Last Modified: 11-13-2015	6.6 F	**Doc ID:** RM000000UZ30G0X
Model Year Start: 2016	**Model:** Tacoma	**Prod Date Range:** [08/2015 -]
Title: INTRODUCTION: HOW TO TROUBLESHOOT ECU CONTROLLED SYSTEMS: ELECTRONIC CIRCUIT INSPECTION PROCEDURE; 2016 MY Tacoma [08/2015 -]		

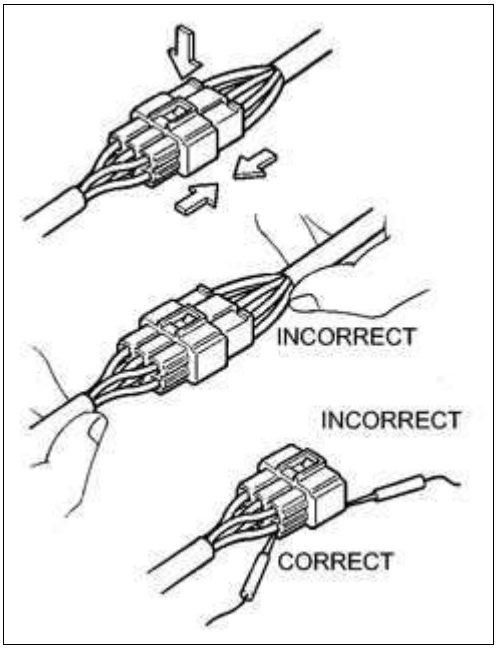
ELECTRONIC CIRCUIT INSPECTION PROCEDURE

1. BASIC INSPECTION

(a) WHEN MEASURING RESISTANCE OF ELECTRONIC PARTS

(1) Unless otherwise stated, all resistance measurements should be made at an ambient temperature of 20°C (68°F). Resistance measurements may be inaccurate if measured at high temperatures, i.e. immediately after the vehicle has been running. Measurements should be made after the engine has cooled down.

(b) HANDLING CONNECTORS



(1) When disconnecting a connector, first squeeze the mating halves tightly together to release the lock, and then press the lock claw and separate the connector.

(2) When disconnecting a connector, do not pull on the harnesses. Grasp the connector directly and separate it.

(3) Before connecting a connector, check that there are no deformed, damaged, loose or missing terminals.

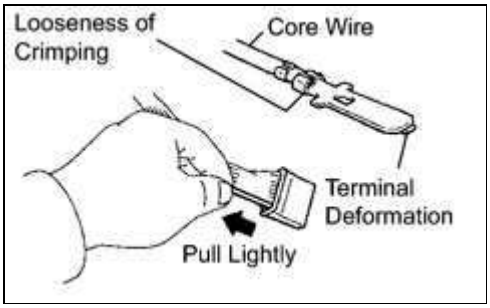
(4) When connecting a connector, press firmly until it locks with a "click" sound.

(5) If checking a connector with a TOYOTA electrical tester, check the connector from the backside (harness side) using a mini test lead.

NOTICE:

- As a waterproof connector cannot be checked from the backside, check it by connecting a sub-harness.
- Do not damage the terminals by moving the inserted tester needle.

(c) CHECKING CONNECTORS



(1) Checking when a connector is disconnected: Squeeze the connector together to confirm that they are fully connected and locked.

(2) Checking when a connector is disconnected: Check by pulling the wire harness lightly from the backside of the connector. Look for unlatched terminals, missing terminals, loose crimps or broken

Last Modified: 11-13-2015	6.6 F	**Doc ID:** RM000001352036X
Model Year Start: 2016	**Model:** Tacoma	**Prod Date Range:** [08/2015 -]
Title: INTRODUCTION: HOW TO TROUBLESHOOT ECU CONTROLLED SYSTEMS: HOW TO PROCEED WITH TROUBLESHOOTING; 2016 MY Tacoma [08/2015 -]		

HOW TO PROCEED WITH TROUBLESHOOTING

1. OPERATION FLOW

HINT:

Perform troubleshooting in accordance with the procedures below. The following is an outline of basic troubleshooting procedures. Confirm the troubleshooting procedures for the circuit you are working on before beginning troubleshooting.

1.	**VEHICLE BROUGHT TO WORKSHOP**

NEXT

2.	**CUSTOMER PROBLEM ANALYSIS**

(a) Ask the customer about the conditions and environment when the problem occurred.

NEXT

3.	**INSPECT BATTERY VOLTAGE**

Standard voltage:
11 to 14 V

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

NEXT

4.	**SYMPTOM CONFIRMATION AND DTC (AND FREEZE FRAME DATA) CHECK**

(a) Visually check the wire harnesses, connectors and fuses for open and short circuits.

(b) Warm up the engine to the normal operating temperature.

Last Modified: 11-13-2015	6.6 F	**Doc ID:** RM000001XCH00AX
Model Year Start: 2016	**Model:** Tacoma	**Prod Date Range:** [08/2015 -]
Title: SERVICE SPECIFICATIONS: SUSPENSION: SERVICE DATA; 2016 MY Tacoma [08/2015 -]		

SERVICE DATA

Vehicle Height (Unloaded Vehicle):

VEHICLE MODEL	TIRE SIZE	FRONT A - B	REAR C - D
TRN245L-CRMSKA	P245/75R16	65 mm (2.56 in.)	-39 mm (-1.54 in.)
TRN245L-CRMSKA (FIRM SUSPENSION)	P245/75R16	65 mm (2.56 in.)	-46 mm (-1.81 in.)
TRN245L-CRTSKA	P245/75R16	67 mm (2.64 in.)	-39 mm (-1.54 in.)
TRN245L-CRTSKA (FIRM SUSPENSION)	P245/75R16	67 mm (2.64 in.)	-47 mm (-1.85 in.)
GRN305L-CRFSHA	P245/75R16	65 mm (2.56 in.)	-37 mm (-1.46 in.)
	265/70R16	66 mm (2.6 in.)	-39 mm (-1.54 in.)
	P265/65R17	65 mm (2.56 in.)	-37 mm (-1.46 in.)
GRN305L-CRFSHA (FIRM SUSPENSION)	P245/75R16	65 mm (2.56 in.)	-45 mm (-1.77 in.)
	265/70R16	66 mm (2.6 in.)	-47 mm (-1.85 in.)
	P265/65R17	65 mm (2.56 in.)	-45 mm (-1.77 in.)
GRN305L-CRTSHA	P245/75R16	64 mm (2.52 in.)	-39 mm (-1.54 in.)
	265/70R16	65 mm (2.56 in.)	-41 mm (-1.61 in.)
	P265/65R17	64 mm (2.52 in.)	-39 mm (-1.54 in.)
GRN305L-CRTSHA (FIRM SUSPENSION)	P245/75R16	64 mm (2.52 in.)	-47 mm (-1.85 in.)
	265/70R16	66 mm (2.6 in.)	-49 mm (-1.93 in.)
	P265/65R17	64 mm (2.52 in.)	-47 mm (-1.85 in.)
GRN305L-PRFSHA	P245/75R16	64 mm (2.52 in.)	-32 mm (-1.26 in.)
	265/70R16	65 mm (2.56 in.)	-34 mm (-1.34 in.)
	P265/65R17	64 mm (2.52 in.)	-32 mm (-1.26 in.)
GRN305L-PRFSHA (FIRM SUSPENSION)	P245/75R16	65 mm (2.56 in.)	-40 mm (-1.57 in.)
	265/70R16	66 mm (2.6 in.)	-41 mm (-1.61 in.)
	P265/65R17	65 mm (2.56 in.)	-40 mm (-1.57 in.)
GRN305L-PRTSHA	P245/75R16	65 mm (2.56 in.)	-33 mm (-1.3 in.)
	265/70R16	66 mm (2.6 in.)	-34 mm (-1.34 in.)
	P265/65R17	65 mm (2.56 in.)	-33 mm (-1.3 in.)
GRN305L-PRTSHA (FIRM SUSPENSION)	P245/75R16	66 mm (2.6 in.)	-41 mm (-1.61 in.)
	265/70R16	66 mm (2.6 in.)	-42 mm (-1.65 in.)

Last Modified: 11-13-2015	6.6 C	**Doc ID:** RM000003WQ40G3X
Model Year Start: 2016	**Model:** Tacoma	**Prod Date Range:** [08/2015 -]
Title: AUDIO / VISUAL: AUDIO AND VISUAL SYSTEM: B15F7; Certification ECU Vehicle Information Reading/Writing Process Malfunction; 2016 MY Tacoma [08/2015 -]		

DTC	**B15F7**	**Certification ECU Vehicle Information Reading/Writing Process Malfunction**

DESCRIPTION

This DTC is stored when items controlled by the certification ECU (smart key ECU assembly) cannot be customized via the audio and visual system vehicle customization screen.

HINT:

The certification ECU (smart key ECU assembly) controls the smart key system related items that are customizable via the audio and visual system vehicle customization screen.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B15F7	Certification ECU (smart key ECU assembly) vehicle setting processing malfunction	• CAN communication system • Smart key system (for Entry Function) • Smart key system (for Start Function) • Certification ECU (smart key ECU assembly) • Radio and display receiver assembly

INSPECTION PROCEDURE

NOTICE:

Before replacing the certification ECU (smart key ECU assembly), refer to Registration INFO .

PROCEDURE

1.	**CHECK CAN COMMUNICATION SYSTEM**

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

OK:

CAN communication DTCs are not output.

NG ▶ **GO TO CAN COMMUNICATION SYSTEM**

Last Modified: 11-13-2015	6.6 J	**Doc ID:** RM0000020RR0V5X
Model Year Start: 2016	**Model:** Tacoma	**Prod Date Range:** [08/2015 -]
Title: AUDIO / VISUAL: AUDIO AND VISUAL SYSTEM: Black Screen; 2016 MY Tacoma [08/2015 -]		

Black Screen

INSPECTION PROCEDURE

PROCEDURE

1.	**CHECK DISPLAY SETTING**

(a) Check that the display is not in "Screen Off" mode.

OK:

The display setting is not in "Screen Off" mode.

NG ▶ **CHANGE SCREEN TO SCREEN ON MODE**

OK ▼

2.	**CHECK IMAGE QUALITY SETTING**

(a) Check that the screen color quality can be set.

OK:

Setting is possible.

NG ▶ **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**

OK ▶ **SET SCREEN COLOR QUALITY TO NORMAL**

- The following procedures require the use of the Techstream:
  - New key code registration
  - Additional key code registration
  - Key code erasure
- A maximum of 5 key codes can be registered.

MALFUNCTIONING ECU	PROCEDURE	REFER TO
Transponder key ECU assembly	1. Replace transponder key ECU assembly.	INFO
	2. Register all keys.	PROCEDURE "A"
	3. Register ECU communication ID.	PROCEDURE "E"
ECM	1. Replace ECM. (for 2TR-FE)	INFO
	2. Replace ECM. (for 2GR-FKS)	INFO
	3. Register ECU communication ID.	PROCEDURE "F"
Transponder key ECU assembly and ECM	1. Replace transponder key ECU assembly.	INFO
	2. Replace ECM. (for 2TR-FE)	INFO
	3. Replace ECM. (for 2GR-FKS)	INFO
	4. Register all keys.	PROCEDURE "A"
	5. Register ECU communication ID.	PROCEDURE "F"

4. KEY REGISTRATION (PROCEDURE "A")

(a) New key code registration (Procedure "A"):

NOTICE:

Make sure that no key codes are registered in the transponder key ECU assembly.

HINT:

- In this mode, a maximum of 2 key codes for 2 master keys can be registered. The master keys can be registered in any order because the transponder key ECU assembly can distinguish between different types of keys.
- New key codes must be registered with the battery connected. The ignition switch can be either ON or off.
- When a new transponder key ECU assembly is installed, key codes must be registered in the transponder key ECU assembly.

Automatic Key Code Registration (New Registration)

PROCEDURE	SECURITY INDICATOR LIGHT CONDITION
1. Start	Blinking **HINT:** Until first key is inserted
2. Insert the master key into the ignition key cylinder.	On
3. Techstream operation Enter the following menus: Body Electrical / Immobiliser / Utility / Key Registration **HINT:** After completing the above operation, proceed to the next step in	Off for 1 second and then on

Last Modified: 11-13-2015	6.6 A	**Doc ID:** RM000000VIS045X
Model Year Start: 2016	**Model:** Tacoma	**Prod Date Range:** [08/2015 -]
Title: 2GR-FKS FUEL: FUEL PUMP (for High Pressure): REMOVAL; 2016 MY Tacoma [08/2015 -]		

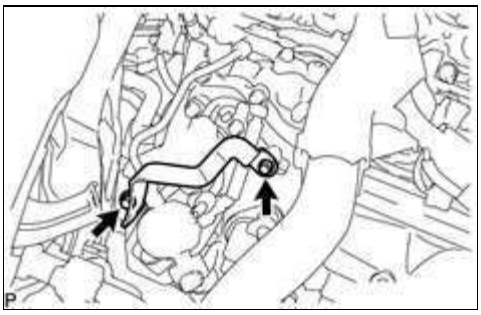
REMOVAL

1. REMOVE INTAKE MANIFOLD

INFO

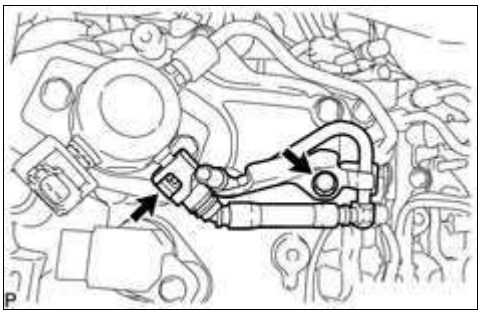
2. REMOVE WIRE HARNESS CLAMP BRACKET

(a) Remove the 2 bolts and wire harness clamp bracket.



3. REMOVE FUEL TUBE SUB-ASSEMBLY

(a) Disconnect the fuel tube sub-assembly from the fuel pump assembly INFO .

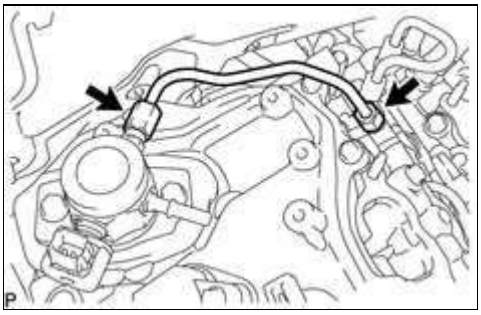


(b) Remove the bolt and fuel tube sub-assembly.

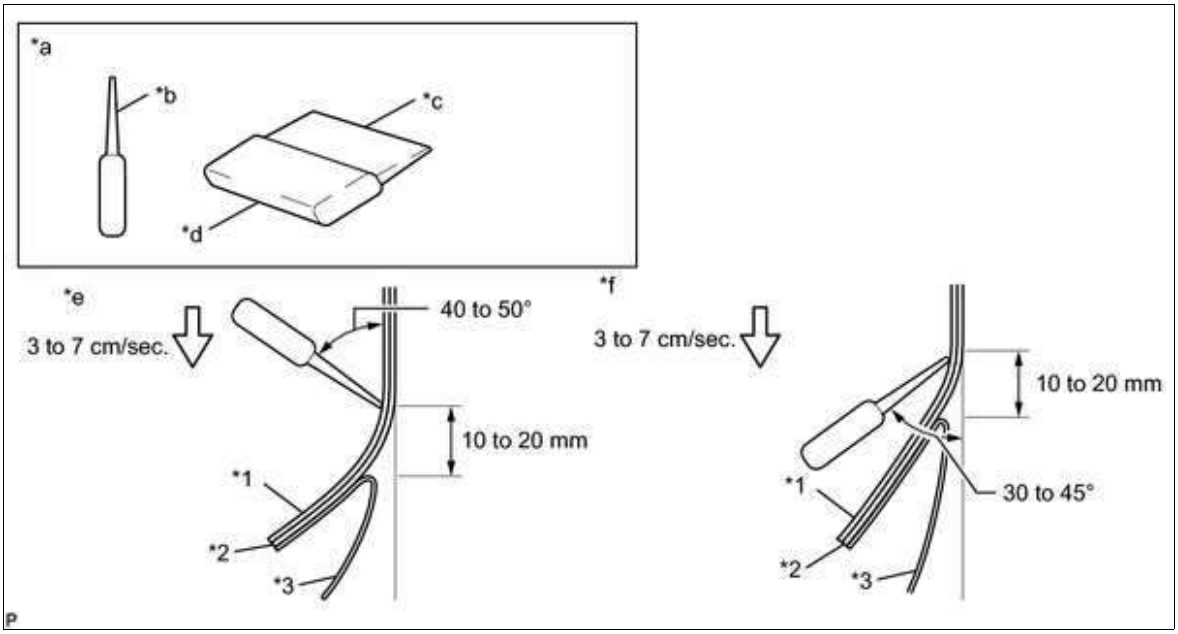
4. REMOVE NO. 1 FUEL PIPE SUB-ASSEMBLY

(a) Loosen the 2 union nuts of the No. 1 fuel pipe sub-assembly.

(b) Remove the No. 1 fuel pipe sub-assembly.



5. REMOVE FUEL PUMP ASSEMBLY



Text in Illustration

*1	Application Sheet	*2	Rear Body Stripe RH
*3	Release Paper	-	-
*a	Sectional View	*b	Squeegee
*c	Non-padded Side	*d	Padded Side
*e	Pressing	*f	Pulling

NOTICE:

Be sure to observe the specified pressing speed, force and angle of the squeegee to avoid wrinkles and air bubbles.

HINT:

- Either angle of the squeegee (for pressing forward or for pulling) is acceptable.
- Be sure to apply the tape while removing the release paper 10 to 20 mm (0.393 to 0.787 in.) from the edge of the squeegee.

(f) Key points for the installation of the tape (how to use a squeegee and the installation procedure for corners)

(1) Remove the release paper and apply the tape carefully with your fingers.

(2) Before applying the tape to each corner, heat the tape using a heat light and gradually apply it to avoid wrinkles in the tape and achieve a neat finish.

(g) Check after installation

(1) After completing the application, check if the tape is applied neatly. If the tape is not applied neatly, apply new tape.

NOTICE:

Do not reuse the tape.

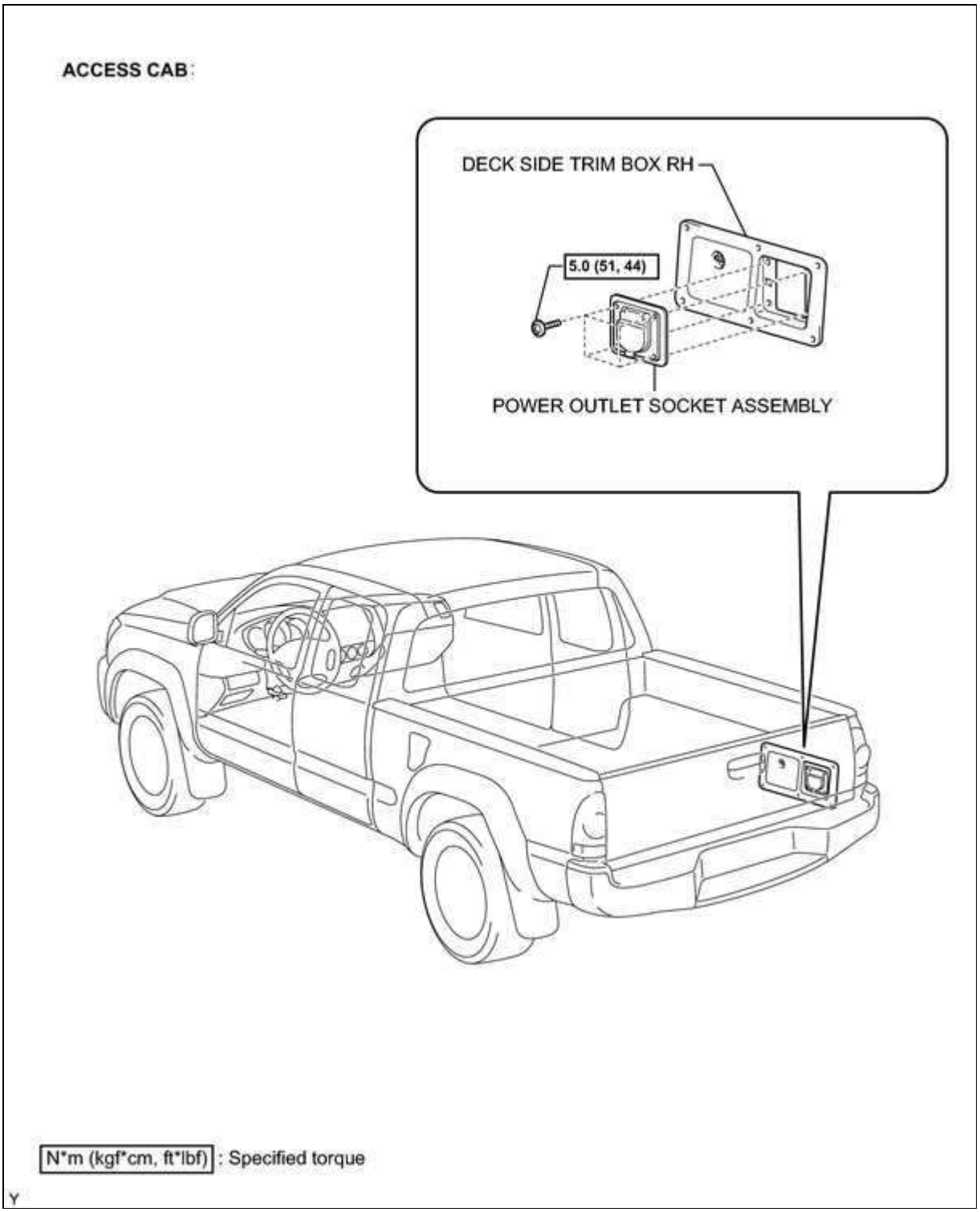
(h) Install a new rear body stripe RH.

(1) Using a heat light, heat the vehicle body and a new rear body stripe RH.

(2) Remove the peeling paper from the face of the rear body stripe RH.

(3) Align the application tape with the rear end character line and using a squeegee, apply the rear body stripe RH.

ILLUSTRATION



*2	Instrument Panel Wire Assembly
*3	Instrument Panel Wire
*4	Airbag Sensor Assembly

Result

RESULT	PROCEED TO
NG	A
OK	B

B ▶ **GO TO STEP 19**

A ▶ **REPLACE INSTRUMENT PANEL WIRE**

11.	**CHECK CONNECTOR**

(a) Turn the ignition switch off.

(b) Disconnect the negative (-) terminal cable from the battery, and wait for at least 90 seconds.

(c) Check that the instrument panel wire assembly connectors (on the instrument panel passenger without door airbag assembly side) are not damaged.

OK:

The lock button is not disengaged, and the claw of the lock is not deformed or damaged.

NG ▶ **REPLACE INSTRUMENT PANEL WIRE ASSEMBLY**

OK ▼

12.	**CHECK CONNECTION OF CONNECTORS**

(a) Check that the connectors are properly connected to the airbag sensor assembly and the instrument panel wire assembly.

OK:

The connectors are properly connected.

NG ▶ **CONNECT CONNECTORS**

Last Modified: 11-13-2015	6.6 A	**Doc ID:** RM000002ZLM04FX
Model Year Start: 2016	**Model:** Tacoma	**Prod Date Range:** [08/2015 -]
Title: AC60E AUTOMATIC TRANSMISSION: TRANSMISSION CONTROL CABLE: REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

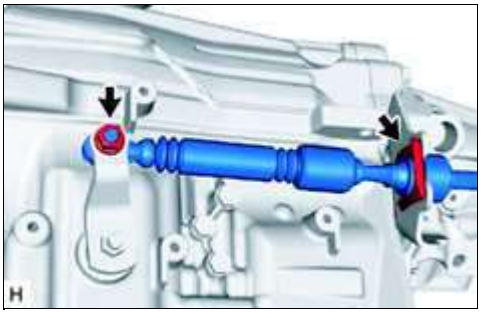
1. REMOVE FRONT CONSOLE BOX

INFO

2. DISCONNECT TRANSMISSION CONTROL CABLE ASSEMBLY INFO

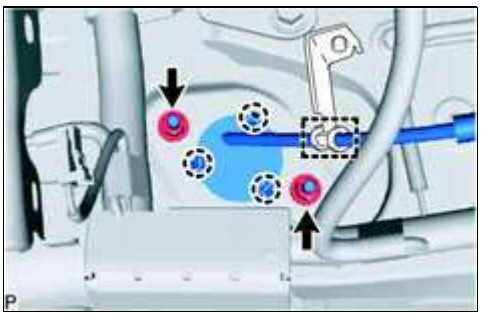
3. REMOVE TRANSMISSION CONTROL CABLE ASSEMBLY

(a) Remove the nut and clip and disconnect the transmission control cable assembly from the automatic transmission assembly.



(b) Remove the nut and disconnect the transmission control cable assembly from the vehicle body.

(c) Detach the clamp to disconnect the transmission control cable support from the transmission control cable clamp.



(d) Remove the 2 nuts and detach the 3 claws, and then pull out the transmission control cable assembly from the vehicle body.

Last Modified: 11-13-2015	6.6 C	**Doc ID:** RM0000012XR0AKX
Model Year Start: 2016	**Model:** Tacoma	**Prod Date Range:** [08/2015 -]
Title: AC60F AUTOMATIC TRANSMISSION: AUTOMATIC TRANSMISSION SYSTEM (for 2GR-FKS): P274011; Transmission Fluid Temperature Sensor "B" Circuit Short to Ground; 2016 MY Tacoma [08/2015 -]		

DTC	**P274011**	**Transmission Fluid Temperature Sensor "B" Circuit Short to Ground**

DESCRIPTION

The No. 2 ATF temperature sensor is installed in the transmission valve body assembly.

If the ECM detects an abnormally high ATF temperature near this sensor, it illuminates the warning indicator.

HINT:

- The temperature of ATF easily rises when towing, climbing hills, in traffic, etc.
- If the No. 2 ATF temperature sensor becomes short-circuited, the signal that indicates that the ATF temperature is 150°C (302°F) or higher is input into the ECM.

Vehicle conditions when the sensor is normal and when the sensor is short-circuited are indicated in the table below.

NO. 2 ATF TEMPERATURE SENSOR STATE	DETECTION CONDITION	SYMPTOM	RECOVERY CONDITION
Sensor is normal	ATF temperature higher than 150°C (302°F)	ATF temperature warning indicator remains on	ATF temperature below 135°C (275°F)*1
	ATF temperature higher than 130°C (266°F)	Shift point too high	ATF temperature below 110°C (230°F)
Sensor is short-circuited	Any conditions	Shift point too high	Symptoms still occur
	Engine coolant temperature higher than 95°C (203°F)	Lock-up at 3rd gear*2	Symptoms still occur

HINT:

*1: When ATF temperature is in the normal range, it decreases to below 135°C (275°F) within 5 minutes with the shift lever in P or N in an idling state.

*2: When ATF temperature is normal, transmission lock-up occurs in 4th, 5th and 6th gear with the shift lever in D or with the S6 range selected, in 4th or 5th gear with the S5 range selected, and 4th gear with the S4 range selected.

DTC CODE	DTC DETECTION CONDITION	TROUBLE AREA	SAE
P274011	The output voltage from the No. 2 ATF temperature sensor is below 0.0459 V for 0.5 seconds or more (1 trip detection logic).	• Short in No. 2 ATF temperature sensor circuit • No. 2 ATF temperature sensor (transmission wire) • ECM	P2742

MONITOR DESCRIPTION

Last Modified: 11-13-2015	6.6 C	**Doc ID:** RM000000W8A0OFX
Model Year Start: 2016	**Model:** Tacoma	**Prod Date Range:** [08/2015 -]
Title: AC60F AUTOMATIC TRANSMISSION: AUTOMATIC TRANSMISSION SYSTEM (for 2TR-FE): P2716; Pressure Control Solenoid "D" Electrical (Shift Solenoid Valve SLT); 2016 MY Tacoma [08/2015 -]		

DTC	**P2716**	**Pressure Control Solenoid "D" Electrical (Shift Solenoid Valve SLT)**

DESCRIPTION

Refer to the system description for DTC P2714 INFO .

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
P2716	Open or short is detected in shift solenoid valve SLT circuit for 1 second or more while driving (1 trip detection logic).	• Open or short in shift solenoid valve SLT circuit • Shift solenoid valve SLT • ECM

MONITOR DESCRIPTION

When an open or short in the shift solenoid valve SLT circuit is detected, the ECM interprets this as a fault. The ECM will illuminate the MIL and store the DTC.

MONITOR STRATEGY

Related DTCs	P2716: Shift solenoid valve SLT/Range check
Required sensors/Components	Shift solenoid valve SLT
Frequency of operation	Continuous
Duration	1 sec.
MIL operation	Immediately
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

All:

The monitor will run whenever the following DTCs are not stored	None
Solenoid current cut status	Not cut
Ignition switch	ON
Starter	OFF

Condition (A):

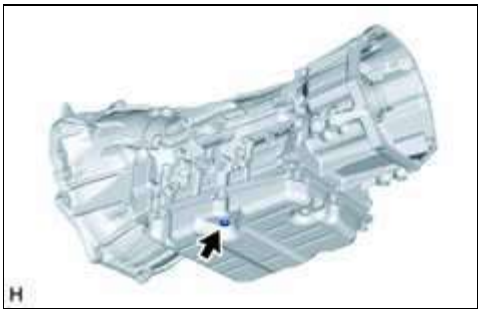
Battery voltage	12 V or higher

Last Modified: 11-13-2015	6.6 A	**Doc ID:** RM000000ODV01SX
Model Year Start: 2016	**Model:** Tacoma	**Prod Date Range:** [08/2015 -]
Title: AC60F AUTOMATIC TRANSMISSION: TRANSMISSION WIRE: REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

1. DRAIN AUTOMATIC TRANSMISSION FLUID

(a) Remove the drain plug and gasket from the automatic transmission assembly and drain the ATF.



(b) Install a new gasket and the drain plug to the automatic transmission assembly.

Torque:

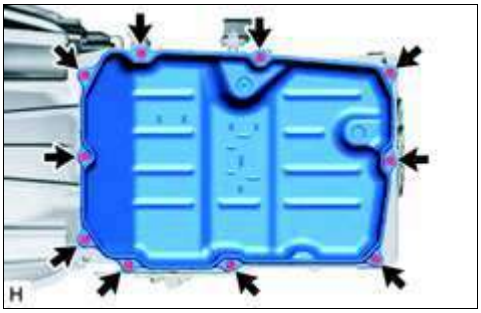
20 N·m {204 kgf·cm, 15ft·lbf}

2. REMOVE AUTOMATIC TRANSMISSION OIL PAN SUB-ASSEMBLY

(a) Remove the 10 bolts, automatic transmission oil pan sub-assembly and automatic transmission oil pan gasket from the automatic transmission case sub-assembly.

NOTICE:

Some fluid will remain in the automatic transmission oil pan sub-assembly. Remove all of the bolts, and carefully remove the automatic transmission oil pan sub-assembly.



(b) Remove the 4 transmission oil cleaner magnets from the automatic transmission oil pan sub-assembly.

(c) Examine the particles in the automatic transmission oil pan sub-assembly.

(1) Collect any steel chips with the removed transmission oil cleaner magnets. Carefully inspect the foreign matter and particles in the automatic transmission oil pan sub-assembly and on the transmission oil cleaner magnets to anticipate the type of wear you will find in the automatic transmission assembly.

Steel (magnetic): bearing, gear and clutch plate wear

Brass (non-magnetic): bush wear

3. DISCONNECT TRANSMISSION WIRE

HINT:

Measure the values on the wire harness side with the connector disconnected.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P24-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
P24-2 (B) - Body ground	R - Body ground	Power supply	Ignition switch ON	11 to 14 V

If the result is not as specified, there may be a malfunction in the wire harness.

(c) Reconnect the P24 front power window regulator motor assembly LH connector.

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

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P24-7 (DOWN) - P24-1 (GND)	SB - W-B	Power window motor DOWN input	Ignition switch ON, power window regulator master switch assembly off	11 to 14 V
			Ignition switch ON, power window regulator master switch assembly DOWN (Manual operation)	Below 1 V
			Ignition switch ON, driver side power window fully closed	11 to 14 V
			Ignition switch ON, driver side power window fully DOWN (AUTO DOWN position)	Below 1 V
			Ignition switch ON, driver side power window fully stopped (DOWN)	11 to 14 V
P24-10 (UP) - P24-1 (GND)	L - W-B	Power window motor UP input	Ignition switch ON, power window regulator master switch assembly off	11 to 14 V
			Ignition switch ON, power window regulator master switch assembly UP (Manual operation)	Below 1 V
			Ignition switch ON, driver side power window fully open	11 to 14 V
			Ignition switch ON, driver side power window fully UP (AUTO UP position)	Below 1 V
			Ignition switch ON, driver side power window fully stopped (UP)	11 to 14 V

If the result is not as specified, the front power window regulator motor assembly LH may have a malfunction.

4. CHECK FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH