2008 GENERAL INFORMATION

Introduction - xD

HOW TO USE THIS MANUAL

GENERAL INFORMATION

1. **GENERAL DESCRIPTION**
    a. This manual is written in accordance with SAE J2008.
        1. Diagnosis
        2. Removing / Installing, Replacing, Disassembling / Reassembling, Checking and Adjusting
        3. Final Inspection
    b. The following procedures are omitted from this manual. However, these procedures must be performed.
        1. Use a jack or lift to perform operations.
        2. Clean all removed parts.
        3. Perform a visual check.
2. **INDEX**
    a. An alphabetical INDEX section is provided at the end of the manual as a reference to help you find the item to be repaired.
3. **PREPARATION**
    a. Use of Special Service Tools (SST) and Special Service Materials (SSM) may be required, depending on the repair procedure. Be sure to use SST and SSM when they are required and follow the working procedures properly. A list of SST and SSM is in the "Preparation" section of this manual.
4. **REPAIR PROCEDURES**
    a. A component illustration is placed under the title where necessary.
    b. Non-reusable parts, grease application areas, precoated parts and torque specifications are noted in the component illustrations.

    The following illustration is an example.

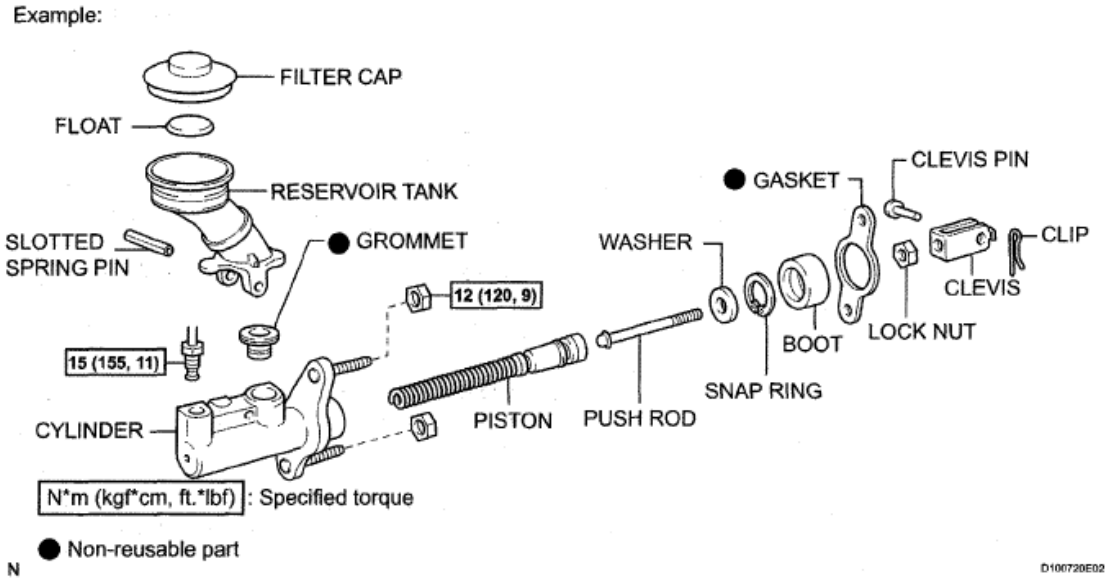


Fig. 1: Exploded View Of Master Cylinder With Torque Specifications
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Torque specifications, grease application areas and non-reusable parts are emphasized in the procedures.

HINT:

There are cases where such information can only be explained by using an illustration. In these cases, torque, oil and other information are described in the illustration.

d. Only items with key points are described in the text. What to do and other details are explained using illustrations next to the text. Both the text and illustrations are accompanied by standard values and notices.

REPAIR PROCEDURE REFERENCE

Illustration	What to do and where to do it
Task heading	What work will be performed
Explanation text	• How to perform the task • Information such as specifications and warnings, which are written in boldface text

e. Illustrations of similar vehicle models are sometimes used. In these cases, minor details may be different from the actual vehicle.

f. Procedures are presented in a step-by-step format.

5. **SERVICE SPECIFICATIONS**

a. SPECIFICATIONS are presented in boldface text throughout the manual. The specifications are also found in the "Service Specifications" section for reference.

REAR SPEAKER SERVICE DATA SPECIFICATION

Item	Tester Connection	Specified Condition
Standard resistance	1 - 2	Approximately 4 ohms

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS CHART

Part Tightened	N*m	kgf*cm	ft.*lbf
Amplifier antenna assembly x Body	4.5	46	40 in.*lbf
Antenna cord sub-assembly x Body	7.0	71	62 in.*lbf
Negative battery terminal x Battery	5.5	55	48 in.*lbf
Radio setting condenser x Body	7.0	71	62 in.*lbf
Radio setting condenser x Engine	10	102	7

HORN

SERVICE DATA

SERVICE DATA SPECIFICATION

Item	Tester Connection	Specified Condition
Standard resistance	A8-T6	10 kohms or higher
		Below 1 ohms (When battery voltage applied to terminals A7 and T6)

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS CHART

Part Tightened	N*m	kgf*cm	ft.*lbf
Low pitched horn x Body	20	199	14
High pitched horn x Body	20	199	14

WINDSHIELD / WINDOWGLASS

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS CHART

Part Tightened	N*m	kgf*cm	ft.*lbf
Rear power window regulator motor assembly x Rear door window regulator assembly	5.4	55	48 in.*lbf
Rear door window division bar x Rear door panel	6.2	63	54 in.*lbf
Front power window regulator motor assembly x Front door window regulator			48

HINT:

Perform the inspection using parts from a normal vehicle when possible.

3. **PERFORM ZERO POINT CALIBRATION**
   a. Connect the negative (-) terminal cable to the battery, and wait for at least 2 seconds.
   b. Connect a Techstream to the DLC3.
   c. Turn the ignition switch ON, and wait for at least 60 seconds.
   d. Using the Techstream, perform the zero point calibration (See **INITIALIZATION**).
4. **PERFORM SENSITIVITY CHECK**
   a. Using a Techstream, perform the sensitivity check (See **INITIALIZATION**).

   Standard range:

   27 to 33 kg (59.5 to 72.8 lb)

NEXT : END

TROUBLE IN PASSENGER AIRBAG ON / OFF INDICATOR

DESCRIPTION

The occupant classification system detects the front passenger seat condition. It then informs a passenger of the front passenger airbag, the front seat side airbag RH and front seat belt pretensioner RH condition (activated/not activated) by the passenger airbag ON/OFF indicator.

HINT:

Approximately 6 seconds after the ignition switch is turned ON, the passenger airbag ON/OFF indicator will be ON/OFF depending on the conditions listed below.

PASSENGER AIRBAG ON/OFF INDICATOR CHART

Front Passenger Seat Condition	Passenger Airbag ON/OFF Indicator		SRS Warning Light
	ON Indicator	OFF Indicator	
Adult is seated	ON	OFF	OFF
Child is seated.	OFF	ON	OFF
Vacant	OFF	OFF	OFF
Occupant classification system failure	OFF	ON	ON

INSPECTION PROCEDURE

1. **CHECK FOR DTC (AIRBAG SYSTEM)**
   a. Turn the ignition switch ON, and wait for at least 60 seconds.
   b. Clear the DTCs stored in the memory (See **DTC CHECK / CLEAR**).

		Wheel speed signal	Serial communication

SYSTEM DESCRIPTION

1. FUNCTION DESCRIPTION

HINT:

The skid control ECU is located within the brake actuator assembly.

a. ABS (Anti-lock Brake System)

The ABS helps prevent the wheels from locking when the brakes are applied firmly or when braking on a slippery surface.

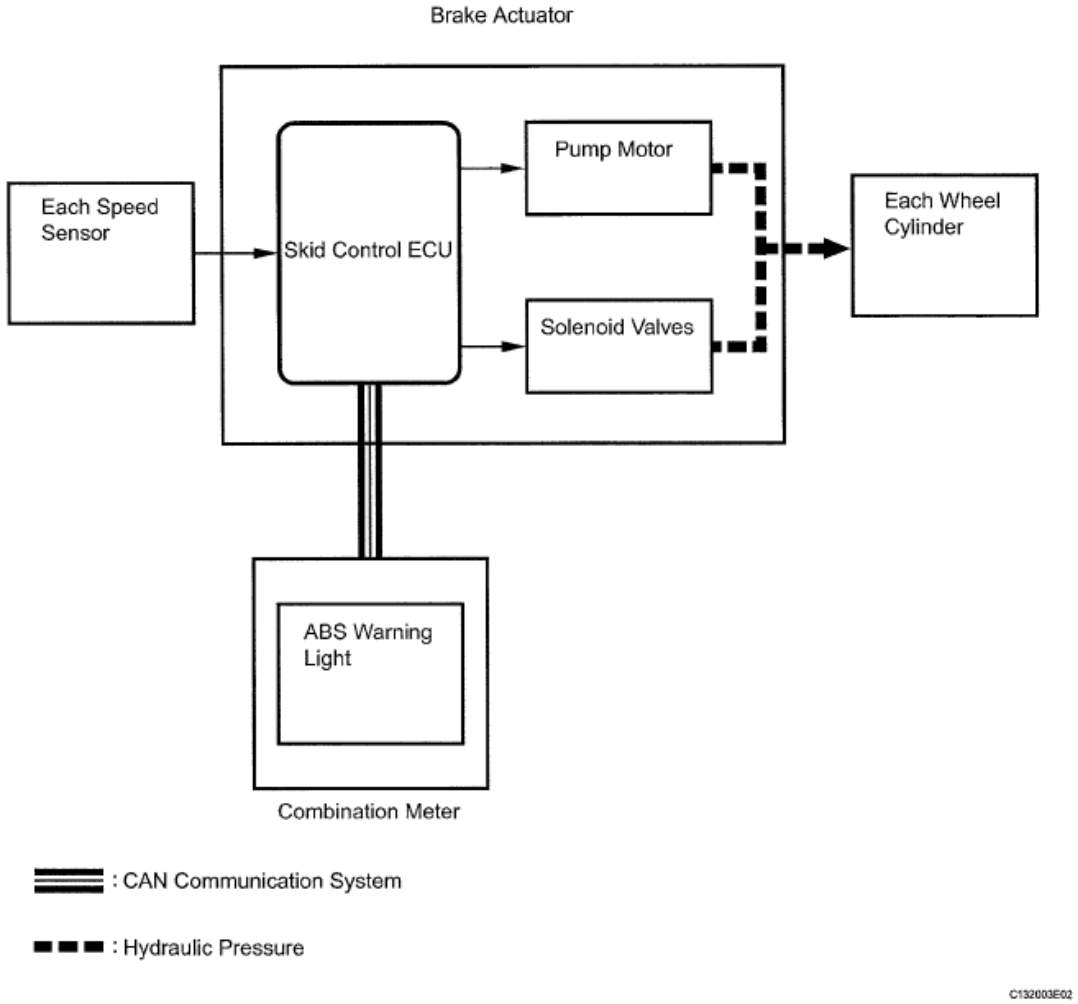


Fig. 5: ABS Function Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

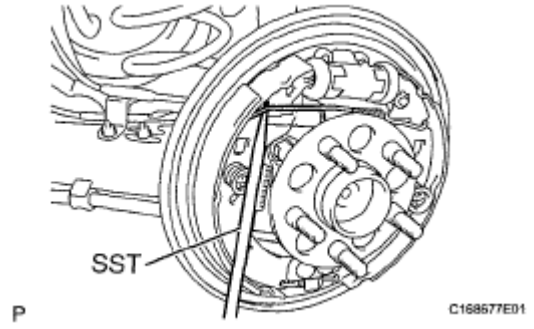


Fig. 103: Separating Shoe Return Spring From Front Brake Shoe
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Using SST, remove the shoe hold down spring cup, shoe hold down spring, pin and front brake shoe.

SST 09718-00011

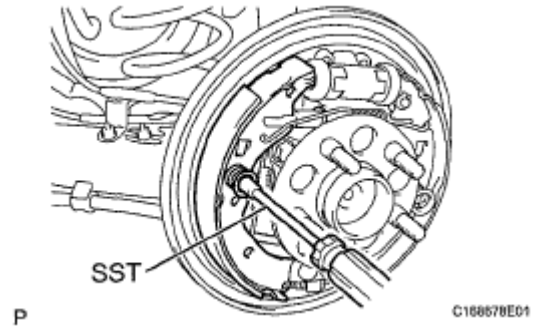


Fig. 104: Removing Shoe Hold Down Spring Cup And Shoe Hold Down Spring
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Remove the tension spring.

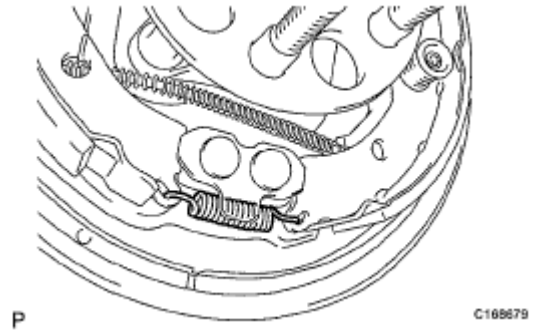


Fig. 105: Identifying Tension Spring
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Remove the shoe return spring from the rear brake shoe and remove the parking brake shoe strut

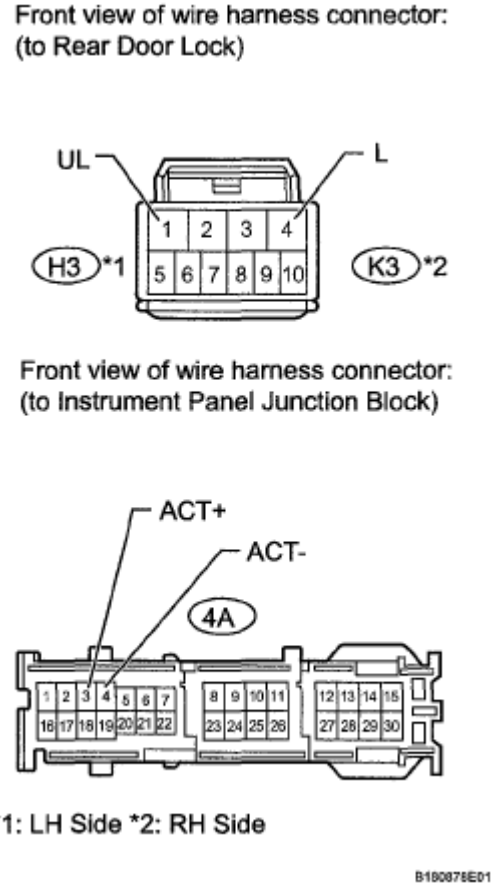


Fig. 23: Identifying Rear Door Lock Motor And Main Body ECU Connector Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK : REPLACE MAIN BODY ECU

BACK DOOR LOCK MOTOR CIRCUIT

DESCRIPTION

The back door lock motor is built into the back door lock assembly. The main body ECU controls the back door lock to lock/unlock the back door lock assembly. This main body ECU applies current from terminal ACT+ to terminal ACT- to operate the motor to lock the door. It reverses the direction of the current flow to operate the motor to unlock the door.

WIRING DIAGRAM

		circuits o ECM		
P0125	Insufficient Coolant Temperature for Closed Loop Fuel Control	o Cooling system o Engine coolant temperature sensor o Thermostat	Comes on	DTC stored
P0128	Coolant Thermostat (Coolant Temperature Below Thermostat Regulating Temperature)	o Thermostat o Cooling system o Engine coolant temperature sensor o ECM	Comes on	DTC stored
P0136	Oxygen Sensor Circuit Malfunction (Bank 1 Sensor 2)	o Heated Oxygen (HO2) sensor (sensor 2) o Air-Fuel Ratio (A/F) sensor (sensor 1) o Gas leak from exhaust system o Fuel pressure o Fuel injector o PCV valve and hose o Air induction system	Comes on	DTC stored
P0137	Oxygen Sensor Circuit Low Voltage (Bank 1 Sensor 2)	o Open or short in Heated Oxygen (HO2) sensor (sensor 2) circuit o HO2 sensor (sensor 2) o HO2 sensor heater (sensor 2) o Air-Fuel Ratio (A/F) sensor (sensor 1) o Gas leak from exhaust system	Comes on	DTC stored

P0452 and P0453:

TYPICAL ENABLING CONDITIONS

Monitor runs whenever following DTCs not present	None
Either of following conditions met	(a) or (b)
(a) Ignition switch	ON
(b) Soak timer	ON

TYPICAL MALFUNCTION THRESHOLDS

P0451: Canister pressure sensor noise

TYPICAL MALFUNCTION THRESHOLDS

Frequency that EVAP pressure change 0.3 kPa-g (2.25 mmHg-g) or more	10 times or more in 10 seconds

P0451: Canister pressure sensor fixed/flat

TYPICAL MALFUNCTION THRESHOLDS

EVAP pressure change during reference pressure	Less than 0.65 kPa-g (4.87 mmHg-g)

P0452: Canister pressure sensor low voltage

TYPICAL MALFUNCTION THRESHOLDS

EVAP pressure	Less than 42.1 kPa-a (315.8 mmHg-a)

P0453: Canister pressure sensor high voltage

TYPICAL MALFUNCTION THRESHOLDS

EVAP pressure	More than 123.8 kPa-a (928.3 mmHg-a)

WIRING DIAGRAM

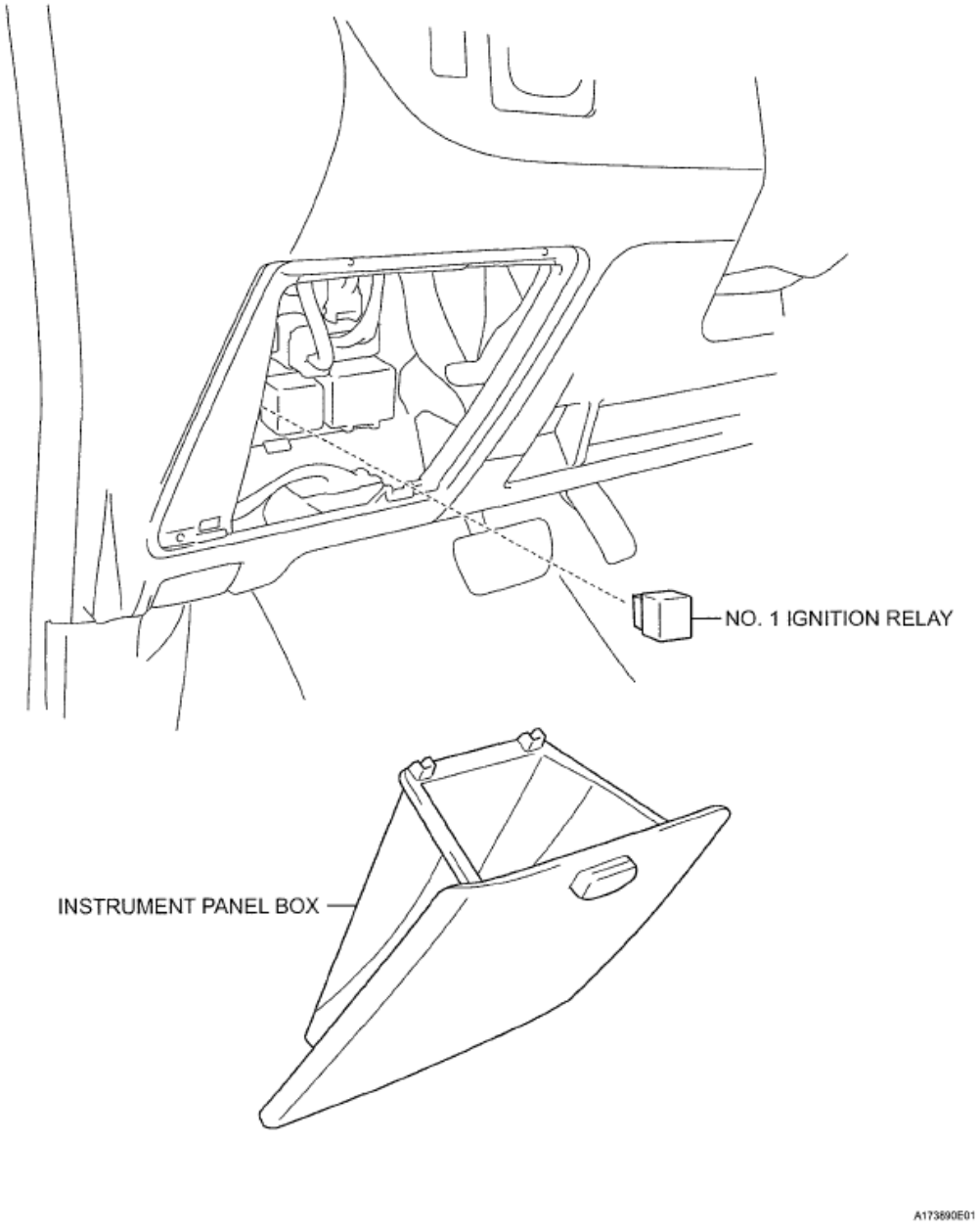


Fig. 405: Identifying Ignition Relay No 1 Components
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE INSTRUMENT PANEL BOX** (See **REMOVAL**)
2. **REMOVE NO. 1 IGNITION RELAY**
    a. Remove the No. 1 ignition relay.

4. **INSTALL TRANSMISSION OIL LEVEL GAGE SUB-ASSEMBLY (for Automatic Transaxle)**
5. **INSTALL NO. 1 OIL COOLER OUTLET TUBE (for Automatic Transaxle)** (See **INSTALLATION**)
6. **INSTALL NO. 1 OIL COOLER INLET TUBE (for Automatic Transaxle)** (See **INSTALLATION**)
7. **INSTALL NO. 2 OIL COOLER TUBE CLAMP (for Automatic Transaxle)** (See **INSTALLATION**)
8. **INSTALL FLYWHEEL SUB-ASSEMBLY (for Manual Transaxle)**
   a. Hold the crankshaft with SST.

      SST 09213-58013 (91651-60855), 09330-00021

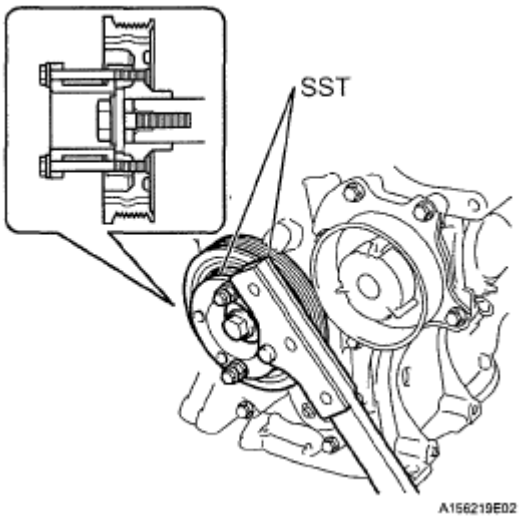


Fig. 299: Holding Crankshaft With SST
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Clean the 8 bolts and their holes.
   c. Apply adhesive to the 2 or 3 end threads of the bolts.

      Adhesive: Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent.

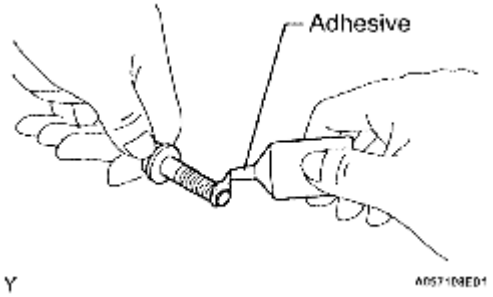


Fig. 300: Applying Adhesive To 2 Or 3 End Threads Of Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

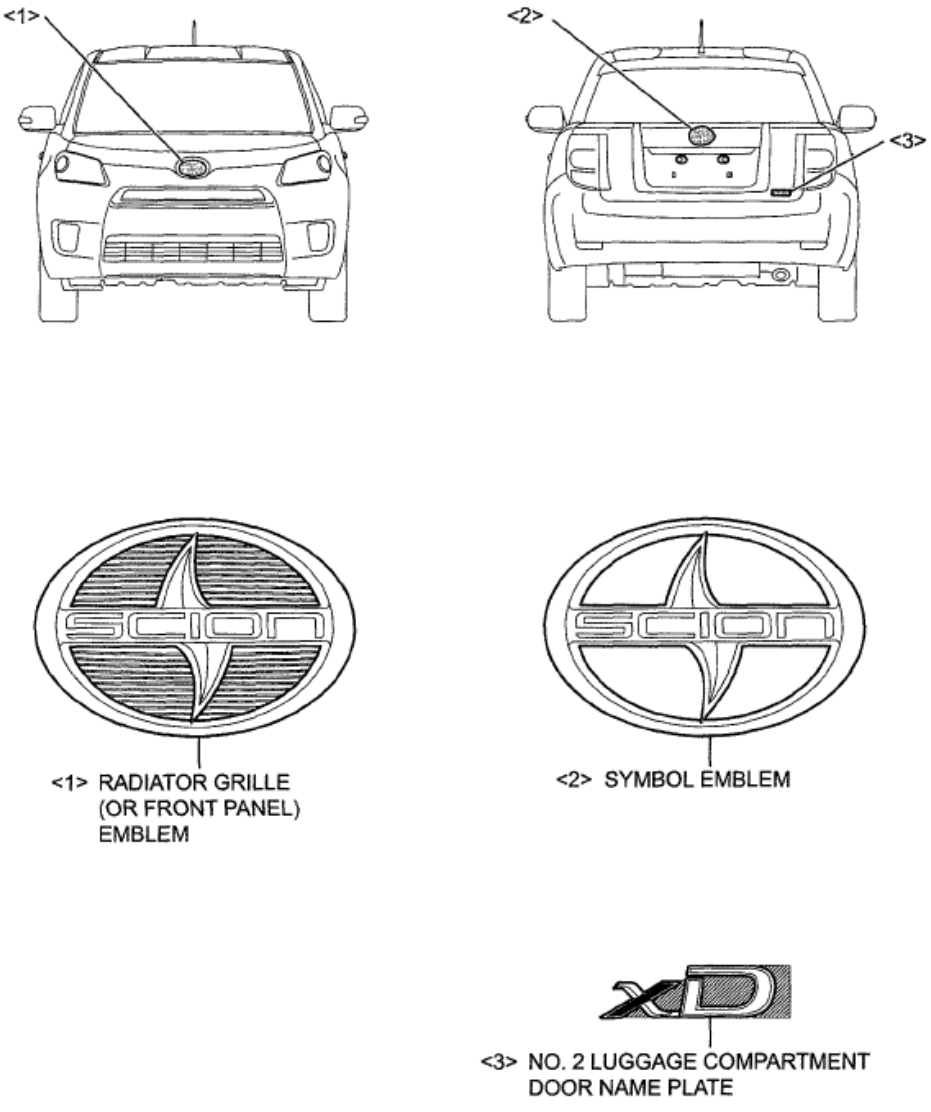


Fig. 69: Identifying Name Plate Components
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

1. **REMOVE RADIATOR GRILLE (OR FRONT PANEL) EMBLEM**
   a. Apply protective tape to the engine hood in the area around the radiator grille (or front panel) emblem.
   b. Pass a piano wire between the vehicle body and radiator grille (or front panel) emblem.
   c. Tie objects that can serve as handles (for example, wooden blocks) to both wire ends.
   d. Pull the piano wire and scrape off the double-sided tape that holds the radiator grille (or front panel) emblem to the vehicle body.

a. Disengage the evaporator temperature sensor connector clamp.

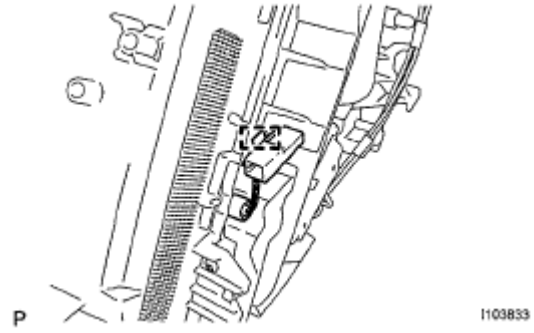


Fig. 129: Identifying Evaporator Temperature Sensor Connector Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Remove the 3 screws.
c. Disengage the 4 claws and remove the heater case lower.

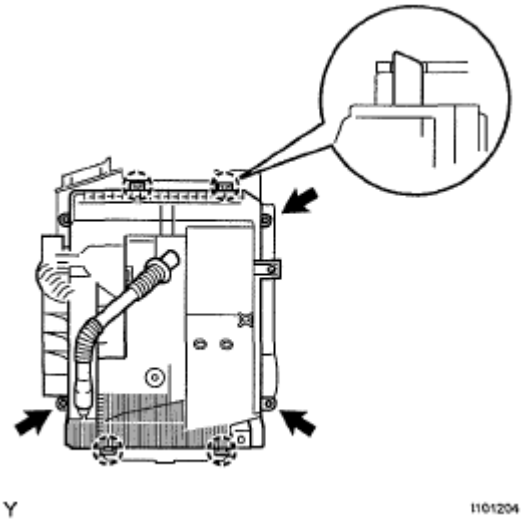


Fig. 130: Identifying Heater Case Lower Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Remove the cooler evaporator.

3. **CHECK HARNESS AND CONNECTOR (HAZARD WARNING SIGNAL SWITCH - MAIN BODY ECU, BODY GROUND)**
   a. Disconnect the F17 telltale light assembly connector.
   b. Disconnect the 4S main body ECU connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard resistance

   STANDARD RESISTANCE SPECIFICATIONS

Tester Connection	Condition	Specified Condition
F17-10 - 4S-17	Always	Below 1 ohms
F17-10 or 4S-17-Body ground	Always	10 kohms or higher
F17-12 - Body ground	Always	Below 1 ohms

   d. Reconnect the telltale light assembly connector.
   e. Reconnect the main body ECU connector.

NG: REPAIR OR REPLACE HARNESS OR CONNECTOR

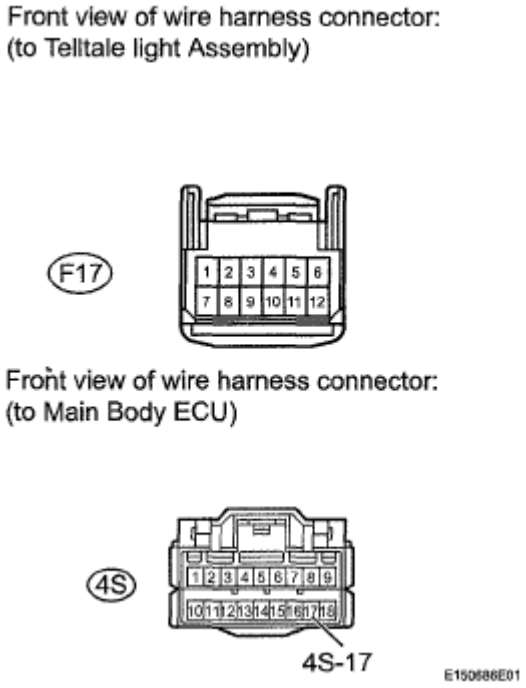
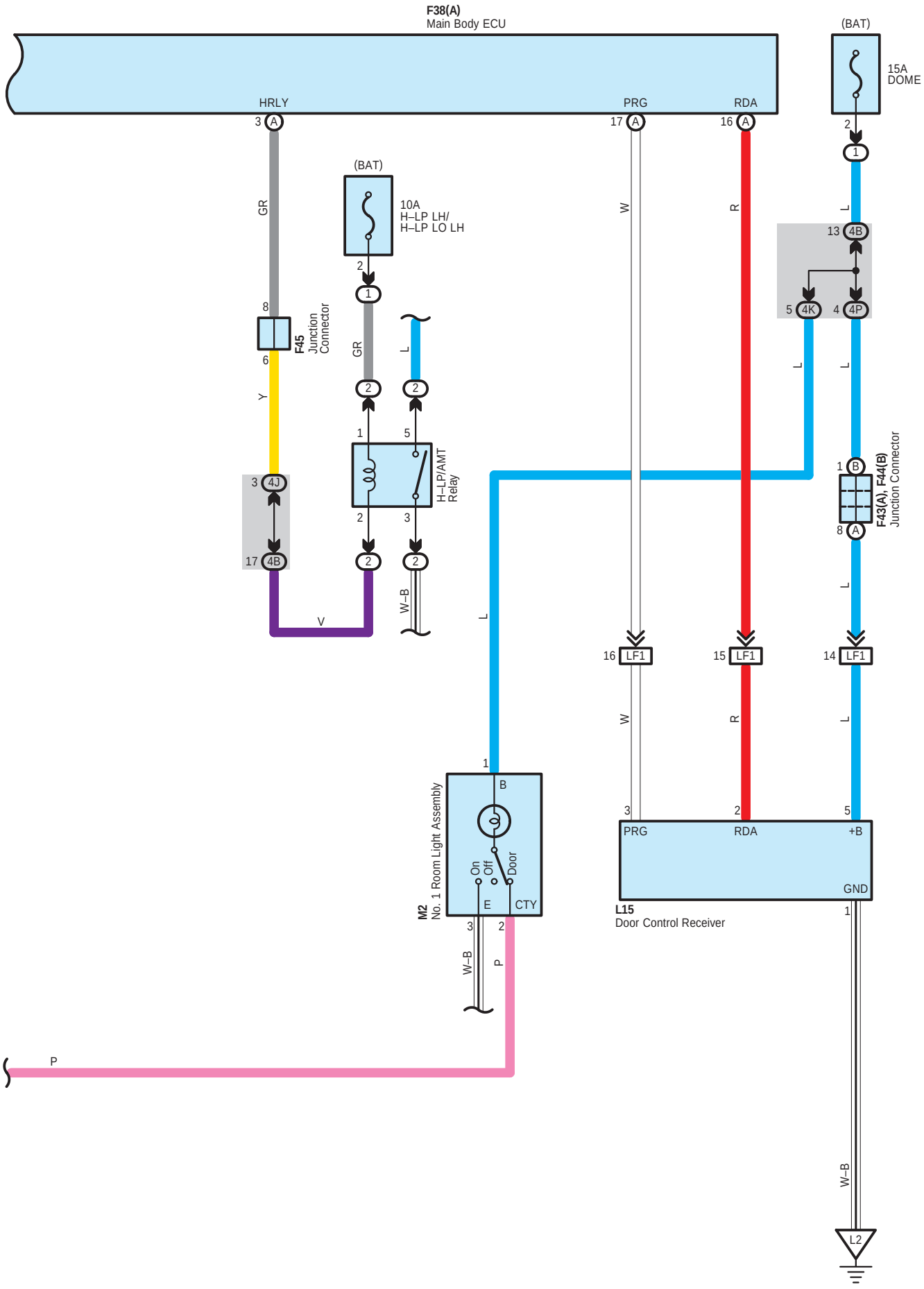


Fig. 40: Identifying F17 Telltale Light And 4S Main Body ECU Connectors
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK : REPLACE MAIN BODY ECU

4. **INSPECT FUSE (HAZ)**


F38(A)
Main Body ECU
HRLY
PRG
RDA
(BAT)
15A
DOME
10A
H–LP LH/
H–LP LO LH
F45
Junction
Connector
H–LP/AMT
Relay
F43(A), F44(B)
Junction Connector
M2
No. 1 Room Light Assembly
On
Off
Door
E
CTY
L15
Door Control Receiver
PRG
RDA
+B
GND
LF1
GR
Y
V
W–B
W
R
L
P