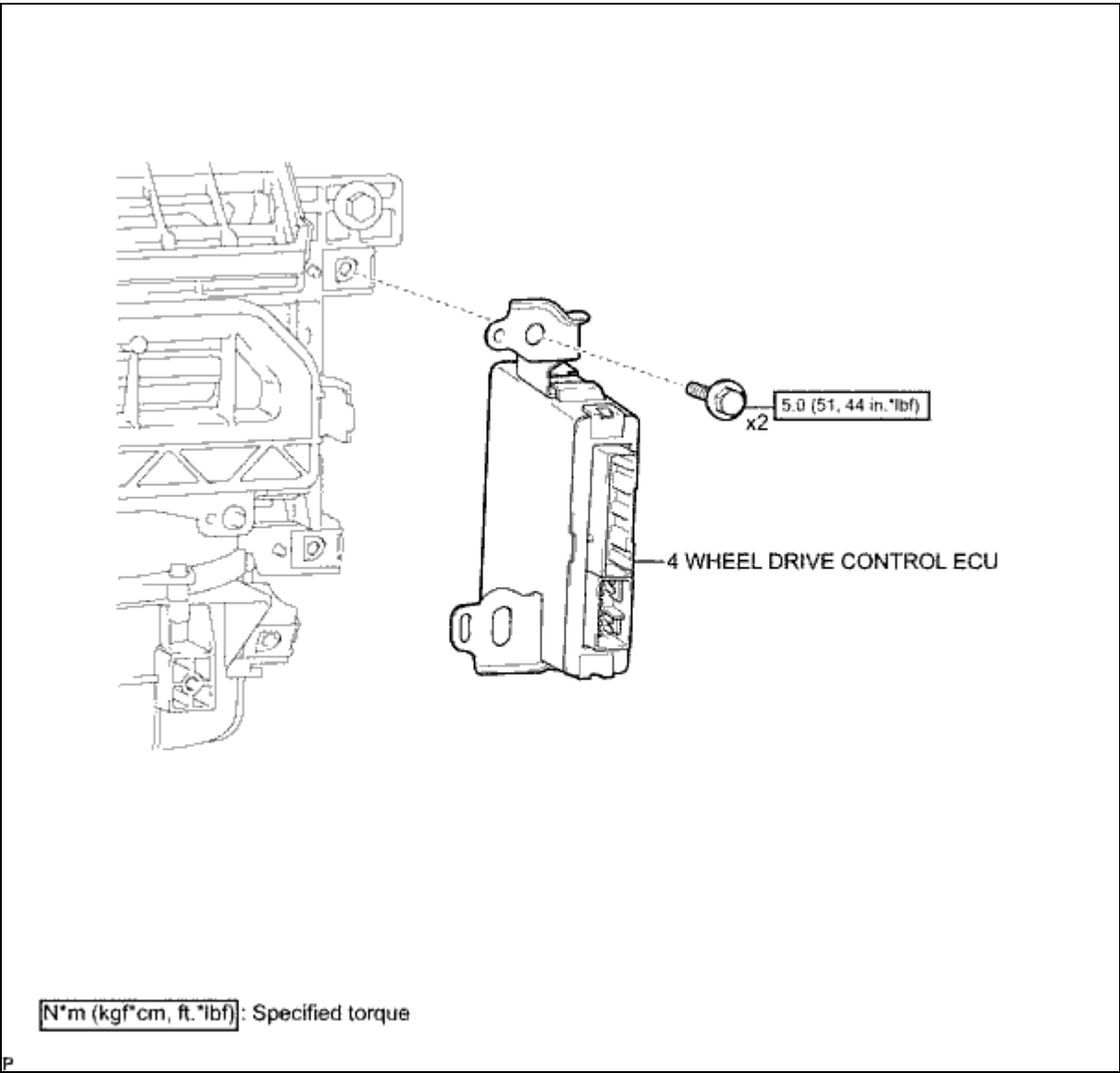


Last Modified: 11-13-2015	6.6 K	Doc ID: RM000005V37000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: 4WD CONTROL ECU: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION



P



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000005V36000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: 4WD CONTROL ECU: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

1. INSTALL 4 WHEEL DRIVE CONTROL ECU

- (a) Engage the 2 guides to install the 4 wheel drive control ECU.
- (b) Install the 2 bolts.

Torque:

5.0 N·m {51 kgf·cm, 44in·lbf}

- (c) Connect the 2 connectors.

2. INSTALL ECM



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000005V38000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: 4WD CONTROL ECU: REMOVAL; 2016 MY Tacoma [08/2015 -]		

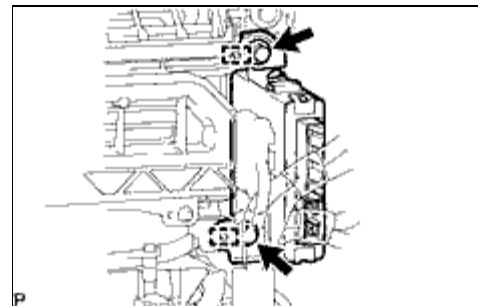
REMOVAL

1. REMOVE ECM

INFO

2. REMOVE 4 WHEEL DRIVE CONTROL ECU

(a) Disconnect the 2 connectors.



(b) Remove the 2 bolts.

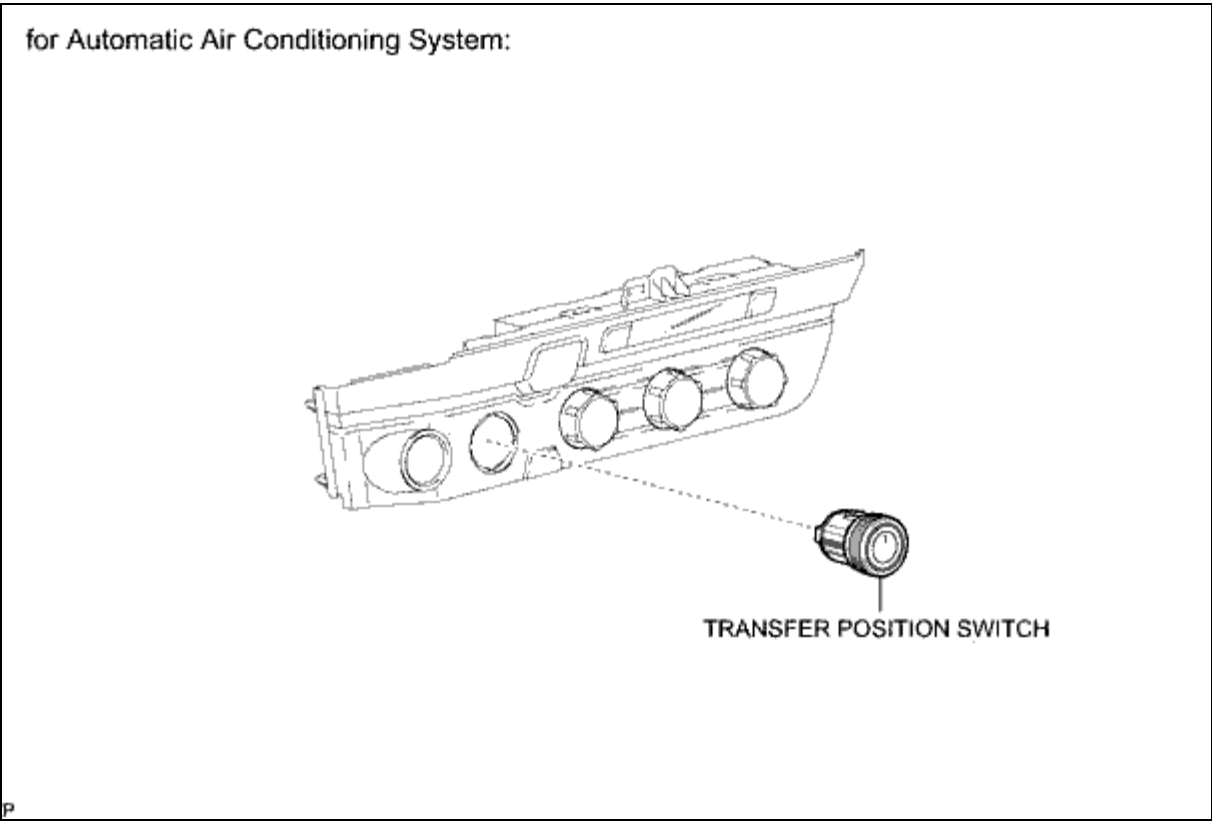
(c) Disengage the 2 guides to remove the 4 wheel drive control ECU.



Last Modified: 11-13-2015	6.6 K	Doc ID: RM000005V33000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: 4WD CONTROL SWITCH: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

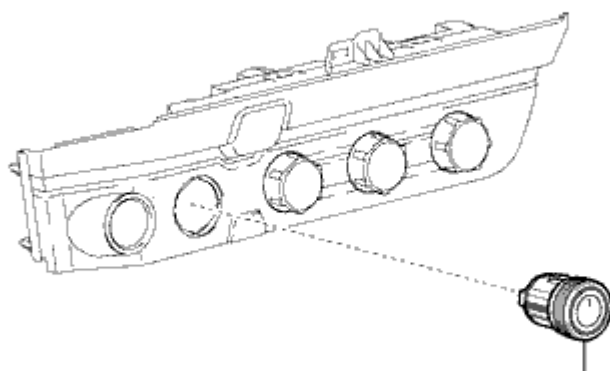
COMPONENTS

ILLUSTRATION



ILLUSTRATION

for Manual Cooler System:



TRANSFER POSITION SWITCH

P



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000005V32000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: 4WD CONTROL SWITCH: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

1. INSTALL TRANSFER POSITION SWITCH

(a) Attach the 2 claws to install the transfer position switch.

2. INSTALL AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)

INFO

3. INSTALL INTEGRATION PANEL SUB-ASSEMBLY (for Manual Cooler System)

INFO



Last Modified: 11-13-2015	6.6 G	Doc ID: RM000005V35000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: 4WD CONTROL SWITCH: ON-VEHICLE INSPECTION; 2016 MY Tacoma [08/2015 -]		

ON-VEHICLE INSPECTION

1. INSPECT INDICATOR LIGHT

(a) Inspect the 4HI Indicator Light:

- (1) Start the engine.
- (2) Change the 4WD control switch from 2WD to 4H.
- (3) Check the 4HI indicator light.

OK:

The 4HI indicator light comes on or the 4HI indicator light comes on after it is blinking.

If the result is not as specified, inspect the switch, four wheel drive control ECU and transfer shift actuator assembly. If there is a malfunction, inspect the switch, ECU, transfer shift actuator and A.D.D. actuator. If the system is normal, there may be a malfunction in the CAN communication system or combination meter. In this case, first check the CAN communication system [INFO](#) . Then check the combination meter [INFO](#) and touch select 2- 4 and high-low system [INFO](#) .

(b) Inspect the 4LO Indicator Light:

- (1) Start the engine.
- (2) Move the shift lever to N.
- (3) Change the 4WD control switch from 2WD to 4H. Then change it from 4H to 4L after the 4HI indicator light illuminates (after 4H switch completion).
- (4) Check the 4LO indicator light.

OK:

The 4LO indicator light comes on or the 4LO indicator light comes on after it is blinking.

If there is a malfunction, inspect the switch, ECU and actuator. If the system is normal, the combination meter may be malfunctioning.

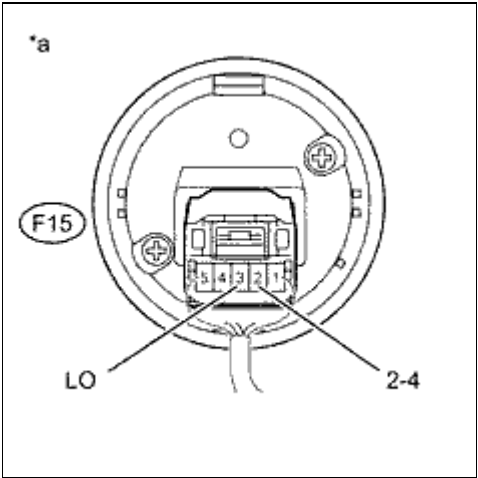
2. INSPECT TRANSFER POSITION SWITCH

(a) Remove the transfer position switch with its connector still connected [INFO](#) .

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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
F15-2 (2-4) - Body ground	Ignition switch ON 2WD position	Below 1 V
	Ignition switch ON 4H position	Below 1.5 V
	Ignition switch ON 4L position	10.5 to 14 V
F15-3 (LO) - Body ground	Ignition switch ON 2WD position	10.5 to 14 V
	Ignition switch ON 4H position	Below 1.5 V
	Ignition switch ON 4L position	Below 1 V



Text in Illustration

*a	Component with harness connected (Transfer Position Switch)
----	--



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000005V34000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: 4WD CONTROL SWITCH: REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

1. REMOVE AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)

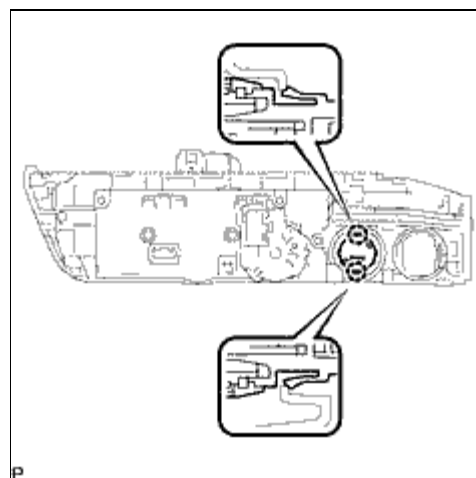
INFO

2. REMOVE INTEGRATION PANEL SUB-ASSEMBLY (for Manual Cooler System)

INFO

3. REMOVE TRANSFER POSITION SWITCH

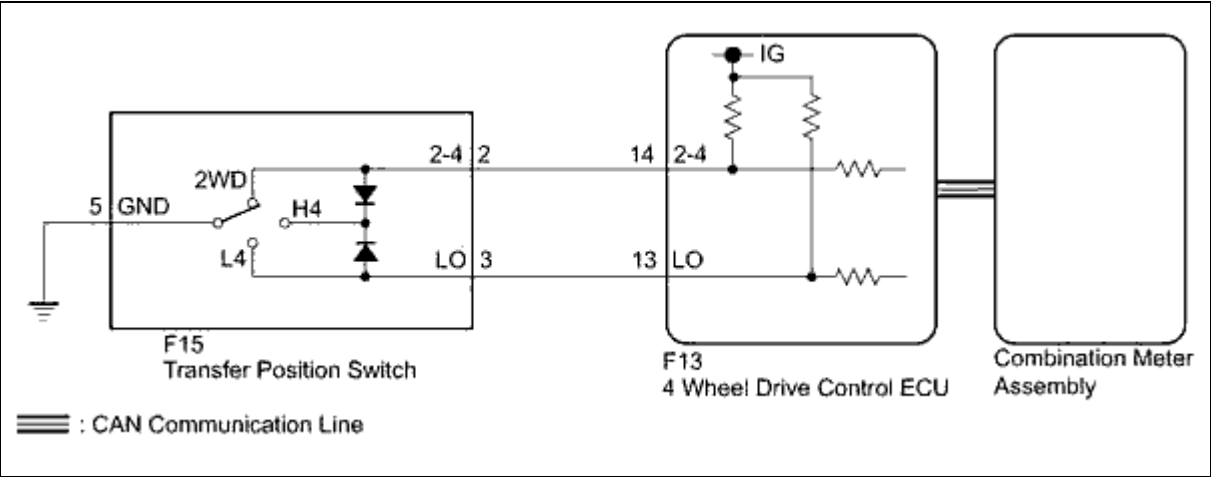
(a) Detach the 2 claws to remove the transfer position switch.



Last Modified: 11-13-2015	6.6 J	Doc ID: RM000005VHN000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: 4WD Control Switch Circuit; 2016 MY Tacoma [08/2015 -]		

4WD Control Switch Circuit

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	CONFIRM PROBLEM SYMPTOM
----	--------------------------------

(a) Confirm the problem symptoms.

Result

RESULT	PROCEED TO
The 4WD indicator light (green) and 4LO indicator light remain off	A
The 4WD indicator light (green) remains illuminated, and the 4LO indicator light remains off	B
The 4WD indicator light (green) and 4LO indicator light remain illuminated	C

B ► GO TO STEP 6

C ► GO TO STEP 7

A



2. CHECK 4WD INDICATOR LIGHT (GREEN)

- (a) Turn the ignition switch to ON.
- (b) for Automatic Transmission:
- Move the shift lever to N.
- for Manual Transmission:
- Depress the clutch pedal.
- (c) Turn the transfer position switch to H4.
- (d) Wait for 60 seconds.
- (e) Check the 4WD indicator light (green).

Result

RESULT	PROCEED TO
The 4WD indicator light (green) blinks*1 or illuminates	A
The 4WD indicator light (green) rapidly blinks*2 or remains off	B

*1 (Blinking): Blinks at 0.5 second intervals (0.5 seconds on and 0.5 seconds off)

*2 (Rapidly blinking): Blinks at 0.25 second intervals (0.25 seconds on and 0.25 seconds off)

B ► GO TO STEP 3

A ► END

3. CHECK FOR DTC

- (a) Turn the transfer position switch to L4.
- (b) Check if DTC P279E is output after 60 seconds elapse .

Result

RESULT	PROCEED TO
DTC P279E is not output	A
DTC P279E is output	B

B ► REPAIR CIRCUIT INDICATED BY OUTPUT CODE

A



4. CHECK CAN COMMUNICATION LINE

(a) Select "Bus Check" from the System Selection Menu screen, and follow the prompts on the screen to inspect the CAN Bus **INFO** .

OK:

"Bus Check" indicates no malfunctions in CAN communication.

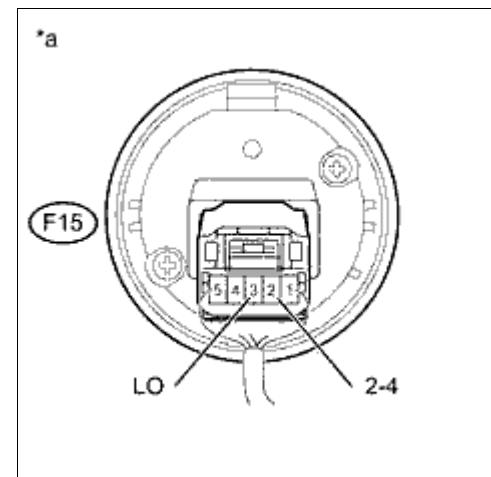
NG **CHECK CAN COMMUNICATION SYSTEM**

OK



5. CHECK TRANSFER POSITION SWITCH

(a) Remove the transfer position switch with its connector still connected.



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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
F15-2 (2-4) - Body ground	Ignition switch ON 2WD position	Below 1.5 V
	Ignition switch ON H4 position	Below 1.5 V
	Ignition switch ON L4 position	10 to 14 V
F15-3 (LO) - Body ground	Ignition switch ON 2WD position	10 to 14 V
	Ignition switch ON H4 position	Below 1.5 V

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
	Ignition switch ON L4 position	Below 1.5 V

Text in Illustration

*a	Component with harness connected (Transfer Position Switch)
----	--

NG ► REPLACE TRANSFER POSITION SWITCH

OK ► CHECK METER / GAUGE SYSTEM

6.	CHECK 4WD INDICATOR LIGHT (GREEN)
-----------	--

(a) Turn the ignition switch to ON.

(b) for Automatic Transmission:

Move the shift lever to N.

for Manual Transmission:

Depress the clutch pedal.

(c) Turn the transfer position switch to 2WD.

(d) Wait for 60 seconds.

(e) Check the 4WD indicator light (green).

Result

RESULT	PROCEED TO
The 4WD indicator light (green) blinks*1 or turns off	A
The 4WD indicator light (green) rapidly blinks*2 or remains on	B

*1 (Blinking): Blinks at 0.5 second intervals (0.5 seconds on and 0.5 seconds off)

*2 (Rapidly blinking): Blinks at 0.25 second intervals (0.25 seconds on and 0.25 seconds off)

B ► GO TO DTC P279E

A ► END

7.	CHECK 4LO INDICATOR LIGHT
-----------	----------------------------------

HINT:

Perform the following procedures with the vehicle stopped.

(a) Turn the ignition switch to ON.

(b) for Automatic Transmission:

Move the shift lever to N.

for Manual Transmission:

Depress the clutch pedal.

(c) Turn the transfer position switch to H4.

(d) Wait for 60 seconds.

(e) Check the 4LO indicator light.

Result

RESULT	PROCEED TO
The 4LO indicator light blinks*1 or turns off	A
The 4LO indicator light rapidly blinks*2 or remains on	B

*1 (Blinking): Blinks at 0.5 second intervals (0.5 seconds on and 0.5 seconds off)

*2 (Rapidly blinking): Blinks at 0.25 second intervals (0.25 seconds on and 0.25 seconds off)

B ► GO TO STEP 8

A ► END

8.	CHECK FOR DTC
-----------	----------------------

(a) Turn the transfer position switch to 2WD.

(b) Check if DTC P279E is output after 60 seconds elapse INFO.

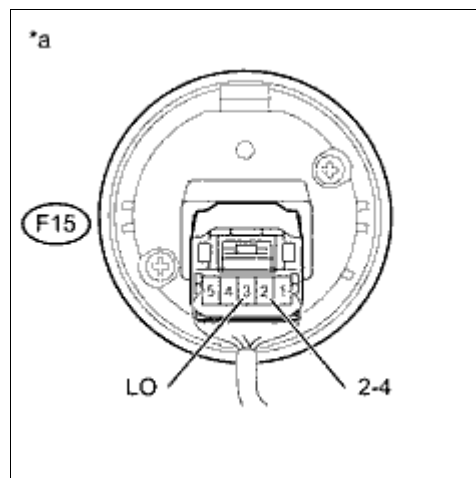
Result

RESULT	PROCEED TO
DTC P279E is not output	A
DTC P279E is output	B

B ► REPAIR CIRCUIT INDICATED BY OUTPUT CODE

A
▼

9.	CHECK TRANSFER POSITION SWITCH
-----------	---------------------------------------



(a) Remove the transfer position switch with its connector still connected.

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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
F15-2 (2-4) - Body ground	Ignition switch ON 2WD position	Below 1.5 V
	Ignition switch ON H4 position	Below 1.5 V
	Ignition switch ON L4 position	10 to 14 V
F15-3 (LO) - Body ground	Ignition switch ON 2WD position	10 to 14 V
	Ignition switch ON H4 position	Below 1.5 V
	Ignition switch ON L4 position	Below 1.5 V

Text in Illustration

*a	Component with harness connected (Transfer Position Switch)
----	--

NG ► **REPLACE TRANSFER POSITION SWITCH**

OK ► **CHECK CAN COMMUNICATION SYSTEM**



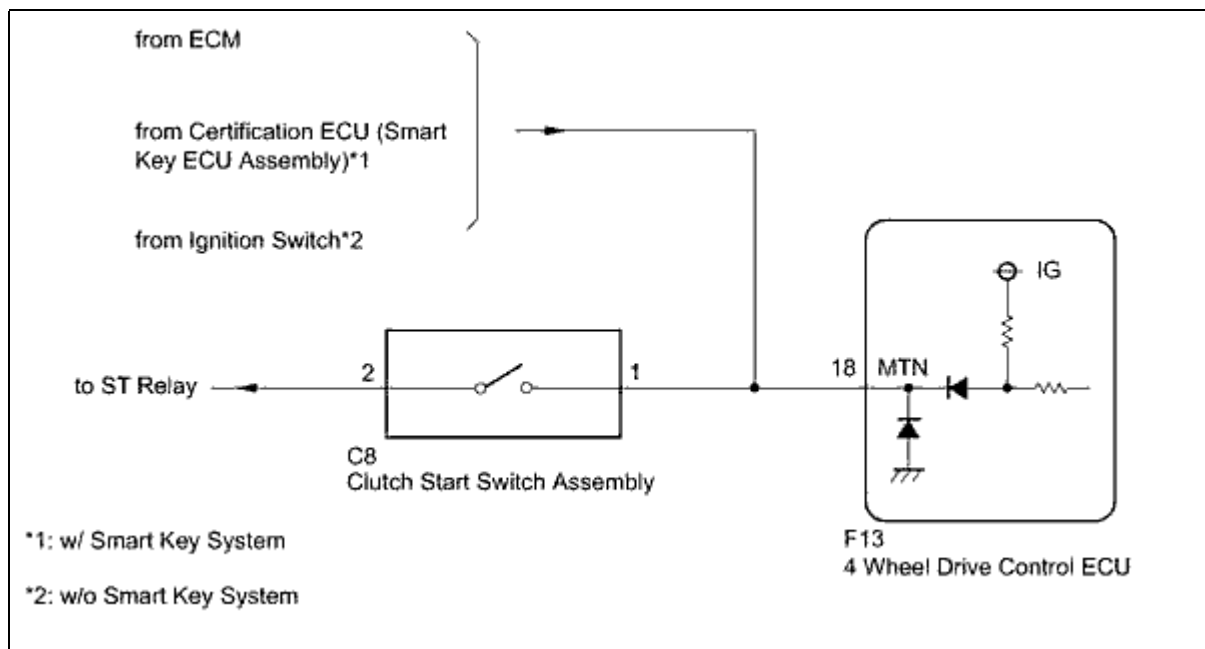
Last Modified: 11-13-2015	6.6 J	Doc ID: RM000005VHM000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: Clutch Switch Circuit; 2016 MY Tacoma [08/2015 -]		

Clutch Switch Circuit

DESCRIPTION

While depressing the clutch pedal, the clutch start switch assembly sends a signal to terminal MTN of the 4 wheel drive control ECU. While the signal is input, switching between H4 and L4 is possible.

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1. READ VALUE USING TECHSTREAM (CLUTCH SWITCH)

- Turn the ignition switch off.
- Connect the Techstream to the DLC3.
- Turn the Techstream on.
- Turn the ignition switch to ON.
- Enter the following menus: Powertrain / Four Wheel Drive / Data List.

(f) According to the display on the Techstream, read the Data List.

Four Wheel Drive

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Clutch SW	Clutch start switch status/ ON or OFF	ON: Clutch pedal depressed OFF: Clutch pedal released	Used only for vehicles with a manual transmission. Displays OFF for vehicles with an automatic transmission.

OK:

The display changes according to the clutch pedal operation.

NG ► **GO TO STEP 2**

OK ► **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**

2.	CHECK SFI SYSTEM
-----------	-------------------------

(a) Check that the SFI system operates normally.

for 2TR-FE: **INFO**

for 2GR-FKS: **INFO**

OK:

SFI system operates normally.

Result

RESULT	PROCEED TO
OK	A
NG (for 2TR-FE)	B
NG (for 2GR-FKS)	C

B ► **CHECK SFI SYSTEM**

C ► **CHECK SFI SYSTEM**

A



3.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU - CLUTCH START SWITCH ASSEMBLY)
-----------	---

- (a) Disconnect the F13 4 wheel drive control ECU connector.
- (b) Disconnect the C8 clutch start switch assembly connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F13-18 (MTN) - C8-1	Always	Below 1 Ω
F13-18 (MTN) or C8-1 - Body ground	Always	10 k Ω or higher

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ► REPLACE 4 WHEEL DRIVE CONTROL ECU



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000005VHS000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: DATA LIST / ACTIVE TEST; 2016 MY Tacoma [08/2015 -]		

DATA LIST / ACTIVE TEST

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

HINT:

Using the 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.

1. DATA LIST OF 4 WHEEL DRIVE CONTROL ECU

- Turn the ignition switch off.
- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Powertrain / Four Wheel Drive / Data List.
- According to the display on the Techstream, read the Data List.

Four Wheel Drive

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
FR Wheel Speed	Front wheel speed sensor RH reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
FL Wheel Speed	Front wheel speed sensor LH reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
RR Wheel Speed	Rear wheel speed sensor RH reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
RL Wheel Speed	Rear wheel speed sensor LH reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
Vehicle Speed	Maximum wheel speed sensor reading/	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
	Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)		speed.
Front Differential Oil Temperature	Front differential oil temperature/ Min.: -56°C (-69°F) Min.: 199°C (390°F)	Displays front differential oil temperature	-
4WD Control SW (LO)	Transfer position switch status (transfer position switch input signal of LO terminal on ECU side)/ ON or OFF	ON: H4 or L4 OFF: 2WD, between 2WD and H4 or between H4 and L4	-
4WD Control SW (2-4)	Transfer position switch status (transfer position switch input signal of 2-4 terminal on ECU side)/ ON or OFF	ON: 2WD or H4 OFF: Between 2WD and H4, between H4 and L4 or L4	-
4WD Detection SW (4WD)	Transfer shift actuator condition (4WD detection switch input signal of 4WD terminal on ECU side)/ ON or OFF	ON: 4WD state OFF: 2WD state	-
L4 Detection SW (4WDL)	Transfer shift actuator condition (L4 detection switch input signal of 4WDL terminal on ECU side)/ ON or OFF	ON: L4 state OFF: State other than L4	-
ADD Position SW (ADD)	A.D.D. actuator condition (A.D.D. position switch input signal of ADD terminal on ECU side)/ ON or OFF	ON: A.D.D. actuator lock condition (4WD state) OFF: A.D.D. actuator free condition (2WD state)	-
IG SW	Ignition switch status/ ON or OFF	ON: Ignition switch ON	-
Transfer Limit SW (TL1)	Transfer shift actuator limit switch (TL1) condition/ ON or OFF	ON: 2WD or switching between 2WD and H4 OFF: H4, switching between H4 and L4 or L4	-
Transfer Limit SW (TL2)	Transfer shift actuator limit switch (TL2) condition/ ON or OFF	ON: Switching between H4 and L4 or L4 OFF: 2WD, switching between 2WD and H4 or H4	-
Transfer Limit SW (TL3)	Transfer shift actuator limit switch (TL3) condition/ ON or OFF	ON: Switching between 2WD and H4, H4 or switching between H4 and L4 OFF: 2WD or L4	-
ADD Limit SW (DL1)	A.D.D. actuator limit switch (DL1) condition/ ON or OFF	ON: Free condition or switching between free and lock conditions OFF: Lock condition	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
ADD Limit SW (DL2)	A.D.D. actuator limit switch (DL2) condition/ ON or OFF	ON: Switching between free and lock conditions or lock condition OFF: Free condition	-
Clutch SW	Clutch start switch status/ ON or OFF	ON: Clutch pedal depressed OFF: Clutch pedal released	Used only for vehicles with a manual transmission. Displays OFF for vehicles with an automatic transmission.
Shift SW Status (N Range)	Shift lever neutral condition/ ON or OFF	ON: Shift lever in N*1, shift lever in neutral*2 ON: Shift lever in N*1, shift lever in neutral*2	-
Request Value of Vehicle Speed Limit	4WD vehicle speed limit request value/ Min.: 0 km/h (0 mph) Max.: 255 km/h (158 mph)	Vehicle speed limit not requested: 200 km/h (124 mph)	-
Transfer Shift Motor Target Current	Target current for transfer shift motor driver circuit/ Min.: 0.0 A Max.: 25.5 A	Normal: 0 A Switching: 0 to 25.5 A	-
Transfer Shift Motor Actual Current	Actual current of transfer shift motor driver circuit/ Min.: 0.0 A Max.: 25.5 A	Normal: 0 A Switching: 0 to 25.5 A	-
ADD Motor Target Current	Target current for A.D.D. shift motor driver circuit/ Min.: 0.0 A Max.: 25.5 A	Normal: 0 A Switching: 0 to 25.5 A	-
ADD Motor Actual Current	Actual current of A.D.D. shift motor driver circuit/ Min.: 0.0 A Max.: 25.5 A	Normal: 0 A Switching: 0 to 25.5 A	-
Motor Energization Status Signal	Motor power signal status/ ON or OFF	ON: Power supplied to motor OFF: Power not supplied to motor	-
C/C Cancel Request	Cruise control cancellation signal status/ ON or OFF	ON: Cruise control cancellation requested OFF: Cruise control cancellation not requested	-
4WD Status Signal	4WD status signal/ ON or OFF	ON: 4WD state OFF: 2WD state	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
L4 Status Signal	L4 status signal/ ON or OFF	ON: L4 state OFF: State other than L4	-
Status of Transfer Shift Actuator	Transfer shift actuator failure status/ Normal or Abnormal	Normal: Actuator normal Abnormal: Actuator abnormal	-
Buzzer Request	Buzzer sounding request/ NO Sound, Sound(3 times) or Sound	• NO Sound: Does not sound • Sound(3 times): Sounds 3 times • Sound: Sounds intermittently	• Sounds 3 times: Sounds 3 times at 0.5 second intervals (0.5 seconds on and 0.5 seconds off) • Sounds intermittently: 0.5 second intervals (0.5 seconds on and 0.5 seconds off)
4WD Indicator Request	4WD indicator light (green/amber*3) request/ Blink(w/o MID)/ ON(w/ MID), Blink(w/o MID)/ OFF(w/ MID), Blink4*5, Blink3(w/o MID)/OFF(w/ MID), Blink2*5, Blink1, ON or OFF	• Blink(w/o MID)/ON(w/ MID): Indicator light (amber) rapidly blinks*3 / Indicator light (green) illuminates*4 • Blink(w/o MID)/OFF(w/ MID): Indicator light (amber) rapidly blinks*3 / Indicator light (green) turns off*4 • Blink3(w/o MID)/ OFF(w/ MID): Indicator light (amber) rapidly blinks*3 / Indicator light (green) turns off*4 • Blink1: Indicator light (green) blinks • ON: Indicator light (green) illuminates • OFF: Indicator light (green/amber*3) turns off	• Blinking: 0.5 second intervals (0.5 seconds on and 0.5 seconds off) • Rapidly blinking: 0.25 second intervals (0.25 seconds on and 0.25 seconds off)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
L4 Indicator Request	4LO indicator light request/ Blink4*5, Blink3, Blink2*5, Blink1, ON or OFF	• Blink3: Indicator light rapidly blinks • Blink1: Indicator light blinks • ON: Indicator light illuminates • OFF: Indicator light turns off	• Blinking: 0.5 second intervals (0.5 seconds on and 0.5 seconds off) • Rapidly blinking: 0.25 second intervals (0.25 seconds on and 0.25 seconds off)
Multi-Terrain Select Control	Multi-terrain select control signal/ OK or NG	-	This item is displayed but not used.
Vehicle Speed Limit Request	4WD vehicle speed limit request/ ON or OFF	ON: Vehicle speed limiting is performed OFF: Vehicle speed limiting is not performed	-
Transfer Motor Energization Request	Transfer shift motor power supply command/ ON or OFF	ON: Power supplied to transfer shift motor OFF: Power not supplied to transfer shift motor	-
ADD Motor Energization Request	A.D.D. shift motor power supply command/ ON or OFF	ON: Power supplied to A.D.D. shift motor OFF: Power not supplied to A.D.D. shift motor	-
IG Voltage	IG monitor voltage/ Min.: 0.0 V Max.: 25.5 V	11 to 14 V: Ignition switch ON	-
Motor Voltage	Motor driver circuit monitor voltage/ Min.: 0.0 V Max.: 25.5 V	Normal: 1.5 to 12.0 V Switching: 3.5 V	-
Motor Duty	Motor driver circuit duty/ Min.: 0% Max.: 255%	Normal: 0% Switching: 0 to 100%	-
Front Differential Oil Temperature Warning Count	Count of front differential oil temperature warnings while ignition switch turned to ON/ Min.: 0 times Max.: 255 times	Displays total number of oil temperature warnings	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Vehicle Speed Limit Request Count	Count of 4WD vehicle speed limit requests while ignition switch turned to ON/ Min.: 0 times Max.: 255 times	Displays total number of 4WD vehicle speed limit requests	-
Mode Status	Mode transition condition/ Initial Control, Particular Control at Start-Up, Shift Settling Control at Start-Up, H2, H2->H4L(T/F Activating), H2->H4L(ADD Activating), H4L->H2(T/F Activating), H4L->H2(ADD Activating), H4L, H4L->L4L, L4L->H4L, L4L Rr Diff. Free, H4F->L4F, L4F->H4F, H4F, H4F->H4L, H4L->H4F, L4F, L4L Rr Diff. Free->Lock, L4L Rr Diff. Lock->Free, L4L Rr Diff. Lock, K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, S01, S02, S03, S04, S05, S06, S07, S08, S09, S10, S11, S12, S13, S14, S15, S16, S17, S18, S19, S20, S21, S22, S23, S24, B1, B2, B3, B4, B5, B6, 2WD Rr Diff. Free, 2WD Rr Diff. Free->Lock, 2WD Rr Diff. Lock->Free, 2WD Rr Diff. Lock	Displays transfer shift actuator, A.D.D. actuator and differential lock coil*7 transition conditions	HINT: • K1 to K10: Control while switching prohibited • K1 to K10: Control while switching prohibited • B1 to B6: Control while switching again
Oil Temperature Sensor Mode	Oil temperature sensor detection mode/ Low Temperature Mode or High Temperature Mode	Low Temperature Mode: Detecting oil temperature in low temperature mode High Temperature Mode: Detecting oil temperature in high temperature mode	-
Motor Relay (RY1-1)	Internal ECU relay (RY1-1) condition*6/ ON or OFF	ON: Relay on OFF: Relay off	-
Motor Relay (RY1-2)	Internal ECU relay (RY1-2) condition*6/ ON or OFF	ON: Relay on OFF: Relay off	-
Motor Relay (RY2-1)	Internal ECU relay (RY2-1) condition*6/ ON or OFF	ON: Relay on OFF: Relay off	-
Motor Relay (RY2-2)	Internal ECU relay (RY2-2) condition*6/ ON or OFF	ON: Relay on OFF: Relay off	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
AT/MT	AT or MT identification/ AT or MT	AT: Automatic transmission MT: Manual transmission	-
CAN Signal Invalid Status by IG Voltage Low	Whether CAN communication data invalid condition due to IG voltage drop/ Valid or Inval	Valid: IG voltage 9.5 V or higher	Inval: IG voltage below 9.5 V
SW Input Invalid Status by IG Voltage Low	Input invalid condition of switches inside actuator due to IG voltage drop/ Valid or Inval	Valid: IG voltage 7.1 V or higher	Inval: IG voltage below 7.1 V
Transfer Shift Invalid Status by IG Voltage Low	Transfer shift actuator switching operation invalid condition due to IG voltage drop/ Valid or Inval	Valid: IG voltage 9.5 V or higher	Inval: IG voltage below 9.5 V
Number of DTC	Number of DTCs stored/ Min.: 0 Max.: 255	0	-

*1: for Automatic Transmission

*2: for Manual Transmission

*3: w/o Multi-information Display

*4: w/ Multi-information Display

*5: Item not supported, therefore not displayed

*6: For the position of the relay, refer to the P17A9 wiring diagram  .

*7: w/ Differential Lock



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000005VHP000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: DIAGNOSIS SYSTEM; 2016 MY Tacoma [08/2015 -]		

DIAGNOSIS SYSTEM

1. DESCRIPTION

The 4 wheel drive control ECU records DTCs when the ECU detects a malfunction in the ECU itself or in system circuits.

The DTCs can be read through the DLC3 of the vehicle. When the system seems to be malfunctioning, use the Techstream to check for malfunctions and perform troubleshooting.

2. CHECK DLC3

- (a) Inspect the battery voltage.

Standard voltage:

11 to 14 V

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

- (b) Check the DLC3 INFO.

3. FUNCTION OF INDICATOR LIGHT

- (a) w/o Multi-information Display

- (1) When a problem occurs in the touch select 2-4 and high-low system, the 4WD indicator light (amber) and/or 4LO indicator light on the combination meter assembly rapidly blinks* to inform the driver of the problem.

*: 0.25 second intervals (0.25 seconds on and 0.25 seconds off)

- (b) w/ Multi-information Display

- (1) When a problem occurs in the touch select 2-4 and high-low system, a message is displayed on the multi-information display and/or the 4LO indicator light on the combination meter assembly rapidly blinks* to inform the driver of the problem.

*: 0.25 second intervals (0.25 seconds on and 0.25 seconds off)

- (c) Indicator light status (illumination and blinking) or multi-information display status when DTC is output.

- (1) w/o Multi-information Display

TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM

DTC NO.	4WD INDICATOR LIGHT (GREEN / AMBER)	4LO INDICATOR LIGHT
U0100	When 2WD: Not illuminated When H4 or L4: Illuminated (green)	Rapidly blinking
U0122	Rapidly blinking (amber)	Rapidly blinking*1
U0416		
P163B		
P17A0		

DTC NO.	4WD INDICATOR LIGHT (GREEN / AMBER)	4LO INDICATOR LIGHT
P17A4	Rapidly blinking (amber)	Not illuminated
P17A8	Rapidly blinking (amber)	Rapidly blinking
P17A9		
P17AA		
P17AC		
P17C7	Rapidly blinking (amber)	When 2WD or H4: Not illuminated When L4: Illuminated
P17C8		
P2772	When 2WD: Not illuminated When H4 or L4: Illuminated (green)	Rapidly blinking
P279E	Rapidly blinking (amber)	Rapidly blinking

Rapidly blinking: Blinks at 0.25 second intervals (0.25 seconds on and 0.25 seconds off)

*1: P163B may also display the 2WD/4WD mode status.

(2) w/ Multi-information Display

TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM

DTC NO.	4WD INDICATOR LIGHT (GREEN)	4LO INDICATOR LIGHT	MULTI-INFORMATION DISPLAY MESSAGE
U0100	When 2WD: Not illuminated When H4 or L4: Illuminated	Rapidly blinking	-
U0122	Not illuminated	Rapidly blinking*1	2WD-4WD mode change malfunction visit your dealer
U0416			
P163B			
P17A0			
P17A4	Not illuminated	Not illuminated	2WD-4WD mode change malfunction visit your dealer
P17A8	Not illuminated	Rapidly blinking	2WD-4WD mode change malfunction visit your dealer
P17A9			
P17AA			
P17AC			
P17C7	Not illuminated	When 2WD or H4: Not illuminated When L4: Illuminated	2WD-4WD mode change malfunction visit your dealer
P17C8			
P2772	When 2WD: Not illuminated When H4 or L4: Illuminated	Rapidly blinking	-
P279E	Not illuminated	Rapidly blinking	2WD-4WD mode change malfunction visit your dealer

Rapidly blinking: Blinks at 0.25 second intervals (0.25 seconds on and 0.25 seconds off)

*1: P163B may also display the 2WD/4WD mode status.



Last Modified: 11-13-2015	6.6 S	Doc ID: RM000005VHH000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: DIAGNOSTIC TROUBLE CODE CHART; 2016 MY Tacoma [08/2015 -]		

DIAGNOSTIC TROUBLE CODE CHART

TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM

DTC CODE	DETECTION ITEM	SEE PAGE
P163B	4WD ECU Malfunction	INFO
P17A0	Automatic Disconnecting Differential Motor Control Circuit Open	INFO
P17A4	Automatic Disconnecting Differential Motor Limit Switch Circuit	INFO
P17A8	Transfer Shift Motor Control Circuit Circuit Open	INFO
P17A9	Transfer Shift Motor Control Circuit Low	INFO
P17AA	Transfer Shift Motor Control Circuit High	INFO
P17AC	Transfer Shift Motor Limit Switch Circuit	INFO
P17C7	Front Differential Oil Temperature Sensor Circuit Low	INFO
P17C8	Front Differential Oil Temperature Sensor Circuit High	INFO
P2772	Four Wheel Drive (4WD) Low Switch Circuit Range / Performance	INFO
P279E	Four Wheel Drive (4WD) Range Signal Circuit Range / Performance	INFO
U0100	Lost Communication with ECM / PCM "A"	INFO
U0122	Lost Communication with Vehicle Dynamics Control Module	INFO
U0416	Invalid Data Received From Vehicle Dynamics Control Module	INFO



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000005VHQ000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: DTC CHECK / CLEAR; 2016 MY Tacoma [08/2015 -]		

DTC CHECK / CLEAR

1. CHECK DTC

(a) Check the DTCs.

- (1) Turn the ignition switch off.
- (2) Connect the Techstream to the DLC3.
- (3) Turn the ignition switch to ON.
- (4) Turn the Techstream on.
- (5) Read the DTCs following the prompts on the Techstream screen. Enter the following menus: Powertrain / Four Wheel Drive / Trouble Codes.
- (6) Check the details of the DTCs  .

2. CLEAR DTC

(a) Clear the DTCs.

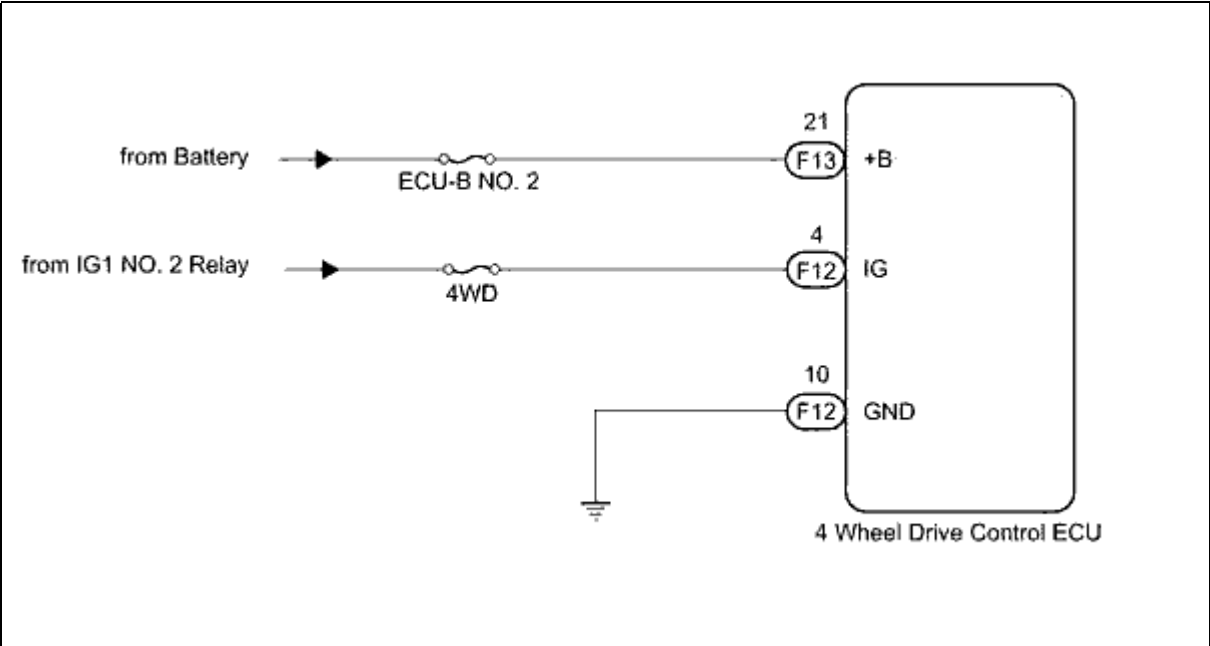
- (1) Turn the ignition switch off.
- (2) Connect the Techstream to the DLC3.
- (3) Turn the ignition switch to ON.
- (4) Turn the Techstream on.
- (5) Operate the Techstream to clear the DTCs. Enter the following menus: Powertrain / Four Wheel Drive / Trouble Codes.
- (6) According to the display on the Techstream, select the trouble code data display with the clear button.



Last Modified: 11-13-2015	6.6 J	Doc ID: RM000005VHL000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: ECU Power Source Circuit; 2016 MY Tacoma [08/2015 -]		

ECU Power Source Circuit

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:
 Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.	INSPECT BATTERY
----	------------------------

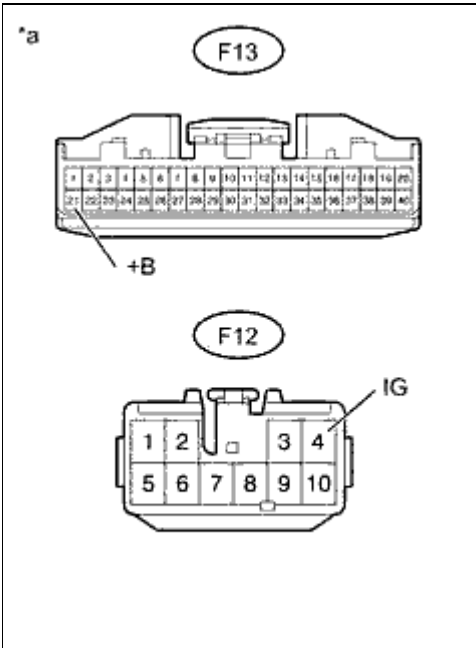
- (a) Check the battery voltage.
- Standard voltage:
 11 to 14 V

NG **CHECK OR REPLACE CHARGING SYSTEM OR BATTERY**

OK

2. CHECK HARNESS AND CONNECTOR (+B AND IG TERMINAL)

(a) Turn the ignition switch off.



(b) Disconnect the 4 wheel drive control ECU connector.

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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
F13-21 (+B) - Body ground	Always	11 to 14 V
F12-4 (IG) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to 4 Wheel Drive Control ECU)
----	--

NG REPAIR OR REPLACE HARNESS OR CONNECTOR (+B AND IG CIRCUIT)

OK

3. CHECK HARNESS AND CONNECTOR (GND TERMINAL)

(a) Turn the ignition switch off.

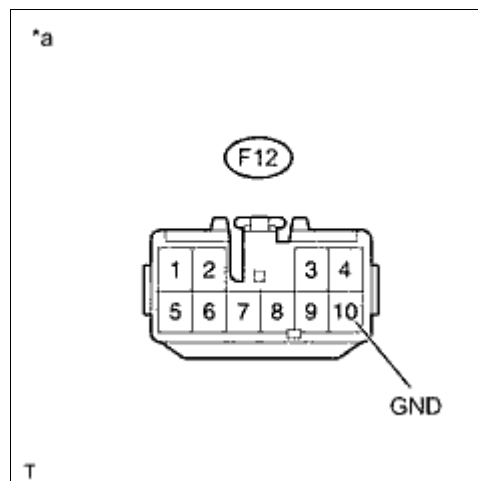
(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F12-10 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*a	Front view of wire harness connector (to 4 Wheel Drive Control ECU)
----	--



NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR
(GND CIRCUIT)

OK ► PROCEED TO NEXT SUSPECTED AREA SHOWN IN
PROBLEM SYMPTOMS TABLE



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000005VHT000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: FAIL-SAFE CHART; 2016 MY Tacoma [08/2015 -]		

FAIL-SAFE CHART

1. FAIL-SAFE OPERATION AND DEACTIVATION CONDITION

TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM

DTC NO.	FAIL-SAFE OPERATION	FAIL-SAFE DEACTIVATION CONDITION
U0100	Switching between H4 and L4 prohibited (shift position N*1 or neutral*2 signal interrupted)	CAN communication signal from ECM is received and ignition switch is turned from off to ON
U0122	All switching prohibited When rear differential is set to lock, rear differential switches to free*3	CAN communication signal from skid control ECU is received and ignition switch is turned from off to ON
U0416	Switching from 2WD to H4 and rear differential free to lock*3 prohibited When rear differential is set to lock, rear differential switches to free*3	Wheel speed sensor malfunction signals from skid control ECU return to normal and ignition switch is turned from off to ON
P163B	All switching prohibited When rear differential is set to lock, rear differential switches to free*3	4 wheel drive control ECU internal circuit returns to normal and ignition switch is turned from off to ON
P17A0	All switching prohibited When rear differential is set to lock, rear differential switches to free*3	Recovers from open circuit in A.D.D. shift motor drive circuit and ignition switch is turned from off to ON
P17A4	Switching between 2WD and H4 prohibited	A.D.D. actuator limit switch and A.D.D. position switch (3 circuits) signals return to normal and ignition switch is turned from off to ON
P17A8	All switching prohibited When rear differential is set to lock, rear differential switches to free*3	Recovers from open circuit in transfer shift motor drive circuit and ignition switch is turned from off to ON
P17A9	All switching prohibited When rear differential is set to lock, rear differential switches to free*3	Recovers from short to ground in transfer shift motor and A.D.D. shift motor*3 drive circuits and ignition switch is turned from off to ON
P17AA	All switching prohibited When rear differential is set to lock, rear differential switches to free*3	Recovers from short to B+ in transfer shift motor and A.D.D. shift motor*3 drive circuits and ignition switch is turned from off to ON
P17AC	All switching prohibited When rear differential is set to lock, rear differential switches to free*3	Transfer shift actuator limit switch signal returns to normal and ignition switch is turned from off to ON
P17C7	-	Front differential oil temperature sensor enters normal range
P17C8	-	Front differential oil temperature sensor enters normal range

DTC NO.	FAIL-SAFE OPERATION	FAIL-SAFE DEACTIVATION CONDITION
P2772	-	Normal signal from transfer shift actuator L4 detection switch input for 1 second and ignition switch is turned from off to ON
P279E	All switching prohibited When rear differential is set to lock, rear differential switches to free*3	Normal signal from transfer position switch input for 1 second and ignition switch is turned from off to ON

*1: for Automatic Transmission

*2: for Manual Transmission

*3: w/ Differential Lock



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000005VHV000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: FREEZE FRAME DATA; 2016 MY Tacoma [08/2015 -]		

FREEZE FRAME DATA

1. FREEZE FRAME DATA

- (a) When a DTC is stored, the 4 wheel drive control ECU stores the current vehicle state as Freeze Frame Data.

HINT:

Freeze Frame Data at the time a DTC is stored:

When the 4 wheel drive control ECU stores data at the time a DTC is stored, no updates will be performed until the data is cleared.

2. CHECK FREEZE FRAME DATA

- (a) Turn the ignition switch off.
- (b) Connect the Techstream to the DLC3.
- (c) Turn the ignition switch to ON.
- (d) Turn the Techstream on.
- (e) Enter the following menus: Powertrain / Four Wheel Drive / Trouble Codes.
- (f) According to the display on the Techstream, select the trouble code data display with Freeze Frame Data.

Four Wheel Drive

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
FR Wheel Speed	Front wheel speed sensor RH reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
FL Wheel Speed	Front wheel speed sensor LH reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
RR Wheel Speed	Rear wheel speed sensor RH reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
RL Wheel Speed	Rear wheel speed sensor LH reading/ Min.: 0.00 km/h (0.00 mph) Max.: 327.67 km/h (203.61 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.
Vehicle Speed	Maximum wheel speed sensor reading/ Min.: 0.00 km/h (0.00 mph)	Vehicle stopped: 0.00 km/h (0.00 mph)	No large fluctuations when driving at a constant speed.

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
	Max.: 327.67 km/h (203.61 mph)		
Front Differential Oil Temperature	Front differential oil temperature/ Min.: -56°C (-69°F) Min.: 199°C (390°F)	Displays front differential oil temperature	-
4WD Control SW (LO)	Transfer position switch status (transfer position switch input signal of LO terminal on ECU side)/ ON or OFF	ON: H4 or L4 OFF: 2WD, between 2WD and H4 or between H4 and L4	-
4WD Control SW (2-4)	Transfer position switch status (transfer position switch input signal of 2-4 terminal on ECU side)/ ON or OFF	ON: 2WD or H4 OFF: Between 2WD and H4, between H4 and L4 or L4	-
4WD Detection SW (4WD)	Transfer shift actuator condition (4WD detection switch input signal of 4WD terminal on ECU side)/ ON or OFF	ON: 4WD state OFF: 2WD state	-
L4 Detection SW (4WDL)	Transfer shift actuator condition (L4 detection switch input signal of 4WDL terminal on ECU side)/ ON or OFF	ON: L4 state OFF: State other than L4	-
ADD Position SW (ADD)	A.D.D. actuator condition (A.D.D. position switch input signal of ADD terminal on ECU side)/ ON or OFF	ON: A.D.D. actuator lock condition (4WD state) OFF: A.D.D. actuator free condition (2WD state)	-
IG SW	Ignition switch status/ ON or OFF	ON: Ignition switch ON	-
Transfer Limit SW (TL1)	Transfer shift actuator limit switch (TL1) condition/ ON or OFF	ON: 2WD or switching between 2WD and H4 OFF: H4, switching between H4 and L4 or L4	-
Transfer Limit SW (TL2)	Transfer shift actuator limit switch (TL2) condition/ ON or OFF	ON: Switching between H4 and L4 or L4 OFF: 2WD, switching between 2WD and H4 or H4	-
Transfer Limit SW (TL3)	Transfer shift actuator limit switch (TL3) condition/ ON or OFF	ON: Switching between 2WD and H4, H4 or switching between H4 and L4 OFF: 2WD or L4	-
ADD Limit SW (DL1)	A.D.D. actuator limit switch (DL1) condition/ ON or OFF	ON: Free condition or switching between free and lock conditions OFF: Lock condition	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
ADD Limit SW (DL2)	A.D.D. actuator limit switch (DL2) condition/ ON or OFF	ON: Switching between free and lock conditions or lock condition OFF: Free condition	-
Clutch SW	Clutch start switch status/ ON or OFF	ON: Clutch pedal depressed OFF: Clutch pedal released	Used only for vehicles with a manual transmission. Displays OFF for vehicles with an automatic transmission.
Shift SW Status (N Range)	Shift lever neutral condition/ ON or OFF	ON: Shift lever in N*1, shift lever in neutral*2 OFF: Shift lever not in N*1, shift lever not in neutral*2	-
Request Value of Vehicle Speed Limit	4WD vehicle speed limit request value/ Min.: 0 km/h (0 mph) Max.: 255 km/h (158 mph)	Vehicle speed limit not requested: 200 km/h (124 mph)	-
Transfer Shift Motor Target Current	Target current for transfer shift motor driver circuit/ Min.: 0.0 A Max.: 25.5 A	Normal: 0 A Switching: 0 to 25.5 A	-
Transfer Shift Motor Actual Current	Actual current of transfer shift motor driver circuit/ Min.: 0.0 A Max.: 25.5 A	Normal: 0 A Switching: 0 to 25.5 A	-
ADD Motor Target Current	Target current for A.D.D. shift motor driver circuit/ Min.: 0.0 A Max.: 25.5 A	Normal: 0 A Switching: 0 to 25.5 A	-
ADD Motor Actual Current	Actual current of A.D.D. shift motor driver circuit/ Min.: 0.0 A Max.: 25.5 A	Normal: 0 A Switching: 0 to 25.5 A	-
Motor Energization Status Signal	Motor power signal status/ ON or OFF	ON: Power supplied to motor OFF: Power not supplied to motor	-
C/C Cancel Request	Cruise control cancellation signal status/ ON or OFF	ON: Cruise control cancellation requested OFF: Cruise control cancellation not requested	-
4WD Status Signal	4WD status signal/ ON or OFF	ON: 4WD state OFF: 2WD state	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
L4 Status Signal	L4 status signal/ ON or OFF	ON: L4 state OFF: State other than L4	-
Status of Transfer Shift Actuator	Transfer shift actuator failure status/ Normal or Abnormal	Normal: Actuator normal Abnormal: Actuator abnormal	-
Buzzer Request	Buzzer sounding request/ NO Sound, Sound(3 times) or Sound	• NO Sound: Does not sound • Sound(3 times): Sounds 3 times • Sound: Sounds intermittently	• Sounds 3 times: Sounds 3 times at 0.5 second intervals (0.5 seconds on and 0.5 seconds off) • Sounds intermittently: 0.5 second intervals (0.5 seconds on and 0.5 seconds off)
4WD Indicator Request	4WD indicator light (green/amber*3) request/ Blink(w/o MID)/ ON(w/ MID), Blink(w/o MID)/ OFF(w/ MID), Blink4*5, Blink3(w/o MID)/OFF(w/ MID), Blink2*5, Blink1, ON or OFF	• Blink(w/o MID)/ON(w/ MID): Indicator light (amber) rapidly blinks*3 / Indicator light (green) illuminates*4 • Blink(w/o MID)/OFF(w/ MID): Indicator light (amber) rapidly blinks*3 / Indicator light (green) turns off*4 • Blink3(w/o MID)/ OFF(w/ MID): Indicator light (amber) rapidly blinks*3 / Indicator light (green) turns off*4 • Blink1: Indicator light (green) blinks • ON: Indicator light (green) illuminates • OFF: Indicator light (green/amber*3) turns off	• Blinking: 0.5 second intervals (0.5 seconds on and 0.5 seconds off) • Rapidly blinking: 0.25 second intervals (0.25 seconds on and 0.25 seconds off)

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
L4 Indicator Request	4LO indicator light request/ Blink4*5, Blink3, Blink2*5, Blink1, ON or OFF	• Blink3: Indicator light rapidly blinks • Blink1: Indicator light blinks • ON: Indicator light illuminates • OFF: Indicator light turns off	• Blinking: 0.5 second intervals (0.5 seconds on and 0.5 seconds off) • Rapidly blinking: 0.25 second intervals (0.25 seconds on and 0.25 seconds off)
Multi-Terrain Select Control	Multi-terrain select control signal/ OK or NG	-	This item is displayed but not used.
Vehicle Speed Limit Request	4WD vehicle speed limit request/ ON or OFF	ON: Vehicle speed limiting is performed OFF: Vehicle speed limiting is not performed	-
Transfer Motor Energization Request	Transfer shift motor power supply command/ ON or OFF	ON: Vehicle speed limiting is performed OFF: Vehicle speed limiting is not performed	-
ADD Motor Energization Request	A.D.D. shift motor power supply command/ ON or OFF	ON: Power supplied to A.D.D. shift motor OFF: Power not supplied to A.D.D. shift motor	-
IG Voltage	IG monitor voltage/ Min.: 0.0 V Max.: 25.5 V	11 to 14 V: Ignition switch ON	-
Motor Voltage	Motor driver circuit monitor voltage/ Min.: 0.0 V Max.: 25.5 V	Normal: 1.5 to 12.0 V Switching: 3.5 V	-
Motor Duty	Motor driver circuit duty/ Min.: 0% Max.: 255%	Normal: 0% Switching: 0 to 100%	-
Front Differential Oil Temperature Warning Count	Count of front differential oil temperature warnings while ignition switch turned to ON/ Min.: 0 times Max.: 255 times	Displays total number of oil temperature warnings	-
Vehicle Speed Limit Request	Count of 4WD vehicle speed limit requests while ignition switch turned to ON/	Displays total number of 4WD vehicle speed limit requests	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Count	Min.: 0 times Max.: 255 times		
Mode Status	Mode transition condition/ Initial Control, Particular Control at Start-Up, Shift Settling Control at Start-Up, H2, H2->H4L(T/F Activating), H2->H4L(ADD Activating), H4L->H2(T/F Activating), H4L->H2(ADD Activating), H4L, H4L->L4L, L4L->H4L, L4L Rr Diff. Free, H4F->L4F, L4F->H4F, H4F, H4F->H4L, H4L->H4F, L4F, L4L Rr Diff. Free->Lock, L4L Rr Diff. Lock->Free, L4L Rr Diff. Lock, K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, S01, S02, S03, S04, S05, S06, S07, S08, S09, S10, S11, S12, S13, S14, S15, S16, S17, S18, S19, S20, S21, S22, S23, S24, B1, B2, B3, B4, B5, B6, 2WD Rr Diff. Free, 2WD Rr Diff. Free->Lock, 2WD Rr Diff. Lock->Free, 2WD Rr Diff. Lock	Displays transfer shift actuator, A.D.D. actuator and differential lock coil*7 transition conditions	HINT: • K1 to K10: Control while switching prohibited • S01 to S24: Control while switching limited • B1 to B6: Control while switching again
Oil Temperature Sensor Mode	Oil temperature sensor detection mode/ Low Temperature Mode or High Temperature Mode	Low Temperature Mode: Detecting oil temperature in low temperature mode High Temperature Mode: Detecting oil temperature in high temperature mode	-
Motor Relay (RY1-1)	Internal ECU relay (RY1-1) condition*6/ ON or OFF	ON: Relay on OFF: Relay off	-
Motor Relay (RY1-2)	Internal ECU relay (RY1-2) condition*6/ ON or OFF	ON: Relay on OFF: Relay off	-
Motor Relay (RY2-1)	Internal ECU relay (RY2-1) condition*6/ ON or OFF	ON: Relay on OFF: Relay off	-
Motor Relay (RY2-2)	Internal ECU relay (RY2-2) condition*6/ ON or OFF	ON: Relay on OFF: Relay off	-

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
AT/MT	AT or MT identification/ AT or MT	AT: Automatic transmission MT: Manual transmission	-
CAN Signal Invalid Status by IG Voltage Low	Whether CAN communication data invalid condition due to IG voltage drop/ Valid or Inval	Valid: IG voltage 9.5 V or higher	Inval: IG voltage below 9.5 V
SW Input Invalid Status by IG Voltage Low	Input invalid condition of switches inside actuator due to IG voltage drop/ Valid or Inval	Valid: IG voltage 7.1 V or higher	Valid: IG voltage 7.1 V or higher
Transfer Shift Invalid Status by IG Voltage Low	Transfer shift actuator switching operation invalid condition due to IG voltage drop/ Valid or Inval	Valid: IG voltage 9.5 V or higher	Inval: IG voltage below 9.5 V
Number of DTC	Number of DTCs stored/ Min.: 0 Max.: 255	0	-

*1: for Automatic Transmission

*2: for Manual Transmission

*3: w/o Multi-information Display

*4: w/ Multi-information Display

*5: Item not supported, therefore not displayed

*6: For the position of the relay, refer to the P17A9 wiring diagram  .

*7: w/ Differential Lock

3. CLEAR FREEZE FRAME DATA

NOTICE:

Clearing the DTCs will also clear the Freeze Frame Data.

- Turn the ignition switch off.
- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Clear the DTCs and Freeze Frame Data  .



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000005VHG000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING; 2016 MY Tacoma [08/2015 -]		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedure listed to troubleshoot the touch select 2-4 and high-low system.
- *: Use the Techstream.

1.	VEHICLE BROUGHT TO WORKSHOP
-----------	------------------------------------

NEXT



2.	CUSTOMER PROBLEM ANALYSIS
-----------	----------------------------------

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.	CHECK COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*
-----------	--

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

HINT:

The ECU of this system is connected to the CAN communication system.

Therefore, before starting troubleshooting, make sure to check that there is no trouble in the CAN communication system.

Result

RESULT	PROCEED TO
CAN DTCs are not output	A
CAN DTCs are output	B

B ► CHECK CAN COMMUNICATION SYSTEM

A



5.	CHECK DTC AND FREEZE FRAME DATA*
----	----------------------------------

(a) Check for DTCs [INFO](#) .

(b) Check for freeze frame data.

HINT:

Record or print DTCs and freeze frame data if necessary.

(c) Clear the DTCs and freeze frame data [INFO](#) .

(d) Recheck for DTCs [INFO](#) .

(1) Simulate the malfunction condition and check if the DTCs are output again.

Result

RESULT	PROCEED TO
DTCs are not output	A
DTCs are output	B

B ► Go to Step 10

A



6.	PROBLEM SYMPTOMS TABLE
----	------------------------

(a) Refer to Problem Symptoms Table [INFO](#) .

Result

RESULT	PROCEED TO
Fault not listed in problem symptoms table	A
Fault listed in problem symptoms table	B

B ► Go to Step 8

A



7.	OVERALL ANALYSIS AND TROUBLESHOOTING*
-----------	--

(a) Terminals of ECU [INFO](#) .

(b) Data List / Active Test [INFO](#) .

NEXT



8.	REPAIR OR REPLACE
-----------	--------------------------

NEXT



9.	CONFIRM TEST
-----------	---------------------

NEXT ► **END**

10.	GO TO DTC CHART
------------	------------------------

NEXT



11.	REPAIR OR REPLACE
------------	--------------------------

NEXT
▼

12.	CONFIRM TEST
-----	--------------

NEXT ► **END**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VI8000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: P163B; 4WD ECU Malfunction; 2016 MY Tacoma [08/2015 -]		

DTC	P163B	4WD ECU Malfunction
------------	--------------	----------------------------

DESCRIPTION

This DTC is output when a malfunction is detected in the 4 wheel drive control ECU internal circuit.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
P163B	4WD ECU Malfunction	• Diagnosis Condition: Directly after the ignition switch is turned to ON, or when switching operations are performed with the ignition switch turned to ON • Malfunction Status: 4 wheel drive control ECU internal circuit malfunction • Malfunction Time: 0.5 seconds or more (directly after the ignition switch is turned to ON, 0.05 seconds or more) • Other: 1 trip detection logic	4 wheel drive control ECU

INSPECTION PROCEDURE

PROCEDURE

1.	CHECK FOR DTC
-----------	----------------------

(a) Check whether DTCs other than C163B are output [INFO](#) .

Result

RESULT	PROCEED TO
Only DTC C163B is output.	A
DTCs (Touch Select 2-4 and High-Low System) other than DTC C163B are output.	B
DTCs (Differential System (w/ Differential Lock)) other than DTC C163B are output.	C

B ► REPAIR CIRCUITS INDICATED BY OUTPUT DTCs

C ► REPAIR CIRCUITS INDICATED BY OUTPUT DTCs

A ► REPLACE 4 WHEEL DRIVE CONTROL ECU



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VHX000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: P17A0; Automatic Disconnecting Differential Motor Control Circuit Open; 2016 MY Tacoma [08/2015 -]		

DTC	P17A0	Automatic Disconnecting Differential Motor Control Circuit Open
------------	--------------	--

DESCRIPTION

This DTC is output when an open circuit in the A.D.D. shift motor drive circuit is detected.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
P17A0	Automatic Disconnecting Differential Motor Control Circuit Open	• Diagnosis Condition: While switching between 2WD and H4 (A.D.D. shift motor operating) with the ignition switch turned to ON • Malfunction Status: Open circuit in the A.D.D. shift motor drive circuit • Malfunction Time: 0.03 seconds or more • Other: 1 trip detection logic	• Wire harness and connector • 4 wheel drive control ECU • A.D.D. actuator (differential vacuum actuator assembly)

WIRING DIAGRAM

Refer to DTC P17A9 INFO.

INSPECTION PROCEDURE

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU - DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY)
-----------	--

(a) Disconnect the F12 4 wheel drive control ECU connector.

(b) Disconnect the A3 A.D.D. actuator (differential vacuum actuator assembly) connector.

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

Standard Resistance:

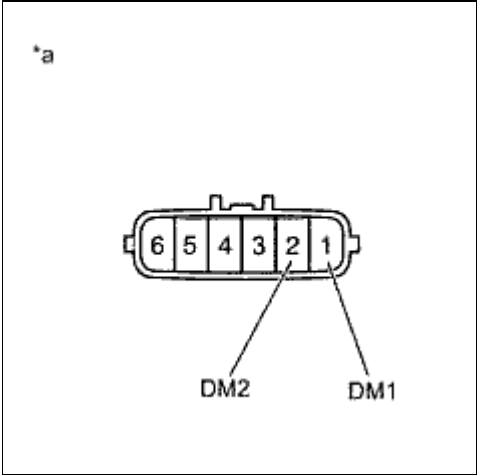
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F12-2 (DM1) - A3-1 (DM1)	Always	Below 1 Ω
F12-6 (DM2) - A3-2 (DM2)	Always	Below 1 Ω

NG REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

2.	INSPECT DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY (A.D.D. SHIFT MOTOR)
----	--

(a) Disconnect the A3 A.D.D. actuator (differential vacuum actuator assembly) connector.



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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 (DM1) - 2 (DM2)	Always	1.5 to 10 Ω

Text in Illustration

*a	Component without harness connected (A.D.D. Actuator (Differential Vacuum Actuator Assembly))
----	--

NG REPLACE DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY

OK REPLACE 4 WHEEL DRIVE CONTROL ECU



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VHY000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: P17A4; Automatic Disconnecting Differential Motor Limit Switch Circuit; 2016 MY Tacoma [08/2015 -]		

DTC	P17A4	Automatic Disconnecting Differential Motor Limit Switch Circuit
------------	--------------	--

DESCRIPTION

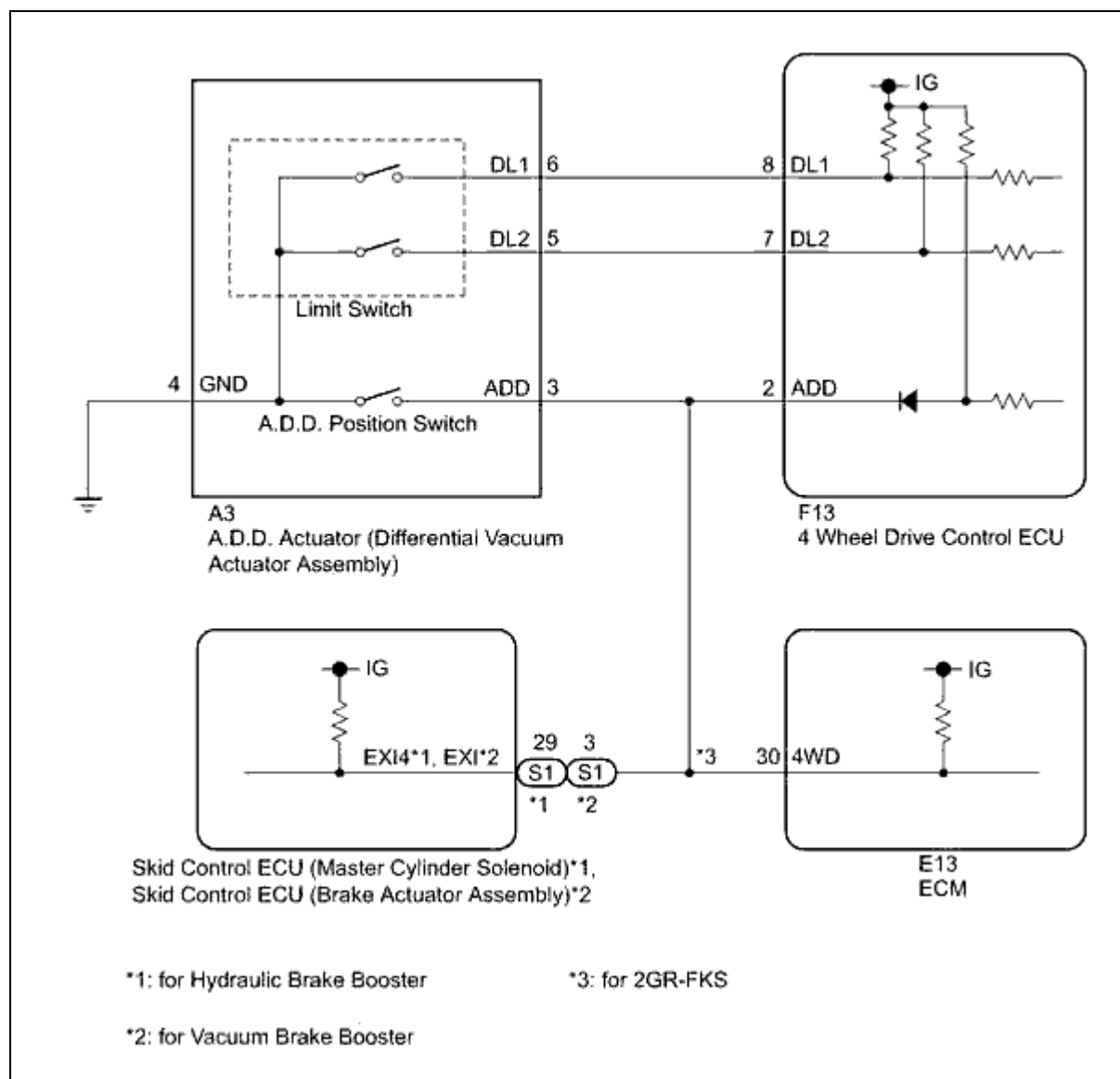
When the A.D.D. actuator switches between 2WD and 4WD, the DL1 and DL2 terminals of the limit switch and ADD terminal of the A.D.D. position switch change to one of the following ON/OFF combinations listed in the table below.

TERMINAL	IN 2WD	SWITCHING BETWEEN 2WD AND 4WD		IN 4WD
DL1	ON (GND)	ON (GND)		OFF (OPEN)
DL2	OFF (OPEN)	ON (GND)		ON (GND)
ADD	OFF (OPEN)	OFF (OPEN)	ON (GND)	ON (GND)

A malfunction is detected depending on the combination of the 3 circuits that make up the limit switch and A.D.D. position switch.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
P17A4	Automatic Disconnecting Differential Motor Limit Switch Circuit	• Diagnosis Condition: Directly after the ignition switch is turned to ON, or while switching between 2WD and H4 (A.D.D. shift motor operating) with the ignition switch turned to ON • Malfunction Status: The ON/OFF combination of DL1, DL2 and ADD does not match the pattern • Malfunction Time: 0 seconds • Other: 1 trip detection logic	• Wire harness and connector • 4 wheel drive control ECU • A.D.D. actuator (differential vacuum actuator assembly)

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU - DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY)
----	--

(a) Disconnect the F13 4 wheel drive control ECU connector.

(b) Disconnect the A3 A.D.D. actuator (differential vacuum actuator assembly) connector.

(c) for Hydraulic Brake Booster:

Disconnect the S1 skid control ECU (Master Cylinder Solenoid) connector.

for Vacuum Brake Booster:

Disconnect the S1 skid control ECU (brake actuator assembly) connector.

(d) for 2GR-FKS:

Disconnect the E13 ECM connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F13-8 (DL1) - A3-6 (DL1)	Always	Below 1 Ω
F13-7 (DL2) - A3-5 (DL2)	Always	Below 1 Ω
F13-2 (ADD) - A3-3 (ADD)	Always	Below 1 Ω
A3-4 (GND) - Body ground	Always	Below 1 Ω
F13-8 (DL1) or A3-6 (DL1) - Body ground	Always	10 k Ω or higher
F13-7 (DL2) or A3-5 (DL2) - Body ground	Always	10 k Ω or higher
F13-2 (ADD) or A3-3 (ADD) - Body ground	Always	10 k Ω or higher

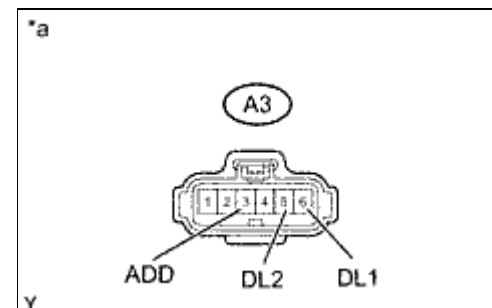
NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



2.	INSPECT DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY (LIMIT SWITCH AND A.D.D. POSITION SWITCH)
-----------	--

(a) Disconnect the A.D.D. actuator (differential vacuum actuator assembly) connector.



(b) for Hydraulic Brake Booster:

Disconnect the S1 skid control ECU (Master Cylinder Solenoid) connector.

for Vacuum Brake Booster:

Disconnect the S1 skid control ECU (brake actuator assembly) connector.

(c) for 2GR-FKS:

Disconnect the E13 ECM connector.

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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
A3-6 (DL1) - Body ground	Ignition switch ON	10 to 14 V
A3-5 (DL2) - Body ground	Ignition switch ON	10 to 14 V
A3-3 (ADD) - Body ground	Ignition switch ON	10 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to A.D.D. Actuator (Differential Vacuum Actuator Assembly))
----	--

NG ► REPLACE 4 WHEEL DRIVE CONTROL ECU

OK ► REPLACE DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VHZ000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: P17A8; Transfer Shift Motor Control Circuit Circuit Open; 2016 MY Tacoma [08/2015 -]		

DTC	P17A8	Transfer Shift Motor Control Circuit Circuit Open
------------	--------------	--

DESCRIPTION

This DTC is output when an open circuit in the transfer shift motor drive circuit is detected.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
P17A8	Transfer Shift Motor Control Circuit Circuit Open	• Diagnosis Condition: While switching between 2WD and H4 or while switching between H4 and L4 (transfer shift motor operating) with the ignition switch turned to ON • Malfunction Status: Open circuit in the transfer shift motor drive circuit • Malfunction Time: 0.03 seconds or more • Other: 1 trip detection logic	• Wire harness and connector • 4 wheel drive control ECU • Transfer shift actuator assembly

WIRING DIAGRAM

Refer to DTC P17A9 INFO.

INSPECTION PROCEDURE

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU - TRANSFER SHIFT ACTUATOR ASSEMBLY)
-----------	---

(a) Disconnect the F12 4 wheel drive control ECU connector.

(b) Disconnect the T4 transfer shift actuator assembly connector.

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

Standard Resistance:

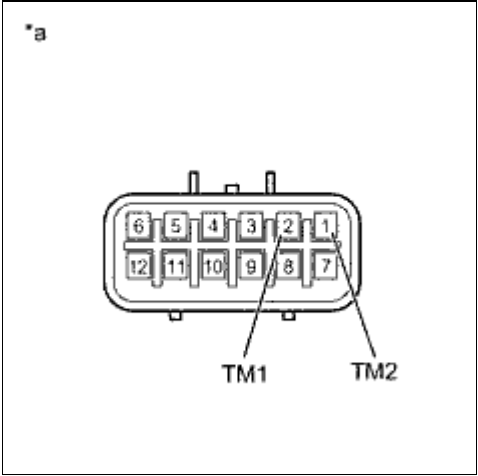
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F12-8 (TM1) - T4-2 (TM1)	Always	Below 1 Ω
F12-7 (TM2) - T4-1 (TM2)	Always	Below 1 Ω

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK
▼

2.	INSPECT TRANSFER SHIFT ACTUATOR ASSEMBLY (TRANSFER SHIFT MOTOR)
----	--

(a) Disconnect the T4 transfer shift actuator assembly connector.



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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
2 (TM1) - 1 (TM2)	Always	1.5 to 10 Ω

Text in Illustration

*a	Component without harness connected (Transfer Shift Actuator Assembly)
----	---

NG ► **REPLACE TRANSFER SHIFT ACTUATOR ASSEMBLY**

OK ► **REPLACE 4 WHEEL DRIVE CONTROL ECU**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VI0000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: P17A9; Transfer Shift Motor Control Circuit Low; 2016 MY Tacoma [08/2015 -]		

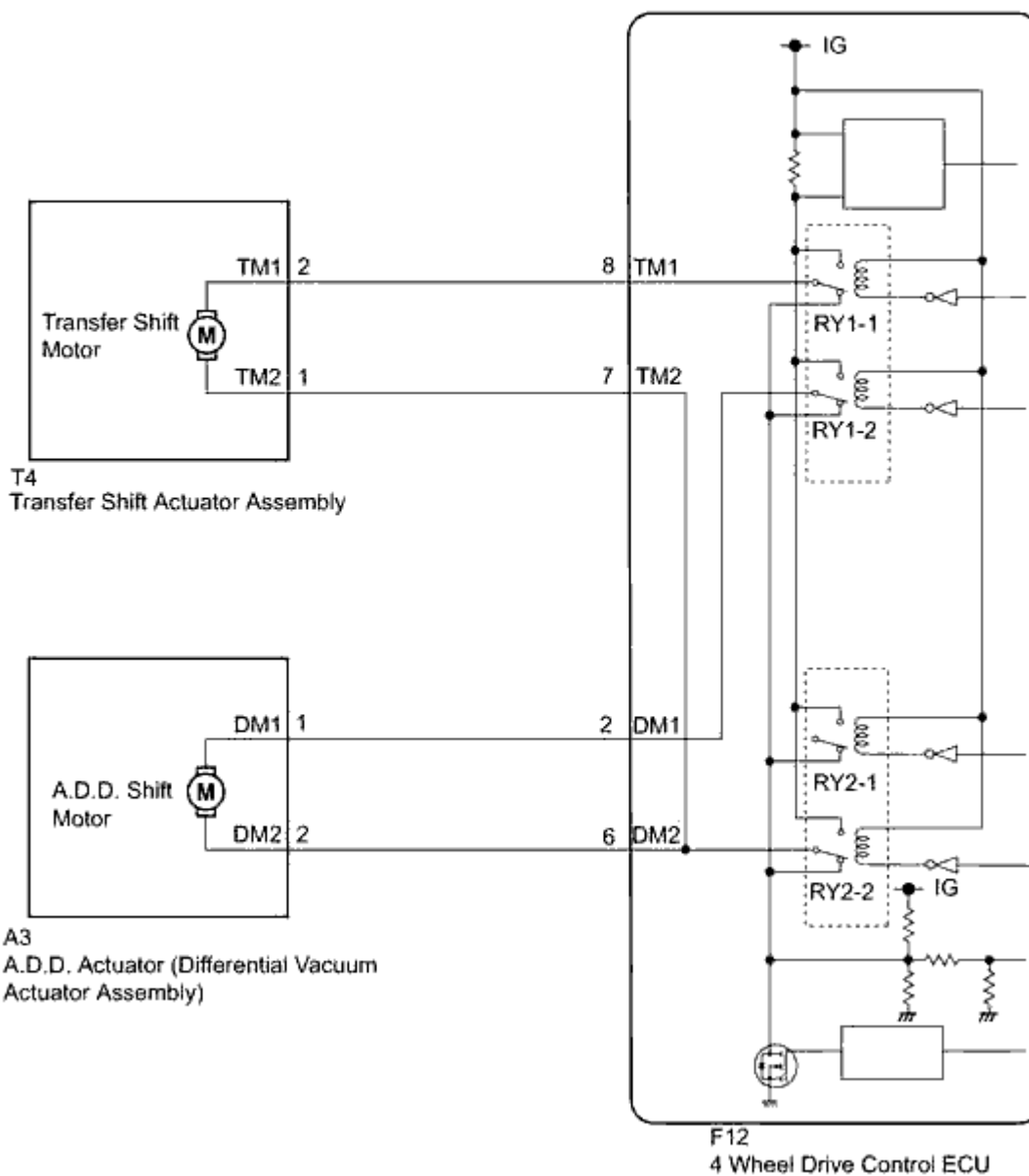
DTC	P17A9	Transfer Shift Motor Control Circuit Low
------------	--------------	---

DESCRIPTION

This DTC is output when a short to ground in the transfer shift motor and A.D.D. shift motor drive circuit is detected.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
P17A9	Transfer Shift Motor Control Circuit Low	• Diagnosis Condition: Directly after the ignition switch is turned to ON, or while the ignition switch is turned to ON (transfer shift motor not operating) • Malfunction Status: Short to ground in the transfer shift motor and A.D.D. shift motor drive circuits • Malfunction Time: 0.5 seconds or more (after the ignition switch is turned to ON, 0.05 seconds or more) • Other: 1 trip detection logic	• Wire harness and connector • 4 wheel drive control ECU • Transfer shift actuator assembly • A.D.D. actuator (differential vacuum actuator assembly)

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

- | | |
|-----------|---|
| 1. | CHECK ACTUATOR ASSEMBLY (TRANSFER SHIFT MOTOR OR A.D.D. SHIFT MOTOR) |
|-----------|---|

(a) Disconnect the 4 wheel drive control ECU connector.

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

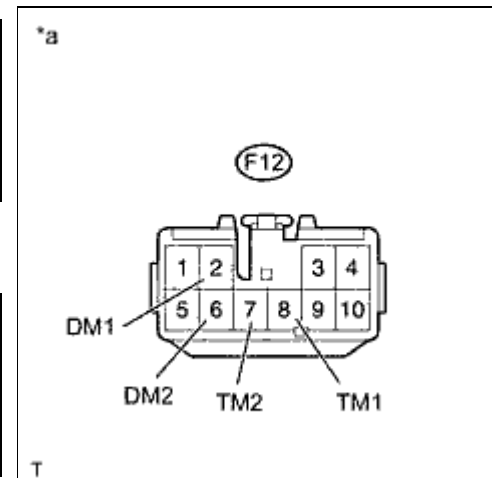
Standard Resistance:

Transfer shift actuator assembly side:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F12-8 (TM1) or F12-7 (TM2) - Body ground	Always	10 kΩ or higher

A.D.D. actuator (differential vacuum actuator assembly) side:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F12-2 (DM1) or F12-6 (DM2) - Body ground	Always	10 kΩ or higher



Text in Illustration

*a	Front view of wire harness connector (to 4 Wheel Drive Control ECU)
----	--

Result

RESULT	PROCEED TO
OK	A
NG (transfer shift actuator assembly side)	B
NG (A.D.D. actuator (differential vacuum actuator assembly) side)	C

B ► GO TO STEP 2

C ► GO TO STEP 3

A ► REPLACE 4 WHEEL DRIVE CONTROL ECU

2.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU AND TRANSFER SHIFT ACTUATOR ASSEMBLY - BODY GROUND)
----	---

(a) Disconnect the F12 4 wheel drive control ECU connector.

(b) Disconnect the T4 transfer shift actuator assembly connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F12-8 (TM1) or T4-2 (TM1) - Body ground	Always	10 kΩ or higher
F12-7 (TM2) or T4-1 (TM2) - Body ground	Always	10 kΩ or higher

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ► REPLACE TRANSFER SHIFT ACTUATOR ASSEMBLY

3.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU AND DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY - BODY GROUND)
-----------	--

- (a) Disconnect the F12 4 wheel drive control ECU connector.
- (b) Disconnect the A3 A.D.D. actuator (differential vacuum actuator assembly) connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F12-2 (DM1) or A3-1 (DM1) - Body ground	Always	10 kΩ or higher
F12-6 (DM2) or A3-2 (DM2) - Body ground	Always	10 kΩ or higher

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ► REPLACE DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VI1000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: P17AA; Transfer Shift Motor Control Circuit High; 2016 MY Tacoma [08/2015 -]		

DTC	P17AA	Transfer Shift Motor Control Circuit High
------------	--------------	--

DESCRIPTION

This DTC is output when a short to B+ in the transfer shift motor and A.D.D. shift motor drive circuit is detected.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
P17AA	Transfer Shift Motor Control Circuit High	• Diagnosis Condition: Directly after or while the ignition switch is turned to ON (transfer shift motor not operating) • Malfunction Status: Short to B+ in the transfer shift motor and A.D.D. shift motor drive circuits • Malfunction Time: 0.5 seconds or more (after the ignition switch is turned to ON, 0.05 seconds or more) • Other: 1 trip detection logic	• Wire harness and connector • 4 wheel drive control ECU • Transfer shift actuator assembly • A.D.D. actuator (differential vacuum actuator assembly)

WIRING DIAGRAM

Refer to DTC P17A9 [INFO](#)

INSPECTION PROCEDURE

PROCEDURE

1.	CHECK ACTUATOR ASSEMBLY (TRANSFER SHIFT MOTOR AND A.D.D. SHIFT MOTOR)
-----------	--

(a) Disconnect the 4 wheel drive control ECU connector.

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

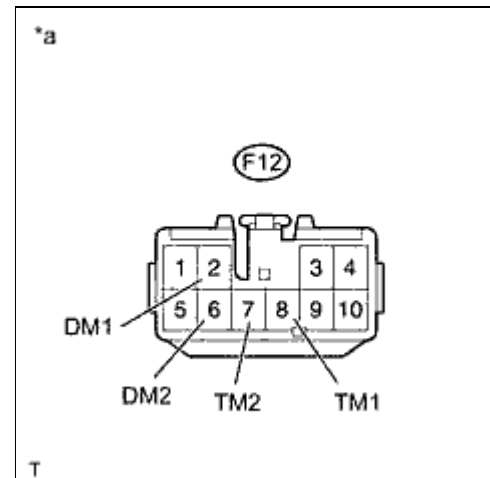
Standard Voltage:

Transfer shift actuator assembly side:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
F12-8 (TM1) or F12-7 (TM2) - Body ground	Ignition switch ON	Below 1 V

A.D.D. actuator (differential vacuum actuator assembly) side:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
F12-2 (DM1) or F12-6 (DM2) - Body ground	Ignition switch ON	Below 1 V



Text in Illustration

*a	Front view of wire harness connector (to 4 Wheel Drive Control ECU)
----	--

Result

RESULT	PROCEED TO
OK	A
NG (transfer shift actuator assembly side)	B
NG (A.D.D. actuator (differential vacuum actuator assembly) side)	C

B ► GO TO STEP 2

C ► GO TO STEP 3

A ► REPLACE 4 WHEEL DRIVE CONTROL ECU

2.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU AND TRANSFER SHIFT ACTUATOR ASSEMBLY - BODY GROUND)
----	---

(a) Disconnect the F12 4 wheel drive control ECU connector.

(b) Disconnect the T4 transfer shift actuator assembly connector.

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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
F12-8 (TM1) or T4-2 (TM1) - Body ground	Ignition switch ON	Below 1 V
F12-7 (TM2) or T4-1 (TM2) - Body ground	Ignition switch ON	Below 1 V

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ► REPLACE TRANSFER SHIFT ACTUATOR ASSEMBLY

3.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU AND DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY - BODY GROUND)
-----------	--

- (a) Disconnect the F12 4 wheel drive control ECU connector.
- (b) Disconnect the A3 A.D.D. actuator (differential vacuum actuator assembly) connector.
- (c) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
F12-2 (DM1) or A3-1 (DM1) - Body ground	Ignition switch ON	Below 1 V
F12-6 (DM2) or A3-2 (DM2) - Body ground	Ignition switch ON	Below 1 V

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ► REPLACE DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VI2000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: P17AC; Transfer Shift Motor Limit Switch Circuit; 2016 MY Tacoma [08/2015 -]		

DTC	P17AC	Transfer Shift Motor Limit Switch Circuit
------------	--------------	--

DESCRIPTION

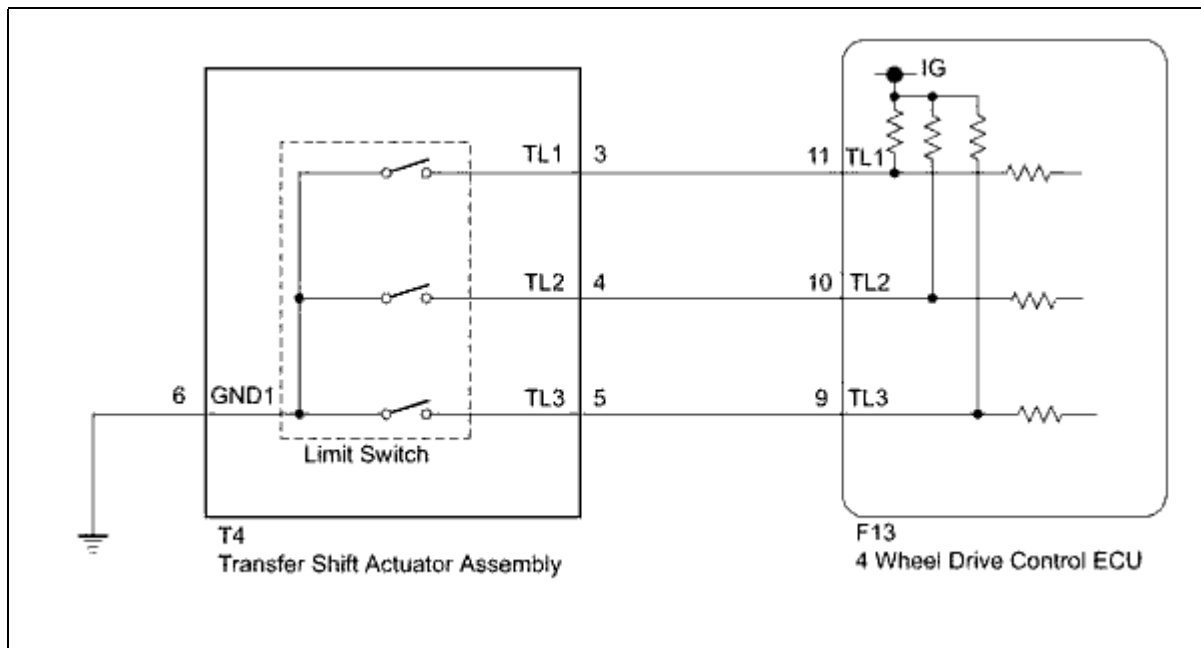
When the transfer switches modes, the TL1, TL2 and TL3 terminals of the limit switch are in one of the ON/OFF combinations listed in the table below.

TERMINAL	WHEN 2WD	SWITCHING BETWEEN 2WD AND H4	WHEN H4	SWITCHING BETWEEN H4 AND L4	WHEN L4
TL1	ON (GND)	ON (GND)	OFF (OPEN)	OFF (OPEN)	OFF (OPEN)
TL2	OFF (OPEN)	OFF (OPEN)	OFF (OPEN)	ON (GND)	ON (GND)
TL2	OFF (OPEN)	ON (GND)	ON (GND)	ON (GND)	OFF (OPEN)

A malfunction is detected depending on the combination of the 3 circuits that make up the limit switch of the transfer shift actuator assembly.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
P17AC	Transfer Shift Motor Limit Switch Circuit	• Diagnosis Condition: Directly after the ignition switch is turned to ON, or while switching between 2WD and H4 or while switching between H4 and L4 (transfer shift motor operating) with the ignition switch turned to ON • Malfunction Status: The combination of TL1, TL2 and TL3 does not match the pattern • Malfunction Time: 0 seconds • Other: 1 trip detection logic	• Wire harness and connector • 4 wheel drive control ECU • Transfer shift actuator assembly

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU - TRANSFER SHIFT ACTUATOR ASSEMBLY)
----	---

- Disconnect the F13 4 wheel drive control ECU connector.
- Disconnect the T4 transfer shift actuator assembly connector.
- Measure the resistance according to the value(s) in the table below.

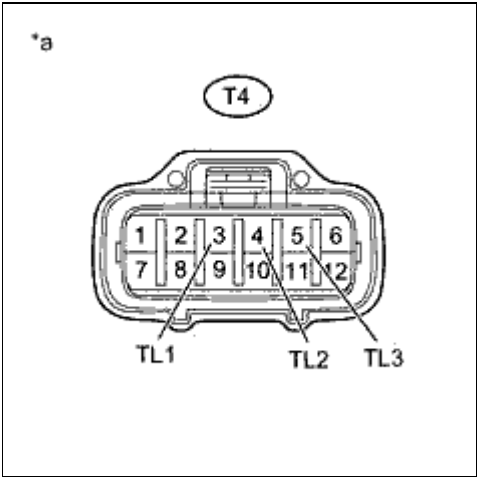
Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F13-11 (TL1) - T4-3 (TL1)	Always	Below 1 Ω
F13-10 (TL2) - T4-4 (TL2)	Always	Below 1 Ω
F13-9 (TL3) - T4-5 (TL3)	Always	Below 1 Ω
T4-6 (GND1) - Body ground	Always	Below 1 Ω
F13-11 (TL1) or T4-3 (TL1) - Body ground	Always	10 k Ω or higher
F13-10 (TL2) or T4-4 (TL2) - Body ground	Always	10 k Ω or higher
F13-9 (TL3) or T4-5 (TL3) - Body ground	Always	10 k Ω or higher
F13-11 (TL1) - T4-4 (TL2) and T4-5 (TL3)	Always	10 k Ω or higher
F13-10 (TL2) - T4-3 (TL1) and T4-5 (TL3)	Always	10 k Ω or higher
F13-9 (TL3) - T4-3 (TL1) and T4-4 (TL2)	Always	10 k Ω or higher

OK
▼

2.	CHECK 4 WHEEL DRIVE CONTROL ECU (ECU OUTPUT VOLTAGE)
----	--

(a) Disconnect the transfer shift actuator assembly connector.



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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
T4-3 (TL1) - Body ground	Ignition switch ON	10 to 14 V
T4-4 (TL2) - Body ground	Ignition switch ON	10 to 14 V
T4-5 (TL3) - Body ground	Ignition switch ON	10 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Transfer Shift Actuator Assembly)
----	---

NG▶ REPLACE 4 WHEEL DRIVE CONTROL ECU

OK▶ REPLACE TRANSFER SHIFT ACTUATOR ASSEMBLY



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VI7000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: P17C7; Front Differential Oil Temperature Sensor Circuit Low; 2016 MY Tacoma [08/2015 -]		

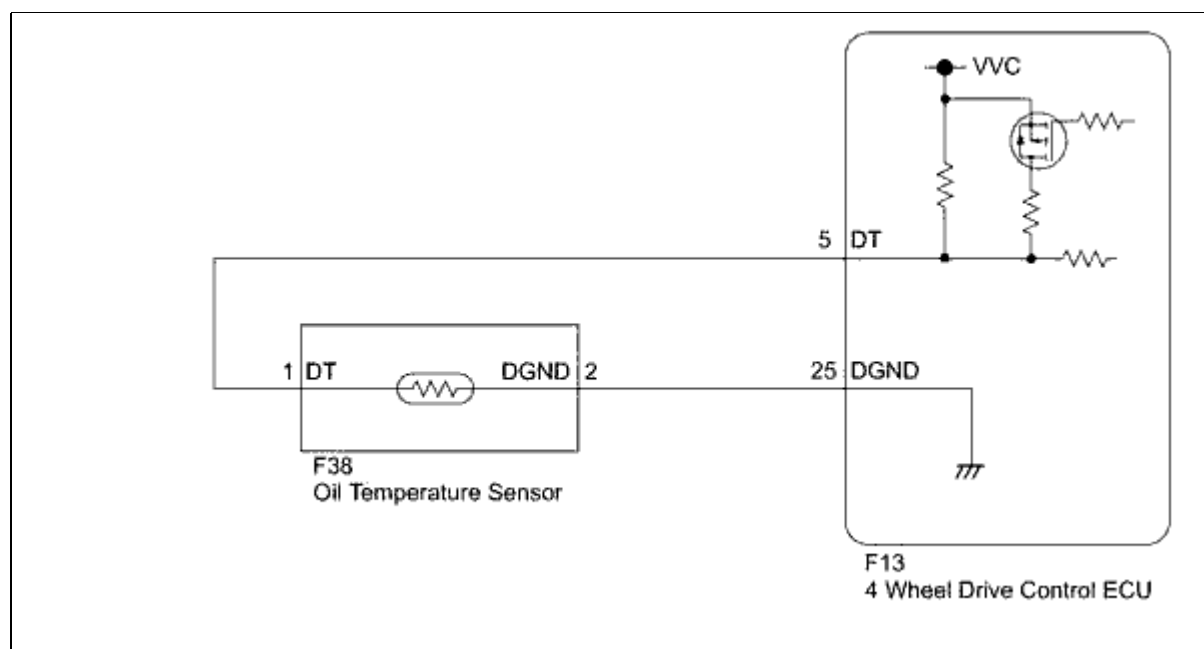
DTC	P17C7	Front Differential Oil Temperature Sensor Circuit Low
------------	--------------	--

DESCRIPTION

This DTC is output when a short to ground in the oil temperature sensor is detected.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
P17C7	Front Differential Oil Temperature Sensor Circuit Low	• Diagnosis Condition: Ignition switch turned to ON • Malfunction Status: Short to ground in the oil temperature sensor • Malfunction Time: 1 second or more • Other: 1 trip detection logic	• Wire harness and connector • 4 wheel drive control ECU • Oil temperature sensor

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1. CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU AND OIL TEMPERATURE SENSOR - BODY GROUND)

- (a) Disconnect the F13 4 wheel drive control ECU connector.
- (b) Disconnect the F38 oil temperature sensor connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F13-5 (DT) or F38-1 (DT) - Body ground	Always	10 kΩ or higher
F13-25 (DGND) or F38-2 (DGND) - Body ground	Always	10 kΩ or higher

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

2. INSPECT OIL TEMPERATURE SENSOR

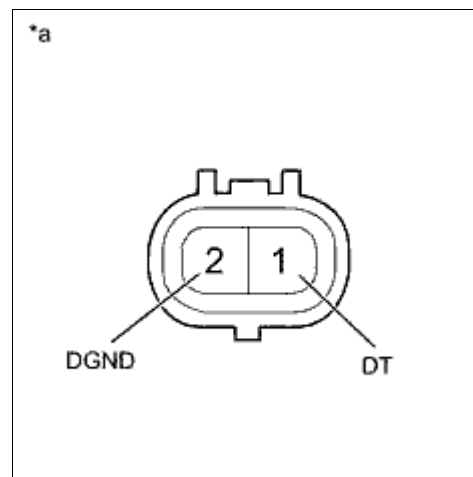
- (a) Disconnect the F38 oil temperature sensor connector.
- (b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 (DT) - 2 (DGND)	Always	120 to 240 kΩ

Text in Illustration

*a Component without harness connected
(Oil Temperature Sensor)



NG ► REPLACE OIL TEMPERATURE SENSOR

OK ► REPLACE 4 WHEEL DRIVE CONTROL ECU



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VI6000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: P17C8; Front Differential Oil Temperature Sensor Circuit High; 2016 MY Tacoma [08/2015 -]		

DTC	P17C8	Front Differential Oil Temperature Sensor Circuit High
------------	--------------	---

DESCRIPTION

This DTC is output when a short to B+ or open circuit in the oil temperature sensor is detected.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
P17C8	Front Differential Oil Temperature Sensor Circuit High	• Diagnosis Condition: Ignition switch turned to ON • Malfunction Status: Short to B+ or open circuit in the oil temperature sensor • Malfunction Time: 1 second or more • Other: 1 trip detection logic	• Wire harness and connector • 4 wheel drive control ECU • Oil temperature sensor

WIRING DIAGRAM

Refer to DTC P17C7 INFO .

INSPECTION PROCEDURE

PROCEDURE

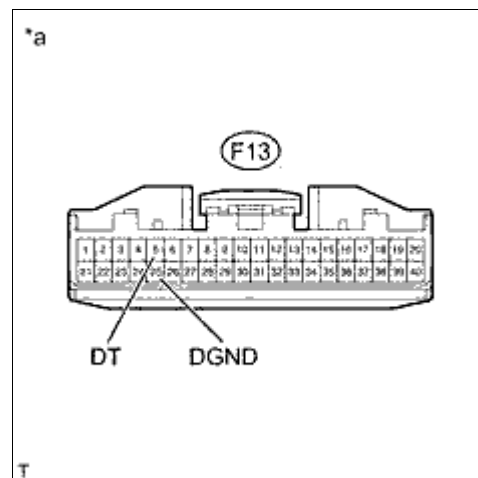
1.	CHECK OIL TEMPERATURE SENSOR
-----------	-------------------------------------

(a) Disconnect the 4 wheel drive control ECU connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F13-5 (DT) - F13-25 (DGND)	Always	120 to 240 k Ω



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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
F13-5 (DT) or F13-25 (DGND) - Body ground	Ignition switch ON	Below 1 V

Text in Illustration

*a	Front view of wire harness connector (to 4 Wheel Drive Control ECU)
----	--

NG **GO TO STEP 2**

OK **REPLACE 4 WHEEL DRIVE CONTROL ECU**

2.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU - OIL TEMPERATURE SENSOR)
-----------	---

(a) Disconnect the F13 4 wheel drive control ECU connector.

(b) Disconnect the F38 oil temperature sensor connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F13-5 (DT) - F38-1 (DT)	Always	Below 1 Ω
F13-25 (DGND) - F38-2 (DGND)	Always	Below 1 Ω

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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
F13-5 (DT) or F38-1 (DT) - Body ground	Ignition switch ON	Below 1 V
F13-25 (DGND) or F38-2 (DGND) - Body ground	Ignition switch ON	Below 1 V

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ► REPLACE OIL TEMPERATURE SENSOR



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VHW000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: P2772; Four Wheel Drive (4WD) Low Switch Circuit Range / Performance; 2016 MY Tacoma [08/2015 -]		

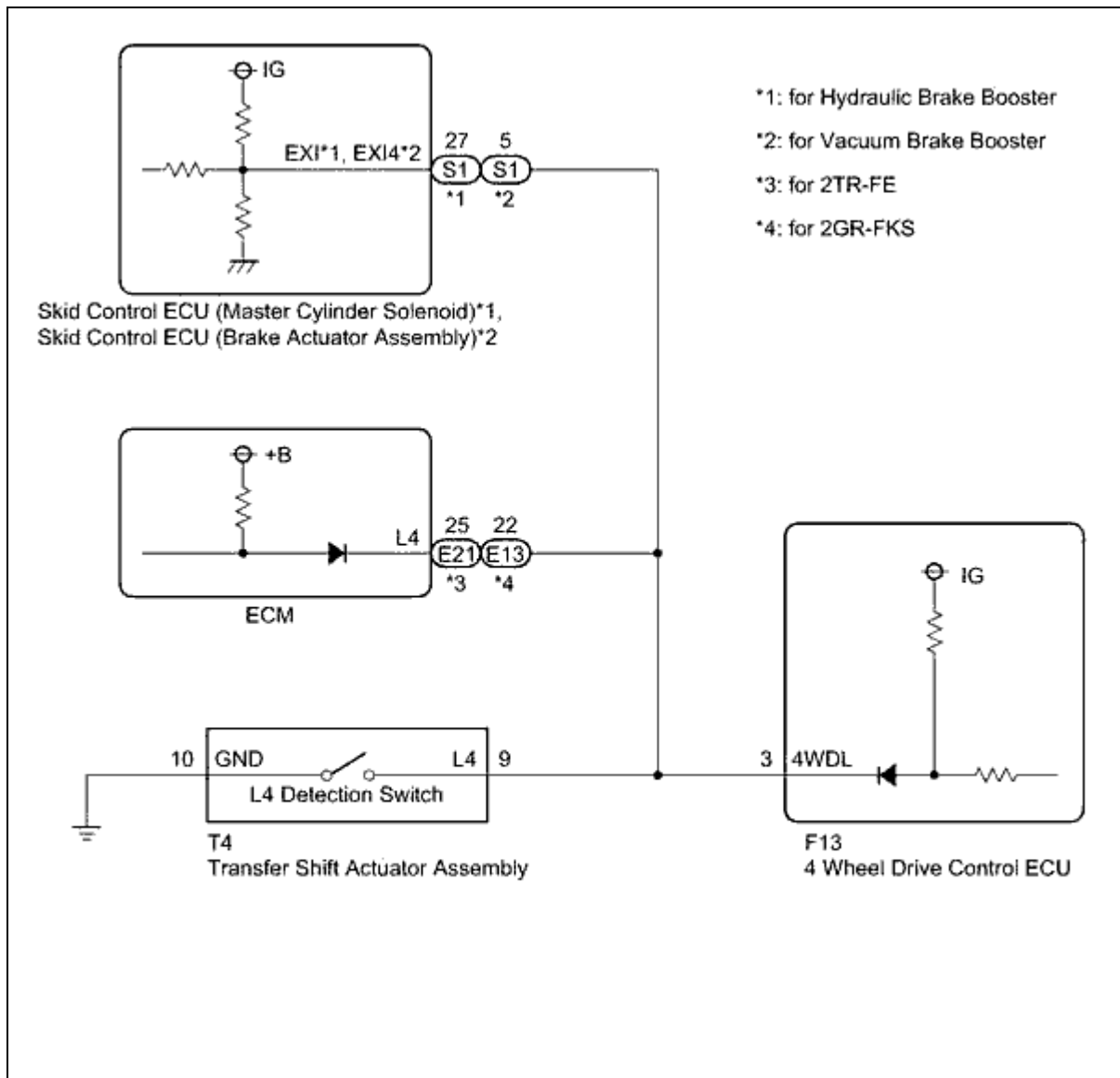
DTC	P2772	Four Wheel Drive (4WD) Low Switch Circuit Range / Performance
------------	--------------	--

DESCRIPTION

This DTC is output when a malfunction in the L4 detection switch is detected.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
P2772	Four Wheel Drive (4WD) Low Switch Circuit Range / Performance	• Diagnosis Condition: Ignition switch turned to ON (3 seconds elapse after ignition switch is turned to ON) • Malfunction Status: L4 detection switch is stuck OFF when the vehicle is in L4 • Malfunction Time: 10 seconds or more • Other: 1 trip detection logic	• Wire harness and connector • 4 wheel drive control ECU • Transfer shift actuator assembly

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU - TRANSFER SHIFT ACTUATOR ASSEMBLY)
----	---

(a) Disconnect the F13 4 wheel drive control ECU connector.

(b) Disconnect the T4 transfer shift actuator assembly connector.

(c) for Hydraulic Brake Booster:

Disconnect the S1 skid control ECU (Master Cylinder Solenoid) connector.

for Vacuum Brake Booster:

Disconnect the S1 skid control ECU (brake actuator assembly) connector.

(d) for 2TR-FE:

Disconnect the E21 ECM connector.

for 2GR-FKS:

Disconnect the E13 ECM connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F13-3 (4WDL) - T4-9 (L4)	Always	Below 1 Ω
T4-10 (GND) - Body ground	Always	Below 1 Ω
F13-3 (4WDL) or T4-9 (L4) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



2.	CHECK TRANSFER SHIFT ACTUATOR ASSEMBLY
-----------	---

(a) Turn the ignition switch to ON.

(b) Turn the transfer position switch to L4.

(c) Turn the ignition switch off.

(d) Disconnect the T4 transfer shift actuator assembly connector.

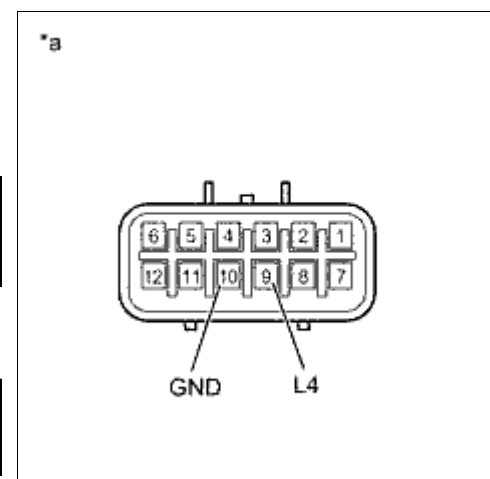
(e) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
9 (L4) - 10 (GND)	Always	Below 1 Ω

Text in Illustration

*a	Component without harness connected (Transfer Shift Actuator Assembly)
-----------	---



NG  **REPLACE TRANSFER SHIFT ACTUATOR ASSEMBLY**

OK  **REPLACE 4 WHEEL DRIVE CONTROL ECU**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VI3000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: P279E; Four Wheel Drive (4WD) Range Signal Circuit Range / Performance; 2016 MY Tacoma [08/2015 -]		

DTC	P279E	Four Wheel Drive (4WD) Range Signal Circuit Range / Performance
------------	--------------	--

DESCRIPTION

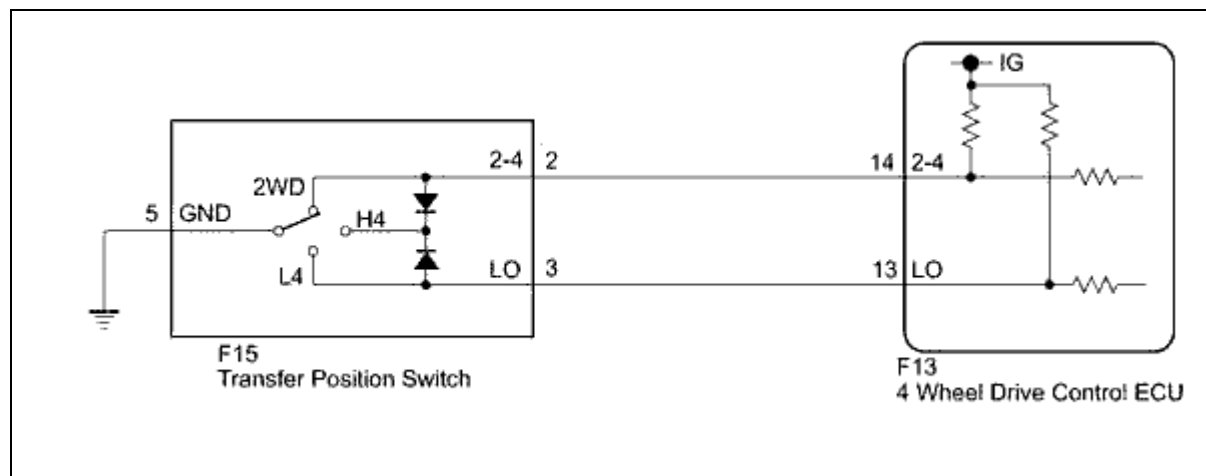
When the transfer position switch is switched, the 2-4 terminal and LO terminal change to one of the following ON/OFF combinations listed in the table below.

TERMINAL	2WD	BETWEEN 2WD AND H4	H4	BETWEEN H4 AND L4	L4
2-4	ON	OFF	ON	OFF	OFF
LO	OFF	OFF	ON	OFF	ON

This DTC is detected if the transfer position switch 2-4 terminal and LO terminal signals are simultaneously received.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
P279E	Four Wheel Drive (4WD) Range Signal Circuit Range / Performance	• Diagnosis Condition: Ignition switch turned to ON • Malfunction Status: The ON/OFF combination of the 2-4 terminal and LO terminal does not match the pattern • Malfunction Time: 60 seconds or more • Other: 1 trip detection logic	• Wire harness and connector • 4 wheel drive control ECU • Transfer position switch

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.

CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU - TRANSFER POSITION SWITCH)

- (a) Disconnect the F13 4 wheel drive control ECU connector.
- (b) Disconnect the F15 transfer position switch connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F13-14 (2-4) - F15-2 (2-4)	Always	Below 1 Ω
F13-13 (LO) - F15-3 (LO)	Always	Below 1 Ω
F15-5 (GND) - Body ground	Always	Below 1 Ω
F13-14 (2-4) or F15-2 (2-4) - Body ground	Always	10 k Ω or higher
F13-13 (LO) or F15-3 (LO) - Body ground	Always	10 k Ω or higher
F13-14 (2-4) or F15-2 (2-4) - F13-13 (LO) or F15-3 (LO)	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

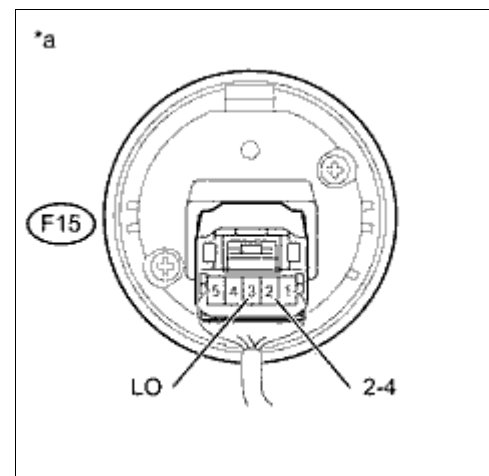
OK



2.

CHECK TRANSFER POSITION SWITCH

- (a) Remove the transfer position switch with its connector still connected.



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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
F15-2 (2-4) - Body ground	Ignition switch ON 2WD position	Below 1.5 V
	Ignition switch ON H4 position	Below 1.5 V
	Ignition switch ON L4 position	10 to 14 V
F15-3 (LO) - Body ground	Ignition switch ON 2WD position	10 to 14 V
	Ignition switch ON H4 position	Below 1.5 V
	Ignition switch ON L4 position	Below 1.5 V

Text in Illustration

*a	Component with harness connected (Transfer Position Switch)
----	--

NG ► **REPLACE TRANSFER POSITION SWITCH**

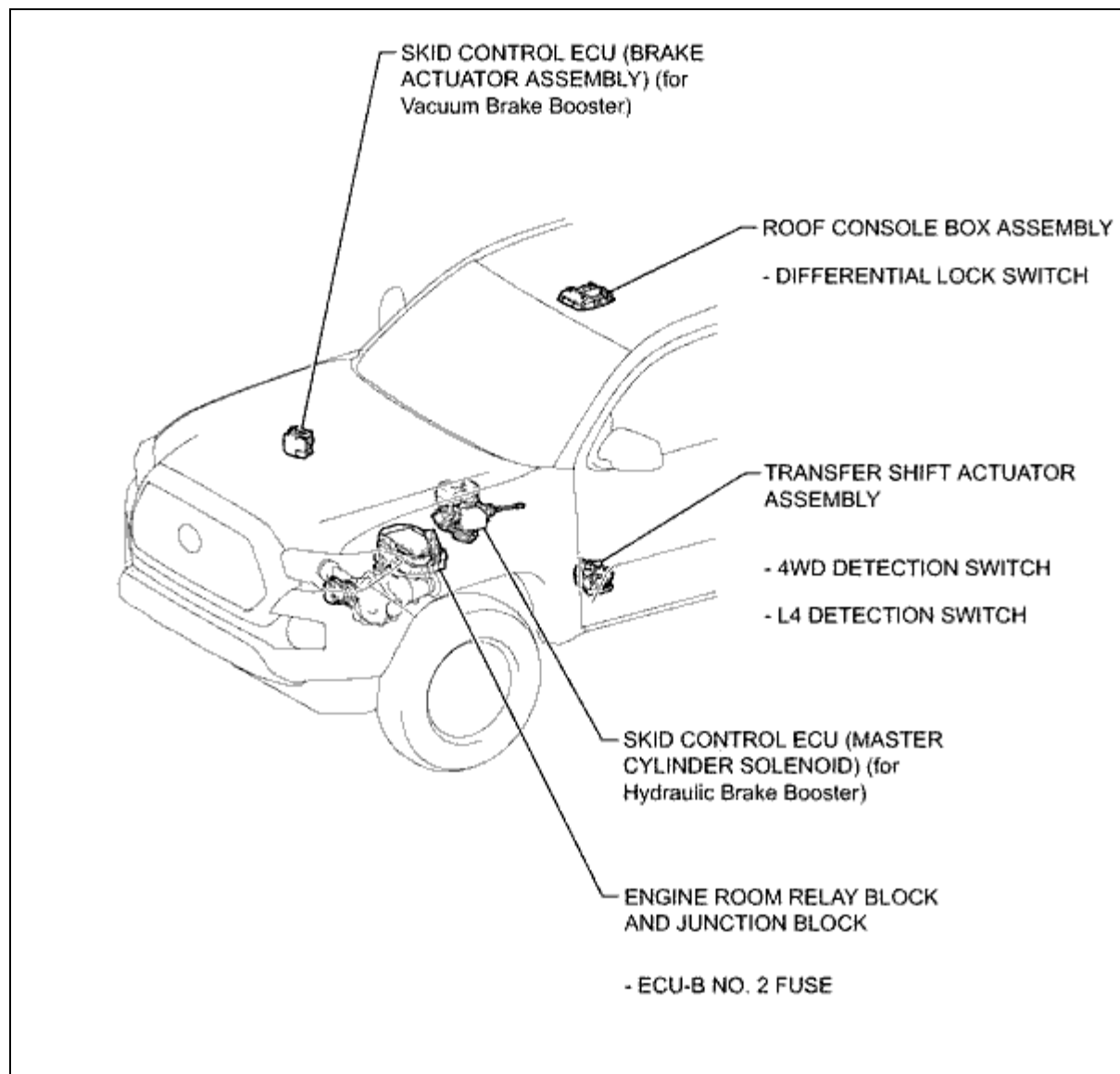
OK ► **REPLACE 4 WHEEL DRIVE CONTROL ECU**



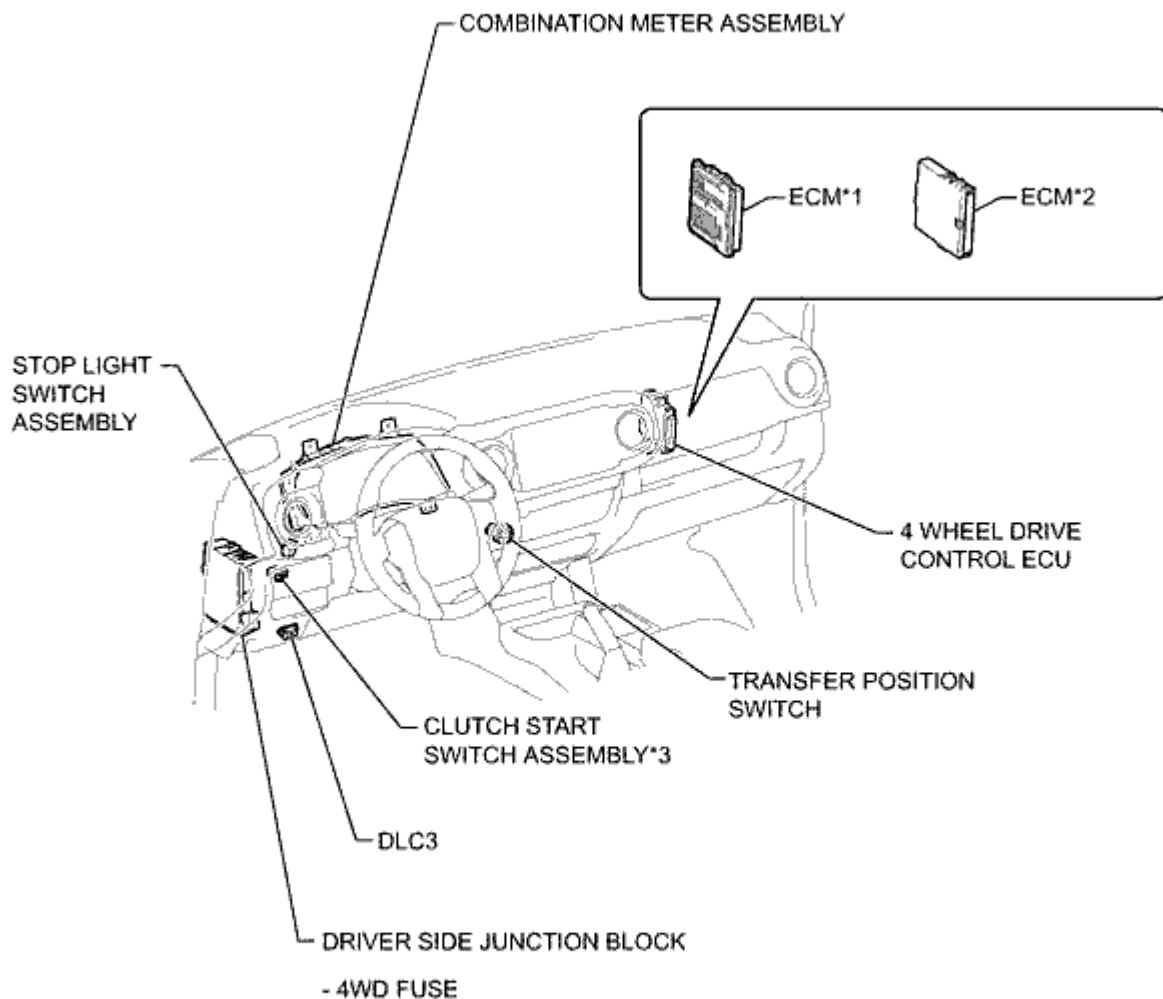
Last Modified: 11-13-2015	6.6 R	Doc ID: RM000005VHI000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: PARTS LOCATION; 2016 MY Tacoma [08/2015 -]		

PARTS LOCATION

ILLUSTRATION



ILLUSTRATION



*1: for 2GR-FKS

*3: for Manual Transmission

*2: for 2TR-FE



Last Modified: 11-13-2015	6.6 L	Doc ID: RM000005VHF000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: PRECAUTION; 2016 MY Tacoma [08/2015 -]		

PRECAUTION

1. IGNITION SWITCH EXPRESSION

(a) The type of ignition switch used on this model differs depending on the specifications of the vehicle.

The expressions listed in the table below are used in this section.

EXPRESSION	IGNITION SWITCH (POSITION)	ENGINE SWITCH (CONDITION)
Ignition Switch off	LOCK	Off (Lock)
Ignition Switch ACC	ACC	On (ACC)
Ignition Switch ON	ON	On (IG)
Engine Start	START	On (Start)

2. TROUBLESHOOTING PRECAUTION

- (a) When there is a malfunction in the contact point of the terminals or installation problems with parts, removal and installation of the suspected problem parts may return the system to the normal condition either completely or temporarily.
- (b) In order to determine the malfunctioning area, be sure to check the conditions at the time the malfunction occurred, such as by DTC output and record them before disconnecting each connector or removing and installing parts.
- (c) Since the Touch Select 2-4 and High-Low System may be influenced by a malfunction in other systems, be sure to check for DTCs in the other systems.

3. CAN COMMUNICATION SYSTEM PRECAUTION

- (a) The CAN communication system is used for data communication between each of the ECUs and sensors. If there is trouble in the CAN communication line, the DTC of the communication line is output.
- (b) If the DTC of the CAN communication line is output, repair the malfunction in the communication line and troubleshoot the Touch Select 2-4 and High-Low System.
- (c) Since the CAN communication line has its own length and route, it cannot be repaired temporarily with the bypass wire, etc.

4. PRECAUTION FOR WHEN TESTING BRAKES, SPEEDOMETER, ETC.

- (a) Make sure that the transfer is in 2WD mode.



Last Modified: 11-13-2015	6.6 T	Doc ID: RM000005VHK000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: PROBLEM SYMPTOMS TABLE; 2016 MY Tacoma [08/2015 -]		

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, 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 as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

Touch Select 2-4 and High-low System

SYMPTOM	SUSPECTED AREA	SEE PAGE
While in 2WD, even when the transfer position switch is turned to a position other than 2WD, the 4WD indicator light (green) and 4LO indicator light do not illuminate	ECU power source circuit	INFO
	CAN communication system	INFO
	Combination meter assembly	
	Transfer position switch	
	4 wheel drive control ECU	
While in 4WD, even when the transfer position switch is turned to a position other than H4, the 4WD indicator light (green) remains on and the 4LO indicator light does not illuminate	ECU power source circuit	INFO
	Clutch start switch circuit (for Manual Transmission)	INFO
	Transfer position switch	INFO
	4 wheel drive control ECU	
While in 4WD, even when the transfer position switch is turned to a position other than L4, the 4WD indicator light (green) and 4LO indicator light remain illuminated	ECU power source circuit	INFO
	Transfer position switch	INFO
	4 wheel drive control ECU	
	CAN communication system	
The 4WD indicator light (green) continues blinking after the transfer position switch is operated	ECU power source circuit	INFO
	Transfer shift actuator assembly (transfer shift motor)	INFO
	A.D.D. actuator (differential vacuum actuator assembly) (A.D.D. shift motor)	
	Transfer shift actuator assembly (limit switch, 4WD detection switch or L4 detection switch)	
	A.D.D. actuator (differential vacuum actuator assembly) (limit switch or A.D.D. position switch)	

SYMPTOM	SUSPECTED AREA	SEE PAGE
The 4LO indicator light continues blinking after the transfer position switch is operated	4 wheel drive control ECU	
	ECU power source circuit	INFO
	Clutch start switch circuit (for Manual Transmission)	INFO
	Transfer shift actuator assembly (transfer shift motor)	INFO
	Transfer shift actuator assembly (limit switch, 4WD detection switch or L4 detection switch)	
	4 wheel drive control ECU	

Blinking: Blinks at 0.5 second intervals (0.5 seconds on and 0.5 seconds off)



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000005VHO000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: SYSTEM DESCRIPTION; 2016 MY Tacoma [08/2015 -]		

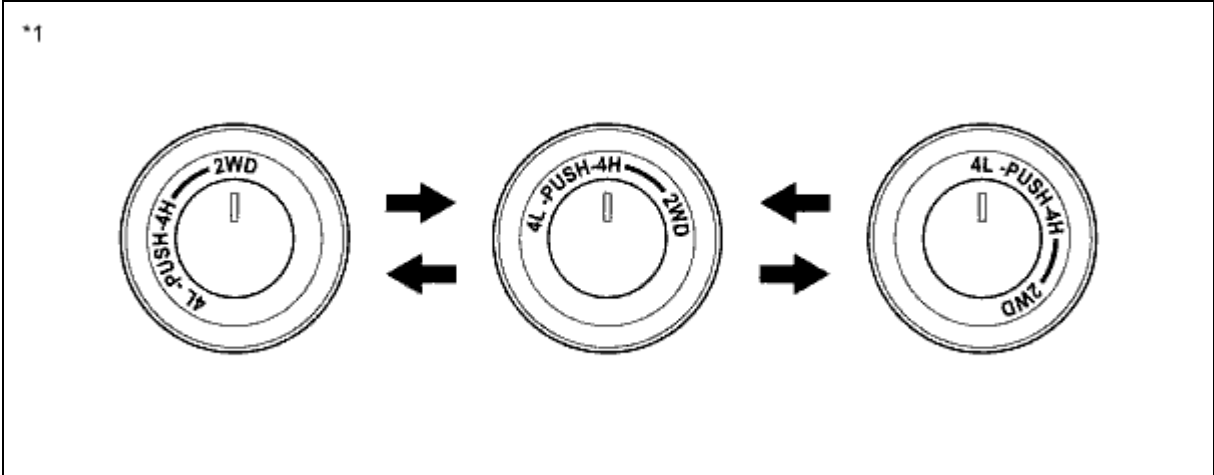
SYSTEM DESCRIPTION

1. DESCRIPTION

- A part-time 2-speed VF2CM transfer uses a touch select 2-4 and high-low system, enabling the driver to switch between 2WD, H4 and L4 modes by turning the transfer position switch.
 - Through these switch signals, the 4 wheel drive control ECU actuates the shift motor in the transfer shift actuator and another shift motor in the A.D.D. actuator (differential vacuum actuator assembly).
 - When driving in 4WD at high speeds on dry pavement, the front differential oil temperature may rise excessively, resulting in oil leaks or seizures. To avoid such occurrences, the 4 wheel drive control ECU monitors the oil temperature via the front differential oil temperature sensor and provides a front differential temperature warning using an indicator*1 or message*2 and the warning buzzer.
- *1: w/o Multi-information Display

*2: w/ Multi-information Display

2. DRIVING MODE SWITCHING PATTERN



Text in Illustration

*1	Transfer Position Switch	-	-
----	--------------------------	---	---

3. INDICATOR LIGHT, WARNING MESSAGE AND WARNING BUZZER OPERATING CONDITIONS

(a) w/o Multi-information Display

2WD/4WD Mode Control

MODE	4WD INDICATOR LIGHT (GREEN / AMBER)	4LO INDICATOR LIGHT	WARNING BUZZER
2WD	Not illuminated	Not illuminated	Not sounding
While switching between 2WD and H4	Blinking (green)	Not illuminated	Not sounding
H4	Illuminated (green)	Not illuminated	Not sounding

MODE	4WD INDICATOR LIGHT (GREEN / AMBER)	4LO INDICATOR LIGHT	WARNING BUZZER
While switching between H4 and L4	Illuminated (green)	Blinking	Not sounding
L4	Illuminated (green)	Illuminated	Not sounding
A.D.D. Actuator malfunction	Rapidly blinking (amber)	Not illuminated	Not sounding
High-Low malfunction	Status displayed*1	Rapidly blinking	Not sounding
Other switching malfunction*2	Rapidly blinking (amber)	Rapidly blinking	Not sounding

*1: Displays the 2WD/4WD mode status during a malfunction

*2: Malfunctions not listed in "Mode" or "Control Mode"

- Blinking: Blinks at 0.5 second intervals (0.5 seconds on and 0.5 seconds off)
- Rapidly blinking: Blinks at 0.25 second intervals (0.25 seconds on and 0.25 seconds off)

Front Differential Oil Temperature Warning Control

CONTROL MODE	2WD/4WD MODE STATUS	4WD INDICATOR LIGHT (GREEN / AMBER)	4LO INDICATOR LIGHT	WARNING BUZZER
Front differential oil temperature warning starts	H4	Rapidly blinking (amber)	Not illuminated	Sounding
	L4	Rapidly blinking (amber)	Illuminated	Sounding
Vehicle speed limit control starts*1	H4	Rapidly blinking (amber)	Not illuminated	Sounding
	L4	Rapidly blinking (amber)	Illuminated	Sounding
While switching to 2WD	H4	Rapidly blinking (amber)	Not illuminated	Sounding
Switching to 2WD complete	2WD	Rapidly blinking (amber)	Not illuminated	Sounding finished
Vehicle speed limit control finished	2WD	Not illuminated	Not illuminated	Not sounding
Front differential oil temperature sensor malfunction	-	Rapidly blinking (amber)	Status displayed*2	Not sounding

*1: 30 seconds after front differential oil temperature warning starts

*2: Displays the 2WD/4WD mode status during a malfunction

(b) w/ Multi-information Display

2WD/4WD Mode Control

MODE	4WD INDICATOR LIGHT (GREEN)	4LO INDICATOR LIGHT	MULTI-INFORMATION DISPLAY MESSAGE	WARNING BUZZER
2WD	Not illuminated	Not illuminated	-	Not sounding
While switching between 2WD and H4	Blinking	Not illuminated	-	Not sounding
H4	Illuminated	Not illuminated	-	Not sounding

MODE	4WD INDICATOR LIGHT (GREEN)	4LO INDICATOR LIGHT	MULTI-INFORMATION DISPLAY MESSAGE	WARNING BUZZER
While switching between H4 and L4	Illuminated	Blinking	-	Not sounding
L4	Illuminated	Illuminated	-	Not sounding
A.D.D. Actuator malfunction	Not illuminated	Not illuminated	2WD-4WD mode change malfunction visit your dealer	Not sounding
High-Low malfunction	Status displayed*1	Rapidly blinking	-	Not sounding
Other switching malfunction*2	Not illuminated	Rapidly blinking	2WD-4WD mode change malfunction visit your dealer	Not sounding

*1: Displays the 2WD/4WD mode status during a malfunction

*2: Malfunctions not listed in "Mode" or "Control Mode"

- Blinking: Blinks at 0.5 second intervals (0.5 seconds on and 0.5 seconds off)
- Rapidly blinking: Blinks at 0.25 second intervals (0.25 seconds on and 0.25 seconds off)

Front Differential Oil Temperature Warning Control

CONTROL MODE	2WD/4WD MODE STATUS	4WD INDICATOR LIGHT (GREEN)	4LO INDICATOR LIGHT	MULTI-INFORMATION DISPLAY MESSAGE	WARNING BUZZER
Front differential oil temperature warning starts	H4	Illuminated	Not illuminated	Differential oil temp high Shift to 2WD mode Cooling time required	Sounding
	L4	Illuminated	Illuminated	Differential oil temp high Shift to 2WD mode Cooling time required	Sounding
Vehicle speed limit control starts*1	H4	Illuminated	Not illuminated	Differential oil temp high Shift to 2WD mode Cooling time required	Sounding
	L4	Illuminated	Illuminated	Differential oil temp high Shift to 2WD mode Cooling time required	Sounding
While switching to 2WD	H4	Illuminated	Not illuminated	Differential oil temp high Shift to 2WD mode Cooling time required	Sounding
Switching to 2WD complete	2WD	Not illuminated	Not illuminated	Differential oil temp high Cooling time required	Sounding finished
Vehicle speed limit control finished	2WD	Not illuminated	Not illuminated	-	Not sounding
Front differential oil temperature sensor malfunction	-	Not illuminated	Status displayed*2	2WD-4WD mode change malfunction visit your dealer	Not sounding

*1: 30 seconds after front differential oil temperature warning starts

*2: Displays the 2WD/4WD mode status during a malfunction

4. FUNCTION OF COMPONENTS

COMPONENTS			FUNCTIONS
Transfer position switch			Switches between the following 3 drive modes: 2WD, H4 and L4.
Combination meter assembly	w/o Multi-information Display	4WD indicator light (green)	Illuminates to inform the user of 4WD mode status. Blinks to inform the user of mode switching.
		4WD indicator light (amber)	Rapidly blinks to inform the user of a system malfunction. Rapidly blinks to inform the user of a front differential oil temperature warning.
		4LO indicator light	Illuminates to inform the user of L4 mode status. Blinks to inform the user of mode switching. Rapidly blinks to inform the user of a system malfunction.
	w/ Multi-information Display	4WD indicator light (green)	Illuminates to inform the user of 4WD mode status. Blinks to inform the user of mode switching.
		Multi-information display	Displays a malfunction message to inform the user of a system malfunction. Displays a message to inform the user of a front differential oil temperature warning.
		4LO indicator light	Illuminates to inform the user of L4 mode status. Blinks to inform the user of mode switching. Rapidly blinks to inform the user of a system malfunction.
	Warning buzzer		Sounds to inform the user of a front differential oil temperature warning or switching condition violation.
Skid control ECU (brake actuator assembly)			Outputs wheel speed signals to the 4 wheel drive control ECU via CAN communication.
ECM			Outputs information such as the shift lever position and engine speed to the 4 wheel drive control ECU via CAN communication.
Clutch start switch assembly (for Manual Transmission)			Detects clutch pedal depression and sends that information to the 4 wheel drive control ECU.
4 wheel drive control ECU			Detects the vehicle status from wheel speed signals, vehicle speed signals, etc. received via CAN communication, and switches to the requested 4WD mode (H4 or L4) by operating the transfer shift actuator assembly and A.D.D. actuator (differential vacuum actuator assembly)* according to the operation of the transfer position switch.
Transfer shift actuator assembly	Transfer shift motor and limit switch		Operates the shift motor according to commands sent from the 4 wheel drive control ECU and switches to 4WD mode (H4 or L4).
	4WD detection switch		Detects the 4WD condition and sends that information to the 4 wheel drive control ECU.

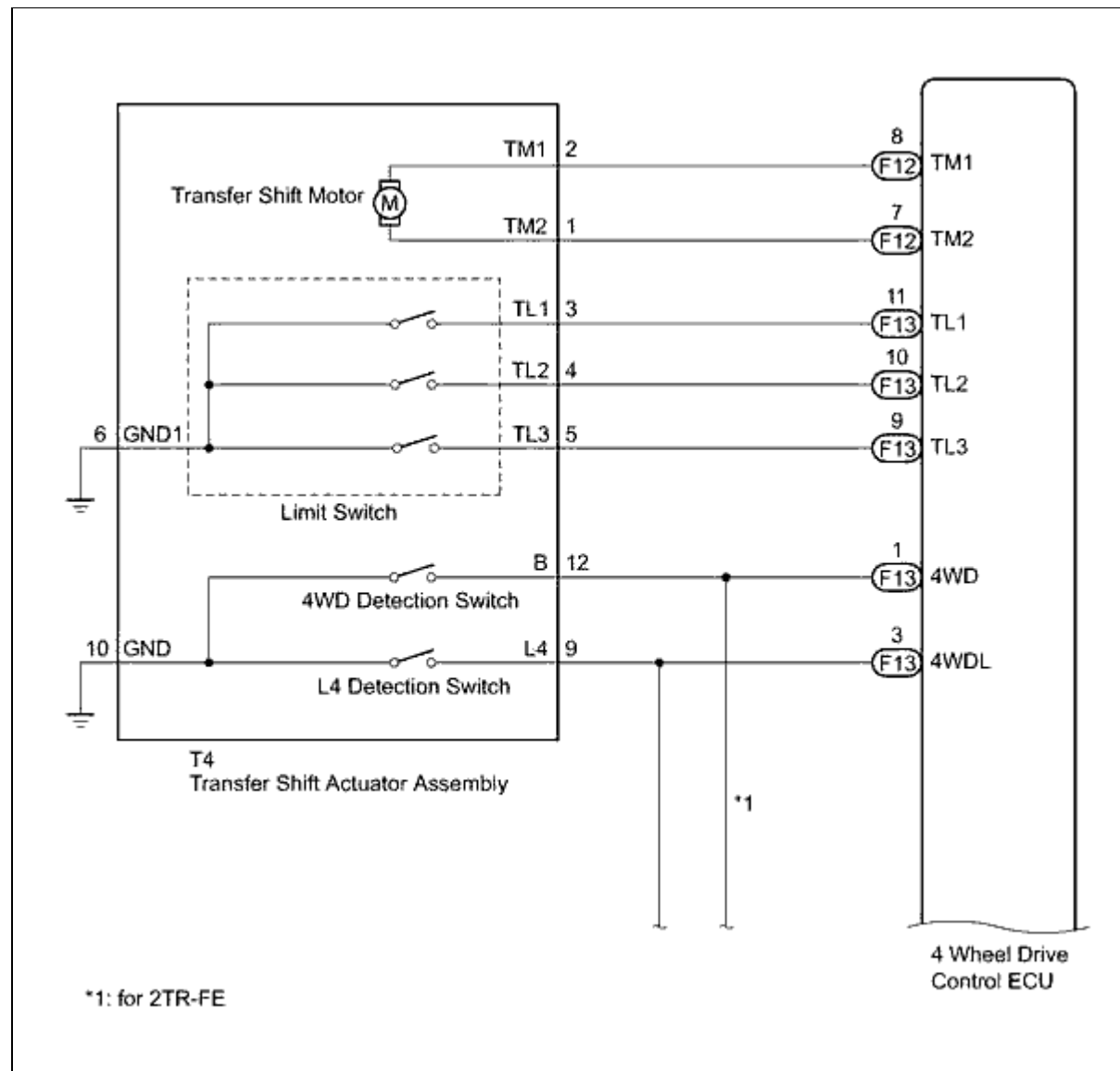
COMPONENTS		FUNCTIONS
	L4 detection switch	Detects the low gear position and sends that information to the 4 wheel drive control ECU.
A.D.D. actuator (differential vacuum actuator assembly)	A.D.D. shift motor and limit switch	Operates the A.D.D. shift motor according to commands sent from the 4 wheel drive control ECU and switches between 2WD and 4WD.
	A.D.D. position switch	Detects the 2WD and 4WD A.D.D. positions and sends that information to the 4 wheel drive control ECU.
Oil temperature sensor		Detects the oil temperature in the front differential.

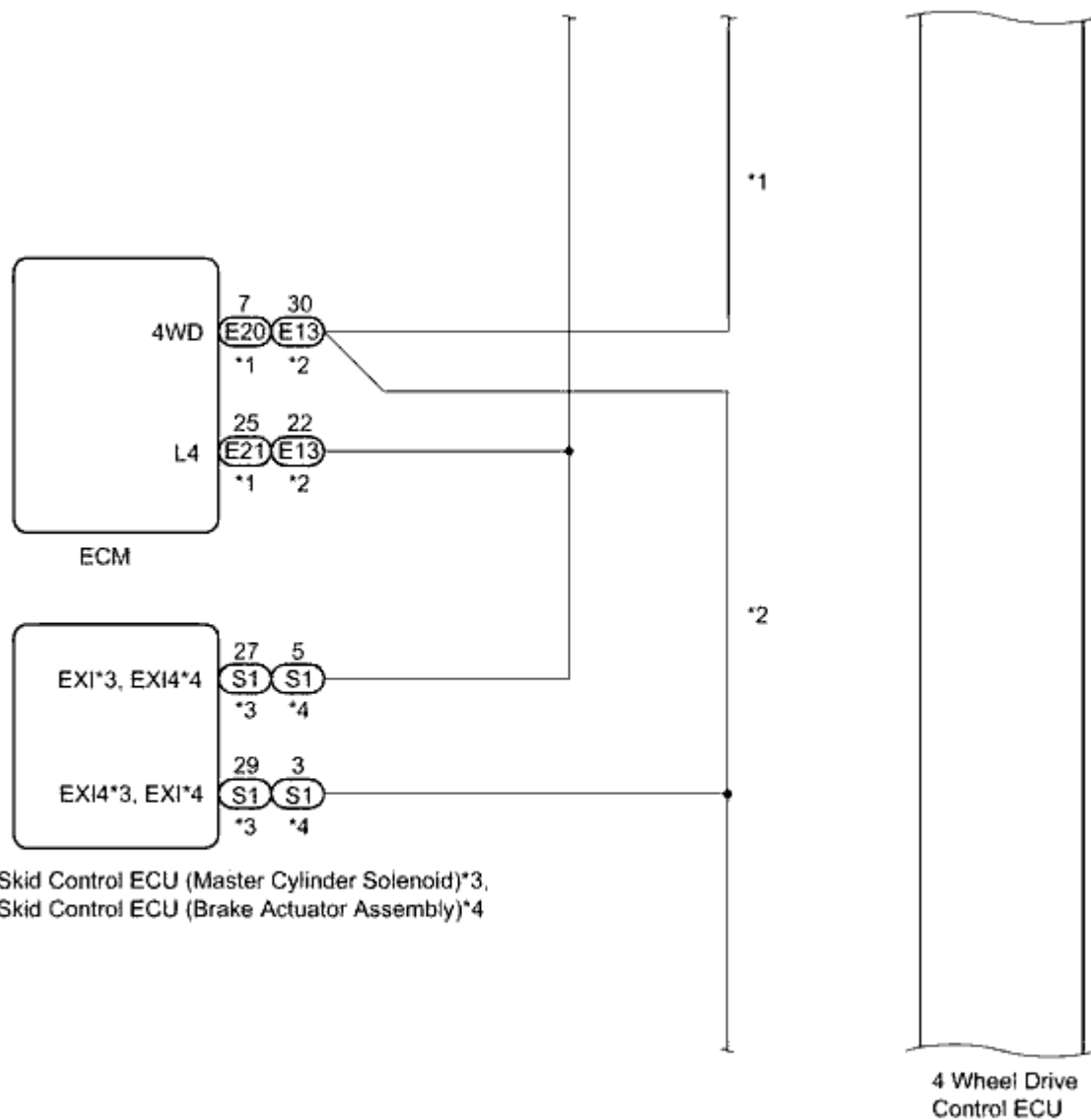
- Blinking: Blinks at 0.5 second intervals (0.5 seconds on and 0.5 seconds off)
- Rapidly blinking: Blinks at 0.25 second intervals (0.25 seconds on and 0.25 seconds off)



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000005VHR000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: SYSTEM DIAGRAM; 2016 MY Tacoma [08/2015 -]		

SYSTEM DIAGRAM



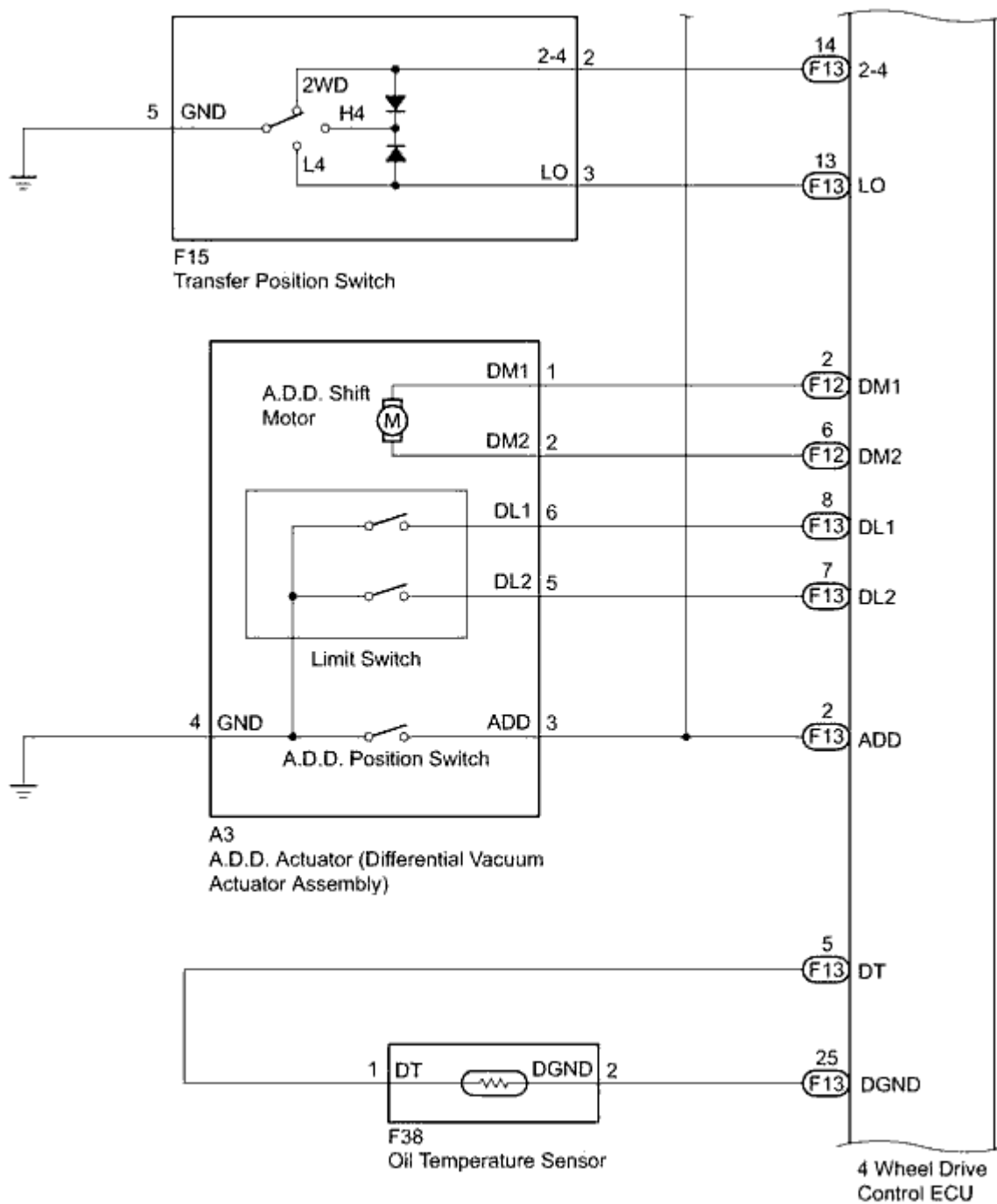


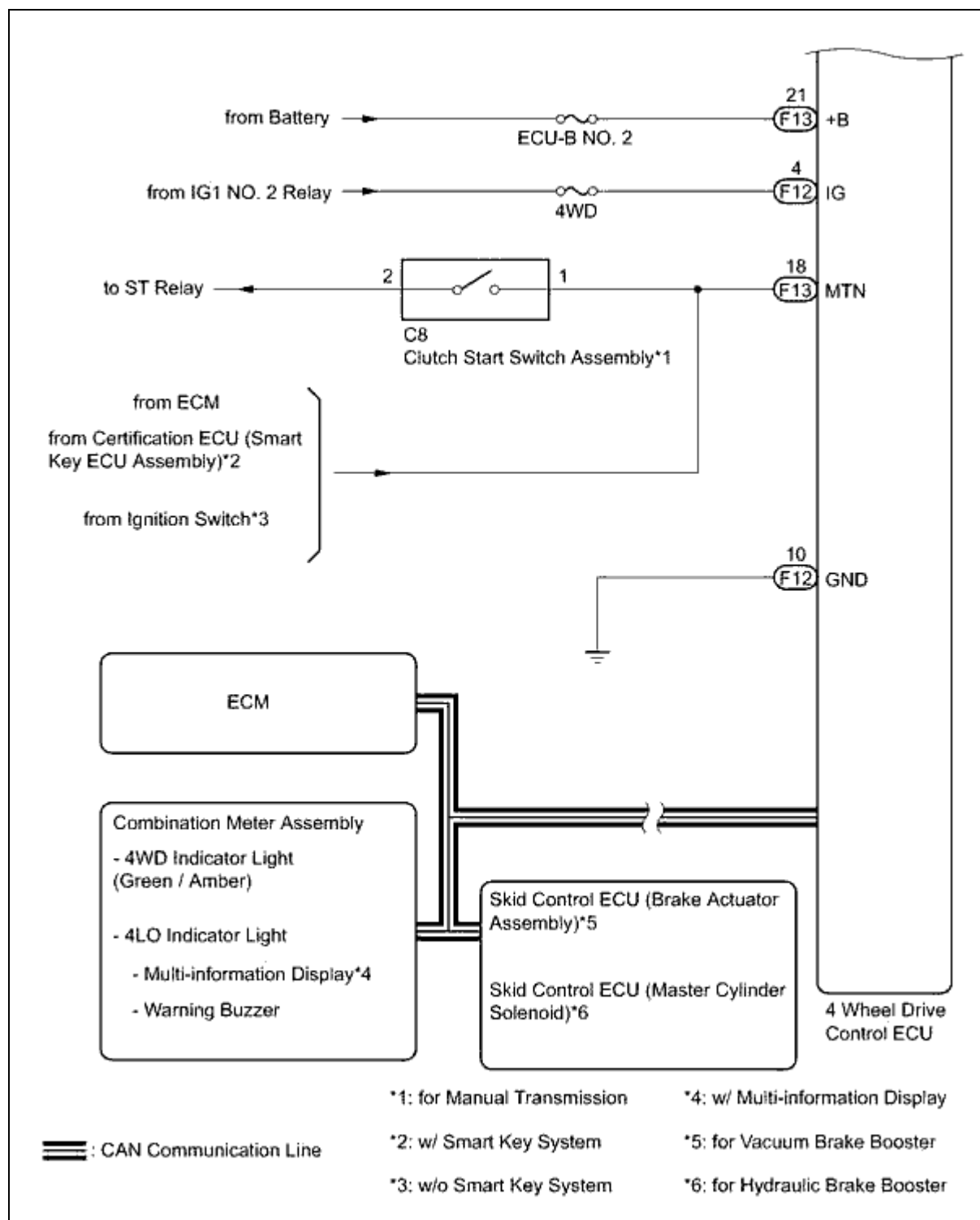
*1: for 2TR-FE

*3: for Hydraulic Brake Booster

*2: for 2GR-FKS

*4: for Vacuum Brake Booster





TRANSMITTING ECU (TRANSMITTER)	RECEIVING ECU	SIGNAL	COMMUNICATION METHOD
4 wheel drive control ECU	Skid control ECU (Brake actuator assembly)	• High-Low actuator fail • 4WD status signal • L4 status signal	CAN communication system
Skid control ECU (Brake actuator)	4 wheel drive control ECU	• Wheel speed sensor error signal • Wheel speed signal	CAN communication

TRANSMITTING ECU (TRANSMITTER)	RECEIVING ECU	SIGNAL	COMMUNICATION METHOD
assembly)		• Vehicle speed signal • Vehicle speed status flag	system
4 wheel drive control ECU	ECM	• Cruise control cancel request signal • 4WD status signal	CAN communication system
ECM	4 wheel drive control ECU	• Shift position N signal • Neutral position switch error flag	CAN communication system
4 wheel drive control ECU	Combination meter assembly	• 4WD indicator light (green / amber*2) signal • 4LO indicator light signal • Multi-information display (4WD malfunction and front differential oil temperature warning related messages) signals*1 • Warning buzzer signal	CAN communication system

*1: w/ Multi-information Display

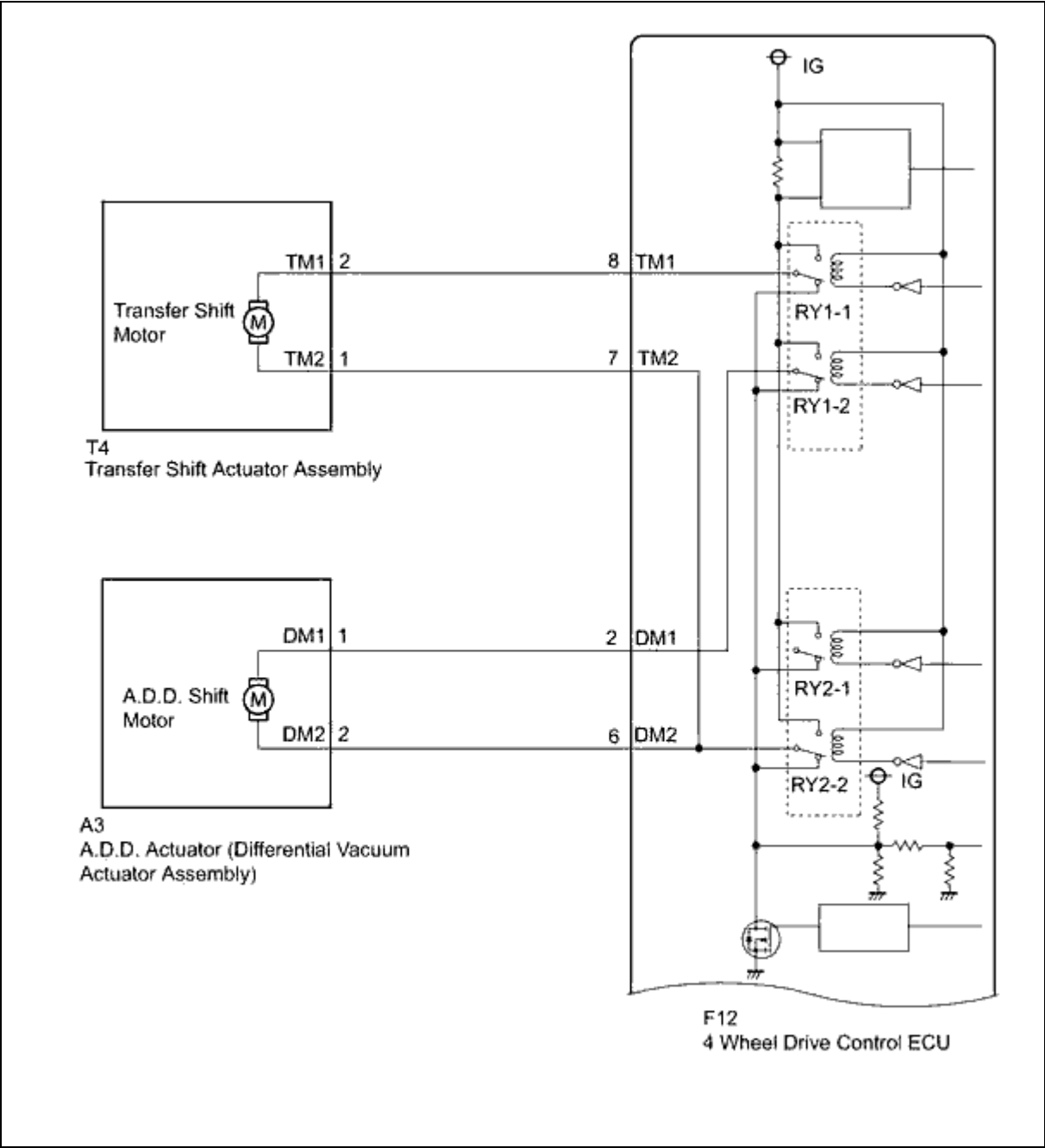
*2: w/o Multi-information Display

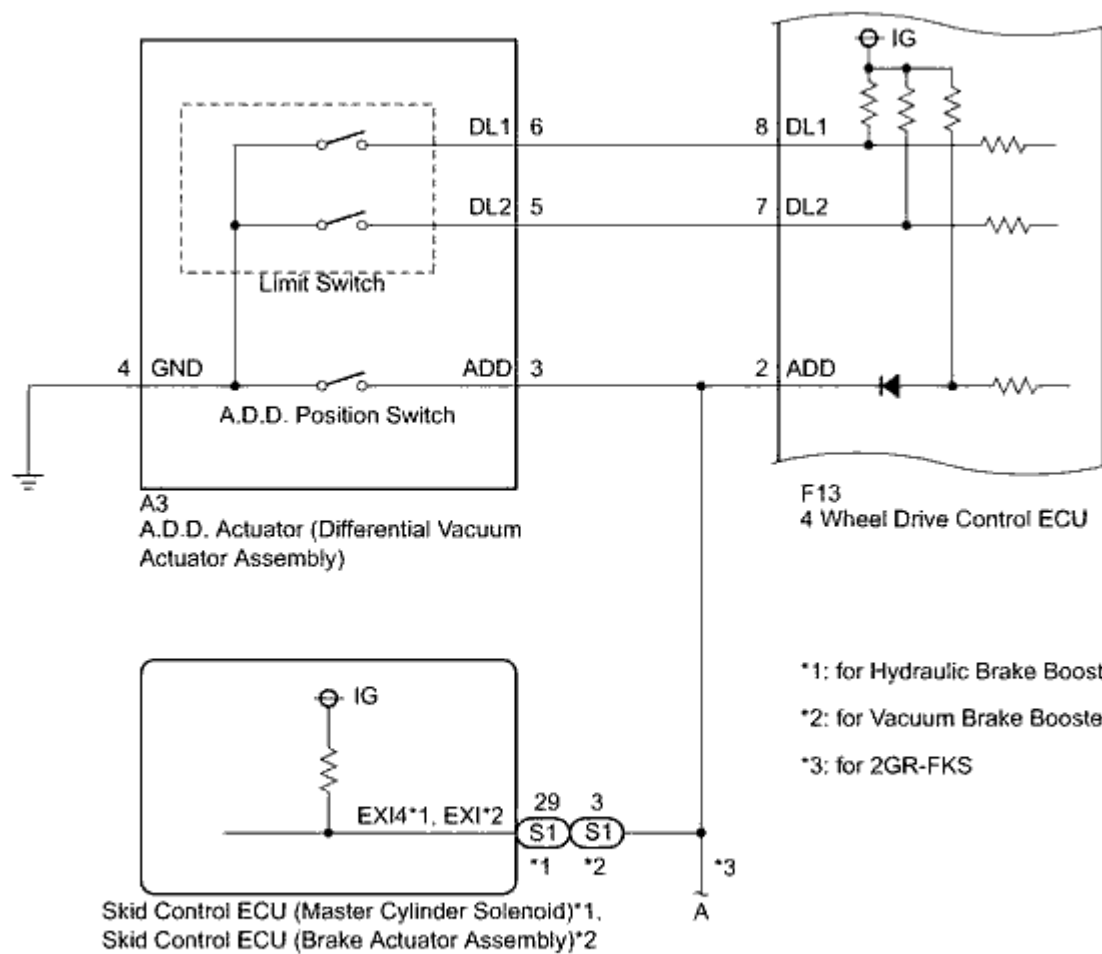


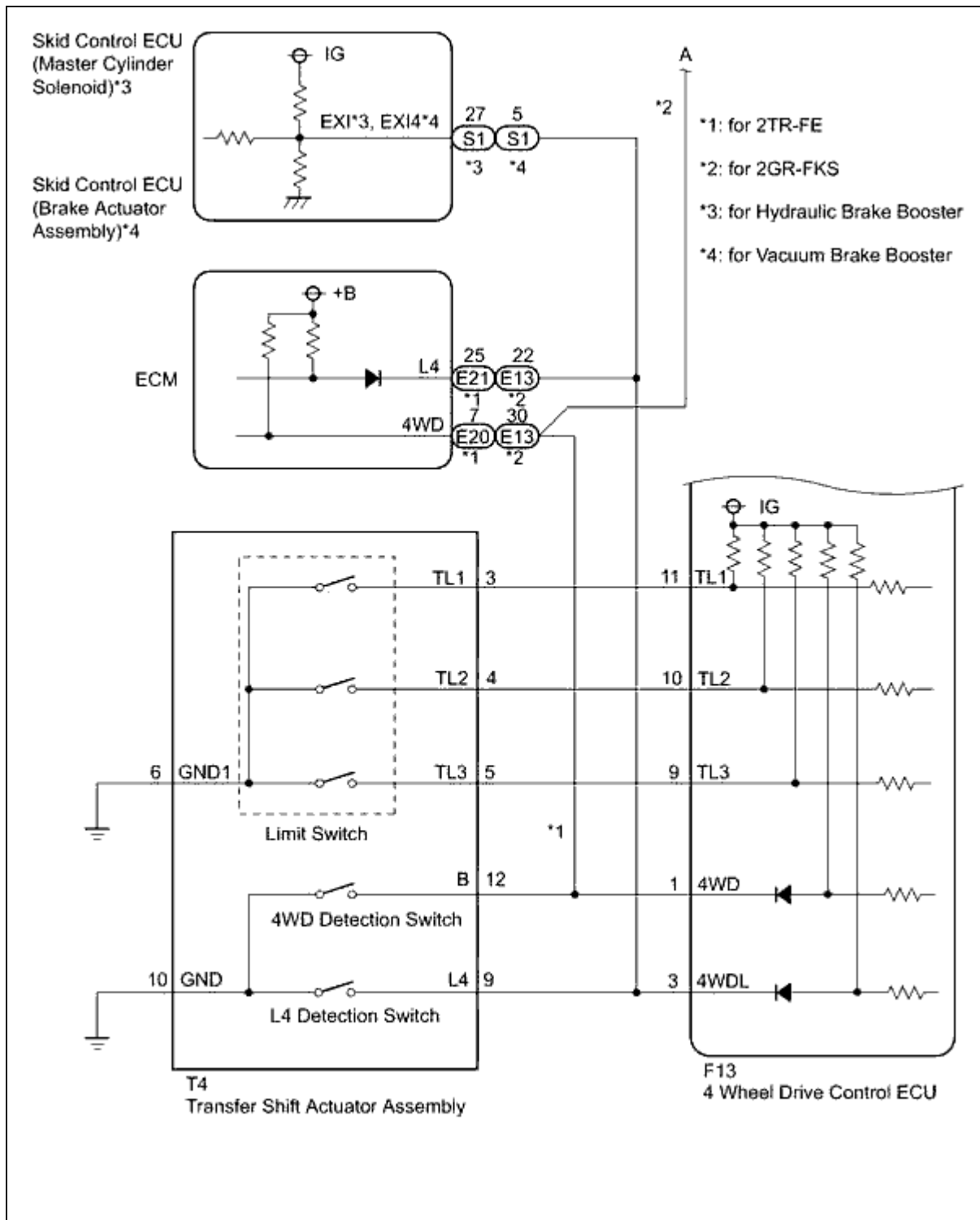
Last Modified: 11-13-2015	6.6 J	Doc ID: RM000005VI4000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: Shift Motor Circuit; 2016 MY Tacoma [08/2015 -]		

Shift Motor Circuit

WIRING DIAGRAM







INSPECTION PROCEDURE

NOTICE:

When the vehicle is stopped, mode switching may be unavailable depending on the phase of the transfer assembly and A.D.D. actuator powertrain. There is no malfunction if mode switching is available after the vehicle is moved.

PROCEDURE

1.	CONFIRM PROBLEM SYMPTOM
-----------	--------------------------------

(a) Confirm the problem symptoms.

Result

RESULT	PROCEED TO
The 4WD indicator light (green) is blinking*	A
The 4LO indicator light is blinking*	B

*: Blinks at 0.5 second intervals (0.5 seconds on and 0.5 seconds off)

B  **GO TO STEP 7**

A



2.	CHECK TRANSFER POSITION
-----------	--------------------------------

(a) Lift up the vehicle until all four wheels are off the ground.

(b) for Automatic Transmission:

Move the shift lever to N.

for Manual Transmission:

Move the shift lever to neutral.

(c) Turn the transfer position switch from 2WD to H4.

HINT:

The 4WD indicator light (green) continues to blink*.

*: Blinks at 0.5 second intervals (0.5 seconds on and 0.5 seconds off)

(d) Release the parking brake.

(e) Turn the ignition switch off.

(f) Disconnect the T4 transfer shift actuator assembly connector.

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

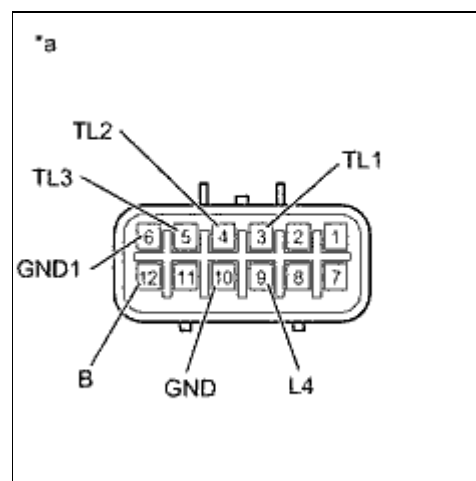
HINT:

Check that the terminals of the limit switch, 4WD detection switch and L4 detection switch of the transfer shift actuator assembly (TL1, TL2, TL3, B and L4) are in the condition shown in the table below (H4).

TERMINAL	WHEN H4
TL1	OFF (OPEN)
TL2	OFF (OPEN)
TL3	ON (GND)
B	ON (GND)
L4	OFF (OPEN)

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 (TL1) - 6 (GND1)	Transfer H4	10 k Ω or higher
4 (TL2) - 6 (GND1)		10 k Ω or higher
5 (TL3) - 6 (GND1)		Below 1 Ω
12 (B) - 10 (GND)		Below 1 Ω
9 (L4) - 10 (GND)		10 k Ω or higher



Text in Illustration

*a	Component without harness connected (Transfer Shift Actuator Assembly)
----	---

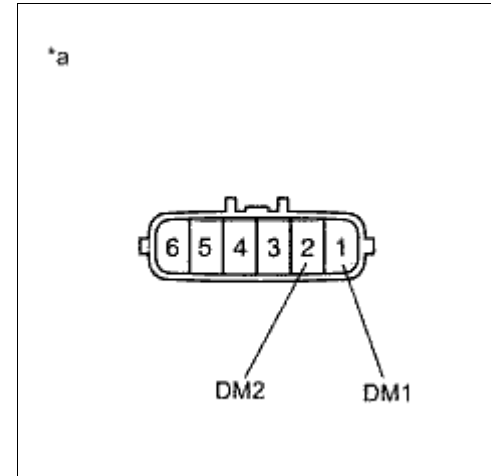
Result

RESULT	PROCEED TO
OK (H4 condition)	A
NG (not H4 condition)	B

B **GO TO STEP 7**

A

3.	CHECK DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY (A.D.D. SHIFT MOTOR)
-----------	---



(a) Disconnect the A3 A.D.D. actuator (differential vacuum actuator assembly) connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1 (DM1) - 2 (DM2)	Always	1.5 to 10 Ω

Text in Illustration

*a	Component without harness connected (A.D.D. Actuator (Differential Vacuum Actuator Assembly))
----	--

NG **REPLACE DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY**

OK

4.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU - DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY)
-----------	--

(a) Disconnect the F12 4 wheel drive control ECU connector.

(b) Disconnect the A3 A.D.D. actuator (differential vacuum actuator assembly) connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F12-2 (DM1) - A3-1 (DM1)	Always	Below 1 Ω
F12-6 (DM2) - A3-2 (DM2)	Always	Below 1 Ω

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F12-2 (DM1) or A3-1 (DM1) - F12-6 (DM2) or A3-2 (DM2)	Always	10 kΩ or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



5.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU - DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY)
-----------	--

(a) Disconnect the F13 4 wheel drive control ECU connector.

(b) Disconnect the A3 A.D.D. actuator (differential vacuum actuator assembly) connector.

(c) for Hydraulic Brake Booster:

Disconnect the S1 skid control ECU (Master Cylinder Solenoid) connector.

for Vacuum Brake Booster:

Disconnect the S1 skid control ECU (brake actuator assembly) connector.

(d) for 2GR-FKS:

Disconnect the E13 ECM connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F13-8 (DL1) - A3-6 (DL1)	Always	Below 1 Ω
F13-7 (DL2) - A3-5 (DL2)	Always	Below 1 Ω
F13-2 (ADD) - A3-3 (ADD)	Always	Below 1 Ω
A3-4 (GND) - Body ground	Always	Below 1 Ω
F13-8 (DL1) or A3-6 (DL1) - Body ground	Always	10 kΩ or higher
F13-7 (DL2) or A3-5 (DL2) - Body ground	Always	10 kΩ or higher
F13-2 (ADD) or A3-3 (ADD) - Body ground	Always	10 kΩ or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

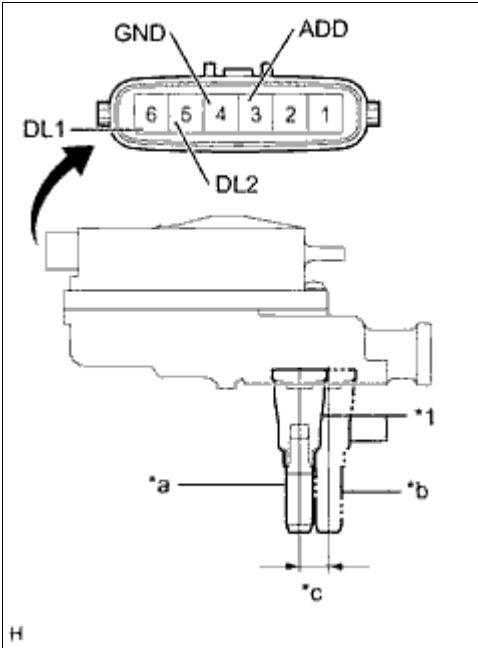
OK

6.

INSPECT DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY (LIMIT SWITCH AND A.D.D. POSITION SWITCH)

- (a) Turn the ignition switch off.
- (b) Remove the A.D.D. actuator (differential vacuum actuator assembly) INFO.

- (c) Measure the resistance between terminals 1 and 2.
- Standard:
- 0.1 to 100 Ω



- (d) Measure the resistance between terminal 1 or 2 and body ground.
- Standard:
- 5 MΩ or more

If the result is not as specified, replace the differential vacuum actuator.

- (e) Check the actuator using one of the following methods.

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

Standard Resistance:

TESTER CONNECTION	MEASUREMENT CONDITION	SPECIFIED CONDITION
3 (ADD) - 4 (GND)	Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Below 1 Ω
3 (ADD) - 4 (GND)	Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1	10 kΩ or higher
4 (GND) - 5 (DL2)	Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Below 1 Ω

TESTER CONNECTION	MEASUREMENT CONDITION	SPECIFIED CONDITION
4 (GND) - 5 (DL2)	Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1	10 kΩ or higher
4 (GND) - 6 (DL1)	Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Below 1 Ω
4 (GND) - 6 (DL1)	Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1	10 kΩ or higher

If the result is not as specified, replace the differential vacuum actuator assembly.

(2) Check the actuator status.

OK:

MEASUREMENT CONDITION	SPECIFIED CONDITION
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	2WD → 4WD
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1	4WD → 2WD

If the result is not as specified, replace the differential vacuum actuator assembly.

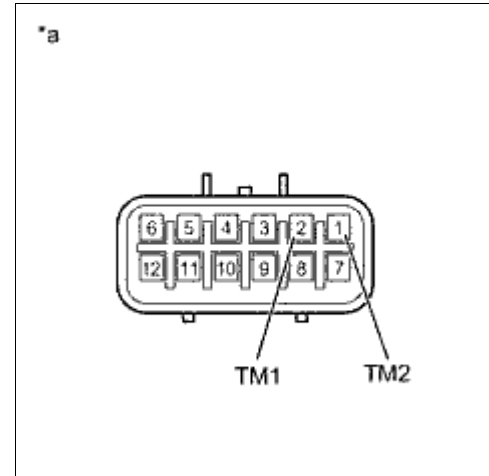
Text in Illustration

*1	Shift Fork
*a	2WD Side
*b	4WD Side
*c	12 mm (0.472 in.)

NG  **REPLACE DIFFERENTIAL VACUUM ACTUATOR ASSEMBLY**

OK  **REPLACE 4 WHEEL DRIVE CONTROL ECU**

7.	CHECK TRANSFER SHIFT ACTUATOR ASSEMBLY (TRANSFER SHIFT MOTOR)
-----------	--



(a) Disconnect the T4 transfer shift actuator assembly connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
2 (TM1) - 1 (TM2)	Always	1.5 to 10 Ω

Text in Illustration

*a	Component without harness connected (Transfer Shift Actuator Assembly)
----	---

NG **REPLACE TRANSFER SHIFT ACTUATOR ASSEMBLY**

OK



8.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU - TRANSFER SHIFT ACTUATOR ASSEMBLY)
-----------	---

(a) Disconnect the F12 4 wheel drive control ECU connector.

(b) Disconnect the T4 transfer shift actuator assembly connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F12-8 (TM1) - T4-2 (TM1)	Always	Below 1 Ω
F12-7 (TM2) - T4-1 (TM2)	Always	Below 1 Ω
F12-8 (TM1) or T4-2 (TM1) - F12-7 (TM2) or T4-1 (TM2)	Always	10 k Ω or higher

OK



9.	CHECK HARNESS AND CONNECTOR (4 WHEEL DRIVE CONTROL ECU - TRANSFER SHIFT ACTUATOR ASSEMBLY)
----	---

(a) Disconnect the F13 4 wheel drive control ECU connector.

(b) Disconnect the T4 transfer shift actuator assembly connector.

(c) for Hydraulic Brake Booster:

Disconnect the S1 skid control ECU (Master Cylinder Solenoid) connector.

for Vacuum Brake Booster:

Disconnect the S1 skid control ECU (brake actuator assembly) connector.

(d) for 2TR-FE:

Disconnect the E20 and E21 ECM connector.

for 2GR-FKS:

Disconnect the E13 ECM connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
F13-11 (TL1) - T4-3 (TL1)	Always	Below 1 Ω
F13-10 (TL2) - T4-4 (TL2)	Always	Below 1 Ω
F13-9 (TL3) - T4-5 (TL3)	Always	Below 1 Ω
T4-6 (GND1) - Body ground	Always	Below 1 Ω
F13-1 (4WD) - T4-12 (B)	Always	Below 1 Ω
F13-3 (4WDL) - T4-9 (L4)	Always	Below 1 Ω
T4-10 (GND) - Body ground	Always	Below 1 Ω
F13-11 (TL1) or T4-3 (TL1) - Body ground	Always	10 k Ω or higher
F13-10 (TL2) or T4-4 (TL2) - Body ground	Always	10 k Ω or higher
F13-9 (TL3) or T4-5 (TL3) - Body ground	Always	10 k Ω or higher
F13-1 (4WD) or T4-12 (B) - Body ground	Always	10 k Ω or higher
F13-3 (4WDL) or T4-9 (L4) - Body ground	Always	10 k Ω or higher

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK



10.	INSPECT TRANSFER SHIFT ACTUATOR ASSEMBLY (LIMIT SWITCH AND 4WD DETECTION SWITCH)
-----	---

(a) Turn the ignition switch off.

(b) Remove the transfer shift actuator assembly  .

(c) Check the limit switch, 4WD detection switch and L4 detection switch of the transfer shift actuator assembly  .

NG ► REPLACE TRANSFER SHIFT ACTUATOR ASSEMBLY

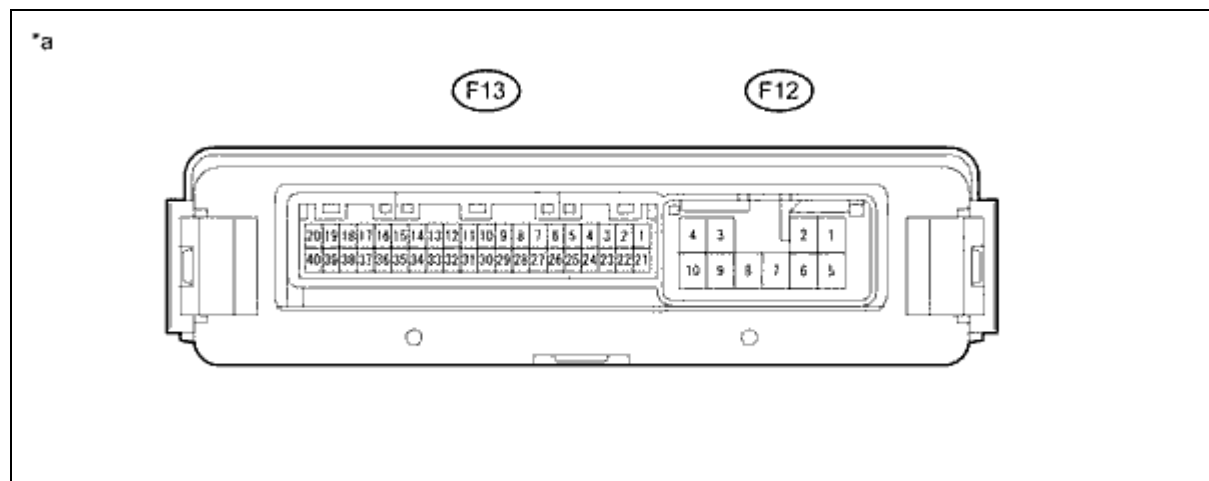
OK ► REPLACE 4 WHEEL DRIVE CONTROL ECU



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000005VHJ000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: TERMINALS OF ECU; 2016 MY Tacoma [08/2015 -]		

TERMINALS OF ECU

1. CHECK 4 WHEEL DRIVE CONTROL ECU



Text in Illustration

*a	Component with harness connected (4 Wheel Drive Control ECU)	-	-
----	---	---	---

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

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
F13-1 (4WD) - F12-10 (GND)	BE - W-B*3 LG - W-B*4	4WD detection switch signal input	Ignition switch ON Transfer position 2WD	10 to 14 V
			Ignition switch ON Transfer position 4WD	Below 1.5 V
F13-2 (ADD) - F12-10 (GND)	G - W-B	A.D.D. position switch input	Ignition switch ON Transfer position 2WD (A.D.D. actuator Free)	10 to 14 V
			Ignition switch ON Transfer position 4WD (A.D.D. actuator Lock)	Below 1.5 V
F13-3 (4WDL) - F12-10 (GND)	Y - W-B	L4 detection switch signal input	Ignition switch ON Transfer position not in L4	10 to 14 V
			Ignition switch ON Transfer position L4	Below 1.5 V
F13-5 (DT) - F13-25 (DGND)	BE - V	Oil temperature sensor signal input	Ignition switch ON	0.9 to 4.9 V

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
F13-7 (DL2) - F12-10 (GND)	P - W-B	A.D.D. actuator limit switch input	Ignition switch ON Transfer position 2WD (A.D.D. actuator Free)	10 to 14 V
			Ignition switch ON Transfer position 4WD (A.D.D. actuator Lock)	Below 1.5 V
F13-8 (DL1) - F12-10 (GND)	LG - W-B	A.D.D. actuator limit switch input	Ignition switch ON Transfer position 2WD (A.D.D. actuator Free)	Below 1.5 V
			Ignition switch ON Transfer position 4WD (A.D.D. actuator Lock)	10 to 14 V
F13-9 (TL3) - F12-10 (GND)	B - W-B	Transfer shift actuator limit switch input	Ignition switch ON TL3 terminal limit switch off (transfer 2WD or L4)	10 to 14 V
			Ignition switch ON TL3 terminal limit switch on (transfer H4)	Below 1.5 V
F13-10 (TL2) - F12-10 (GND)	SB - W-B	Transfer shift actuator limit switch input	Ignition switch ON TL2 terminal limit switch off (transfer 2WD or H4)	10 to 14 V
			Ignition switch ON TL2 terminal limit switch on (transfer L4)	Below 1.5 V
F13-11 (TL1) - F12-10 (GND)	Y - W-B	Transfer shift actuator limit switch input	Ignition switch ON TL1 terminal limit switch off (transfer H4 or L4)	10 to 14 V
			Ignition switch ON TL1 terminal limit switch on (transfer 2WD)	Below 1.5 V
F13-13 (LO) - F12-10 (GND)	V - W-B	Transfer position switch input	Ignition switch ON Transfer position switch 2WD	10 to 14 V
			Ignition switch ON Transfer position switch H4	Below 1.5 V
			Ignition switch ON Transfer position switch L4	Below 1.5 V
F13-14 (2-4) - F12-10 (GND)	GR - W-B	Transfer position switch input	Ignition switch ON Transfer position switch 2WD	Below 1.5 V
			Ignition switch ON Transfer position switch H4	Below 1.5 V
			Ignition switch ON Transfer position switch L4	10 to 14 V

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
F13-18 (MTN) - F12-10 (GND)*2	V - W-B	Clutch start switch input	Ignition switch ON Clutch pedal released	10 to 14 V
			Ignition switch ON Clutch pedal depressed	Below 2 V
F13-20 (CANH) - F13-40 (CANL)	BE - W	HIGH-level CAN bus wire - LOW-level CAN bus wire	Ignition switch off Cable disconnected from negative (-) battery terminal	54 to 69 Ω
F13-21 (+B) - F12-10 (GND)	W - W-B	ECU power supply	Always	11 to 14 V
F12-2 (DM1) - F12-10 (GND)	R - W-B	A. D. D. shift motor output	Ignition switch ON Transfer position switch H4 to 2WD (during A.D.D. actuator Lock to Free operation)	Pulse generation (see waveform 1)
F12-4 (IG) - F12-10 (GND)	Y - W-B	ECU and actuator power supply	Ignition switch ON	11 to 14 V
F12-6 (DM2) - F12-10 (GND)	SB - W-B	A. D. D. shift motor output	Ignition switch ON Transfer position switch 2WD to H4 (during A.D.D. actuator Free to Lock operation)	Pulse generation (see waveform 1)
F12-7 (TM2) - F12-10 (GND)	L - W-B	Transfer shift motor output	Ignition switch ON Shift lever in N*1 Shift lever in neutral*2 Transfer position switch turned from 2WD to H4 (switching from 2WD to H4) Transfer position switch turned from H4 to L4 (switching from H4 to L4)	Pulse generation (see waveform 2)
F12-8 (TM1) - F12-10 (GND)	G - W-B	Transfer shift motor output	Ignition switch ON Shift lever in N*1 Shift lever in neutral*2 Transfer position switch turned from L4 to H4 (switching from L4 to H4)	Pulse generation
F12-10 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

*1: for Automatic Transmission

*2: for Manual Transmission

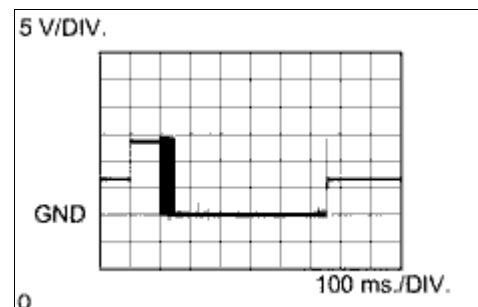
*3: 2GR-FKS

*4: 2TR-FE

(b) Waveform 1

(1) When a gear is engaged and switching is performed

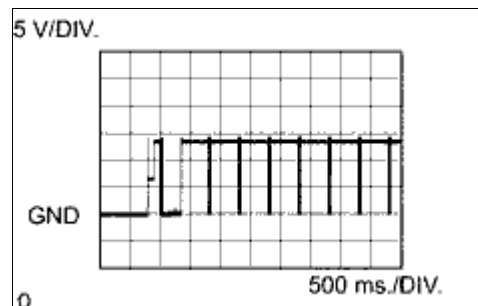
ITEM	CONTENT
Tester Connection	F12-2 (DM1) - F12-10 (GND)
Tool Setting	5 V/DIV., 100 ms./DIV.
Condition	Ignition switch ON Transfer position switch H4 to 2WD (during A.D.D. actuator Lock to Free operation)



ITEM	CONTENT
Tester Connection	F12-6 (DM2) - F12-10 (GND)
Tool Setting	5 V/DIV., 100 ms./DIV.
Condition	Ignition switch ON Transfer position switch 2WD to H4 (during A.D.D. actuator Free to Lock operation)

(2) When a gear is not engaged and switching is not performed

ITEM	CONTENT
Tester Connection	F12-2 (DM1) - F12-10 (GND)
Tool Setting	5 V/DIV., 500 ms./DIV.
Condition	Ignition switch ON Transfer position switch H4 to 2WD (during A.D.D. actuator Lock to Free operation)



ITEM	CONTENT
Tester Connection	F12-6 (DM2) - F12-10 (GND)
Tool Setting	5 V/DIV., 500 ms./DIV.
Condition	Ignition switch ON Transfer position switch 2WD to H4 (during A.D.D. actuator Free to Lock operation)

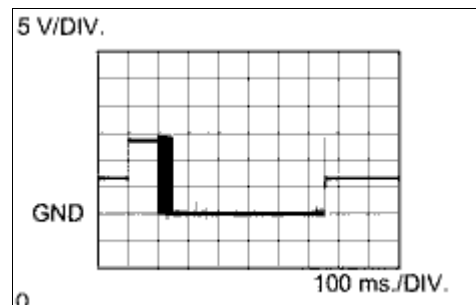
(c) Waveform 2

(1) When a gear is engaged and switching is performed

ITEM	CONTENT
Tester Connection	F12-8 (TM1) - F12-10 (GND)
Tool Setting	5 V/DIV., 100 ms./DIV.
Condition	Ignition switch ON Shift lever in N*1 Shift lever in neutral*2 Transfer position switch turned from L4 to H4 (switching from L4 to H4)

*1: for Automatic Transmission

*2: for Manual Transmission



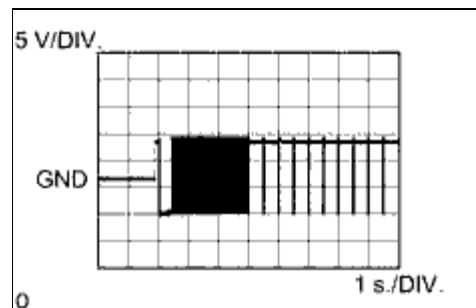
ITEM	CONTENT
Tester Connection	F12-7 (TM2) - F12-10 (GND)
Tool Setting	5 V/DIV., 100 ms./DIV.
Condition	Ignition switch ON Shift lever in N*1 Shift lever in neutral*2 Transfer position switch turned from 2WD to H4 (switching from 2WD to H4) Transfer position switch turned from H4 to L4 (switching from H4 to L4)

*1: for Automatic Transmission

*2: for Manual Transmission

(2) When a gear is not engaged and switching is not performed

ITEM	CONTENT
Tester Connection	F12-8 (TM1) - F12-10 (GND)
Tool Setting	5 V/DIV., 1 s./DIV.
Condition	Ignition switch ON Shift lever in N*1 Shift lever in neutral*2 Transfer position switch turned from L4 to H4 (switching from L4 to H4)



*1: for Automatic Transmission

*2: for Manual Transmission

ITEM	CONTENT
Tester Connection	F12-7 (TM2) - F12-10 (GND)
Tool Setting	5 V/DIV., 1 s./DIV.
Condition	Ignition switch ON Shift lever in N*1 Shift lever in neutral*2 Transfer position switch turned from 2WD to H4 (switching from 2WD to H4) Transfer position switch turned from H4 to L4 (switching from H4 to L4)

*1: for Automatic Transmission

*2: for Manual Transmission



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VHU000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: U0100,U0122; Lost Communication with ECM / PCM "A"; 2016 MY Tacoma [08/2015 -]		

DTC	U0100	Lost Communication with ECM / PCM "A"
------------	--------------	--

DTC	U0122	Lost Communication with Vehicle Dynamics Control Module
------------	--------------	--

DESCRIPTION

This DTC is output when communication is lost with the skid control ECU (brake actuator assembly) or ECM.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
U0100	Lost Communication with ECM / PCM "A"	• Diagnosis Condition: Ignition switch turned to ON (3 seconds elapse after ignition switch is turned to ON) • Malfunction Status: Communication is lost between ECM and 4 wheel drive control ECU • Malfunction Time: 1.85 seconds or more • Other: 1 trip detection logic	CAN communication system
U0122	Lost Communication with Vehicle Dynamics Control Module	• Diagnosis Condition: Ignition switch turned to ON (3 seconds elapse after ignition switch is turned to ON) • Malfunction Status: Communication is lost between skid control ECU and 4 wheel drive control ECU • Malfunction Time: 0.72 seconds or more • Other: 1 trip detection logic	CAN communication system

INSPECTION PROCEDURE

NOTICE:

- w/o Multi-information Display:

When the data in the ECM or skid control ECU (brake actuator assembly) is being overwritten, the indicator light may rapidly blink due to the 4 wheel drive control ECU detecting a communication malfunction (blinks at 0.25 second intervals (0.25 seconds on and 0.25 seconds off)), but this is not a malfunction.

w/ Multi-information Display:

When the data in the ECM and skid control ECU (brake actuator assembly) is being overwritten, a message is displayed on the multi-information display and the indicator light rapidly blinks due to the 4 wheel drive control ECU detecting a communication malfunction (blinks at 0.25 second

- intervals (0.25 seconds on and 0.25 seconds off)), but this is not a malfunction.
- Clear all DTCs, since DTCs are stored after the data in the ECM or skid control ECU (brake actuator assembly) is overwritten.

PROCEDURE

1.	PERFORM DTC
----	-------------

(a) Clear the DTCs [INFO](#) .

(b) Check if the same DTCs are output [INFO](#) .

Result

RESULT	PROCEED TO
DTC is output	A
DTC is not output	B

B ► **USE SIMULATION METHOD TO CHECK**

A ► **CHECK CAN COMMUNICATION SYSTEM**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000005VI5000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TOUCH SELECT 2-4 AND HIGH-LOW SYSTEM: U0416; Invalid Data Received From Vehicle Dynamics Control Module; 2016 MY Tacoma [08/2015 -]		

DTC	U0416	Invalid Data Received From Vehicle Dynamics Control Module
------------	--------------	---

DESCRIPTION

This DTC is detected if a wheel speed malfunction signal is sent from the skid control ECU (brake actuator assembly).

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA
U0416	Invalid Data Received From Vehicle Dynamics Control Module	• Diagnosis Condition: Ignition switch turned to ON (3 seconds elapse after ignition switch is turned to ON) • Malfunction Status: Wheel speed sensor malfunction signals from skid control ECU are received • Malfunction Time: 0.06 seconds or more (malfunction signal received 1 or more times) • Other: 1 trip detection logic	• CAN communication system • Anti-lock brake system (w/o VSC) • Vehicle stability control system (w/ VSC)

INSPECTION PROCEDURE

PROCEDURE

1.	RECONFIRM DTC
-----------	----------------------

(a) Clear the DTCs .

(b) Check if the same DTCs are output .

Result

RESULT	PROCEED TO
DTC U0122 and U0416 are output	A
Only DTC U0416 is output	B
DTC is not output	C

C ▶ USE SIMULATION METHOD TO CHECK

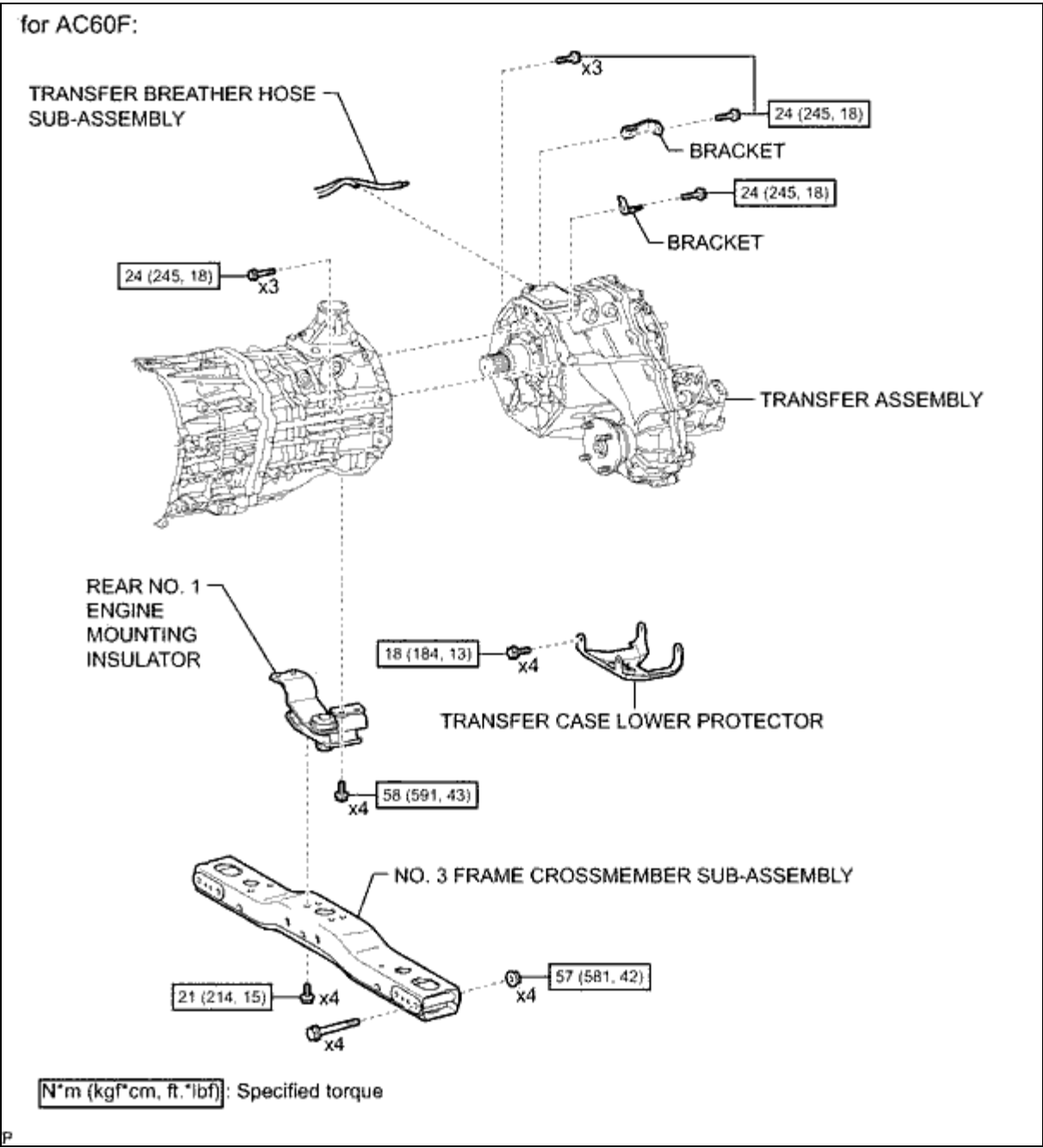
A ▶ GO TO DTC U0122



Last Modified: 11-13-2015	6.6 K	Doc ID: RM0000016PW01UX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER ASSEMBLY: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

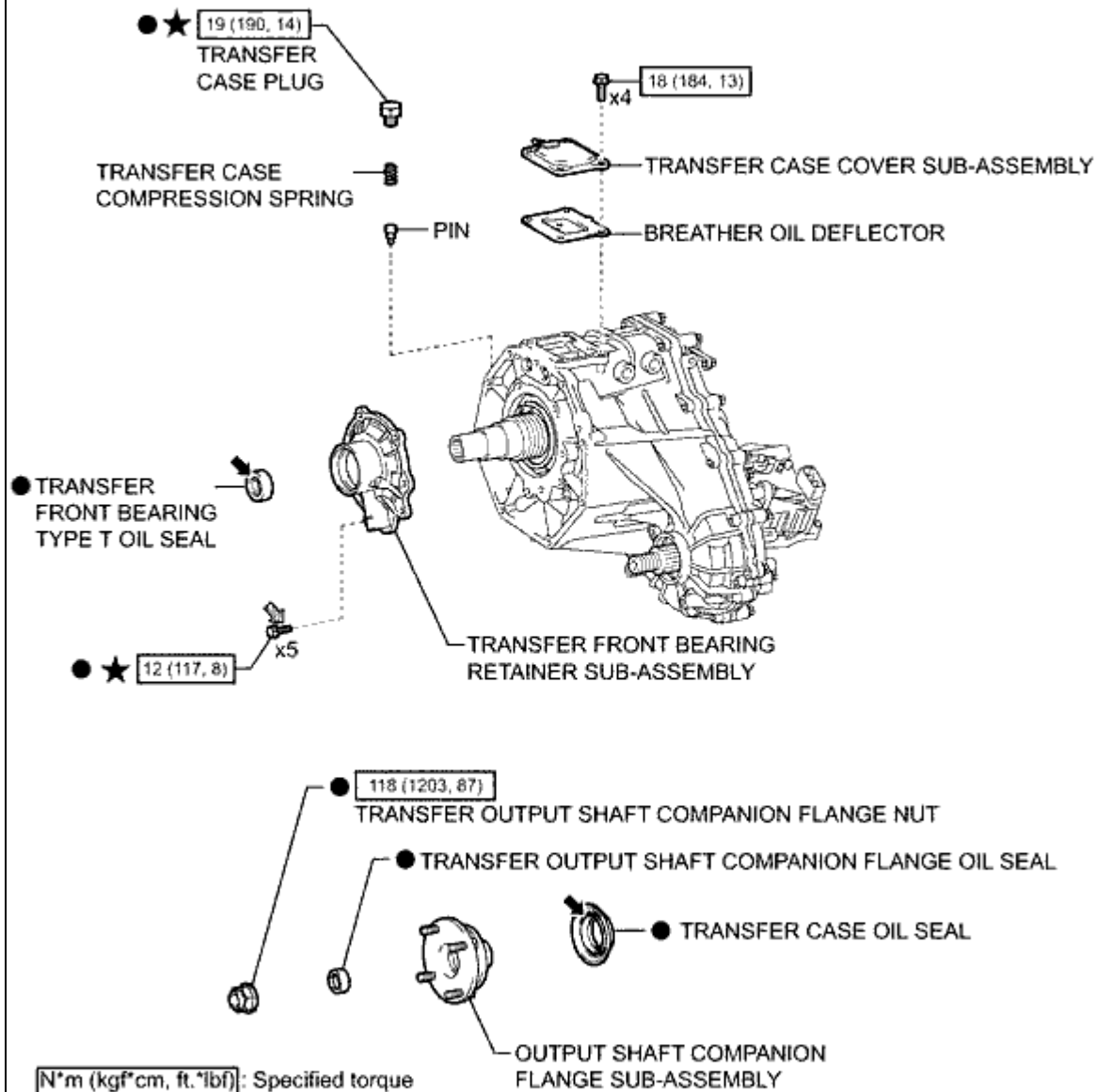
ILLUSTRATION



ILLUSTRATION

for AC60F:

for R156F:



● Non-reusable part

← MP grease

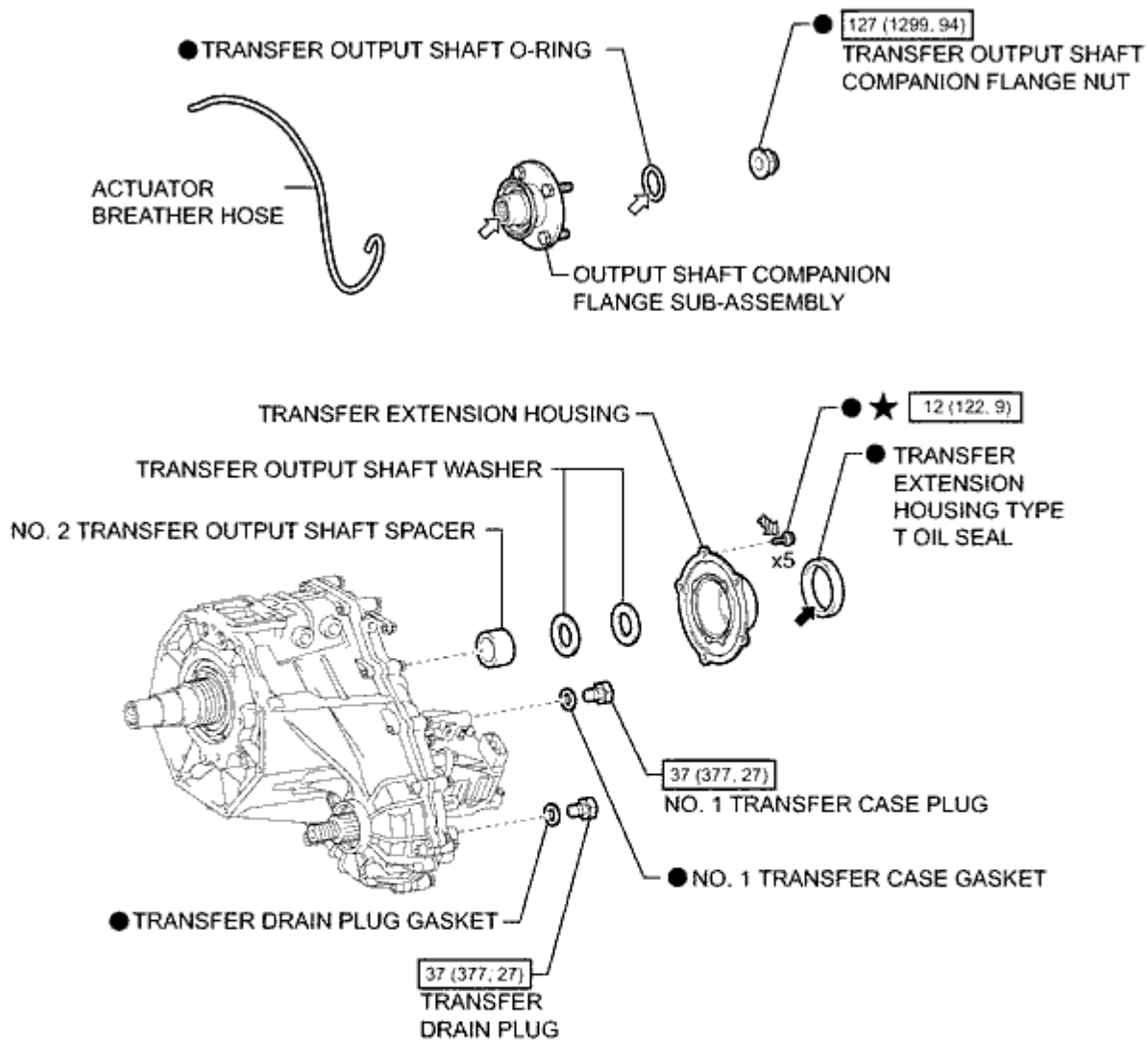
Toyota Genuine Adhesive 1344

★ Precoated part

ILLUSTRATION

for AC60F:

for R156F:



[N*m (kgf*cm, ft.*lbf)]: Specified torque

● Non-reusable part

← MP grease

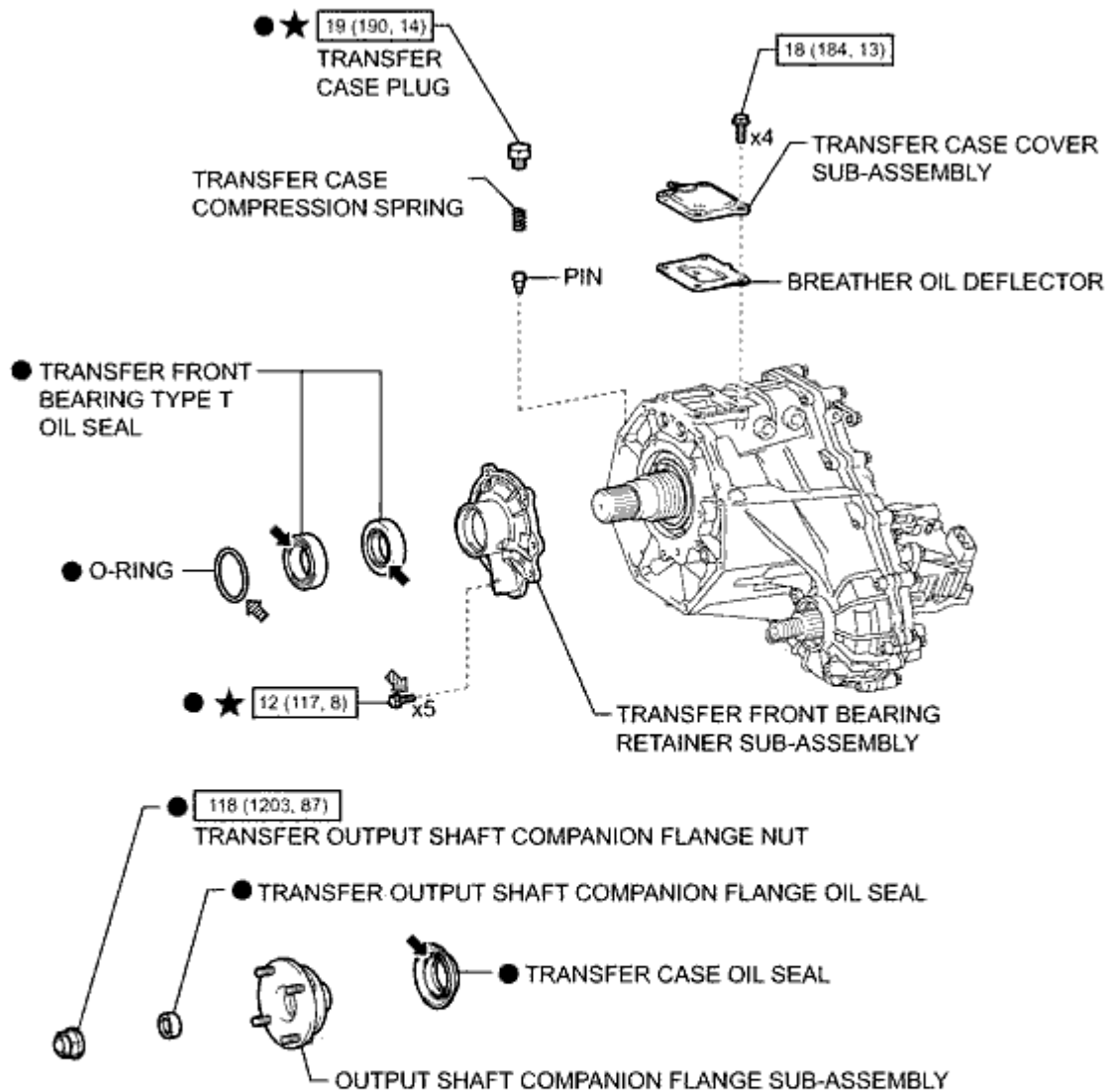
← Transfer Oil

← Toyota Genuine Adhesive 1344

★ Precoated part

ILLUSTRATION

for RC62F:



[N*m (kgf*cm, ft.*lbf)]: Specified torque

● Non-reusable part

← MP grease

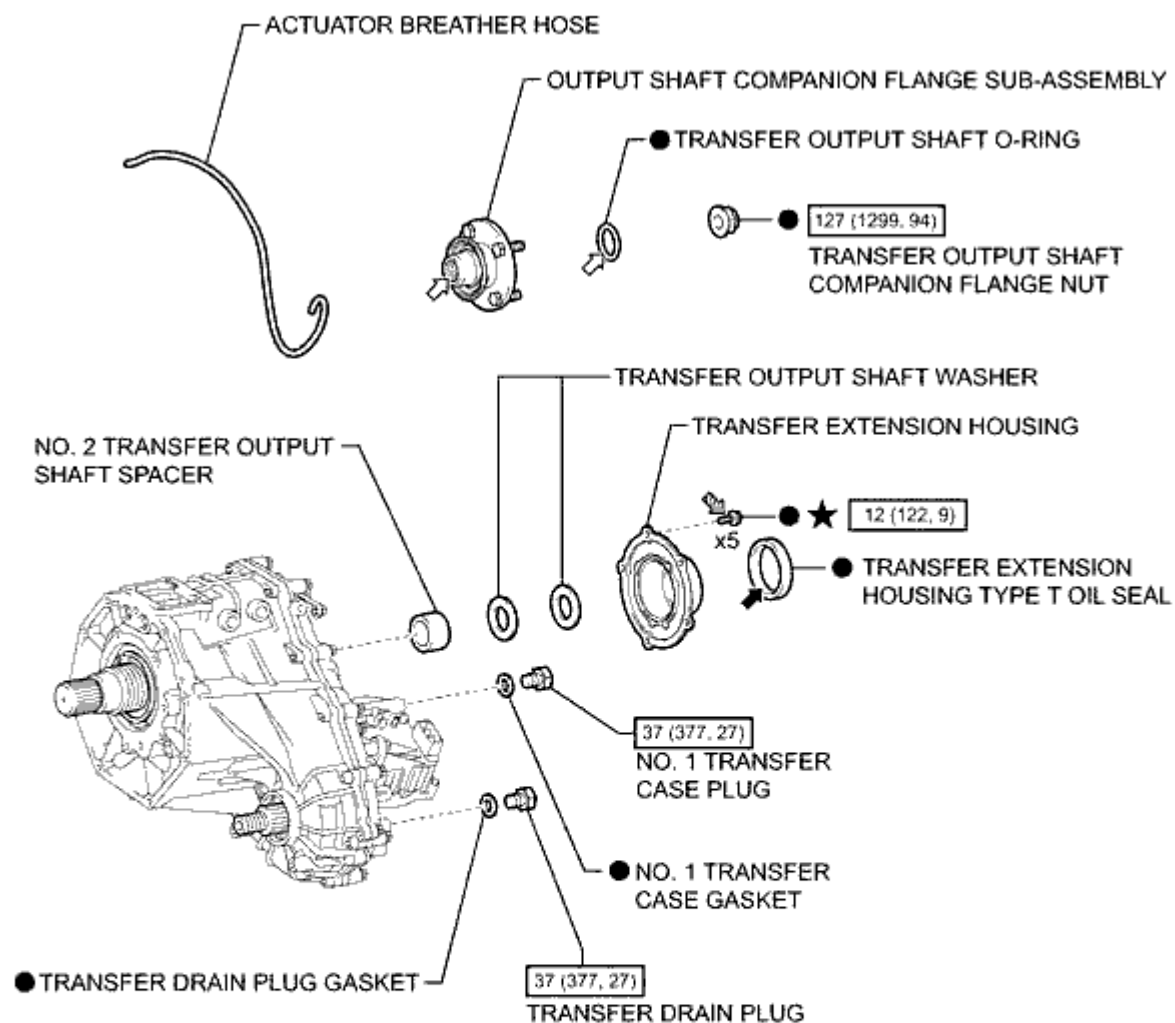
Toyota Genuine Adhesive 1344

Manual Transmission Oil

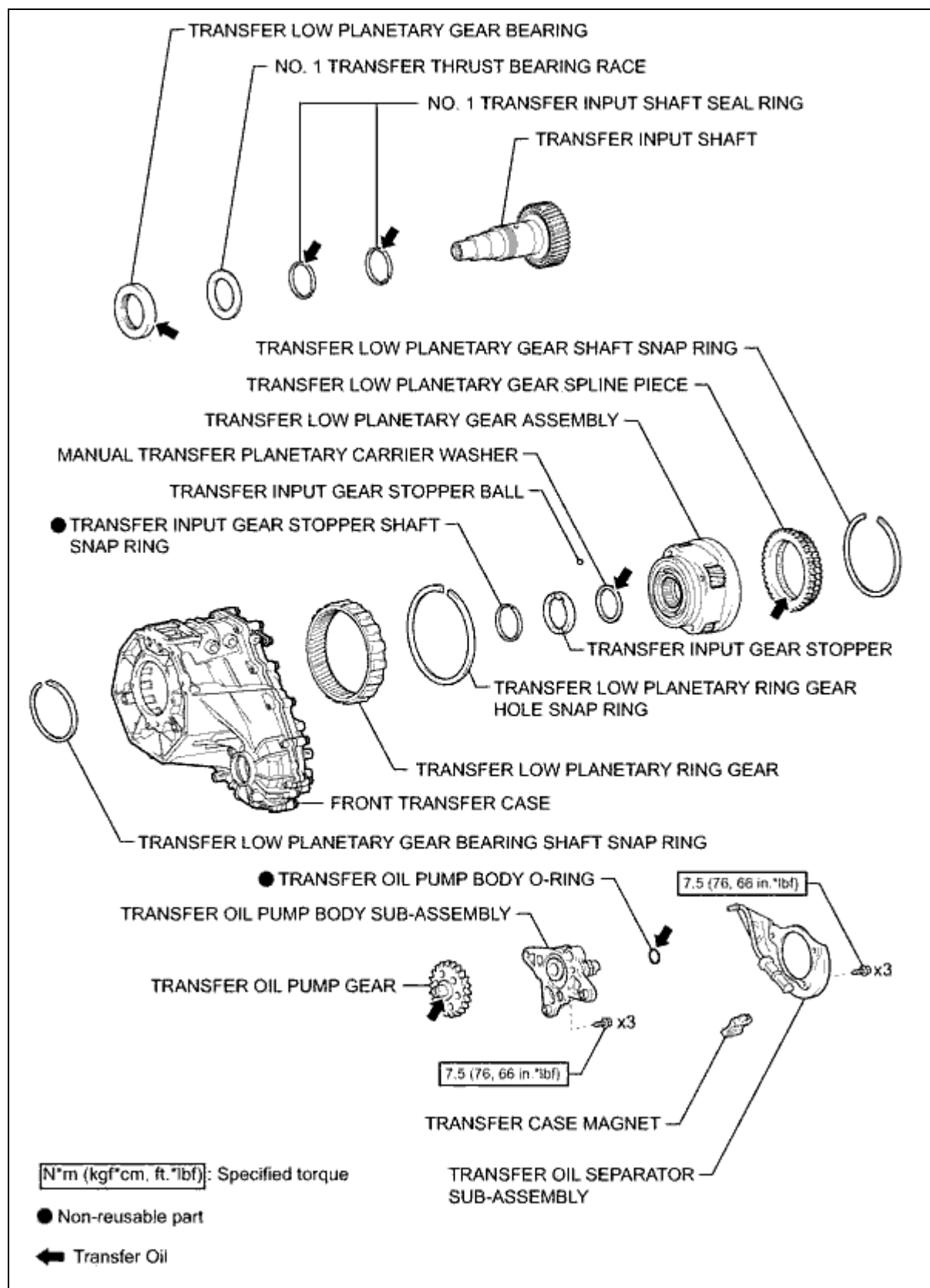
★ Precoated part

ILLUSTRATION

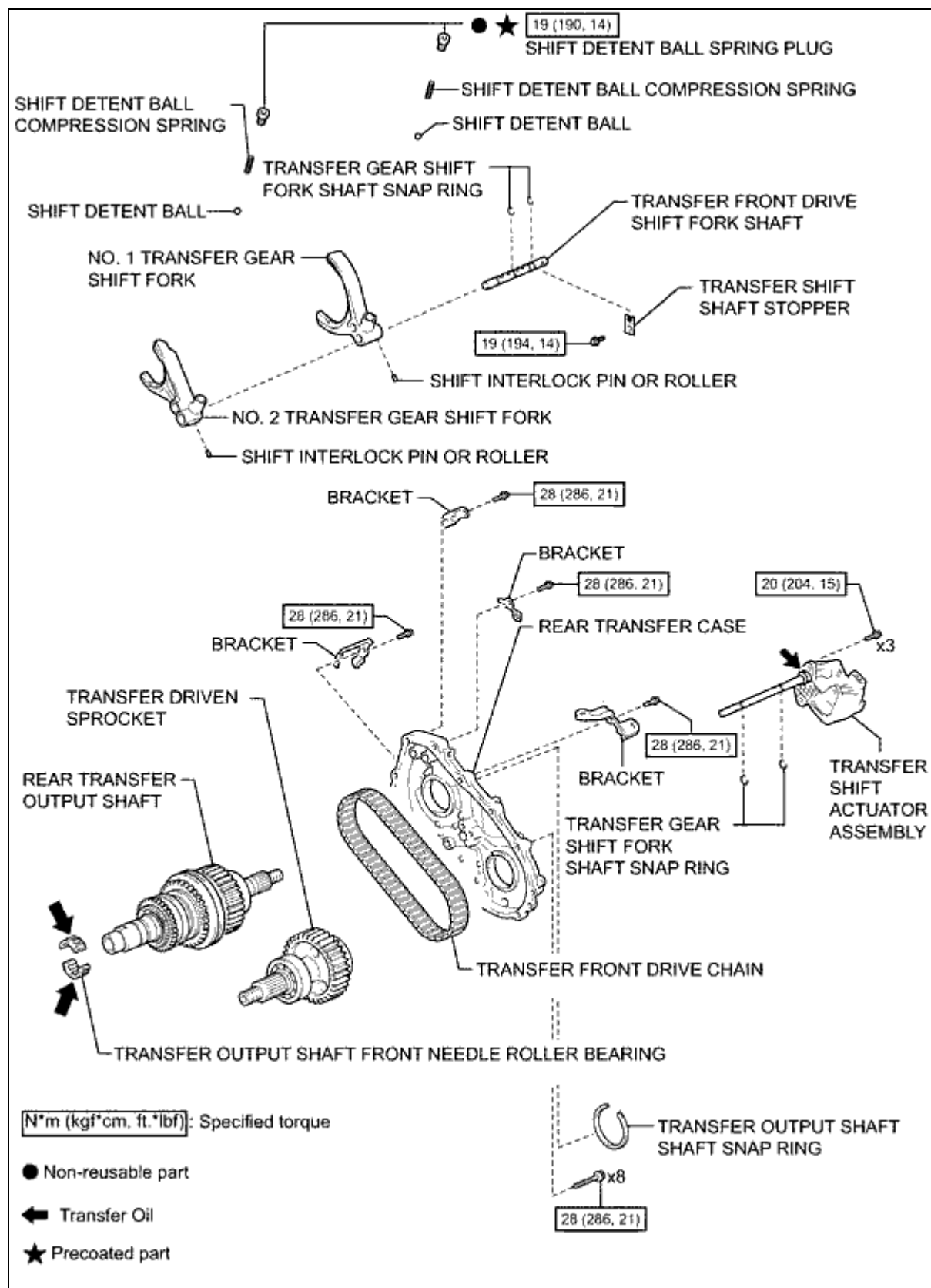
for RC62F:



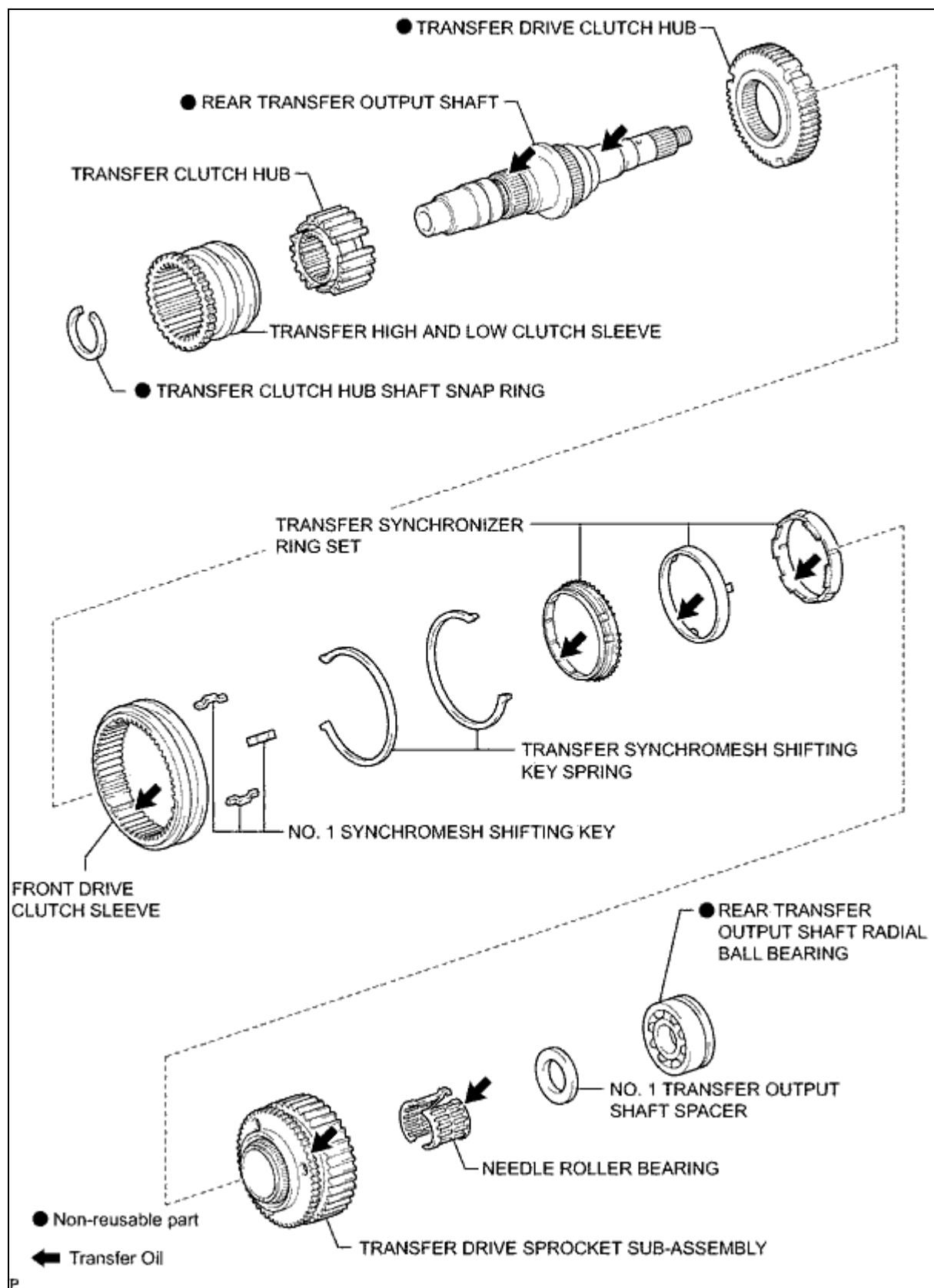
ILLUSTRATION



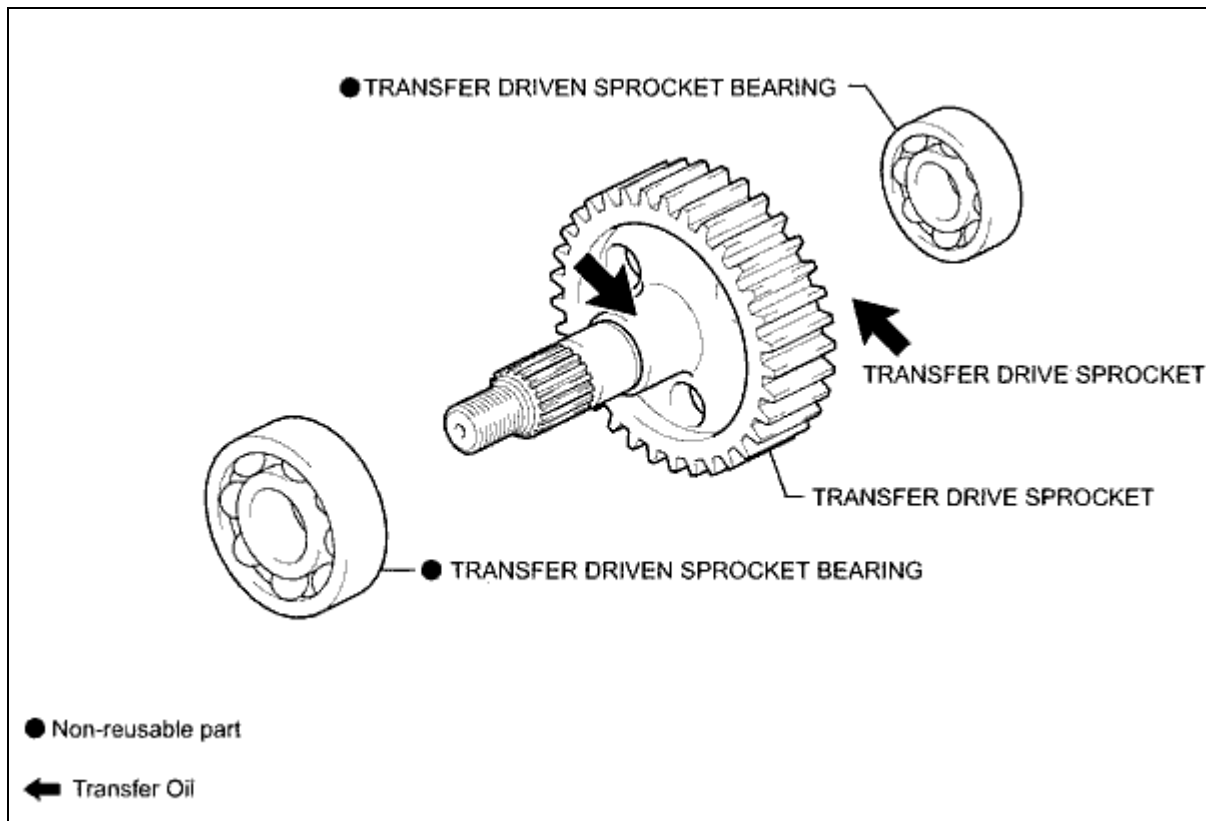
ILLUSTRATION



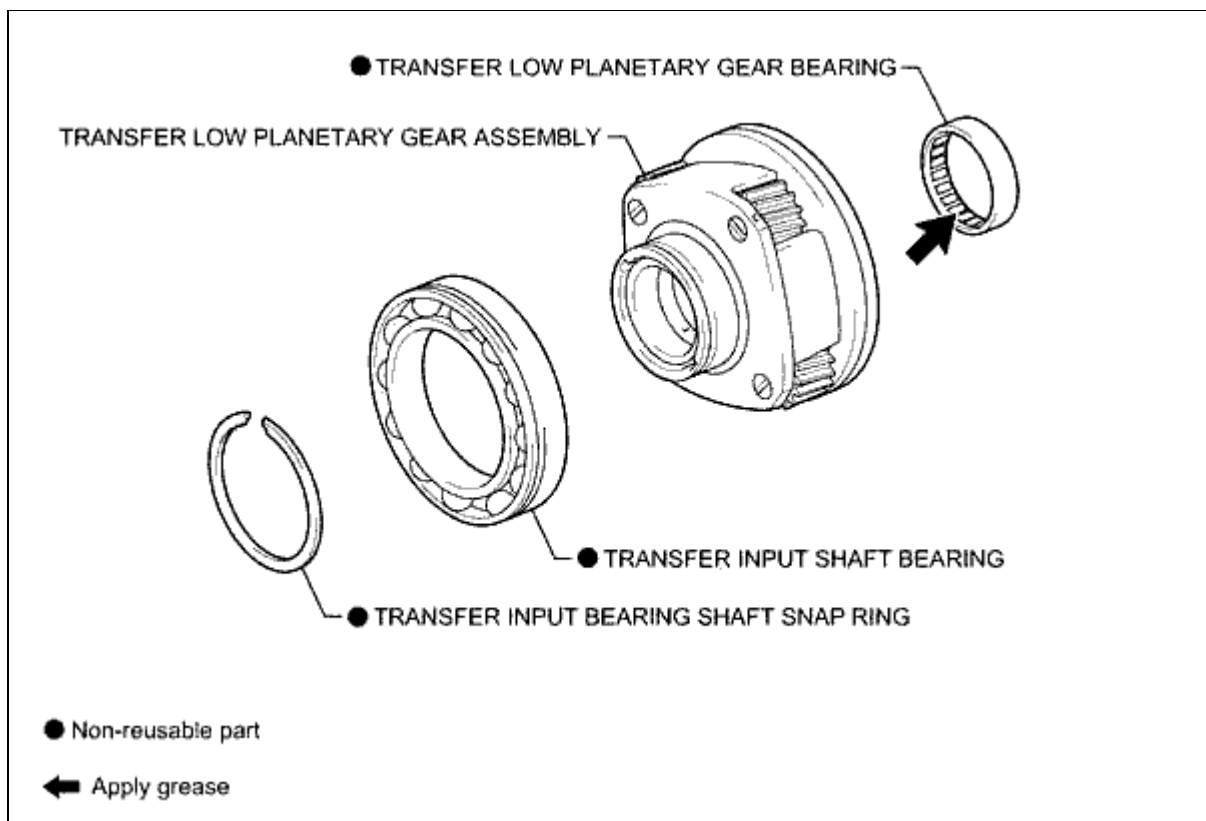
ILLUSTRATION



ILLUSTRATION



ILLUSTRATION

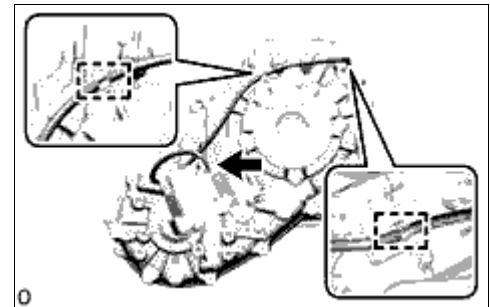


Last Modified: 11-13-2015	6.6 A	Doc ID: RM0000016PX01CX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER ASSEMBLY: DISASSEMBLY; 2016 MY Tacoma [08/2015 -]		

DISASSEMBLY

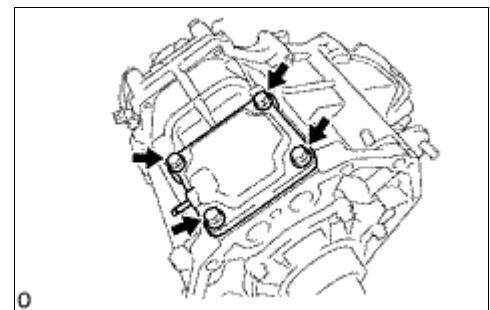
1. REMOVE ACTUATOR BREATHER HOSE

- (a) Disconnect the connection to the transfer shift actuator assembly, detach the 2 clamps, and then remove the actuator breather hose.

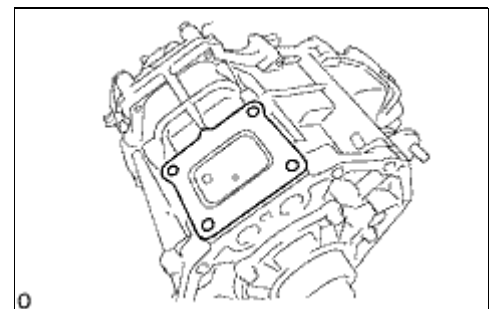


2. REMOVE TRANSFER CASE COVER SUB-ASSEMBLY

- (a) Remove the 4 bolts and transfer case cover sub-assembly.



- (b) Remove the breather oil deflector.



3. REMOVE OUTPUT SHAFT COMPANION FLANGE SUB-ASSEMBLY (for Front Side)

- (a) Using a chisel and hammer, loosen the staked part of the transfer output shaft companion flange nut.

NOTICE:

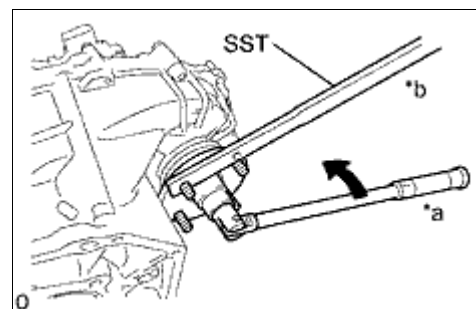
- Completely loosen the staked part of the lock nut when removing it.
- Do not damage the threads of the driven sprocket.

- (b) Using SST to hold the output shaft companion flange sub-assembly, remove the transfer output shaft companion flange nut.

SST: 09330-00021

Text in Illustration

*a	Turn
*b	Hold



- (c) Using SST, remove the output shaft companion flange sub-assembly.

SST: 09950-40011

09951-04020

09952-04010

09953-04030

09954-04010

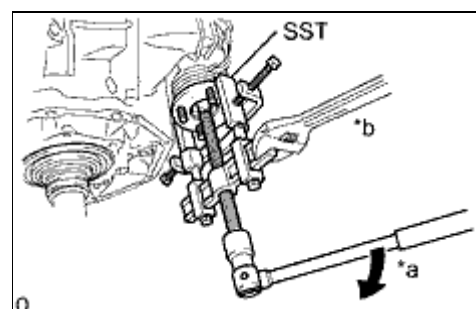
09955-04031

09957-04010

09958-04011

Text in Illustration

*a	Turn
*b	Hold



NOTICE:

Apply a lubricant to the threads and end of SST.

- (d) Using SST and hammer, remove the transfer output shaft companion flange oil seal.

SST: 09950-60010

09951-00220

09951-00290

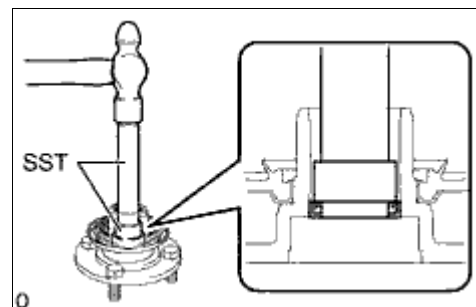
09952-06010

SST: 09950-70010

09951-07100

NOTICE:

Be careful not to damage the transfer output shaft companion flange oil seal and output shaft companion flange sub-assembly contact surfaces.



4. REMOVE TRANSFER CASE OIL SEAL

INFO

5. REMOVE OUTPUT SHAFT COMPANION FLANGE SUB-ASSEMBLY (for Rear Side)

- (a) Using a chisel and hammer, loosen the staked part of the transfer output shaft companion flange nut.

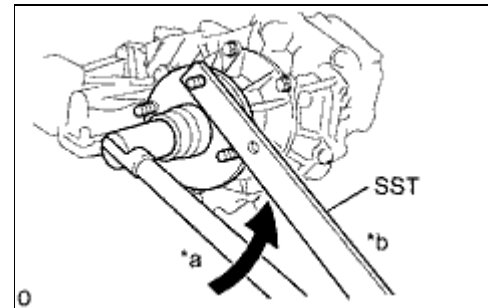
NOTICE:

- Completely loosen the staked part of the transfer output shaft companion flange nut when removing it.
- Do not damage the threads of the rear transfer output shaft.

- (b) Using SST to hold the output shaft companion flange sub-assembly, remove the transfer output shaft companion flange nut and transfer output shaft O-ring.

SST: 09330-00021**Text in Illustration**

*a	Turn
*b	Hold



- (c) Using SST, remove the output shaft companion flange sub-assembly.

SST: 09950-40011

09951-04020

09952-04010

09953-04030

09954-04010

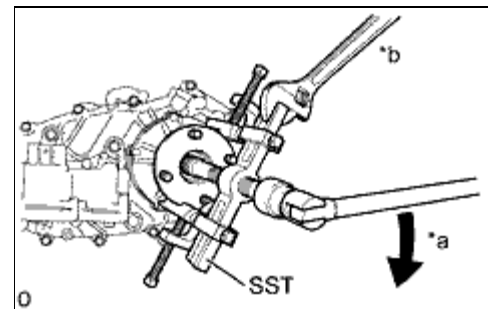
09955-04031

09957-04010

09958-04011

Text in Illustration

*a	Turn
*b	Hold

**NOTICE:**

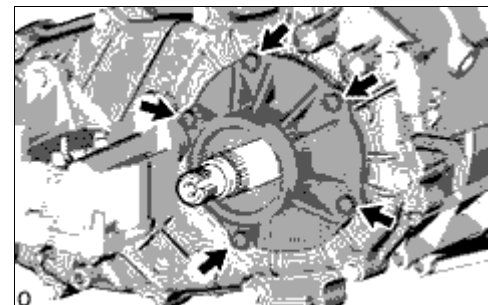
Apply a lubricant to the threads and end of SST.

6. REMOVE TRANSFER EXTENSION HOUSING TYPE T OIL SEAL[INFO](#)**7. REMOVE TRANSFER EXTENSION HOUSING**

- (a) Remove the 5 bolts and transfer extension housing.

HINT:

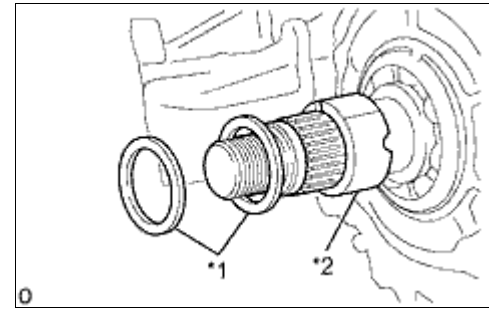
If necessary, tap the transfer extension housing with a plastic-faced hammer to remove it.

**8. REMOVE TRANSFER OUTPUT SHAFT WASHER**

(a) Remove the 2 transfer output shaft washers.

Text in Illustration

*1	Transfer Output Shaft Washer
*2	No. 2 Transfer Output Shaft Spacer



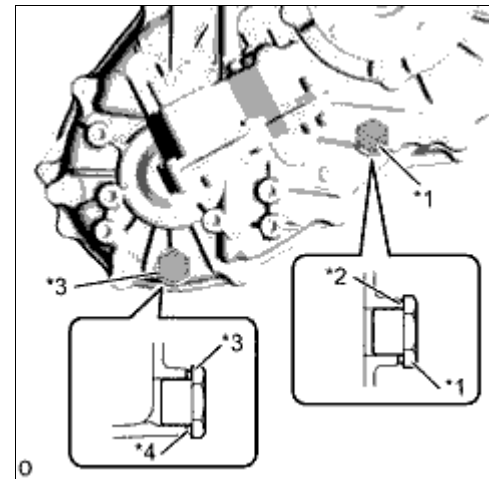
(b) Remove the No. 2 transfer output shaft spacer.

9. REMOVE NO. 1 TRANSFER CASE PLUG

(a) Remove the No. 1 transfer case plug (filler plug) and No. 1 transfer case gasket.

Text in Illustration

*1	No. 1 Transfer Case Plug (Filler Plug)
*2	No. 1 Transfer Case Gasket
*3	Transfer Drain Plug
*4	Transfer Drain Plug Gasket



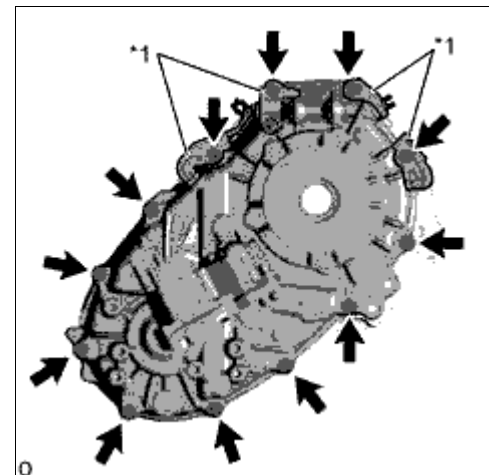
(b) Remove the transfer drain plug and transfer drain plug gasket.

10. REMOVE REAR TRANSFER CASE

(a) Remove the 12 bolts and 4 brackets.

Text in Illustration

*1	Bracket
----	---------



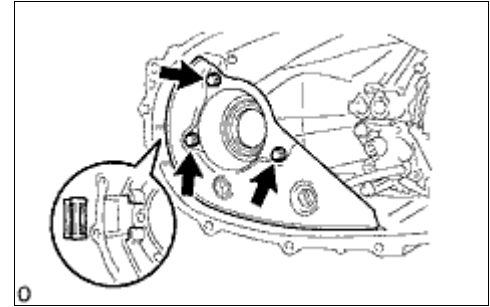
(b) Remove the rear transfer case.

HINT:

If necessary, tap the rear transfer case with a plastic-faced hammer to remove it.

11. REMOVE TRANSFER OIL SEPARATOR SUB-ASSEMBLY

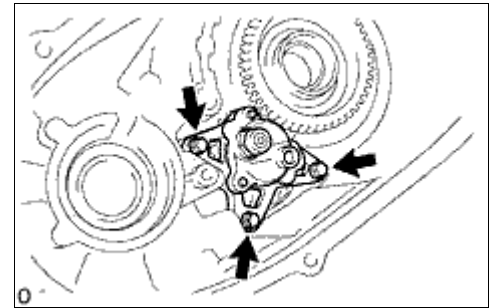
(a) Remove the 3 bolts and transfer oil separator sub-assembly.



(b) Remove the transfer case magnet.

12. REMOVE TRANSFER OIL PUMP BODY SUB-ASSEMBLY

(a) Remove the 3 bolts and transfer oil pump body sub-assembly.



(b) Using a screwdriver, remove the transfer oil pump body O-ring.

Text in Illustration

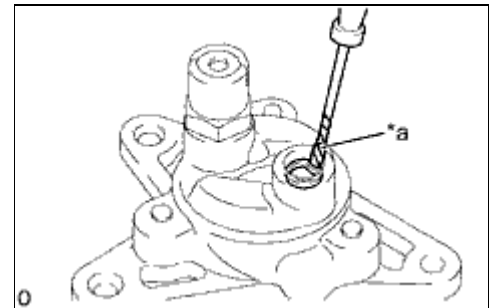
*a	Protective Tape
----	-----------------

NOTICE:

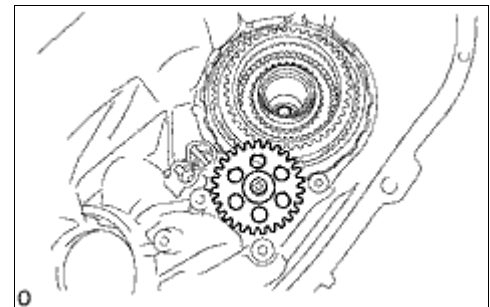
Be careful not to damage the transfer oil pump body sub-assembly.

HINT:

Tape the screwdriver tip before use.



(c) Remove the transfer oil pump gear.

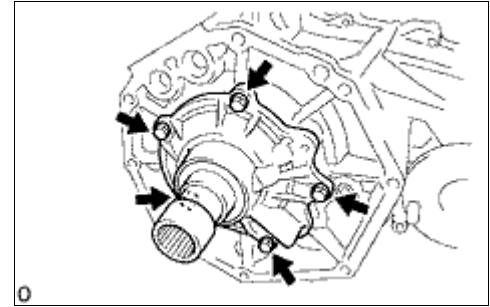


13. REMOVE TRANSFER FRONT BEARING RETAINER SUB-ASSEMBLY

- (a) Remove the 5 bolts and transfer front bearing retainer sub-assembly.

HINT:

If necessary, tap the transfer front bearing retainer sub-assembly with a plastic-faced hammer to remove it.



- (b) for RC62F:

- (1) Remove the O-ring.

14. REMOVE TRANSFER FRONT BEARING TYPE T OIL SEAL

- (a) for AC60F, R156F:

Using a screwdriver and hammer, remove the transfer front bearing type T oil seal.

Text in Illustration

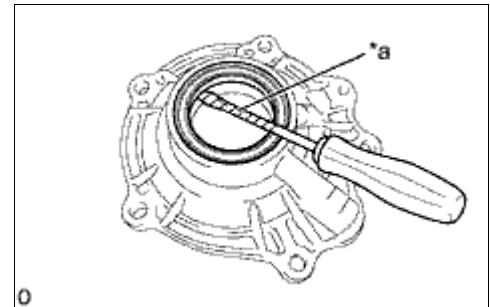
*a	Protective Tape
----	-----------------

NOTICE:

Be careful not to damage the transfer front bearing type T oil seal and transfer front bearing retainer sub-assembly contact surfaces.

HINT:

Tape the screwdriver tip before use.



- (b) for RC62F:

Using a screwdriver and hammer, remove the 2 transfer front bearing type T oil seals.

NOTICE:

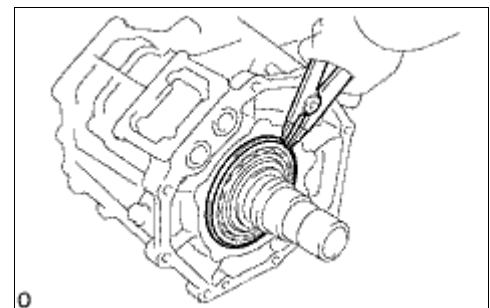
Be careful not to damage the transfer front bearing type T oil seal and transfer front bearing retainer sub-assembly contact surfaces.

HINT:

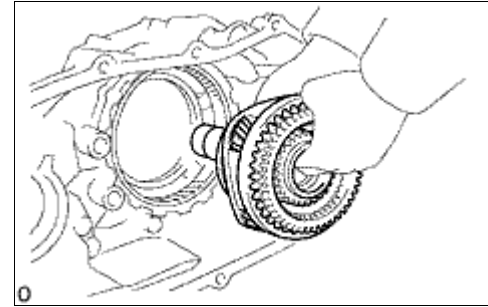
Tape the screwdriver tip before use.

15. REMOVE TRANSFER LOW PLANETARY GEAR ASSEMBLY

- (a) Using a snap ring expander, remove the transfer low planetary gear bearing shaft snap ring.



- (b) Remove the transfer low planetary gear assembly with the transfer input shaft.

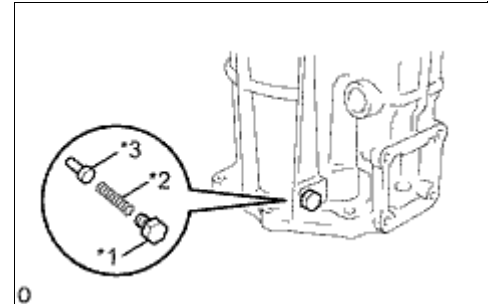


16. REMOVE TRANSFER CASE PLUG

- (a) Remove the transfer case plug, transfer case compression spring and pin.

Text in Illustration

*1	Transfer Case Plug
*2	Transfer Case Compression Spring
*3	Pin



17. REMOVE TRANSFER LOW PLANETARY RING GEAR

- (a) Using a screwdriver, remove the transfer low planetary ring gear hole snap ring.

Text in Illustration

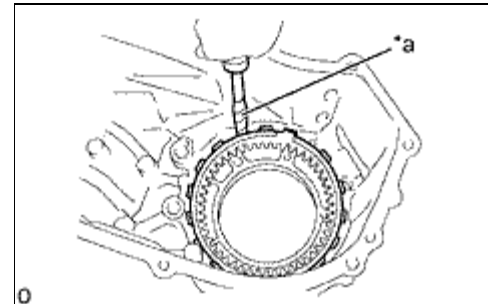
*a	Protective Tape
----	-----------------

NOTICE:

Be careful not to damage the front transfer case.

HINT:

Tape the screwdriver tip before use.



- (b) Remove the transfer low planetary ring gear.

18. REMOVE TRANSFER LOW PLANETARY GEAR SPLINE PIECE

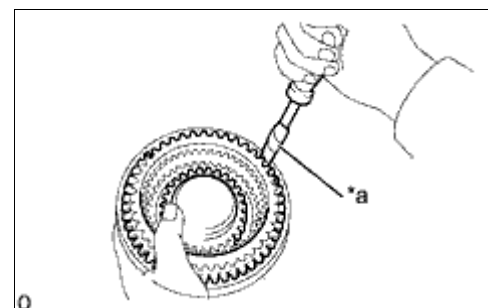
- (a) Using a screwdriver, remove the transfer low planetary gear shaft snap ring.

Text in Illustration

*a	Protective Tape
----	-----------------

NOTICE:

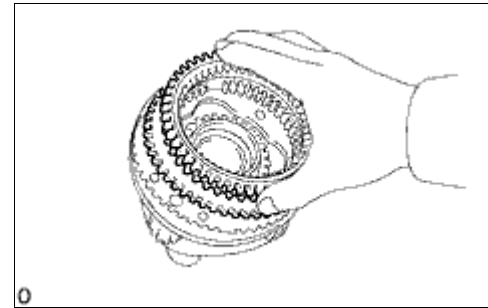
Be careful not to damage the transfer low planetary gear assembly.



HINT:

Tape the screwdriver tip before use.

- (b) Remove the transfer low planetary gear spline piece.

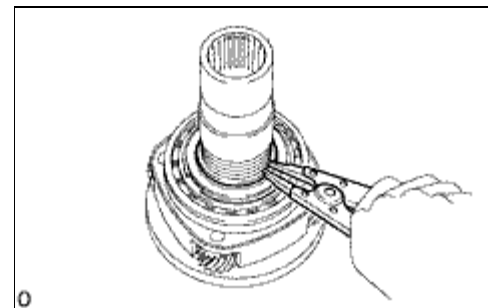


- (c) Remove the transfer output shaft front needle roller bearing.

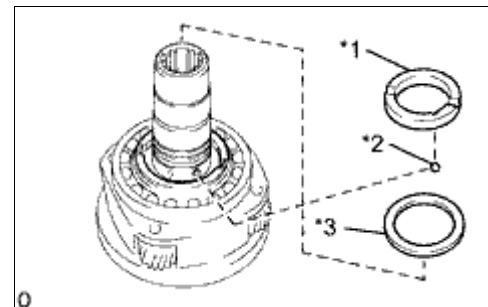


19. REMOVE TRANSFER INPUT SHAFT

- (a) Using a snap ring expander, remove the transfer input gear stopper shaft snap ring.



- (b) Remove the transfer input gear stopper and transfer input gear stopper ball.



Text in Illustration

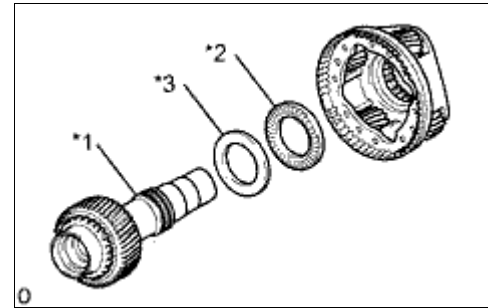
*1	Transfer Input Gear Stopper
*2	Transfer Input Gear Stopper Ball
*3	Manual Transfer Planetary Carrier Washer

- (c) Remove the manual transfer planetary carrier washer.

- (d) Remove the transfer input shaft, transfer low planetary gear bearing and No. 1 transfer thrust bearing race.

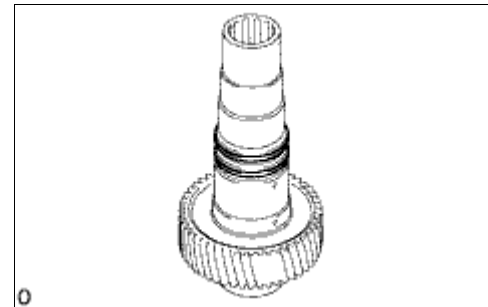
Text in Illustration

*1	Transfer Input Shaft
*2	Transfer Low Planetary Gear Bearing
*3	No. 1 Transfer Thrust Bearing Race



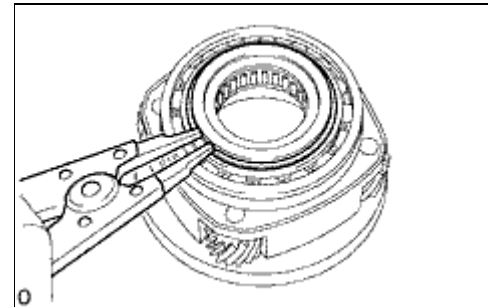
20. REMOVE NO. 1 TRANSFER INPUT SHAFT SEAL RING

- (a) Remove the 2 No. 1 transfer input shaft seal rings.



21. REMOVE TRANSFER INPUT SHAFT BEARING

- (a) Using a snap ring expander, remove the transfer input bearing shaft snap ring.



- (b) Using SST, remove the transfer input shaft bearing.

SST: 09555-55010

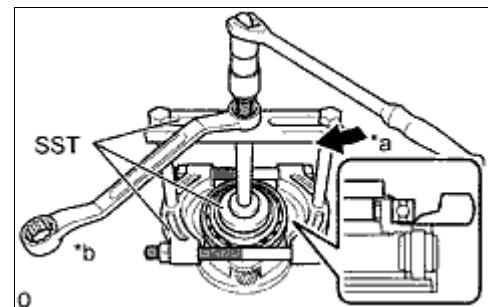
SST: 09950-00030

SST: 09950-60020

09951-00630

Text in Illustration

*a	Turn
*b	Hold



NOTICE:

- Be careful not to damage the transfer low planetary gear assembly.
- Apply a lubricant to the threads and end of SST.

22. REMOVE TRANSFER LOW PLANETARY GEAR BEARING

(a) Using SST, remove the transfer low planetary gear bearing.

SST: 09527-10011

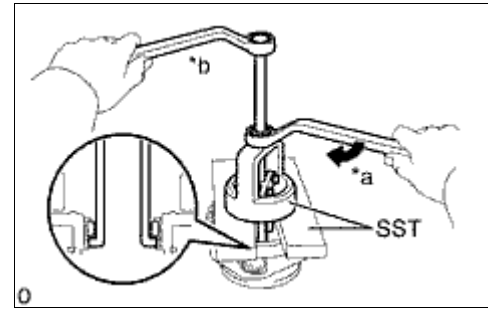
SST: 09612-65014

09612-01050

09612-01060

Text in Illustration

*a	Turn
*b	Hold



NOTICE:

Hook SST securely between the bearing and transfer low planetary gear.

23. REMOVE TRANSFER FRONT DRIVE SHIFT FORK SHAFT

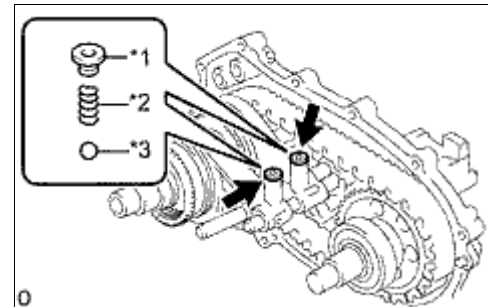
NOTICE:

- When using a vise, place aluminum plates between the part and vise.
- When using a vise, do not overtighten it.

(a) Using a 6 mm hexagon wrench, remove the 2 shift detent ball spring plugs.

Text in Illustration

*1	Shift Detent Ball Spring Plug
*2	Shift Detent Ball Compression Spring
*3	Shift Detent Ball

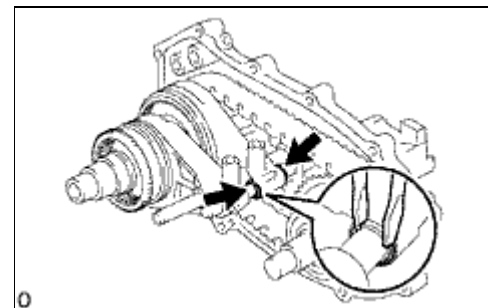


(b) Using a magnet hand, remove the 2 shift detent ball compression springs and 2 shift detent balls.

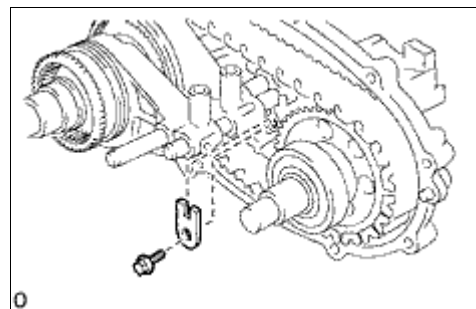
(c) Using 2 screwdrivers and a hammer, remove the 2 transfer gear shift fork shaft snap rings.

HINT:

Use a piece of cloth to prevent the transfer gear shift fork shaft snap rings from flying off.



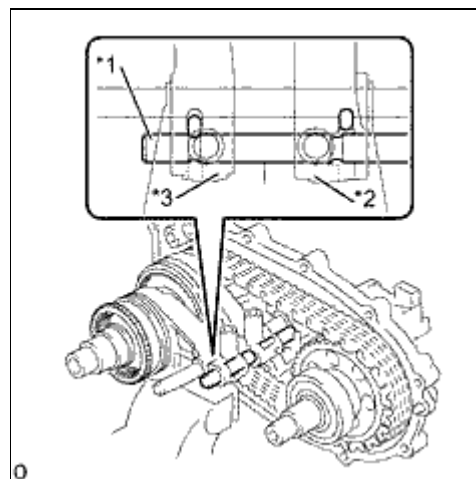
(d) Remove the bolt and transfer shift shaft stopper.



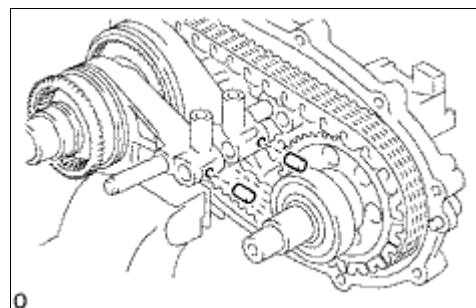
(e) To remove the transfer front drive shift fork shaft, shift the No. 1 transfer gear shift fork and No. 2 transfer gear shift fork to the positions shown in the illustration.

Text in Illustration

*1	Transfer Front Drive Shift Fork Shaft
*2	No. 1 Transfer Gear Shift Fork
*3	No. 2 Transfer Gear Shift Fork



(f) Remove the transfer front drive shift fork shaft.



(g) Using a magnet hand, remove the 2 shift interlock pin or rollers.



24. REMOVE REAR TRANSFER OUTPUT SHAFT, TRANSFER FRONT DRIVE CHAIN, TRANSFER DRIVEN SPROCKET

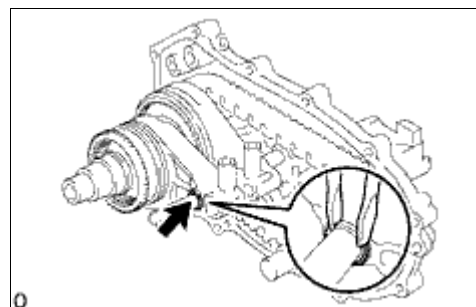
NOTICE:

- When using a vise, place aluminum plates between the part and vise.
- When using a vise, do not overtighten it.

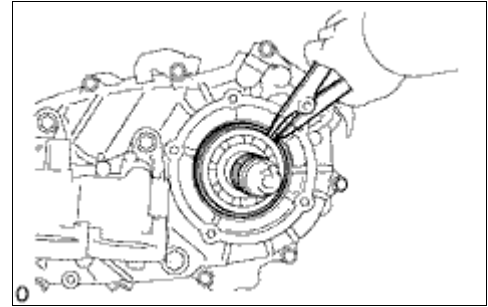
(a) Using 2 screwdrivers and a hammer, remove the transfer gear shift fork shaft snap ring.

HINT:

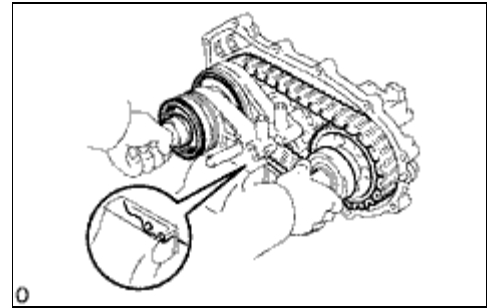
- Use a piece of cloth to prevent the transfer gear shift fork shaft snap ring from flying off.
- Remove only the transfer gear shift fork shaft snap ring on the front side of the transfer shift actuator shaft.



- (b) Using a snap ring expander, remove the transfer output shaft shaft snap ring.



- (c) Using a plastic-faced hammer, carefully tap the rear transfer case, and remove the transfer output shaft rear, transfer driven sprocket and transfer front drive chain with the No. 1 transfer gear shift fork and No. 2 transfer gear shift fork.

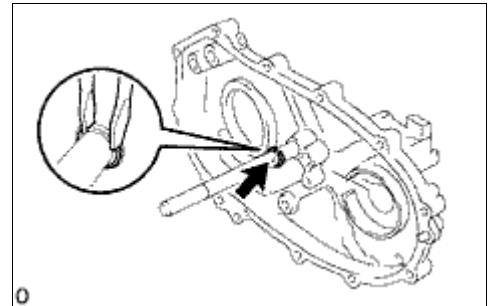


25. REMOVE TRANSFER SHIFT ACTUATOR ASSEMBLY

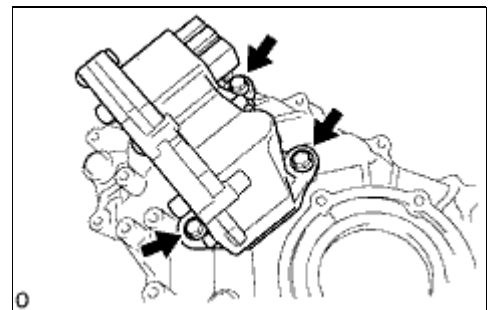
- (a) Using 2 screwdrivers and a hammer, remove the transfer gear shift fork shaft snap ring.

HINT:

Use a piece of cloth to prevent the transfer gear shift fork shaft snap ring from flying off.



- (b) Remove the 3 bolts and transfer shift actuator assembly.



26. REMOVE TRANSFER DRIVEN SPROCKET BEARING

- (a) for Front Side:

- (1) Using SST and a press, remove the transfer driven sprocket bearing.

SST: 09555-55010

SST: 09950-60010

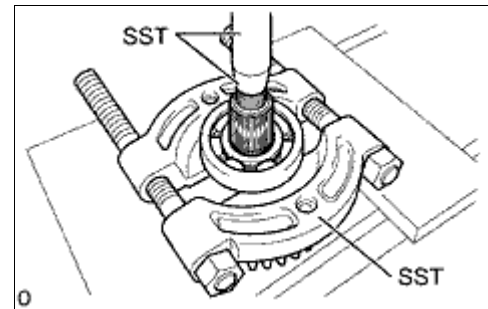
09951-00210

SST: 09950-70010

09951-07100

NOTICE:

Be careful not to drop or damage the driven sprocket.



- (b) for Rear Side:

- (1) Using SST and a press, remove the transfer driven sprocket bearing.

SST: 09555-55010

SST: 09950-60010

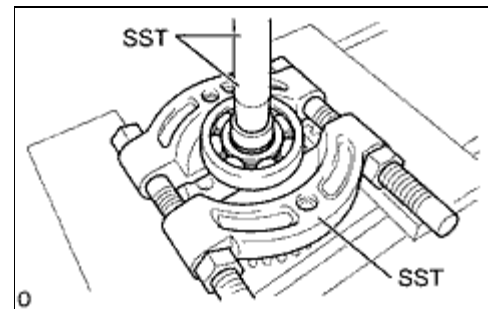
09951-00210

SST: 09950-70010

09951-07100

NOTICE:

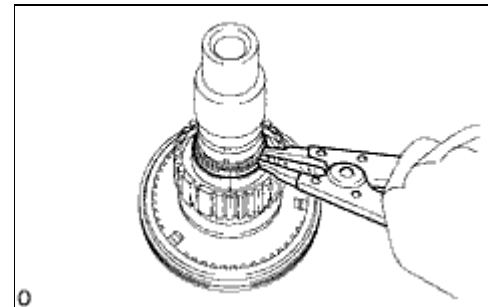
Be careful not to drop or damage the driven sprocket.



27. REMOVE TRANSFER CLUTCH HUB

- (a) Remove the transfer high and low clutch sleeve.

- (b) Using a snap ring expander, remove the transfer clutch hub shaft snap ring.

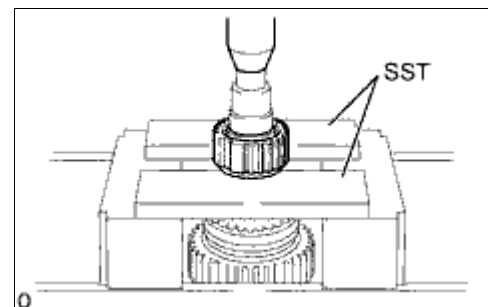


- (c) Using SST and a press, remove the transfer clutch hub.

SST: 09527-10011

NOTICE:

Be careful not to drop or damage the rear transfer output shaft.



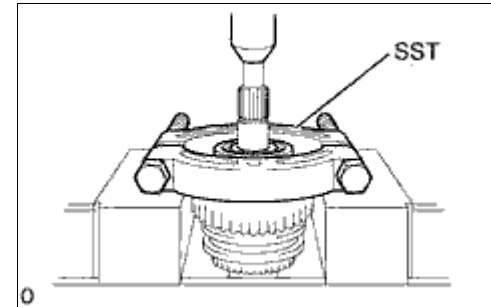
28. REMOVE TRANSFER DRIVE SPROCKET SUB-ASSEMBLY

- (a) Using SST and a press, remove the rear transfer output shaft radial ball bearing.

SST: 09555-55010

NOTICE:

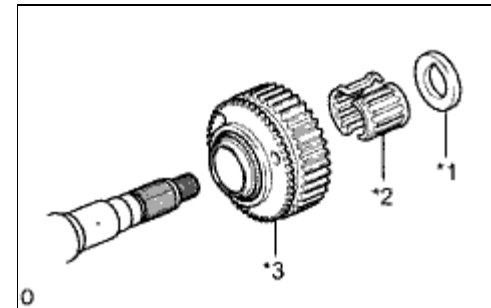
Be careful not to drop or damage the rear transfer output shaft.



- (b) Remove the No. 1 transfer output shaft spacer.

Text in Illustration

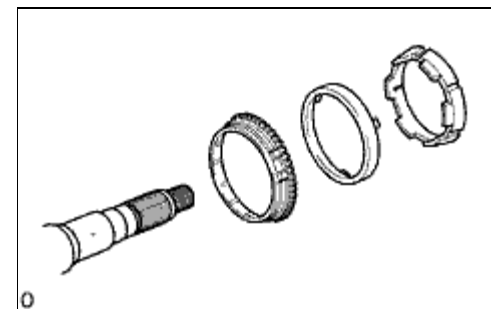
*1	No. 1 Transfer Output Shaft Spacer
*2	Needle Roller Bearing
*3	Transfer Drive Sprocket Sub-assembly



- (c) Remove the needle roller bearing.
 (d) Remove the transfer drive sprocket sub-assembly.

29. REMOVE TRANSFER SYNCHRONIZER RING SET

- (a) Remove the transfer synchronizer ring set.



30. REMOVE FRONT DRIVE CLUTCH SLEEVE

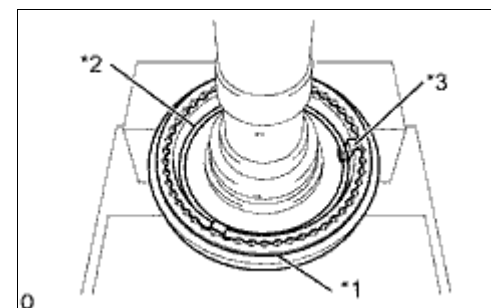
- (a) Remove the front drive clutch sleeve.

Text in Illustration

*1	Front Drive Clutch Sleeve
*2	Transfer Synchromesh Shifting Key Spring
*3	No. 1 Synchromesh Shifting Key

NOTICE:

Be careful not to drop the 3 No. 1 synchromesh shifting keys.



- (b) Remove the 2 transfer synchromesh shifting key springs and 3 No. 1 synchromesh shifting keys.

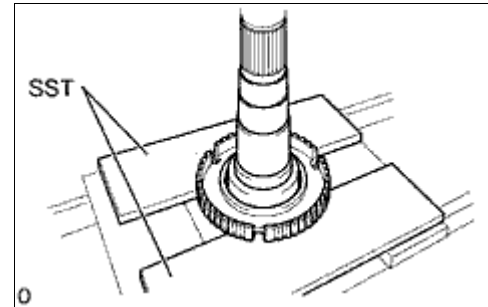
31. REMOVE TRANSFER DRIVE CLUTCH HUB

(a) Using SST and a press, remove the transfer drive clutch hub.

SST: 09527-10011

NOTICE:

Be careful not to drop or damage the rear transfer output shaft.



Last Modified: 11-13-2015	6.6 G	Doc ID: RM0000016TL01CX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER ASSEMBLY: INSPECTION; 2016 MY Tacoma [08/2015 -]		

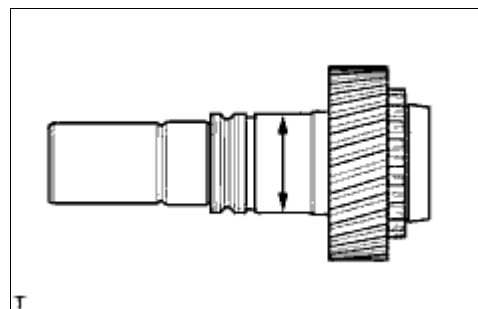
INSPECTION

1. INSPECT TRANSFER INPUT SHAFT

- (a) Using a micrometer, measure the diameter of the transfer input shaft journal surface.

Minimum diameter:
47.59 mm (1.874 in.)

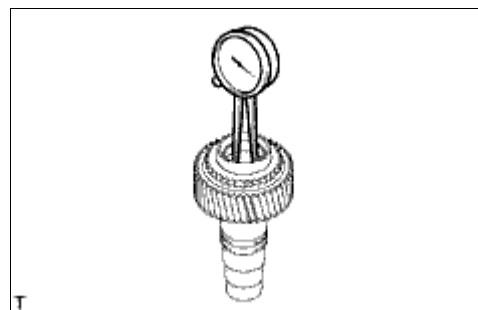
If the diameter is less than the minimum, replace the transfer input shaft.



- (b) Using a dial indicator, measure the inside diameter of the transfer input shaft bushing.

Maximum diameter:
39.14 mm (1.540 in.)

If the inside diameter is more than the maximum, replace the transfer input shaft.



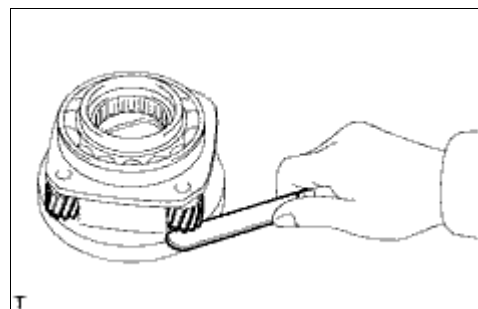
2. INSPECT TRANSFER LOW PLANETARY GEAR ASSEMBLY

- (a) Using a feeler gauge, measure the thrust clearance of the pinion gear.

Standard clearance:
0.11 to 0.84 mm (0.00434 to 0.0330 in.)

Maximum clearance:
0.84 mm (0.0330 in.)

If the clearance is more than the maximum, replace the transfer low planetary gear assembly.

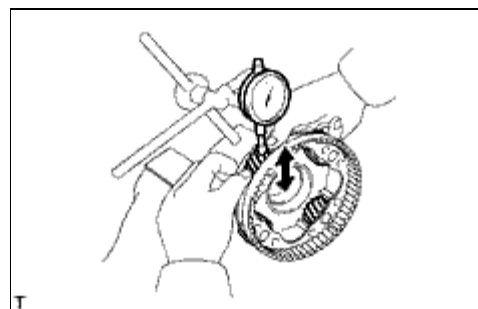


- (b) Using a dial indicator, measure the radial clearance of the pinion gear.

Standard clearance:
0.009 to 0.038 mm (0.000355 to 0.00149 in.)

Maximum clearance:
0.038 mm (0.00149 in.)

If the clearance is more than the maximum, replace the transfer low planetary gear assembly.



3. INSPECT TRANSFER DRIVE SPROCKET SUB-ASSEMBLY

- (a) Using a feeler gauge, measure the thrust clearance.

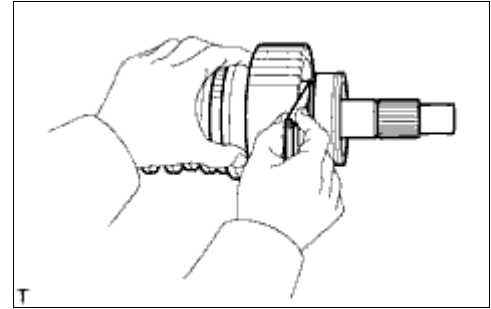
Standard clearance:

0.10 to 0.25 mm (0.00394 to 0.00984 in.)

Maximum clearance:

0.25 mm (0.00984 in.)

If the thrust clearance is more than the maximum, replace the transfer drive sprocket sub-assembly.



- (b) Using a dial indicator, measure the radial clearance between the drive sprocket and output shaft with the needle roller bearing installed.

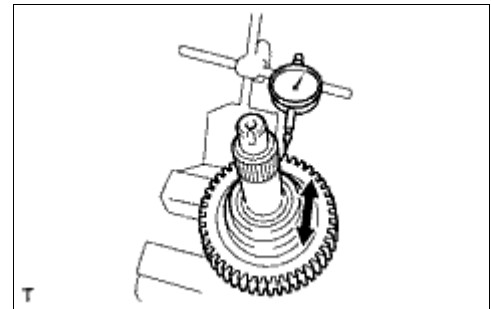
Standard clearance:

0.010 to 0.055 mm (0.000394 to 0.00216 in.)

Maximum clearance:

0.055 mm (0.00216 in.)

If the radial clearance is more than the maximum, replace the transfer drive sprocket sub-assembly or needle roller bearing.



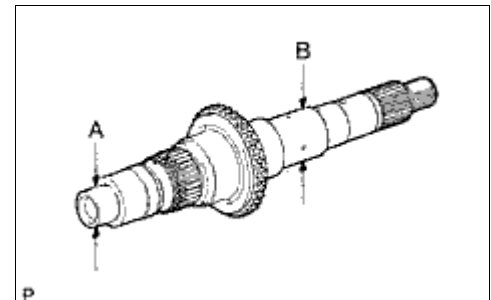
4. INSPECT REAR TRANSFER OUTPUT SHAFT

- (a) Using a micrometer, measure the diameter of the rear transfer output shaft journal surface.

Minimum diameter:

JOURNAL	DIAMETER
A	27.98 mm (1.102 in.)
B	36.98 mm (1.456 in.)

If the diameter is less than the minimum, replace the rear transfer output shaft.



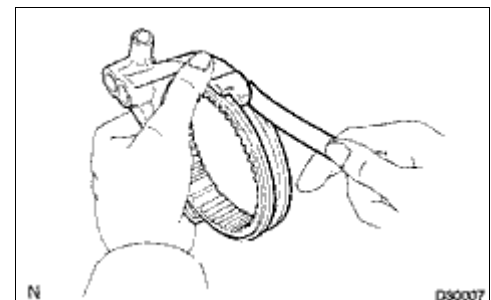
5. INSPECT FRONT DRIVE CLUTCH SLEEVE AND NO. 1 TRANSFER GEAR SHIFT FORK CLEARANCE

- (a) Using a feeler gauge, measure the clearance between the front drive clutch sleeve and No. 1 transfer gear shift fork.

Maximum clearance:

0.35 mm (0.0137 in.)

If the clearance is more than the maximum, replace the front drive clutch sleeve or No. 1 transfer gear shift fork.



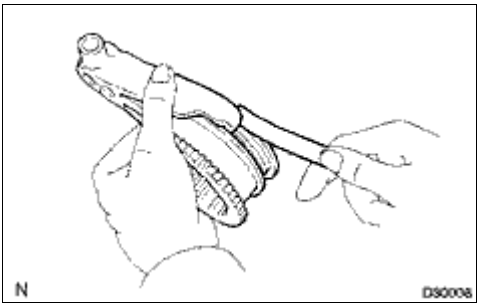
6. INSPECT TRANSFER HIGH AND LOW CLUTCH SLEEVE AND NO. 2 TRANSFER GEAR SHIFT

FORK CLEARANCE

- (a) Using a feeler gauge, measure the clearance between the transfer high and low clutch sleeve and No. 2 transfer gear shift fork.

Maximum clearance:
0.35 mm (0.0137 in.)

If the clearance is more than the maximum, replace the transfer high and low clutch sleeve or No. 2 transfer gear shift fork.



7. INSPECT TRANSFER SHIFT ACTUATOR ASSEMBLY

- (a) Inspect the transfer shift actuator assembly.

NOTICE:

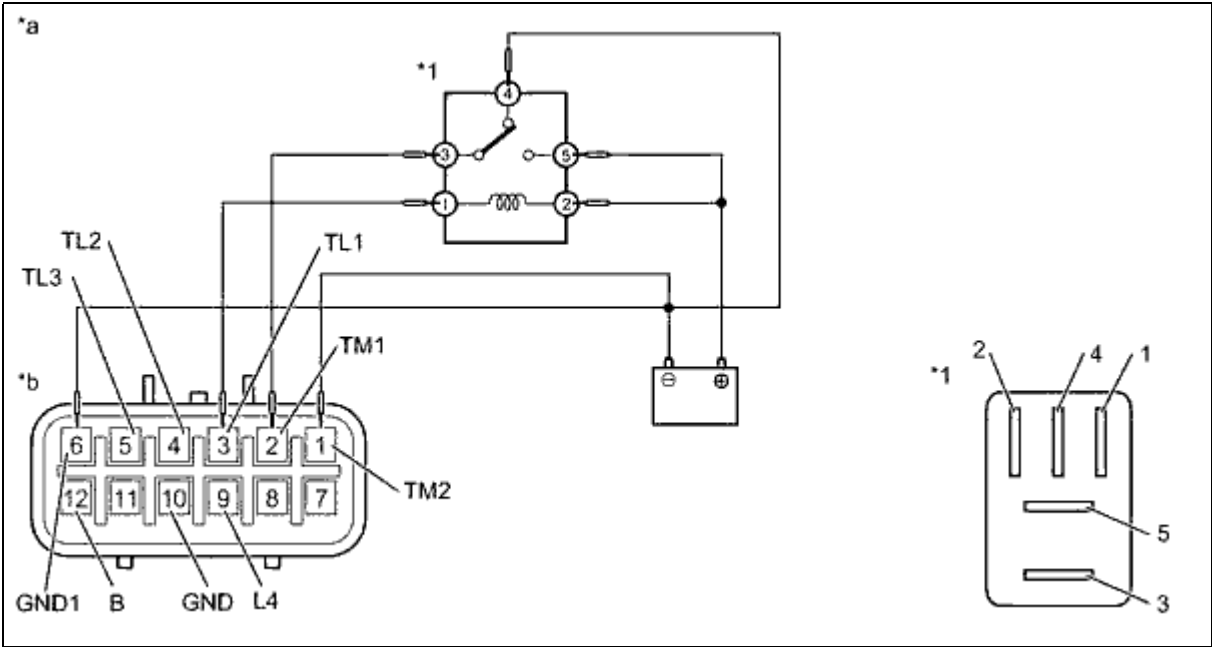
- Perform this inspection with the actuator removed from the vehicle. If this inspection is performed with the actuator installed to the vehicle, the actuator will be damaged.
- When inspecting the actuator, operate it with the lines connected via a relay. If the lines are not connected via a relay and battery voltage is directly applied to the actuator, the actuator will be damaged.

HINT:

- When inspecting the transfer shift actuator assembly, refer to the wiring diagram INFO.
- When performing the operation described above, use the DEF relay.

- (1) Check the 2WD to 4WD HIGH switch.

Connect lines via a relay as shown in the illustration, then check that the actuator fork moves from the 2WD to 4WD HIGH position.



Text in Illustration

*1	DEF Relay	-	-
*a	2WD to 4WD HIGH	*b	Component without harness connected (Transfer Shift Actuator Assembly)

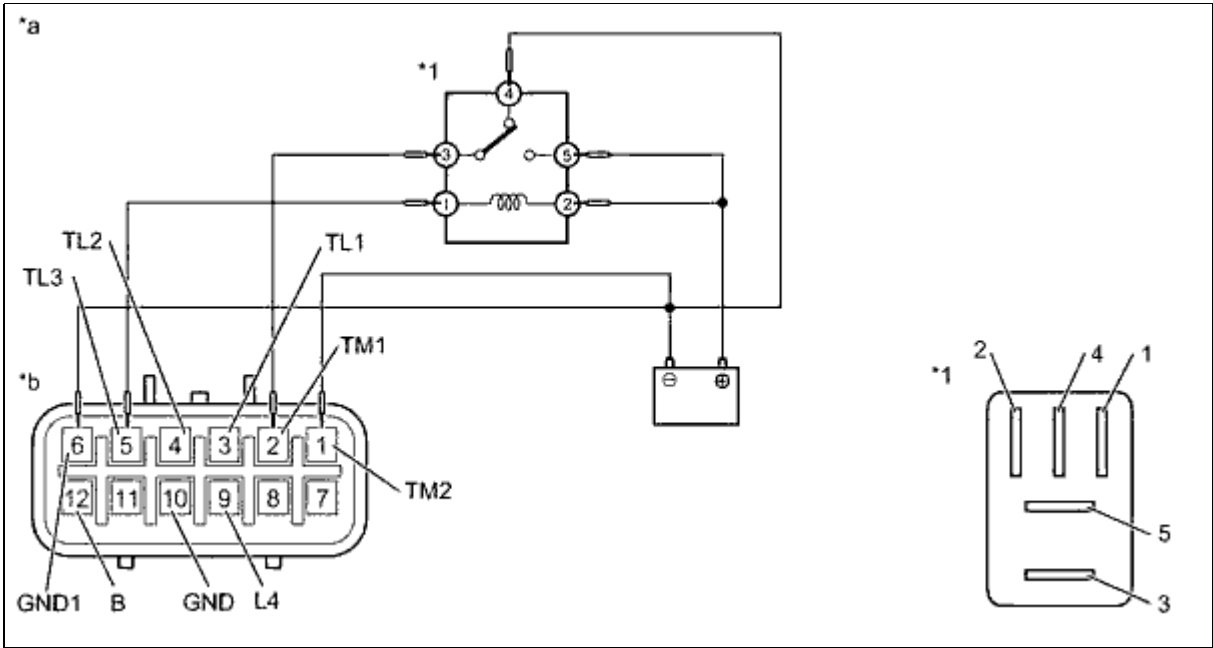
1. After the 2WD to 4WD HIGH switch is complete, inspect the 4WD detection switch, L4 detection switch and limit switch.
- Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 (TL1) - 6 (GND1)	After 2WD to 4WD HIGH switch is complete	10 kΩ or higher
4 (TL2) - 6 (GND1)	After 2WD to 4WD HIGH switch is complete	10 kΩ or higher
5 (TL3) - 6 (GND1)	After 2WD to 4WD HIGH switch is complete	Below 1 Ω
9 (L4) - 6 (GND1)	After 2WD to 4WD HIGH switch is complete	10 kΩ or higher
12 (B) - 10 (GND)	After 2WD to 4WD HIGH switch is complete	Below 1 Ω

If the result is not as specified, replace the transfer shift actuator assembly.

- (2) Check the 4WD HIGH to 4WD LOW switch.

Connect lines via a relay as shown in the illustration, then check that the actuator fork moves from the 4WD HIGH to 4WD LOW position.



Text in Illustration

*1	DEF Relay	-	-
*a	4WD HIGH to 4WD LOW	*b	Component without harness connected (Transfer Shift Actuator Assembly)

1. After the 4WD HIGH to 4WD LOW switch is complete, inspect the 4WD detection switch, L4 detection switch and limit switch.
- Standard Resistance:

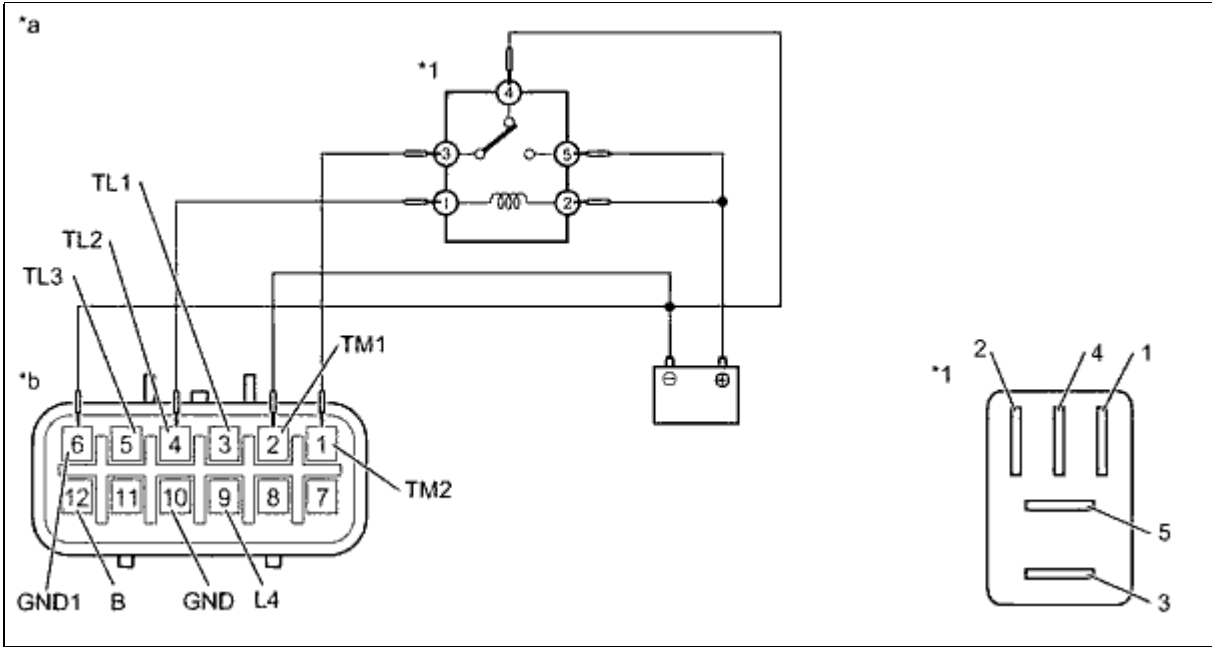
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 (TL1) - 6 (GND1)	After 4WD HIGH to 4WD LOW switch is complete	10 kΩ or higher

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
4 (TL2) - 6 (GND1)	After 4WD HIGH to 4WD LOW switch is complete	Below 1 Ω
5 (TL3) - 6 (GND1)	After 4WD HIGH to 4WD LOW switch is complete	10 k Ω or higher
9 (L4) - 6 (GND1)	After 4WD HIGH to 4WD LOW switch is complete	Below 1 Ω
12 (B) - 10 (GND)	After 4WD HIGH to 4WD LOW switch is complete	Below 1 Ω

If the result is not as specified, replace the transfer shift actuator assembly.

(3) Check the 4WD LOW to 4WD HIGH switch.

Connect lines via a relay as shown in the illustration, then check that the actuator fork moves from the 4WD LOW to 4WD HIGH position.



Text in Illustration

*1	DEF Relay	-	-
*a	4WD LOW to 4WD HIGH	*b	Component without harness connected (Transfer Shift Actuator Assembly)

- After the 4WD LOW to 4WD HIGH switch is complete, inspect the 4WD detection switch, L4 detection switch and limit switch.

Standard Resistance:

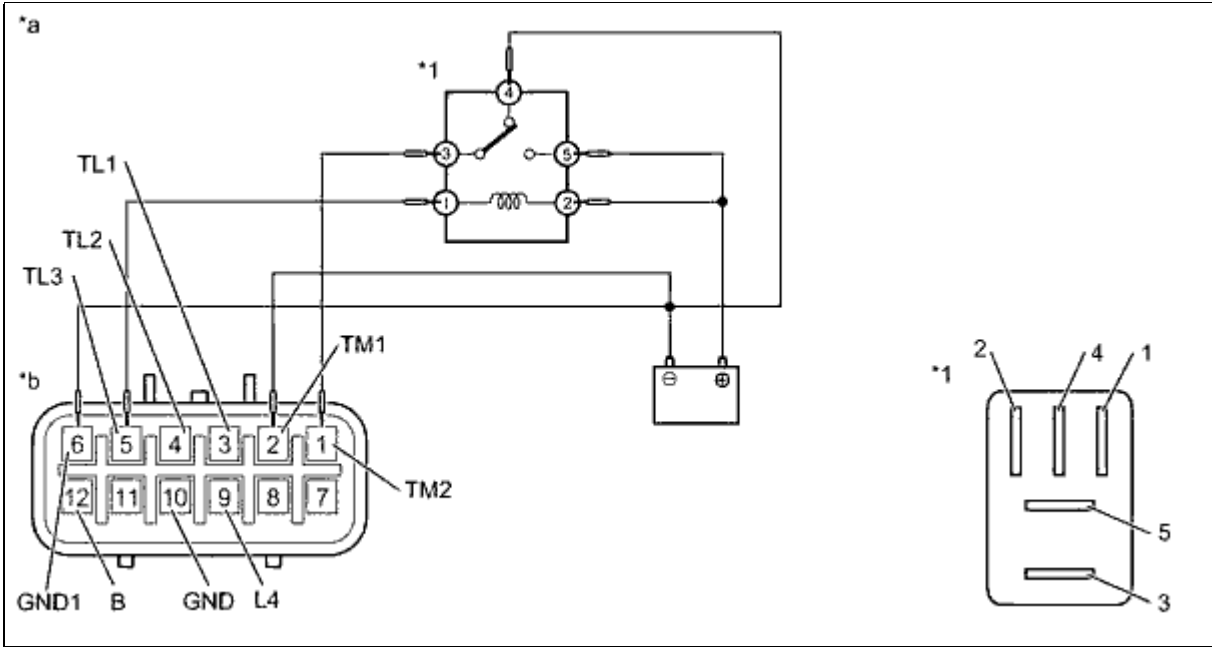
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 (TL1) - 6 (GND1)	After 4WD LOW to 4WD HIGH switch is complete	10 k Ω or higher

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
4 (TL2) - 6 (GND1)	After 4WD LOW to 4WD HIGH switch is complete	10 k Ω or higher
5 (TL3) - 6 (GND1)	After 4WD LOW to 4WD HIGH switch is complete	Below 1 Ω
9 (L4) - 6 (GND1)	After 4WD LOW to 4WD HIGH switch is complete	10 k Ω or higher
12 (B) - 10 (GND)	After 4WD LOW to 4WD HIGH switch is complete	Below 1 Ω

If the result is not as specified, replace the transfer shift actuator assembly.

(4) Check the 4WD HIGH to 2WD switch.

Connect lines via a relay as shown in the illustration, then check that the actuator fork moves from the 4WD HIGH to 2WD position.



Text in Illustration

*1	DEF Relay	-	-
*a	4WD HIGH to 2WD	*b	Component without harness connected (Transfer Shift Actuator Assembly)

1. After the 4WD HIGH to 2WD switch is complete, inspect the 4WD detection switch, L4 detection switch and limit switch.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 (TL1) - 6 (GND1)	After 4WD HIGH to 2WD switch is complete	Below 1 Ω
4 (TL2) - 6 (GND1)	After 4WD HIGH to 2WD switch is complete	10 k Ω or higher

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
5 (TL3) - 6 (GND1)	After 4WD HIGH to 2WD switch is complete	10 k Ω or higher
9 (L4) - 6 (GND1)	After 4WD HIGH to 2WD switch is complete	10 k Ω or higher
12 (B) - 10 (GND)	After 4WD HIGH to 2WD switch is complete	10 k Ω or higher

If the result is not as specified, replace the transfer shift actuator assembly.



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000001QHX035X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER ASSEMBLY: INSTALLATION; 2016 MY Tacoma [08/2015 -]		

INSTALLATION

CAUTION:

Be sure to perform this procedure with several people as the transfer assembly is very heavy.

1. INSTALL TRANSFER CASE LOWER PROTECTOR

- (a) Install the transfer case lower protector with the 4 bolts.

Torque:

18 N·m {184 kgf·cm, 13ft·lbf}

2. INSTALL TRANSFER ASSEMBLY

- (a) Install the transfer assembly and 2 clamps with the 8 bolts.

NOTICE:

Do not damage the lip of the transfer adapter oil seal.

Torque:

24 N·m {245 kgf·cm, 18ft·lbf}

3. CONNECT TRANSFER BREATHER HOSE SUB-ASSEMBLY

- (a) Connect the 2 transfer breather hose sub-assemblies.
- (b) Engage the 2 clamps to connect the 2 transfer breather hose sub-assemblies.

4. CONNECT WIRE HARNESS

- (a) for 2GR-FKS:
 - (1) Engage the 3 clamps to connect the wire harness.
 - (2) Connect the connector.
- (b) for 2TR-FE:
 - (1) Engage the 4 clamps to connect the wire harness.
 - (2) Connect the connector.

5. INSTALL REAR NO. 1 ENGINE MOUNTING INSULATOR INFO

6. INSTALL NO. 3 FRAME CROSSMEMBER SUB-ASSEMBLY INFO

7. INSTALL PROPELLER WITH CENTER BEARING SHAFT ASSEMBLY

INFO

8. INSTALL PROPELLER SHAFT ASSEMBLY FRONT

INFO

9. ADD TRANSFER OIL INFO

10. INSPECT FOR TRANSFER OIL LEAK



Last Modified: 11-13-2015	6.6 A	Doc ID: RM0000016PY01EX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER ASSEMBLY: REASSEMBLY; 2016 MY Tacoma [08/2015 -]		

REASSEMBLY

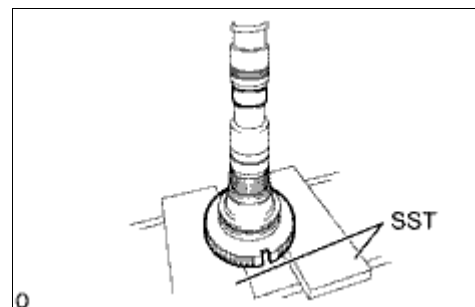
1. INSTALL TRANSFER DRIVE CLUTCH HUB

(a) Using SST and a press, install a new transfer drive clutch hub.

SST: 09527-10011

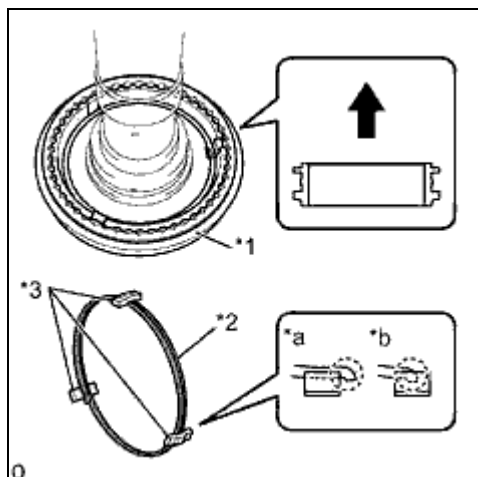
NOTICE:

- When replacing the transfer drive clutch hub, replace it with a new one and align it with the rear transfer output shaft.
- Make sure the transfer drive clutch hub contacts the edge of the rear transfer output shaft, but do not press it in more than necessary.



2. INSTALL FRONT DRIVE CLUTCH SLEEVE

(a) Install the front drive clutch sleeve.



Text in Illustration

*1	Front Drive Clutch Sleeve
*2	Transfer Synchromesh Shifting Key Spring
*3	No. 1 Synchromesh Shifting Key
*a	Correct
*b	Incorrect
	Rear Side

NOTICE:

Install the front drive clutch sleeve in the correct direction.

(b) Install the 2 transfer synchromesh shifting key springs and 3 No. 1 synchromesh shifting keys.

NOTICE:

- Install the shifting key springs so that their openings do not overlap as shown in the illustration.
- Install the No. 1 synchromesh shifting keys so that they are securely attached to the 2 transfer synchromesh shifting key springs.
- Install the No. 1 synchromesh shifting keys so that they do not rest on the ends of the transfer synchromesh shifting key springs as shown in the illustration.
- Make sure that the transfer synchromesh shifting key springs are firmly connected to the No. 1 synchromesh shifting key.
- Make sure that the front drive clutch sleeve moves smoothly.

3. INSTALL TRANSFER SYNCHRONIZER RING SET**NOTICE:**

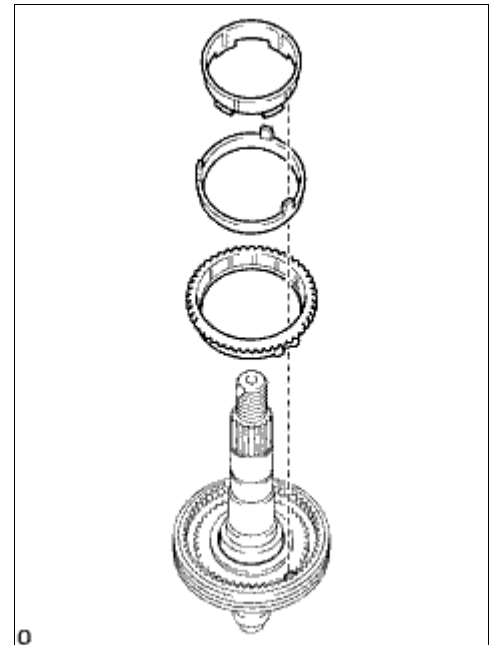
Be careful not to drop the front drive clutch sleeve and No. 1 synchromesh shifting key.

(a) Apply transfer oil to the transfer synchronizer ring set.

(b) Install the transfer synchronizer ring set.

NOTICE:

Align the key groove of the transfer synchronizer ring set with the No. 1 synchromesh shifting key, and then install the transfer synchronizer ring set.

**4. INSTALL TRANSFER DRIVE SPROCKET SUB-ASSEMBLY****NOTICE:**

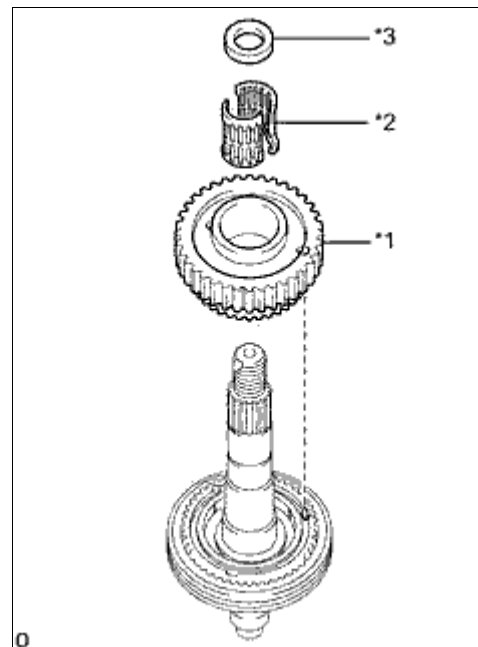
Be careful not to drop the front drive clutch sleeve and No. 1 synchromesh shifting key.

(a) Apply transfer oil to the rolling and thrusting surfaces of the needle roller bearing, and the fitting surfaces of the transfer drive sprocket sub-assembly and front drive clutch sleeve.

(b) Install the transfer drive sprocket sub-assembly.

Text in Illustration

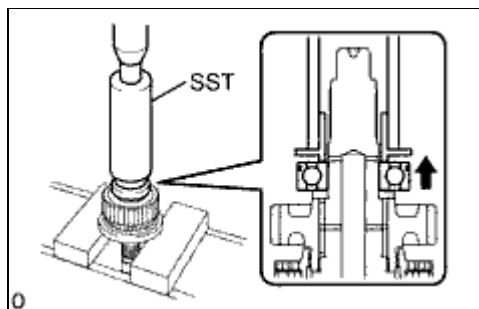
*1	Transfer Drive Sprocket Sub-assembly
*2	Needle Roller Bearing
*3	No. 1 Transfer Output Shaft Spacer



(c) Install the needle roller bearing.

(d) Install the No. 1 transfer output shaft spacer.

(e) Apply transfer oil to a new rear transfer output shaft radial ball bearing and the press-fit portion of the rear transfer output shaft.



Text in Illustration

➔	Rear Side
---	-----------

(f) Using SST and a press, install the rear transfer output shaft radial ball bearing.

SST: 09316-60011

09316-00011

09316-00071

NOTICE:

- Install the rear transfer output shaft radial ball bearing with the installation groove of the transfer output shaft snap ring facing the rear side as shown in the illustration.
- Make sure the rear transfer output shaft radial ball bearing contacts the edge of the No. 1 transfer output shaft spacer, but do not press it in more than necessary.
- Make sure that the transfer drive sprocket sub-assembly moves smoothly.

(g) Measure the transfer drive sprocket sub-assembly thrust clearance INFO.

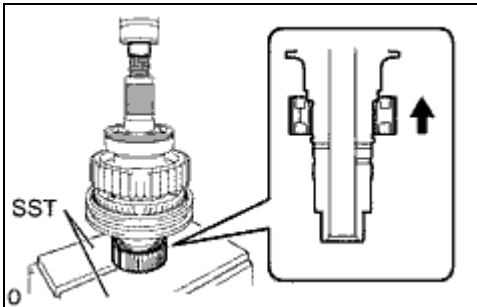
5. INSPECT TRANSFER CLUTCH HUB

NOTICE:

Be careful not to drop the front drive clutch sleeve and No. 1 synchromesh shifting key.

- (a) Apply transfer oil to the transfer clutch hub and the press-fit portion of the rear transfer output shaft.
- (b) Using SST and a press, install the transfer clutch hub.

SST: 09527-10011



Text in Illustration

	Rear Side
---	-----------

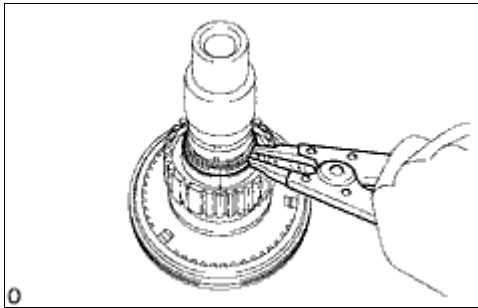
NOTICE:

- Install the transfer clutch hub in the correct direction.
- Make sure the transfer clutch hub contacts the edge of the rear transfer output shaft, but do not press it in more than necessary.

- (c) Select a transfer clutch hub shaft snap ring from the table below so that the clearance between the transfer clutch hub and transfer clutch hub shaft snap ring is 0.15 mm (0.00590 in.) or less.

Snap Ring Thickness:

PART NO.	SPECIFIED CONDITION
90520-39013	2.00 to 2.05 mm (0.0788 to 0.0807 in.)
90520-T0200	
90520-39014	2.05 to 2.10 mm (0.0808 to 0.0826 in.)
90520-T0201	
90520-39004	2.10 to 2.15 mm (0.0827 to 0.0846 in.)
90520-T0191	
90520-39005	2.15 to 2.20 mm (0.0847 to 0.0866 in.)
90520-T0192	
90520-39006	2.20 to 2.25 mm (0.0867 to 0.0885 in.)
90520-T0193	
90520-39007	2.25 to 2.30 mm (0.0886 to 0.0905 in.)
90520-T0194	
90520-39008	2.30 to 2.35 mm (0.0906 to 0.0925 in.)



PART NO.	SPECIFIED CONDITION
90520-T0195	
90520-39009	2.35 to 2.40 mm (0.0926 to 0.0944 in.)
90520-T0196	
90520-39010	2.40 to 2.45 mm (0.0945 to 0.0964 in.)
90520-T0197	
90520-39011	2.45 to 2.50 mm (0.0965 to 0.0984 in.)
90520-T0198	
90520-39012	2.50 to 2.55 mm (0.0985 to 0.1003 in.)
90520-T0199	

(d) Using a snap ring expander, install a new transfer clutch hub shaft snap ring.

(e) Install the transfer high and low clutch sleeve.

NOTICE:

Make sure that the transfer high and low clutch sleeve moves smoothly.

6. INSTALL TRANSFER DRIVEN SPROCKET BEARING

(a) Apply transfer oil to 2 new transfer driven sprocket bearings and the press-fit portion of the transfer driven sprocket.

(b) for Rear Side:

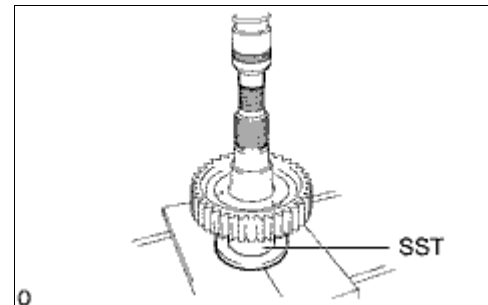
(1) Using SST and a press, install the transfer driven sprocket bearing.

SST: 09316-60011

09316-00031

NOTICE:

- Make sure the transfer driven sprocket bearing contacts the edge of the transfer driven sprocket, but do not press it in more than necessary.
- Make sure that the transfer driven sprocket bearing moves smoothly.



(c) for Front Side:

(1) Using SST and a press, install the transfer driven sprocket bearing.

SST: 09950-60010

09951-00290

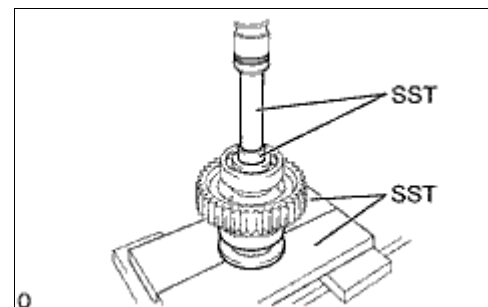
SST: 09950-70010

09951-07100

SST: 09316-60011

09316-00031

SST: 09527-10011



NOTICE:

- Make sure the transfer driven sprocket bearing contacts the edge of the transfer driven sprocket, but do not press it in more than necessary.
- Make sure that the transfer driven sprocket bearing moves smoothly.

7. INSTALL TRANSFER SHIFT ACTUATOR ASSEMBLY

(a) Apply transfer oil to the O-ring of the transfer shift actuator assembly.

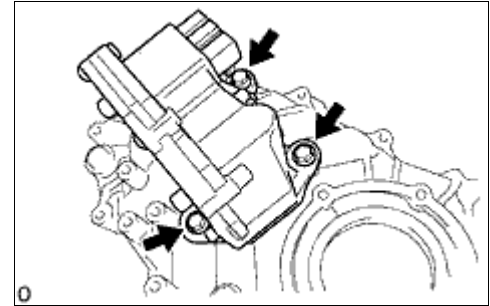
(b) Install the transfer shift actuator assembly with the 3 bolts.

Torque:

20 N·m {204 kgf·cm, 15ft·lbf}

NOTICE:

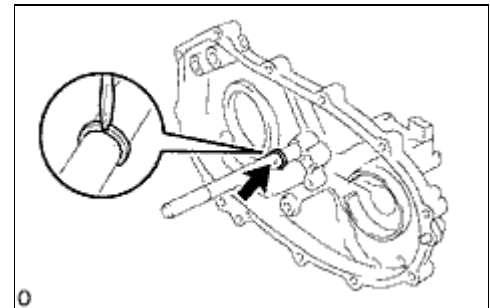
Do not damage the O-ring.



(c) Using a screwdriver and hammer, install the transfer gear shift fork shaft snap ring.

HINT:

Install only the transfer gear shift fork shaft snap ring on the rear side of the transfer shift actuator shaft.

**8. INSTALL REAR TRANSFER OUTPUT SHAFT, TRANSFER FRONT DRIVE CHAIN, TRANSFER DRIVEN SPROCKET****NOTICE:**

- Be careful not to drop the front drive clutch sleeve and No. 1 synchromesh shifting key.
- When using a vise, place aluminum plates between the part and vise.
- When using a vise, do not overtighten it.

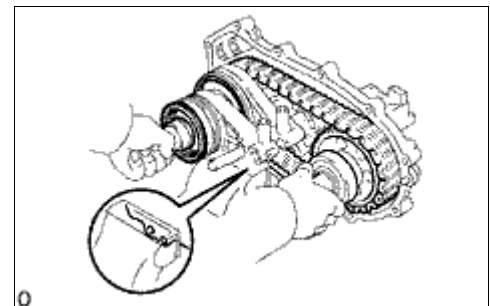
(a) Install the rear transfer output shaft, transfer driven sprocket and transfer front drive chain with the No. 1 transfer gear shift fork and No. 2 transfer gear shift fork.

HINT:

When installation under normal temperatures is difficult, heat the rear transfer case to approximately 50 to 80°C (122 to 176°F), and then install it.

CAUTION:

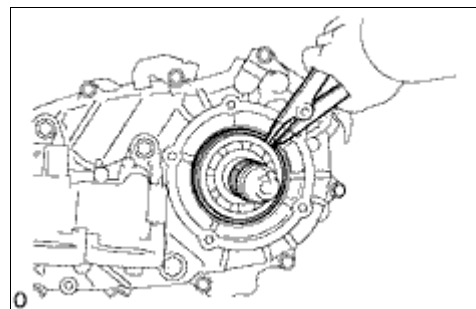
Be careful not to burn yourself when the rear transfer case temperature is high.



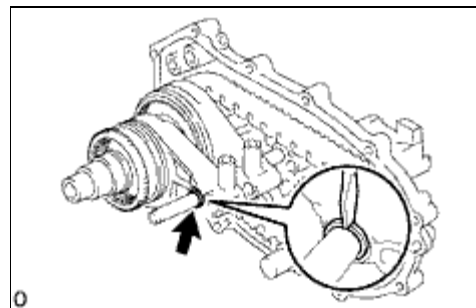
- (b) Using a snap ring expander, install the transfer output shaft shaft snap ring.

NOTICE:

After installation, if there is any clearance along the inside diameter of the transfer output shaft snap ring, replace it with a new one.

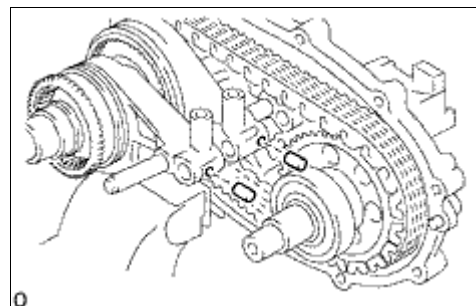


- (c) Using a screwdriver and hammer, install the transfer gear shift fork shaft snap ring.

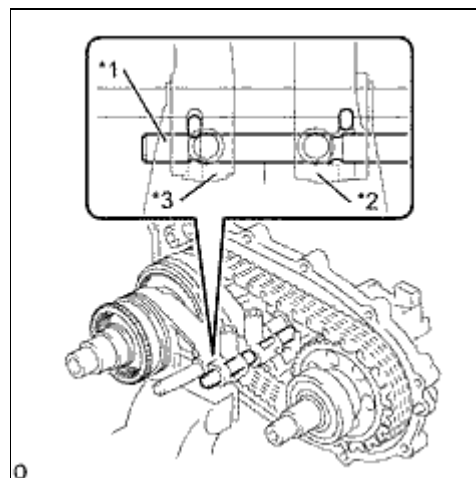


9. INSTALL TRANSFER FRONT DRIVE SHIFT FORK SHAFT

- (a) Using a magnet hand, install the 2 shift interlock pin or rollers.



- (b) To install the transfer front drive shift fork shaft, shift the No. 1 transfer gear shift fork and No. 2 transfer gear shift fork to the positions shown in the illustration.



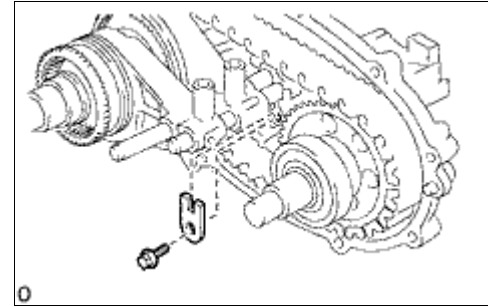
Text in Illustration

*1	Transfer Front Drive Shift Fork Shaft
*2	No. 1 Transfer Gear Shift Fork
*3	No. 2 Transfer Gear shift fork

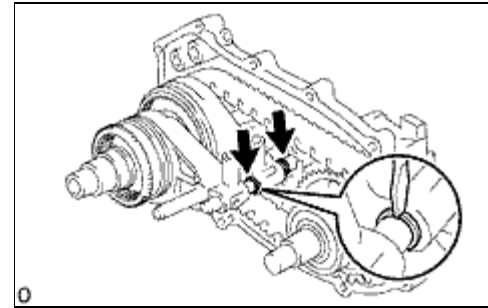
(c) Install the transfer shift shaft stopper with the bolt.

Torque:

19 N·m {194 kgf·cm, 14ft·lbf}



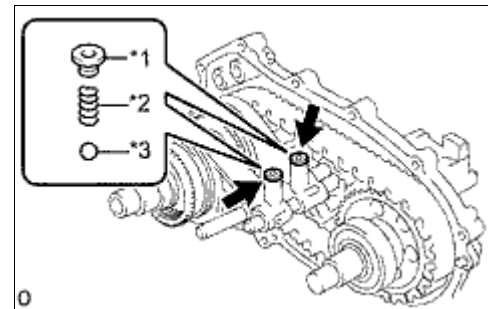
(d) Using a screwdriver and hammer, install the 2 transfer gear shift fork shaft snap rings.



(e) Clean the 2 shift detent ball spring plug holes.

Text in Illustration

*1	Shift Detent Ball Spring Plug
*2	Shift Detent Ball Compression Spring
*3	Shift Detent Ball



(f) Install the 2 shift detent balls and 2 shift detent ball compression springs.

(g) Using a 6 mm hexagon wrench, install 2 new shift detent ball spring plugs.

Torque:

19 N·m {190 kgf·cm, 14ft·lbf}

10. INSTALL TRANSFER LOW PLANETARY GEAR BEARING

(a) Apply transfer oil to a new transfer low planetary gear bearing.

(b) Using SST and a press, install the transfer low planetary gear bearing as shown in the illustration.

SST: 09950-60010

09951-00470

09951-00570

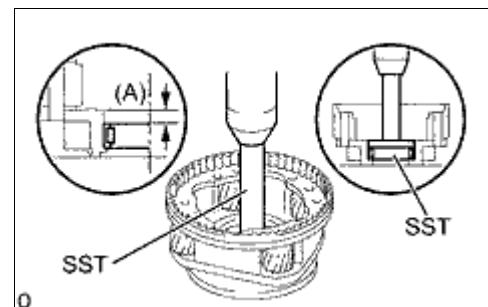
09952-06010

SST: 09950-70010

09951-07150

Drive in depth (A):

7.7 to 8.3 mm (0.3032 to 0.3267 in.)



11. INSTALL TRANSFER INPUT SHAFT BEARING

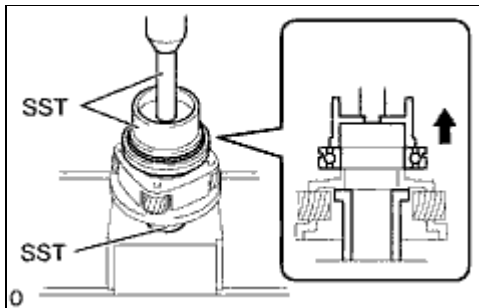
(a) Using SST and a press, install a new transfer input shaft bearing.

SST: 09223-15020

SST: 09515-30010

SST: 09950-70010

09951-07100



Text in Illustration

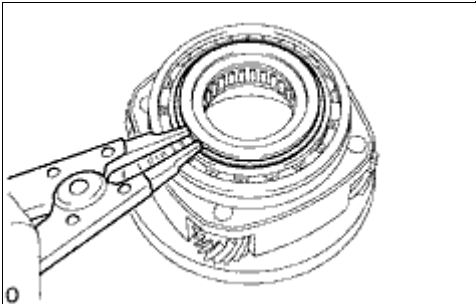
	Front Side
---	------------

- NOTICE:**
- Install the transfer input shaft bearing with the installation groove of the transfer low planetary gear bearing shaft snap ring facing the front side as shown in the illustration.
 - Make sure the transfer input shaft bearing contacts the edge of the transfer low planetary ring gear, but do not press it in more than necessary.

(b) Select a transfer input bearing shaft snap ring from the table below so that the clearance between the transfer input shaft bearing and transfer input bearing shaft snap ring is 0.1 mm (0.00393 in.) or less.

Snap Ring Thickness:

PART NO.	MARK	SPECIFIED CONDITION
90520-72001	1	1.45 to 1.50 mm (0.0571 to 0.0590 in.)
90520-T0136		
90520-72002	2	1.50 to 1.55 mm (0.0591 to 0.0610 in.)
90520-T0137		
90520-72003	3	1.55 to 1.60 mm (0.0611 to 0.0629 in.)
90520-T0138		
90520-72004	4	1.60 to 1.65 mm (0.0630 to 0.0649 in.)
90520-T0139		
90520-72005	5	1.65 to 1.70 mm (0.0650 to 0.0669 in.)
90520-T0140		



(c) Using a snap ring expander, install a new transfer input bearing shaft snap ring.

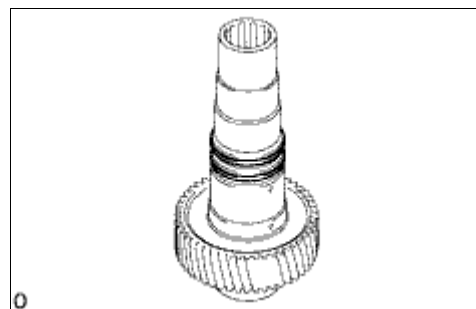
12. INSTALL NO. 1 TRANSFER INPUT SHAFT SEAL RING

(a) Apply transfer oil to the 2 No. 1 transfer input shaft seal rings.

(b) Install the 2 No. 1 transfer input shaft seal rings.

NOTICE:

When installing the No. 1 transfer input shaft seal ring, do not expand the inside diameter to 65.0 mm (2.55 in.) or more.



13. INSTALL TRANSFER INPUT SHAFT

(a) Apply transfer oil to the transfer low planetary gear bearing.

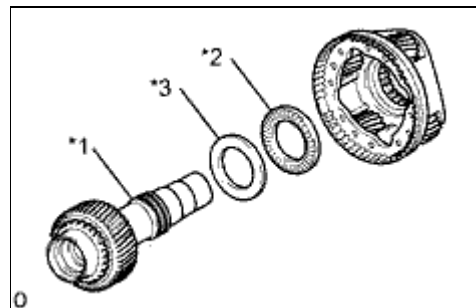
(b) Install the transfer low planetary gear bearing, No. 1 transfer thrust bearing race and transfer input shaft.

Text in Illustration

*1	Transfer Input Shaft
*2	Transfer Low Planetary Gear Bearing
*3	No. 1 Transfer Thrust Bearing Race

NOTICE:

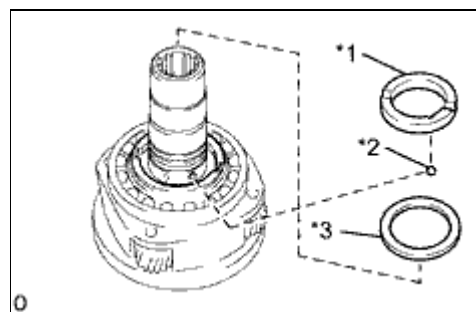
When selecting a transfer low planetary gear bearing and No. 1 transfer thrust bearing race, select and install parts from the same manufacturer.



(c) Apply transfer oil to the manual transfer planetary carrier washer.

Text in Illustration

*1	Transfer Input Gear Stopper
*2	Transfer Input Gear Stopper Ball
*3	Manual Transfer Planetary Carrier Washer



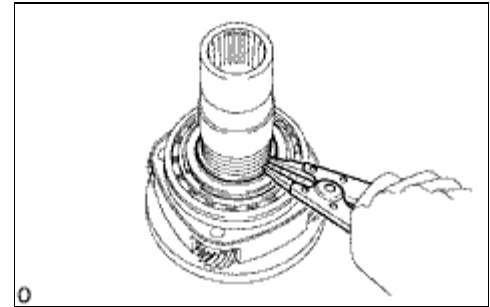
(d) Install the manual transfer planetary carrier washer.

(e) Install the transfer input gear stopper and transfer input gear stopper ball.

- (f) Select a transfer input bearing shaft snap ring from the table below so that the thrust clearance of the transfer input gear stopper shaft snap ring is 0.05 to 0.15 mm (0.00197 to 0.00590 in.).

Snap Ring Thickness:

PART NO.	SPECIFIED CONDITION
90520-44003	2.10 to 2.15 mm (0.0827 to 0.0846 in.)
90520-T0202	
90520-44004	2.15 to 2.20 mm (0.0847 to 0.0866 in.)
90520-T0203	
90520-44005	2.20 to 2.25 mm (0.0867 to 0.0885 in.)
90520-T0204	
90520-44006	2.25 to 2.30 mm (0.0886 to 0.0905 in.)
90520-T0205	
90520-44007	2.30 to 2.35 mm (0.0906 to 0.0925 in.)
90520-T0206	
90520-44008	2.35 to 2.40 mm (0.0926 to 0.0944 in.)
90520-T0207	
90520-44009	2.40 to 2.45 mm (0.0945 to 0.0964 in.)
90520-T0208	
90520-44010	2.45 to 2.50 mm (0.0965 to 0.0984 in.)
90520-T0209	
90520-44011	2.50 to 2.55 mm (0.0985 to 0.100 in.)
90520-T0210	
90520-44012	2.55 to 2.60 mm (0.101 to 0.102 in.)
90520-T0211	
90520-44013	2.60 to 2.65 mm (0.103 to 0.104 in.)
90520-T0212	
90520-44014	2.65 to 2.70 mm (0.105 to 0.106 in.)
90520-T0213	
90520-44015	2.70 to 2.75 mm (0.107 to 0.108 in.)
90520-T0214	
90520-44016	2.75 to 2.80 mm (0.109 to 0.110 in.)
90520-T0215	
90520-44017	2.80 to 2.85 mm (0.111 to 0.112 in.)
90520-T0216	



PART NO.	SPECIFIED CONDITION
90520-44018	2.85 to 2.90 mm (0.113 to 0.114 in.)
90520-T0217	
90520-44019	2.90 to 2.95 mm (0.115 to 0.116 in.)
90520-T0218	
90520-44020	2.95 to 3.00 mm (0.117 to 0.118 in.)
90520-T0219	
90520-44021	3.00 to 3.05 mm (0.119 to 0.120 in.)
90520-T0220	

(g) Using a snap ring expander, install a new transfer input gear stopper shaft snap ring.

NOTICE:

After installation, if there is any clearance along the inside diameter of the transfer input gear stopper shaft snap ring, replace it with a new one.

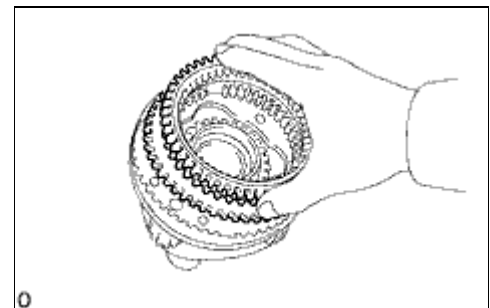
14. INSTALL TRANSFER LOW PLANETARY GEAR SPLINE PIECE

(a) Apply transfer oil to the transfer output shaft front needle roller bearing.

(b) Install the transfer output shaft front needle roller bearing.



(c) Install the transfer low planetary gear spline piece.



- (d) Using a screwdriver, install the transfer low planetary gear shaft snap ring.

Text in Illustration

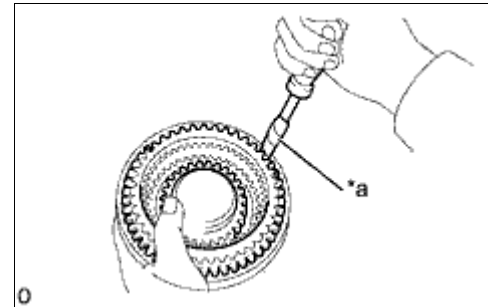
*a	Protective Tape
----	-----------------

NOTICE:

The transfer low planetary gear shaft snap ring should be installed completely.

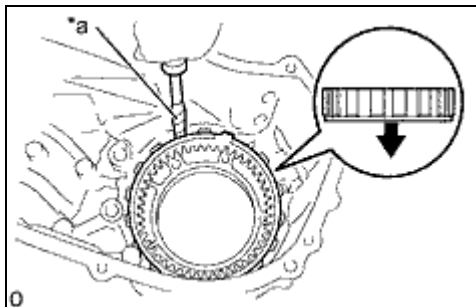
HINT:

Tape the screwdriver tip before use.



15. INSTALL TRANSFER LOW PLANETARY RING GEAR

- (a) Install the transfer low planetary ring gear.



Text in Illustration

*a	Protective Tape
➔	Front Side

NOTICE:

Install the transfer low planetary ring gear in the correct direction.

- (b) Using a screwdriver, install the transfer low planetary ring gear hole snap ring.

NOTICE:

The transfer low planetary gear shaft snap ring should be installed completely.

HINT:

Tape the screwdriver tip before use.

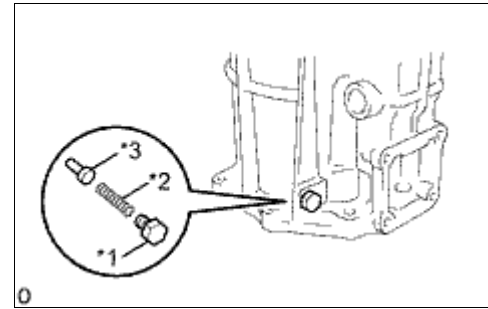
16. INSTALL TRANSFER CASE PLUG

- (a) Clean the transfer case plug hole.

- (b) Install the pin and transfer case compression spring.

Text in Illustration

*1	Transfer Case Plug
*2	Transfer Case Compression Spring
*3	Pin



- (c) Install a new transfer case plug.

Torque:

18.6 N·m {190 kgf·cm, 14ft·lbf}

17. INSTALL TRANSFER LOW PLANETARY GEAR ASSEMBLY

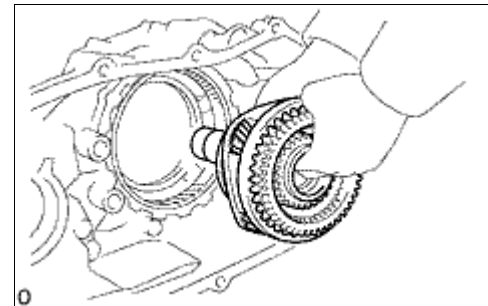
- (a) Install the transfer low planetary gear assembly.

HINT:

When installation under normal temperatures is difficult, heat the front transfer case to approximately 50 to 80°C (122 to 176°F), and then install it.

CAUTION:

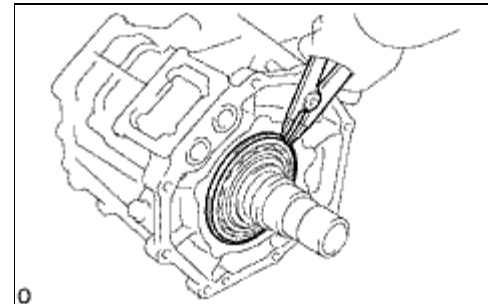
Be careful not to burn yourself when the front transfer case temperature is high.



- (b) Using a snap ring expander, install the transfer low planetary gear bearing shaft snap ring.

NOTICE:

After installation, if there is any clearance along the inside diameter of the transfer low planetary gear bearing shaft snap ring, replace it with a new one.



18. INSTALL TRANSFER FRONT BEARING TYPE T OIL SEAL

- (a) for AC60F, R156F:

(1) Coat the lip of a new transfer front bearing type T oil seal with MP grease.

- (b) for RC62F:

(1) Coat the lip of 2 new transfer front bearing type T oil seals with MP grease.

- (c) for AC60F, R156F:

- (1) Using SST and a hammer, install the transfer front bearing type T oil seal as shown in the illustration.

SST: 09950-60010

09951-00410

09951-00570

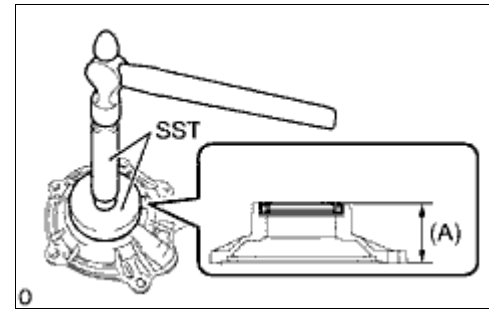
09952-06010

SST: 09950-70010

09951-07100

Drive in depth (A):

43.0 to 44.0 mm (1.70 to 1.73 in.)



NOTICE:

Be careful not to damage the transfer front bearing type T oil seal.

(d) for RC62F:

- (1) Using SST and a hammer, install the 2 transfer front bearing type T oil seals as shown in the illustration.

SST: 09950-60010

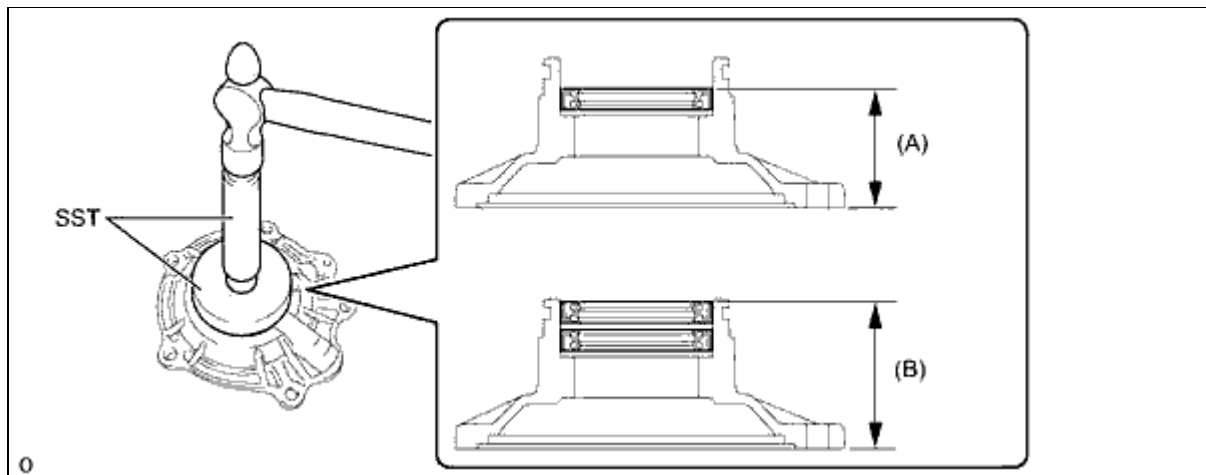
09951-00410

09951-00570

09952-06010

SST: 09950-70010

09951-07100



Drive in depth:

Drive in depth (A)	43.0 to 44.0 mm (1.70 to 1.73 in.)
Drive in depth (B)	53.0 to 54.0 mm (2.09 to 2.12 in.)

NOTICE:

- Install the transfer front bearing type T oil seal in the correct direction.
- Be careful not to damage the transfer front bearing type T oil seal.

19. INSTALL TRANSFER FRONT BEARING RETAINER SUB-ASSEMBLY

- (a) Clean the 5 bolt holes.

- (b) Apply seal packing to the transfer front bearing retainer sub-assembly as shown in the illustration.

Seal packing:

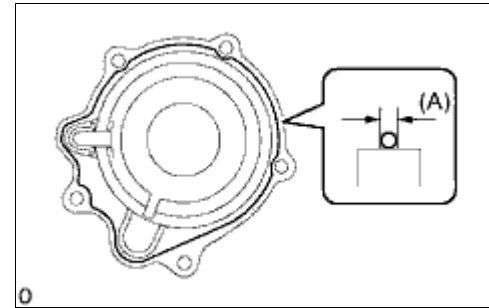
Toyota Genuine Seal Packing 1281, Three Bond 1281 or equivalent

Seal width (A):

1.2 mm (0.0472 in.)

NOTICE:

If the removed transfer front bearing retainer sub-assembly will be reused: After removing the transfer front bearing retainer sub-assembly, be sure to perform the following before reinstalling it: 1) using a knife, cut off any old seal packing on the transfer front bearing retainer sub-assembly contact surface, 2) clean off any remaining old seal packing from the transfer front bearing retainer sub-assembly contact surface, and 3) reapply seal packing to the transfer front bearing retainer sub-assembly.



- (c) Apply adhesive to 2 or 3 threads on the end of the 5 new bolts.

Adhesive:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent

- (d) Install the transfer front bearing retainer subassembly with the 5 bolts.

Torque:

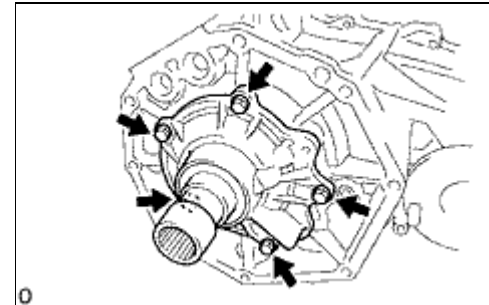
12 N·m {117 kgf·cm, 8ft·lbf}

NOTICE:

- Tighten the bolts of the transfer front bearing retainer sub-assembly within 10 minutes of applying the seal packing.

The seal packing will dry very quickly.

- Be careful not to damage the transfer front bearing type T oil seal.



- (e) for RC62F:

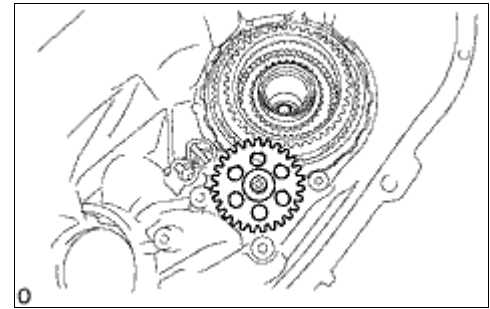
- (1) Apply manual transmission oil to a new O-ring.
- (2) Install the O-ring.

NOTICE:

- Do not scratch or twist the O-ring.
- The O-ring should be installed completely.

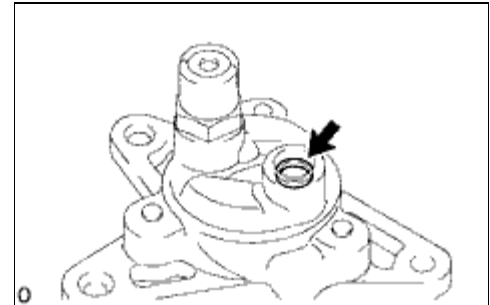
20. INSTALL TRANSFER OIL PUMP BODY SUB-ASSEMBLY

(a) Apply transfer oil to the transfer oil pump gear.



(b) Install the transfer oil pump gear.

(c) Apply transfer oil to a new transfer oil pump body O-ring.



(d) Install the transfer oil pump body O-ring.

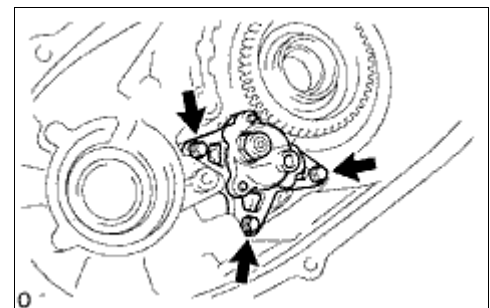
NOTICE:

- Do not scratch or twist the transfer oil pump body O-ring.
- The transfer oil pump body O-ring should be installed completely.

(e) Install the transfer oil pump body sub-assembly with the 3 bolts.

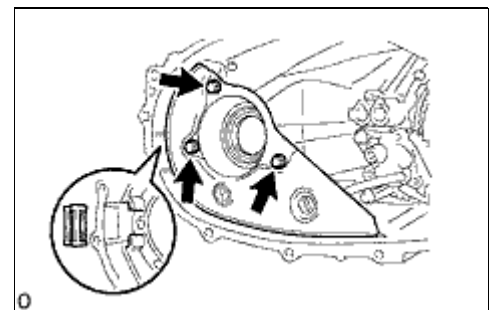
Torque:

7.5 N·m {76 kgf·cm, 66in·lbf}



21. INSTALL TRANSFER OIL SEPARATOR SUB-ASSEMBLY

(a) Install the transfer case magnet.



(b) Install the transfer oil separator sub-assembly with the 3 bolts.

Torque:

7.5 N·m {76 kgf·cm, 66in·lbf}

NOTICE:

Be careful not to damage the transfer oil pump body O-ring.

22. INSTALL REAR TRANSFER CASE

(a) Apply transfer oil to the transfer output shaft front needle roller bearing, the inside diameter of the internal bush portion of the transfer input shaft and the fitting surfaces of the high and low clutch sleeve and transfer low planetary gear assembly.

(b) Apply seal packing to the rear transfer case as shown in the illustration.

Seal packing:

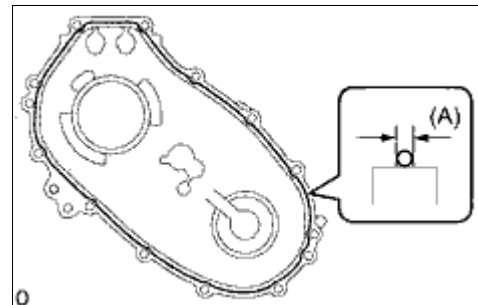
Toyota Genuine Seal Packing 1281, Three Bond 1281 or equivalent

Seal width (A):

1.2 mm (0.0472 in.)

NOTICE:

If the removed rear transfer case will be reused: After removing the rear transfer case, be sure to perform the following before reinstalling it: 1) using a knife, cut off any old seal packing on the rear transfer case contact surface, 2) clean off any remaining old seal packing from the rear transfer case contact surface, and 3) reapply seal packing to the rear transfer case.



(c) Install the rear transfer case and 4 brackets with the 12 bolts.

Text in Illustration

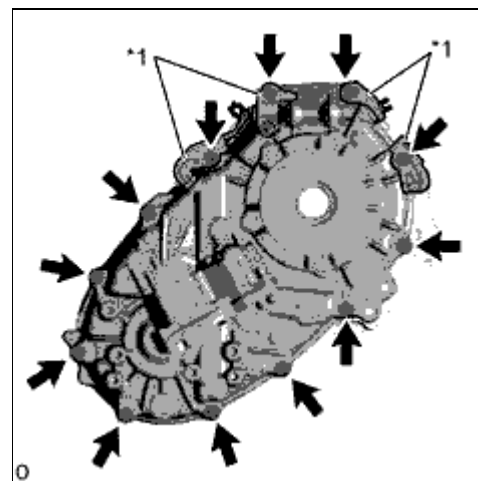
*1	Bracket
----	---------

Torque:

28 N·m {286 kgf·cm, 21ft·lbf}

NOTICE:

Tighten the bolts of the rear transfer case within 10 minutes of applying the seal packing. The seal packing will dry very quickly.

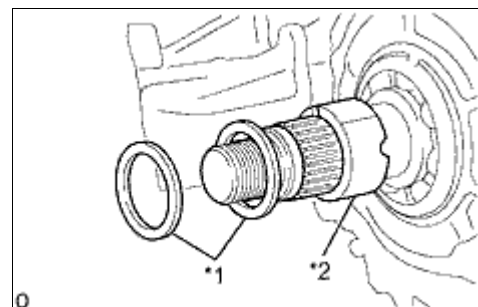


23. INSTALL TRANSFER OUTPUT SHAFT WASHER

(a) Install the No. 2 transfer output shaft spacer.

Text in Illustration

*1	Transfer Output Shaft Washer
*2	No. 2 Transfer Output Shaft Spacer



(b) Install the 2 transfer output shaft washers.

24. INSTALL TRANSFER EXTENSION HOUSING

(a) Clean the 5 bolt holes.

(b) Apply seal packing to the transfer extension housing as shown in the illustration.

Seal packing:

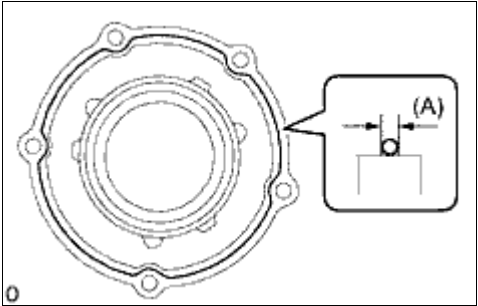
Toyota Genuine Seal Packing 1281, Three Bond 1281 or equivalent

Seal width (A):

1.2 mm (0.0472 in.)

NOTICE:

If the removed transfer extension housing will be reused: After removing the transfer extension housing, be sure to perform the following before reinstalling it: 1) using a knife, cut off any old seal packing on the transfer extension housing contact surface, 2) clean off any remaining old seal packing from the transfer extension housing contact surface, and 3) reapply seal packing to the transfer extension housing.



(c) Apply adhesive to 2 or 3 threads on the end of the 5 new bolts.

Adhesive:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent

(d) Install the transfer extension housing with the 5 bolts.

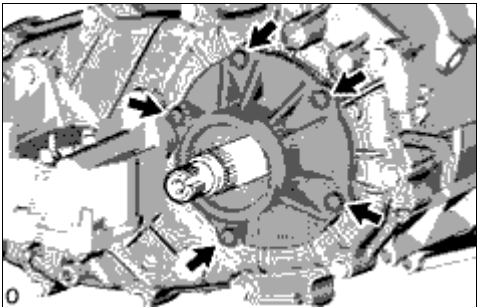
Torque:

12 N·m {122 kgf·cm, 9ft·lbf}

NOTICE:

Tighten the bolts of the transfer extension housing within 10 minutes of applying the seal packing.

The seal packing will dry very quickly.



25. INSTALL TRANSFER EXTENSION HOUSING TYPE T OIL SEAL INFO

26. INSTALL OUTPUT SHAFT COMPANION FLANGE SUB-ASSEMBLY (for Rear Side)

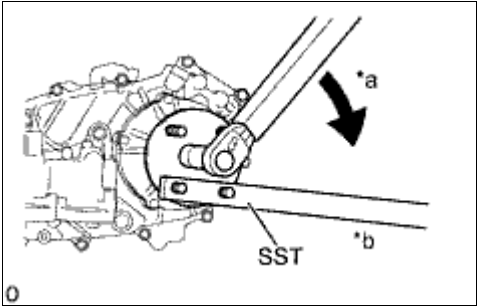
(a) Apply transfer oil to a new transfer output shaft O-ring and the fitting portions of the output shaft companion flange sub-assembly and rear transfer output shaft.

(b) Using SST to hold the output shaft companion flange sub-assembly, install the transfer output shaft O-ring and a new transfer output shaft companion flange nut.

SST: 09330-00021

Text in Illustration

*a	Turn
*b	Hold



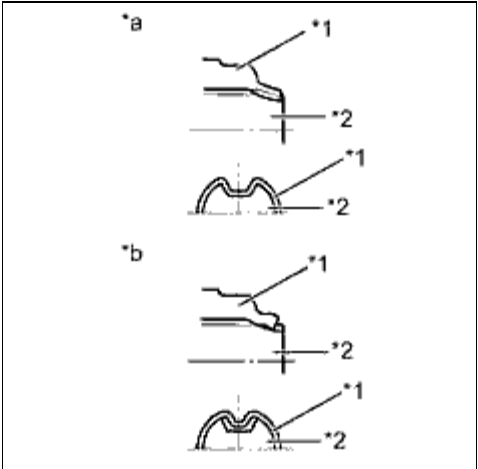
Torque:
127 N·m {1299 kgf·cm, 94ft·lbf}

- NOTICE:**
- Do not scratch or twist the transfer output shaft O-ring.
 - The transfer output shaft O-ring should be installed completely.

(c) Using a chisel and hammer, stake the transfer output shaft companion flange nut as shown in the illustration.

Text in Illustration

*1	Transfer Output Shaft Companion Flange Nut
*2	Rear Transfer Output Shaft
*a	Correct
*b	Incorrect



27. INSTALL TRANSFER CASE OIL SEAL INFO

28. INSTALL OUTPUT SHAFT COMPANION FLANGE SUB-ASSEMBLY (for Front Side)

(a) Using SST and hammer, install a new transfer output shaft companion flange oil seal.

SST: 09950-60010

09951-00220

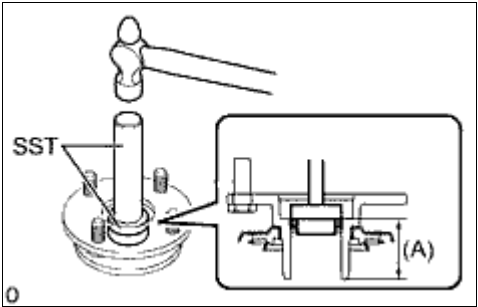
09951-00310

09952-06010

SST: 09950-70010

09951-07100

Drive in depth (A):
38.0 to 39.0 mm (1.50 to 1.53 in.)



- NOTICE:**
- Install the transfer output shaft companion flange oil seal in the correct direction.

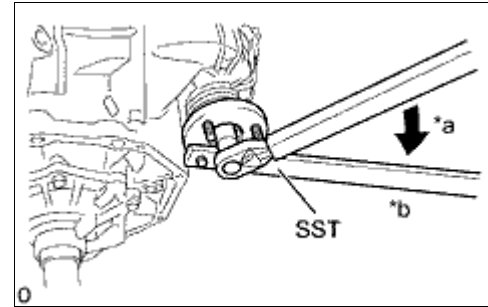
(b) Apply transfer oil to the fitting portions of the output shaft companion flange sub-assembly and transfer driven sprocket.

- (c) Using SST to hold the output shaft companion flange sub-assembly, install a new transfer output shaft companion flange nut.

SST: 09330-00021

Text in Illustration

*a	Turn
*b	Hold



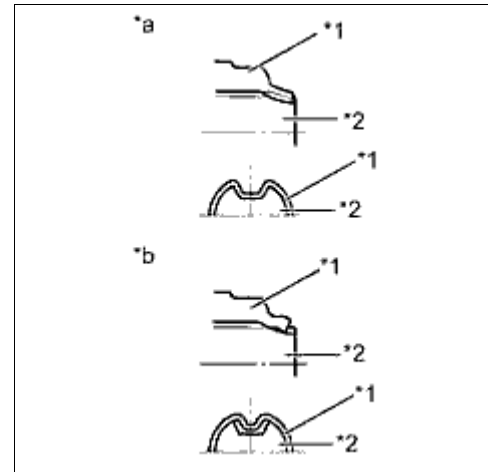
Torque:

118 N·m {1203 kgf·cm, 87ft·lbf}

- (d) Using a chisel and hammer, stake the transfer output shaft companion flange nut as shown in the illustration.

Text in Illustration

*1	Transfer Output Shaft Companion Flange Nut
*2	Rear Transfer Output Shaft
*a	Correct
*b	Incorrect



29. INSTALL NO. 1 TRANSFER CASE PLUG

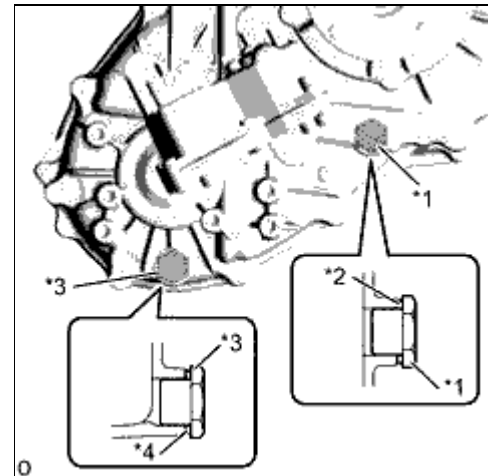
- (a) Install a new No. 1 transfer case gasket to the No. 1 transfer case plug (filler plug), and then install the No. 1 transfer case plug (filler plug).

Text in Illustration

*1	No. 1 Transfer Case Plug (Filler Plug)
*2	No. 1 Transfer Case Gasket
*3	Transfer Drain Plug
*4	Transfer Drain Plug Gasket

Torque:

37 N·m {377 kgf·cm, 27ft·lbf}



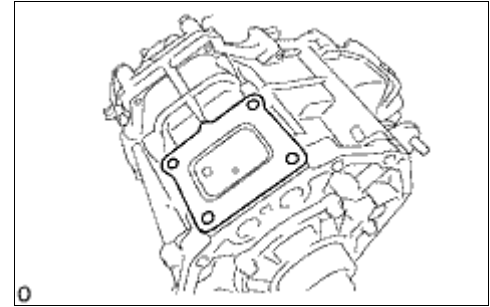
- (b) Install a new transfer drain plug gasket to the transfer drain plug, and then install the transfer drain plug.

Torque:

37 N·m {377 kgf·cm, 27ft·lbf}

30. INSTALL TRANSFER CASE COVER SUB-ASSEMBLY

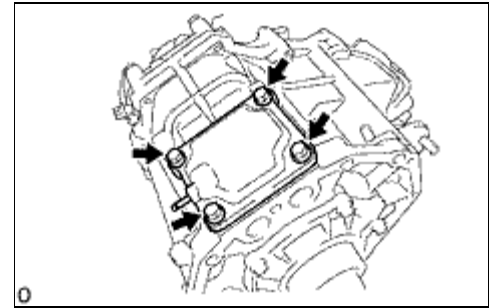
(a) Install the breather oil deflector.



(b) Install the transfer case cover sub-assembly with the 4 bolts.

Torque:

18 N·m {184 kgf·cm, 13ft·lbf}



31. INSTALL ACTUATOR BREATHER HOSE

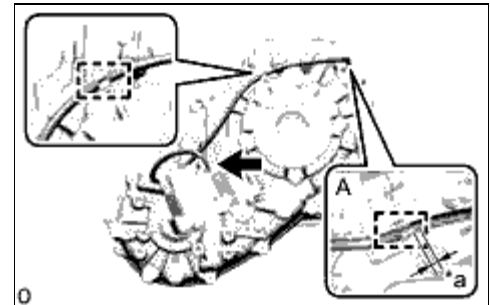
(a) Install the 2 clamps and actuator breather hose as shown in the illustration.

Text in Illustration

*a	0 to 3.0 mm
----	-------------

NOTICE:

- Install the actuator breather hose so that it passes between the rear transfer case and transfer shift actuator assembly.
- Fully install the actuator breather hose to the base of the transfer shift actuator assembly.
- Install the actuator breather hose so that the net protector in area A extends 0 to 3.0 mm (0 to 0.118 in.) from the clamp.



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000001QHY036X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER ASSEMBLY: REMOVAL; 2016 MY Tacoma [08/2015 -]		

REMOVAL

1. DRAIN TRANSFER OIL INFO

2. REMOVE FRONT PROPELLER SHAFT ASSEMBLY

INFO

3. REMOVE PROPELLER WITH CENTER BEARING SHAFT ASSEMBLY

INFO

4. SUPPORT TRANSMISSION ASSEMBLY INFO

5. REMOVE NO. 3 FRAME CROSSMEMBER SUB-ASSEMBLY INFO

6. REMOVE REAR NO. 1 ENGINE MOUNTING INSULATOR INFO

7. SUPPORT TRANSFER ASSEMBLY

(a) Tilt the transmission assembly until the transfer assembly can be removed.

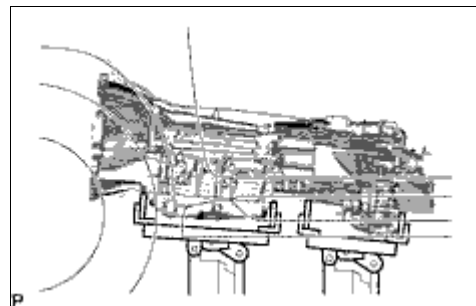
NOTICE:

Do not damage the wire harness, pipe or surrounding parts.

(b) Support the transfer assembly with a transmission jack.

NOTICE:

Secure the transfer assembly to the transmission jack using a belt, etc. to prevent it from falling.

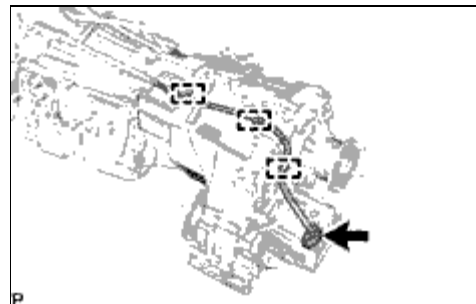


8. DISCONNECT WIRE HARNESS

(a) for 2GR-FKS:

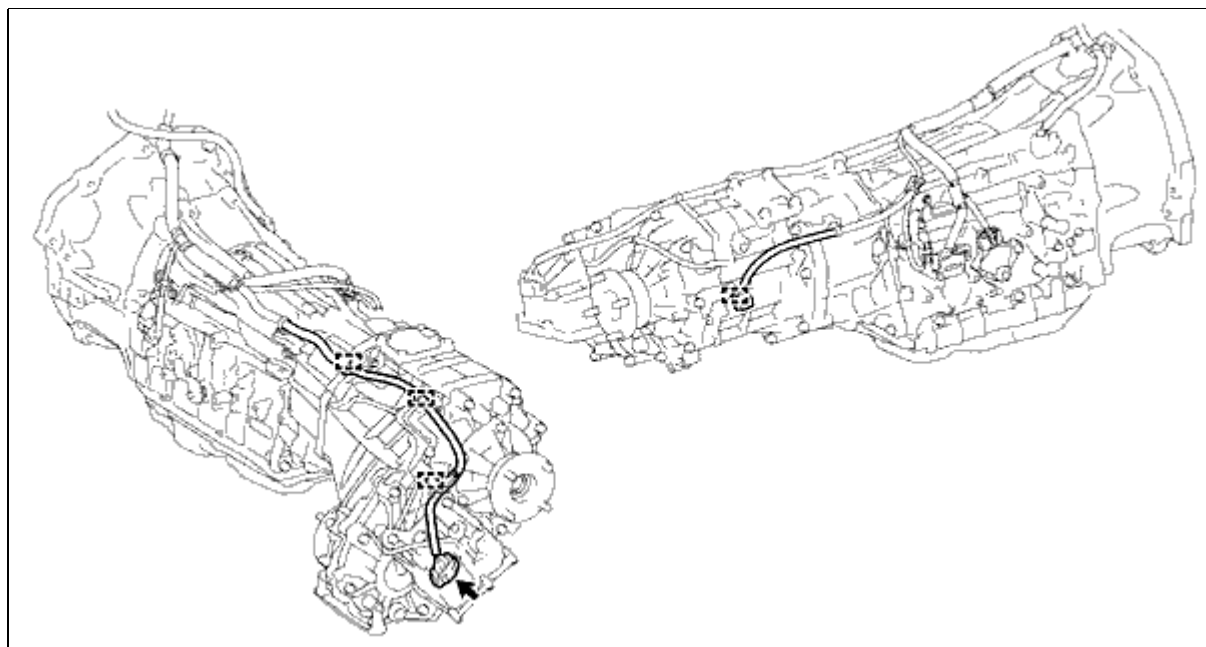
(1) Disconnect the connector.

(2) Disengage the 3 clamps to disconnect the wire harness.



(b) for 2TR-FE:

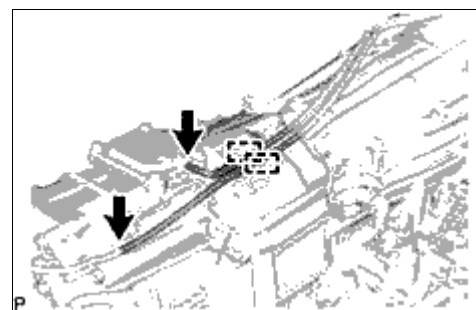
(1) Disconnect the connector.



(2) Disengage the 4 clamps to disconnect the wire harness.

9. DISCONNECT TRANSFER BREATHER HOSE SUB-ASSEMBLY

(a) Disconnect the 2 transfer breather hose subassemblies and detach the 2 clamps.

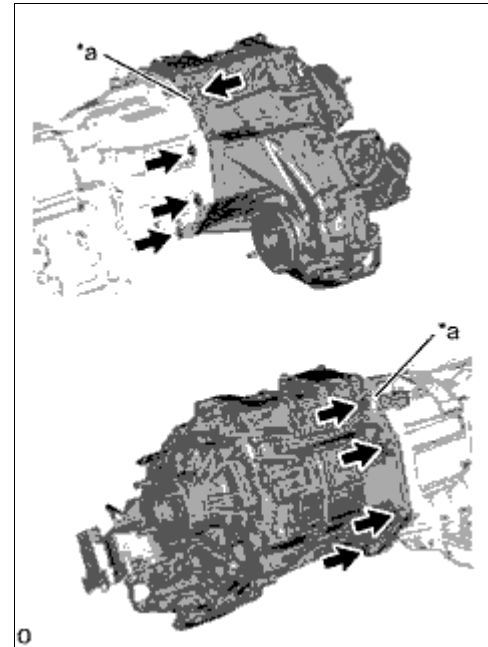


10. REMOVE TRANSFER ASSEMBLY

(a) Remove the 8 bolts and 2 clamps.

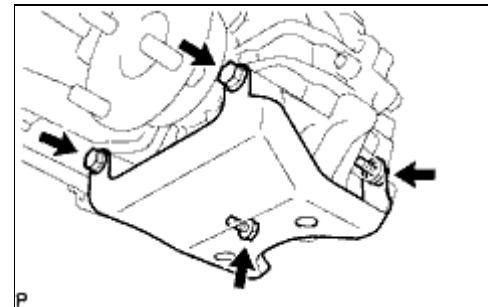
Text in Illustration

*1	Bracket
----	---------



11. REMOVE TRANSFER CASE LOWER PROTECTOR

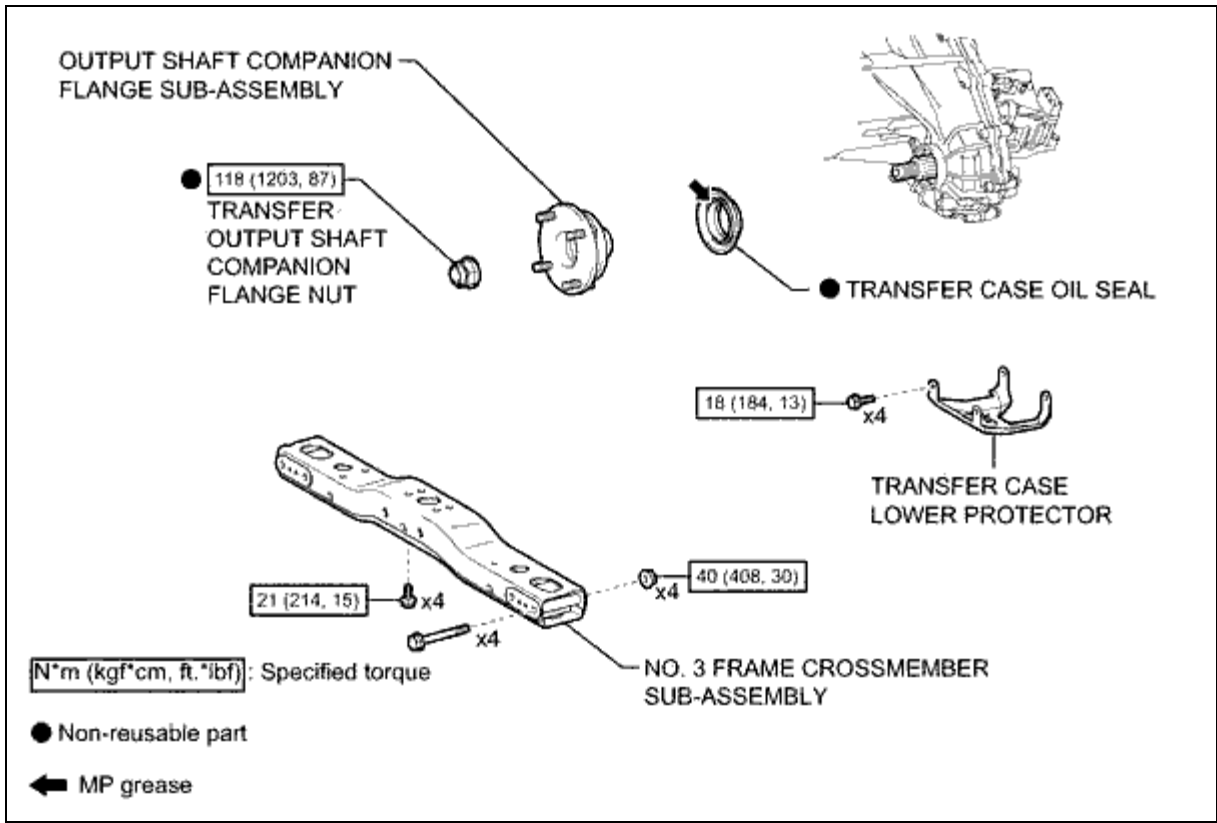
(a) Remove the 4 bolts and transfer case lower protector.



Last Modified: 11-13-2015	6.6 K	Doc ID: RM000005V2Z000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER CASE FRONT OIL SEAL: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000005V2Y000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER CASE FRONT OIL SEAL: REPLACEMENT; 2016 MY Tacoma [08/2015 -]		

REPLACEMENT

1. DRAIN TRANSFER OIL INFO

2. SUPPORT TRANSMISSION ASSEMBLY INFO

3. REMOVE NO. 3 FRAME CROSSMEMBER SUB-ASSEMBLY INFO

4. REMOVE TRANSFER CASE LOWER PROTECTOR INFO

5. REMOVE FRONT PROPELLER SHAFT ASSEMBLY

INFO

6. REMOVE OUTPUT SHAFT COMPANION FLANGE SUB-ASSEMBLY INFO

7. REMOVE TRANSFER CASE OIL SEAL

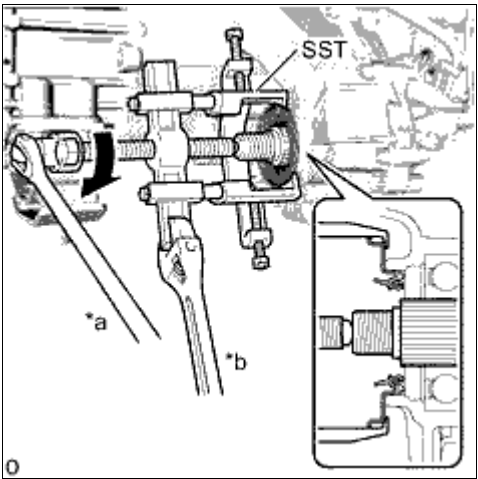
(a) Using SST, remove the transfer case oil seal.

SST: 09950-40011

- 09951-04020
- 09952-04010
- 09953-04030
- 09954-04010
- 09955-04031
- 09957-04010
- 09958-04011

Text in Illustration

*a	Turn
*b	Hold



NOTICE:

Apply a lubricant to the threads and end of SST.

8. INSTALL TRANSFER CASE OIL SEAL

(a) Coat the lip of a new transfer case oil seal with MP grease.

(b) Using SST and a hammer, install the transfer case oil seal until its metal ring contacts the case.

SST: 09710-30041

09710-03221

SST: 09950-60010

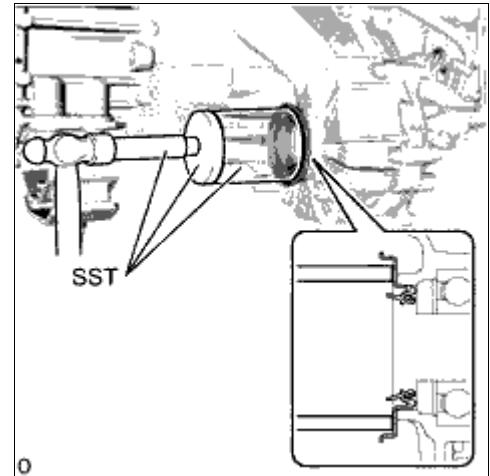
09951-00600

09951-00650

09952-06010

SST: 09950-70010

09951-07150



9. INSTALL OUTPUT SHAFT COMPANION FLANGE SUB-ASSEMBLY [INFO](#)

10. INSTALL FRONT PROPELLER SHAFT ASSEMBLY

[INFO](#)

11. INSTALL TRANSFER CASE LOWER PROTECTOR [INFO](#)

12. INSTALL NO. 3 FRAME CROSSMEMBER SUB-ASSEMBLY [INFO](#)

13. ADD TRANSFER OIL [INFO](#)

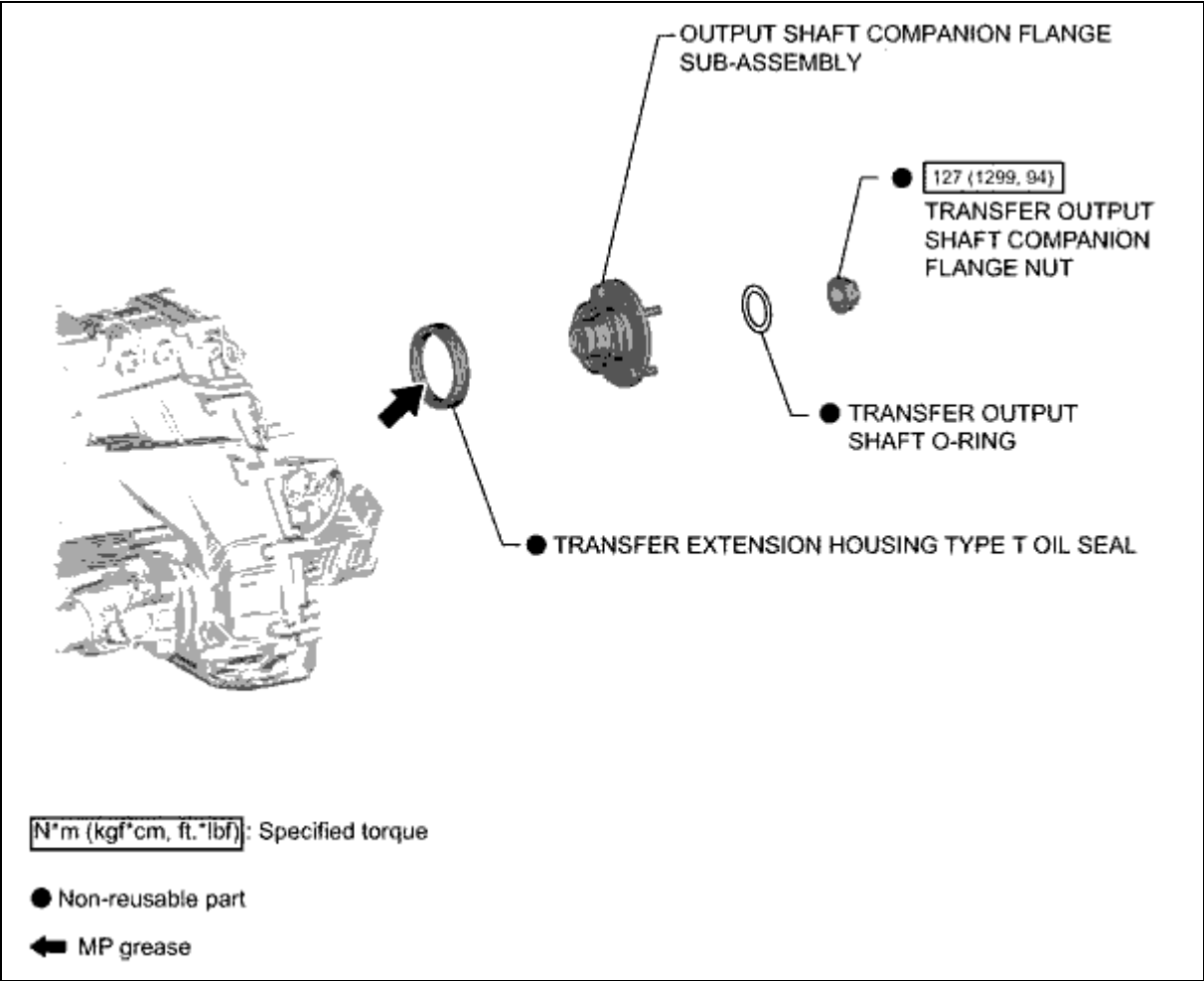
14. INSPECT FOR TRANSFER OIL LEAK



Last Modified: 11-13-2015	6.6 K	Doc ID: RM000005V31000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER CASE REAR OIL SEAL: COMPONENTS; 2016 MY Tacoma [08/2015 -]		

COMPONENTS

ILLUSTRATION



Last Modified: 11-13-2015	6.6 A	Doc ID: RM000005V30000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER CASE REAR OIL SEAL: REPLACEMENT; 2016 MY Tacoma [08/2015 -]		

REPLACEMENT

1. DRAIN TRANSFER OIL INFO

2. REMOVE PROPELLER WITH CENTER BEARING SHAFT ASSEMBLY

INFO

3. REMOVE OUTPUT SHAFT COMPANION FLANGE SUB-ASSEMBLY INFO

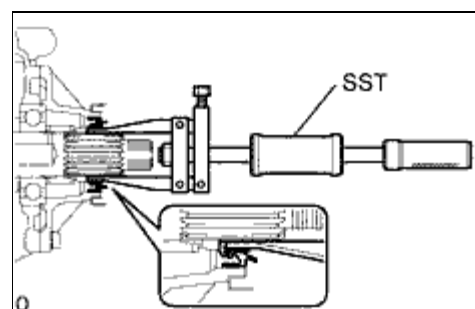
4. REMOVE TRANSFER EXTENSION HOUSING TYPE T OIL SEAL

- (a) Using SST, remove the transfer extension housing type T oil seal.

SST: 09308-00010

NOTICE:

Be careful not to damage the transfer extension housing type T oil seal and extension housing contact surface.



5. INSTALL TRANSFER EXTENSION HOUSING TYPE T OIL SEAL

- (a) Coat the lip of a new transfer extension housing type T oil seal with MP grease.

- (b) Using SST and a hammer, install the transfer extension housing type T oil seal as shown in the illustration.

SST: 09631-12090

SST: 09950-60010

09951-00600

SST: 09950-70010

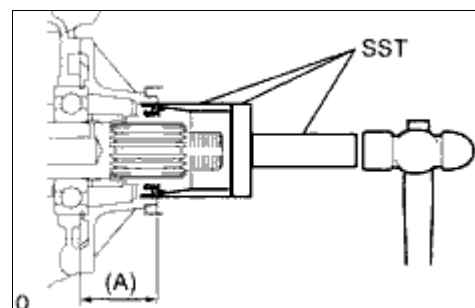
09951-07100

Drive in depth (A):

48.5 to 49.5 mm (1.910 to 1.948 in.)

NOTICE:

Be careful not to damage the transfer extension housing type T oil seal.



6. INSTALL OUTPUT SHAFT COMPANION FLANGE SUB-ASSEMBLY INFO

7. INSTALL PROPELLER WITH CENTER BEARING SHAFT ASSEMBLY

INFO

8. ADD TRANSFER OIL INFO

9. CHECK FOR TRANSFER OIL LEAK



Last Modified: 11-13-2015	6.6 G	Doc ID: RM000005V2X000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER OIL: ON-VEHICLE INSPECTION; 2016 MY Tacoma [08/2015 -]		

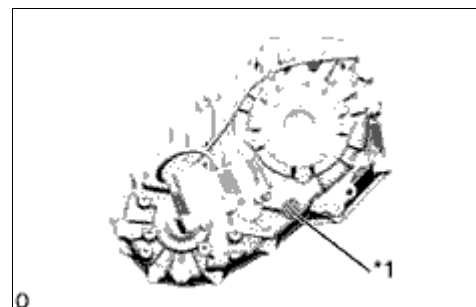
ON-VEHICLE INSPECTION

1. CHECK TRANSFER OIL

- (a) Remove the filler plug and gasket.

Text in Illustration

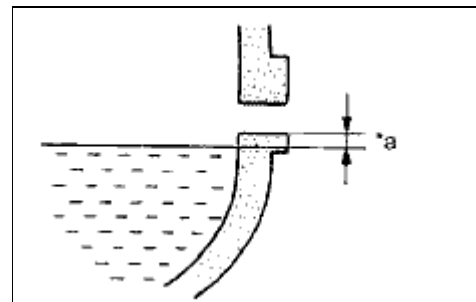
*1	Filler Plug
----	-------------



- (b) Check that the oil level is between 0 to 5.0 mm (0 to 0.196 in.) from the bottom lip of the filler plug hole.

Text in Illustration

*a	0 to 5.0 mm
----	-------------



If the result is not as specified, add transfer oil.

Oil grade:

Toyota Genuine Transfer Gear Oil LF or Equivalent

Viscosity:

SAE 75W

NOTICE:

Too much or too little oil will lead to transfer problems.

- (c) When the oil level is too low, check for oil leakage.
(d) Install a new gasket to the filler plug, and then install the filler plug.

Torque:

37 N·m {377 kgf·cm, 27ft·lbf}



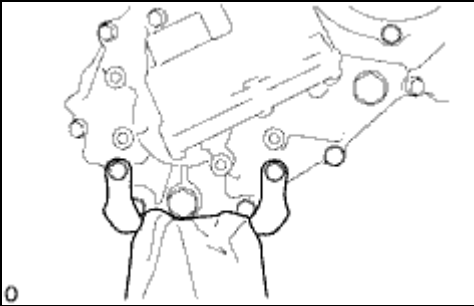
Last Modified: 11-13-2015	6.6 A	Doc ID: RM000005V2W000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER OIL: REPLACEMENT; 2016 MY Tacoma [08/2015 -]		

REPLACEMENT

1. DRAIN TRANSFER OIL

NOTICE:

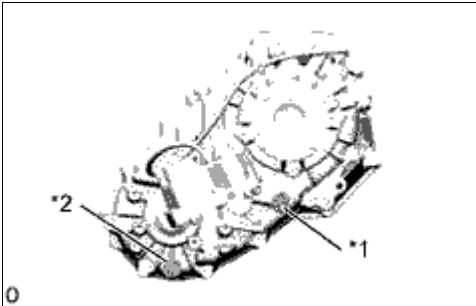
Before proceeding with work, wedge a cloth or similar item into the transfer case lower protector to prevent transfer oil from sticking to the transfer case protector cushion.



(a) Remove the filler plug and gasket.

Text in Illustration

*1	Filler Plug
*2	Drain Plug



- (b) Remove the drain plug and gasket to drain the transfer oil.
- (c) Install a new gasket to the drain plug, and then install the drain plug.

Torque:

37 N·m {377 kgf·cm, 27ft·lbf}

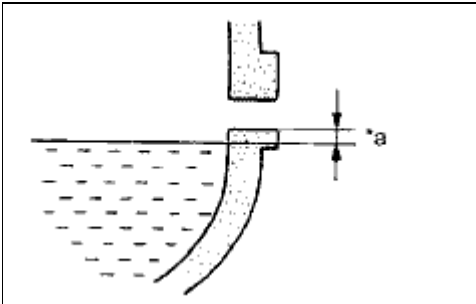
2. ADD TRANSFER OIL

- (a) Add oil so that the oil level is between 0 to 5.0 mm (0 to 0.196 in.) from the bottom lip of the filler plug hole.

Text in Illustration

*a	0 to 5.0 mm
----	-------------

Oil grade:
 Toyota Genuine Transfer Gear Oil LF or Equivalent
 Viscosity:
 SAE 75W
 Standard capacity:



1.0 liters (1.1 US qts, 0.9 Imp. qts)

NOTICE:

Too much or too little oil will lead to transfer problems.

(b) Install a new gasket to the filler plug, and then install the filler plug.

Torque:

37 N·m {377 kgf·cm, 27ft·lbf}

NOTICE:

- When adding transfer oil, make sure the vehicle is level.
- An excessively large or small amount of oil may cause problems.
- After adding oil, drive the vehicle and recheck the oil level.

(c) Inspect for transfer oil leaks.



Last Modified: 11-13-2015	6.6 L	Doc ID: RM0000016PZ019X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER SYSTEM: PRECAUTION; 2016 MY Tacoma [08/2015 -]		

PRECAUTION

- Before disassembly, clean the transfer assembly and remove any deposited sand and mud to prevent it from entering the transfer during disassembly and assembly.
- When removing any light alloy parts such as the transfer covers, do not pry them off with a tool like a screwdriver, but tap them out with a plastic hammer.
- Always organize the removed parts properly and protect them from dust.
- After cleaning and drying the transfer completely before installation, apply hypoid gear oil to each part. Do not use alkaline chemicals when cleansing aluminum or rubber parts or ring gear set bolts. Also, do not use any cleansing oil (ex. non-residue solvent) to clean rubber parts such as oil seals.
- Apply sufficient hypoid gear oil to all sliding surfaces and rotating parts.
- Do not directly hold any parts in a vise. Be sure to put an aluminum sheet between them.
- Replace any damaged or deformed snap rings with new ones.
- If the mating surface of the case is scratched, it could cause oil leakage. Therefore, handle with care to prevent such damage.
- Using a razor blade and gasket scraper, remove old seal packing from the seal surface.
- Clean all the components to remove the redundant seal packing completely.
- Clean the sealing surface with solvent so that no residue remains on the seal surface.
- Apply a line of seal packing approximately 1.2 mm (0.0472 in.) diameter of bead state along the sealing surface.
- Be sure to assemble parts within 10 minutes of application. Otherwise, the seal packing must be removed and reapplied.
- Do not pour in oil immediately after installing sealed parts. Leave it for at least an hour.
- Scratches on the contact surface with an oil seal or gasket could cause oil leakage. Handle with care to prevent such damage.
- When press-fitting an oil seal, take care to prevent the oil seal lip and its periphery from being damaged.



Last Modified: 11-13-2015	6.6 T	Doc ID: RM0000016Q001FX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: VF2CM TRANSFER: TRANSFER SYSTEM: PROBLEM SYMPTOMS TABLE; 2016 MY Tacoma [08/2015 -]		

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, 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 as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

SYMPTOM	SUSPECTED AREA	SEE PAGE
Noise	1. Oil (Level low)	INFO
	2. Oil (Wrong)	INFO
	3. Transfer faulty	INFO
Oil leakage	1. Oil (Level too high)	INFO
	2. Gasket (Damaged)	INFO
	3. Oil seal (Worn or damaged)	INFO
	4. O-ring (Worn or damaged)	INFO
Tight corner braking	1. Transfer faulty	INFO

