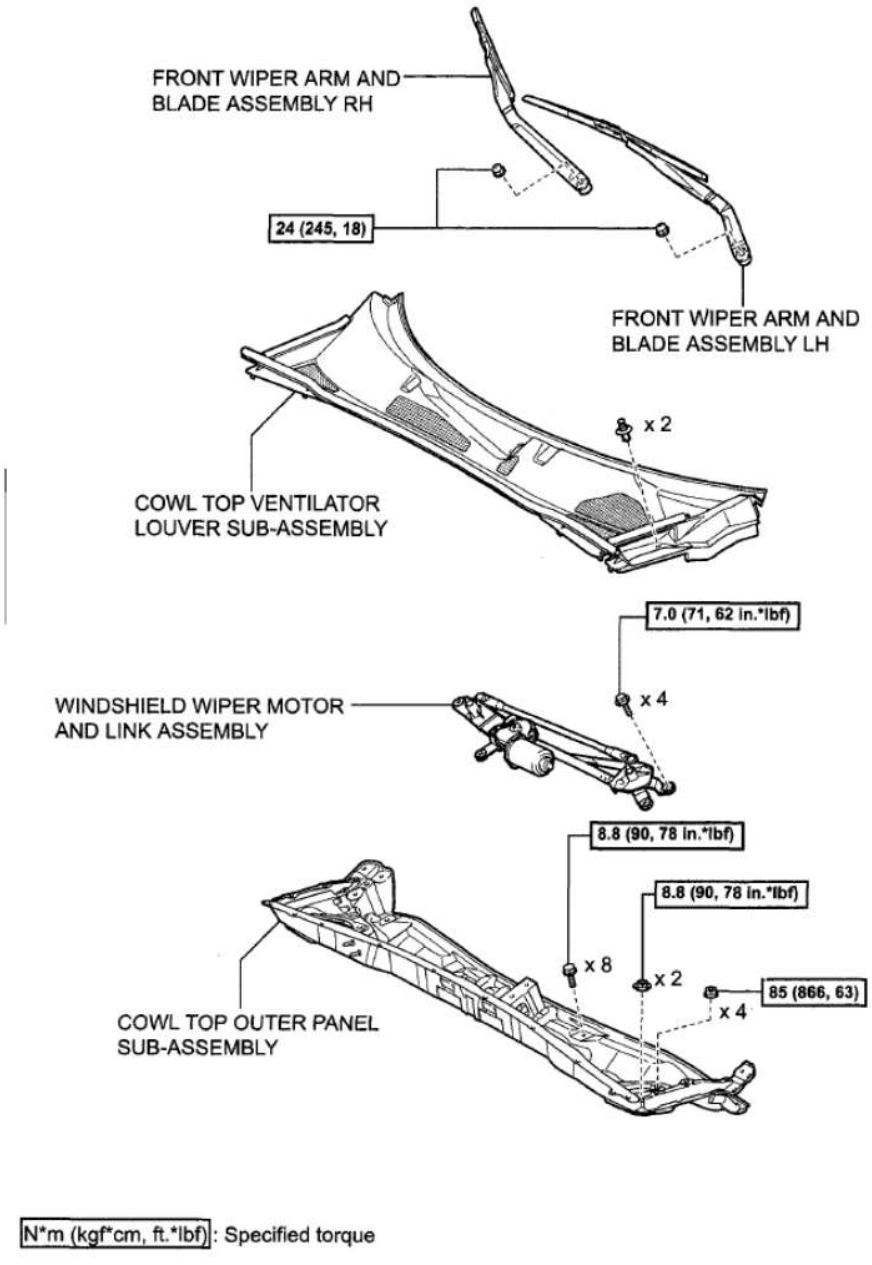


Fig. 479: Identifying Air Mix Control Servo Motor Components - For Front (1 Of 14)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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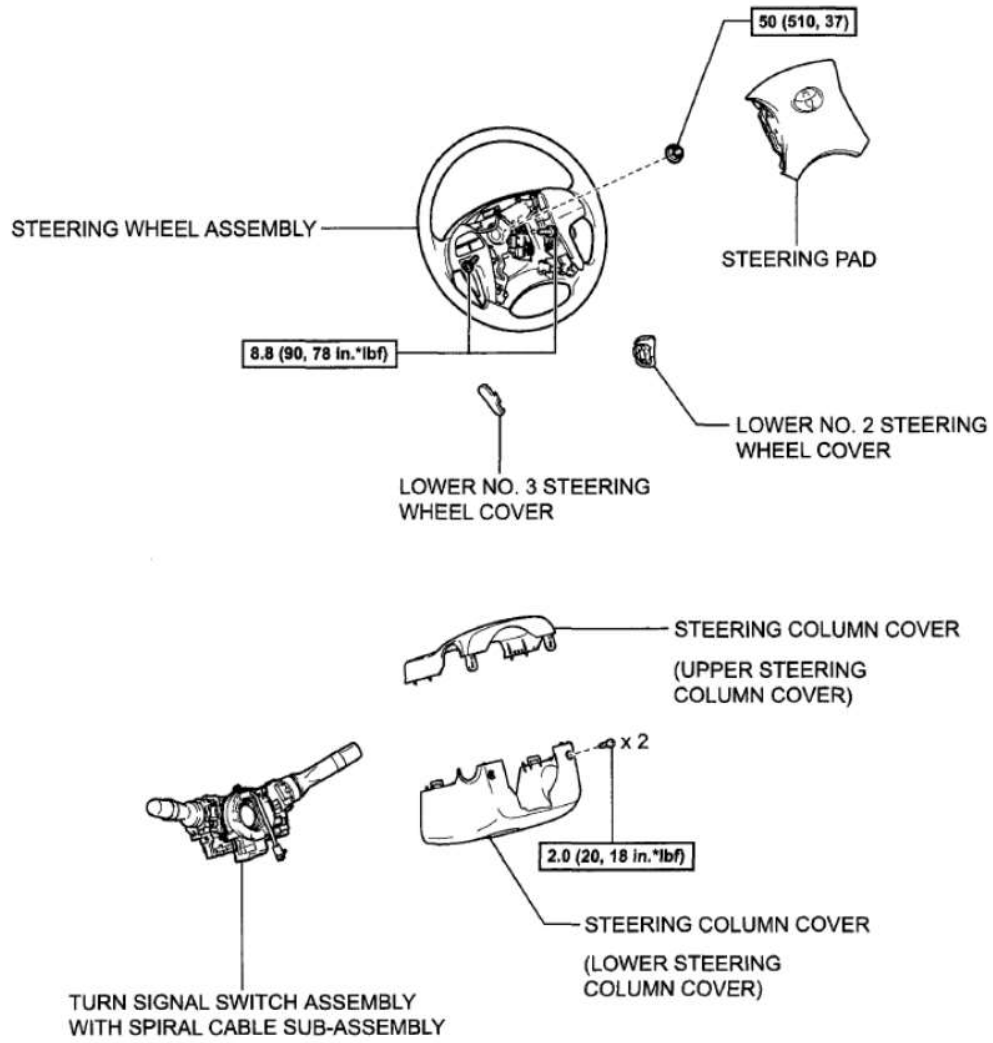


Fig. 480: Identifying Air Mix Control Servo Motor Components - For Front (2 Of 14)
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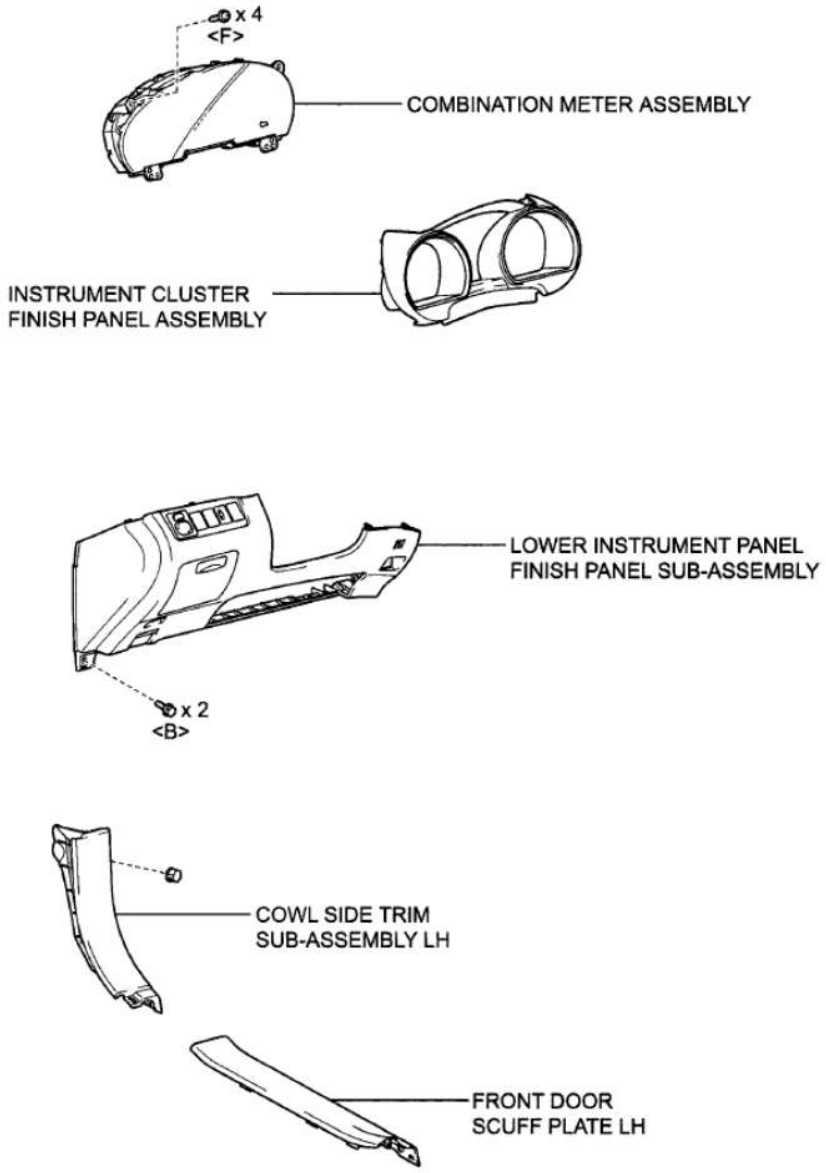


Fig. 481: Identifying Air Mix Control Servo Motor Components - For Front (3 Of 14)
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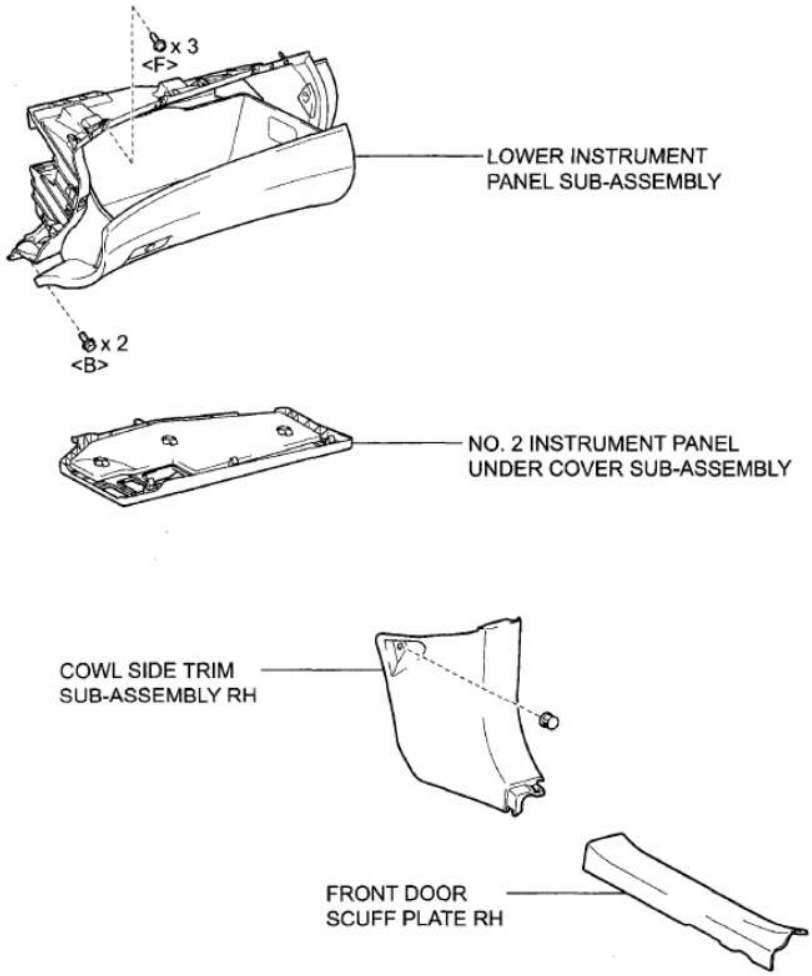


Fig. 482: Identifying Air Mix Control Servo Motor Components - For Front (4 Of 14)
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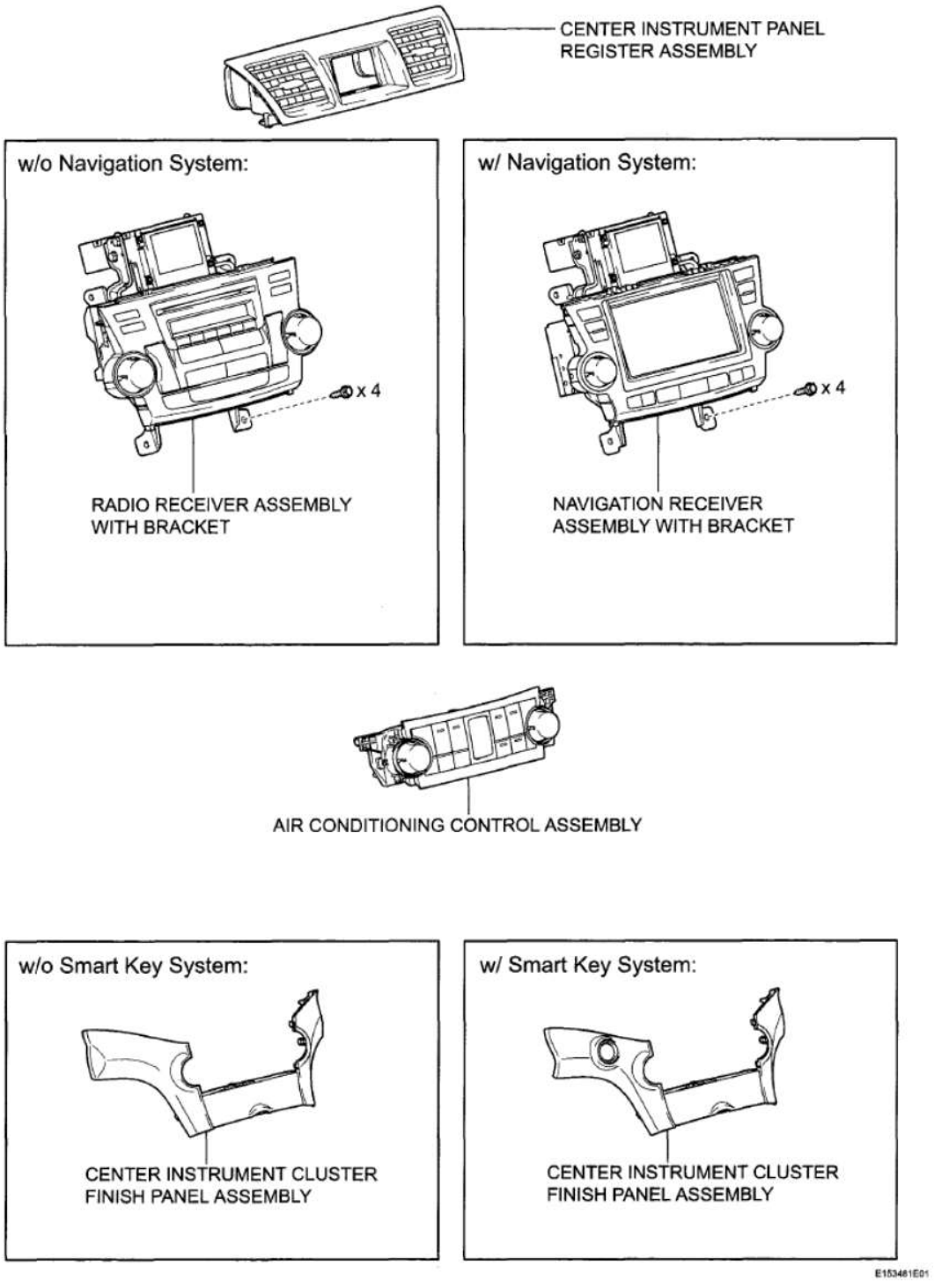


Fig. 483: Identifying Air Mix Control Servo Motor Components - For Front (5 Of 14)
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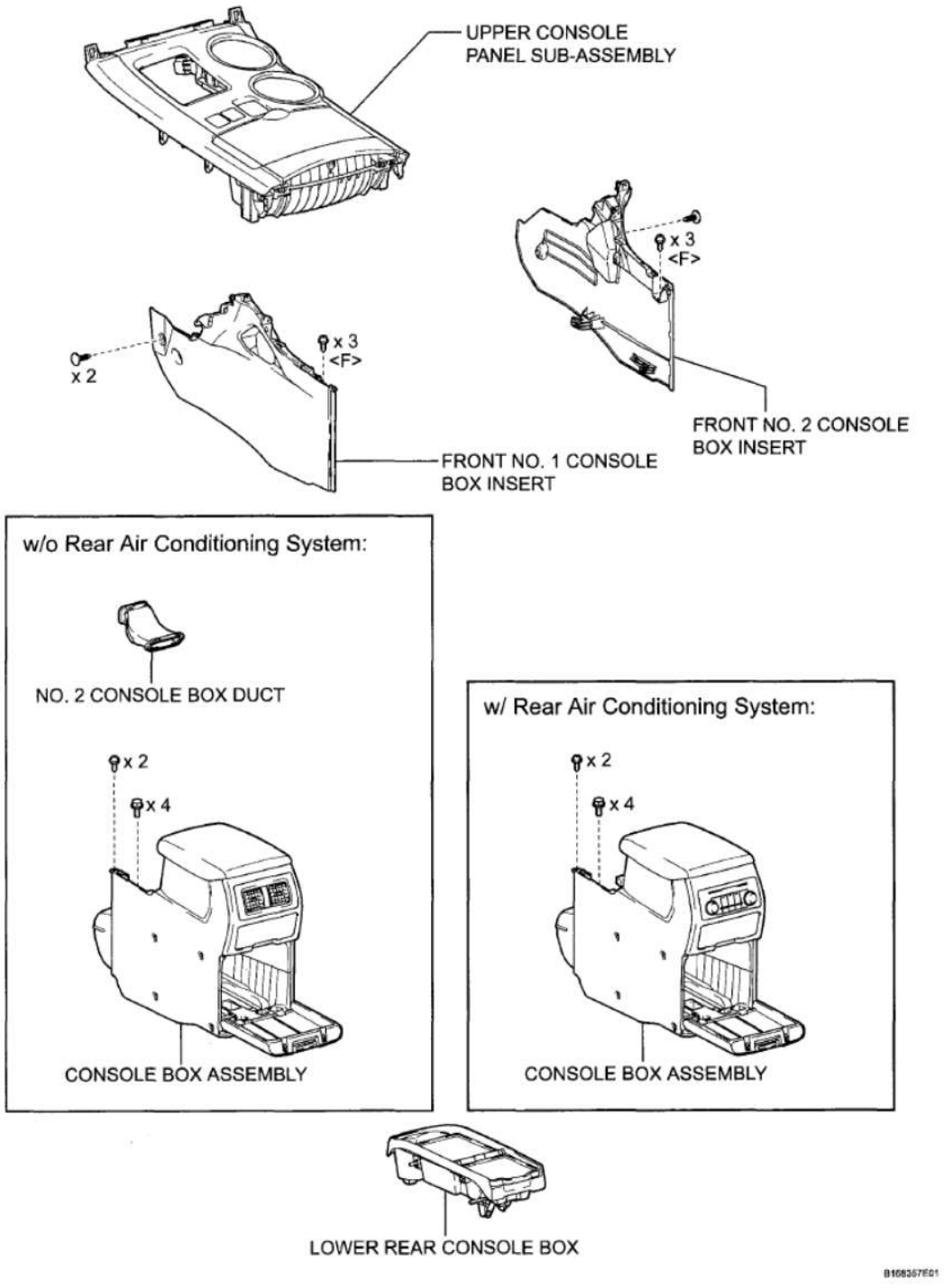


Fig. 484: Identifying Air Mix Control Servo Motor Components - For Front (6 Of 14)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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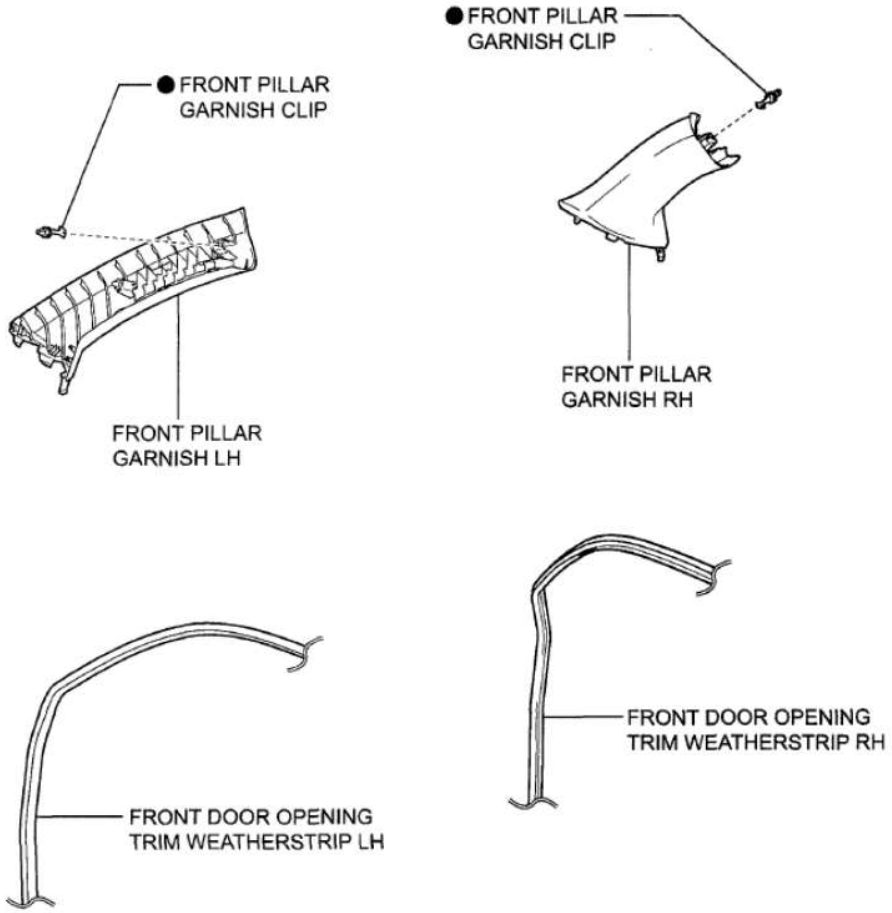


Fig. 485: Identifying Air Mix Control Servo Motor Components - For Front (7 Of 14)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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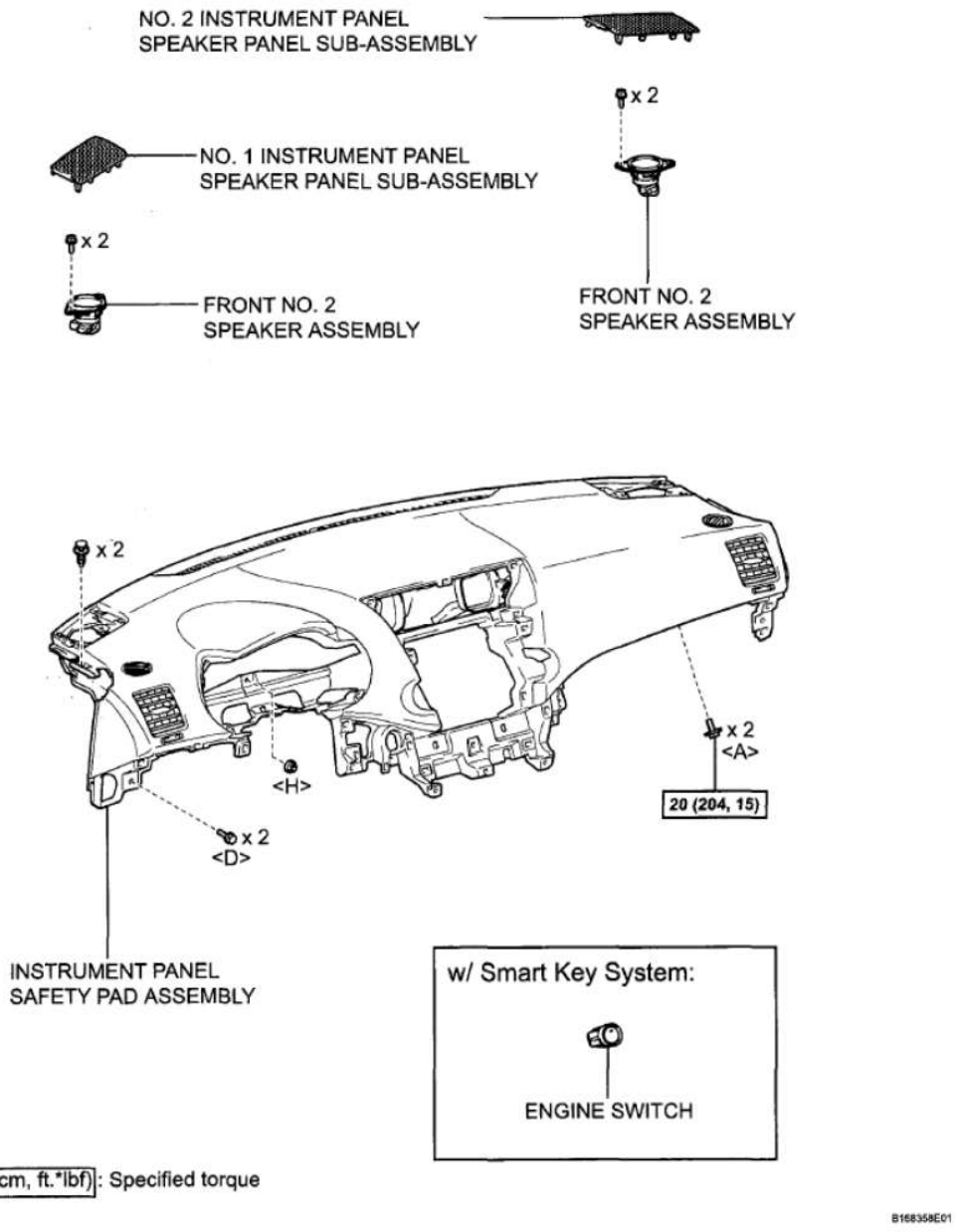


Fig. 486: Identifying Air Mix Control Servo Motor Components - For Front (8 Of 14)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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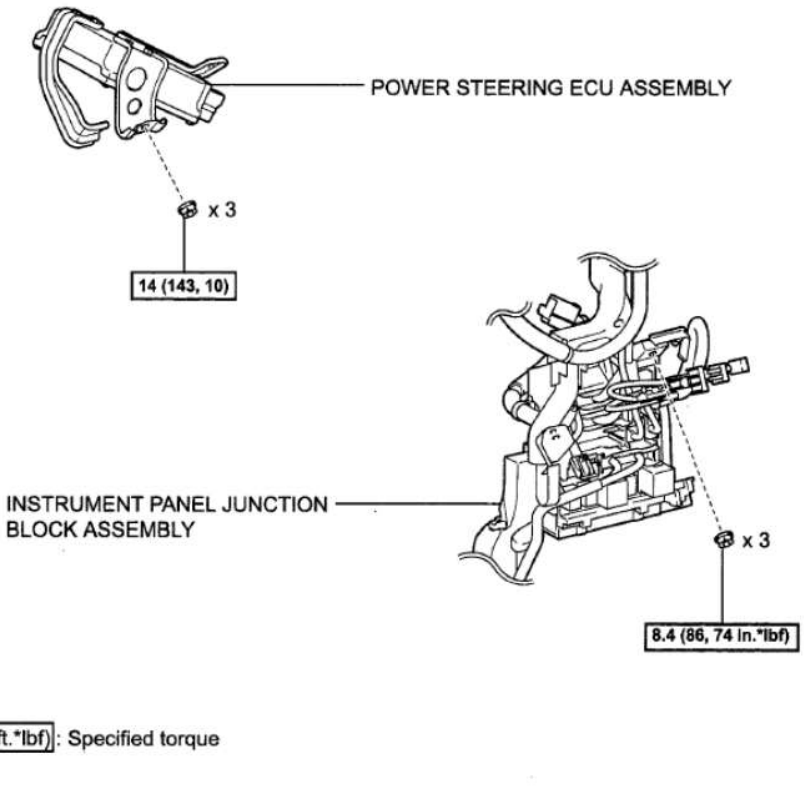


Fig. 487: Identifying Air Mix Control Servo Motor Components - For Front (9 Of 14)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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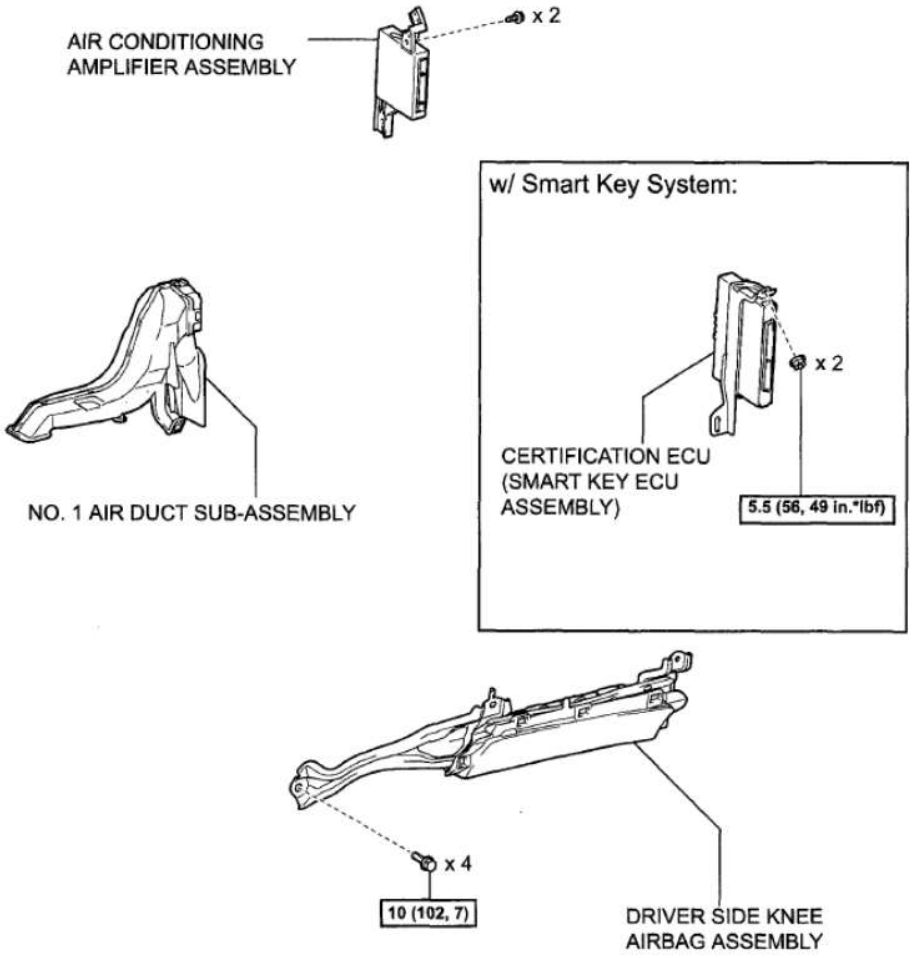


Fig. 488: Identifying Air Mix Control Servo Motor Components - For Front (10 Of 14)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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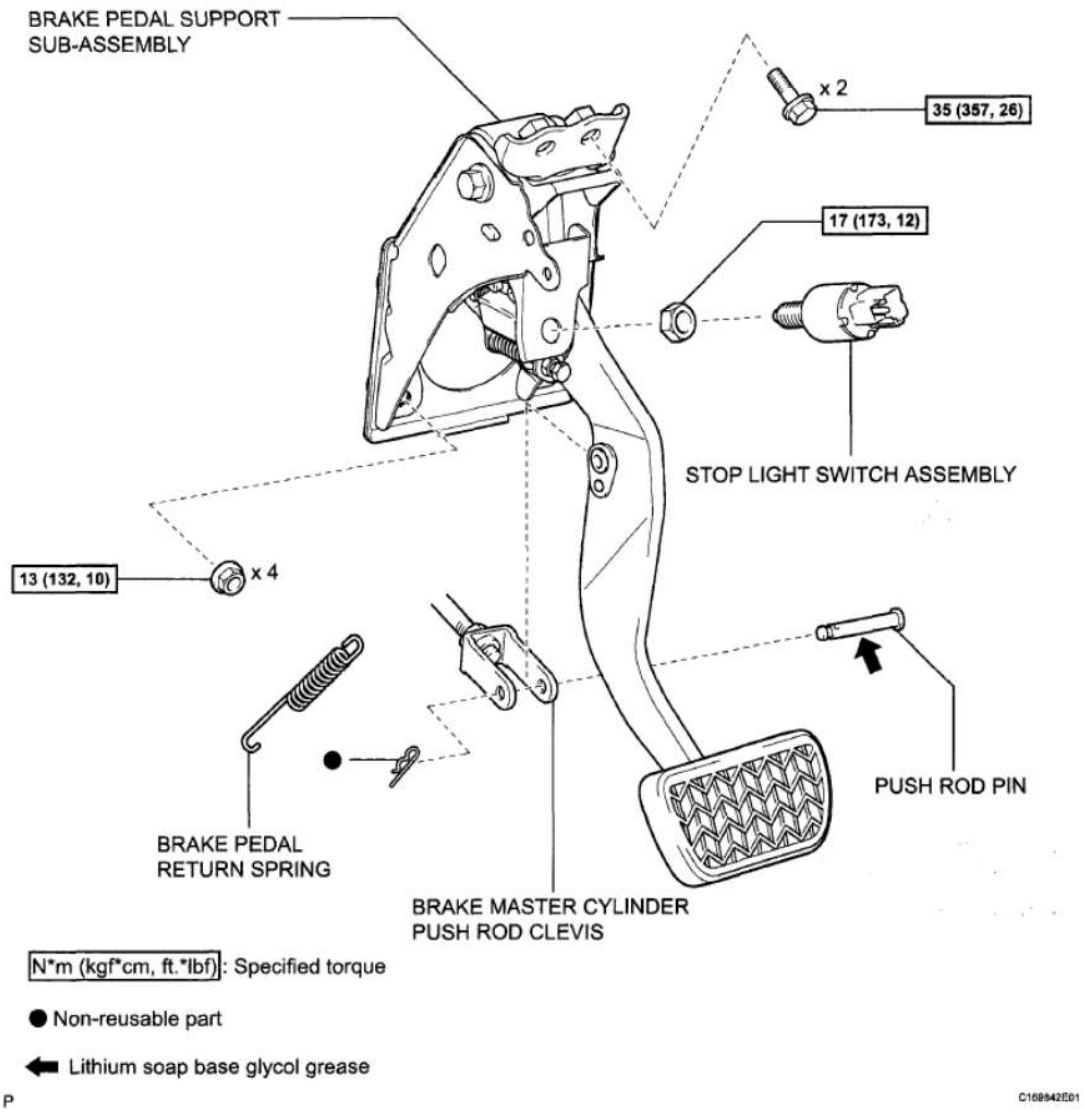


Fig. 489: Identifying Air Mix Control Servo Motor Components - For Front (11 Of 14)
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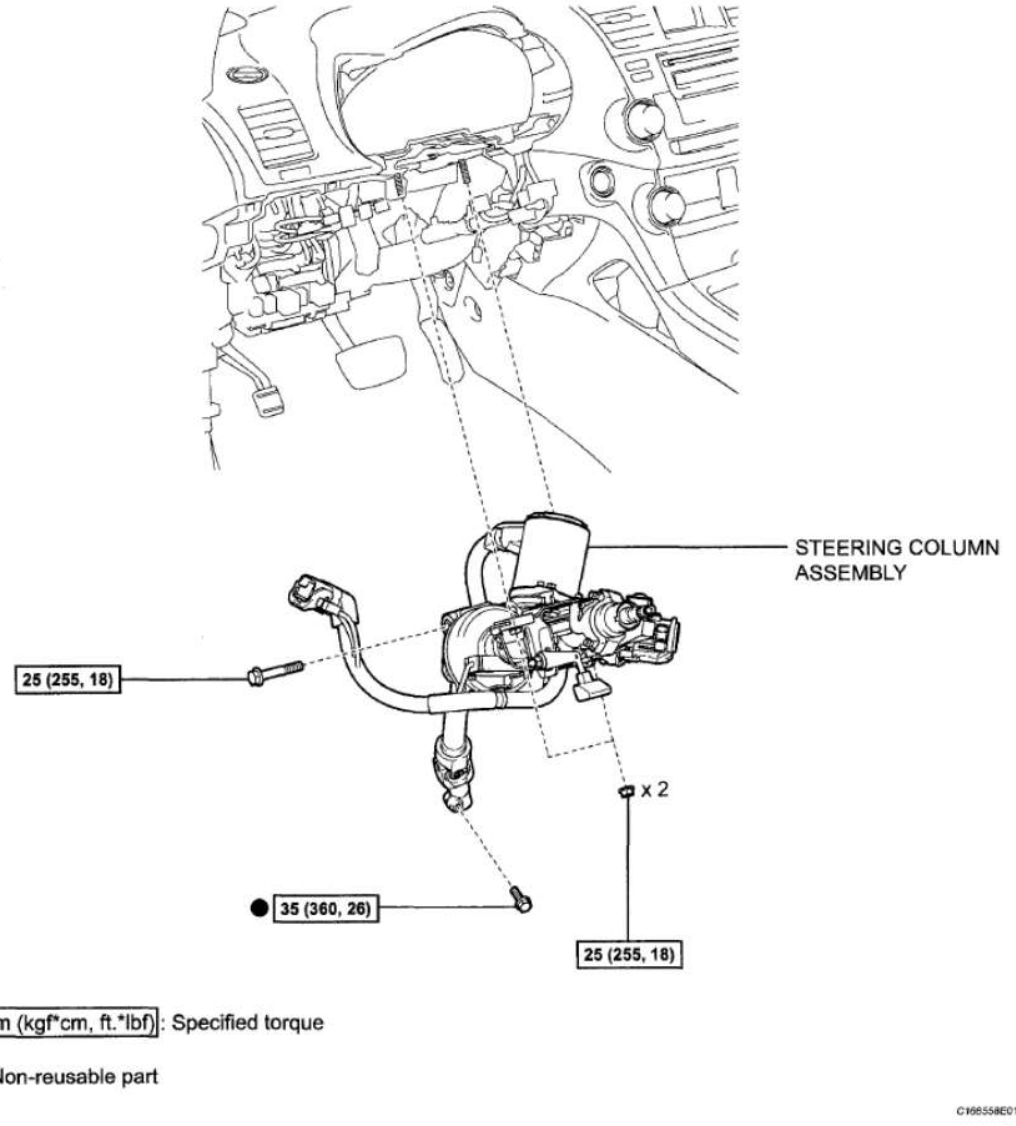


Fig. 490: Identifying Air Mix Control Servo Motor Components - For Front (12 Of 14)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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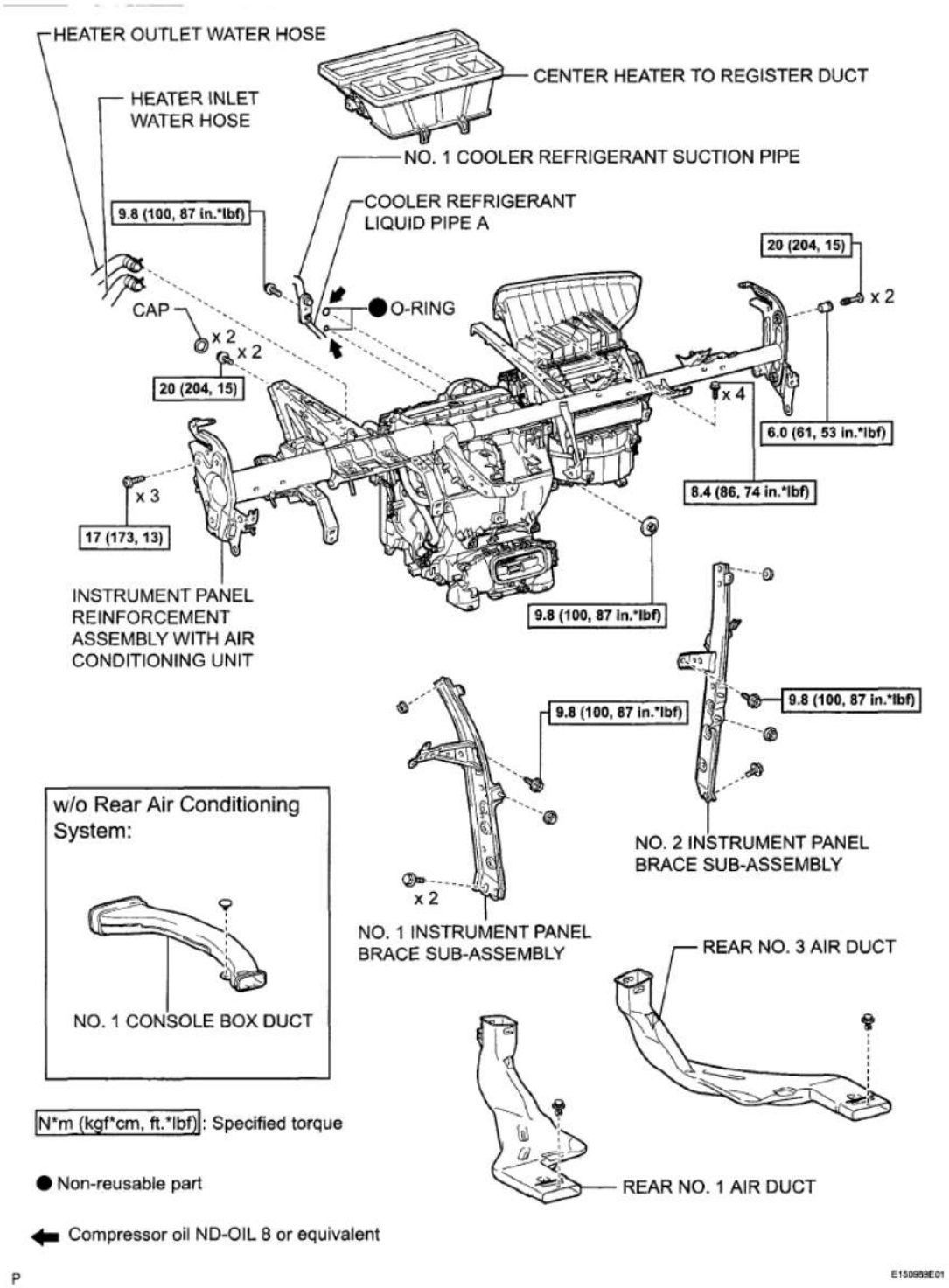


Fig. 491: Identifying Air Mix Control Servo Motor Components - For Front (13 Of 14)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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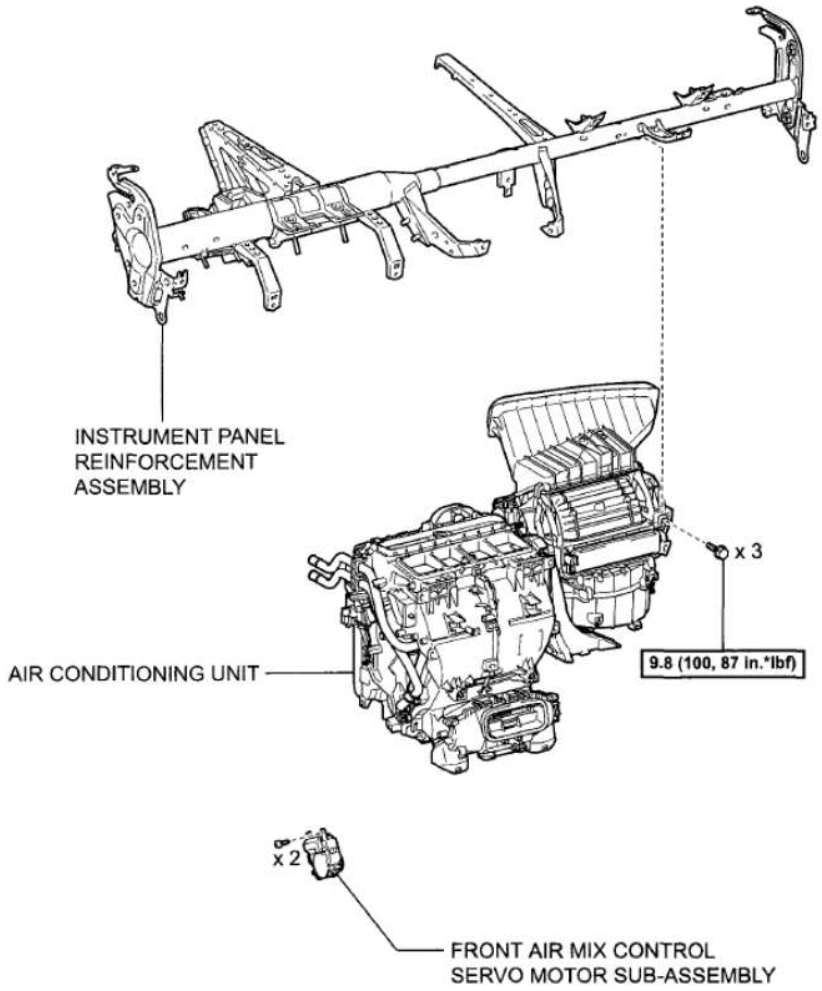


Fig. 492: Identifying Air Mix Control Servo Motor Components - For Front (14 Of 14)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **PRECAUTION**

   (See **INSTRUMENT PANEL SAFETY PAD**)

2. **RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM** (See **REPLACEMENT**)
3. **POSITION FRONT WHEELS STRAIGHT AHEAD**
4. **REMOVE FRONT WHEEL LH**
5. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

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CAUTION: Wait for 90 seconds after disconnecting the cable to prevent the airbag from deploying (See AIRBAG SYSTEM).

NOTE: When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).

6. **REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY LH** (See **REMOVAL**)
7. **REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY RH** (See **REMOVAL**)
8. **REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY** (See **REMOVAL**)
9. **REMOVE WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY** (See **REMOVAL**)
10. **REMOVE COWL TOP OUTER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
11. **DISCONNECT HEATER WATER HOSE OUTLET** (See **REMOVAL**)
12. **DISCONNECT HEATER WATER HOSE INLET** (See **DISASSEMBLY**)
13. **DISCONNECT COOLER REFRIGERANT LIQUID PIPE A** (See **DISASSEMBLY**)
14. **DISCONNECT NO. 1 COOLER REFRIGERANT SUCTION PIPE** (See **DISASSEMBLY**)
15. **REMOVE LOWER NO. 3 STEERING WHEEL COVER** (See **REMOVAL**)
16. **REMOVE LOWER NO. 2 STEERING WHEEL COVER** (See **REMOVAL**)
17. **REMOVE STEERING PAD** (See **REMOVAL**)
18. **REMOVE STEERING WHEEL ASSEMBLY** (See **DISASSEMBLY**)
19. **REMOVE STEERING COLUMN COVER** (See **REMOVAL**)
20. **REMOVE TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **REMOVAL**)
21. **REMOVE INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REMOVAL**)
22. **REMOVE COMBINATION METER ASSEMBLY** (See **REMOVAL**)
23. **REMOVE CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **REMOVAL**)
24. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **REMOVAL**)
25. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **REMOVAL**)
26. **REMOVE AIR CONDITIONING CONTROL ASSEMBLY** (See **REMOVAL**)
27. **REMOVE RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **REMOVAL**)
28. **REMOVE NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **REMOVAL**)
29. **REMOVE FRONT DOOR SCUFF PLATE LH** (See **REMOVAL**)
30. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH** (See **REMOVAL**)
31. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY** (See **REMOVAL**)
32. **REMOVE FRONT DOOR SCUFF PLATE RH** (See **REMOVAL**)

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33. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH** (See **REMOVAL**)
34. **REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **REMOVAL**)
35. **REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **REMOVAL**)
36. **REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **REMOVAL**)
37. **REMOVE NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **REMOVAL**)
38. **REMOVE LOWER REAR CONSOLE BOX** (See **REMOVAL**)
39. **REMOVE CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **REMOVAL**)
40. **REMOVE CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **DISASSEMBLY**)
41. **REMOVE FRONT NO. 1 CONSOLE BOX INSERT** (See **REMOVAL**)
42. **REMOVE FRONT NO. 2 CONSOLE BOX INSERT** (See **REMOVAL**)
43. **REMOVE ENGINE SWITCH (w/ Smart Key System)** (See **INSPECTION**)
44. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **REMOVAL**)
45. **REMOVE FRONT PILLAR GARNISH LH** (See **REMOVAL**)
46. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)
47. **REMOVE FRONT PILLAR GARNISH RH** (See **REMOVAL**)
48. **REMOVE NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
49. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
50. **REMOVE NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
51. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
52. **DISCONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **REMOVAL**)
53. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **REMOVAL**)
54. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **REMOVAL**)
55. **REMOVE BRAKE PEDAL RETURN SPRING** (See **REMOVAL**)
56. **REMOVE STOP LIGHT SWITCH ASSEMBLY** (See **INSPECTION**)
57. **SEPARATE BRAKE MASTER CYLINDER PUSH ROD CLEVIS** (See **REMOVAL**)
58. **REMOVE BRAKE PEDAL SUPPORT SUB-ASSEMBLY** (See **REMOVAL**)
59. **REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY** (See **REMOVAL**)
60. **REMOVE NO. 1 AIR DUCT SUB-ASSEMBLY** (See **REMOVAL**)
61. **SEPARATE STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY** (See **REMOVAL**)
62. **REMOVE STEERING COLUMN ASSEMBLY** (See **REMOVAL**)
63. **DISCONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY** (See **DISASSEMBLY**)
64. **REMOVE POWER STEERING ECU ASSEMBLY** (See **INSTALLATION**)
65. **REMOVE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)

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66. **REMOVE AIR CONDITIONING AMPLIFIER ASSEMBLY** (See **REMOVAL**)
67. **REMOVE REAR NO. 1 AIR DUCT** (See **DISASSEMBLY**)
68. **REMOVE REAR NO. 3 AIR DUCT** (See **DISASSEMBLY**)
69. **REMOVE NO. 1 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **DISASSEMBLY**)
70. **REMOVE CENTER HEATER TO REGISTER DUCT** (See **DISASSEMBLY**)
71. **REMOVE NO. 1 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **DISASSEMBLY**)
72. **REMOVE NO. 2 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **DISASSEMBLY**)
73. **REMOVE INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/o PTC Heater)** (See **DISASSEMBLY**)
74. **REMOVE INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/ PTC Heater)** (See **DISASSEMBLY**)
75. **REMOVE AIR CONDITIONING UNIT** (See **DISASSEMBLY**)
76. **REMOVE FRONT AIR MIX CONTROL SERVO MOTOR SUB-ASSEMBLY**
    a. Disconnect the connector.
    b. Remove the 2 screws and front air mix control servo motor sub-assembly.

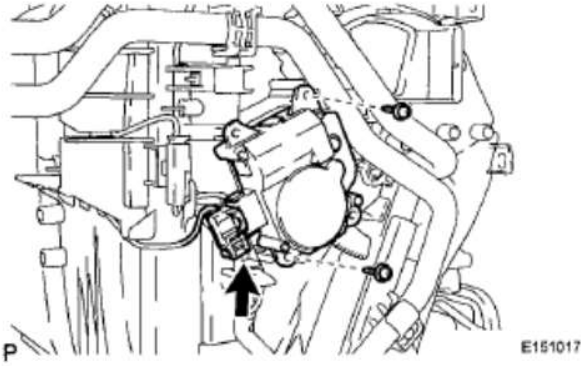


Fig. 493: Identifying Front Air Mix Control Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL FRONT AIR MIX CONTROL SERVO MOTOR SUB-ASSEMBLY**
    a. Using the reference point, install the front air mix control servo motor sub-assembly with the 2 screws.
    b. Connect the connector.
2. **INSTALL AIR CONDITIONING UNIT** (See **INSTALLATION**)
3. **INSTALL INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/o PTC Heater)** (See **REAR COOLING UNIT**)

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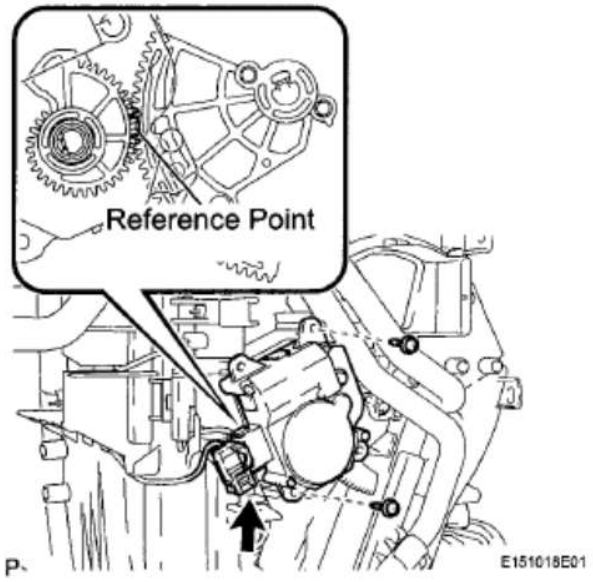


Fig. 494: Identifying Reference Point, Front Air Mix Control Servo Motor Sub-Assembly And Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **INSTALL INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/ PTC Heater)** (See **REAR COOLING UNIT**)
5. **INSTALL NO. 1 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **REAR COOLING UNIT**)
6. **INSTALL NO. 2 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **REAR COOLING UNIT**)
7. **INSTALL CENTER HEATER TO REGISTER DUCT** (See **REAR COOLING UNIT**)
8. **INSTALL NO. 1 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **REAR COOLING UNIT**)
9. **INSTALL REAR NO. 3 AIR DUCT** (See **REAR COOLING UNIT**)
10. **INSTALL REAR NO. 1 AIR DUCT** (See **REAR COOLING UNIT**)
11. **INSTALL AIR CONDITIONING AMPLIFIER ASSEMBLY** (See **REMOVAL**)
12. **INSTALL CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)
13. **INSTALL POWER STEERING ECU ASSEMBLY** (See **INSTALLATION**)
14. **CONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY** (See **REAR COOLING UNIT**)
15. **INSTALL STEERING COLUMN ASSEMBLY** (See **INSTALLATION**)
16. **CONNECT STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY** (See **INSTALLATION**)
17. **INSTALL NO. 1 AIR DUCT SUB-ASSEMBLY** (See **INSTALLATION**)
18. **INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY** (See **INSTALLATION**)
19. **INSTALL BRAKE PEDAL SUPPORT SUB-ASSEMBLY** (See **INSTALLATION**)

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20. **CONNECT BRAKE MASTER CYLINDER PUSH ROD CLEVIS** (See **INSTALLATION**)
21. **INSTALL BRAKE PEDAL RETURN SPRING** (See **INSTALLATION**)
22. **INSTALL STOP LIGHT SWITCH ASSEMBLY** (See **INSTALLATION**)
23. **INSPECT AND ADJUST BRAKE PEDAL HEIGHT** (See **ADJUSTMENT**)
24. **INSPECT BRAKE PEDAL FREE PLAY** (See **ADJUSTMENT**)
25. **INSPECT BRAKE PEDAL RESERVE DISTANCE** (See **ADJUSTMENT**)
26. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **INSTALLATION**)
27. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **INSTALLATION**)
28. **CONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **INSTALLATION**)
29. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
30. **INSTALL NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
31. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
32. **INSTALL NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
33. **INSTALL FRONT PILLAR GARNISH RH** (See **INSTALLATION**)
34. **CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
35. **INSTALL FRONT PILLAR GARNISH LH** (See **INSTALLATION**)
36. **CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **INSTALLATION**)
37. **INSTALL ENGINE SWITCH (w/ Smart Key System)** (See **INSTALLATION**)
38. **INSTALL FRONT NO. 2 CONSOLE BOX INSERT** (See **INSTALLATION**)
39. **INSTALL FRONT NO. 1 CONSOLE BOX INSERT** (See **INSTALLATION**)
40. **INSTALL CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
41. **INSTALL CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **INSTALLATION**)
42. **INSTALL LOWER REAR CONSOLE BOX** (See **INSTALLATION**)
43. **INSTALL NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
44. **INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
45. **INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
46. **INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **INSTALLATION**)
47. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH** (See **INSTALLATION**)
48. **INSTALL FRONT DOOR SCUFF PLATE RH** (See **INSTALLATION**)
49. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
50. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH** (See **INSTALLATION**)

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51. **INSTALL FRONT DOOR SCUFF PLATE LH** (See **INSTALLATION**)
52. **INSTALL RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **INSTALLATION**)
53. **INSTALL NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **INSTALLATION**)
54. **INSTALL AIR CONDITIONING CONTROL ASSEMBLY** (See **REMOVAL**)
55. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **INSTALLATION**)
56. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **INSTALLATION**)
57. **INSTALL CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **INSTALLATION**)
58. **INSTALL COMBINATION METER ASSEMBLY** (See **REASSEMBLY**)
59. **INSTALL INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REASSEMBLY**)
60. **POSITION FRONT WHEELS STRAIGHT AHEAD**
61. **INSTALL TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
62. **INSTALL STEERING COLUMN COVER** (See **INSTALLATION**)
63. **ADJUST SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
64. **INSTALL STEERING WHEEL ASSEMBLY** (See **INSTALLATION**)
65. **INSPECT STEERING WHEEL CENTER POINT**
66. **INSTALL STEERING PAD** (See **INSTALLATION**)
67. **INSTALL LOWER NO. 2 STEERING WHEEL COVER** (See **INSTALLATION**)
68. **INSTALL LOWER NO. 3 STEERING WHEEL COVER** (See **INSTALLATION**)
69. **INSTALL FRONT WHEEL LH** (See **INSTALLATION**)
70. **CONNECT COOLER REFRIGERANT LIQUID PIPE A** (See **REAR COOLING UNIT**)
71. **CONNECT NO. 1 COOLER REFRIGERANT SUCTION PIPE** (See **REAR COOLING UNIT**)
72. **CONNECT HEATER WATER HOSE INLET** (See **REAR COOLING UNIT**)
73. **CONNECT HEATER WATER HOSE OUTLET** (See **REAR COOLING UNIT**)
74. **INSTALL COWL TOP OUTER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
75. **INSTALL WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY** (See **INSTALLATION**)
76. **INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY** (See **INSTALLATION**)
77. **INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY RH** (See **INSTALLATION**)
78. **INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY LH** (See **INSTALLATION**)
79. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**

NOTE:

- **When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).**

80. **INSPECT STEERING PAD** (See **INSTALLATION**)

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81. **INSPECT SRS WARNING LIGHT**
    a. Inspect the SRS warning light (See **DIAGNOSIS SYSTEM**).
82. **ADD ENGINE COOLANT (for 1AR-FE)** (See **COOLANT**)
83. **ADD ENGINE COOLANT (for 2GR-FE)** (See **REPLACEMENT**)
84. **INSPECT FOR COOLANT LEAK (for 1AR-FE)** (See **COOLING SYSTEM**)
85. **INSPECT FOR COOLANT LEAK (for 2GR-FE)** (See **COOLING SYSTEM**)
86. **CHARGE WITH REFRIGERANT** (See **REFRIGERANT LINE**)
87. **WARM UP ENGINE** (See **REFRIGERANT LINE**)
88. **INSPECT FOR REFRIGERANT LEAK** (See **REFRIGERANT LINE**)

AIR MIX CONTROL SERVO MOTOR (FOR REAR)

COMPONENTS

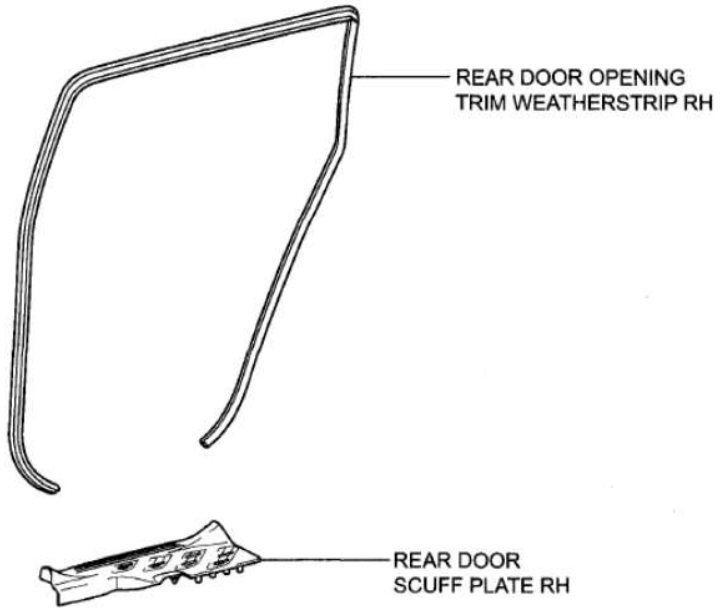


Fig. 495: Identifying Air Mix Control Servo Motor Components - For Rear (1 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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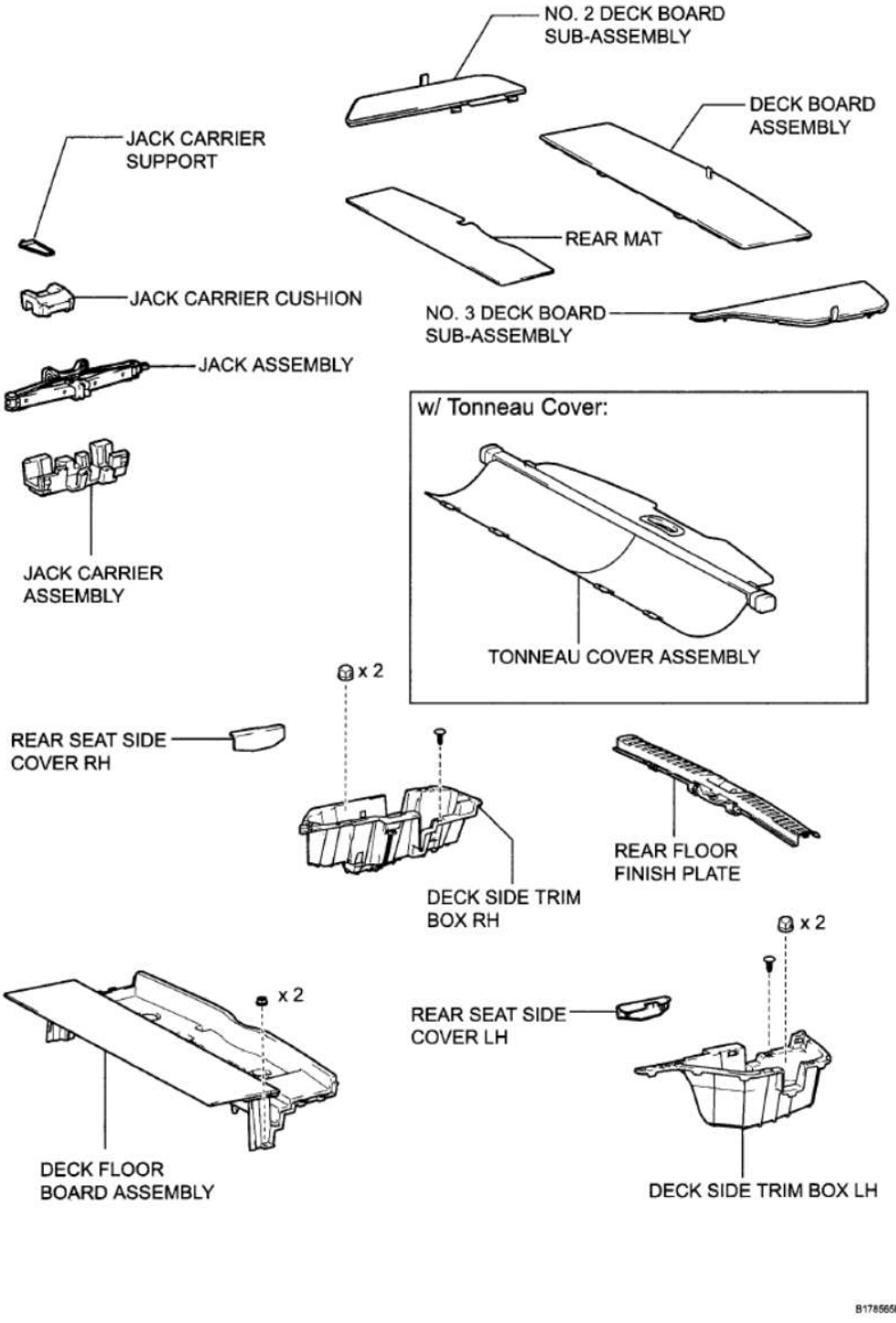


Fig. 496: Identifying Air Mix Control Servo Motor Components - For Rear (2 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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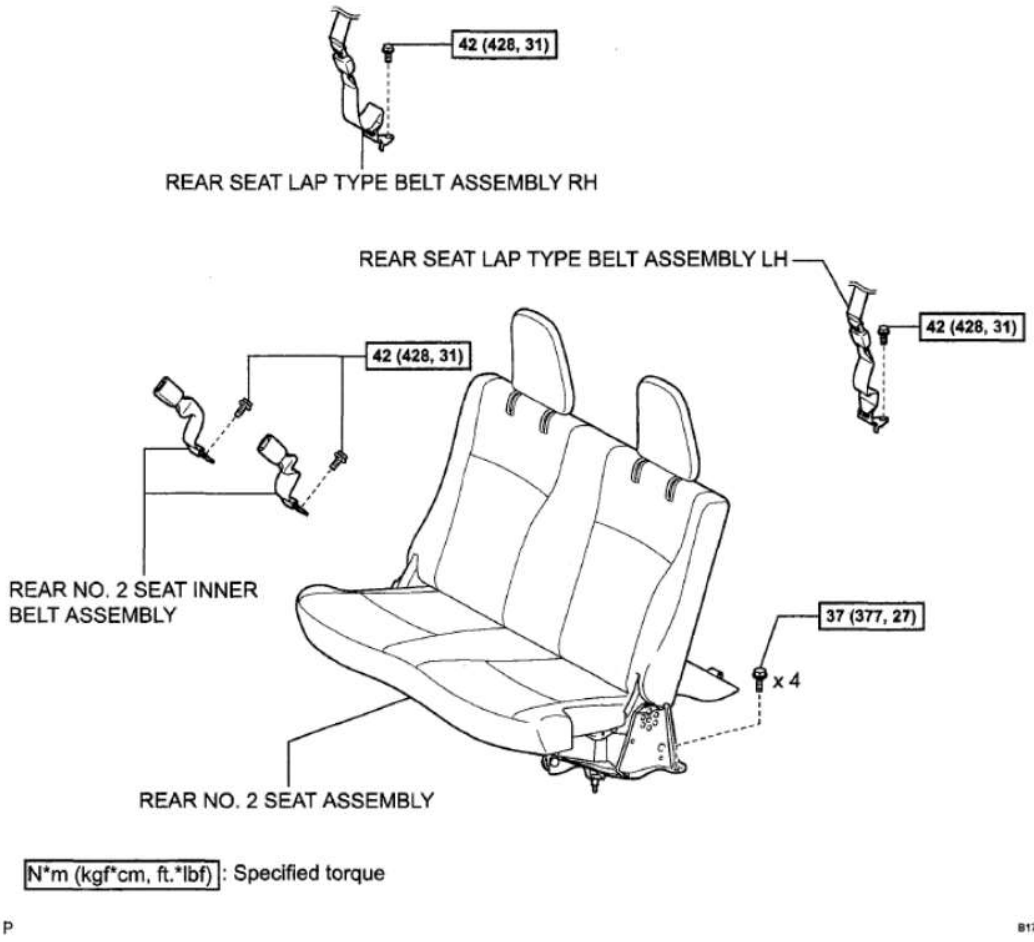


Fig. 497: Identifying Air Mix Control Servo Motor Components - For Rear (3 Of 15)
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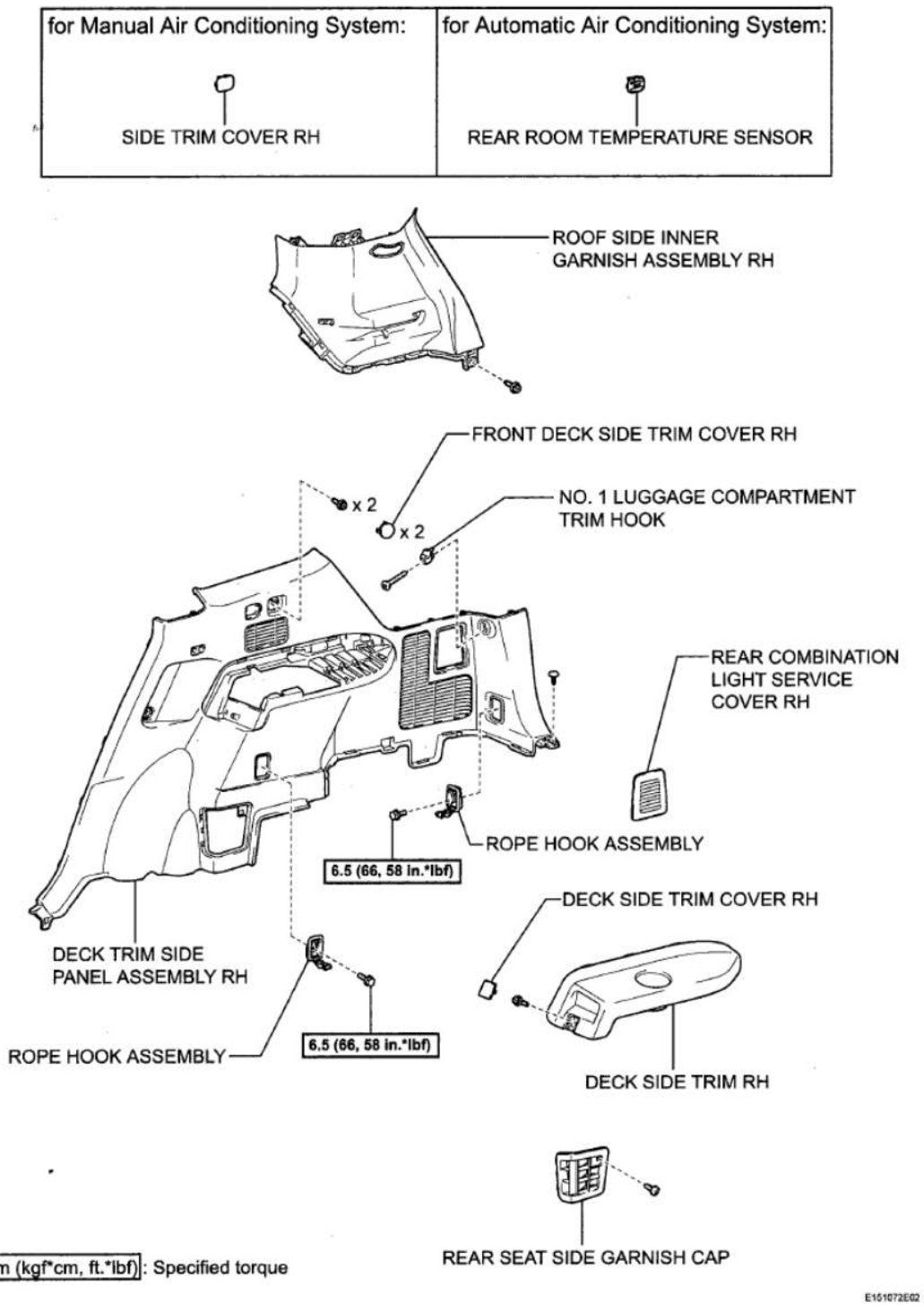
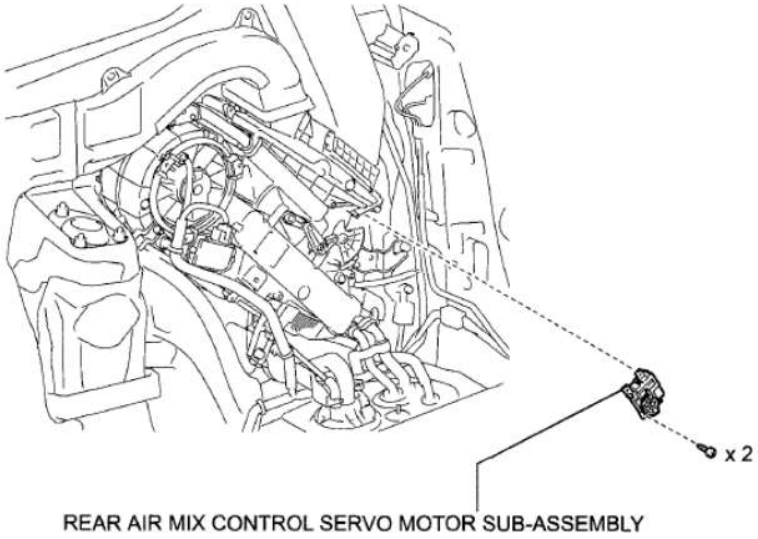


Fig. 498: Identifying Air Mix Control Servo Motor Components - For Rear (4 Of 15)
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Fig. 499: Identifying Air Mix Control Servo Motor Components - For Rear (15 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE REAR DOOR SCUFF PLATE RH** (See **REMOVAL**)
2. **REMOVE REAR DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)
3. **REMOVE DECK BOARD ASSEMBLY** (See **REMOVAL**)
4. **REMOVE NO. 3 DECK BOARD SUB-ASSEMBLY** (See **REMOVAL**)
5. **REMOVE NO. 2 DECK BOARD SUB-ASSEMBLY** (See **REMOVAL**)
6. **REMOVE TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)** (See **REMOVAL**)
7. **REMOVE REAR SEAT SIDE COVER LH** (See **REMOVAL**)
8. **REMOVE DECK SIDE TRIM BOX LH** (See **REMOVAL**)
9. **REMOVE REAR SEAT SIDE COVER RH** (See **REMOVAL**)
10. **REMOVE JACK CARRIER SUPPORT**
11. **REMOVE JACK CARRIER CUSHION** (See **REMOVAL**)
12. **REMOVE JACK ASSEMBLY** (See **REMOVAL**)
13. **REMOVE JACK CARRIER ASSEMBLY** (See **REMOVAL**)
14. **REMOVE DECK SIDE TRIM BOX RH** (See **REMOVAL**)
15. **REMOVE REAR MAT** (See **REMOVAL**)
16. **REMOVE DECK FLOOR BOARD ASSEMBLY** (See **REMOVAL**)
17. **REMOVE REAR NO. 2 SEAT INNER BELT ASSEMBLY** (See **INSTALLATION**)
18. **DISCONNECT REAR SEAT LAP TYPE BELT ASSEMBLY LH** (See **REMOVAL**)

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19. **DISCONNECT REAR SEAT LAP TYPE BELT ASSEMBLY RH** (See **REMOVAL**)
20. **REMOVE REAR NO. 2 SEAT ASSEMBLY** (See **DISASSEMBLY**)
21. **REMOVE REAR FLOOR FINISH PLATE** (See **REMOVAL**)
22. **REMOVE REAR SEAT SIDE GARNISH CAP** (See **REMOVAL**)
23. **REMOVE DECK SIDE TRIM COVER RH** (See **REMOVAL**)
24. **REMOVE DECK SIDE TRIM RH** (See **REMOVAL**)
25. **REMOVE SIDE TRIM COVER RH (for Manual Air Conditioning System)** (See **REMOVAL**)
26. **REMOVE REAR ROOM TEMPERATURE SENSOR (for Automatic Air Conditioning System)** (See **ROOM TEMPERATURE SENSOR (FOR REAR)**)
27. **REMOVE REAR COMBINATION LIGHT SERVICE COVER RH** (See **REMOVAL**)
28. **REMOVE ROPE HOOK ASSEMBLY (for RH Side)** (See **REMOVAL**)
29. **REMOVE NO. 1 LUGGAGE COMPARTMENT TRIM HOOK** (See **REMOVAL**)
30. **REMOVE FRONT DECK SIDE TRIM COVER RH** (See **REMOVAL**)
31. **REMOVE DECK TRIM SIDE PANEL ASSEMBLY RH** (See **REMOVAL**)
32. **REMOVE ROOF SIDE INNER GARNISH ASSEMBLY RH** (See **REMOVAL**)
33. **REMOVE REAR AIR MIX CONTROL SERVO MOTOR SUB-ASSEMBLY**
    a. Disconnect the connector.
    b. Remove the 2 screws and rear air mix control servo motor sub-assembly.

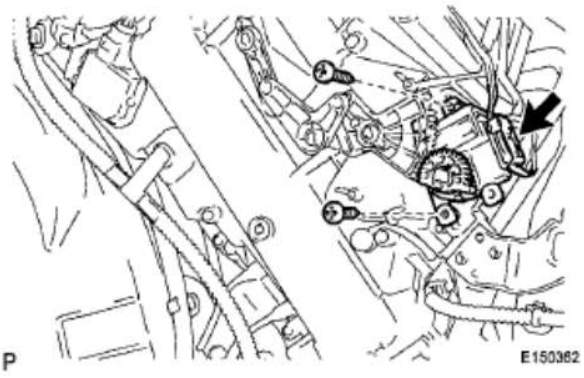


Fig. 500: Identifying Rear Air Mix Control Servo Motor Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL REAR AIR MIX CONTROL SERVO MOTOR SUB-ASSEMBLY**
    a. Using the reference point, install the rear air mix control servo motor sub-assembly with the 2 screws.
    b. Connect the connector.
2. **INSTALL ROOF SIDE INNER GARNISH ASSEMBLY RH** (See **INSTALLATION**)
3. **INSTALL DECK TRIM SIDE PANEL ASSEMBLY RH** (See **INSTALLATION**)

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4. **INSTALL FRONT DECK SIDE TRIM COVER RH** (See **INSTALLATION**)

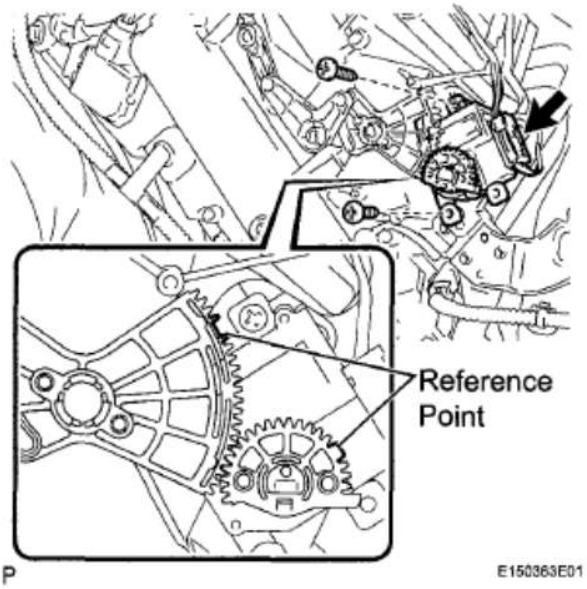


Fig. 501: Identifying Reference Point, Rear Air Mix Control Servo Motor Sub-Assembly And Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **INSTALL NO. 1 LUGGAGE COMPARTMENT TRIM HOOK** (See **INSTALLATION**)
6. **INSTALL ROPE HOOK ASSEMBLY (for RH Side)** (See **INSTALLATION**)
7. **INSTALL REAR COMBINATION LIGHT SERVICE COVER RH** (See **INSTALLATION**)
8. **INSTALL SIDE TRIM COVER RH (for Manual Air Conditioning System)** (See **INSTALLATION**)
9. **INSTALL REAR ROOM TEMPERATURE SENSOR (for Automatic Air Conditioning System)** (See **INSPECTION**)
10. **INSTALL DECK SIDE TRIM RH** (See **INSTALLATION**)
11. **INSTALL DECK SIDE TRIM COVER RH** (See **INSTALLATION**)
12. **INSTALL REAR SEAT SIDE GARNISH CAP** (See **INSTALLATION**)
13. **INSTALL REAR FLOOR FINISH PLATE** (See **INSTALLATION**)
14. **INSTALL REAR NO. 2 SEAT ASSEMBLY** (See **INSTALLATION**)
15. **CONNECT REAR SEAT LAP TYPE BELT ASSEMBLY LH** (See **INSTALLATION**)
16. **CONNECT REAR SEAT LAP TYPE BELT ASSEMBLY RH** (See **INSTALLATION**)
17. **INSTALL REAR NO. 2 SEAT INNER BELT ASSEMBLY** (See **INSTALLATION**)
18. **INSTALL REAR MAT** (See **INSTALLATION**)
19. **INSTALL DECK FLOOR BOARD ASSEMBLY** (See **INSTALLATION**)
20. **INSTALL DECK SIDE TRIM BOX LH** (See **INSTALLATION**)
21. **INSTALL REAR SEAT SIDE COVER LH** (See **INSTALLATION**)

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22. **INSTALL DECK SIDE TRIM BOX RH** (See **INSTALLATION**)
23. **INSTALL JACK CARRIER ASSEMBLY** (See **INSTALLATION**)
24. **INSTALL JACK ASSEMBLY** (See **INSTALLATION**)
25. **INSTALL JACK CARRIER CUSHION** (See **INSTALLATION**)
26. **INSTALL JACK CARRIER SUPPORT**
27. **INSTALL REAR SEAT SIDE COVER RH** (See **INSTALLATION**)
28. **INSTALL TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)** (See **INSTALLATION**)
29. **INSTALL NO. 2 DECK BOARD SUB-ASSEMBLY** (See **INSTALLATION**)
30. **INSTALL NO. 3 DECK BOARD SUB-ASSEMBLY** (See **INSTALLATION**)
31. **INSTALL DECK BOARD ASSEMBLY** (See **INSTALLATION**)
32. **INSTALL REAR DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
33. **INSTALL REAR DOOR SCUFF PLATE RH** (See **INSTALLATION**)

PTC HEATER ASSEMBLY

COMPONENTS

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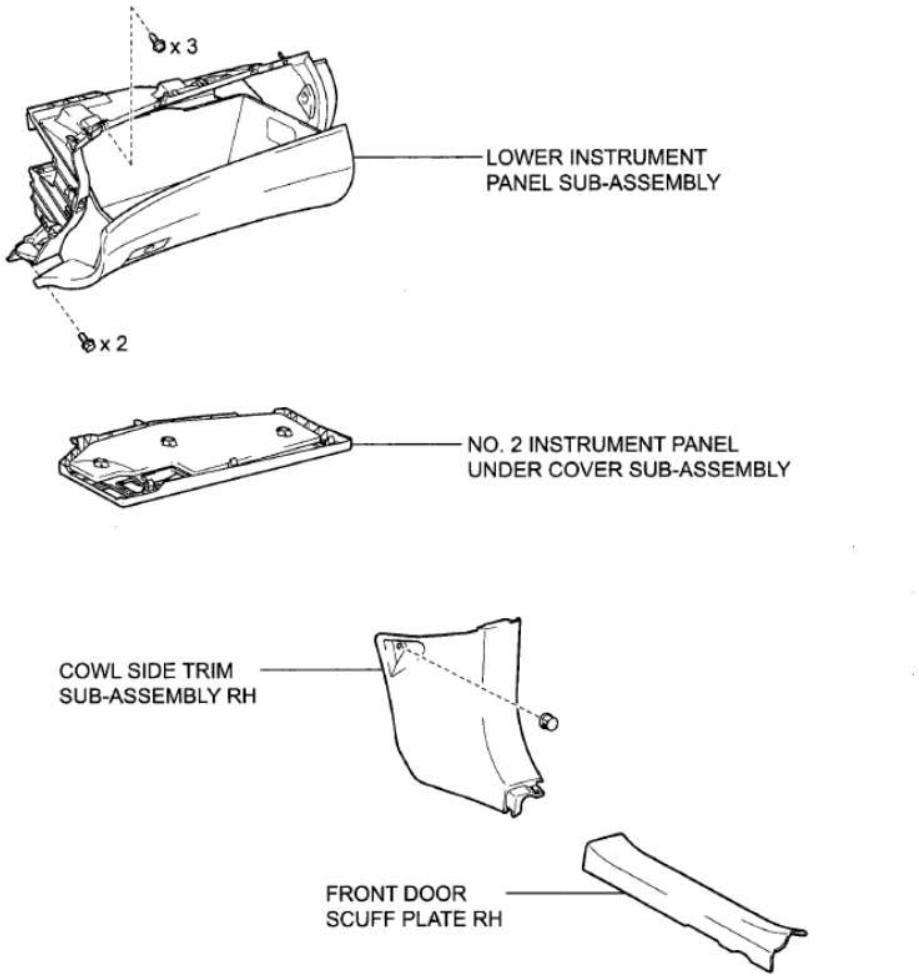


Fig. 502: Identifying PTC Heater Assembly Components (1 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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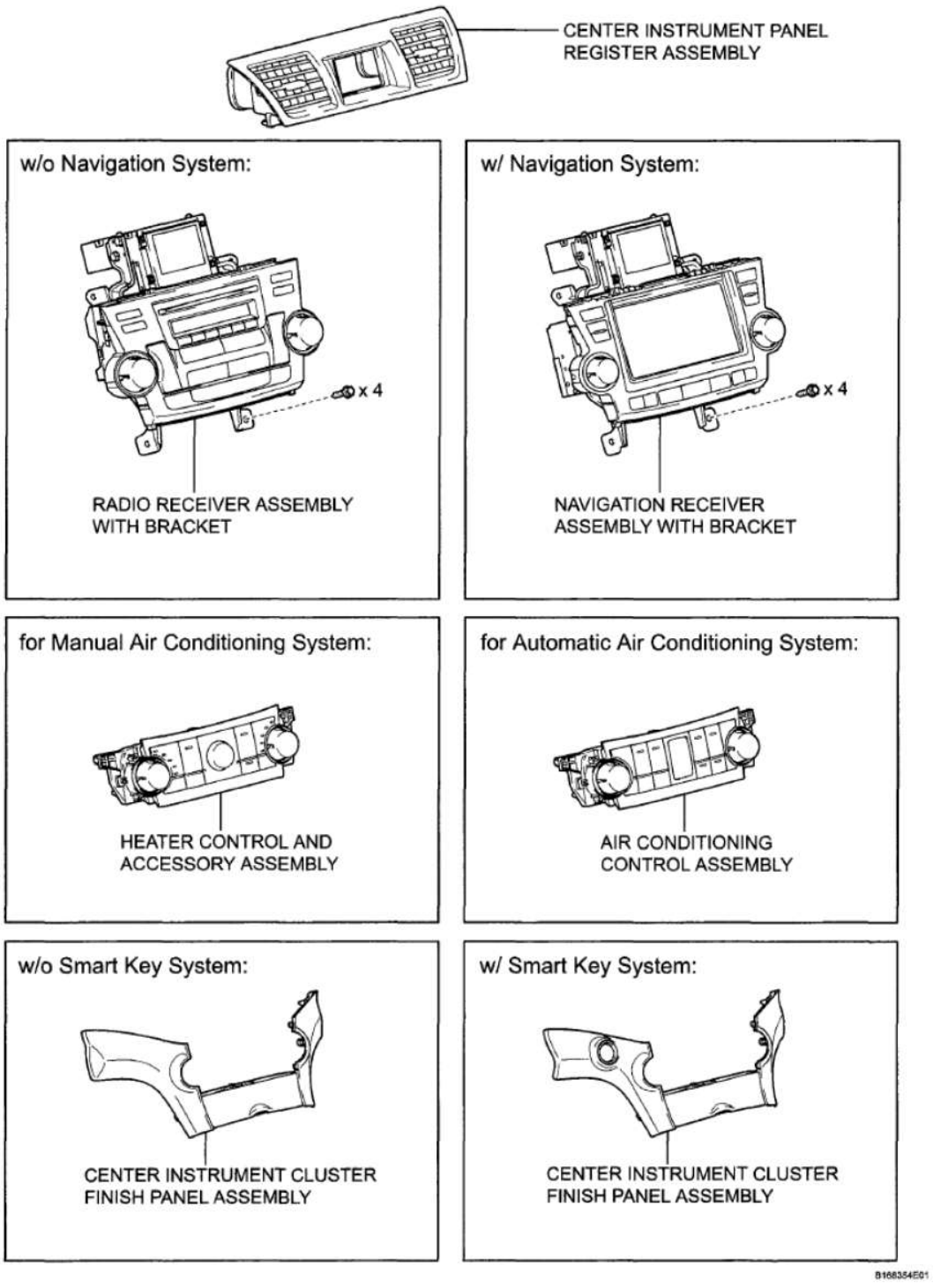


Fig. 503: Identifying PTC Heater Assembly Components (2 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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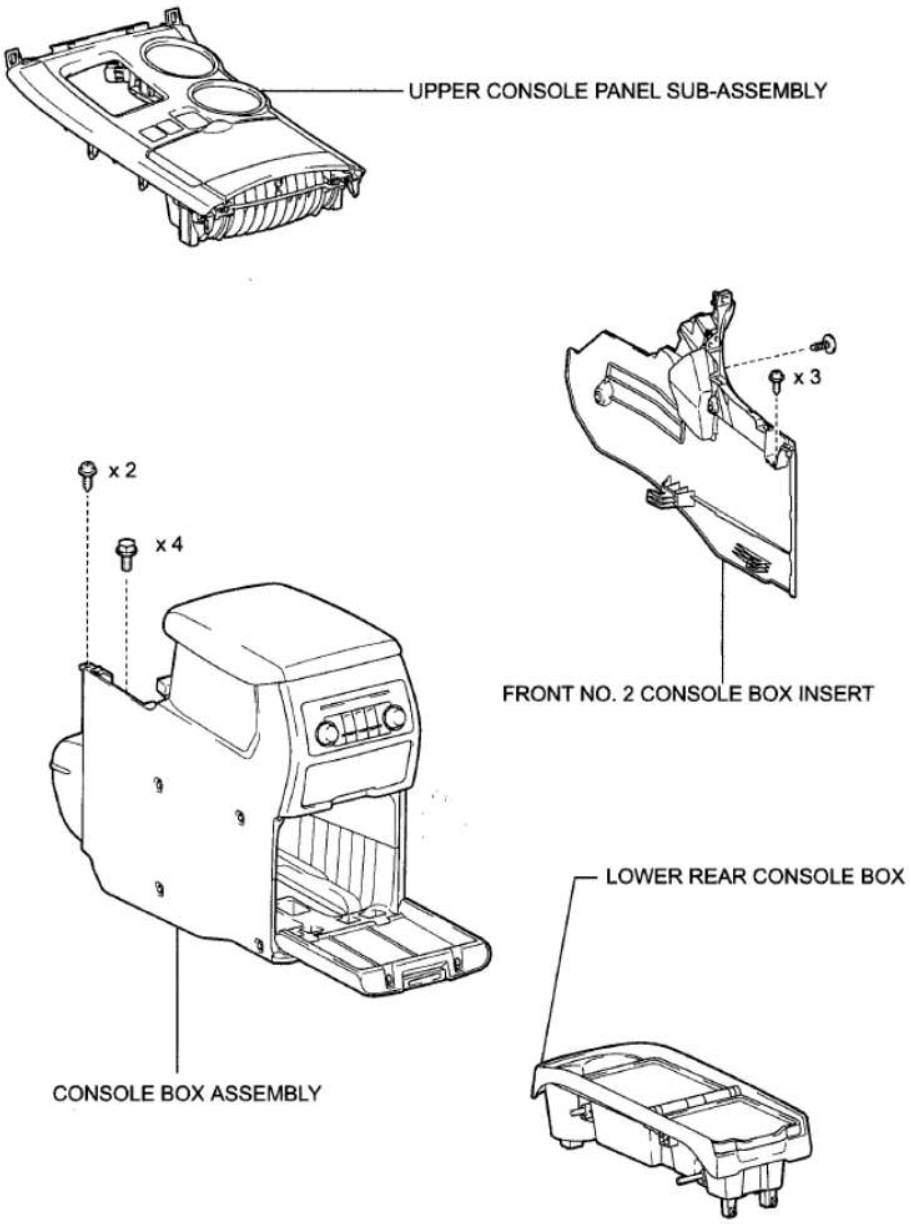


Fig. 504: Identifying PTC Heater Assembly Components (3 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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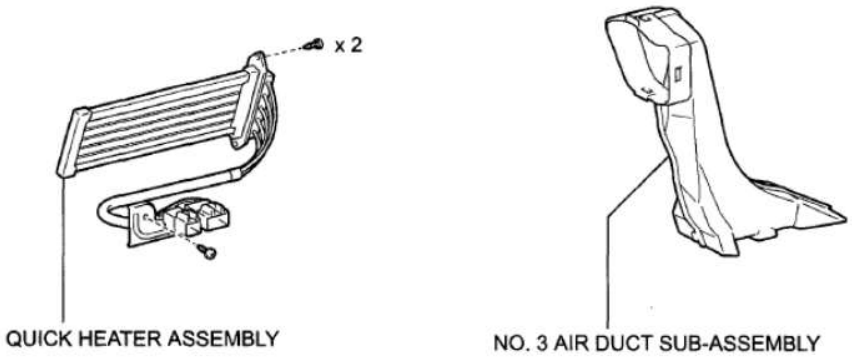


Fig. 505: Identifying PTC Heater Assembly Components (4 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **REMOVAL**)
2. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **REMOVAL**)
3. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **REMOVAL**)
4. **REMOVE HEATER CONTROL AND ACCESSORY ASSEMBLY (for Manual Air Conditioning System)** (See **AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)**)
5. **REMOVE AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
6. **REMOVE RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **REMOVAL**)
7. **REMOVE NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **REMOVAL**)
8. **REMOVE FRONT DOOR SCUFF PLATE RH** (See **REMOVAL**)
9. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH** (See **REMOVAL**)
10. **REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **REMOVAL**)
11. **REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **REMOVAL**)
12. **REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **REMOVAL**)
13. **REMOVE LOWER REAR CONSOLE BOX** (See **REMOVAL**)
14. **REMOVE CONSOLE BOX ASSEMBLY** (See **DISASSEMBLY**)
15. **REMOVE FRONT NO. 2 CONSOLE BOX INSERT** (See **REMOVAL**)
16. **REMOVE NO. 3 AIR DUCT SUB-ASSEMBLY**
    a. Disengage the 3 claws and remove the No. 3 air duct sub-assembly as shown in the illustration.

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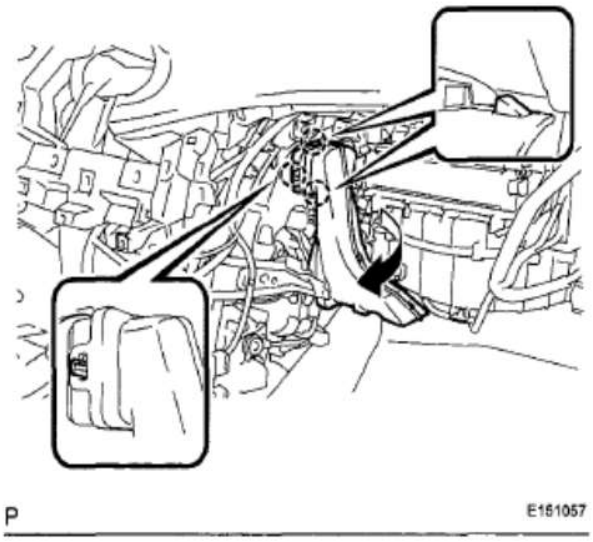


Fig. 506: Identifying No. 3 Air Duct Sub-Assembly Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

17. **REMOVE QUICK HEATER ASSEMBLY**
    a. Disconnect the 2 connectors.
    b. Remove the 3 screws and the quick heater assembly as shown in the illustration.

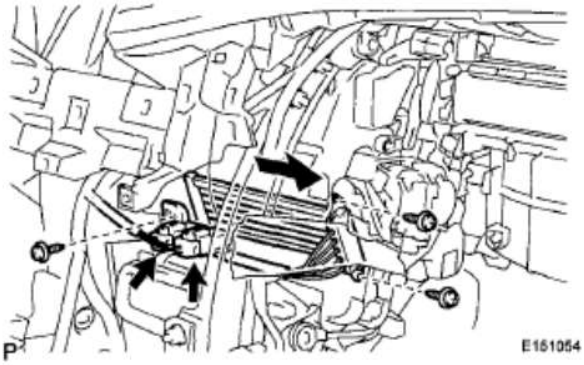


Fig. 507: Identifying Quick Heater Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION

1. **INSPECT PTC HEATER ASSEMBLY**
    a. Measure the resistance of the PTC heater.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition

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D44-1 (B) - D45-1 (E)	23 to 25°C (73 to 77°F)	0.5 to 2.5 ohms
D44-2 (B) - D45-2 (E)	23 to 25°C (73 to 77°F)	0.5 to 2.5 ohms
D44-2 (B) - D45-1 (E)	23 to 25°C (73 to 77°F)	0.5 to 2.5 ohms
D44-3 (B) - D45-2 (E)	23 to 25°C (73 to 77°F)	0.5 to 2.5 ohms

If the result is not as specified, replace the PTC heater assembly.

Component without harness connected:
(PTC Heater)

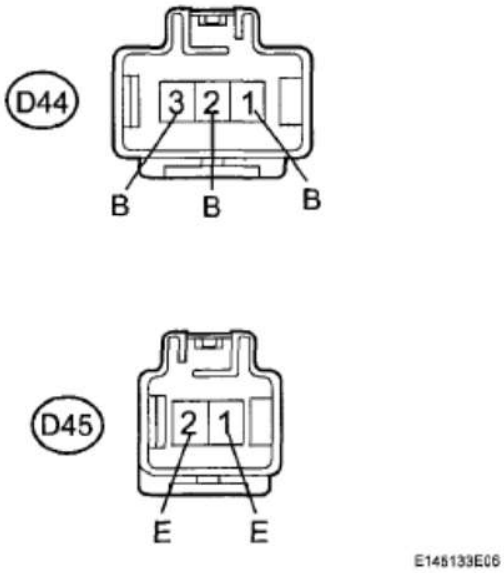


Fig. 508: Identifying PTC Heater Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL QUICK HEATER ASSEMBLY**
   a. Install the quick heater assembly with the 3 screws as shown in the illustration.
   b. Connect the 2 connectors.

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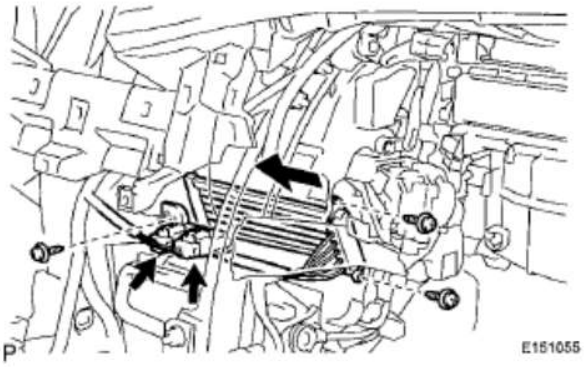


Fig. 509: Identifying Quick Heater Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **INSTALL NO. 3 AIR DUCT SUB-ASSEMBLY**
   a. Engage the 3 claws and install the No. 3 air duct sub-assembly as shown in the illustration.
3. **INSTALL FRONT NO. 2 CONSOLE BOX INSERT** (See **INSTALLATION**)
4. **INSTALL CONSOLE BOX ASSEMBLY** (See **INSTALLATION**)
5. **INSTALL LOWER REAR CONSOLE BOX** (See **INSTALLATION**)
6. **INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
7. **INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
8. **INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **INSTALLATION**)

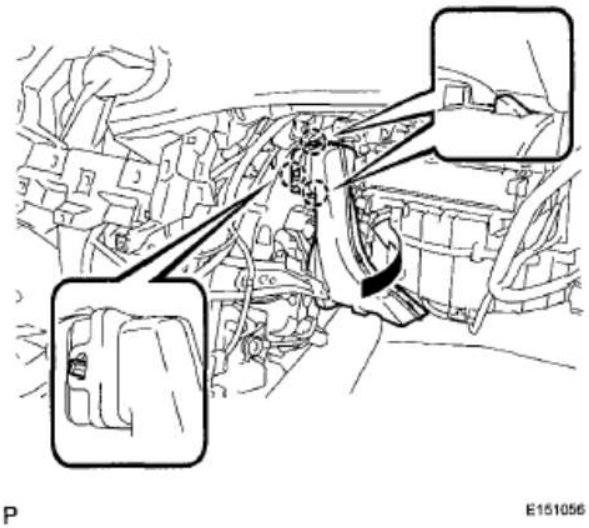


Fig. 510: Identifying No. 3 Air Duct Sub-Assembly Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH** (See **INSTALLATION**)
10. **INSTALL FRONT DOOR SCUFF PLATE RH** (See **INSTALLATION**)

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11. **INSTALL RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **INSTALLATION**)
12. **INSTALL NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **INSTALLATION**)
13. **INSTALL HEATER CONTROL AND ACCESSORY ASSEMBLY (for Manual Air Conditioning System)** (See **AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)**)
14. **INSTALL AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
15. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **INSTALLATION**)
16. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **INSTALLATION**)
17. **INSTALL CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **INSTALLATION**)

COMPRESSOR (FOR 1AR-FE)

COMPONENTS

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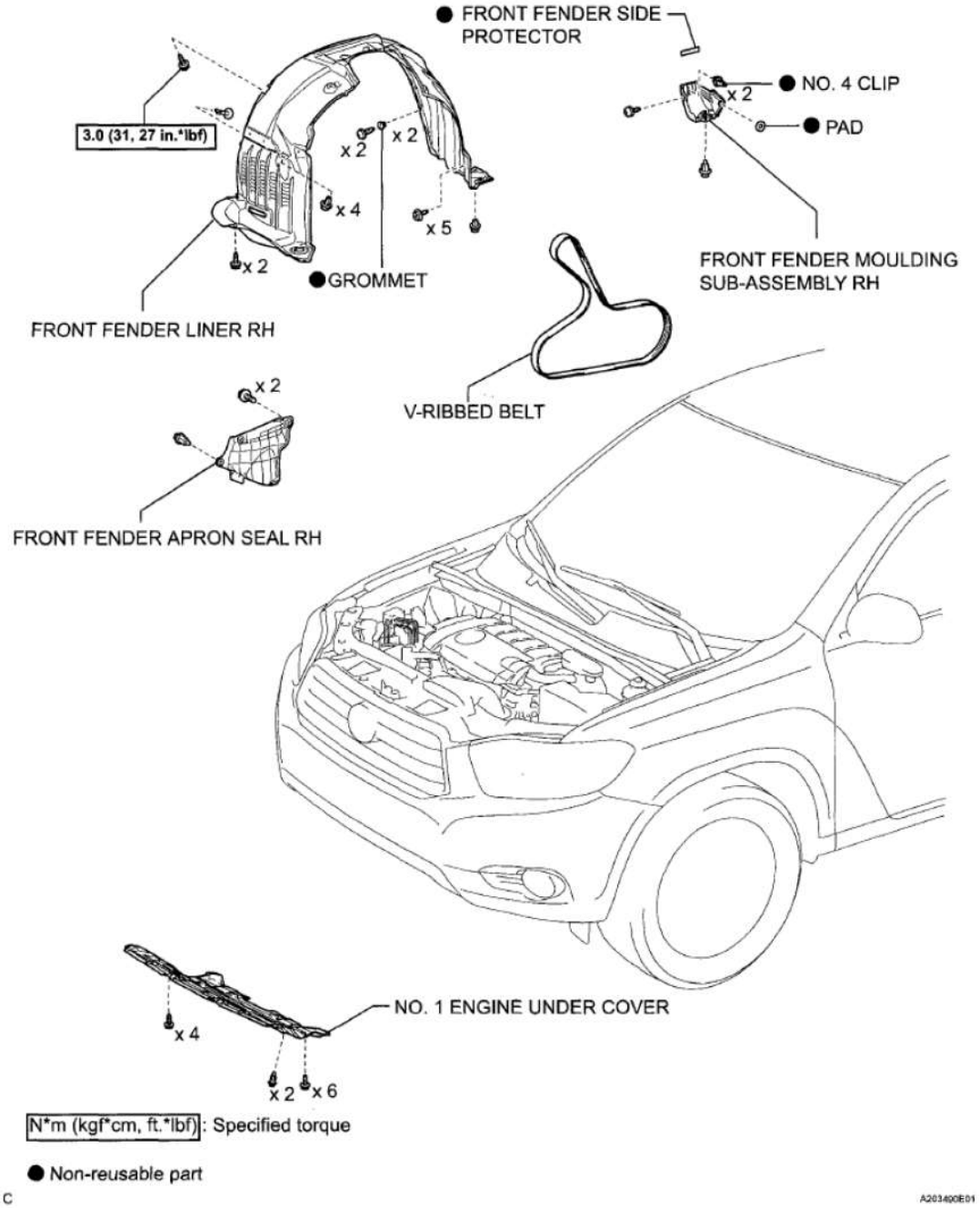


Fig. 511: Identifying Compressor Components - For 1AR-FE (1 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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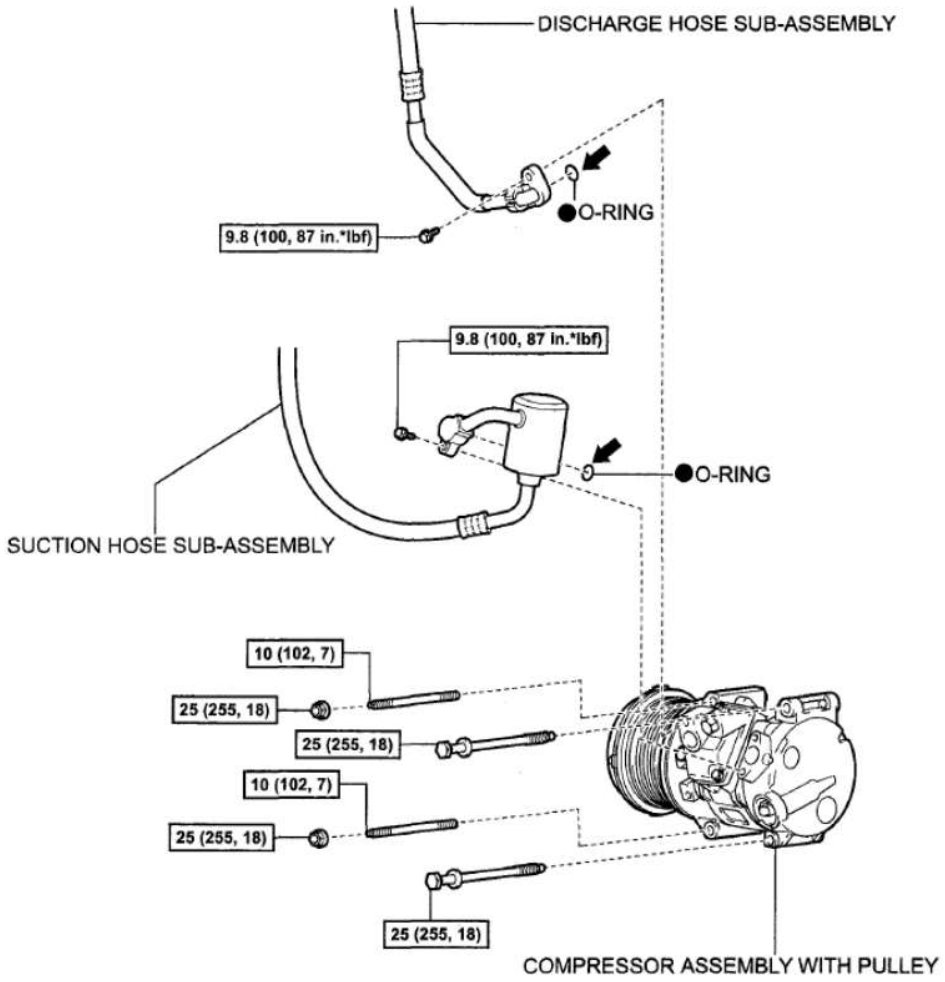


Fig. 512: Identifying Compressor Components - For 1AR-FE (2 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ON-VEHICLE INSPECTION

1. **INSPECT COMPRESSOR FOR METALLIC SOUND**
   a. Check if there is abnormal metallic sound from the compressor when the A/C switch is on and the compressor operates.

      If abnormal metallic sound is heard, replace the compressor and pulley.

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2. **INSPECT REFRIGERANT PRESSURE**

HINT:

(See **REFRIGERANT**)

3. **INSPECT FOR LEAKAGE OF REFRIGERANT**
   a. Using a gas leak detector, check for leakage of refrigerant.

      If there is any leakage, replace the compressor and pulley.

4. **INSPECT COMPRESSOR ASSEMBLY WITH PULLEY**
   a. Check operation of compressor assembly with pulley.
      1. Start the engine.
      2. Inspect the compressor pulley.

Example:

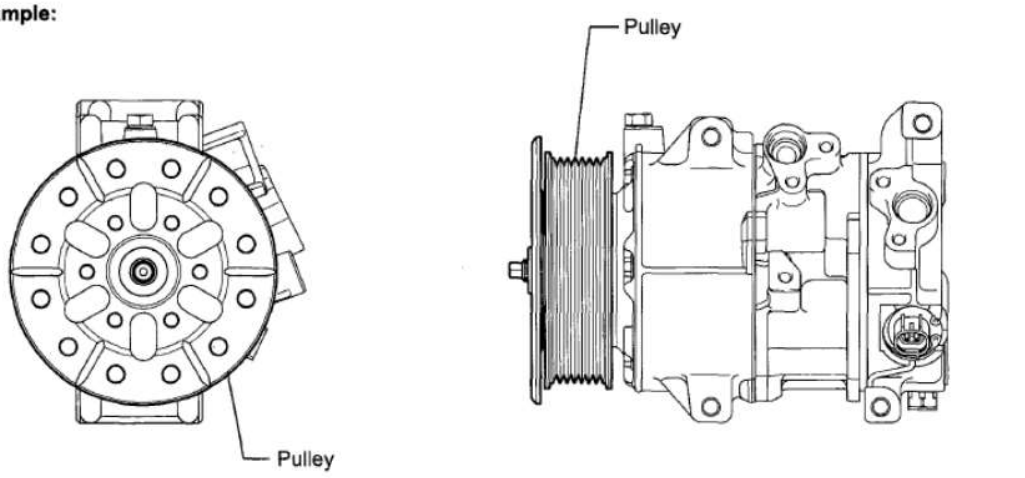


Fig. 513: Identifying Compressor Pulley
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard:

The compressor shaft rotates along with the pulley.

If the result is not as specified, replace the compressor assembly with pulley.

REMOVAL

1. **RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM** (See **REPLACEMENT**)
2. **REMOVE FRONT WHEEL RH**

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3. **REMOVE NO. 1 ENGINE UNDER COVER**
4. **REMOVE FRONT FENDER MOULDING SUB-ASSEMBLY RH** (See **ON-VEHICLE INSPECTION**)
5. **REMOVE FRONT FENDER LINER RH** (See **REMOVAL**)
6. **REMOVE FRONT FENDER APRON SEAL RH** (See **REMOVAL**)
7. **REMOVE V-RIBBED BELT** (See **INSTALLATION**)
8. **DISCONNECT SUCTION HOSE SUB-ASSEMBLY**
   a. Remove the bolt and disconnect the suction hose sub-assembly from the compressor and pulley.
   b. Remove the O-ring from the suction hose sub-assembly.

NOTE: **Seal the openings of the disconnected parts using vinyl tape to prevent entry of moisture and foreign matter.**

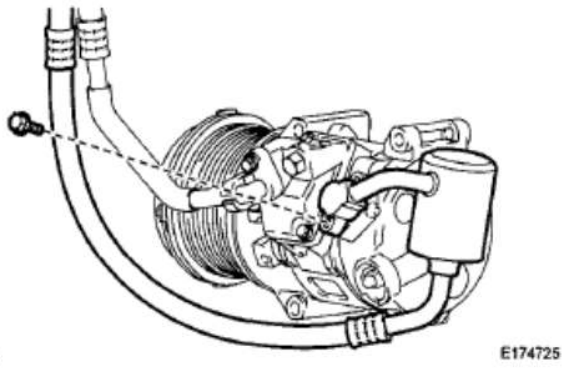


Fig. 514: Identifying Suction Hose Sub-Assembly Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. **DISCONNECT DISCHARGE HOSE SUB-ASSEMBLY**
   a. Remove the bolt and disconnect the discharge hose sub-assembly from the compressor and pulley.
   b. Remove the O-ring from the discharge hose sub-assembly.

NOTE: **Seal the openings of the disconnected parts using vinyl tape to prevent entry of moisture and foreign matter.**

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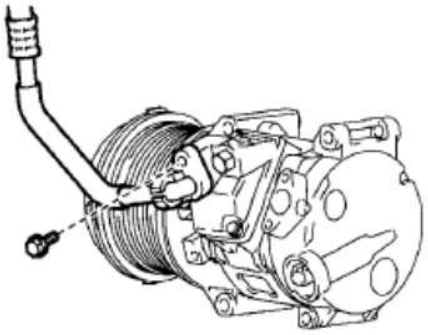


Fig. 515: Identifying Discharge Hose Sub-Assembly Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

10. **REMOVE COMPRESSOR ASSEMBLY WITH PULLEY**
    a. Disconnect the connector.
    b. Remove the 2 bolts and the 2 nuts.

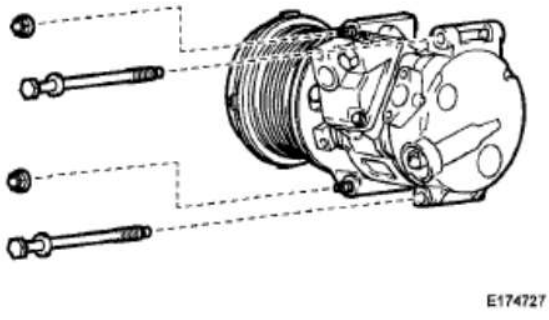


Fig. 516: Identifying Compressor Assembly Bolts And Nuts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

    c. Using a "TORX" socket wrench (E8), remove the 2 stud bolts and the compressor assembly with pulley.

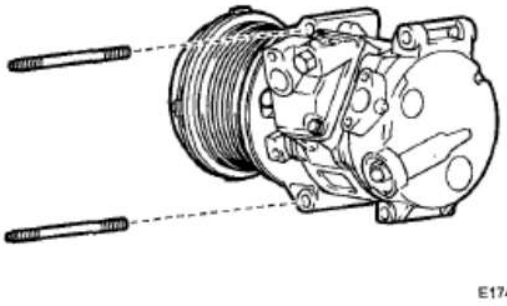


Fig. 517: Identifying Stud Bolts Of Compressor Assembly With Pulley
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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INSPECTION

1. **INSPECT COMPRESSOR ASSEMBLY WITH PULLEY**
   a. Measure the resistance according to the value(s) in the table below.

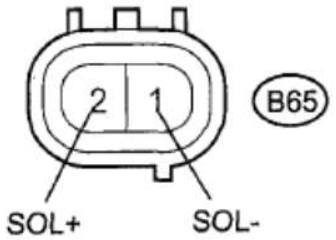
Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B65-2 (SOL+) - B65-1 (SOL-)	20°C (68°F)	10 to 11 ohms

If the resistance is not as specified, replace the compressor assembly with pulley.

Component without harness connected:
(Compressor Assembly with Pulley)



H E116870E50

Fig. 518: Identifying Compressor Assembly With Pulley Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **ADJUST COMPRESSOR OIL LEVEL**
   a. When replacing the cooler compressor assembly with a new one, gradually discharge the inert gas (helium) from the service valve, and drain the following amount of oil from the vents indicated by the arrows in the illustration before installation.

HINT:

The drain bolt and washer can be reused.

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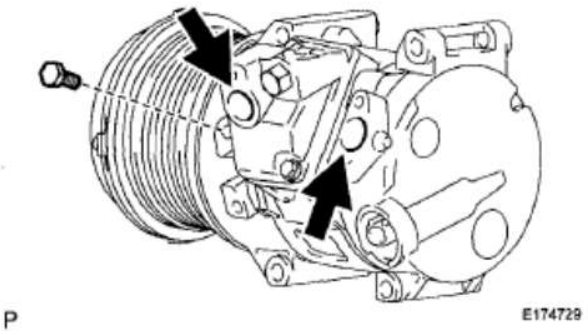


Fig. 519: Locating Service Valve Vents
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard (w/o Rear Air Conditioning System): (Oil capacity inside the new compressor assembly with pulley: 130 + 15 cc (4.4 + 0.51 fl.oz.)) - (Remaining oil amount in the removed compressor assembly with pulley) = (Oil amount to be removed from the new compressor when replacing)

Standard (w/ Rear Air Conditioning System):

(Oil capacity inside the new compressor assembly with pulley: 225 + 15 cc (7.6 + 0.51 fl.oz.)) - (Remaining oil amount in the removed compressor assembly with pulley) = (Oil amount to be removed from the new compressor when replacing)

NOTE:

- **If a new compressor is installed without removing some oil remaining in the pipes of the vehicle, the oil amount will be excessive. This prevents heat exchange in the refrigerant cycle and causes refrigeration system failure.**
- **If the volume of oil remaining in the removed compressor is too small, check for oil leaks.**
- **Be sure to use ND-OIL 8 or equivalent for compressor oil.**

2. **INSTALL COMPRESSOR ASSEMBLY WITH PULLEY**
   a. Using a "TORX" socket wrench (E8), temporarily install the compressor assembly with pulley with the 2 stud bolts.

   Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

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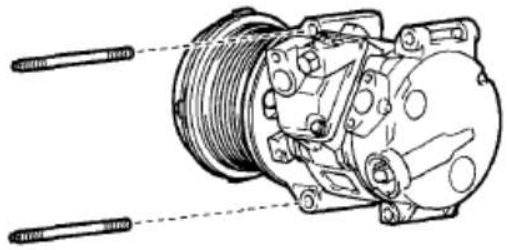


Fig. 520: Identifying Stud Bolts Of Compressor Assembly With Pulley
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Install the compressor assembly with pulley with the 2 bolts and the 2 nuts.

Torque: 25 N*m (255 kgf*cm, 18 ft.*lbf)

HINT:

Tighten the bolts and the nuts in the order shown in the illustration.

c. Connect the connector.

3. **INSTALL DISCHARGE HOSE SUB-ASSEMBLY**
   a. Remove the attached vinyl tape from the hose.
   b. Apply sufficient compressor oil to a new O-ring and the fitting surface of the compressor assembly with pulley.

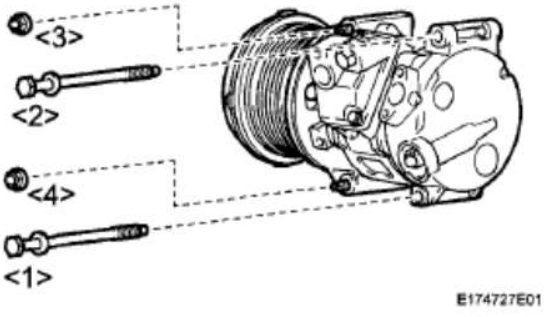


Fig. 521: Identifying Compressor Assembly With Pulley Bolts And Nuts Tighten Order
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Compressor oil:

ND-OIL 8 or equivalent

c. Install the O-ring onto the discharge hose sub-assembly.
d. Install the discharge hose sub-assembly onto the compressor assembly with pulley with the bolt.

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Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

4. **INSTALL SUCTION HOSE SUB-ASSEMBLY**
   a. Remove the attached vinyl tape from the hose.
   b. Apply sufficient compressor oil to a new O-ring and the fitting surface of the compressor assembly with pulley.

      Compressor oil:

      ND-OIL 8 or equivalent

   c. Install the O-ring onto the suction hose sub-assembly.

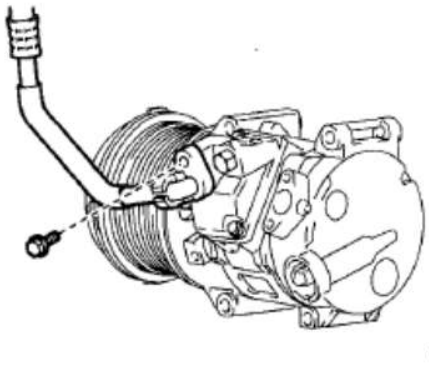


Fig. 522: Identifying Discharge Hose Sub-Assembly And Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   d. Install the suction hose sub-assembly onto the compressor assembly with pulley with the bolt.

      Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

5. **INSTALL V-RIBBED BELT** (See **INSTALLATION**)
6. **INSTALL FRONT FENDER APRON SEAL RH** (See **INSTALLATION**)
7. **INSTALL FRONT FENDER LINER RH** (See **INSTALLATION**)
8. **INSTALL FRONT FENDER MOULDING SUB-ASSEMBLY RH** (See **INSTALLATION**)

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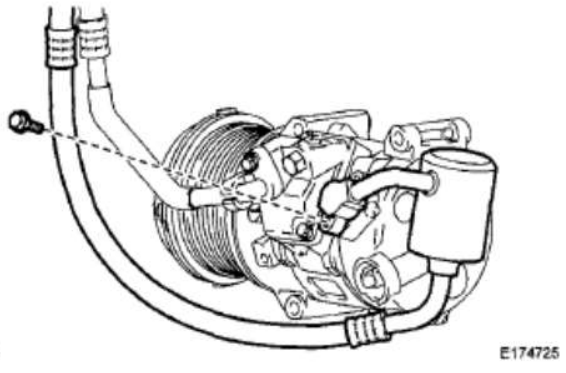


Fig. 523: Identifying Suction Hose Sub-Assembly And Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. **INSTALL NO. 1 ENGINE UNDER COVER**
10. **INSTALL FRONT WHEEL RH** (See **INSTALLATION**)
11. **CHARGE WITH REFRIGERANT** (See **REFRIGERANT LINE**)
12. **WARM UP ENGINE** (See **REFRIGERANT LINE**)
13. **INSPECT FOR REFRIGERANT LEAK** (See **REFRIGERANT LINE**)

COMPRESSOR (FOR 2GR-FE)

COMPONENTS

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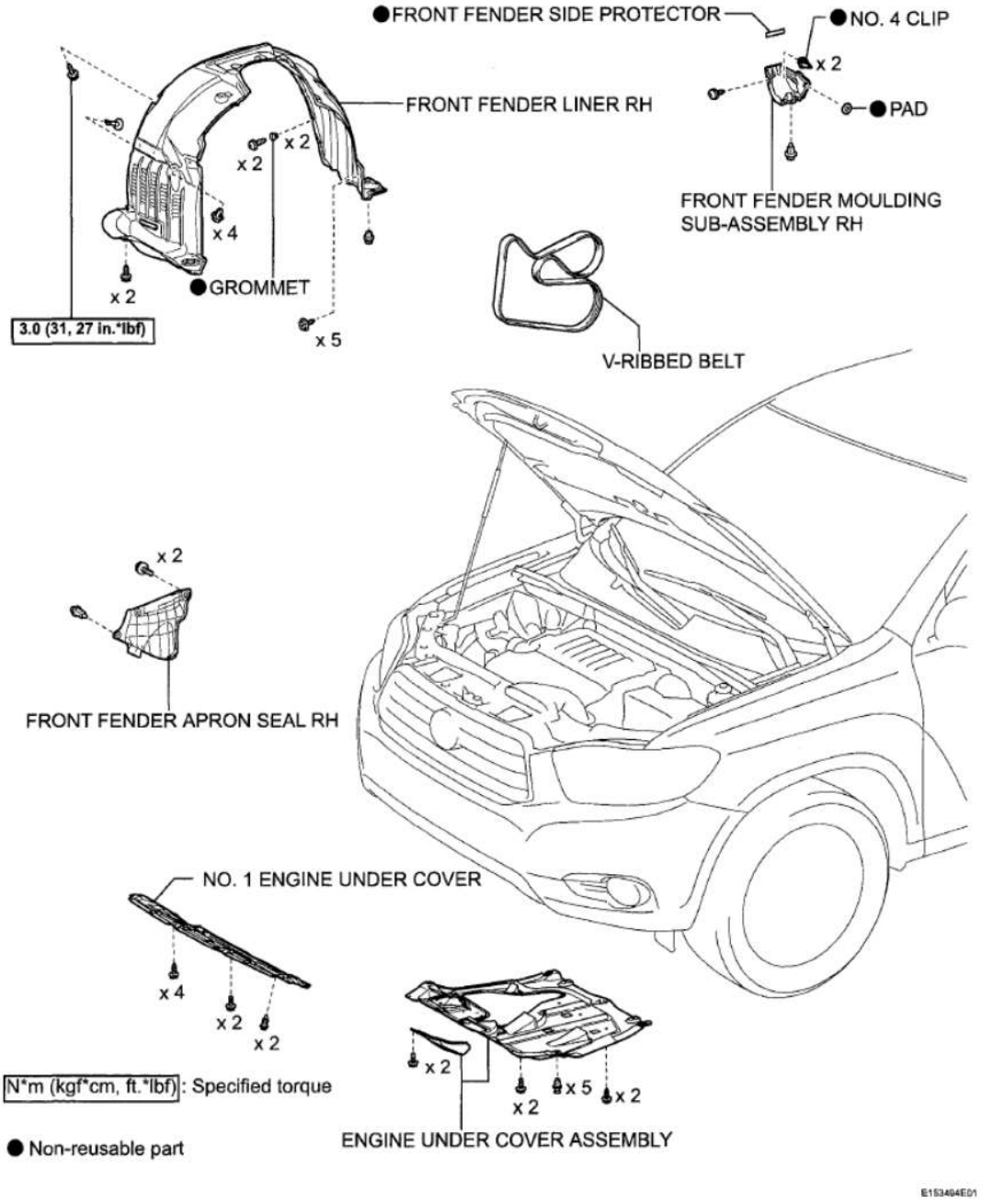


Fig. 524: Identifying Compressor Components - For 2GR-FE (1 Of 6)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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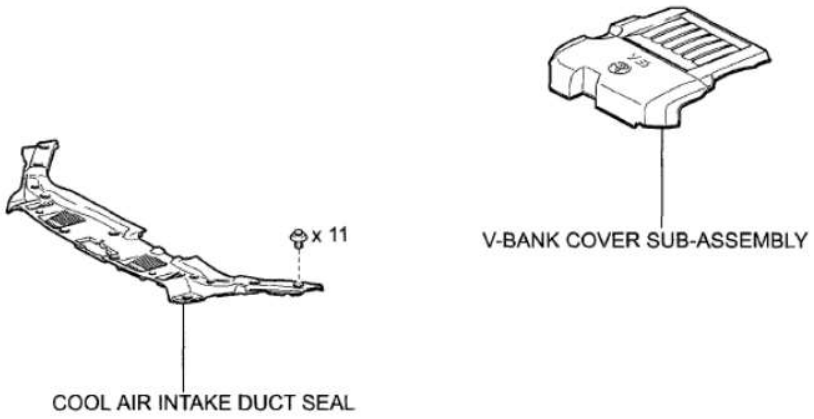


Fig. 525: Identifying Compressor Components - For 2GR-FE (2 Of 6)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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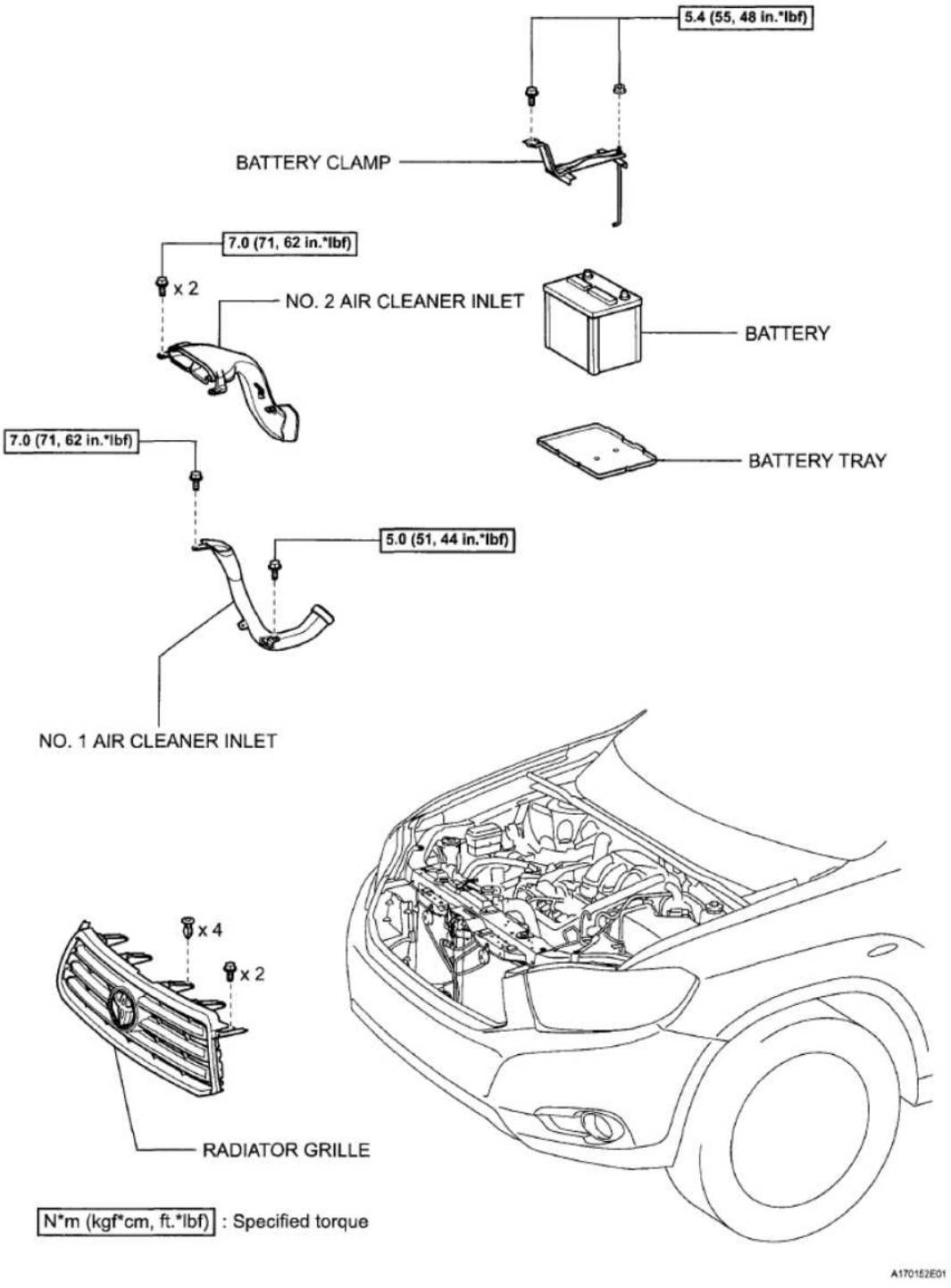
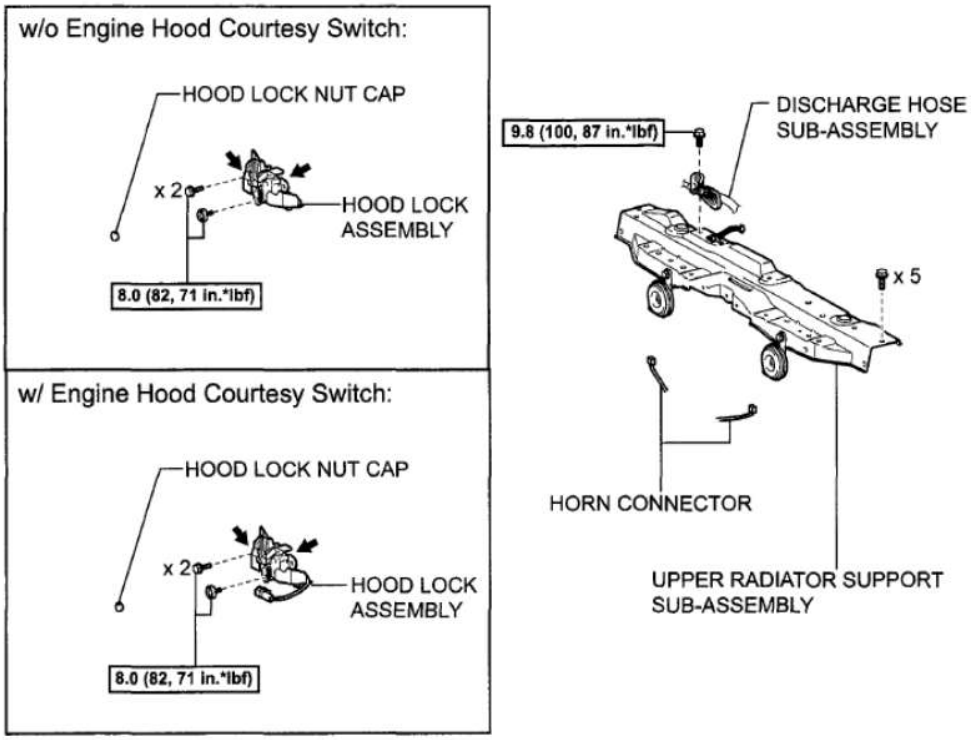


Fig. 526: Identifying Compressor Components - For 2GR-FE (3 Of 6)
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N*m (kgf*cm, ft.*lbf): Specified torque

MP grease

P

E162137E01

Fig. 527: Identifying Compressor Components - For 2GR-FE (4 Of 6)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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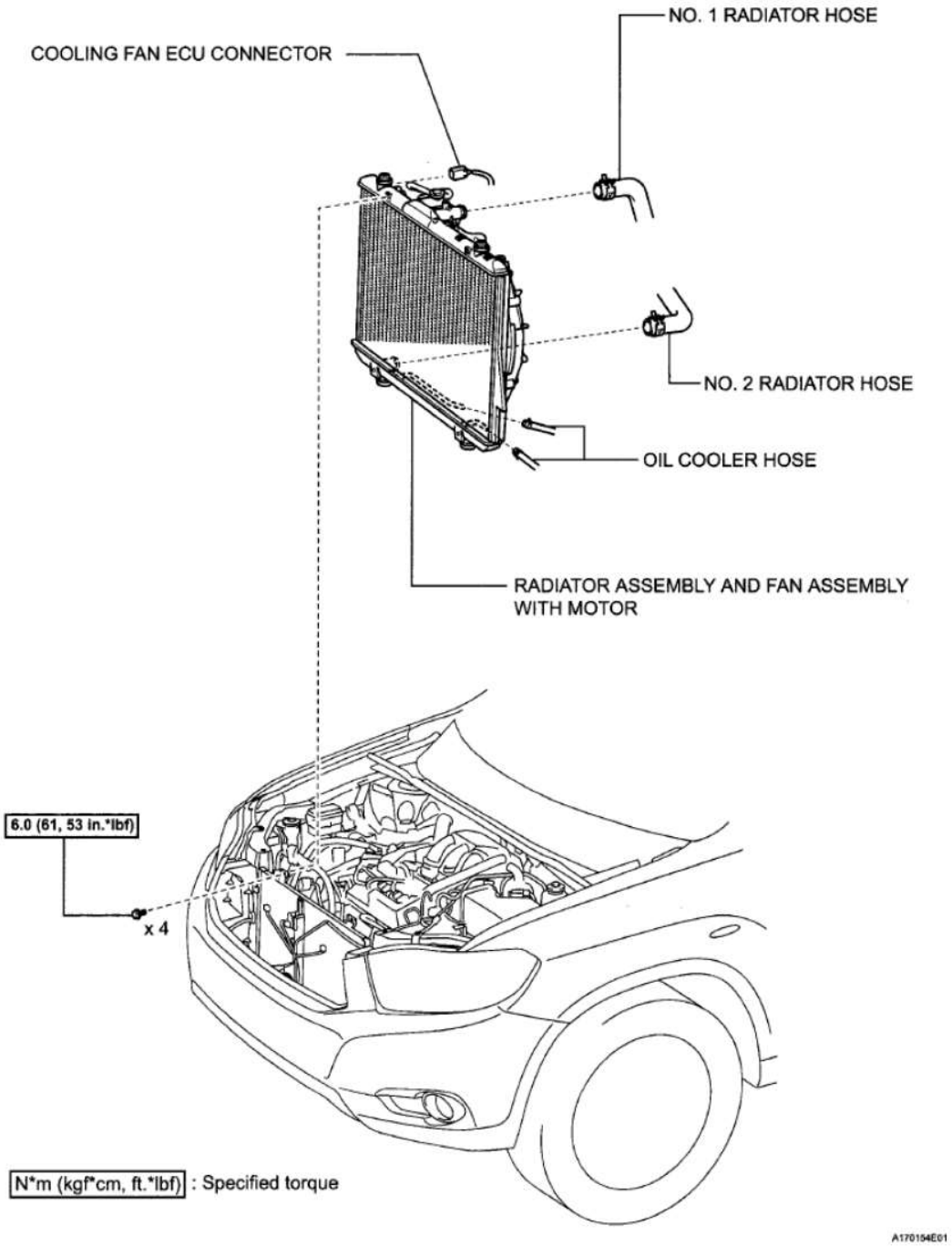


Fig. 528: Identifying Compressor Components - For 2GR-FE (5 Of 6)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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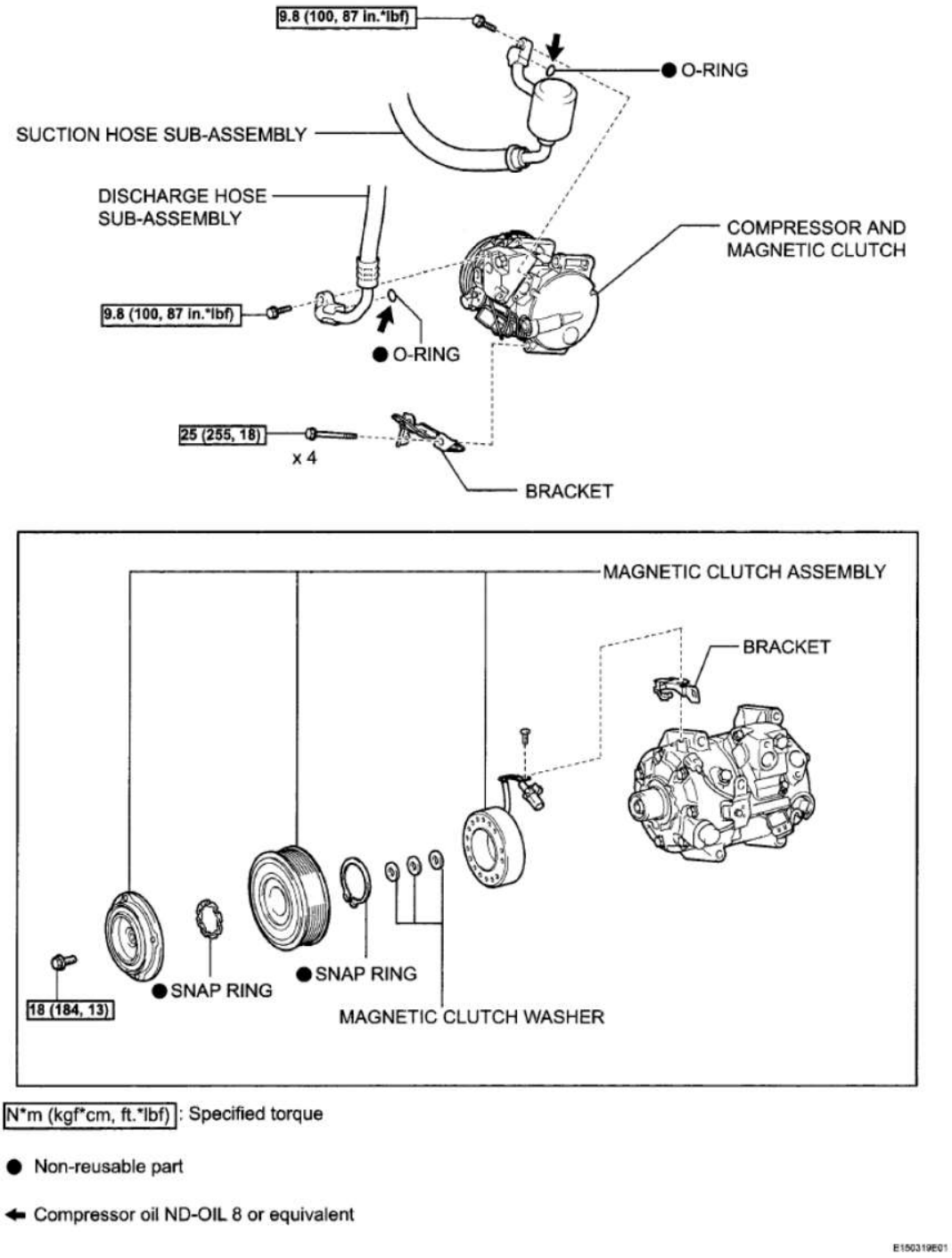


Fig. 529: Identifying Compressor Components - For 2GR-FE (6 Of 6)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM** (See **REPLACEMENT**)

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2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

CAUTION: Wait for 90 seconds after disconnecting the cable to prevent the airbag from deploying (See AIRBAG SYSTEM).

3. **REMOVE FRONT WHEEL RH**
4. **REMOVE ENGINE UNDER COVER ASSEMBLY** (See **REASSEMBLY**)
5. **REMOVE NO. 1 ENGINE UNDER COVER** (See **REASSEMBLY**)
6. **REMOVE FRONT FENDER MOULDING SUB-ASSEMBLY RH** (See **REMOVAL**)
7. **REMOVE FRONT FENDER LINER RH** (See **REMOVAL**)
8. **REMOVE FRONT FENDER APRON SEAL RH** (See **REASSEMBLY**)
9. **REMOVE V-RIBBED BELT** (See **ON-VEHICLE INSPECTION**)
10. **DRAIN ENGINE COOLANT** (See **COMPONENTS**)
11. **REMOVE V-BANK COVER SUB-ASSEMBLY** (See **REASSEMBLY**)
12. **REMOVE COOL AIR INTAKE DUCT SEAL** (See **REMOVAL**)
13. **REMOVE BATTERY** (See **SYSTEM DIAGRAM**)
14. **REMOVE NO. 2 AIR CLEANER INLET** (See **SYSTEM DIAGRAM**)
15. **REMOVE NO. 1 AIR CLEANER INLET** (See **ON-VEHICLE INSPECTION**)
16. **DISCONNECT NO. 1 RADIATOR HOSE** (See **REMOVAL**)
17. **DISCONNECT NO. 2 RADIATOR HOSE** (See **REMOVAL**)
18. **DISCONNECT OIL COOLER HOSE** (See **REMOVAL**)
19. **DISCONNECT COOLING FAN ECU CONNECTOR** (See **REMOVAL**)
20. **REMOVE RADIATOR GRILLE** (See **REMOVAL**)
21. **REMOVE HOOD LOCK ASSEMBLY (w/o Engine Hood Courtesy Switch)** (See **REMOVAL**)
22. **REMOVE HOOD LOCK ASSEMBLY (w/ Engine Hood Courtesy Switch)** (See **REMOVAL**)
23. **REMOVE UPPER RADIATOR SUPPORT SUB-ASSEMBLY** (See **REMOVAL**)
24. **SEPARATE COOLER CONDENSER ASSEMBLY** (See **REMOVAL**)
25. **REMOVE RADIATOR ASSEMBLY AND FAN ASSEMBLY WITH MOTOR** (See **REMOVAL**)
26. **DISCONNECT DISCHARGE HOSE SUB-ASSEMBLY**
    a. Remove the bolt and disconnect the discharge hose sub-assembly from the compressor and magnetic clutch.
    b. Remove the O-ring from the discharge hose sub-assembly.

NOTE: Seal the openings of the disconnected parts using vinyl tape to prevent entry of moisture and foreign matter.

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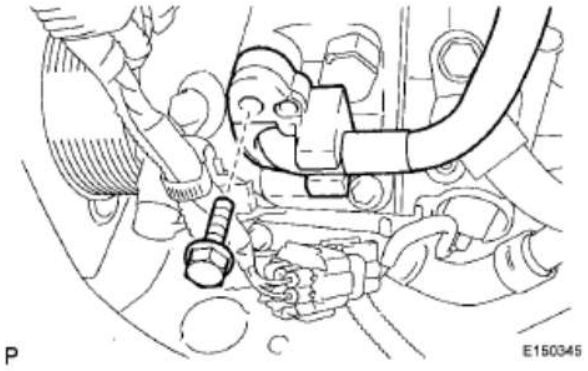


Fig. 530: Identifying Discharge Hose Sub-Assembly Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

27. **DISCONNECT SUCTION HOSE SUB-ASSEMBLY**
    a. Remove the bolt and disconnect the suction hose sub-assembly from the compressor and magnetic clutch.
    b. Remove the O-ring from the suction hose sub-assembly.

NOTE: Seal the openings of the disconnected parts using vinyl tape to prevent entry of moisture and foreign matter.

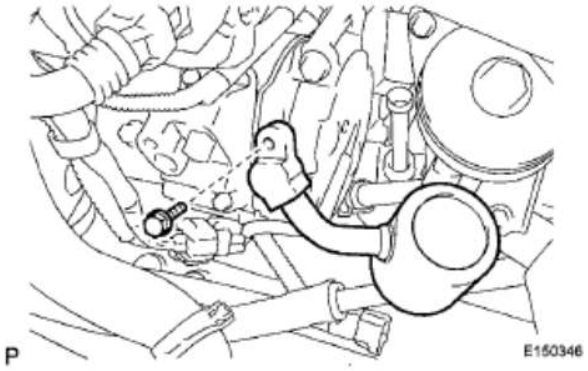


Fig. 531: Identifying Suction Hose Sub-Assembly Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

28. **REMOVE COMPRESSOR AND MAGNETIC CLUTCH**
    a. Disengage the clamp.
    b. Disconnect the connector.

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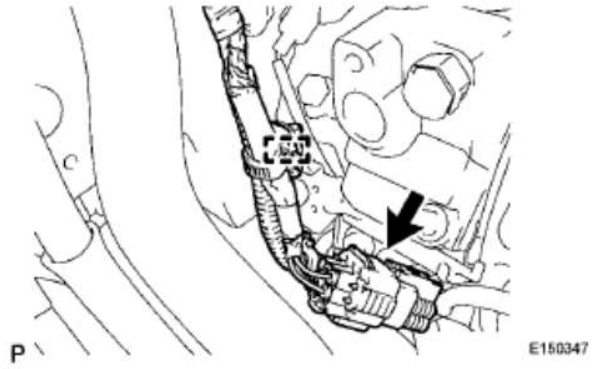


Fig. 532: Locating Compressor And Magnetic Clutch Connector And Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Disengage each clamp.
d. Disconnect the connector.

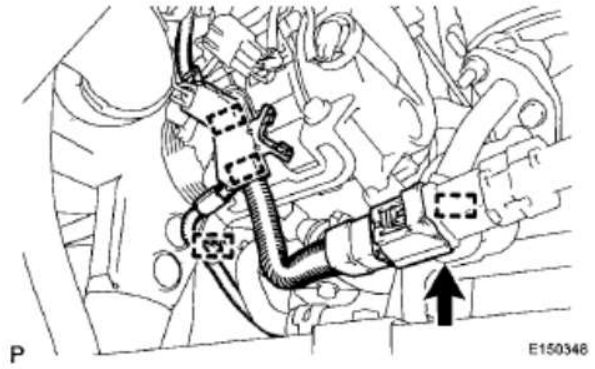


Fig. 533: Locating Compressor And Magnetic Clutch Connector And Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

e. Remove the 4 bolts and the compressor and magnetic clutch.

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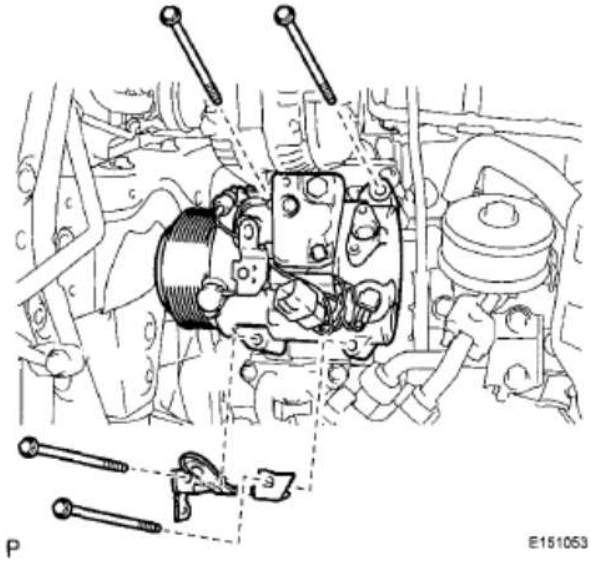


Fig. 534: Identifying Compressor And Magnetic Clutch Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

DISASSEMBLY

1. **REMOVE MAGNETIC CLUTCH ASSEMBLY**
   a. Place the compressor and magnetic clutch in a vise.

      SST 95047-10040

   b. Using SST, hold the magnetic clutch hub.
   c. Remove the bolt, magnetic clutch hub, and magnetic clutch washers.

      HINT:

      There is no set number of magnetic clutch washers because they are used for adjustment.

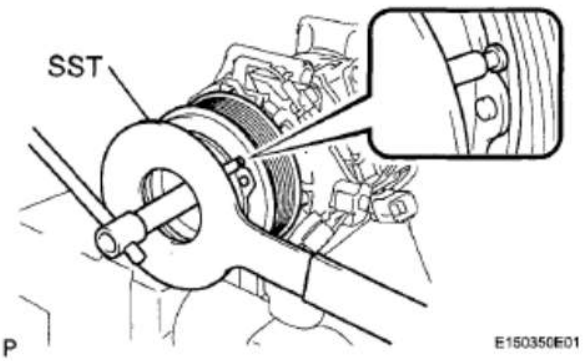


Fig. 535: Removing Bolt, Magnetic Clutch Hub, And Magnetic Clutch Washers
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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d. Using a snap ring expander, remove the snap ring and then remove the magnetic clutch rotor.

NOTE: Take care not to damage the seal cover of the bearing when removing the snap ring.

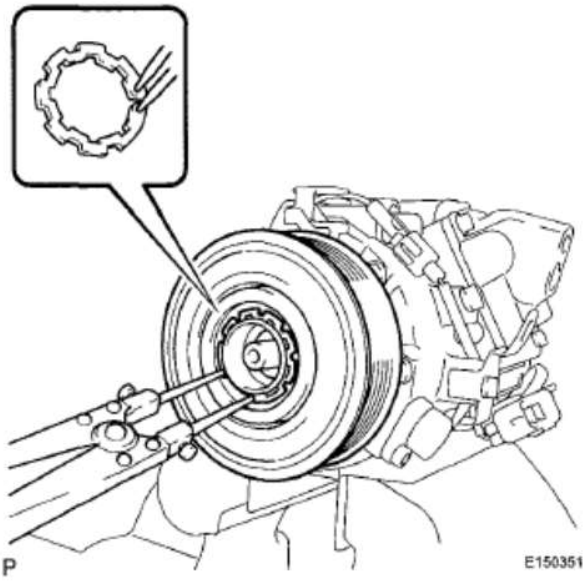


Fig. 536: Removing Snap Ring And Magnetic Clutch Rotor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

e. Disconnect the connector.
f. Disengage the clamp.
g. Remove the screw and the bracket.

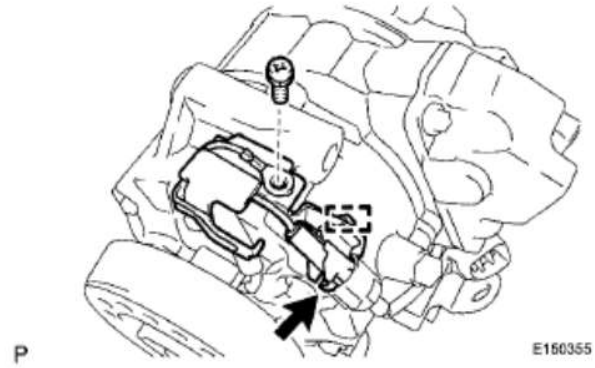


Fig. 537: Identifying Bracket Screw
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

h. Using a snap ring expander, remove the snap ring and magnetic clutch stator.

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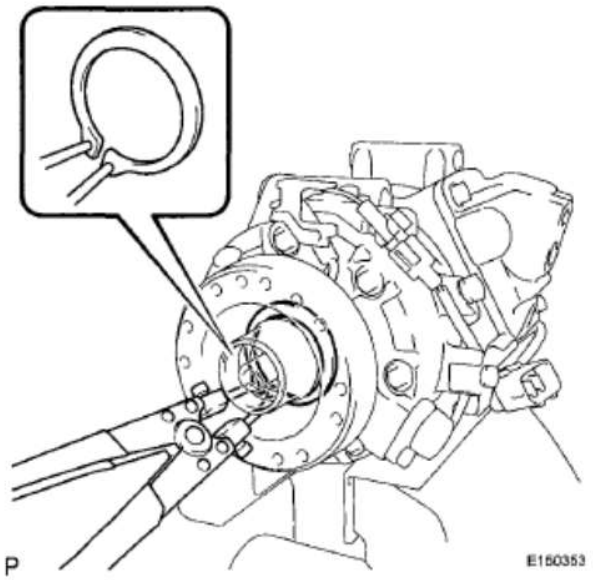


Fig. 538: Removing Snap Ring And Magnetic Clutch Stator
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION

1. **INSPECT COMPRESSOR AND MAGNETIC CLUTCH (A/C LOCK SENSOR)**
   a. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

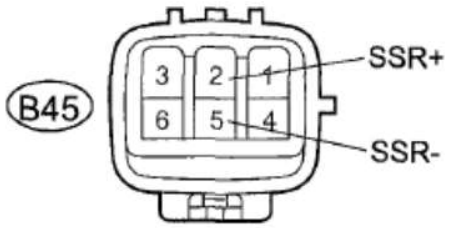
Tester Connection	Condition	Specified Condition
B45-2 (SSR+) - B45-5 (SSR-)	20°C (68°F)	165 to 320 ohms

If the resistance is not as specified, replace the compressor and magnetic clutch.

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Component without harness connected:
(Air Conditioning Lock Sensor)



E152688E03

Fig. 539: Identifying Air Conditioning Lock Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **INSPECT COMPRESSOR AND MAGNETIC CLUTCH (A/C COMPRESSOR SOLENOID)**
   a. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B45-3 (SOL+) - B45-6 (SOL-)	25°C (77°F)	10.1 to 11.1 ohms

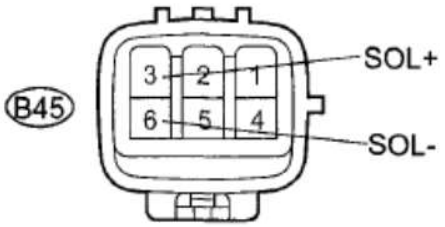
If the resistance is not as specified, replace the compressor and magnetic clutch.

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Component without harness connected:
(Compressor and Magnetic Clutch)



E152688E04

Fig. 540: Identifying Compressor And Magnetic Clutch Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **INSPECT COMPRESSOR AND MAGNETIC CLUTCH**
   a. Disconnect the connector from the compressor and magnetic clutch.
   b. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
B45-1 (MG+) - Body Ground	Always	Below 1 ohms

If the resistance is not as specified, replace the compressor and magnetic clutch.

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Component without harness connected:
(Air Conditioning Compressor)

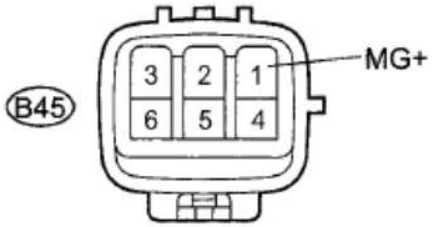


Fig. 541: Identifying Air Conditioning Compressor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REASSEMBLY

1. **INSTALL MAGNETIC CLUTCH ASSEMBLY**
   a. Install the magnetic clutch stator while aligning the protrusion on the stator with the notch on the air compressor assembly as shown in the illustration.

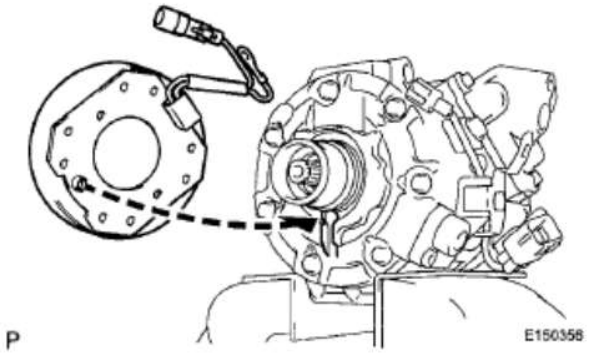


Fig. 542: Aligning Protrusion On Stator With Notch On Air Compressor Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Engage the clamp.
   c. Install the bracket with the screw.
   d. Connect the connector.

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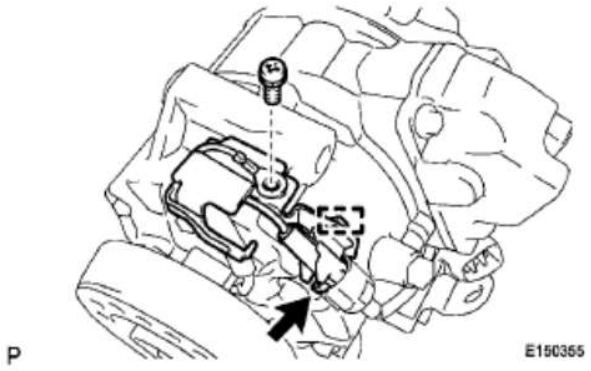


Fig. 543: Identifying Bracket Screw
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

e. Using a snap ring expander, install a new snap ring with the chamfered side facing up.

NOTE: Take care not to damage the seal cover of the bearing when installing the snap ring.

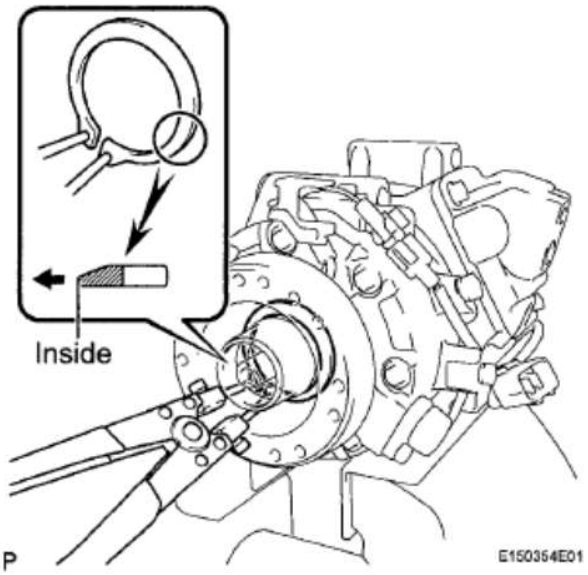


Fig. 544: Installing Snap Ring With Chamfered Side Facing Up
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

f. Using a snap ring expander, install the magnetic clutch rotor and a new snap ring with the chamfered side facing up.

NOTE:

- **Do not expand the snap ring by more than 35.5 mm (1.39 in.) when installing it.**
- **Do not damage the seal cover of the bearing when installing the**

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snap ring.

g. Install the magnetic clutch washer and magnetic clutch hub.

NOTE: Do not change the combination of the magnetic clutch washers used before disassembly.

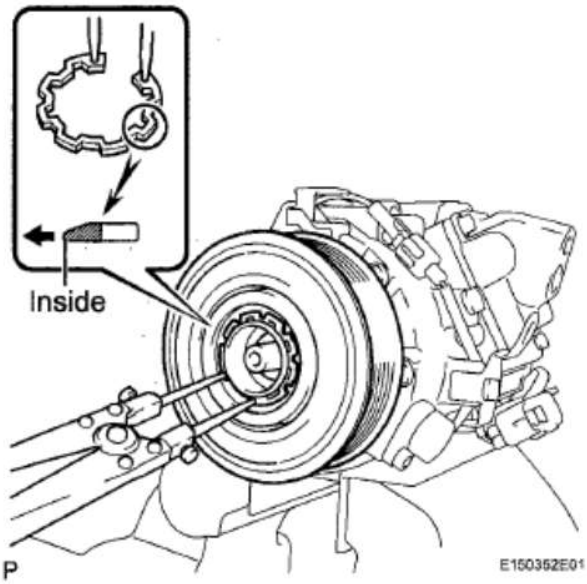


Fig. 545: Installing Magnetic Clutch Washer And Magnetic Clutch Hub
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

h. Using SST, hold the magnetic clutch hub and install the bolt.

SST 95047-10040

Torque: 18 N*m (184 kgf*cm, 13 ft.*lbf)

NOTE: Make sure that there is no foreign matter or oil on the compressor shaft, bolt, and clutch hub.

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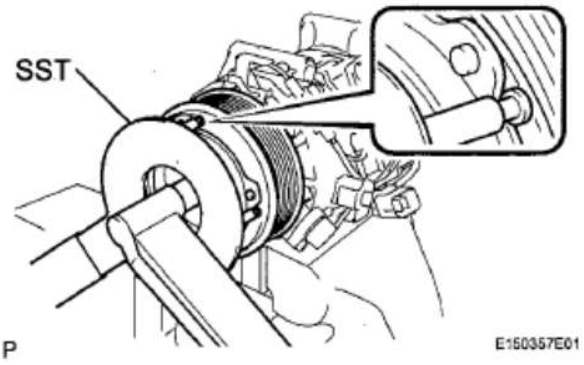


Fig. 546: Holding Magnetic Clutch Hub And Install Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **INSPECT MAGNETIC CLUTCH CLEARANCE**
   a. Set the dial indicator to the magnetic clutch hub.
   b. Connect the battery positive lead to terminal 1 of the magnetic clutch connector, and the negative lead to the ground wire. Turn the magnetic clutch on and off and measure the clearance.

      Standard clearance:

      0.26 to 0.60 mm (0.010 to 0.024 in.)

      If the measured value is not within the standard range, remove the magnetic clutch hub and adjust it with magnetic clutch washers.

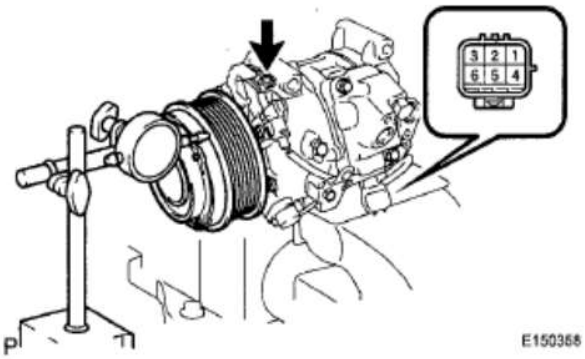


Fig. 547: Inspecting Magnetic Clutch Clearance
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: Adjustment should be performed with 3 or less magnetic clutch washers.

   c. Remove the compressor and magnetic clutch from the vise.

3. **ADJUST COMPRESSOR OIL LEVEL**
   a. When replacing the compressor and magnetic clutch with a new one, gradually discharge the

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refrigerant gas from the service valve, and drain the following amount of oil from the new compressor and magnetic clutch before installation.

Standard (w/o Rear Air Conditioning System):

(Oil capacity inside the new compressor and magnetic clutch: 130 + 15 cc (4.4 + 0.51 fl.oz.))

- (Remaining oil amount in the removed compressor and magnetic clutch) = (Oil amount to be removed from the new compressor when replacing)

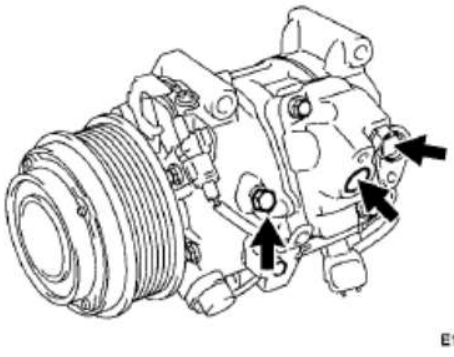


Fig. 548: Locating Service Valve And Compressor And Magnetic Clutch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard (w/ Rear Air Conditioning System):

(Oil capacity inside the new compressor and magnetic clutch: 225 + 15 cc (7.6 + 0.51 fl.oz.))

- (Remaining oil amount in the removed compressor and magnetic clutch) = (Oil amount to be removed from the new compressor when replacing)

NOTE:

- **When checking the compressor oil level, observe the precautions on the cooler removal/installation.**
- **If a new compressor and magnetic clutch are installed without removing some oil, due to the oil remaining in the pipes of the vehicle, the oil amount will be too large. This prevents heat exchange in the refrigerant cycle and causes refrigerant failure.**
- **If the volume of oil remaining in the removed compressor and magnetic clutch is too small, check for oil leakage.**
- **Be sure to use ND-OIL 8 or equivalent for compressor oil.**

INSTALLATION

1. **TEMPORARILY TIGHTEN COMPRESSOR AND MAGNETIC CLUTCH**
   a. Temporarily install the compressor and magnetic clutch with the bolts.

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HINT:

Temporarily tighten the bolts in the order shown in the illustration.

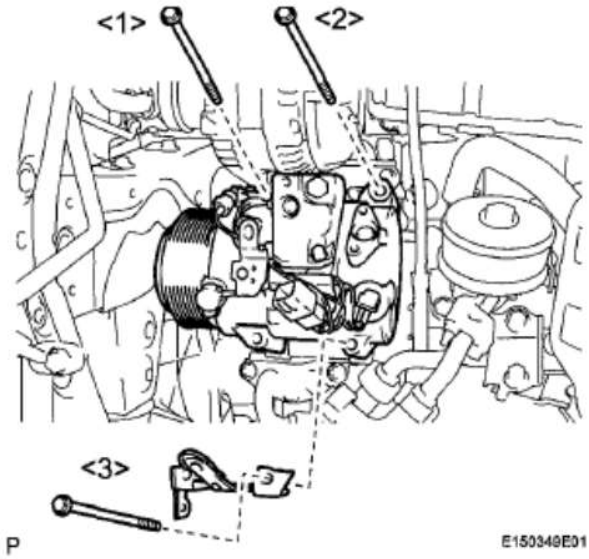


Fig. 549: Identifying Compressor And Magnetic Clutch Bolts Tighten Order
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **INSTALL COMPRESSOR AND MAGNETIC CLUTCH**
   a. Install the compressor and magnetic clutch with the 4 bolts.

Torque: 25 N*m (255 kgf*cm, 18 ft.*lbf)

NOTE: Tighten the bolts in the order shown in the illustration to install the compressor and magnetic clutch.

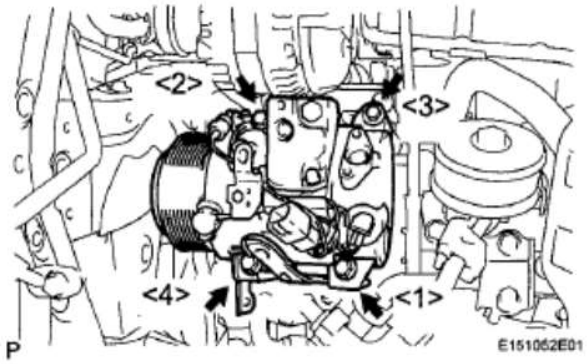


Fig. 550: Identifying Compressor And Magnetic Clutch Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Engage each clamp.

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c. Connect the connector.

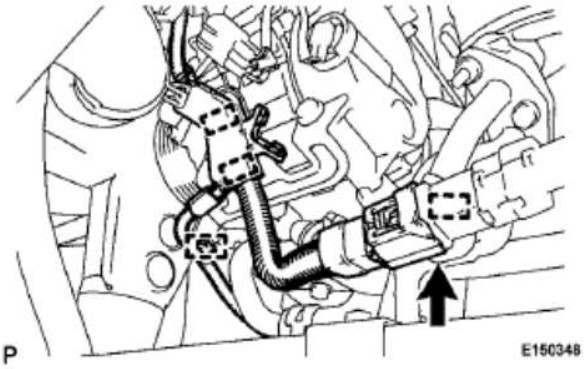


Fig. 551: Identifying Compressor And Magnetic Clutch Connector And Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Engage the clamp.
e. Connect the connector.

3. **CONNECT SUCTION HOSE SUB-ASSEMBLY**
   a. Remove the attached vinyl tape from the hose.
   b. Apply sufficient compressor oil to a new O-ring and the fitting surface of the compressor and magnetic clutch.

      Compressor oil:

      ND-OIL 8 or equivalent

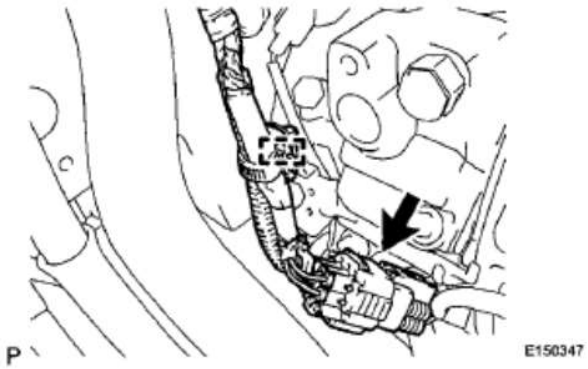


Fig. 552: Identifying Compressor And Magnetic Clutch Connector And Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   c. Install the O-ring onto the suction hose sub-assembly.
   d. Install the suction hose sub-assembly onto the compressor and magnetic clutch with the bolt.

      Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

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4. **CONNECT DISCHARGE HOSE SUB-ASSEMBLY**
   a. Remove the attached vinyl tape from the hose.
   b. Apply sufficient compressor oil to a new O-ring and the fitting surface of the compressor and magnetic clutch.

      Compressor oil:

      ND-OIL 8 or equivalent

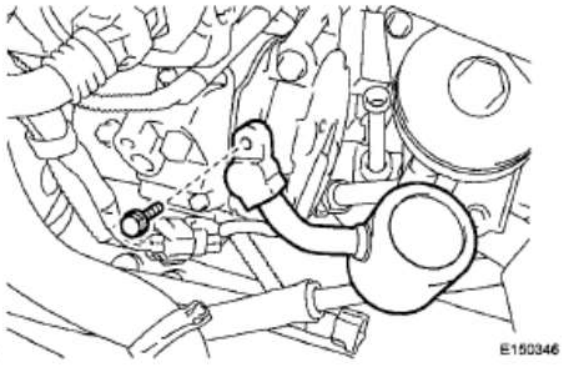


Fig. 553: Identifying Suction Hose Sub-Assembly Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   c. Install the O-ring onto the discharge hose sub-assembly.
   d. Install the discharge hose sub-assembly onto the compressor and magnetic clutch with the bolt.

      Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

5. **INSTALL RADIATOR ASSEMBLY AND FAN ASSEMBLY WITH MOTOR** (See **INSTALLATION**)
6. **INSTALL COOLER CONDENSER ASSEMBLY** (See **INSTALLATION**)
7. **INSTALL UPPER RADIATOR SUPPORT SUB-ASSEMBLY** (See **INSTALLATION**)

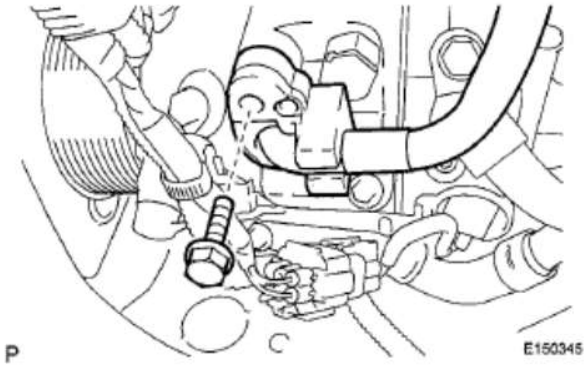


Fig. 554: Identifying Discharge Hose Sub-Assembly Bolt

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. **INSTALL HOOD LOCK ASSEMBLY (w/o Engine Hood Courtesy Switch)** (See **INSTALLATION**)
9. **INSTALL HOOD LOCK ASSEMBLY (w/ Engine Hood Courtesy Switch)** (See **INSTALLATION**)
10. **INSTALL RADIATOR GRILLE** (See **INSTALLATION**)
11. **CONNECT COOLING FAN ECU CONNECTOR** (See **INSTALLATION**)
12. **CONNECT OIL COOLER HOSE** (See **INSTALLATION**)
13. **CONNECT NO. 2 RADIATOR HOSE** (See **INSTALLATION**)
14. **CONNECT NO. 1 RADIATOR HOSE** (See **INSTALLATION**)
15. **INSTALL NO. 1 AIR CLEANER INLET** (See **INTAKE MANIFOLD**)
16. **INSTALL NO. 2 AIR CLEANER INLET** (See **COMPONENTS**)
17. **INSTALL BATTERY** (See **COMPONENTS**)
18. **INSTALL COOL AIR INTAKE DUCT SEAL** (See **INSTALLATION**)
19. **INSTALL V-RIBBED BELT** (See **INSTALLATION**)
20. **CHARGE WITH REFRIGERANT** (See **REFRIGERANT LINE**)
21. **ADD ENGINE COOLANT** (See **REMOVAL**)
22. **INSTALL FRONT FENDER APRON SEAL RH** (See **INSTALLATION**)
23. **INSTALL FRONT FENDER LINER RH** (See **INSTALLATION**)
24. **INSTALL FRONT FENDER MOULDING SUB-ASSEMBLY RH** (See **INSTALLATION**)
25. **INSTALL FRONT WHEEL RH** (See **INSTALLATION**)
26. **WARM UP ENGINE** (See **REFRIGERANT LINE**)
27. **INSPECT FOR REFRIGERANT LEAK** (See **REFRIGERANT LINE**)
28. **INSPECT FOR COOLANT LEAK** (See **COOLING SYSTEM**)
29. **INSPECT AUTOMATIC TRANSAXLE FLUID**

    for U151E: (See **AUTOMATIC TRANSAXLE FLUID**)

    for U151F: (See **AUTOMATIC TRANSAXLE FLUID**)

30. **INSTALL NO. 1 ENGINE UNDER COVER** (See **INSTALLATION**)
31. **INSTALL ENGINE UNDER COVER ASSEMBLY** (See **INSTALLATION**)
32. **INSTALL V-BANK COVER SUB-ASSEMBLY** (See **INSTALLATION**)

CONDENSER

COMPONENTS

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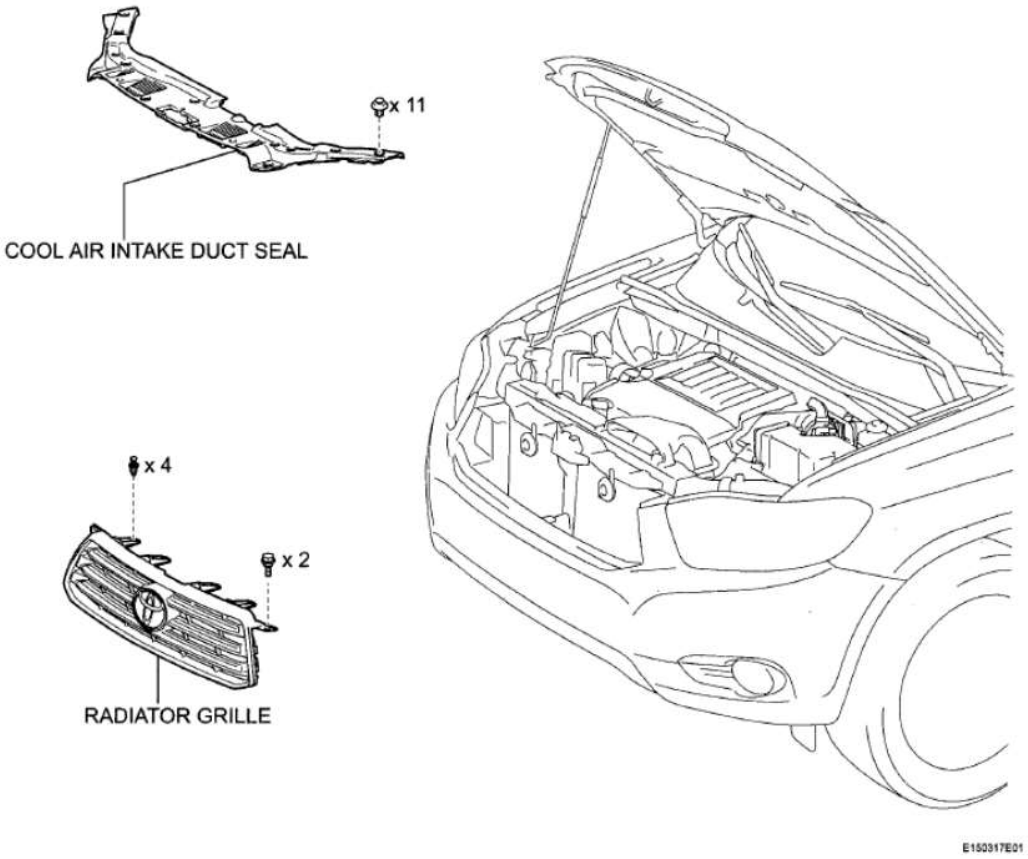


Fig. 555: Identifying Condenser Components (1 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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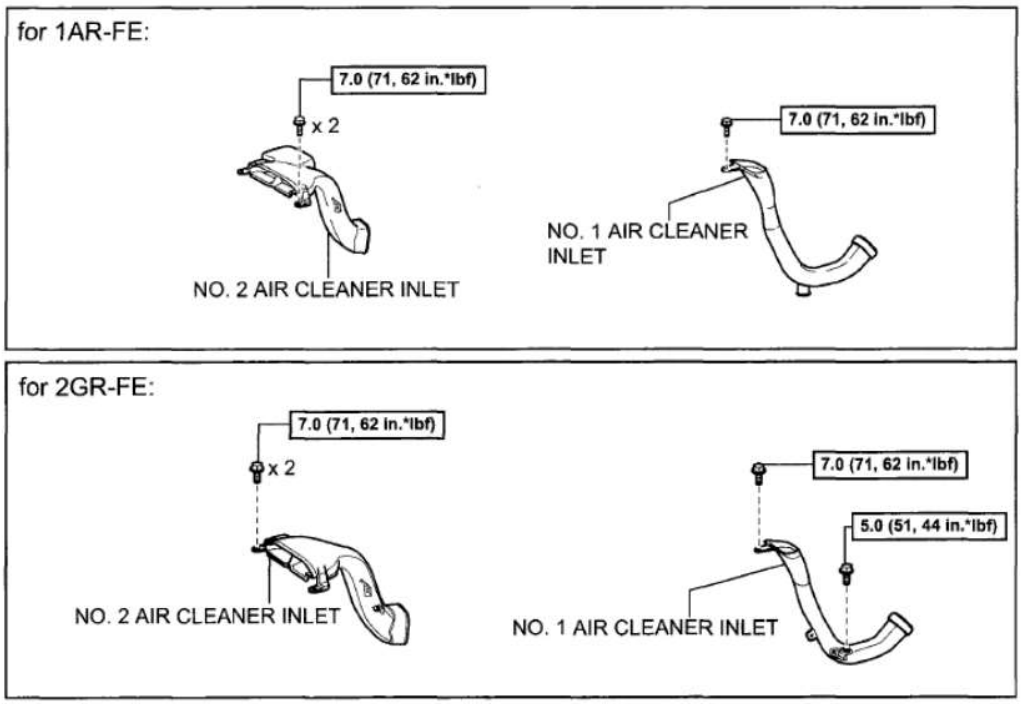


Fig. 556: Identifying Condenser Components (2 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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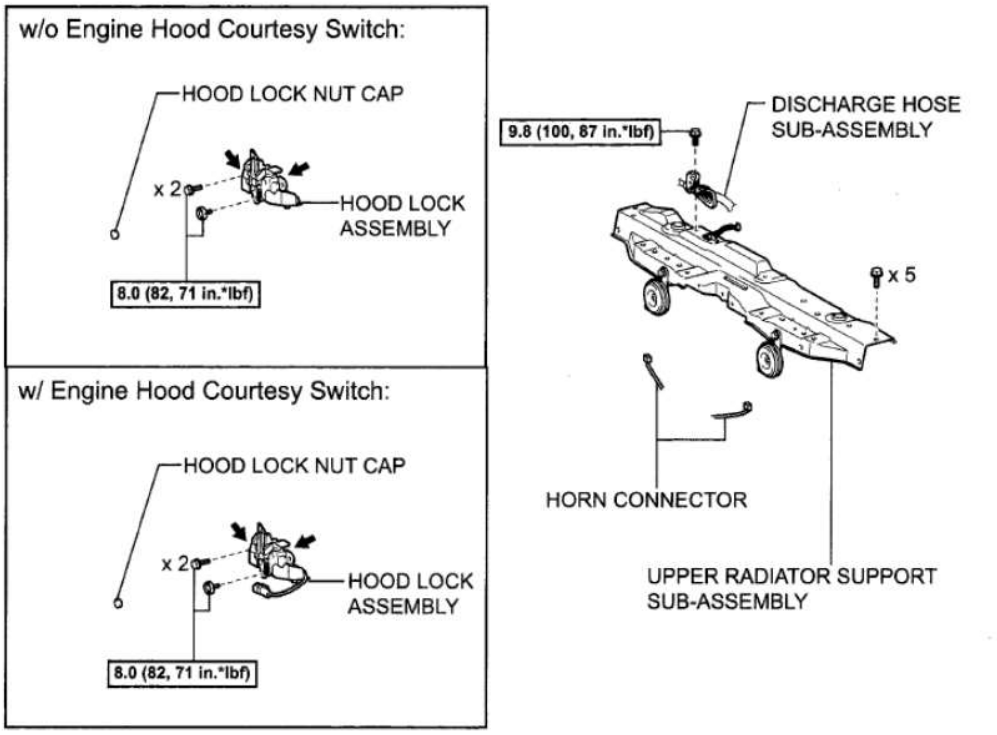


Fig. 557: Identifying Condenser Components (3 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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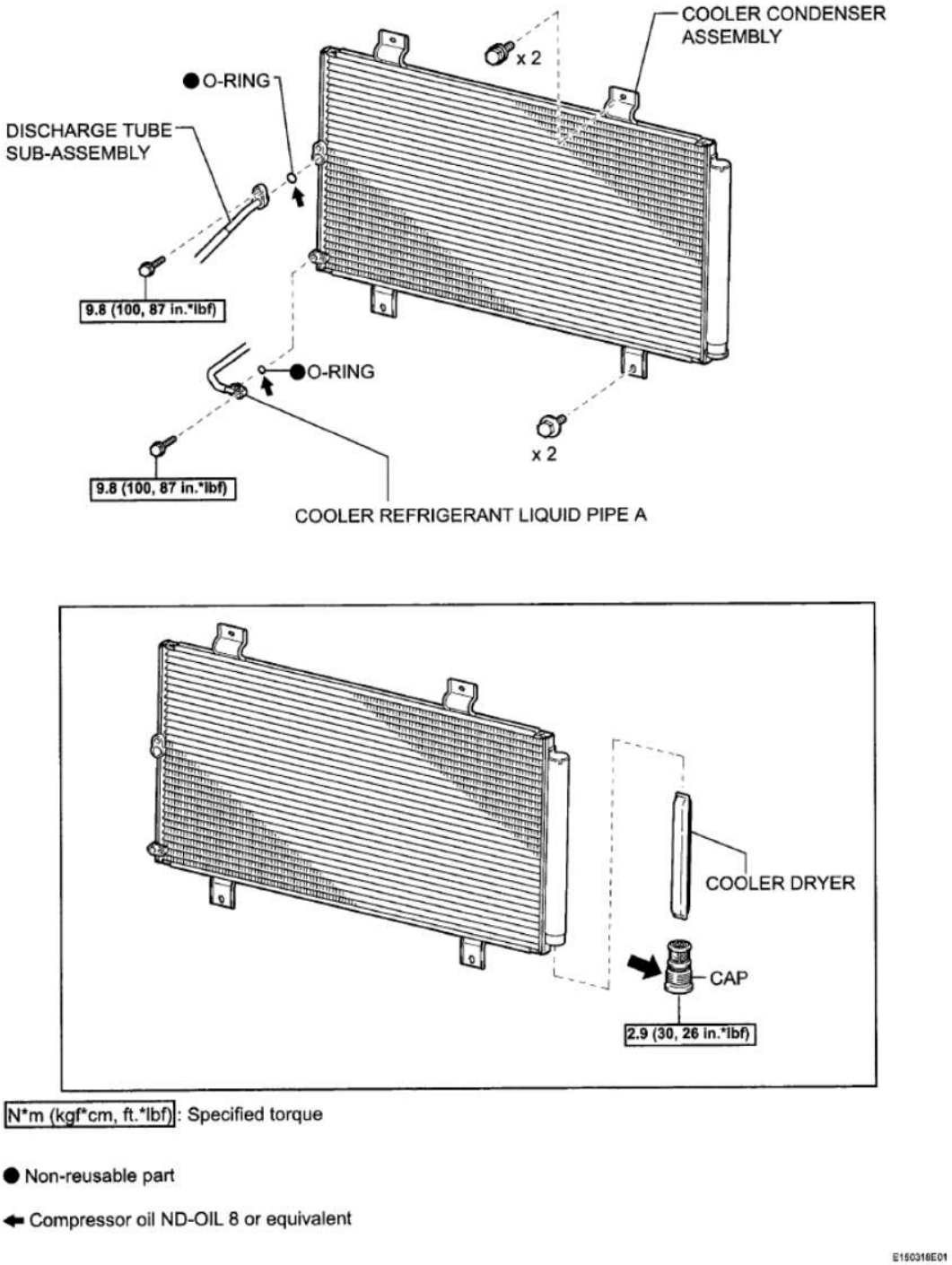


Fig. 558: Identifying Condenser Components (4 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ON-VEHICLE INSPECTION

1. **INSPECT COOLER CONDENSER ASSEMBLY**

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a. If the cooler condenser assembly fins are dirty, clean them with water and dry with compressed air.

NOTE: Do not damage the cooler condenser assembly fins.

b. If any cooler condenser assembly fins are bent, straighten them using a screwdriver or pliers.

2. **INSPECT CONDENSER FOR LEAKAGE OF REFRIGERANT**
   a. Using a gas leak detector, check pipe joints for gas leakage.
   b. If gas leakage is detected in a joint, check the torque of the joint.

REMOVAL

1. **RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM** (See **REPLACEMENT**)
2. **REMOVE COOL AIR INTAKE DUCT SEAL** (See **REMOVAL**)
3. **REMOVE RADIATOR GRILLE** (See **REMOVAL**)
4. **REMOVE NO. 2 AIR CLEANER INLET (for 1AR-FE)** (See **REMOVAL**)
5. **REMOVE NO. 2 AIR CLEANER INLET (for 2GR-FE)** (See **REMOVAL**)
6. **REMOVE NO. 1 AIR CLEANER INLET (for 1AR-FE)** (See **REMOVAL**)
7. **REMOVE NO. 1 AIR CLEANER INLET (for 2GR-FE)** (See **REMOVAL**)
8. **REMOVE HOOD LOCK ASSEMBLY (w/o Engine Hood Courtesy Switch)** (See **REMOVAL**)
9. **REMOVE HOOD LOCK ASSEMBLY (w/ Engine Hood Courtesy Switch)** (See **REMOVAL**)
10. **REMOVE UPPER RADIATOR SUPPORT SUB-ASSEMBLY (for 1AR-FE)** (See **REMOVAL**)
11. **REMOVE UPPER RADIATOR SUPPORT SUB-ASSEMBLY (for 2GR-FE)** (See **REMOVAL**)
12. **DISCONNECT DISCHARGE TUBE SUB-ASSEMBLY**
    a. Remove the bolt and disconnect the discharge tube sub-assembly from the condenser.
    b. Remove the O-ring from the discharge tube sub-assembly.

NOTE: Seal the openings of the disconnected parts using vinyl tape to prevent entry of moisture and foreign matter.

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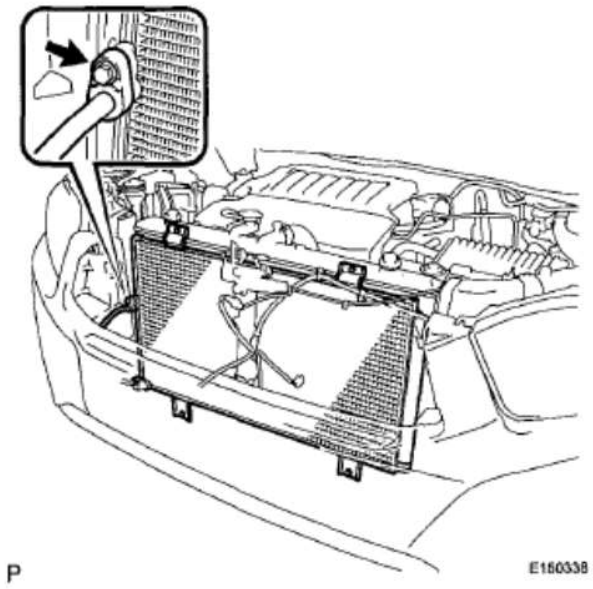


Fig. 559: Locating Discharge Tube Sub-Assembly Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

13. **DISCONNECT COOLER REFRIGERANT LIQUID PIPE A**
    a. Remove the bolt and disconnect the cooler refrigerant liquid pipe A from the condenser.
    b. Remove the O-ring from the cooler refrigerant liquid pipe A.

NOTE: Seal the openings of the disconnected parts using vinyl tape to prevent entry of moisture and foreign matter.

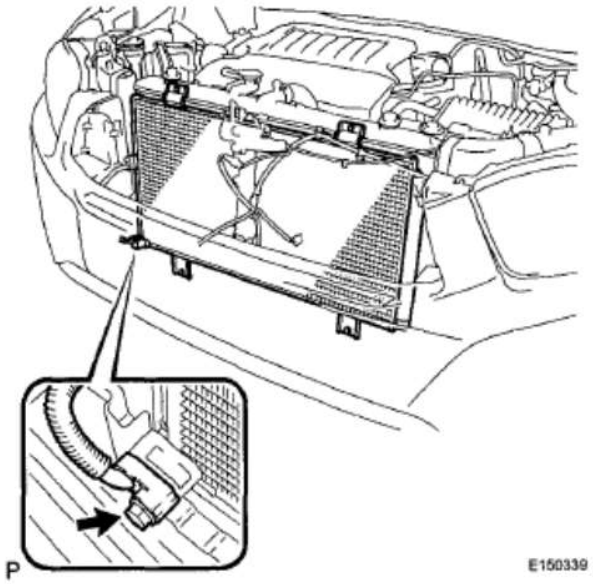


Fig. 560: Locating Cooler Refrigerant Liquid Pipe A Bolt

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Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

14. **REMOVE COOLER CONDENSER ASSEMBLY**
    a. Remove the 4 bolts.

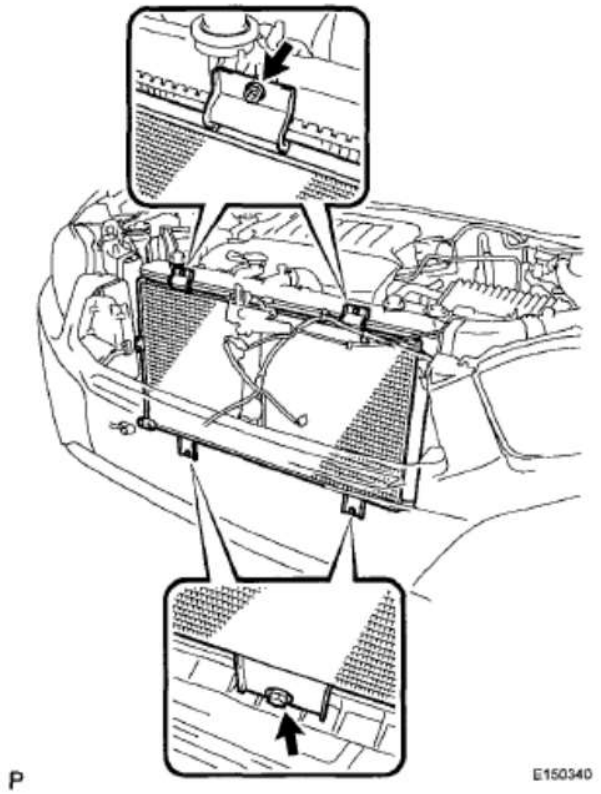


Fig. 561: Locating Cooler Condenser Assembly Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

    b. Remove the cooler condenser assembly as shown in the illustration.

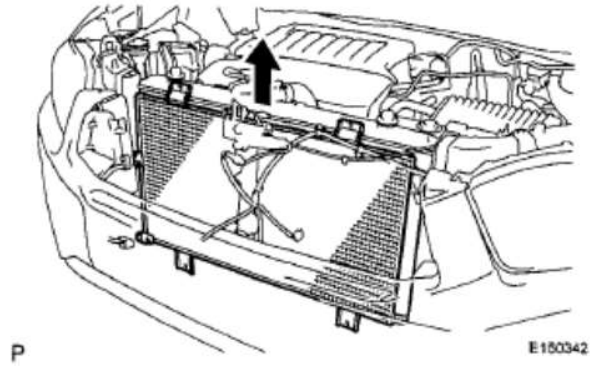


Fig. 562: Identifying Cooler Condenser Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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DISASSEMBLY

1. **REMOVE COOLER DRYER**
   a. Using a 14 mm straight hexagon wrench, remove the cap from the modulator.

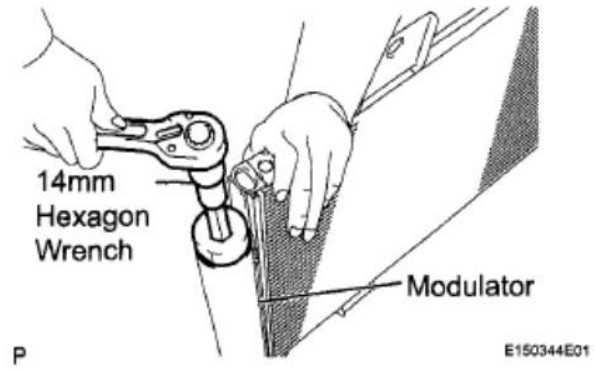


Fig. 563: Removing Cap From Modulator
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Using pliers, remove the cooler dryer.

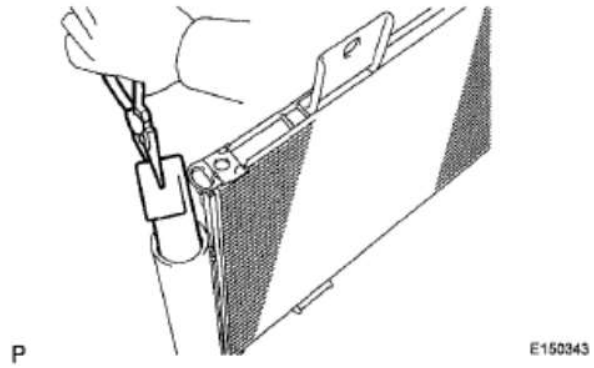


Fig. 564: Removing Cooler Dryer
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REASSEMBLY

1. **INSTALL COOLER DRYER**
   a. Using pliers, install the cooler dryer to the modulator.

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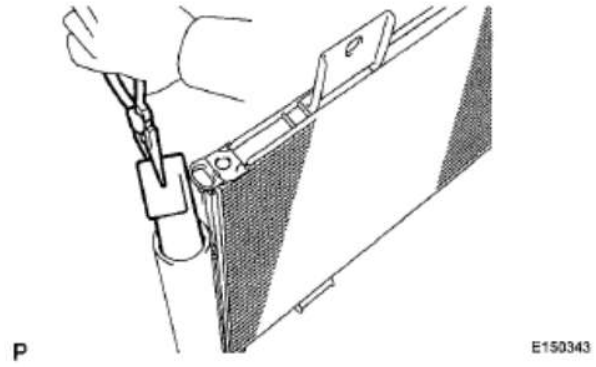


Fig. 565: Installing Cooler Dryer To Modulator
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Apply sufficient compressor oil to an O-ring and the cap fitting surface.

Compressor oil:

ND-OIL 8 or equivalent

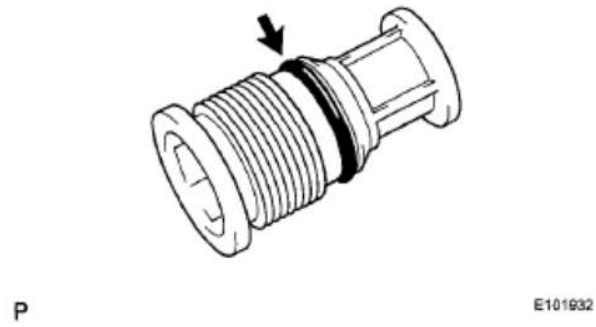


Fig. 566: Locating O-Ring
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Using a 14 mm straight hexagon wrench, install the cap to the cooler condenser core.

Torque: 2.9 N*m (30 kgf*cm, 26 in.*lbf)

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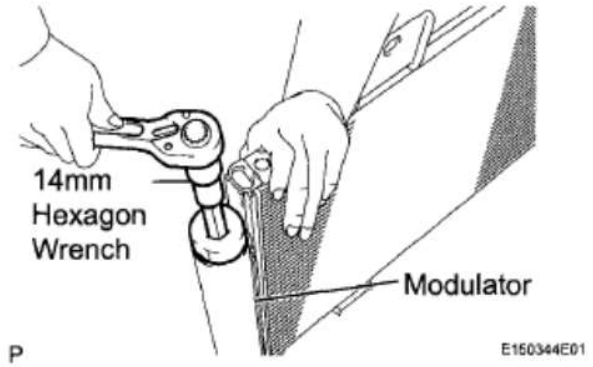


Fig. 567: Installing Cap To Cooler Condenser Core
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL COOLER CONDENSER ASSEMBLY**
   a. Install the cooler condenser assembly as shown in the illustration.

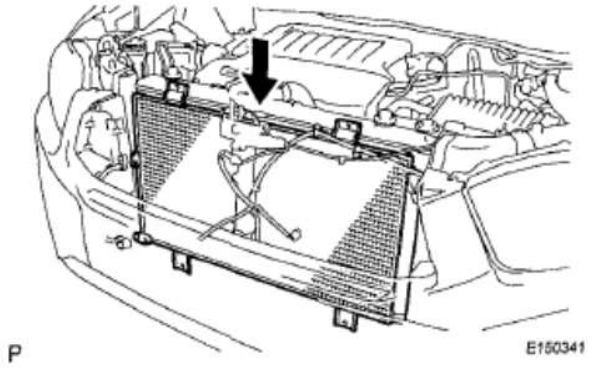


Fig. 568: Identifying Cooler Condenser Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Install the 4 bolts.

   HINT:

   If the condenser is replaced with a new one, add compressor oil to the new condenser.

   Capacity:

   40 cc (1.4 fl.oz.)

   Compressor oil:

   ND-8 or equivalent

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2. **CONNECT COOLER REFRIGERANT LIQUID PIPE A**
   a. Remove the attached vinyl tape from the tube and the connecting part of the cooler condenser assembly.
   b. Sufficiently apply compressor oil to a new O-ring and the fitting surface of the tube joint.

      Compressor oil:

      ND-OIL 8 or equivalent

   c. Install the O-ring on the cooler refrigerant liquid pipe A.

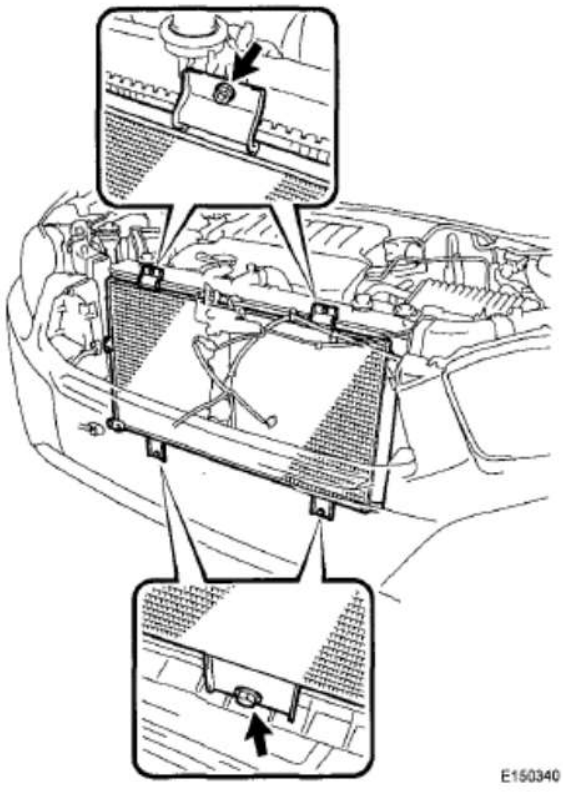


Fig. 569: Locating Cooler Condenser Assembly Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   d. Install the cooler refrigerant liquid pipe A on the cooler condenser assembly with the bolt.

      Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

3. **CONNECT DISCHARGE TUBE SUB-ASSEMBLY**
   a. Remove the attached vinyl tape from the pipe and the connecting part of the cooler condenser assembly.
   b. Sufficiently apply compressor oil to a new O-ring and the fitting surface of the pipe joint.

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Compressor oil:

ND-OIL 8 or equivalent

c. Install the O-ring on the discharge tube sub-assembly.

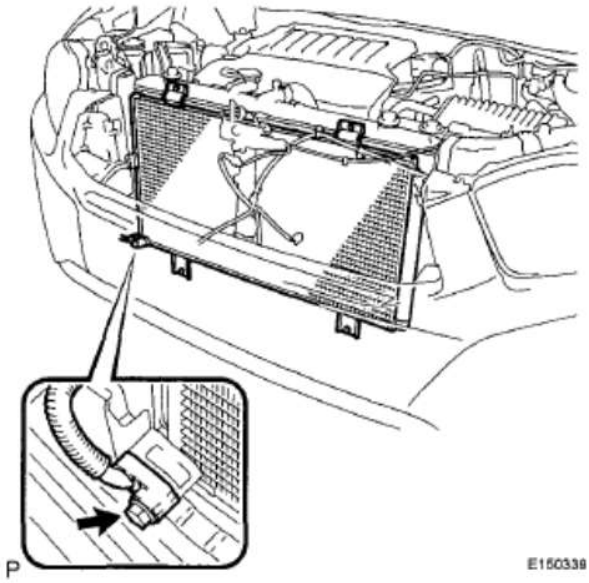


Fig. 570: Locating Cooler Refrigerant Liquid Pipe A Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Install the discharge tube sub-assembly on the cooler condenser assembly with the bolt.

Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

4. **INSTALL UPPER RADIATOR SUPPORT SUB-ASSEMBLY (for 1AR-FE)** (See **INSTALLATION**)
5. **INSTALL UPPER RADIATOR SUPPORT SUB-ASSEMBLY (for 2GR-FE)** (See **INSTALLATION**)
6. **INSTALL HOOD LOCK ASSEMBLY (w/o Engine Hood Courtesy Switch)** (See **INSTALLATION**)
7. **INSTALL HOOD LOCK ASSEMBLY (w/ Engine Hood Courtesy Switch)** (See **INSTALLATION**)
8. **INSPECT HOOD SUB-ASSEMBLY** (See **ON-VEHICLE INSPECTION**)

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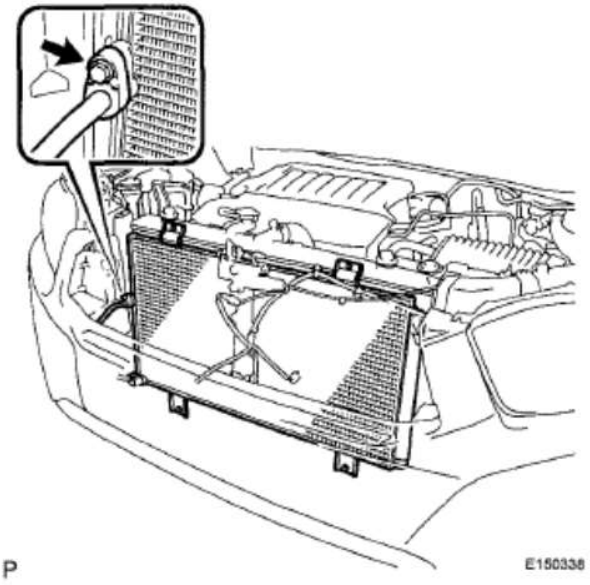


Fig. 571: Locating Discharge Tube Sub-Assembly Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. **ADJUST HOOD SUB-ASSEMBLY** (See **ADJUSTMENT**)
10. **INSTALL NO. 1 AIR CLEANER INLET (for 1AR-FE)** (See **INSTALLATION**)
11. **INSTALL NO. 1 AIR CLEANER INLET (for 2GR-FE)** (See **INSTALLATION**)
12. **INSTALL NO. 2 AIR CLEANER INLET (for 1AR-FE)** (See **INSTALLATION**)
13. **INSTALL NO. 2 AIR CLEANER INLET (for 2GR-FE)** (See **INSTALLATION**)
14. **INSTALL RADIATOR GRILLE** (See **INSTALLATION**)
15. **INSTALL COOL AIR INTAKE DUCT SEAL** (See **INSTALLATION**)
16. **CHARGE WITH REFRIGERANT** (See **REFRIGERANT LINE**)
17. **WARM UP ENGINE** (See **REFRIGERANT LINE**)
18. **INSPECT FOR REFRIGERANT LEAK** (See **REFRIGERANT LINE**)

ROOM TEMPERATURE SENSOR (FOR FRONT)

COMPONENTS

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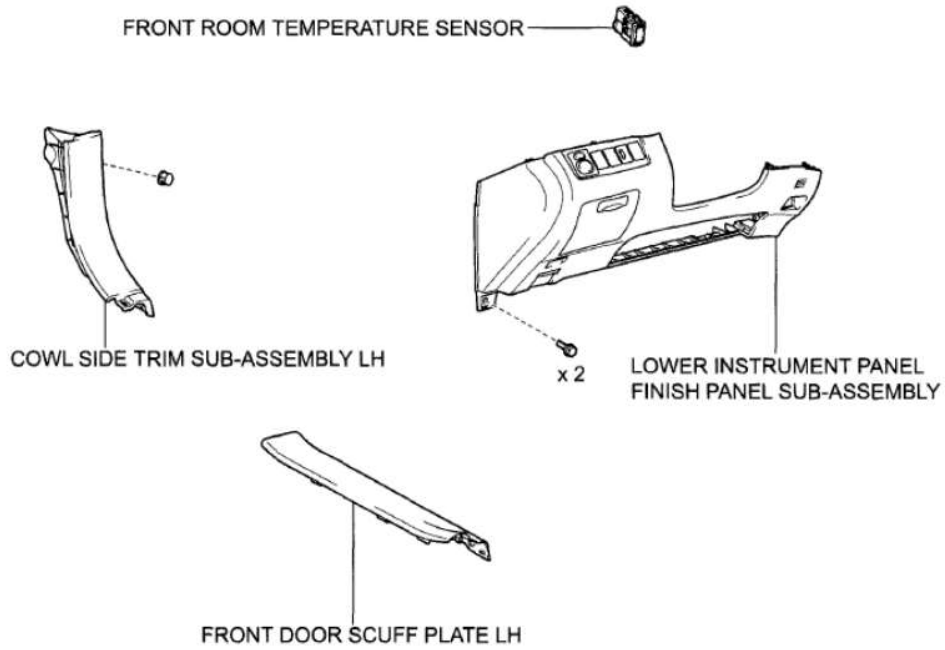


Fig. 572: Identifying Room Temperature Sensor (For Front) Components
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE FRONT DOOR SCUFF PLATE LH** (See **REMOVAL**)
2. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH** (See **REMOVAL**)
3. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY** (See **REMOVAL**)
4. **REMOVE FRONT ROOM TEMPERATURE SENSOR**
   a. Disengage the 2 claws and remove the front room temperature sensor.

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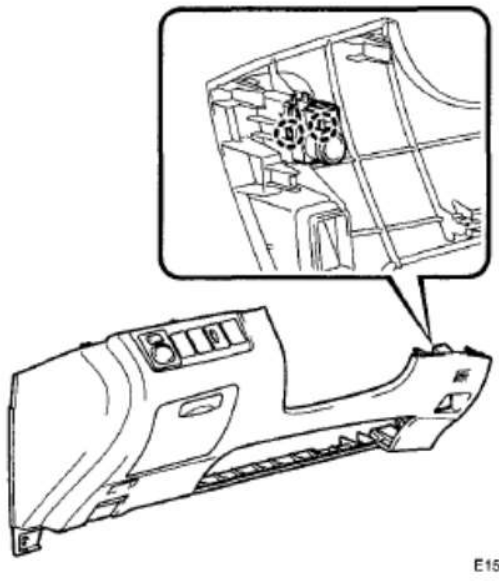


Fig. 573: Identifying Front Room Temperature Sensor Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION

1. **INSPECT ROOM TEMPERATURE SENSOR**
   a. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
D26-1 (+) - D26-2 (-)	10°C (50°F)	3.00 to 3.73 kohms
D26-1 (+) - D26-2 (-)	15°C (59°F)	2.45 to 2.88 kohms
D26-1 (+) - D26-2 (-)	20°C (68°F)	1.95 to 2.30 kohms
D26-1 (+) - D26-2 (-)	25°C (77°F)	1.60 to 1.80 kohms
D26-1 (+) - D26-2 (-)	30°C (86°F)	1.28 to 1.47 kohms
D26-1 (+) - D26-2 (-)	35°C (95°F)	1.00 to 1.22 kohms
D26-1 (+) - D26-2 (-)	40°C (104°F)	0.80 to 1.00 kohms
D26-1 (+) - D26-2 (-)	45°C (113°F)	0.65 to 0.85 kohms
D26-1 (+) - D26-2 (-)	50°C (122°F)	0.50 to 0.70 kohms
D26-1 (+) - D26-2 (-)	55°C (131°F)	0.44 to 0.60 kohms
D26-1 (+) - D26-2 (-)	60°C (140°F)	0.36 to 0.50 kohms

NOTE:

- **Hold the sensor only by its connector. Touching the sensor may change the resistance value.**
- **When measuring, the sensor temperature must be the same as**

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the ambient temperature.

HINT:

As the temperature increases, the resistance decreases (see the graph).

If the resistance is not as specified, replace the room temperature sensor.

Component without harness connected:
(Room Temperature Sensor (for Front))

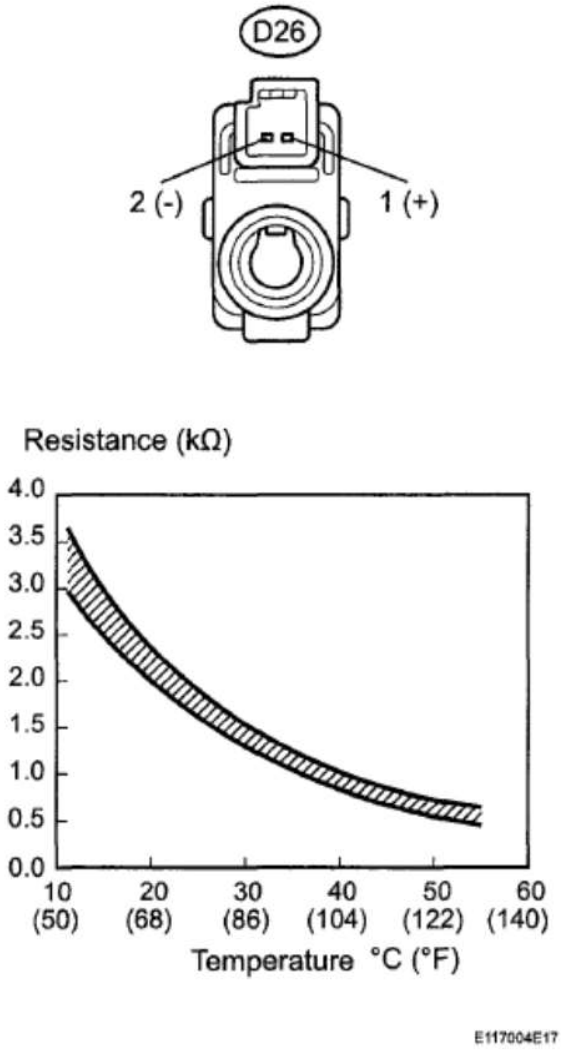


Fig. 574: Identifying Room Temperature Sensor Connector Terminals And Temperature/Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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INSTALLATION

1. **INSTALL FRONT ROOM TEMPERATURE SENSOR**
   a. Engage the 2 claws and install the front room temperature sensor.
2. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
3. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH** (See **INSTALLATION**)
4. **INSTALL FRONT DOOR SCUFF PLATE LH** (See **INSTALLATION**)

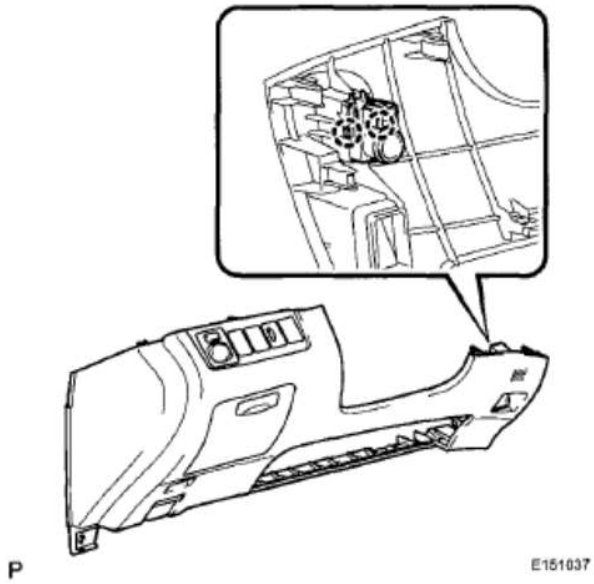


Fig. 575: Identifying Front Room Temperature Sensor Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ROOM TEMPERATURE SENSOR (FOR REAR)

COMPONENTS

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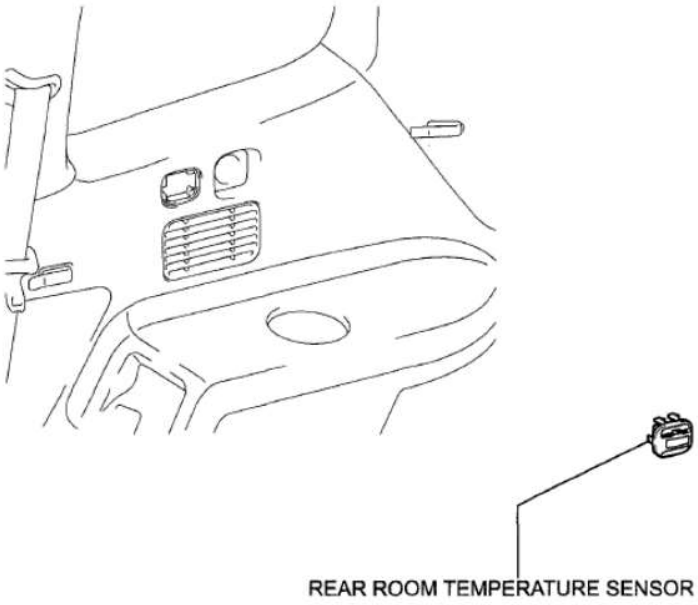


Fig. 576: Identifying Room Temperature Sensor (For Rear) Components
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE REAR ROOM TEMPERATURE SENSOR**
   a. Disengage the 4 claws and remove the rear room temperature sensor.
   b. Disconnect the connector.

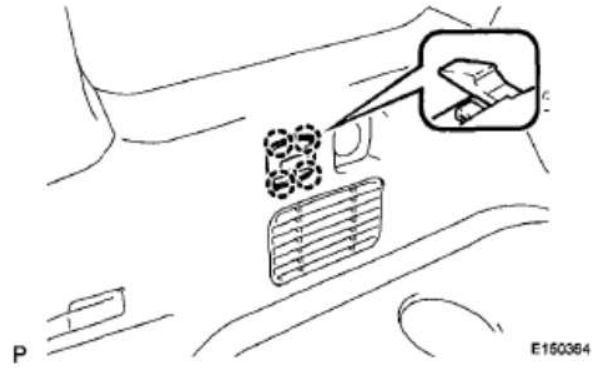


Fig. 577: Identifying Rear Room Temperature Sensor Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION

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1. **INSPECT REAR ROOM TEMPERATURE SENSOR**
   a. Remove the rear room temperature sensor (see **ROOM TEMPERATURE SENSOR (FOR REAR)**).
   b. Disconnect the connector from the rear room temperature sensor.
   c. Measure the resistance of the sensor.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
N13-1 (+) - N13-2 (-)	10°C (50°F)	3.00 to 3.73 kohms
N13-1 (+) - N13-2 (-)	15°C (59°F)	2.45 to 2.88 kohms
N13-1 (+) - N13-2 (-)	20°C (68°F)	1.95 to 2.30 kohms
N13-1 (+) - N13-2 (-)	25°C (77°F)	1.60 to 1.80 kohms
N13-1 (+) - N13-2 (-)	30°C (86°F)	1.28 to 1.47 kohms
N13-1 (+) - N13-2 (-)	35°C (95°F)	1.00 to 1.22 kohms
N13-1 (+) - N13-2 (-)	40°C (104°F)	0.80 to 1.00 kohms
N13-1 (+) - N13-2 (-)	45°C (113°F)	0.65 to 0.85 kohms
N13-1 (+) - N13-2 (-)	50°C (122°F)	0.50 to 0.70 kohms
N13-1 (+) - N13-2 (-)	55°C (131°F)	0.44 to 0.60 kohms
N13-1 (+) - N13-2 (-)	60°C (140°F)	0.36 to 0.50 kohms

NOTE:

- **Even slightly touching the sensor may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring, the sensor temperature must be the same as the ambient temperature.**

HINT:

As the temperature increases, the resistance decreases (see the graph).

If the resistance value is not as specified, replace the sensor.

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Component without harness connected:
Rear Room Temperature Sensor)

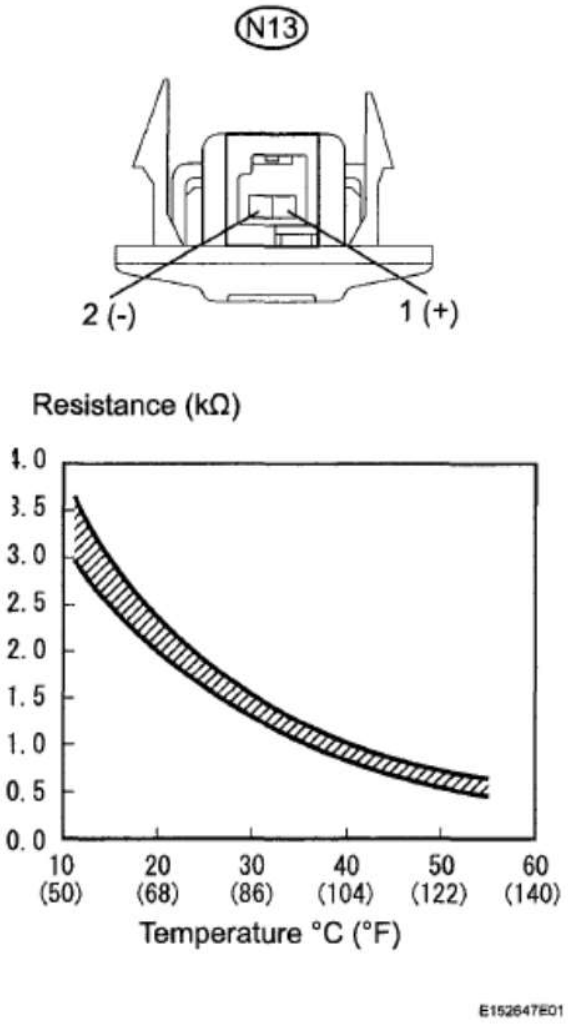


Fig. 578: Identifying Rear Room Temperature Sensor Connector Terminals And Temperature/Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL REAR ROOM TEMPERATURE SENSOR**
   a. Connect the connector.
   b. Engage the 4 claws and install the rear room temperature sensor.

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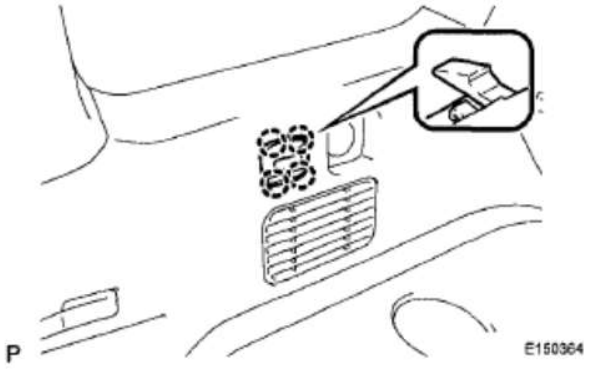
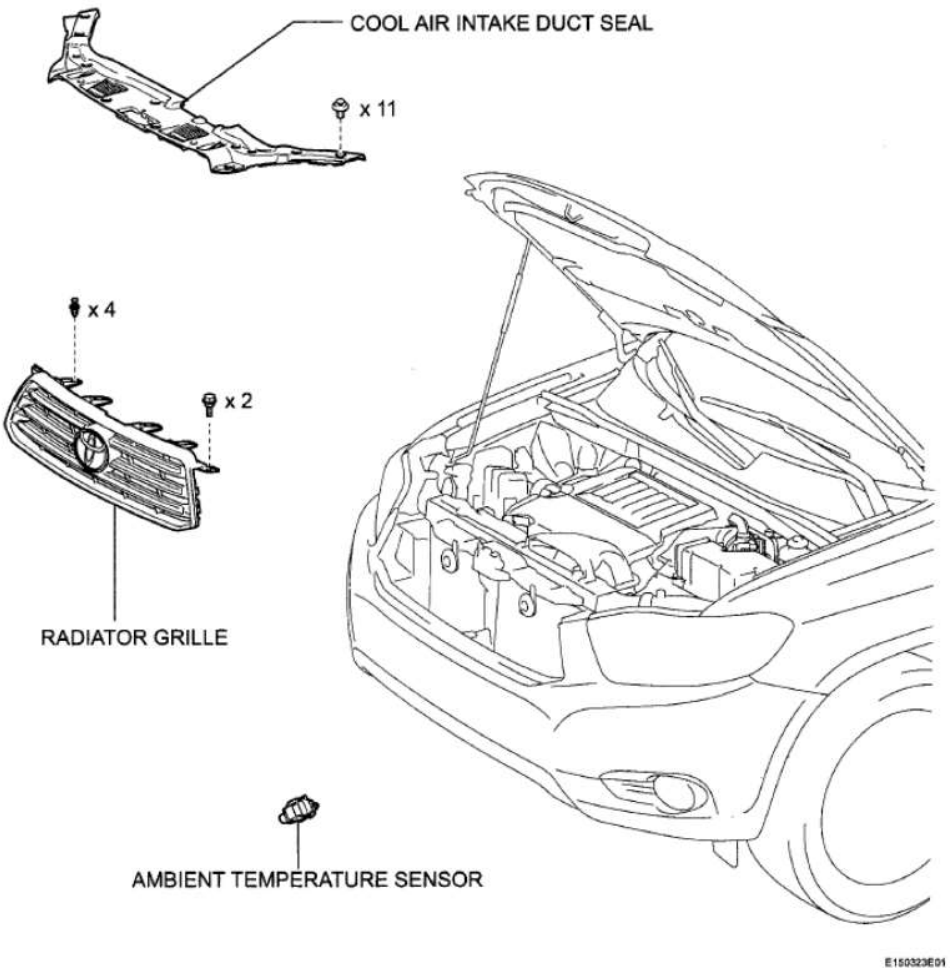


Fig. 579: Identifying Rear Room Temperature Sensor Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

AMBIENT TEMPERATURE SENSOR

COMPONENTS



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Fig. 580: Identifying Ambient Temperature Sensor Components
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE COOL AIR INTAKE DUCT SEAL** (See **REMOVAL**)
2. **REMOVE RADIATOR GRILLE** (See **REMOVAL**)
3. **REMOVE AMBIENT TEMPERATURE SENSOR**
   a. Disconnect the connector.
   b. Disengage the clamp and remove the ambient temperature sensor.

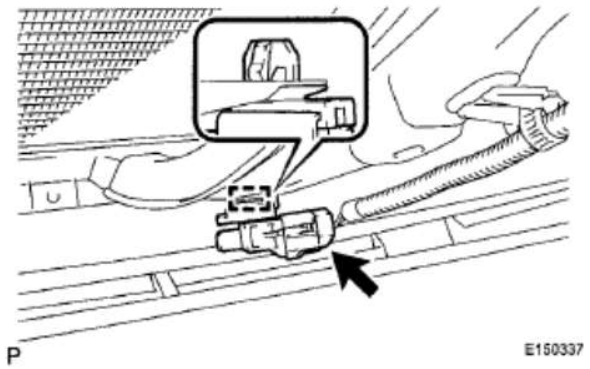


Fig. 581: Locating Ambient Temperature Sensor Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION

1. **INSPECT AMBIENT TEMPERATURE SENSOR**
   a. Measure the resistance according to the value(s) in the table below.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
A7-1 - A7-2	10°C (50°F)	3.00 to 3.73 kohms
A7-1 - A7-2	15°C(59°F)	2.45 to 2.88 kohms
A7-1 - A7-2	20°C (68°F)	1.95 to 2.30 kohms
A7-1 - A7-2	25°C (77°F)	1.60 to 1.80 kohms
A7-1 - A7-2	30°C (86°F)	1.28 to 1.47 kohms
A7-1 - A7-2	35°C (95°F)	1.00 to 1.22 kohms
A7-1 - A7-2	40°C (104°F)	0.80 to 1.00 kohms
A7-1 - A7-2	45°C (113°F)	0.65 to 0.85 kohms
A7-1 - A7-2	50°C (122°F)	0.50 to 0.70 kohms
A7-1 - A7-2	55°C (131°F)	0.44 to 0.60 kohms

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A7-1 - A7-2	60°C (140°F)	0.36 to 0.50 kohms

NOTE:

- **Even slightly touching the sensor may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring, the sensor temperature must be the same as the ambient temperature.**

HINT:

As the temperature increases, the resistance decreases (see the graph).

If the resistance is not as specified, replace the ambient temperature sensor.

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Component without harness connected:
(Ambient temperature Sensor)

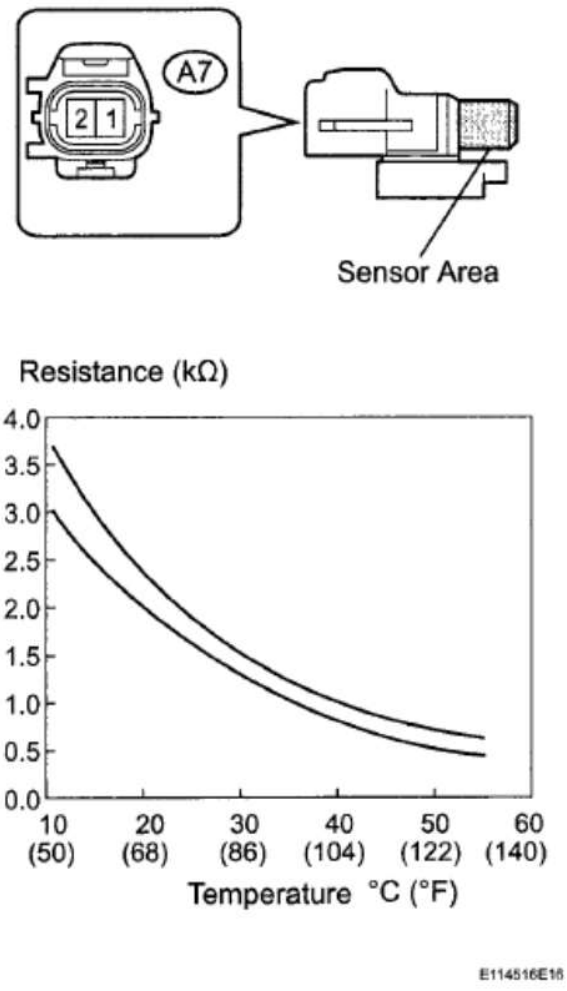


Fig. 582: Identifying Ambient Temperature Sensor Connector Terminals And Temperature/Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL AMBIENT TEMPERATURE SENSOR**
   a. Engage the clamp and install the ambient temperature sensor.
   b. Connect the connector.
2. **INSTALL RADIATOR GRILLE** (See **INSTALLATION**)
3. **INSTALL COOL AIR INTAKE DUCT SEAL** (See **INSTALLATION**)

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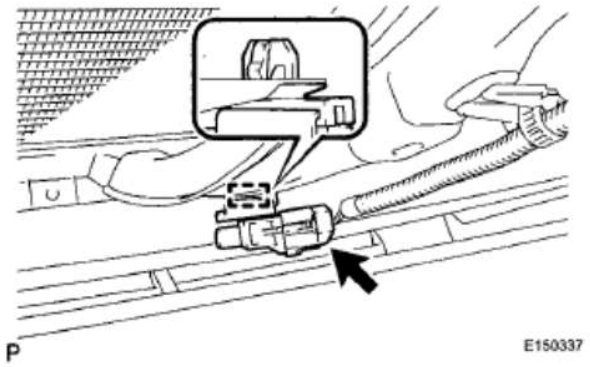


Fig. 583: Locating Ambient Temperature Sensor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

FRONT EVAPORATOR TEMPERATURE SENSOR

COMPONENTS

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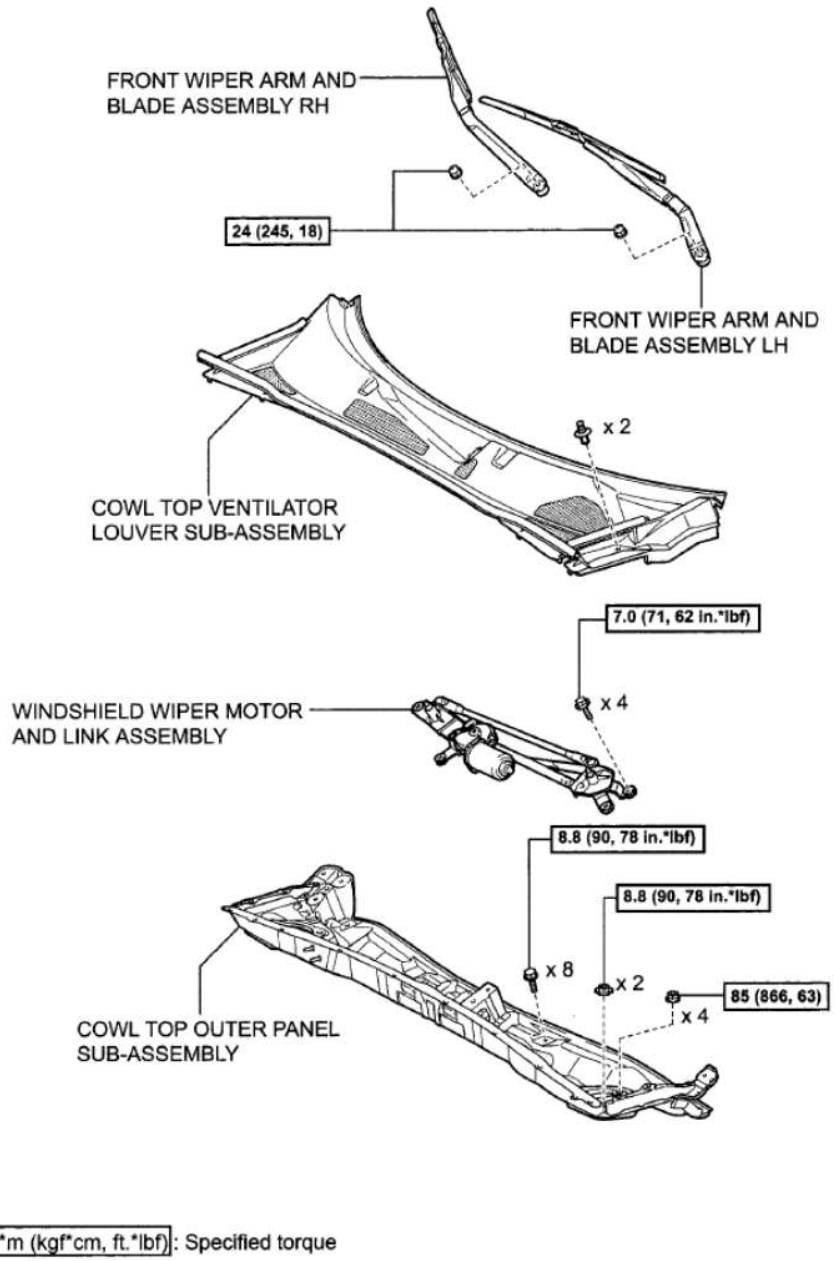


Fig. 584: Identifying Front Evaporator Temperature Sensor Components (1 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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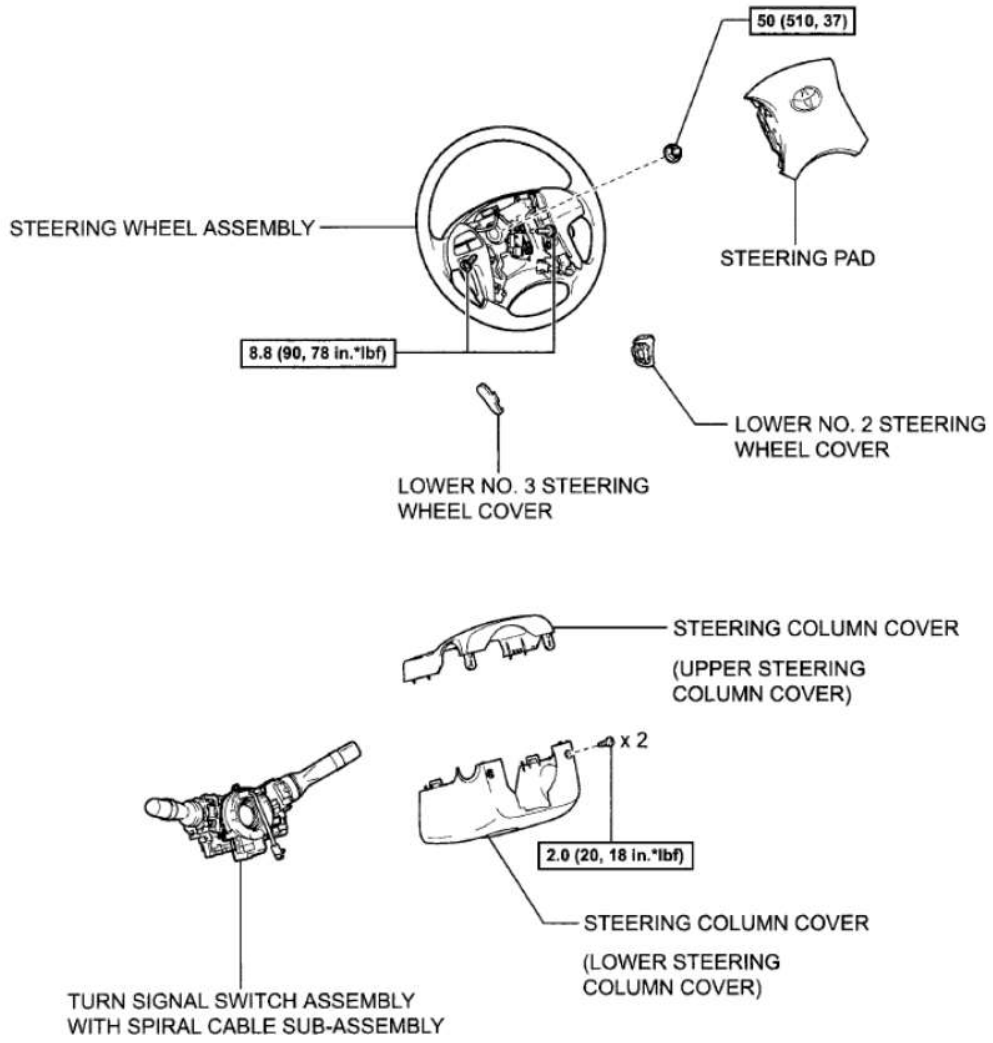


Fig. 585: Identifying Front Evaporator Temperature Sensor Components (2 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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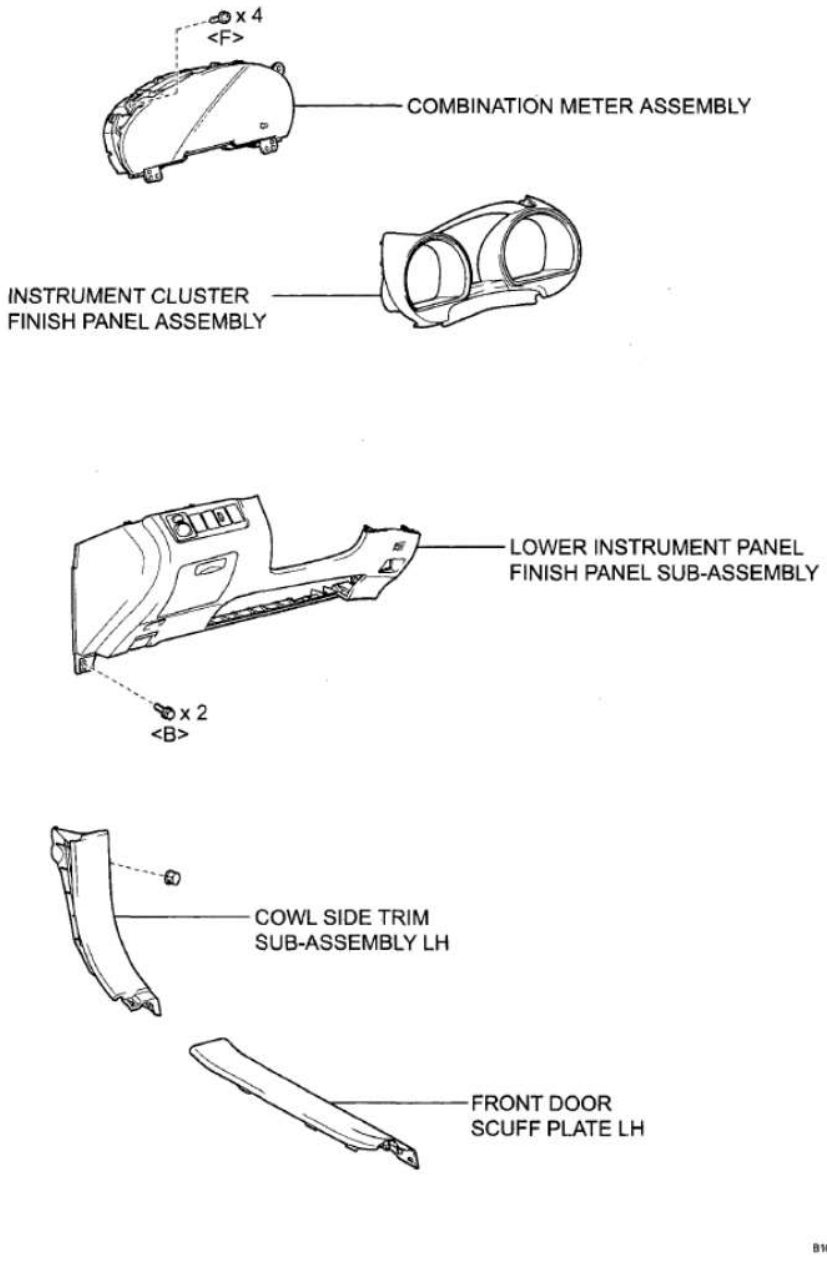


Fig. 586: Identifying Front Evaporator Temperature Sensor Components (3 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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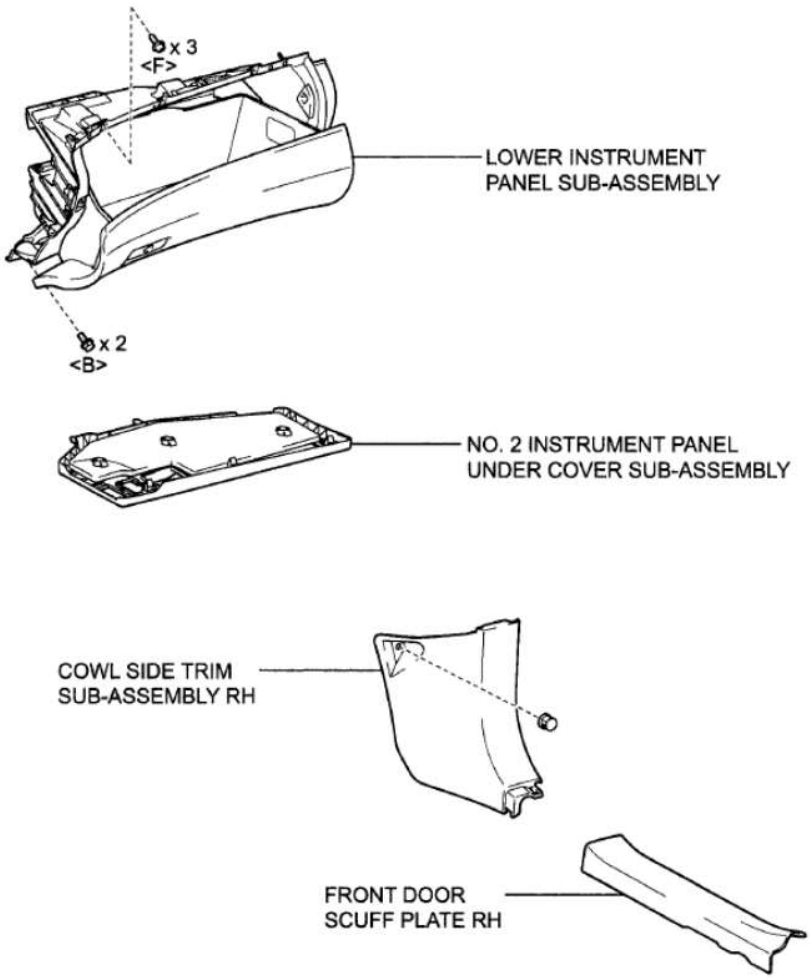


Fig. 587: Identifying Front Evaporator Temperature Sensor Components (4 Of 15)
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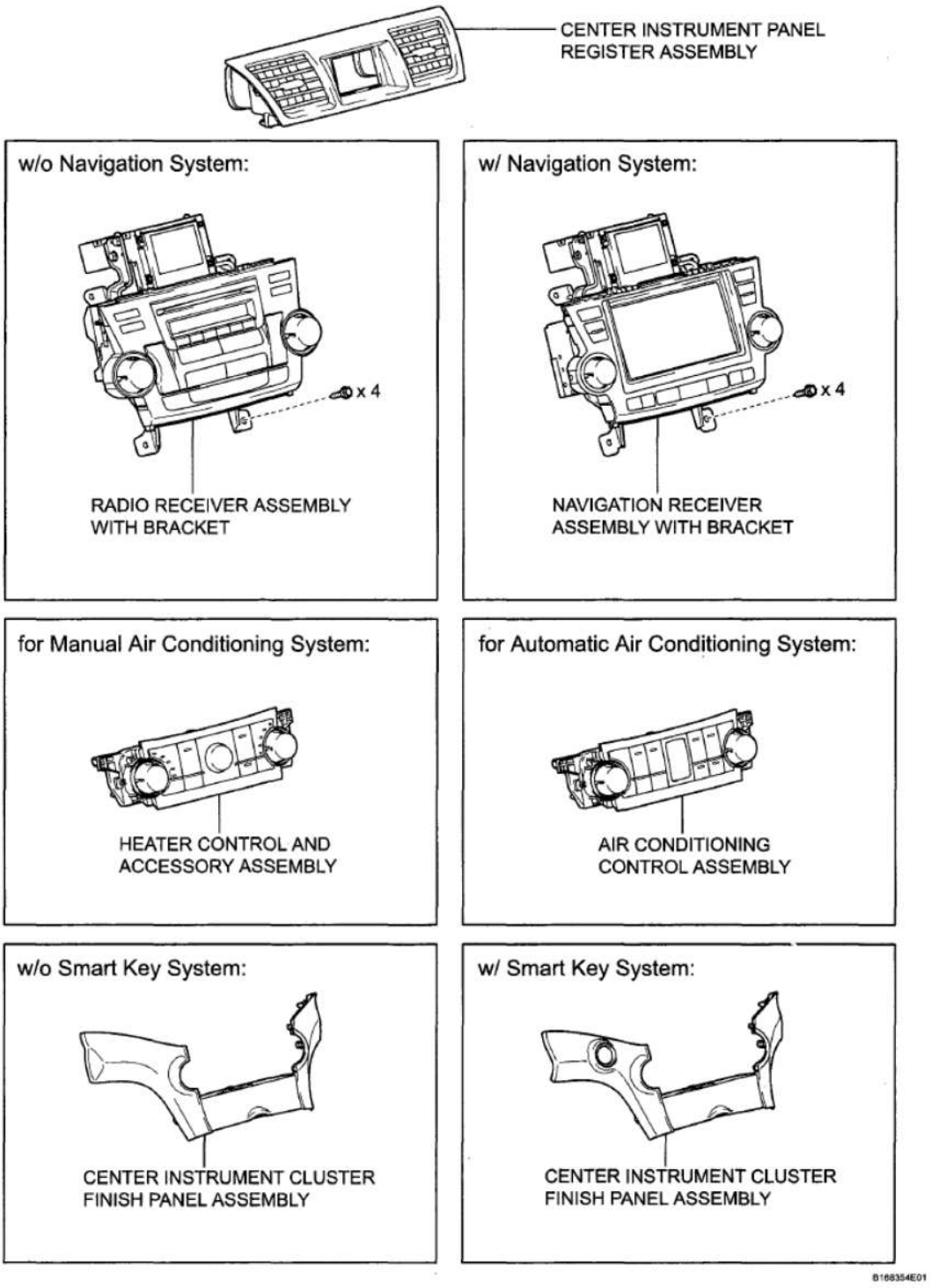


Fig. 588: Identifying Front Evaporator Temperature Sensor Components (5 Of 15)
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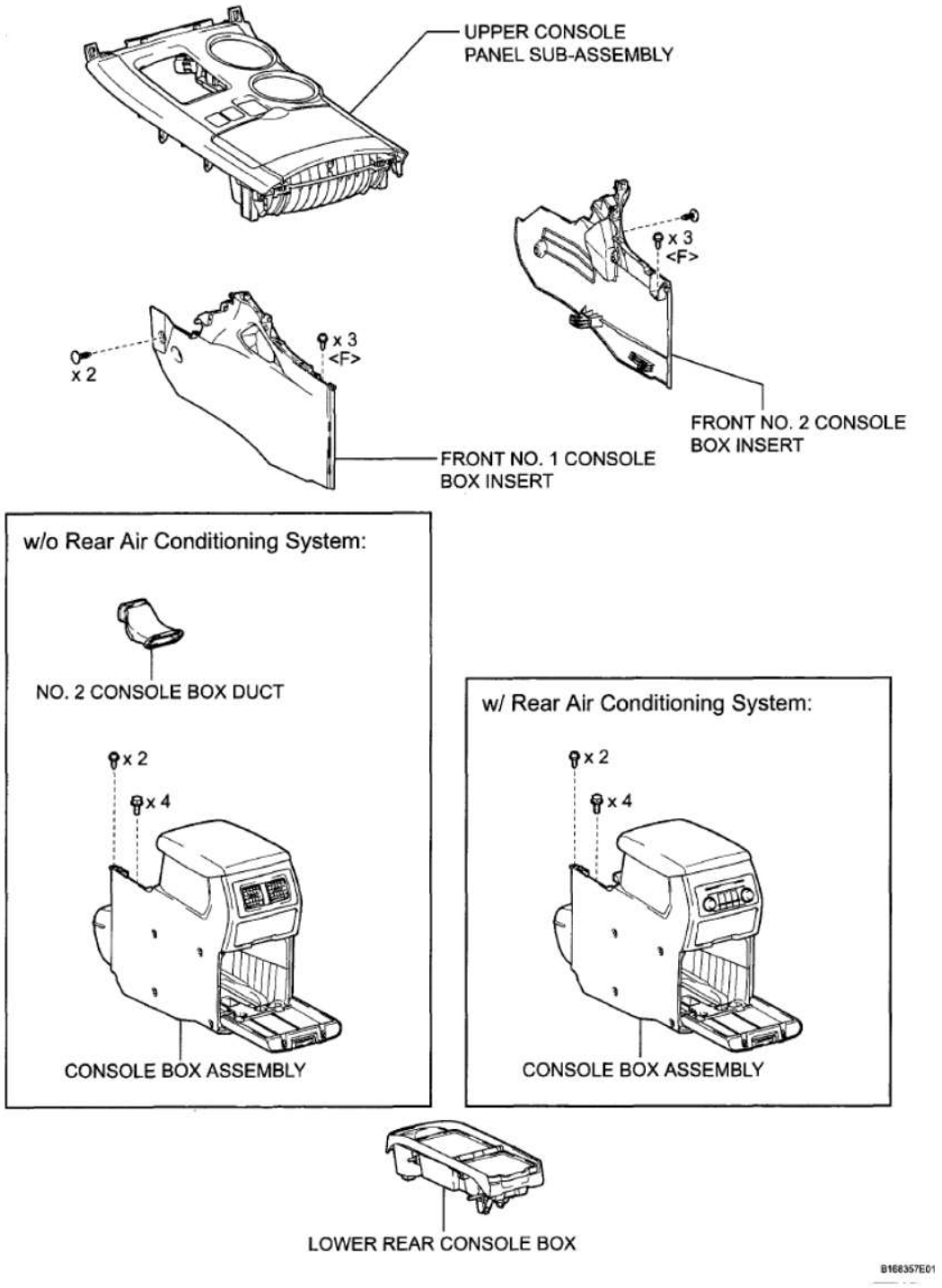


Fig. 589: Identifying Front Evaporator Temperature Sensor Components (6 Of 15)
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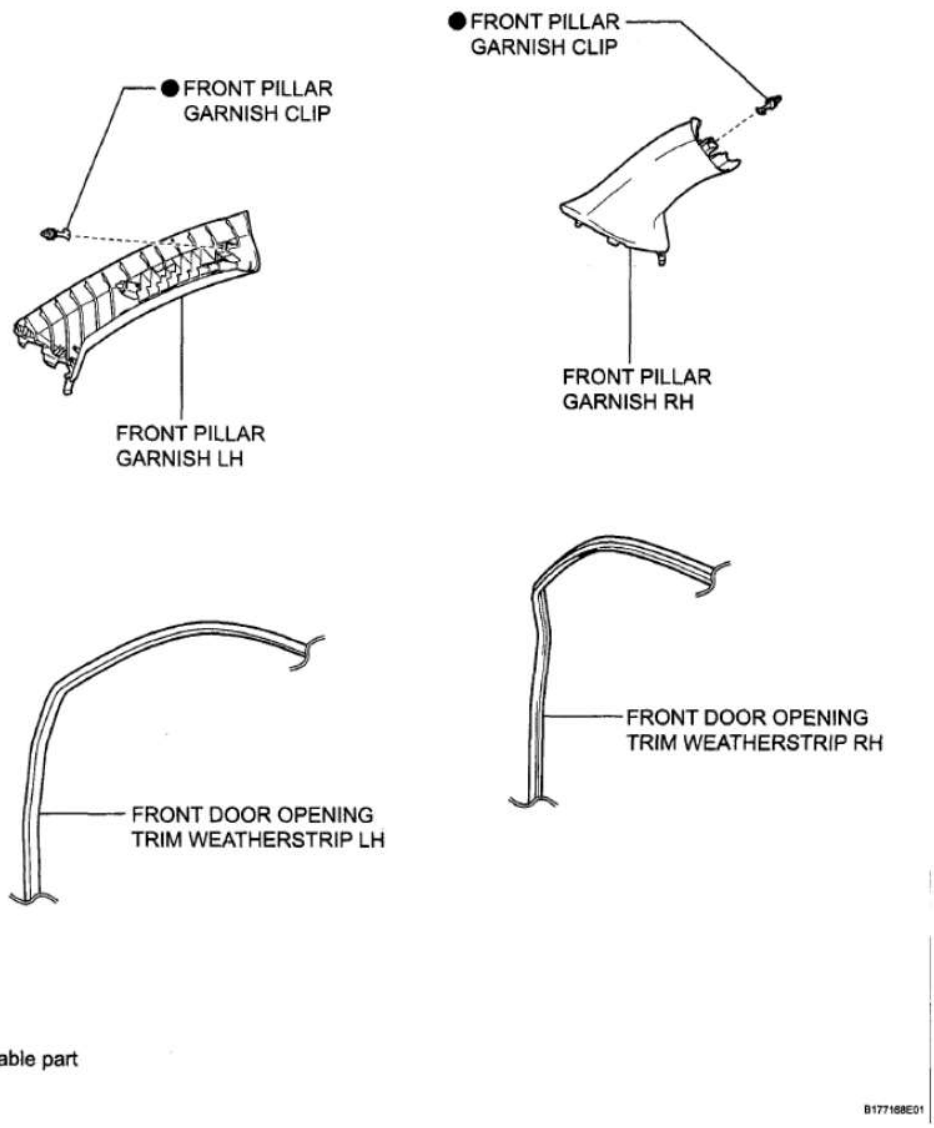


Fig. 590: Identifying Front Evaporator Temperature Sensor Components (7 Of 15)
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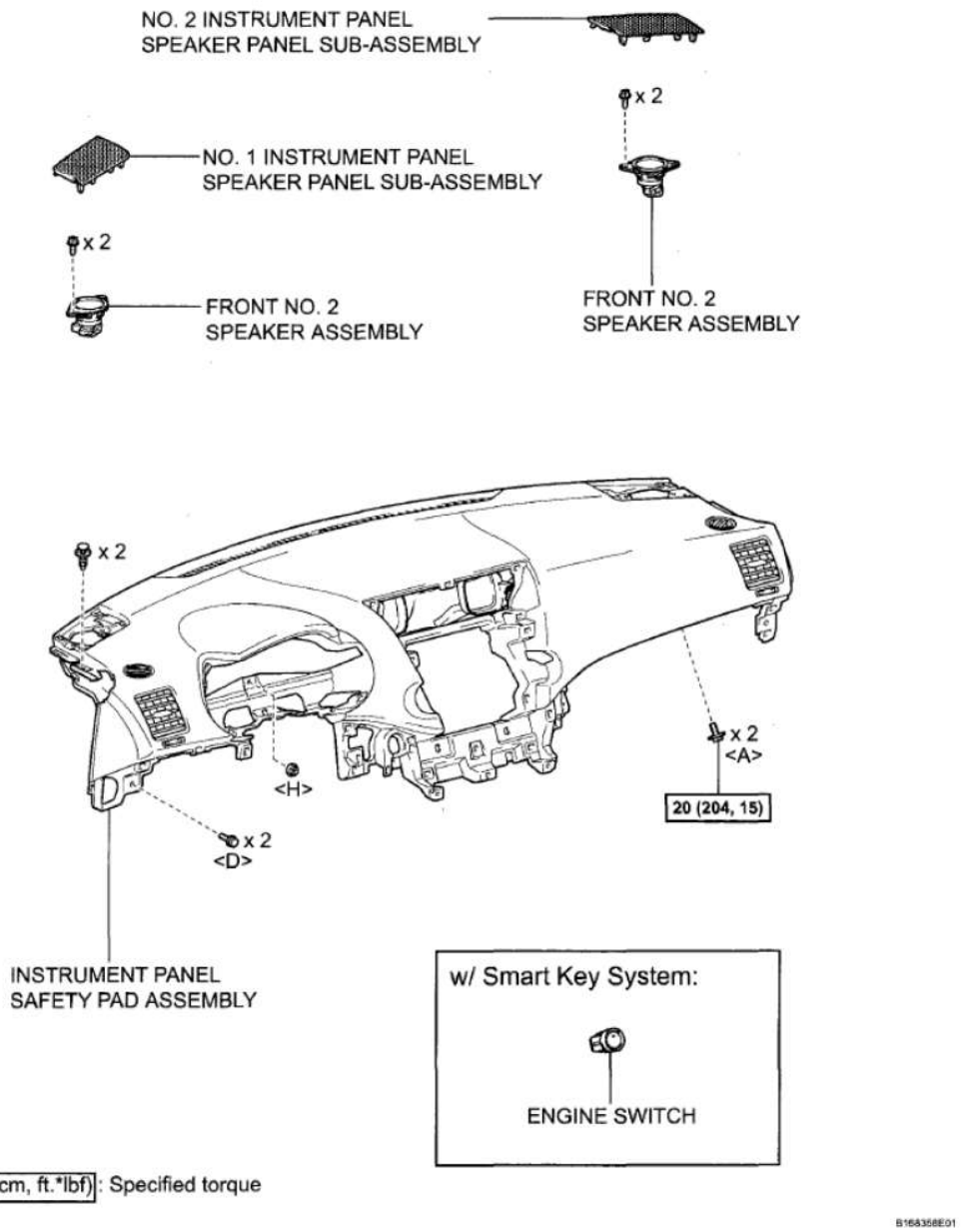


Fig. 591: Identifying Front Evaporator Temperature Sensor Components (8 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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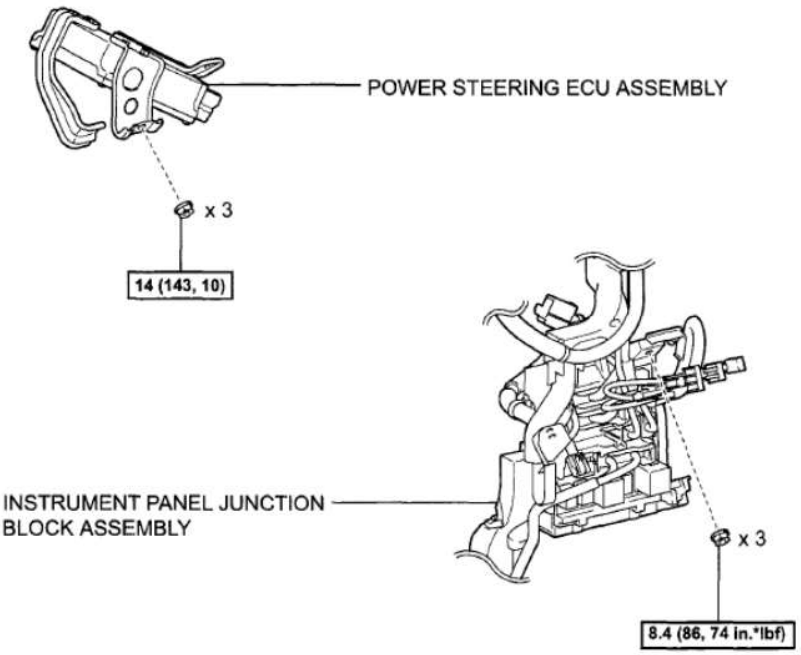


Fig. 592: Identifying Front Evaporator Temperature Sensor Components (9 Of 15)
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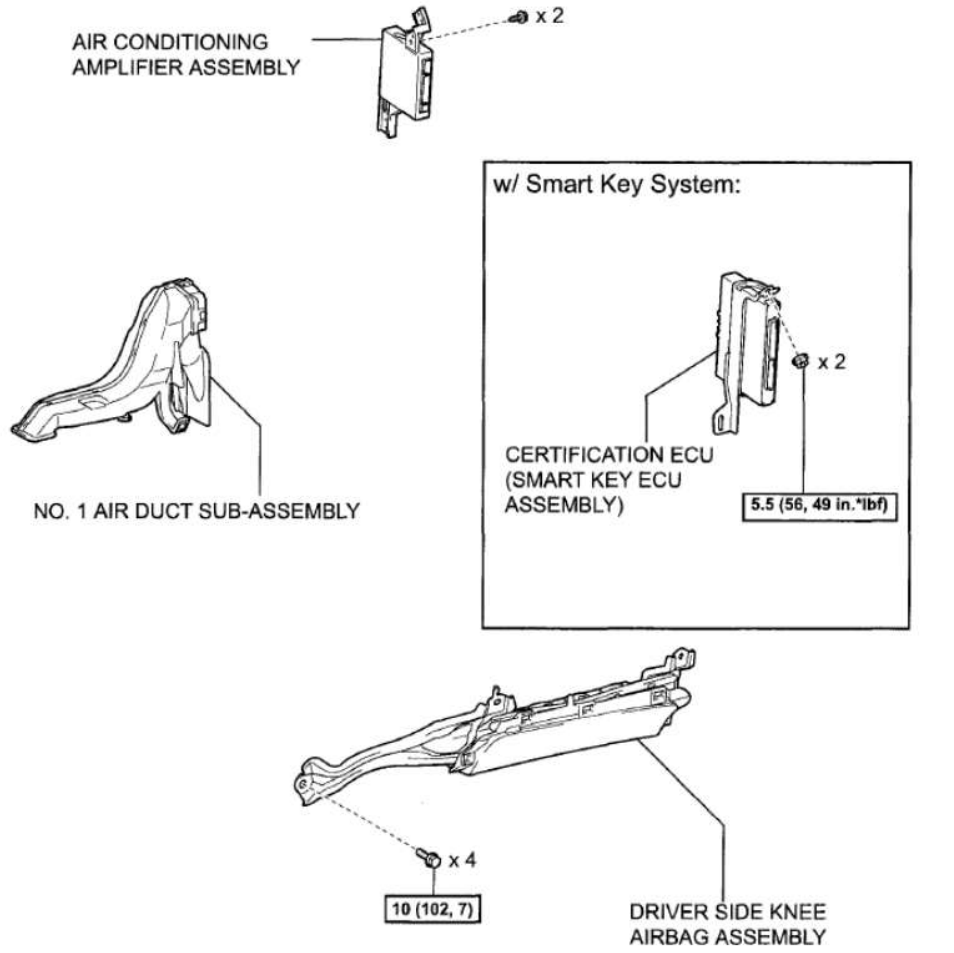


Fig. 593: Identifying Front Evaporator Temperature Sensor Components (10 Of 15)
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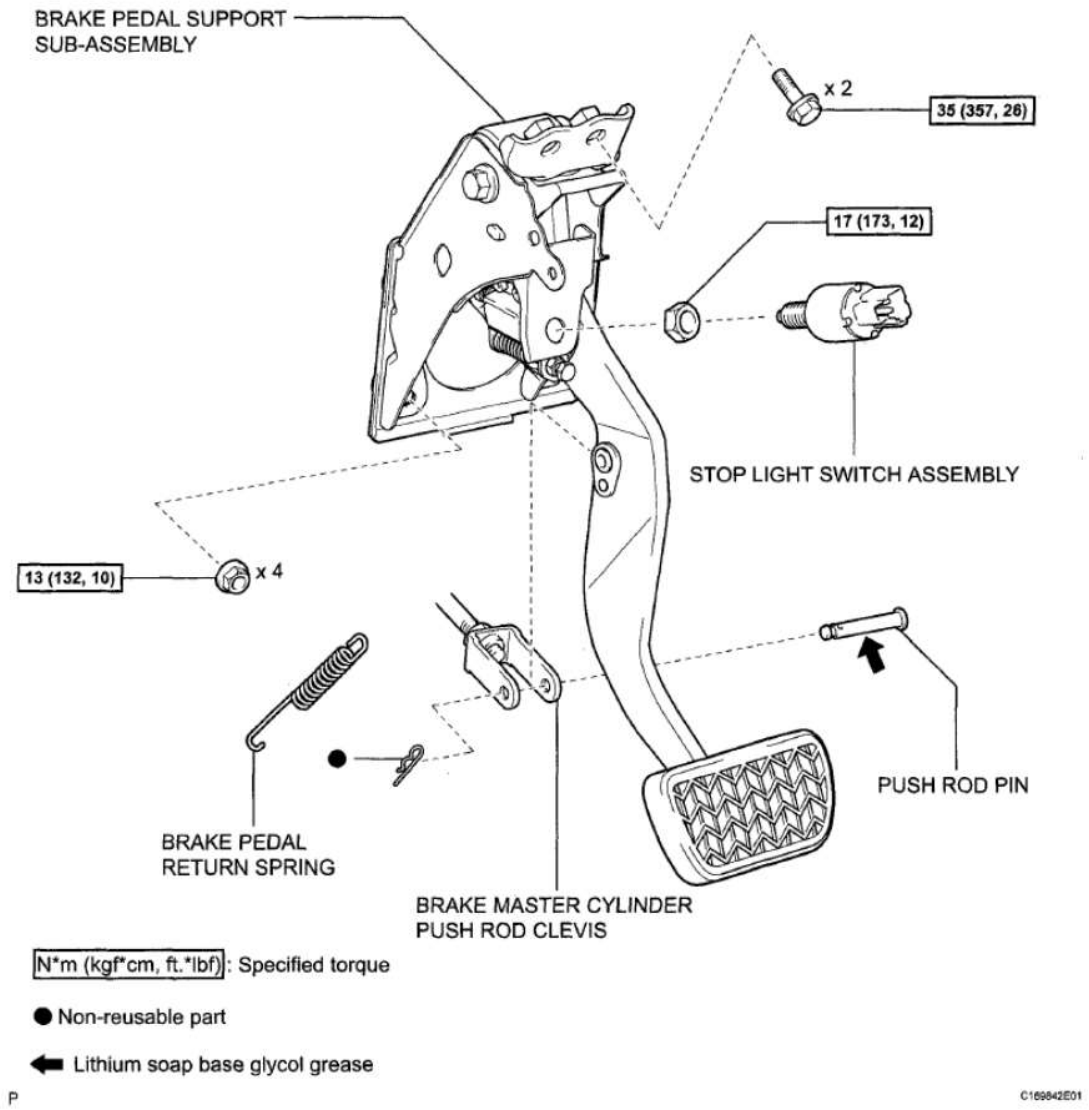


Fig. 594: Identifying Front Evaporator Temperature Sensor Components (11 Of 15)
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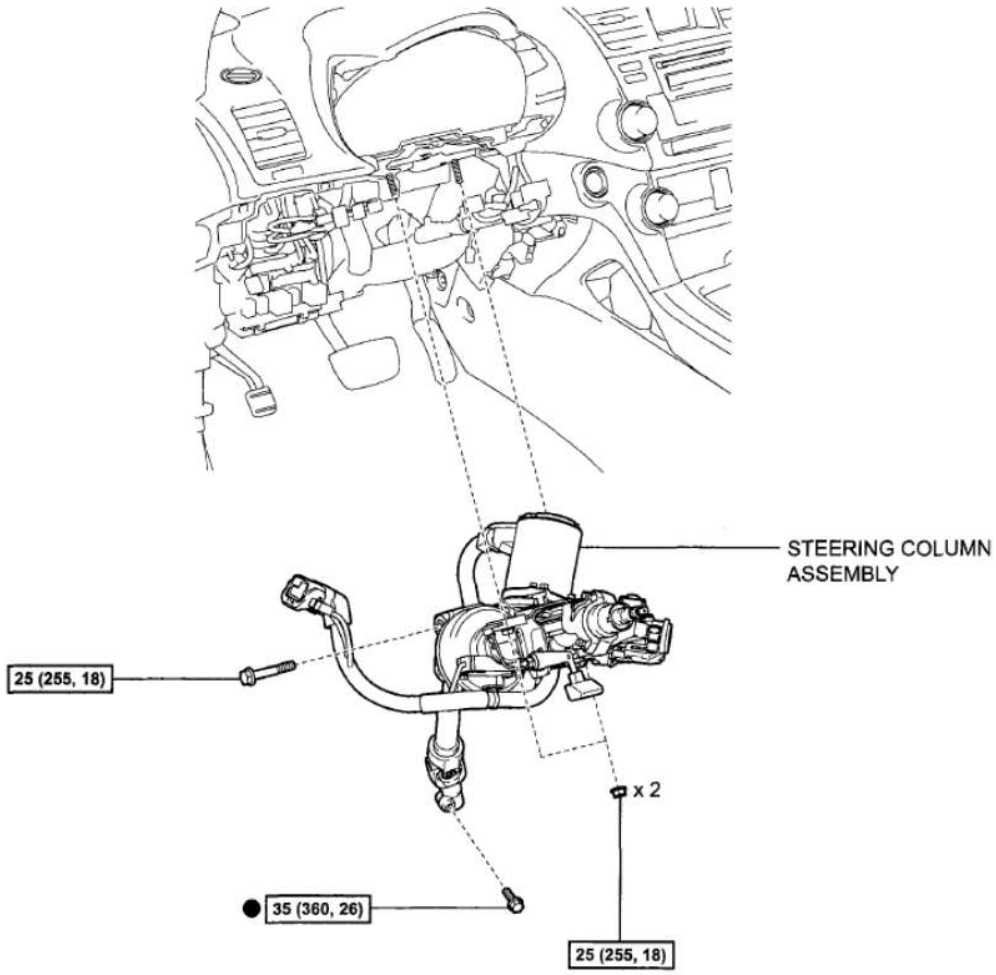


Fig. 595: Identifying Front Evaporator Temperature Sensor Components (12 Of 15)
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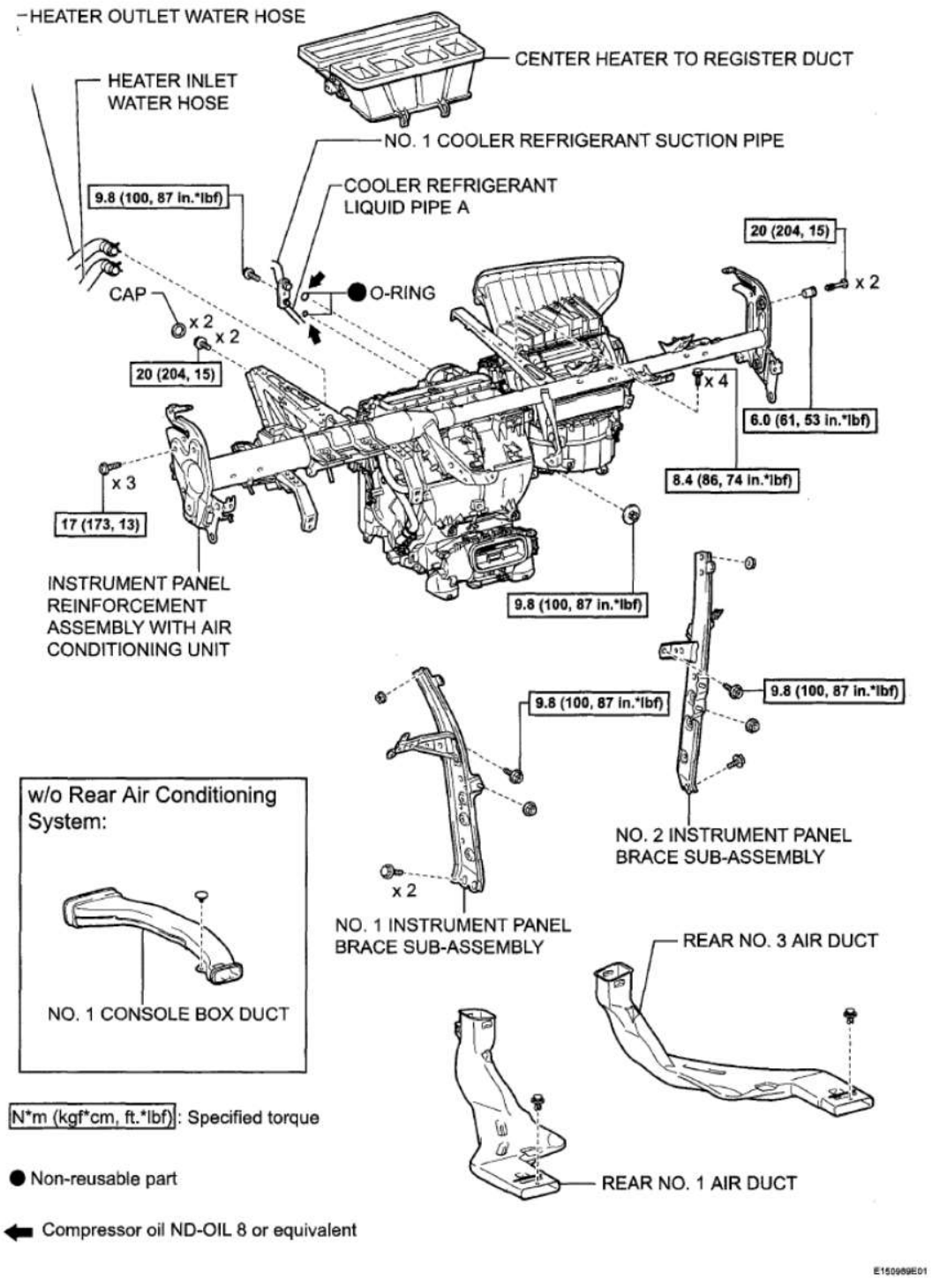


Fig. 596: Identifying Front Evaporator Temperature Sensor Components (13 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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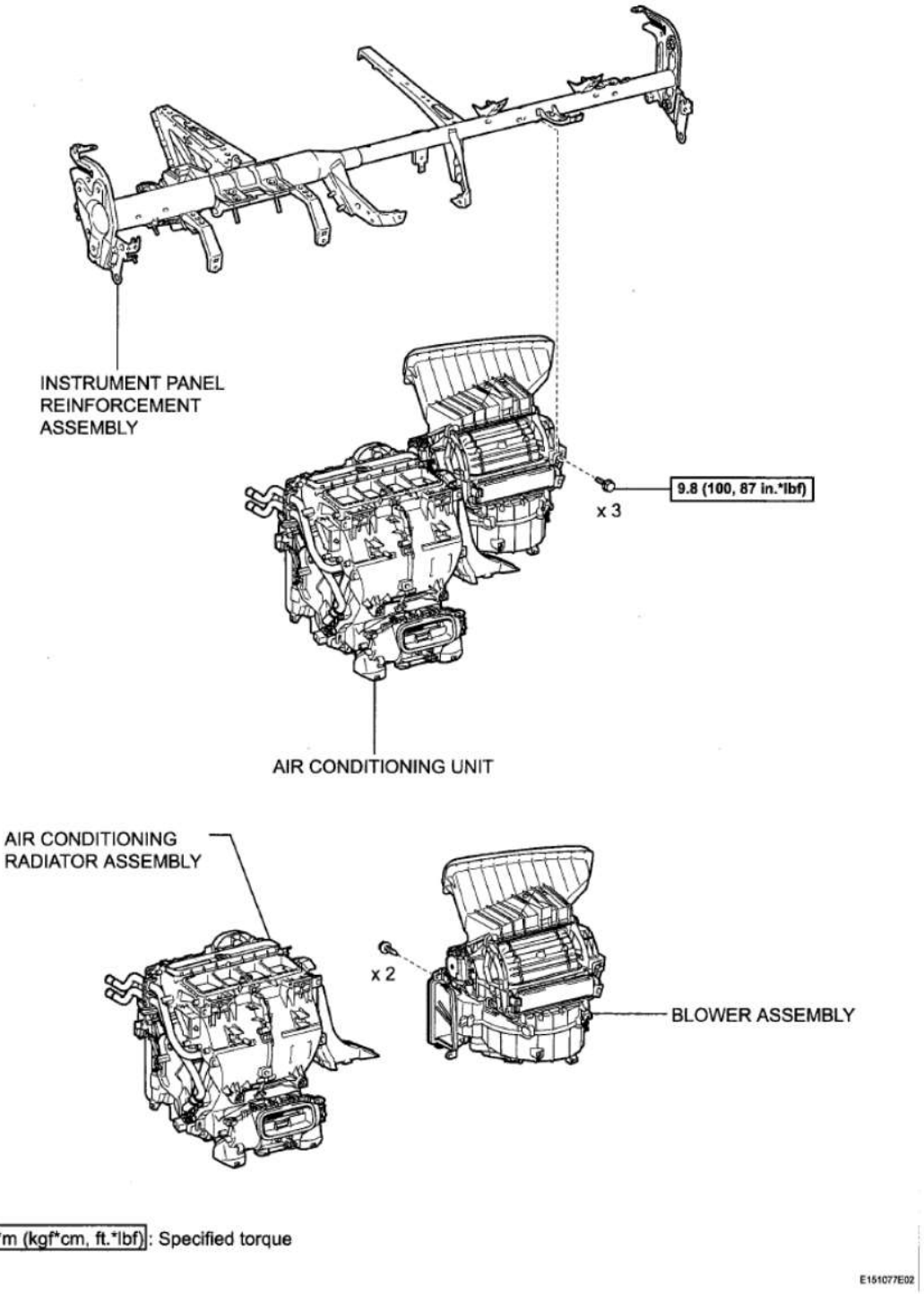


Fig. 597: Identifying Front Evaporator Temperature Sensor Components (14 Of 15)
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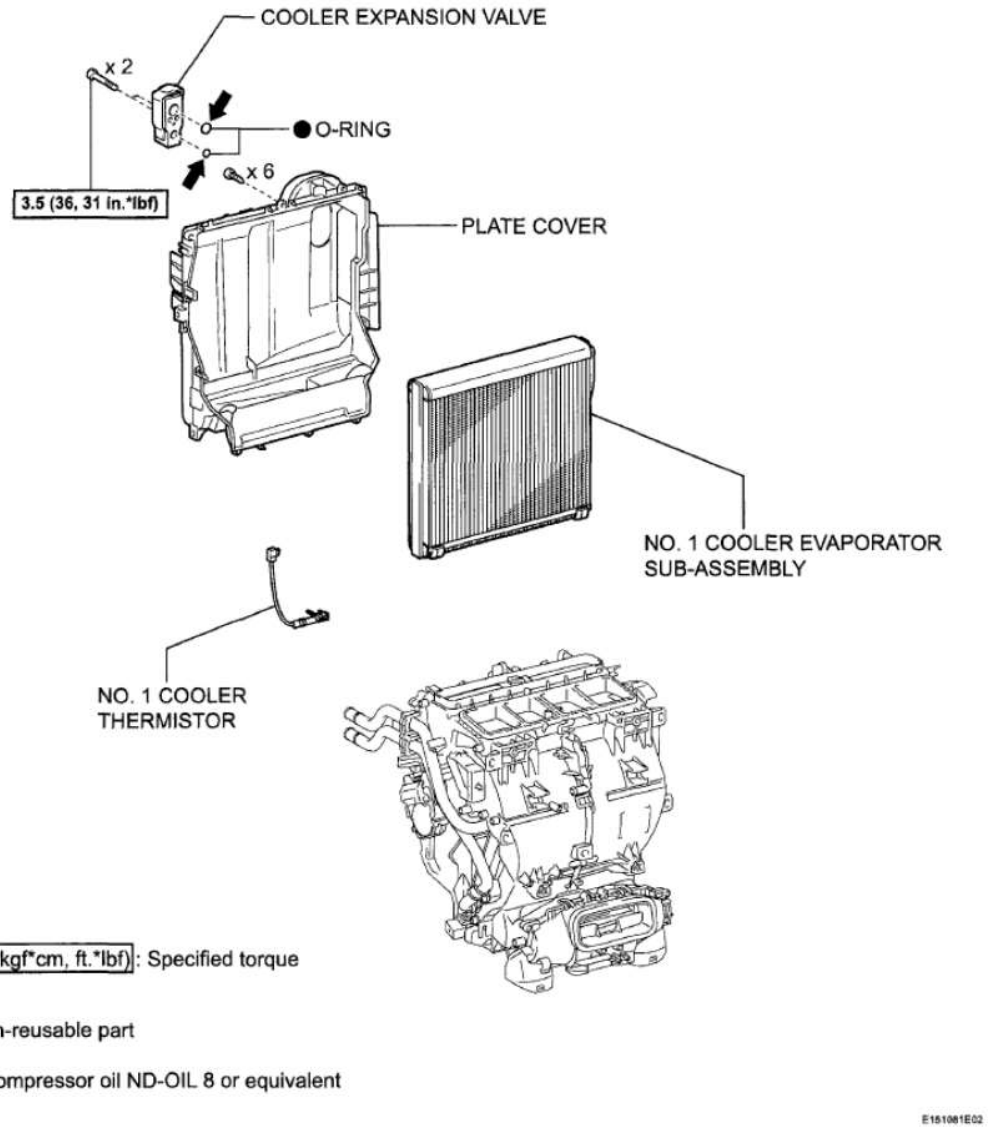


Fig. 598: Identifying Front Evaporator Temperature Sensor Components (15 Of 15)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **PRECAUTION**

   (See **INSTRUMENT PANEL SAFETY PAD**)

2. **RECOVER REFRIGERANT FROM REFRIGERATION SYSTEM** (See **REPLACEMENT**)
3. **POSITION FRONT WHEELS STRAIGHT AHEAD**
4. **REMOVE FRONT WHEEL LH**
5. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

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CAUTION: Wait for 90 seconds after disconnecting the cable to prevent the airbag from deploying (See AIRBAG SYSTEM).

NOTE: When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).

6. **REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY LH** (See **REMOVAL**)
7. **REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY RH** (See **REMOVAL**)
8. **REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY** (See **REMOVAL**)
9. **REMOVE WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY** (See **REMOVAL**)
10. **REMOVE COWL TOP OUTER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
11. **DISCONNECT HEATER WATER HOSE OUTLET** (See **REMOVAL**)
12. **DISCONNECT HEATER WATER HOSE INLET** (See **DISASSEMBLY**)
13. **DISCONNECT COOLER REFRIGERANT LIQUID PIPE A** (See **DISASSEMBLY**)
14. **DISCONNECT NO. 1 COOLER REFRIGERANT SUCTION PIPE** (See **DISASSEMBLY**)
15. **REMOVE LOWER NO. 3 STEERING WHEEL COVER** (See **REMOVAL**)
16. **REMOVE LOWER NO. 2 STEERING WHEEL COVER** (See **REMOVAL**)
17. **REMOVE STEERING PAD** (See **REMOVAL**)
18. **REMOVE STEERING WHEEL ASSEMBLY** (See **DISASSEMBLY**)
19. **REMOVE STEERING COLUMN COVER** (See **REMOVAL**)
20. **REMOVE TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **REMOVAL**)
21. **REMOVE INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REMOVAL**)
22. **REMOVE COMBINATION METER ASSEMBLY** (See **REMOVAL**)
23. **REMOVE CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **REMOVAL**)
24. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **REMOVAL**)
25. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **REMOVAL**)
26. **REMOVE HEATER CONTROL AND ACCESSORY ASSEMBLY (for Manual Air Conditioning System)** (See **AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)**)
27. **REMOVE AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
28. **REMOVE RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **REMOVAL**)
29. **REMOVE NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **REMOVAL**)
30. **REMOVE FRONT DOOR SCUFF PLATE LH** (See **REMOVAL**)
31. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH** (See **REMOVAL**)
32. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Manual Air**

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Conditioning System) (See **REMOVAL**)

33. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
34. **REMOVE FRONT DOOR SCUFF PLATE RH** (See **REMOVAL**)
35. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH** (See **REMOVAL**)
36. **REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **REMOVAL**)
37. **REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **REMOVAL**)
38. **REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **REMOVAL**)
39. **REMOVE NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **REMOVAL**)
40. **REMOVE LOWER REAR CONSOLE BOX** (See **REMOVAL**)
41. **REMOVE CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **REMOVAL**)
42. **REMOVE CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **DISASSEMBLY**)
43. **REMOVE FRONT NO. 1 CONSOLE BOX INSERT** (See **REMOVAL**)
44. **REMOVE FRONT NO. 2 CONSOLE BOX INSERT** (See **REMOVAL**)
45. **REMOVE ENGINE SWITCH (w/ Smart Key System)** (See **INSPECTION**)
46. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **REMOVAL**)
47. **REMOVE FRONT PILLAR GARNISH LH** (See **REMOVAL**)
48. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)
49. **REMOVE FRONT PILLAR GARNISH RH** (See **REMOVAL**)
50. **REMOVE NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
51. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
52. **REMOVE NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
53. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
54. **DISCONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **REMOVAL**)
55. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **REMOVAL**)
56. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **REMOVAL**)
57. **REMOVE BRAKE PEDAL RETURN SPRING** (See **REMOVAL**)
58. **REMOVE STOP LIGHT SWITCH ASSEMBLY** (See **INSPECTION**)
59. **SEPARATE BRAKE MASTER CYLINDER PUSH ROD CLEVIS** (See **REMOVAL**)
60. **REMOVE BRAKE PEDAL SUPPORT SUB-ASSEMBLY** (See **REMOVAL**)
61. **REMOVE DRIVER SIDE KNEE AIRBAG ASSEMBLY** (See **REMOVAL**)
62. **REMOVE NO. 1 AIR DUCT SUB-ASSEMBLY** (See **REMOVAL**)
63. **SEPARATE STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY** (See **REMOVAL**)
64. **REMOVE STEERING COLUMN ASSEMBLY** (See **REMOVAL**)

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65. **DISCONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY** (See **DISASSEMBLY**)
66. **REMOVE POWER STEERING ECU ASSEMBLY** (See **INSTALLATION**)
67. **REMOVE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)
68. **REMOVE AIR CONDITIONING AMPLIFIER ASSEMBLY** (See **REMOVAL**)
69. **REMOVE REAR NO. 1 AIR DUCT** (See **DISASSEMBLY**)
70. **REMOVE REAR NO. 3 AIR DUCT** (See **DISASSEMBLY**)
71. **REMOVE NO. 1 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **DISASSEMBLY**)
72. **REMOVE CENTER HEATER TO REGISTER DUCT** (See **DISASSEMBLY**)
73. **REMOVE NO. 1 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **DISASSEMBLY**)
74. **REMOVE NO. 2 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **DISASSEMBLY**)
75. **REMOVE INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/o PTC Heater)** (See **DISASSEMBLY**)
76. **REMOVE INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/ PTC Heater)** (See **DISASSEMBLY**)
77. **REMOVE AIR CONDITIONING UNIT** (See **DISASSEMBLY**)
78. **REMOVE BLOWER ASSEMBLY** (See **DISASSEMBLY**)
79. **REMOVE COOLER EXPANSION VALVE** (See **REASSEMBLY**)
80. **REMOVE NO. 1 COOLER EVAPORATOR SUB-ASSEMBLY** (See **REASSEMBLY**)
81. **REMOVE NO. 1 COOLER THERMISTOR**
    a. Remove the No. 1 cooler thermistor.

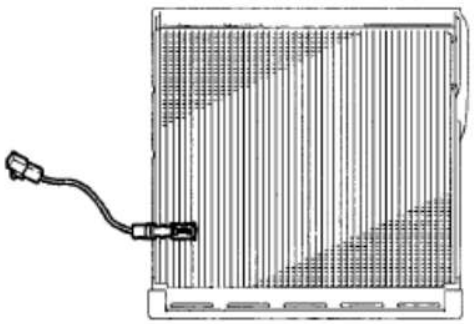


Fig. 599: Identifying No. 1 Cooler Thermistor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION

1. **INSPECT EVAPORATOR TEMPERATURE SENSOR**
    a. Measure the resistance according to the value(s) in the table below.

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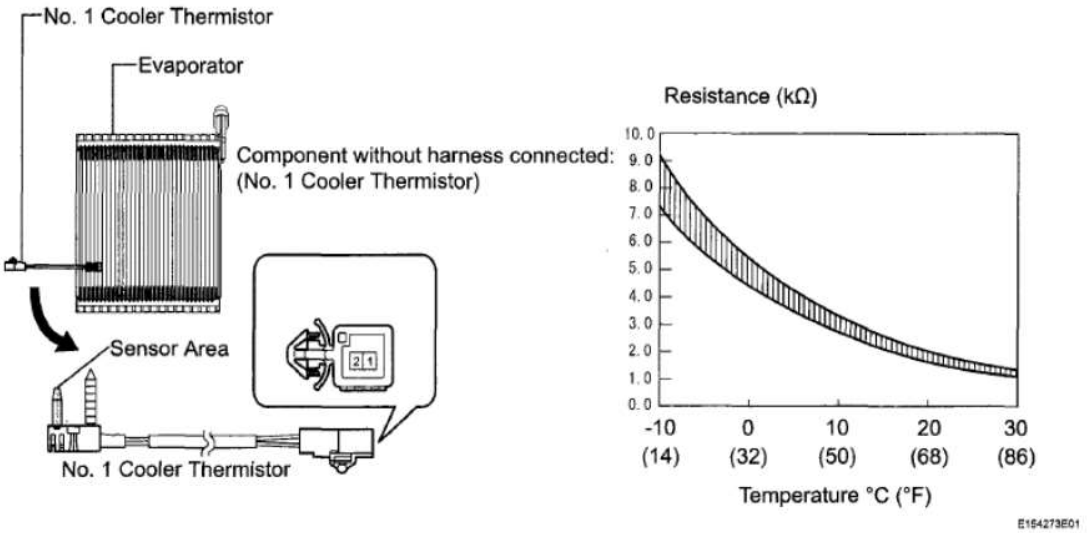


Fig. 600: Identifying Evaporator Temperature Sensor And Temperature/Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
1 - 2	-10°C (14°F)	7.30 to 9.10 kohms
1 - 2	-5°C (23°F)	5.65 to 6.95 kohms
1 - 2	0°C (32°F)	4.40 to 5.35 kohms
1 - 2	5°C(41°F)	3.40 to 4.15 kohms
1 - 2	10°C (50°F)	2.70 to 3.25 kohms
1 - 2	15°C (59°F)	2.14 to 2.58 kohms
1 - 2	20°C (68°F)	1.71 to 2.05 kohms
1 - 2	25°C (77°F)	1.38 to 1.64 kohms
1 - 2	30°C (86°F)	1.11 to 1.32 kohms

If the resistance is not as specified, replace the evaporator temperature sensor.

NOTE:

- **Even slightly touching the sensor may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring, the sensor temperature must be the same as the ambient temperature.**

HINT:

As the temperature increases, the resistance decreases (see the graph).

INSTALLATION

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1. **INSTALL NO. 1 COOLER THERMISTOR**
   a. Install No. 1 cooler thermistor as shown in the illustration.

NO. 1 COOLER THERMISTOR REFERENCE CHART

Part	Length	
A	34.3 mm	1.35 in.
B	20.9 mm	0.82 in.
C	50 mm	1.96 in.

NOTE:

- **Be sure to insert the thermistor only once because reinserting it into the same position will not allow it to be firmly secured.**
- **When reusing the evaporator, insert the thermistor one row next to the one that has been used previously (X in the illustration).**
- **After inserting the thermistor, do not apply excessive force to the wire.**
- **Directly insert the thermistor until the edge of plastic case "a" comes into contact with evaporator "b".**

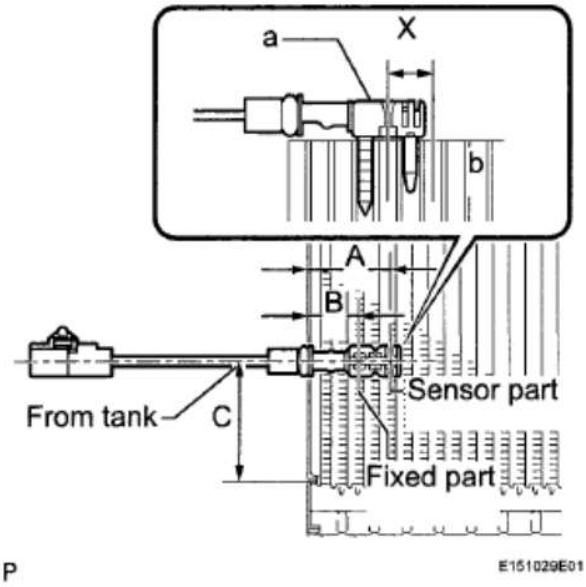


Fig. 601: Identifying No. 1 Cooler Thermistor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **INSTALL NO. 1 COOLER EVAPORATOR SUB-ASSEMBLY** (See **REASSEMBLY**)
3. **INSTALL COOLER EXPANSION VALVE** (See **INSTALLATION**)
4. **INSTALL BLOWER ASSEMBLY** (See **INSTALLATION**)
5. **INSTALL AIR CONDITIONING UNIT** (See **INSTALLATION**)
6. **INSTALL INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR**

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CONDITIONING UNIT (w/o PTC Heater) (See **REAR COOLING UNIT**)

7. **INSTALL INSTRUMENT PANEL REINFORCEMENT ASSEMBLY WITH AIR CONDITIONING UNIT (w/ PTC Heater)** (See **REAR COOLING UNIT**)
8. **INSTALL NO. 1 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **REAR COOLING UNIT**)
9. **INSTALL NO. 2 INSTRUMENT PANEL BRACE SUB-ASSEMBLY** (See **REAR COOLING UNIT**)
10. **INSTALL CENTER HEATER TO REGISTER DUCT** (See **REAR COOLING UNIT**)
11. **INSTALL NO. 1 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **REAR COOLING UNIT**)
12. **INSTALL REAR NO. 3 AIR DUCT** (See **REAR COOLING UNIT**)
13. **INSTALL REAR NO. 1 AIR DUCT** (See **REAR COOLING UNIT**)
14. **INSTALL AIR CONDITIONING AMPLIFIER ASSEMBLY** (See **REMOVAL**)
15. **INSTALL CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)
16. **INSTALL POWER STEERING ECU ASSEMBLY** (See **INSTALLATION**)
17. **CONNECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY** (See **REAR COOLING UNIT**)
18. **INSTALL STEERING COLUMN ASSEMBLY** (See **INSTALLATION**)
19. **CONNECT STEERING INTERMEDIATE SHAFT SUB-ASSEMBLY** (See **INSTALLATION**)
20. **INSTALL NO. 1 AIR DUCT SUB-ASSEMBLY** (See **INSTALLATION**)
21. **INSTALL DRIVER SIDE KNEE AIRBAG ASSEMBLY** (See **INSTALLATION**)
22. **INSTALL BRAKE PEDAL SUPPORT SUB-ASSEMBLY** (See **INSTALLATION**)
23. **CONNECT BRAKE MASTER CYLINDER PUSH ROD CLEVIS** (See **INSTALLATION**)
24. **INSTALL BRAKE PEDAL RETURN SPRING** (See **INSTALLATION**)
25. **INSTALL STOP LIGHT SWITCH ASSEMBLY** (See **INSTALLATION**)
26. **INSPECT AND ADJUST BRAKE PEDAL HEIGHT** (See **ADJUSTMENT**)
27. **INSPECT BRAKE PEDAL FREE PLAY** (See **ADJUSTMENT**)
28. **INSPECT BRAKE PEDAL RESERVE DISTANCE** (See **ADJUSTMENT**)
29. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **INSTALLATION**)
30. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **INSTALLATION**)
31. **CONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **INSTALLATION**)
32. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
33. **INSTALL NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
34. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
35. **INSTALL NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)

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36. **INSTALL FRONT PILLAR GARNISH RH** (See **INSTALLATION**)
37. **CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
38. **INSTALL FRONT PILLAR GARNISH LH** (See **INSTALLATION**)
39. **CONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **INSTALLATION**)
40. **INSTALL ENGINE SWITCH (w/ Smart Key System)** (See **INSTALLATION**)
41. **INSTALL FRONT NO. 2 CONSOLE BOX INSERT** (See **INSTALLATION**)
42. **INSTALL FRONT NO. 1 CONSOLE BOX INSERT** (See **INSTALLATION**)
43. **INSTALL CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
44. **INSTALL CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **INSTALLATION**)
45. **INSTALL LOWER REAR CONSOLE BOX** (See **INSTALLATION**)
46. **INSTALL NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
47. **INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
48. **INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
49. **INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **INSTALLATION**)
50. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH** (See **INSTALLATION**)
51. **INSTALL FRONT DOOR SCUFF PLATE RH** (See **INSTALLATION**)
52. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Manual Air Conditioning System)** (See **INSTALLATION**)
53. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY (for Automatic Air Conditioning System)** (See **INSTALLATION**)
54. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH** (See **INSTALLATION**)
55. **INSTALL FRONT DOOR SCUFF PLATE LH** (See **INSTALLATION**)
56. **INSTALL RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **INSTALLATION**)
57. **INSTALL NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **INSTALLATION**)
58. **INSTALL HEATER CONTROL AND ACCESSORY ASSEMBLY (for Manual Air Conditioning System)** (See **AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)**)
59. **INSTALL AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** (See **REMOVAL**)
60. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **INSTALLATION**)
61. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **INSTALLATION**)
62. **INSTALL CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **INSTALLATION**)
63. **INSTALL COMBINATION METER ASSEMBLY** (See **REASSEMBLY**)

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64. **INSTALL INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REASSEMBLY**)
65. **POSITION FRONT WHEELS STRAIGHT AHEAD**
66. **INSTALL TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
67. **INSTALL STEERING COLUMN COVER** (See **INSTALLATION**)
68. **ADJUST SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
69. **INSTALL STEERING WHEEL ASSEMBLY** (See **INSTALLATION**)
70. **INSPECT STEERING WHEEL CENTER POINT**
71. **INSTALL STEERING PAD** (See **INSTALLATION**)
72. **INSTALL LOWER NO. 2 STEERING WHEEL COVER** (See **INSTALLATION**)
73. **INSTALL LOWER NO. 3 STEERING WHEEL COVER** (See **INSTALLATION**)
74. **INSTALL FRONT WHEEL LH** (See **INSTALLATION**)
75. **CONNECT COOLER REFRIGERANT LIQUID PIPE A** (See **REAR COOLING UNIT**)
76. **CONNECT NO. 1 COOLER REFRIGERANT SUCTION PIPE** (See **REAR COOLING UNIT**)
77. **CONNECT HEATER WATER HOSE INLET** (See **REAR COOLING UNIT**)
78. **CONNECT HEATER WATER HOSE OUTLET** (See **REAR COOLING UNIT**)
79. **INSTALL COWL TOP OUTER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
80. **INSTALL WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY** (See **INSTALLATION**)
81. **INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY** (See **INSTALLATION**)
82. **INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY RH** (See **INSTALLATION**)
83. **INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY LH** (See **INSTALLATION**)
84. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**

NOTE: **When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).**

85. **INSPECT STEERING PAD** (See **INSTALLATION**)
86. **INSPECT SRS WARNING LIGHT**
    a. Inspect the SRS warning light (See **DIAGNOSIS SYSTEM**).
87. **ADD ENGINE COOLANT (for 1AR-FE)** (See **COOLANT**)
88. **ADD ENGINE COOLANT (for 2GR-FE)** (See **REPLACEMENT**)
89. **INSPECT FOR COOLANT LEAK (for 1AR-FE)** (See **COOLING SYSTEM**)
90. **INSPECT FOR COOLANT LEAK (for 2GR-FE)** (See **COOLING SYSTEM**)
91. **CHARGE WITH REFRIGERANT** (See **REFRIGERANT LINE**)
92. **WARM UP ENGINE** (See **REFRIGERANT LINE**)
93. **INSPECT FOR REFRIGERANT LEAK** (See **REFRIGERANT LINE**)

REAR EVAPORATOR TEMPERATURE SENSOR

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COMPONENTS

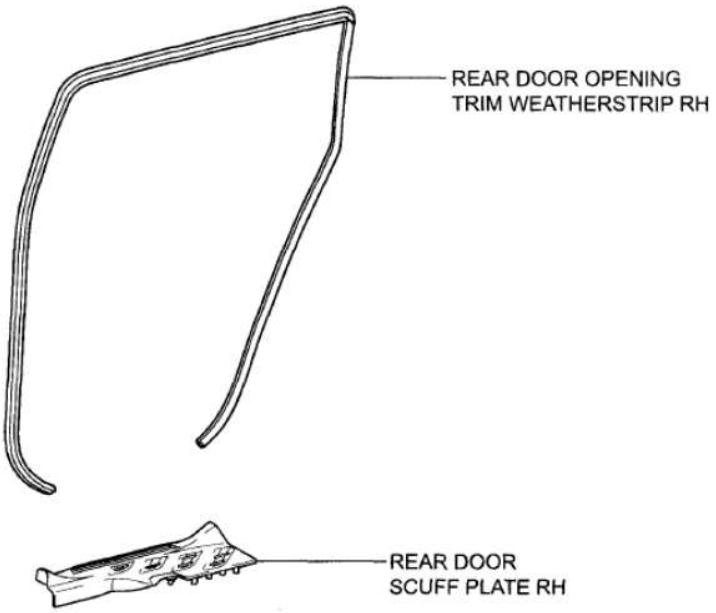


Fig. 602: Identifying Rear Evaporator Temperature Sensor Components (1 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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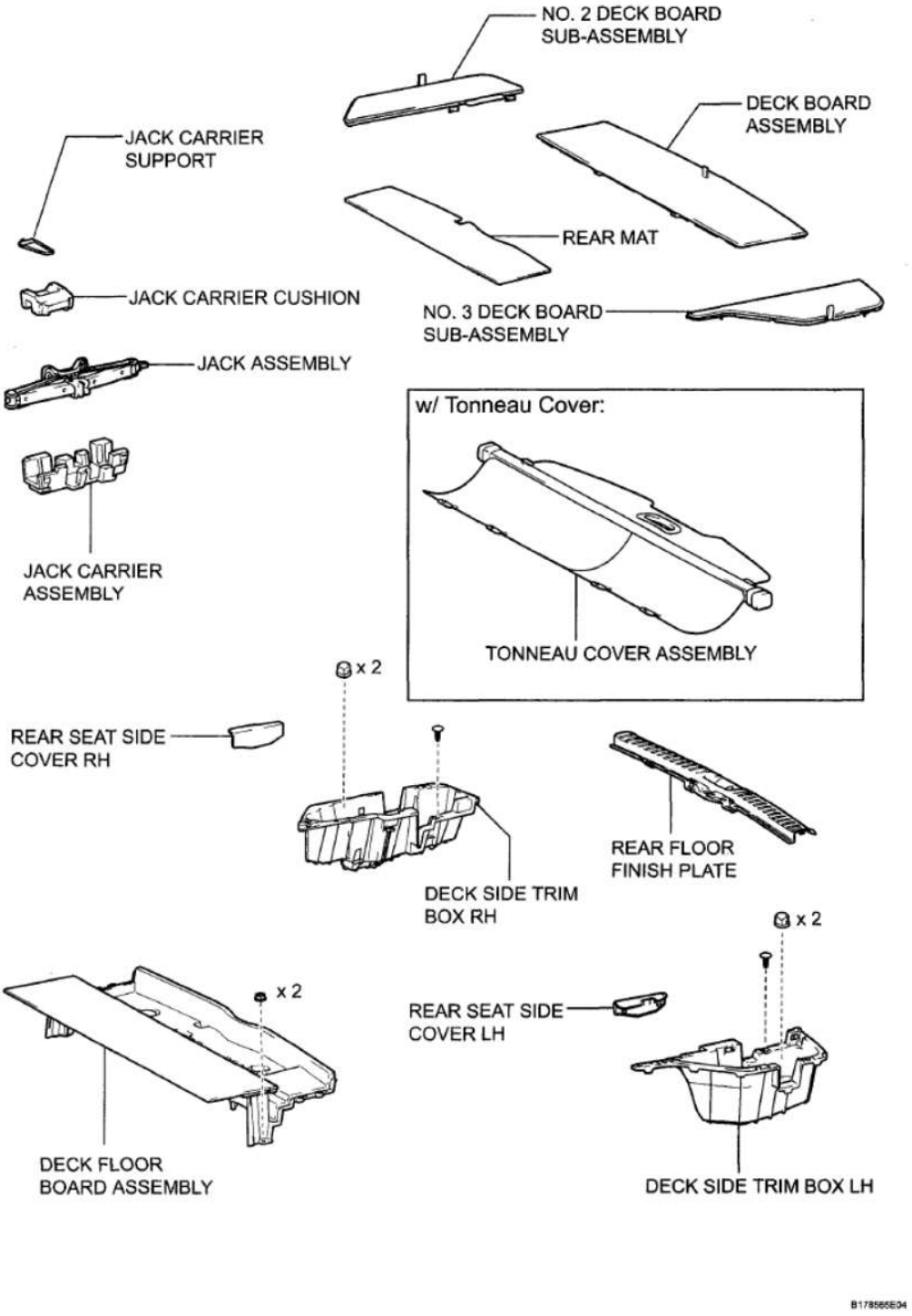


Fig. 603: Identifying Rear Evaporator Temperature Sensor Components (2 Of 5)
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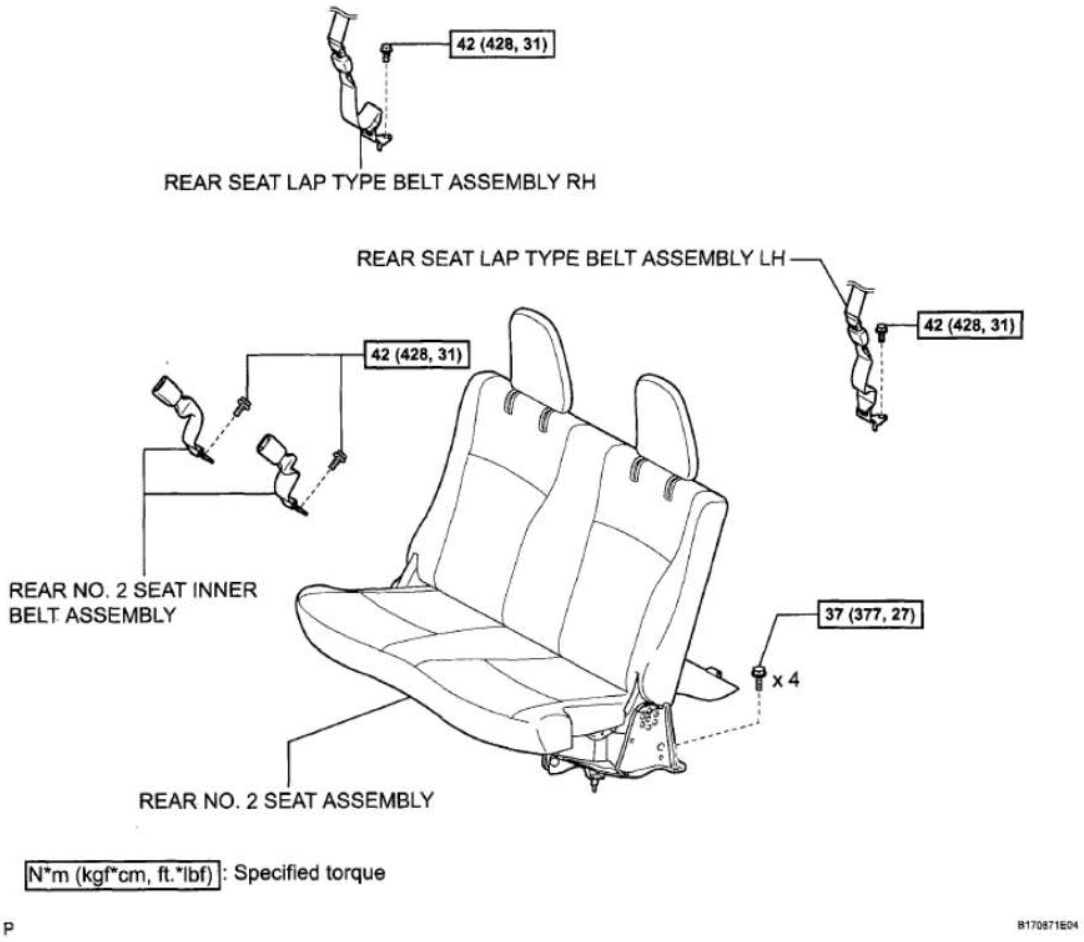


Fig. 604: Identifying Rear Evaporator Temperature Sensor Components (3 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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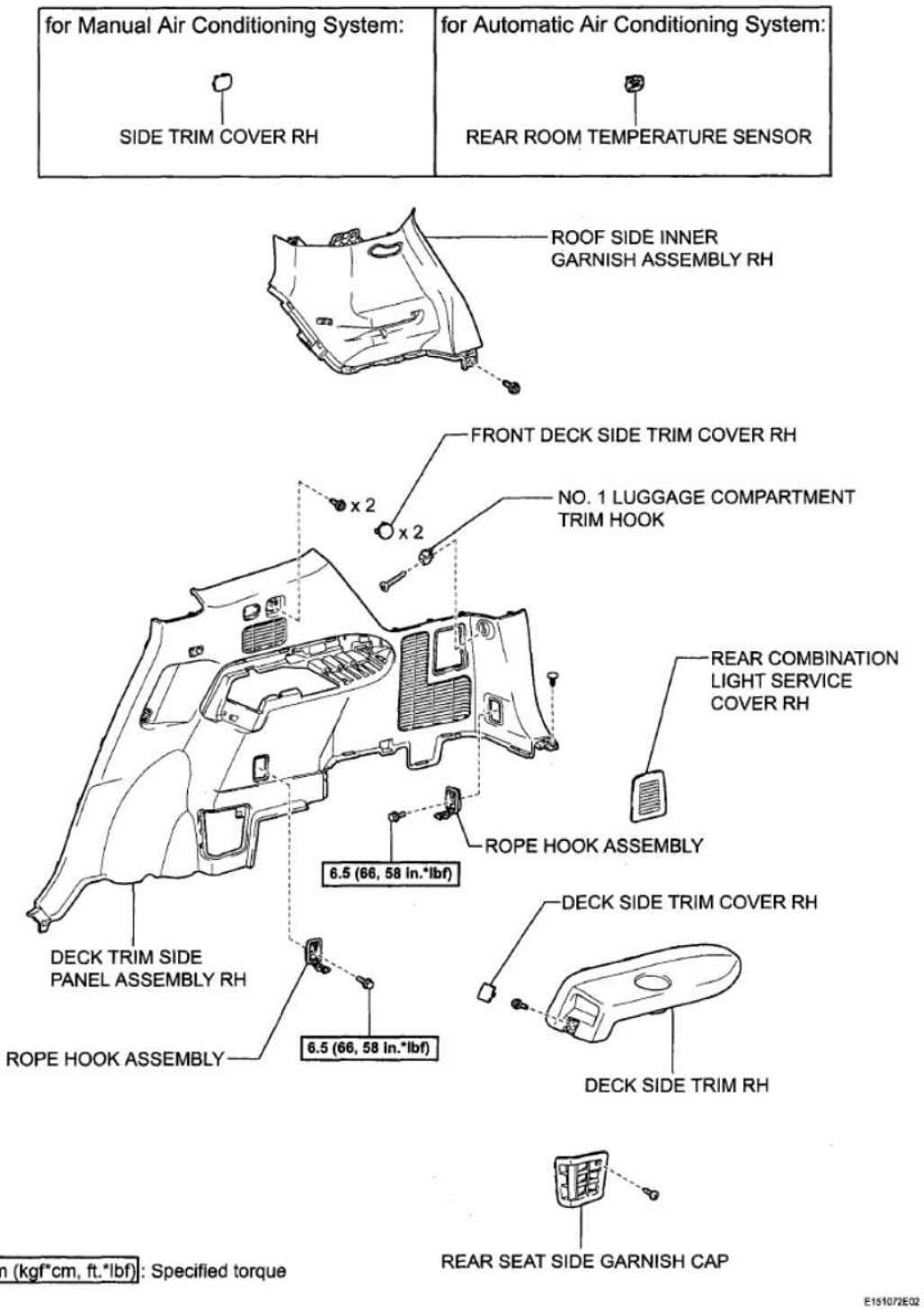
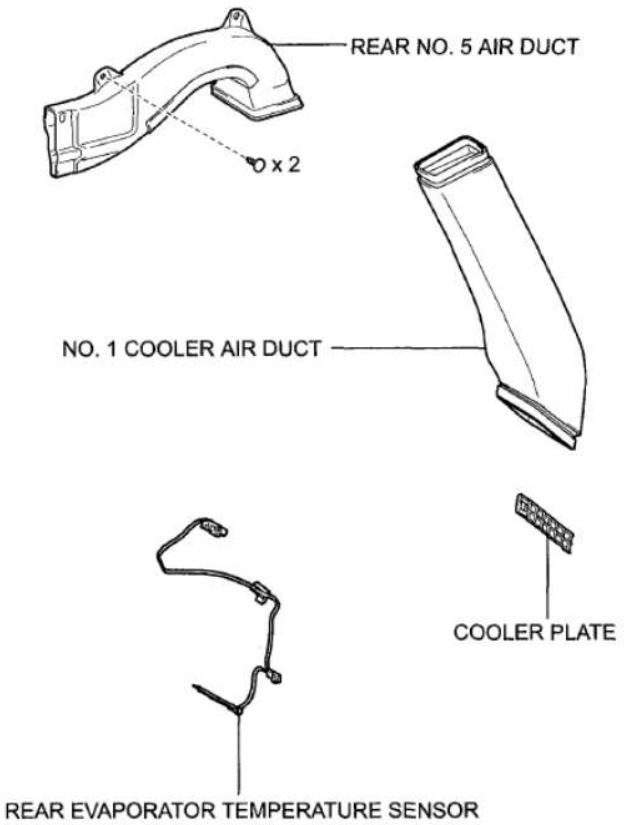


Fig. 605: Identifying Rear Evaporator Temperature Sensor Components (4 Of 5)
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Fig. 606: Identifying Rear Evaporator Temperature Sensor Components (5 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE REAR DOOR SCUFF PLATE RH** (See **REMOVAL**)
2. **REMOVE REAR DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)
3. **REMOVE DECK BOARD ASSEMBLY** (See **REMOVAL**)
4. **REMOVE NO. 3 DECK BOARD SUB-ASSEMBLY** (See **REMOVAL**)
5. **REMOVE NO. 2 DECK BOARD SUB-ASSEMBLY** (See **REMOVAL**)
6. **REMOVE TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)** (See **REMOVAL**)
7. **REMOVE REAR SEAT SIDE COVER LH** (See **REMOVAL**)
8. **REMOVE DECK SIDE TRIM BOX LH** (See **REMOVAL**)
9. **REMOVE REAR SEAT SIDE COVER RH** (See **REMOVAL**)
10. **REMOVE JACK CARRIER SUPPORT**
11. **REMOVE JACK CARRIER CUSHION** (See **REMOVAL**)
12. **REMOVE JACK ASSEMBLY** (See **REMOVAL**)

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13. **REMOVE JACK CARRIER ASSEMBLY** (See **REMOVAL**)
14. **REMOVE DECK SIDE TRIM BOX RH** (See **REMOVAL**)
15. **REMOVE REAR MAT** (See **REMOVAL**)
16. **REMOVE DECK FLOOR BOARD ASSEMBLY** (See **REMOVAL**)
17. **REMOVE REAR NO. 2 SEAT INNER BELT ASSEMBLY** (See **INSTALLATION**)
18. **DISCONNECT REAR SEAT LAP TYPE BELT ASSEMBLY LH** (See **REMOVAL**)
19. **DISCONNECT REAR SEAT LAP TYPE BELT ASSEMBLY RH** (See **REMOVAL**)
20. **REMOVE REAR NO. 2 SEAT ASSEMBLY** (See **DISASSEMBLY**)
21. **REMOVE REAR FLOOR FINISH PLATE** (See **REMOVAL**)
22. **REMOVE REAR SEAT SIDE GARNISH CAP** (See **REMOVAL**)
23. **REMOVE DECK SIDE TRIM COVER RH** (See **REMOVAL**)
24. **REMOVE DECK SIDE TRIM RH** (See **REMOVAL**)
25. **REMOVE SIDE TRIM COVER RH (for Manual Air Conditioning System)** (See **REMOVAL**)
26. **REMOVE REAR ROOM TEMPERATURE SENSOR (for Automatic Air Conditioning System)** (See **ROOM TEMPERATURE SENSOR (FOR REAR)**)
27. **REMOVE REAR COMBINATION LIGHT SERVICE COVER RH** (See **REMOVAL**)
28. **REMOVE ROPE HOOK ASSEMBLY (for RH Side)** (See **REMOVAL**)
29. **REMOVE NO. 1 LUGGAGE COMPARTMENT TRIM HOOK** (See **REMOVAL**)
30. **REMOVE FRONT DECK SIDE TRIM COVER RH** (See **REMOVAL**)
31. **REMOVE DECK TRIM SIDE PANEL ASSEMBLY RH** (See **REMOVAL**)
32. **REMOVE ROOF SIDE INNER GARNISH ASSEMBLY RH** (See **REMOVAL**)
33. **REMOVE COOLER PLATE** (See **DISASSEMBLY**)
34. **REMOVE NO. 1 COOLER AIR DUCT** (See **DISASSEMBLY**)
35. **REMOVE REAR NO. 5 AIR DUCT** (See **DISASSEMBLY**)
36. **REMOVE REAR EVAPORATOR TEMPERATURE SENSOR**
    a. Disconnect the 3 connectors.
    b. Disengage the clamp.
    c. Disengage the claw and remove the rear evaporator temperature sensor.

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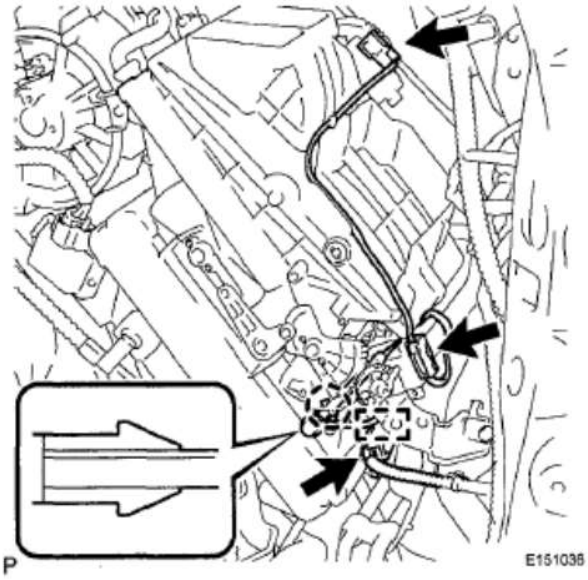


Fig. 607: Locating Rear Evaporator Temperature Sensor Connectors
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION

1. **INSPECT EVAPORATOR TEMPERATURE SENSOR**
   a. Measure the resistance of the sensor.

Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Condition	Specified Condition
N12-7 (-) - N12-8 (+)	-10°C (14°F)	7.30 to 9.10 kohms
N12-7 (-) - N12-8 (+)	-5°C (23°F)	5.65 to 6.95 kohms
N12-7 (-) - N12-8 (+)	0°C (32°F)	4.40 to 5.35 kohms
N12-7 (-) - N12-8 (+)	5°C (41°F)	3.40 to 4.15 kohms
N12-7 (-) - N12-8 (+)	10°C (50°F)	2.70 to 3.25 kohms
N12-7 (-) - N12-8 (+)	15°C (59°F)	2.14 to 2.58 kohms
N12-7 (-) - N12-8 (+)	20°C (68°F)	1.71 to 2.05 kohms
N12-7 (-) - N12-8 (+)	25°C (77°F)	1.38 to 1.64 kohms
N12-7 (-) - N12-8 (+)	30°C (86°F)	1.11 to 1.32 kohms

NOTE:

- **Even slightly touching the sensor may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring the sensor temperature must be the same as the ambient temperature.**

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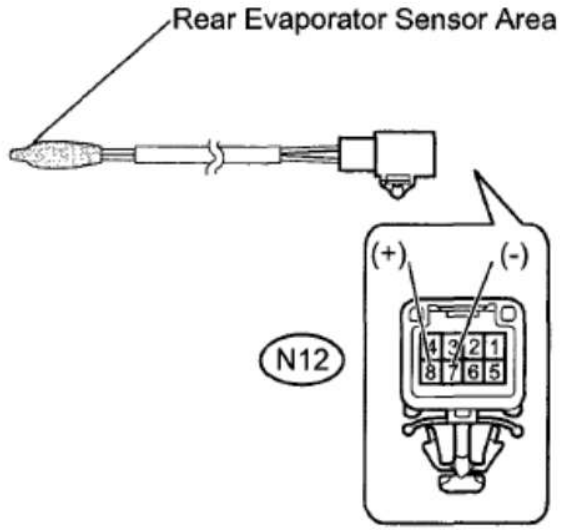
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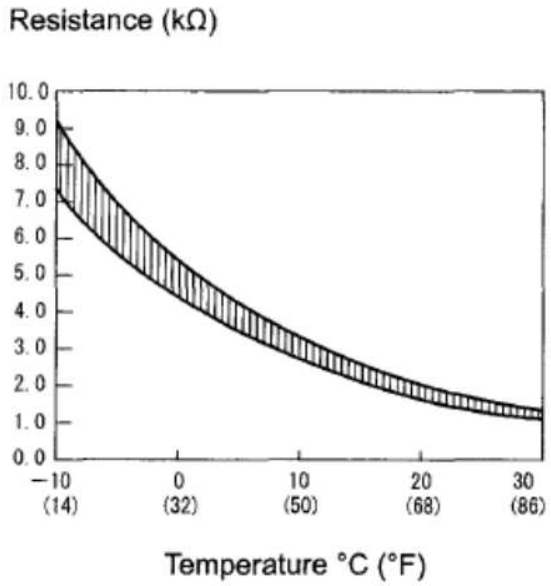
HINT:

As the temperature increases, the resistance decreases (see the graph).

If the resistance value is not as specified, replace the sensor.

Component without harness connected:
(Rear Air Conditioning Harness(Rear Evaporator Temperature Sensor))





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Fig. 608: Identifying Evaporator Temperature Sensor Connector Terminals And Temperature/Resistance Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL REAR EVAPORATOR TEMPERATURE SENSOR**
   a. Engage the claw and clamp.
   b. Connect the 3 connectors and install the rear evaporator temperature sensor.
2. **INSTALL REAR NO. 5 AIR DUCT** (See **BLOWER UNIT**)
3. **INSTALL NO. 1 COOLER AIR DUCT** (See **BLOWER UNIT**)
4. **INSTALL COOLER PLATE** (See **BLOWER UNIT**)
5. **INSTALL ROOF SIDE INNER GARNISH ASSEMBLY RH** (See **INSTALLATION**)

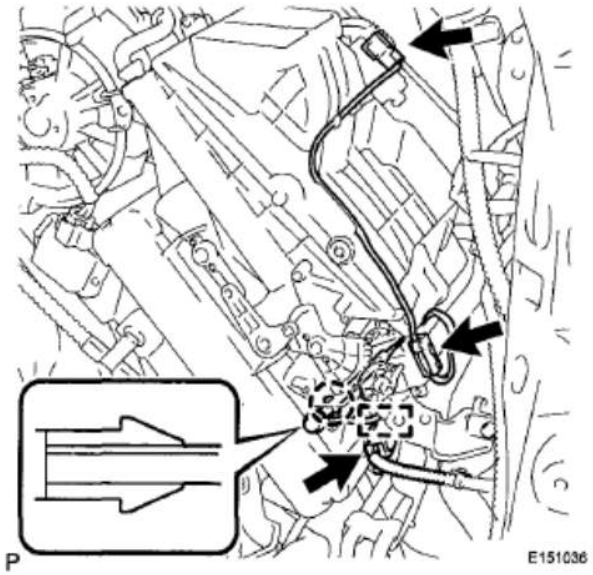


Fig. 609: Locating Rear Evaporator Temperature Sensor Connectors
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. **INSTALL DECK TRIM SIDE PANEL ASSEMBLY RH** (See **INSTALLATION**)
7. **INSTALL FRONT DECK SIDE TRIM COVER RH** (See **INSTALLATION**)
8. **INSTALL NO. 1 LUGGAGE COMPARTMENT TRIM HOOK** (See **INSTALLATION**)
9. **INSTALL ROPE HOOK ASSEMBLY (for RH Side)** (See **INSTALLATION**)
10. **INSTALL REAR COMBINATION LIGHT SERVICE COVER RH** (See **INSTALLATION**)
11. **INSTALL SIDE TRIM COVER RH (for Manual Air Conditioning System)** (See **INSTALLATION**)
12. **INSTALL REAR ROOM TEMPERATURE SENSOR (for Automatic Air Conditioning System)** (See **INSPECTION**)
13. **INSTALL DECK SIDE TRIM RH** (See **INSTALLATION**)

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14. **INSTALL DECK SIDE TRIM COVER RH** (See **INSTALLATION**)
15. **INSTALL REAR SEAT SIDE GARNISH CAP** (See **INSTALLATION**)
16. **INSTALL REAR FLOOR FINISH PLATE** (See **INSTALLATION**)
17. **INSTALL REAR NO. 2 SEAT ASSEMBLY** (See **INSTALLATION**)
18. **CONNECT REAR SEAT LAP TYPE BELT ASSEMBLY LH** (See **INSTALLATION**)
19. **CONNECT REAR SEAT LAP TYPE BELT ASSEMBLY RH** (See **INSTALLATION**)
20. **INSTALL REAR NO. 2 SEAT INNER BELT ASSEMBLY** (See **INSTALLATION**)
21. **INSTALL REAR MAT** (See **INSTALLATION**)
22. **INSTALL DECK FLOOR BOARD ASSEMBLY** (See **INSTALLATION**)
23. **INSTALL DECK SIDE TRIM BOX LH** (See **INSTALLATION**)
24. **INSTALL REAR SEAT SIDE COVER LH** (See **INSTALLATION**)
25. **INSTALL DECK SIDE TRIM BOX RH** (See **INSTALLATION**)
26. **INSTALL JACK CARRIER ASSEMBLY** (See **INSTALLATION**)
27. **INSTALL JACK ASSEMBLY** (See **INSTALLATION**)
28. **INSTALL JACK CARRIER CUSHION** (See **INSTALLATION**)
29. **INSTALL JACK CARRIER SUPPORT**
30. **INSTALL REAR SEAT SIDE COVER RH** (See **INSTALLATION**)
31. **INSTALL TONNEAU COVER ASSEMBLY (w/ Tonneau Cover)** (See **INSTALLATION**)
32. **INSTALL NO. 2 DECK BOARD SUB-ASSEMBLY** (See **INSTALLATION**)
33. **INSTALL NO. 3 DECK BOARD SUB-ASSEMBLY** (See **INSTALLATION**)
34. **INSTALL DECK BOARD ASSEMBLY** (See **INSTALLATION**)
35. **INSTALL REAR DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
36. **INSTALL REAR DOOR SCUFF PLATE RH** (See **INSTALLATION**)

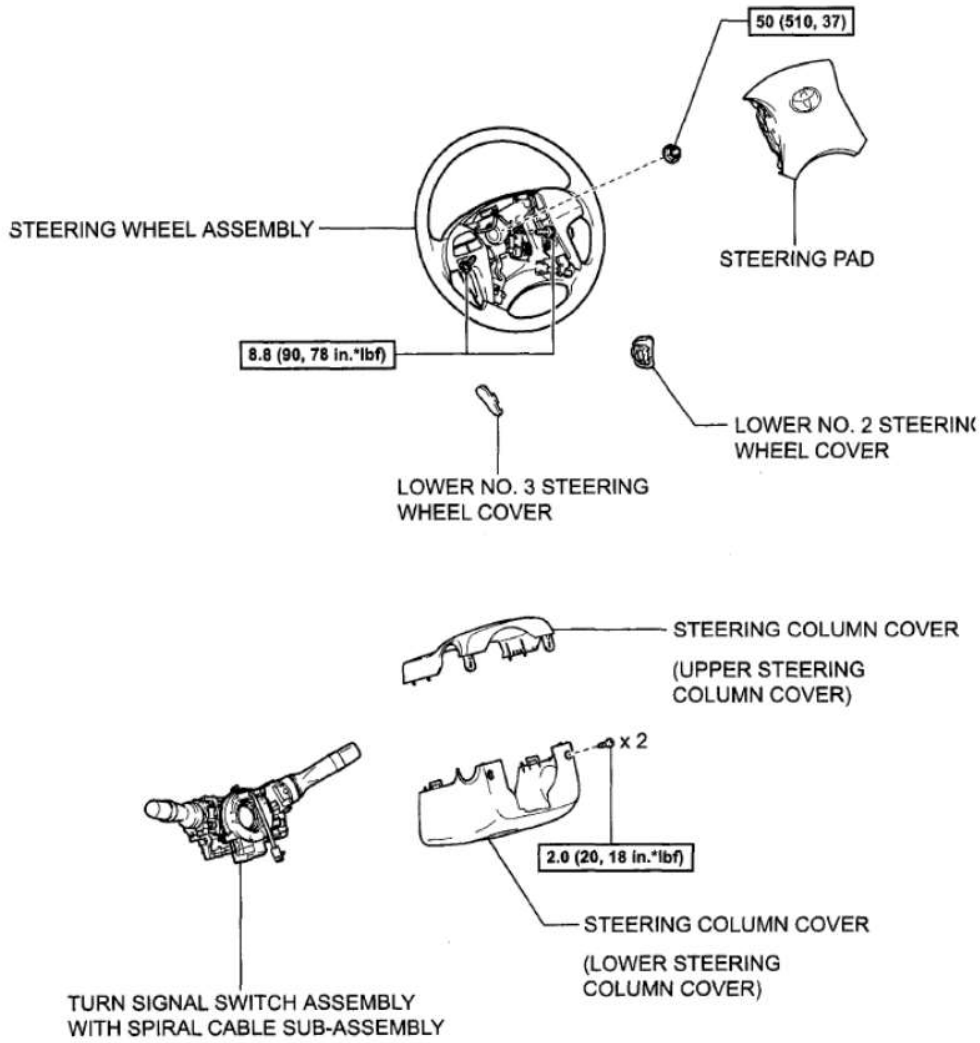
SOLAR SENSOR

COMPONENTS

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

P

B173043E01

Fig. 610: Identifying Solar Sensor Components (1 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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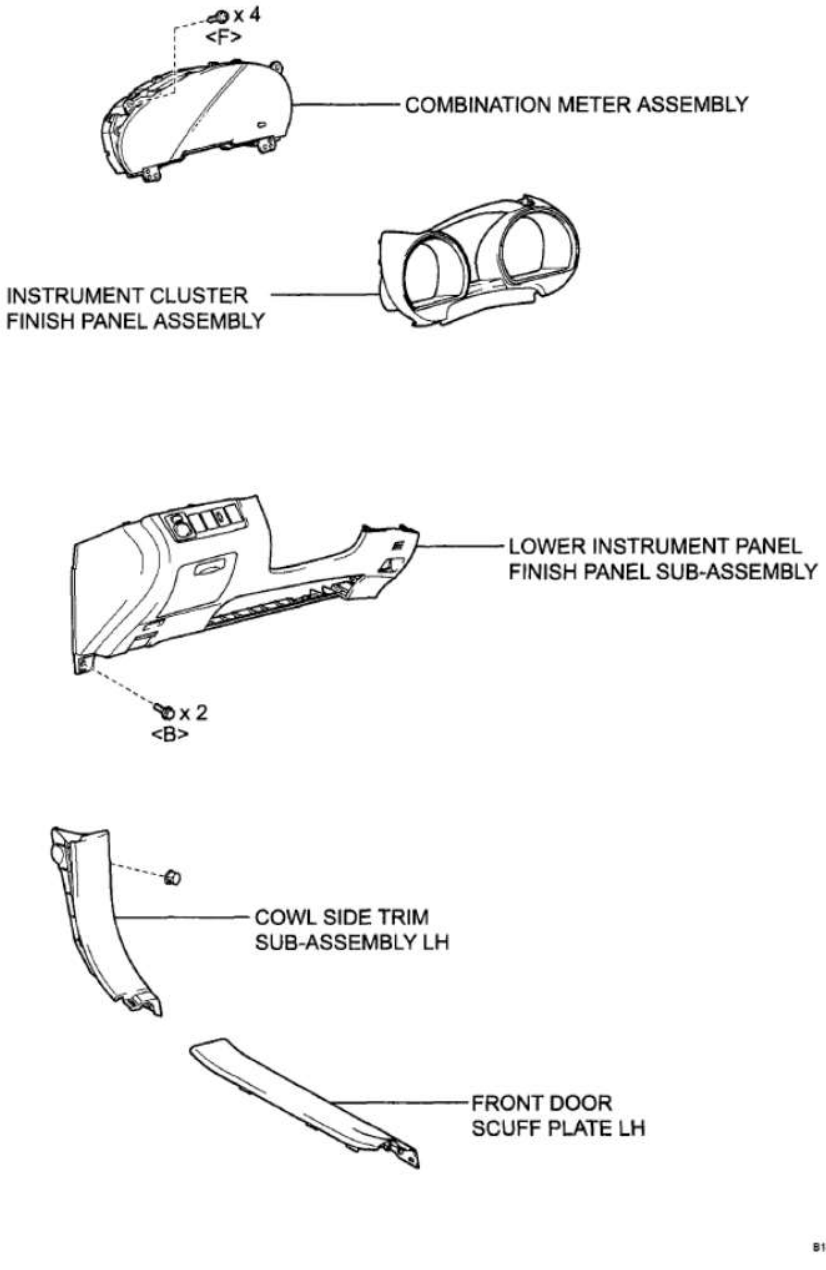


Fig. 611: Identifying Solar Sensor Components (2 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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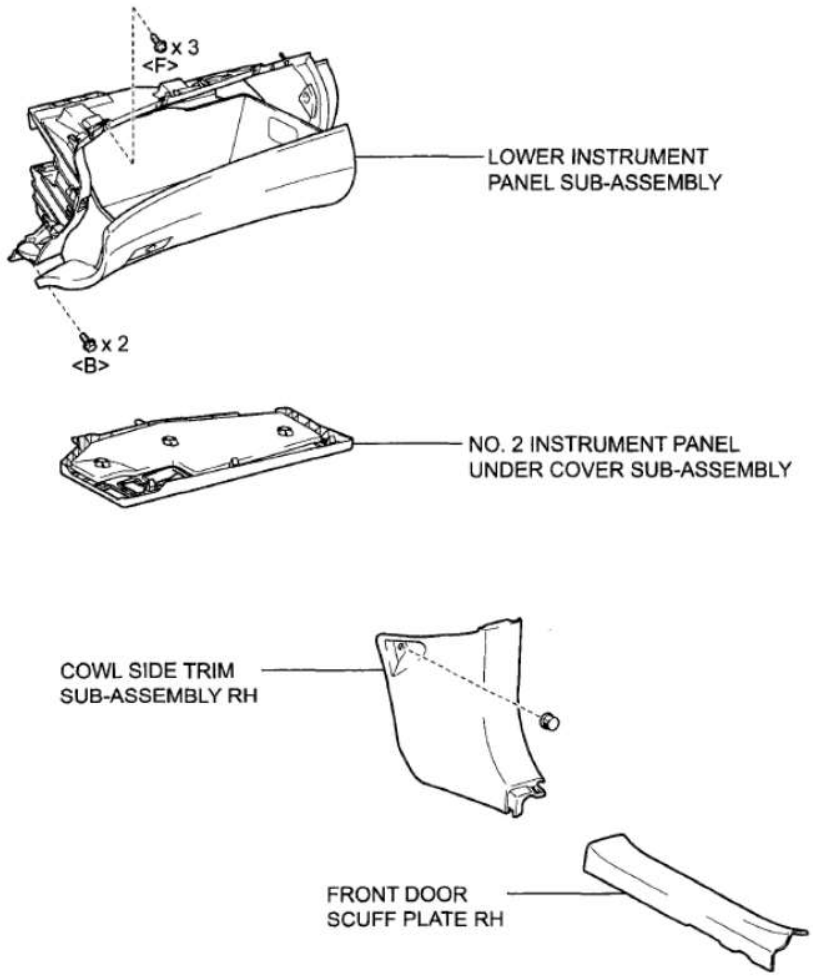


Fig. 612: Identifying Solar Sensor Components (3 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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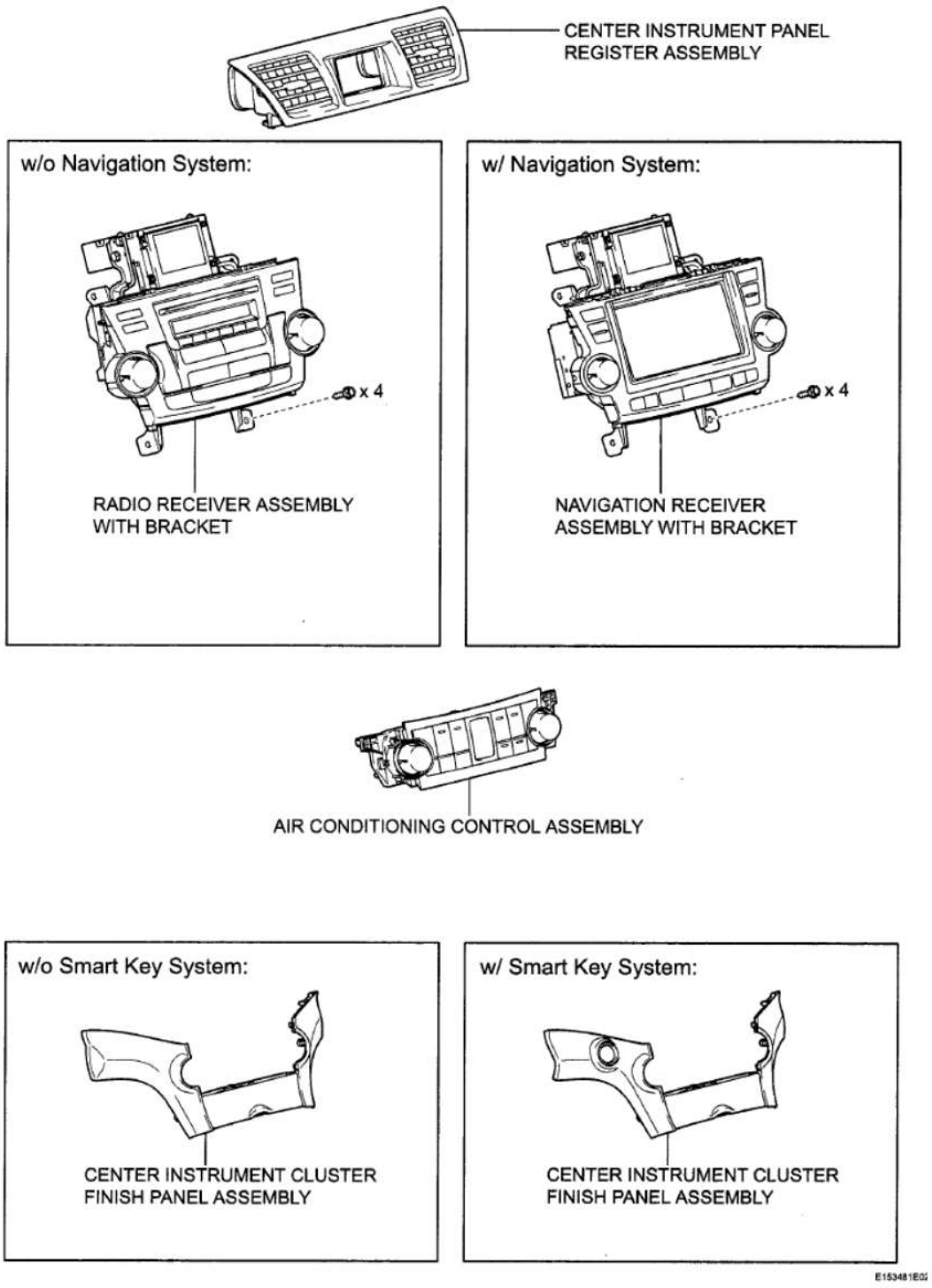


Fig. 613: Identifying Solar Sensor Components (4 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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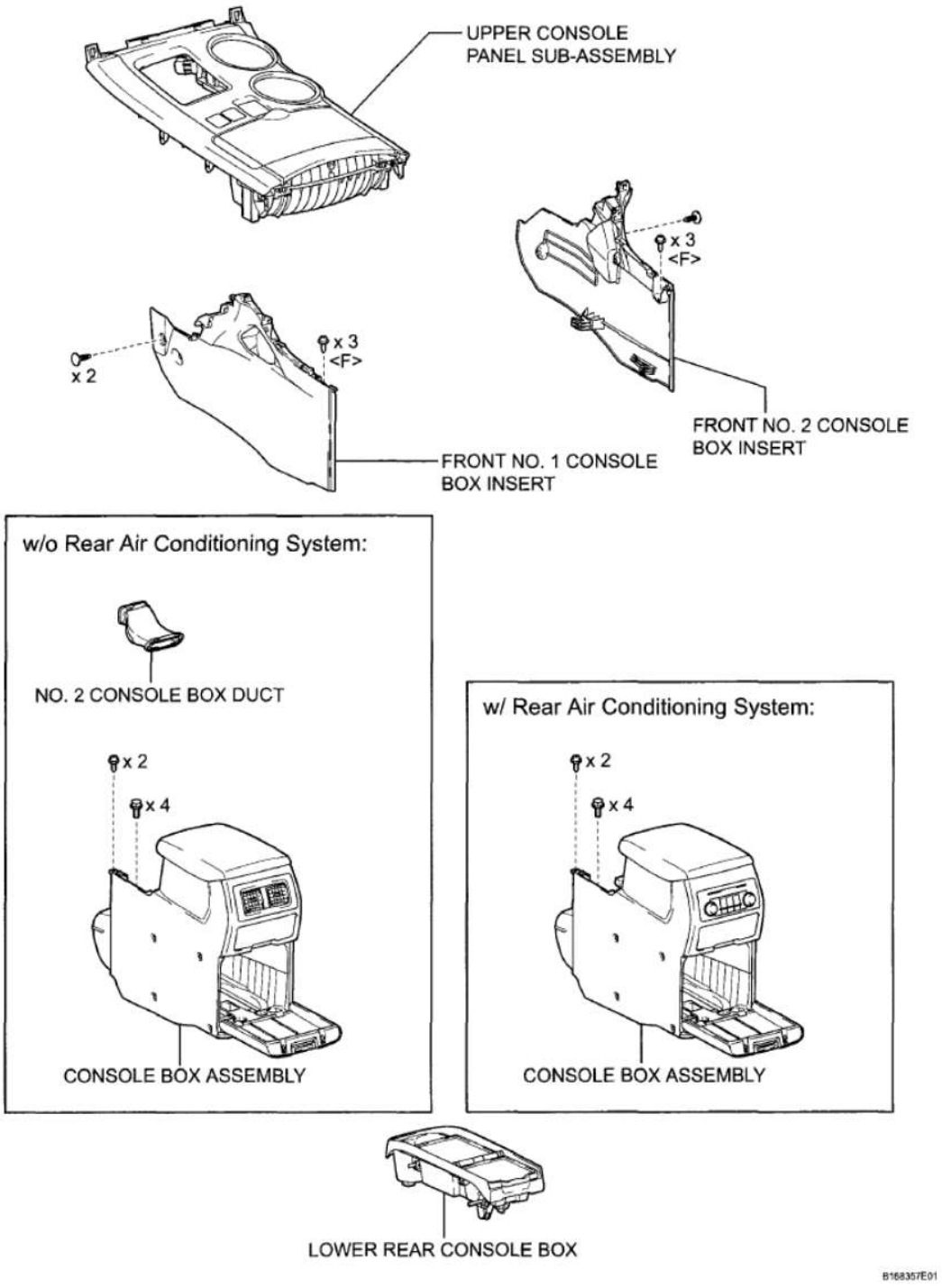


Fig. 614: Identifying Solar Sensor Components (5 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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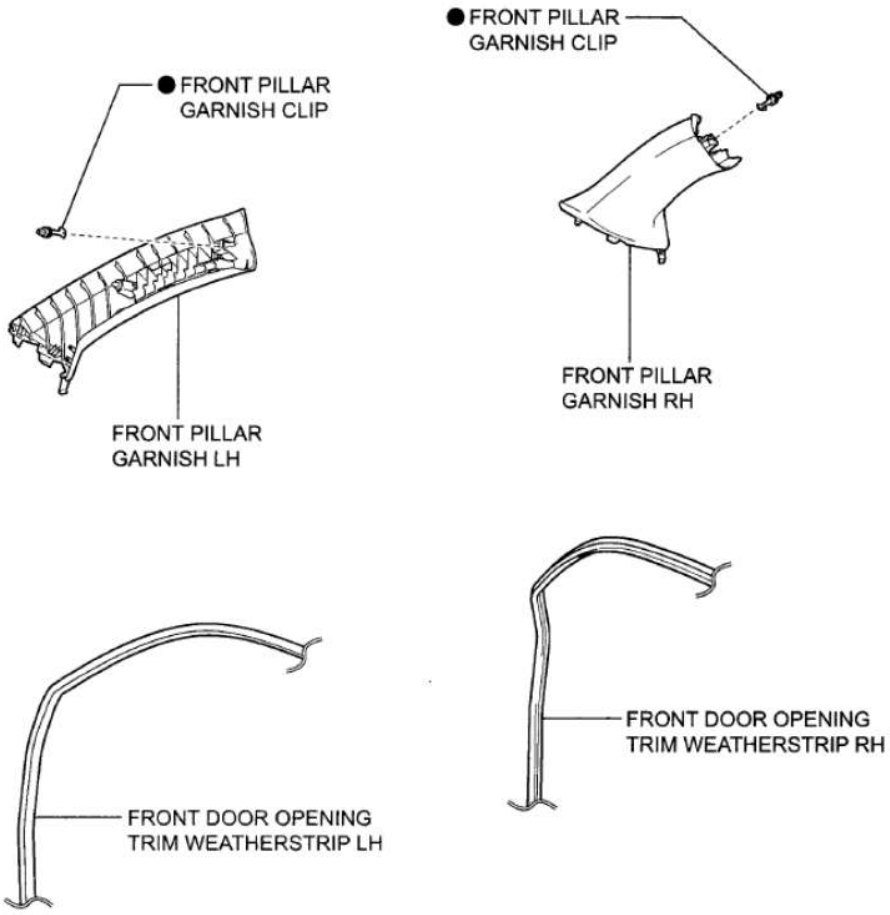


Fig. 615: Identifying Solar Sensor Components (6 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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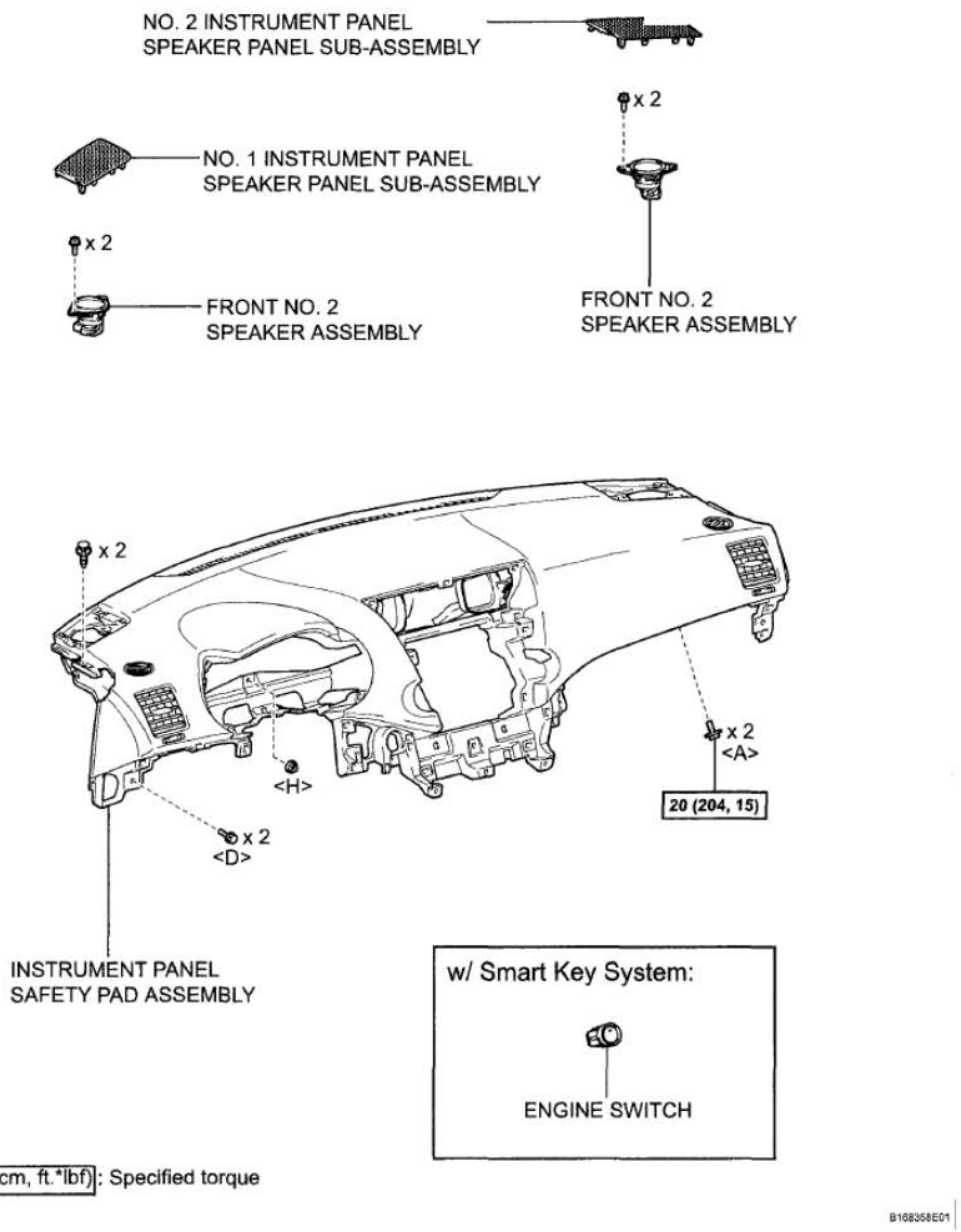


Fig. 616: Identifying Solar Sensor Components (7 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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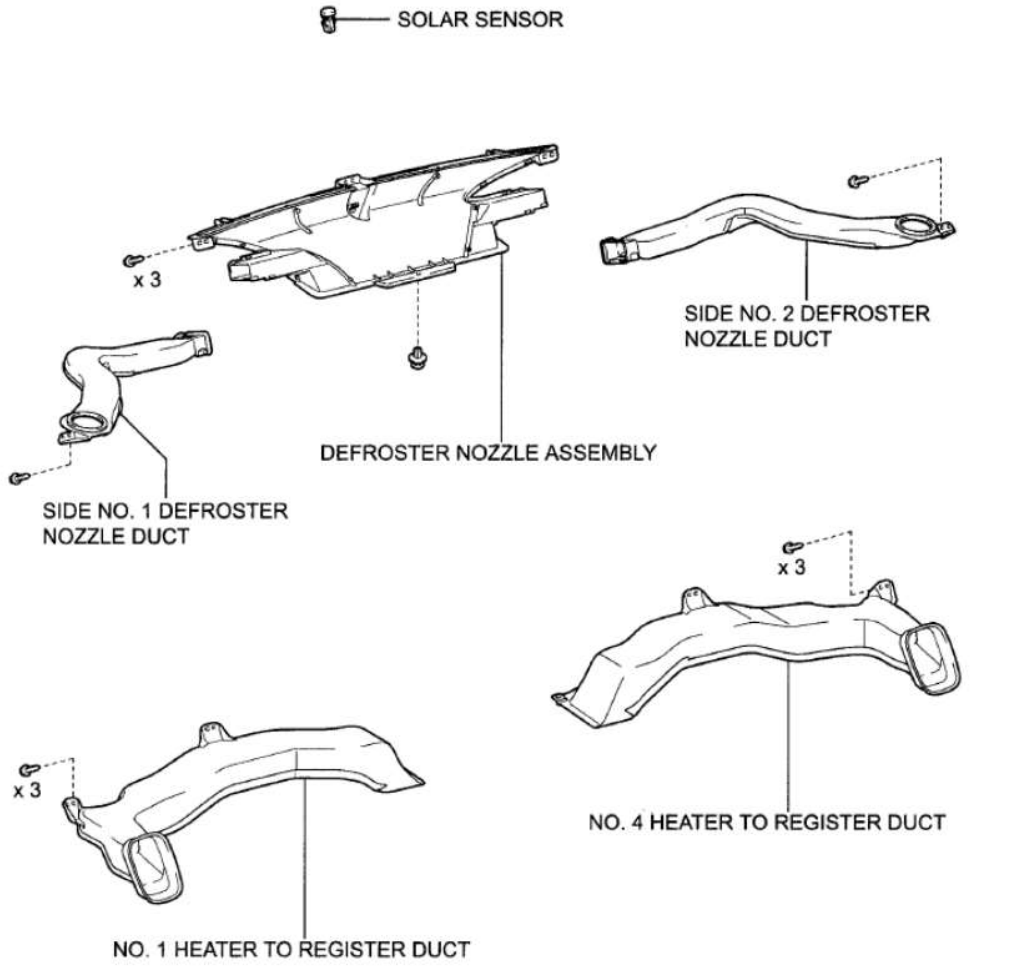


Fig. 617: Identifying Solar Sensor Components (8 Of 8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **PRECAUTION**

   (See **INSTRUMENT PANEL SAFETY PAD**)

2. **POSITION FRONT WHEELS STRAIGHT AHEAD**
3. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

CAUTION: Wait for 90 seconds after disconnecting the cable to prevent airbag deployment (See AIRBAG SYSTEM).

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NOTE: When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).

4. **REMOVE LOWER NO. 3 STEERING WHEEL COVER** (See **REMOVAL**)
5. **REMOVE LOWER NO. 2 STEERING WHEEL COVER** (See **REMOVAL**)
6. **REMOVE STEERING PAD** (See **REMOVAL**)
7. **REMOVE STEERING WHEEL ASSEMBLY** (See **DISASSEMBLY**)
8. **REMOVE STEERING COLUMN COVER** (See **REMOVAL**)
9. **REMOVE TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **REMOVAL**)
10. **REMOVE INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REMOVAL**)
11. **REMOVE COMBINATION METER ASSEMBLY** (See **REMOVAL**)
12. **REMOVE CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **REMOVAL**)
13. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **REMOVAL**)
14. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **REMOVAL**)
15. **REMOVE AIR CONDITIONING CONTROL ASSEMBLY** (See **REMOVAL**)
16. **REMOVE RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **REMOVAL**)
17. **REMOVE NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **REMOVAL**)
18. **REMOVE FRONT DOOR SCUFF PLATE LH** (See **REMOVAL**)
19. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH** (See **REMOVAL**)
20. **REMOVE LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY** (See **REMOVAL**)
21. **REMOVE FRONT DOOR SCUFF PLATE RH** (See **REMOVAL**)
22. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH** (See **REMOVAL**)
23. **REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **REMOVAL**)
24. **REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **REMOVAL**)
25. **REMOVE UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **REMOVAL**)
26. **REMOVE NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **REMOVAL**)
27. **REMOVE LOWER REAR CONSOLE BOX** (See **REMOVAL**)
28. **REMOVE CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **REMOVAL**)
29. **REMOVE CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **DISASSEMBLY**)
30. **REMOVE FRONT NO. 1 CONSOLE BOX INSERT** (See **REMOVAL**)
31. **REMOVE FRONT NO. 2 CONSOLE BOX INSERT** (See **REMOVAL**)
32. **REMOVE ENGINE SWITCH (w/ Smart Key System)** (See **INSPECTION**)
33. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **REMOVAL**)

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34. **REMOVE FRONT PILLAR GARNISH LH** (See **REMOVAL**)
35. **DISCONNECT FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **REMOVAL**)
36. **REMOVE FRONT PILLAR GARNISH RH** (See **REMOVAL**)
37. **REMOVE NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
38. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
39. **REMOVE NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **REMOVAL**)
40. **REMOVE FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **REMOVAL**)
41. **DISCONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **REMOVAL**)
42. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **REMOVAL**)
43. **REMOVE INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **REMOVAL**)
44. **REMOVE NO. 1 HEATER TO REGISTER DUCT** (See **DISASSEMBLY**)
45. **REMOVE NO. 4 HEATER TO REGISTER DUCT** (See **DISASSEMBLY**)
46. **REMOVE SIDE NO. 1 DEFROSTER NOZZLE DUCT** (See **DISASSEMBLY**)
47. **REMOVE SIDE NO. 2 DEFROSTER NOZZLE DUCT** (See **DISASSEMBLY**)
48. **REMOVE DEFROSTER NOZZLE ASSEMBLY** (See **DISASSEMBLY**)
49. **REMOVE SOLAR SENSOR**
    a. Disconnect the connector.
    b. Disengage the 2 claws and remove the solar sensor.

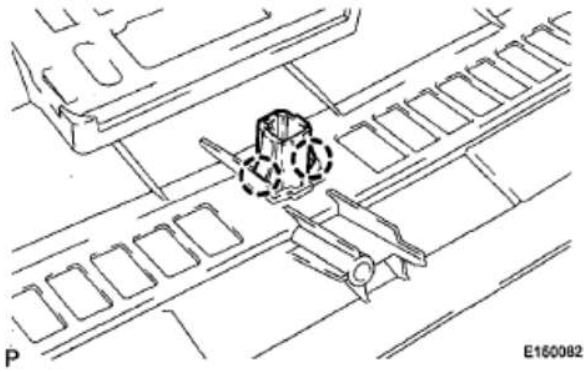


Fig. 618: Identifying Solar Sensor Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION

1. **INSPECT SOLAR SENSOR**
    a. Remove the A/C solar sensor with the connector still connected.
    b. Apply battery voltage between terminals 6 (CLTB) and 3 (CLTE) of the A/C solar sensor.

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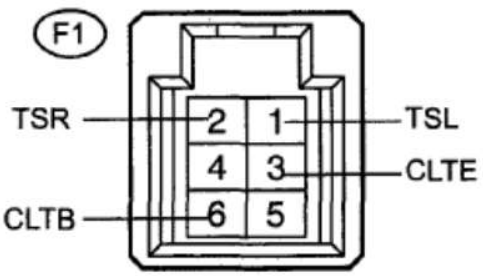
c. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
F1-1 (TSL) - F1-3 (CLTE)	Sensor is subjected to electric light	0.8 to 4.3 V
F1-1 (TSL) - F1-3 (CLTE)	Sensor is covered by a cloth	Below 0.8 V
F1-2 (TSR) - F1-3 (CLTE)	Sensor is subjected to electric light	0.8 to 4.3 V
F1-2 (TSR) - F1-3 (CLTE)	Sensor is covered by a cloth	Below 0.8 V

Component without harness connected:
(Solar Sensor)



P E109215E41

Fig. 619: Identifying Solar Sensor Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE:

- **The connection procedure for using a digital tester such as a TOYOTA electrical tester is shown above. When using an analog tester, connect the positive (+) lead to terminal 2 and negative (-) lead to terminal 1 of the solar sensor.**
- **While using the battery during inspection, do not bring the positive and negative tester probes too close to each other as a short circuit may occur.**

HINT:

- Use an incandescent light for inspection. Bring it within about 30 cm (11.8 in.) of the solar sensor.
- As the inspection light is moved away from the sensor, the voltage increases.

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INSTALLATION

1. **INSTALL SOLAR SENSOR**
   a. Engage the 2 claws and install the solar sensor.
   b. Connect the connector.
2. **INSTALL DEFROSTER NOZZLE ASSEMBLY** (See **REASSEMBLY**)
3. **INSTALL SIDE NO. 2 DEFROSTER NOZZLE DUCT** (See **REASSEMBLY**)
4. **INSTALL SIDE NO. 1 DEFROSTER NOZZLE DUCT** (See **REASSEMBLY**)

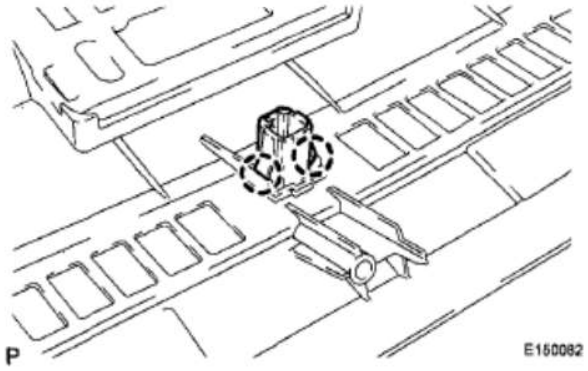


Fig. 620: Identifying Solar Sensor Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **INSTALL NO. 4 HEATER TO REGISTER DUCT** (See **INSTALLATION**)
6. **INSTALL NO. 1 HEATER TO REGISTER DUCT** (See **INSTALLATION**)
7. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Pole Antenna Type)** (See **INSTALLATION**)
8. **INSTALL INSTRUMENT PANEL SAFETY PAD ASSEMBLY (for Glass Antenna Type)** (See **INSTALLATION**)
9. **CONNECT INSTRUMENT PANEL WIRE ASSEMBLY** (See **INSTALLATION**)
10. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for LH Side)** (See **REMOVAL**)
11. **INSTALL NO. 1 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
12. **INSTALL FRONT NO. 2 SPEAKER ASSEMBLY (for RH Side)** (See **INSTALLATION**)
13. **INSTALL NO. 2 INSTRUMENT PANEL SPEAKER PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
14. **INSTALL FRONT PILLAR GARNISH RH** (See **INSTALLATION**)
15. **INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP RH** (See **INSTALLATION**)
16. **INSTALL FRONT PILLAR GARNISH LH** (See **INSTALLATION**)
17. **INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP LH** (See **INSTALLATION**)
18. **INSTALL ENGINE SWITCH (w/ Smart Key System)** (See **INSTALLATION**)
19. **INSTALL FRONT NO. 2 CONSOLE BOX INSERT** (See **INSTALLATION**)

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20. **INSTALL FRONT NO. 1 CONSOLE BOX INSERT** (See **INSTALLATION**)
21. **INSTALL CONSOLE BOX ASSEMBLY (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
22. **INSTALL CONSOLE BOX ASSEMBLY (w/ Rear Air Conditioning System)** (See **INSTALLATION**)
23. **INSTALL LOWER REAR CONSOLE BOX** (See **INSTALLATION**)
24. **INSTALL NO. 2 CONSOLE BOX DUCT (w/o Rear Air Conditioning System)** (See **INSTALLATION**)
25. **INSTALL UPPER CONSOLE PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
26. **INSTALL LOWER INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
27. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH** (See **INSTALLATION**)
28. **INSTALL FRONT DOOR SCUFF PLATE LH** (See **INSTALLATION**)
29. **INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
30. **INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **INSTALLATION**)
31. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH** (See **INSTALLATION**)
32. **INSTALL FRONT DOOR SCUFF PLATE RH** (See **INSTALLATION**)
33. **INSTALL RADIO RECEIVER ASSEMBLY WITH BRACKET (w/o Navigation System)** (See **INSTALLATION**)
34. **INSTALL NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (w/ Navigation System)** (See **INSTALLATION**)
35. **INSTALL AIR CONDITIONING CONTROL ASSEMBLY** (See **REMOVAL**)
36. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **INSTALLATION**)
37. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **INSTALLATION**)
38. **INSTALL CENTER INSTRUMENT PANEL REGISTER ASSEMBLY** (See **INSTALLATION**)
39. **INSTALL COMBINATION METER ASSEMBLY** (See **INSTALLATION**)
40. **INSTALL INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **INSTALLATION**)
41. **POSITION FRONT WHEELS STRAIGHT AHEAD**
42. **INSTALL TURN SIGNAL SWITCH ASSEMBLY WITH SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
43. **INSTALL STEERING COLUMN COVER** (See **INSTALLATION**)
44. **ADJUST SPIRAL CABLE SUB-ASSEMBLY** (See **INSTALLATION**)
45. **INSTALL STEERING WHEEL ASSEMBLY** (See **INSTALLATION**)
46. **INSPECT STEERING WHEEL CENTER POINT**
47. **INSTALL STEERING PAD** (See **INSTALLATION**)
48. **INSTALL LOWER NO. 2 STEERING WHEEL COVER** (See **INSTALLATION**)
49. **INSTALL LOWER NO. 3 STEERING WHEEL COVER** (See **INSTALLATION**)

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50. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**

NOTE: **When disconnecting the cable, some systems need to be initialized after the cable is reconnected (See INITIALIZATION).**

51. **INSPECT STEERING PAD** (See **INSTALLATION**)
52. **INSPECT SRS WARNING LIGHT**
    a. Inspect the SRS warning light (See **DIAGNOSIS SYSTEM**).

AIR CONDITIONING PRESSURE SENSOR

ON-VEHICLE INSPECTION

1. **INSPECT A/C PRESSURE SENSOR**
    a. Install the manifold gauge set.
    b. Disconnect the connector from the A/C pressure sensor.
    c. Connect the three 1.5 V dry cell batteries' positive (+) lead to terminal 3 and the negative (-) lead to terminal 1.
    d. Connect the voltmeter's positive (+) lead to terminal 2 and the negative (-) lead to terminal 1.
    e. Measure the voltage according to the value(s) in the table below.

Standard voltage

STANDARD VOLTAGE CHART

Tester Connection	Condition	Specified Condition
2 - 1	Refrigerant pressure: 0.39 to 3.187 MPa (57 to 463 psi)	1.0 to 4.8 V

If the result is not as specified, replace the A/C pressure sensor.

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Component without harness connected:
(A/C Pressure Sensor)

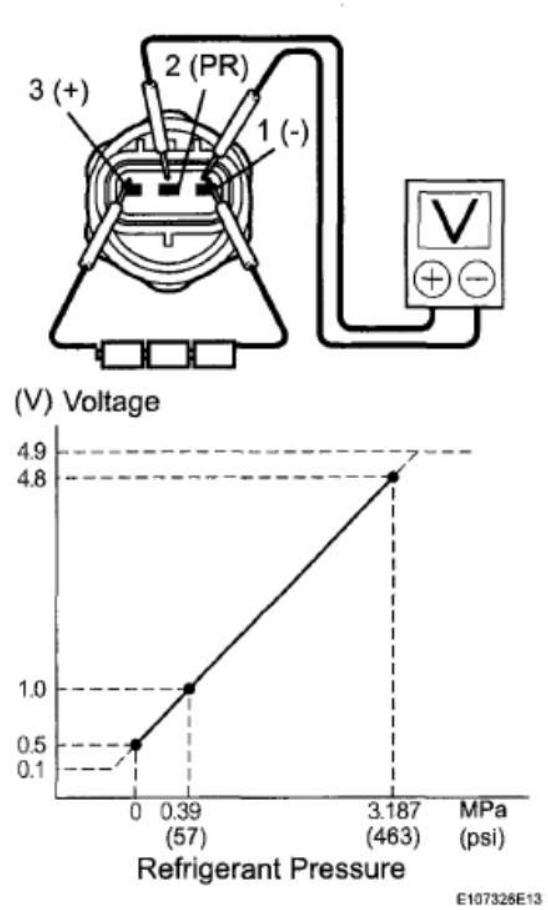


Fig. 621: Inspecting A/C Pressure Sensor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

PTC HEATER RELAY

ON-VEHICLE INSPECTION

1. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

   CAUTION: Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

2. **REMOVE PTC HEATER RELAY**
   a. Remove the 3 PTC heater relays to the engine room No. 2 relay block.
3. **INSPECT PTC HEATER RELAY**
   a. Measure the resistance of the relay.

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Standard resistance

STANDARD RESISTANCE CHART

Tester Connection	Specified Condition
3 - 5	10 kohms or higher
3 - 5	Below 1 ohms (when battery voltage is applied to terminals 1 and 2)

If the result is not as specified, replace the relay.

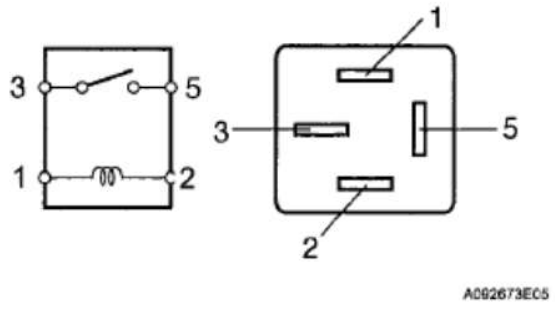


Fig. 622: Inspecting PTC Heater Relay
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **INSTALL PTC HEATER RELAY**
5. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
6. **PERFORM INITIALIZATION**
   a. Perform initialization (see **INITIALIZATION**).

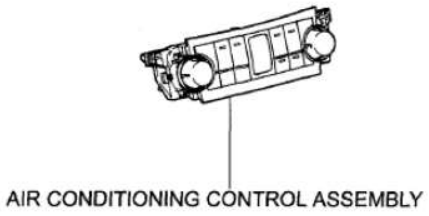
NOTE: **Certain systems need to be initialized after disconnecting and reconnecting the cable from the negative (-) battery terminal.**

AIR CONDITIONING PANEL (FOR AUTOMATIC AIR CONDITIONING SYSTEM)

COMPONENTS

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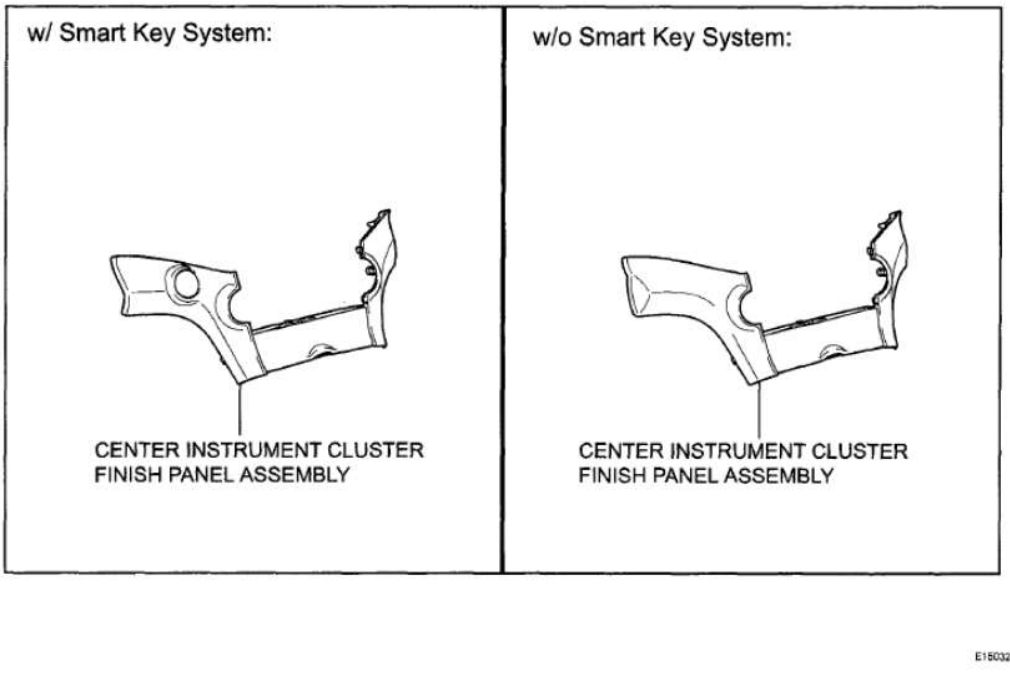


Fig. 623: Identifying Air Conditioning Panel (For Automatic Air Conditioning System) Components
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **REMOVAL**)
2. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **REMOVAL**)
3. **REMOVE AIR CONDITIONING CONTROL ASSEMBLY**
   a. Disengage the 4 clips and remove the air conditioning control assembly.
   b. Disconnect the connector.

INSTALLATION

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1. **INSTALL AIR CONDITIONING CONTROL ASSEMBLY**
   a. Connect the connector.

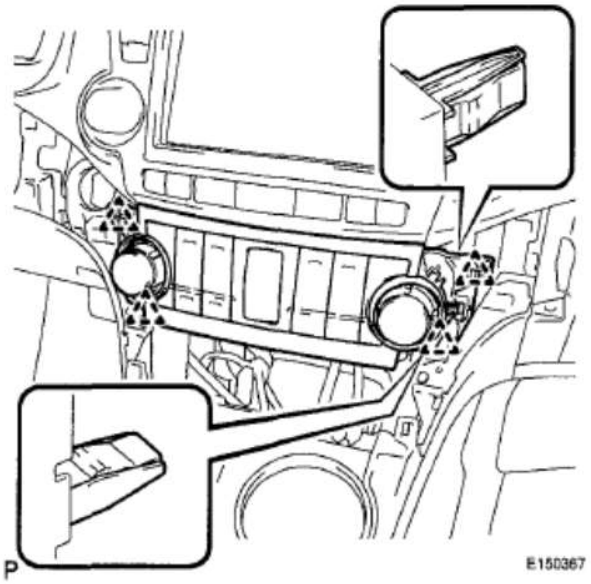
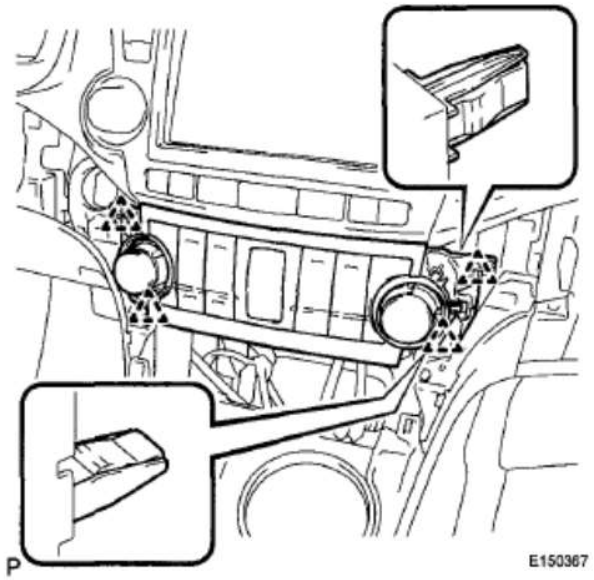


Fig. 624: Identifying Air Conditioning Control Assembly Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Engage the 4 clips and install the air conditioning control assembly.
2. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/o Smart Key System)** (See **INSTALLATION**)
3. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY (w/ Smart Key System)** (See **INSTALLATION**)



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Fig. 625: Identifying Air Conditioning Control Assembly Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

AIR CONDITIONING PANEL (FOR MANUAL AIR CONDITIONING SYSTEM)

COMPONENTS

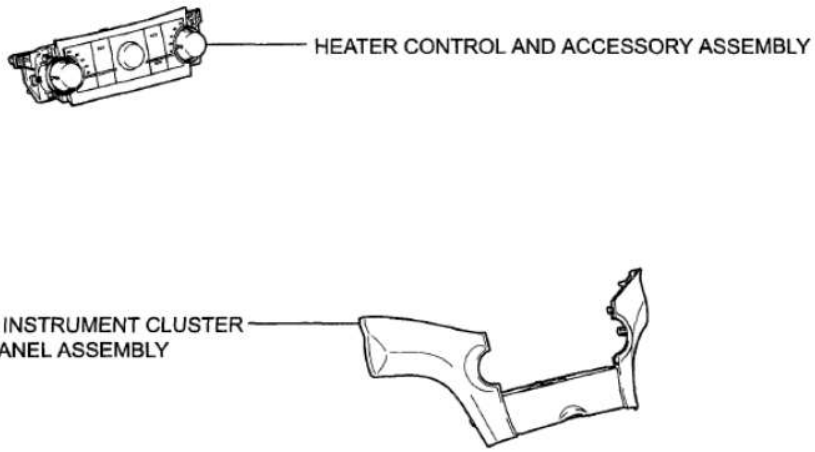


Fig. 626: Identifying Air Conditioning Panel (For Manual Air Conditioning System) Components
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **REMOVAL**)
2. **REMOVE HEATER CONTROL AND ACCESSORY ASSEMBLY**
   a. Disengage the 4 clips and remove the heater control and accessory assembly.
   b. Disconnect the connector.

INSTALLATION

1. **INSTALL HEATER CONTROL AND ACCESSORY ASSEMBLY**
   a. Connect the connector.

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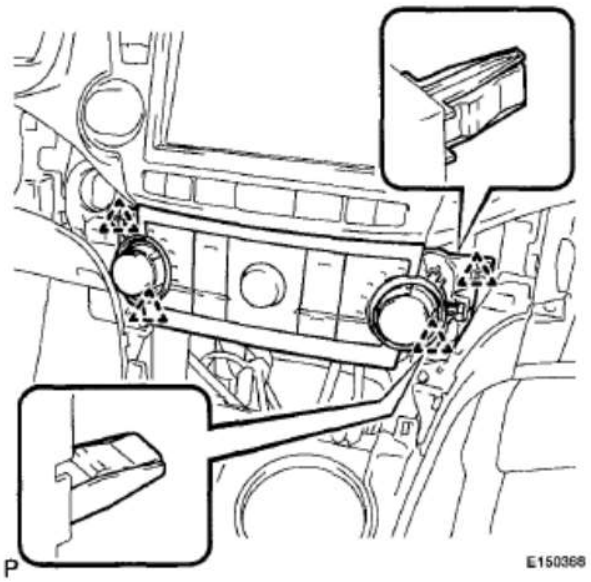


Fig. 627: Identifying Heater Control And Accessory Assembly Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Engage the 4 clips and install the heater control and accessory assembly.

2. **INSTALL CENTER INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY** (See **INSTALLATION**)

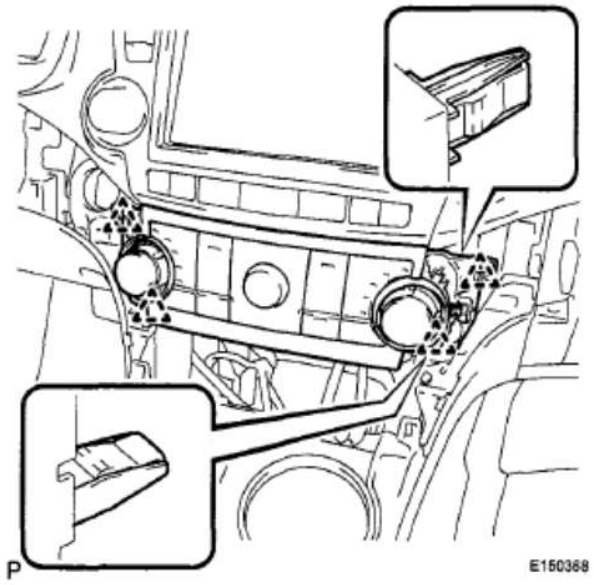


Fig. 628: Identifying Heater Control And Accessory Assembly Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

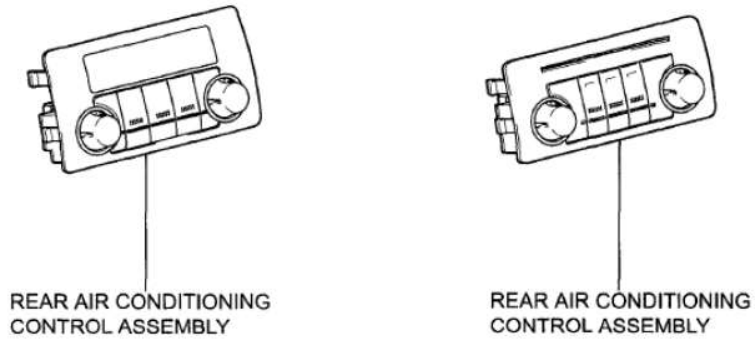
REAR AIR CONDITIONING PANEL

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COMPONENTS

for Automatic Air Conditioning System: for Manual Air Conditioning System:



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Fig. 629: Identifying Rear Air Conditioning Panel Components
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE REAR AIR CONDITIONING CONTROL ASSEMBLY (for Manual Air Conditioning System)**
   a. Disengage the 8 claws and 2 clips, and remove the rear air conditioning control assembly.
   b. Disconnect the connector.

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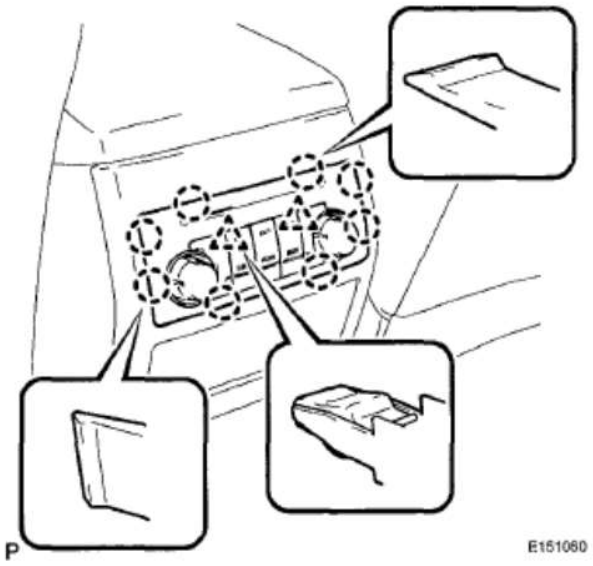


Fig. 630: Identifying Rear Air Conditioning Control Assembly Claws And Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **REMOVE REAR AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)**
   a. Disengage the 8 claws and 2 clips, and remove the rear air conditioning control assembly.
   b. Disconnect the connector.

INSTALLATION

1. **INSTALL REAR AIR CONDITIONING CONTROL ASSEMBLY (for Manual Air Conditioning System)**
   a. Connect the connector.

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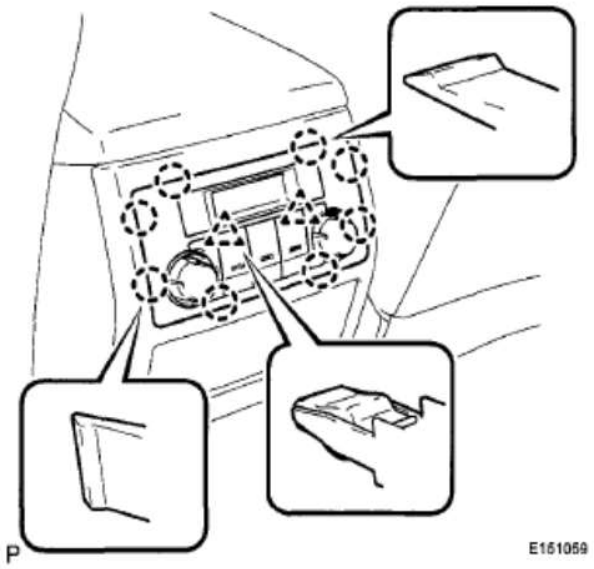


Fig. 631: Identifying Rear Air Conditioning Control Assembly Claws And Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Engage the 8 claws and 2 clips, and install the rear air conditioning control assembly.

2. **INSTALL REAR AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)**
   a. Connect the connector.

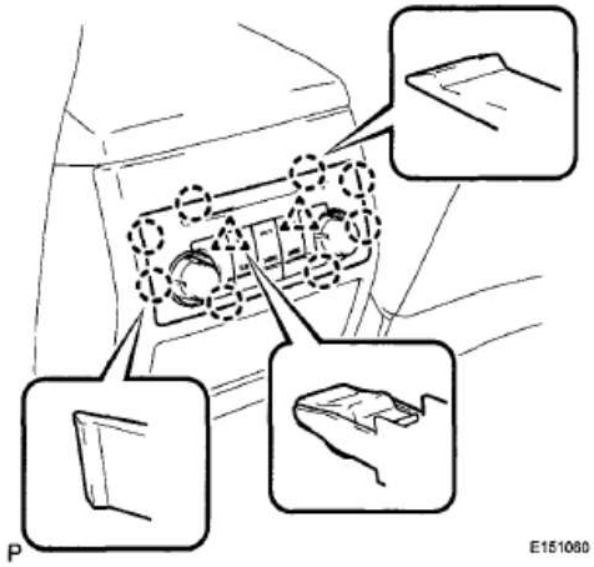


Fig. 632: Identifying Rear Air Conditioning Control Assembly Claws And Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Engage the 8 claws and 2 clips, and install the rear air conditioning control assembly.

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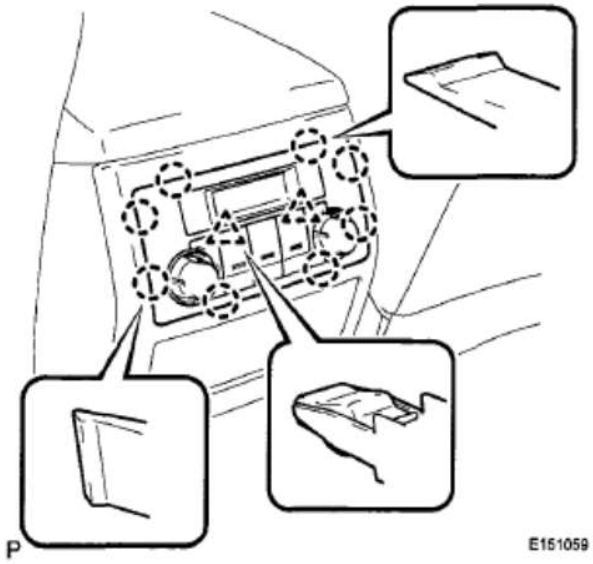


Fig. 633: Identifying Rear Air Conditioning Control Assembly Claws And Clips
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

AIR CONDITIONING AMPLIFIER

COMPONENTS

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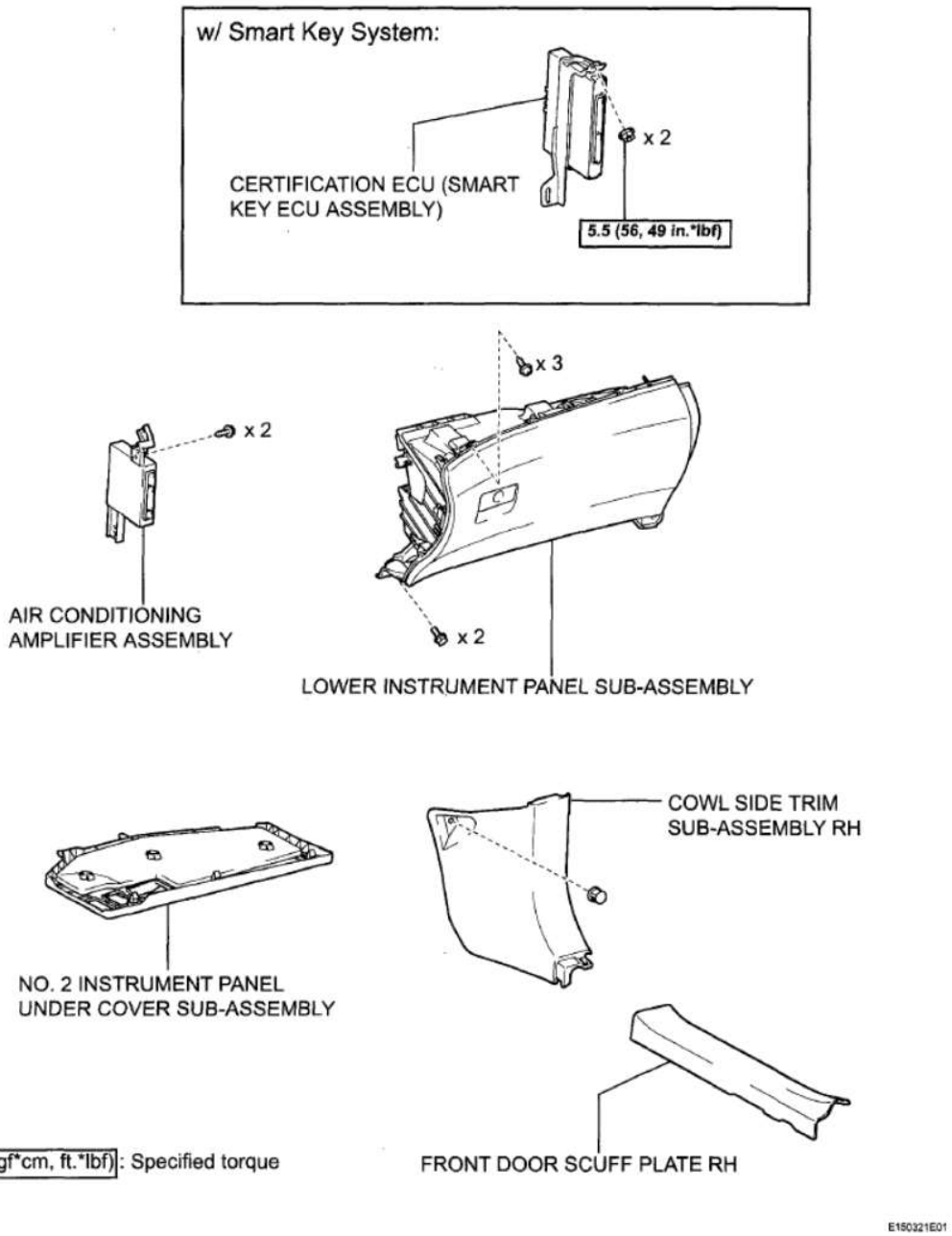


Fig. 634: Identifying Air Conditioning Amplifier Components
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE FRONT DOOR SCUFF PLATE RH** (See **REMOVAL**)
2. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH** (See **REMOVAL**)
3. **REMOVE NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **REMOVAL**)
4. **REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **REMOVAL**)

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5. **REMOVE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)
6. **REMOVE AIR CONDITIONING AMPLIFIER ASSEMBLY**
   a. Disconnect each connector.
   b. Remove the 2 screws and the air conditioning amplifier assembly.

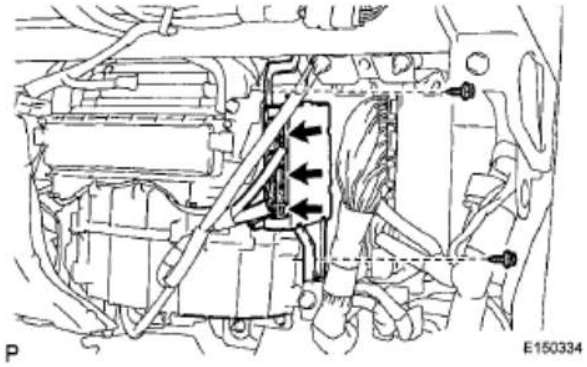


Fig. 635: Identifying Air Conditioning Amplifier Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

1. **INSTALL AIR CONDITIONING AMPLIFIER ASSEMBLY**
   a. Install the air conditioning amplifier assembly with the 2 screws.
   b. Connect each connector.
2. **INSTALL CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) (w/ Smart Key System)** (See **REMOVAL**)

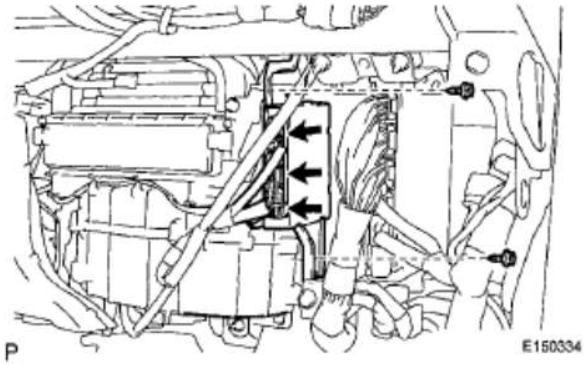


Fig. 636: Identifying Air Conditioning Amplifier Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY** (See **INSTALLATION**)
4. **INSTALL NO. 2 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY** (See **INSTALLATION**)

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5. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH** (See **INSTALLATION**)
6. **INSTALL FRONT DOOR SCUFF PLATE RH** (See **INSTALLATION**)

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