CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION

Un-tapped Pressure Ports

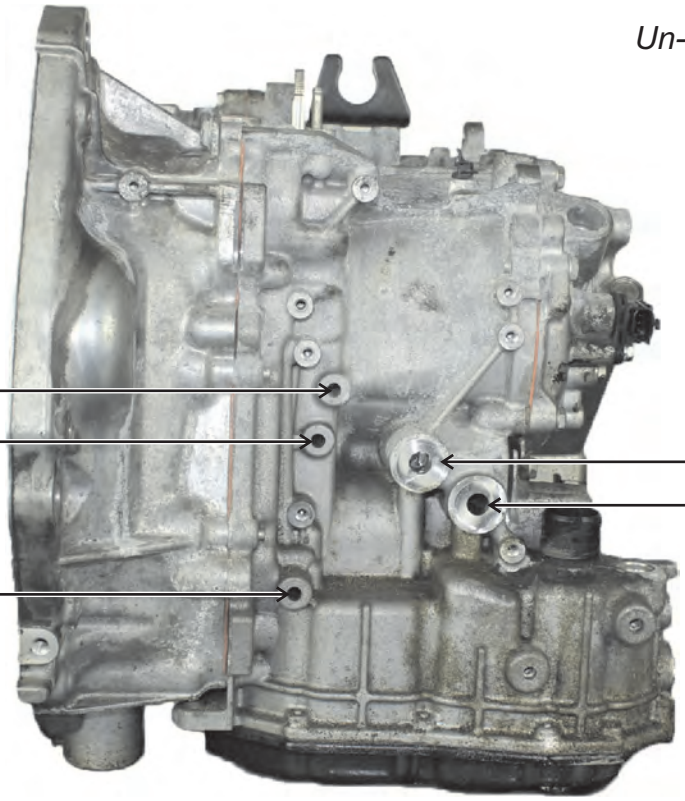
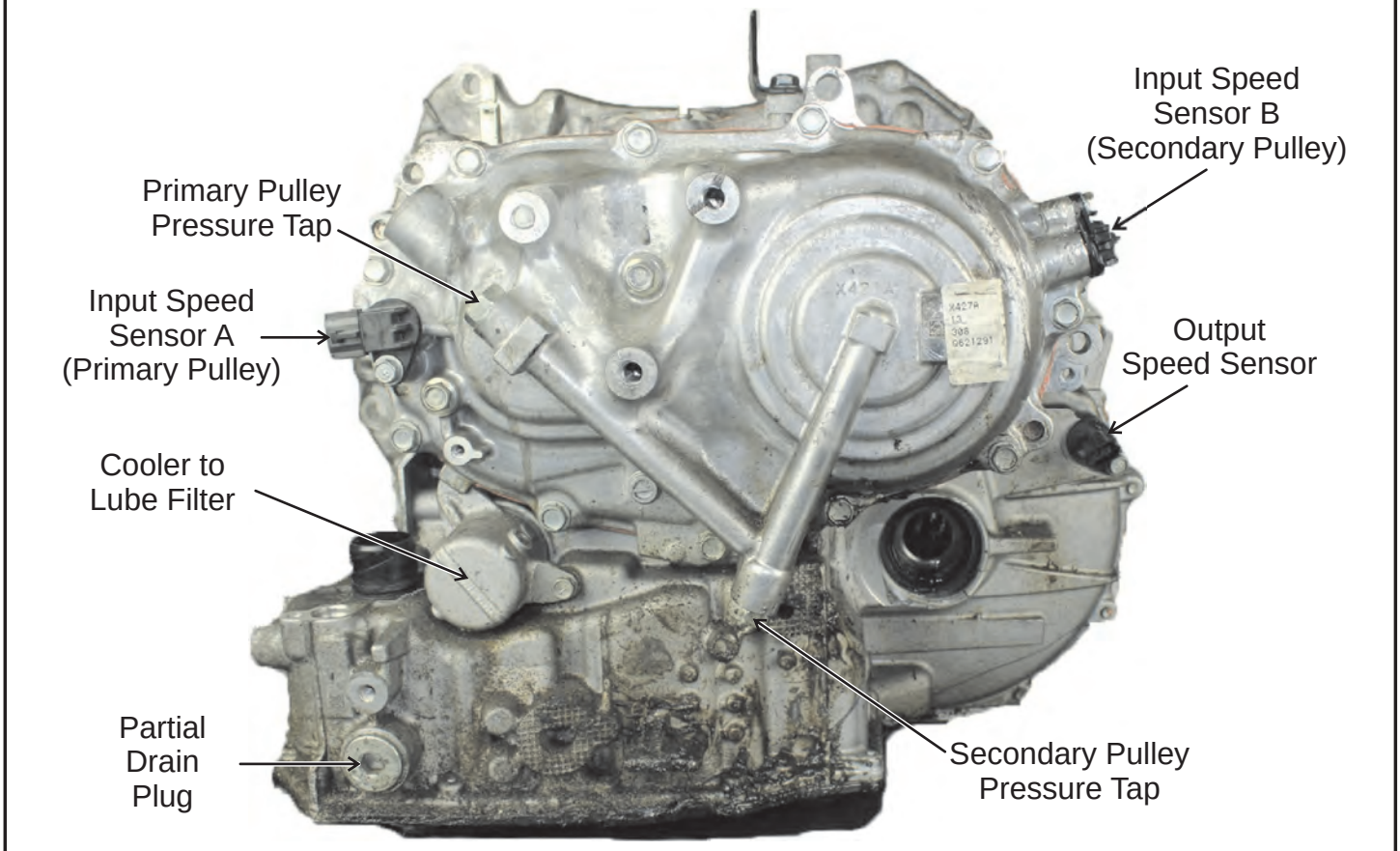
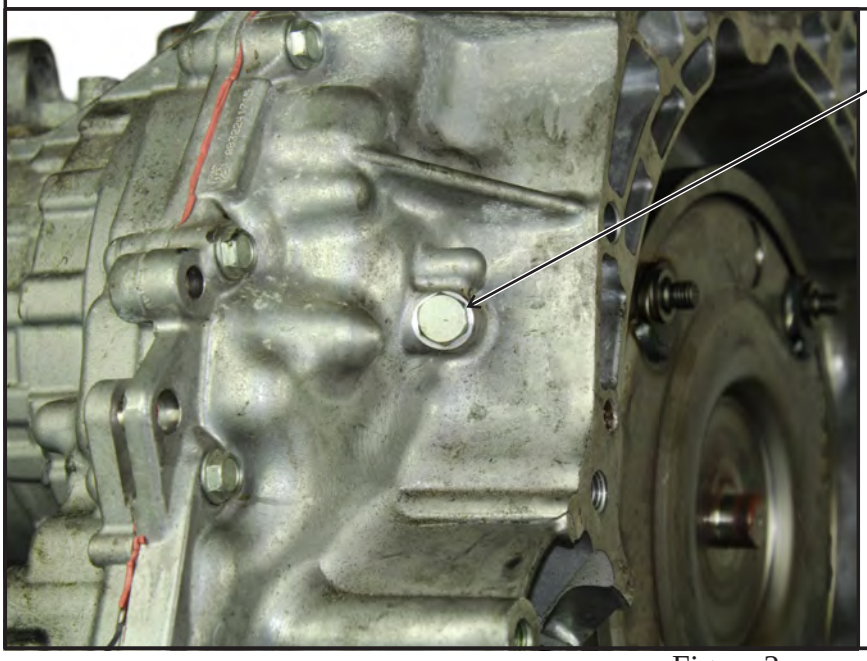


Figure 1

CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION





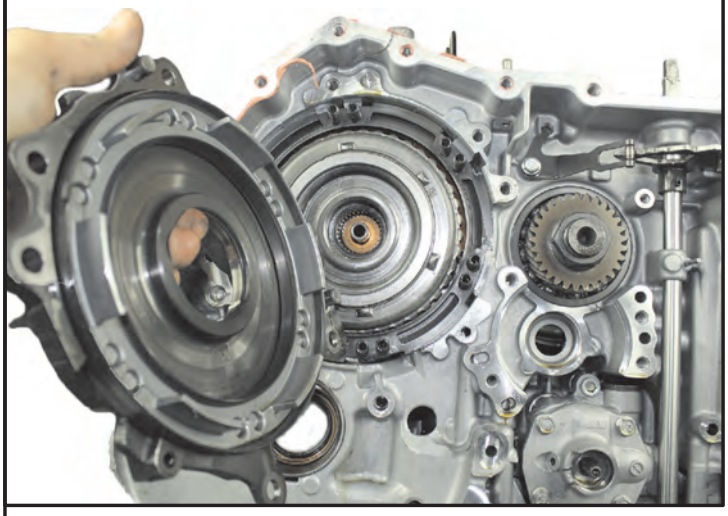
Main line pressure specifications:
P/N Idle - 5 Bars (72.5 psi)

D/R Idle 5-13 Bars (72.5-200psi)
D/R Stall 41.8-46.8 Bars (607-680psi)

Figure 2

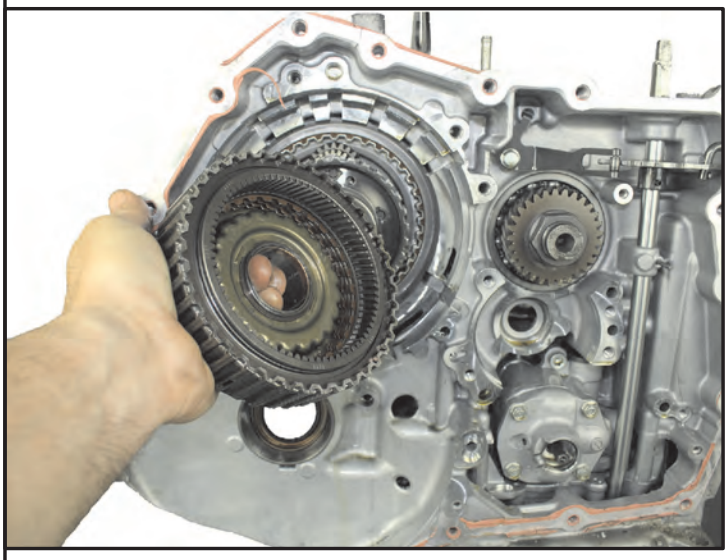
CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION



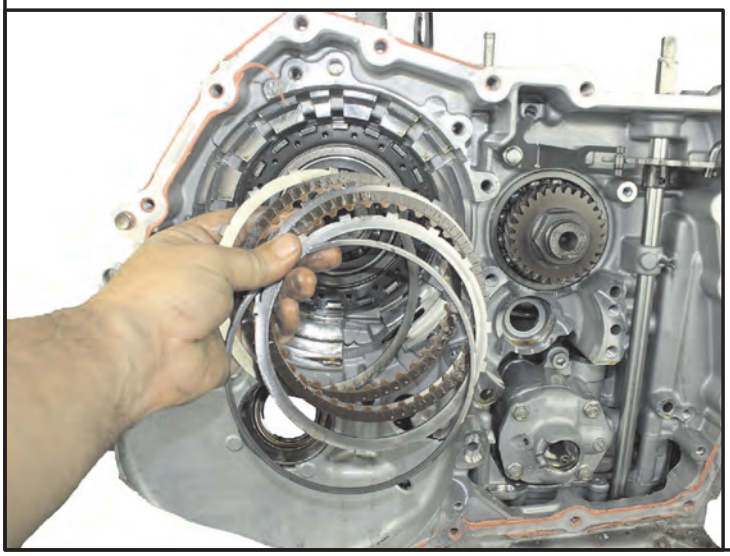
A torque converter is used to drive the input shaft which drives the pulley assembly. In-between the pulley assembly and the differential is the "Auxiliary Transmission" section. This consists of a Reverse Brake, High Clutch, Low Brake and a Ravigneaux planetary gear set.

When dismantling the transmission the Reverse Brake Assembly is the first to come out as seen to the left.



The High Clutch Drum is next to come out which includes the ring gear. When the Reverse Brake applies it holds the High Clutch Drum and ring gear stationary providing a reverse ratio 1.714 gear reduction.

The High Clutch friction plates spline to the ravigneaux carrier which is next to be removed. This carrier is driven by the secondary pulley. When the High Clutch is applied, it locks the ring gear to the carrier providing a 1 to 1 direct drive ratio.



The sun gear is next to be removed followed by the Low Brake assembly. The Low Brake assembly when applied holds the sun gear stationary providing a forward gear reduction ratio of 1.821.

The Formula:

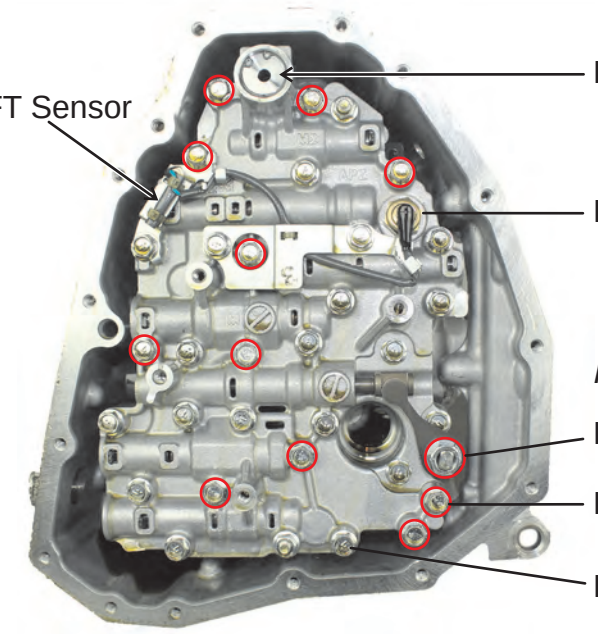
Pulley Ratio x Aux-Trans Gear Ratio provides a 4.0 low gear ratio to 0.55 high gear ratio.

4.0 divided by 0.55 = 7.273 Ratio Coverage

Figure 3

CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION



Removing the VB assembly:

Remove manual valve lever nut and lever

Remove 11 bolts with the # 7 mark

Do not remove bolts with the # 4 mark

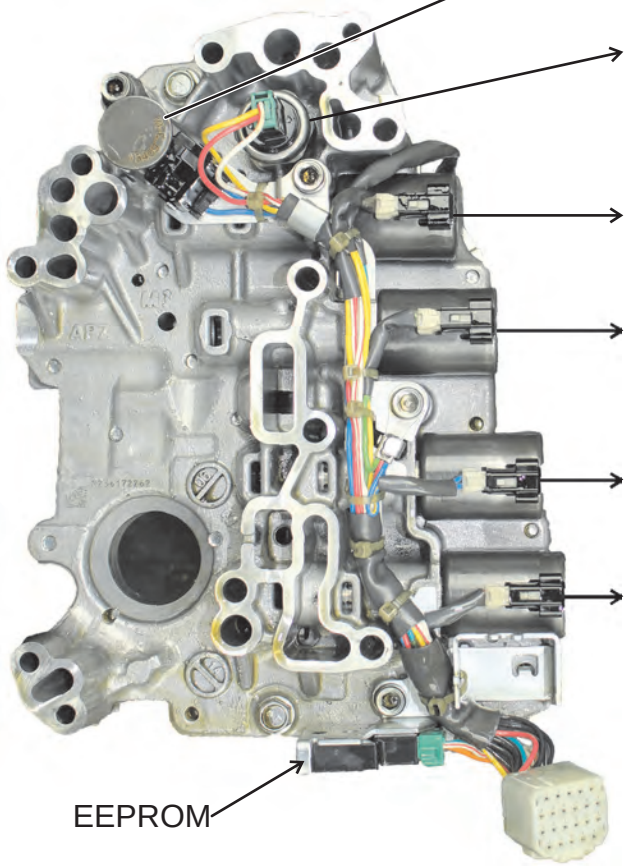
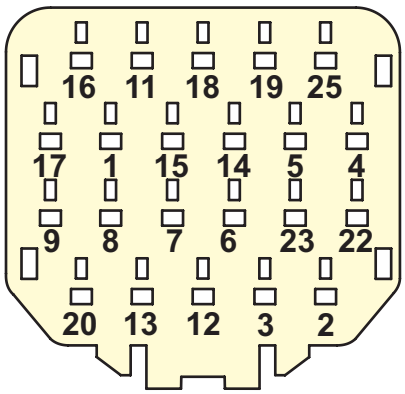


Figure 4

CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION

Transmission Case Connector



Internal Harness Connector

Note: Terminal identification has been obtained from Nissan information. Terminal identification may be different with other manufacturers using this transmission (Mitsubishi, Suzuki etc.).

Terminal		Component	Condition	Value
+	-			
2	GND*	Line Pressure Solenoid (A)	20°C (68°F) 50°C (122°F) 80°C (176°F)	5.3Ù 6.0Ù 6.7Ù
3	GND*	Primary Pressure Solenoid (B)	20°C (68°F) 50°C (122°F) 80°C (176°F)	5.3Ù 6.0Ù 6.7Ù
6	GND*	TCC Solenoid	20°C (68°F) 50°C (122°F) 80°C (176°F)	6.1Ù 6.9Ù 7.7Ù
22	GND*	Low Brake Solenoid (F)	20°C (68°F) 50°C (122°F) 80°C (176°F)	5.3Ù 6.0Ù 6.7Ù
23	GND*	H. C. & R. B. Solenoid (G)	20°C (68°F) 50°C (122°F) 80°C (176°F)	5.3Ù 6.0Ù 6.7Ù

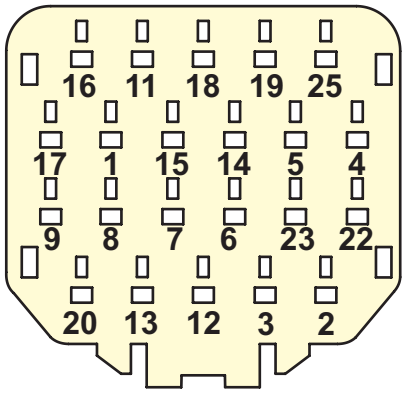
**Each solenoid is internally grounded - use case for ground when checking resistance from the case connector. Use solenoid harness bracket for ground when checking resistance from the internal harness connector.*

Figure 5

CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION

Transmission Case Connector



Internal Harness Connector

Note: Terminal identification has been obtained from Nissan information. Terminal identification may be different with other manufacturers using this transmission (Mitsubishi, Suzuki etc.).

Terminal		Component	Condition	Value
+	-			
4	25	CVT Fluid Temp. Sensor	20°C (68°F) 50°C (122°F) 80°C (176°F)	2.00 V or 6.5 kÙ 1.50 V or 2.2 kÙ 0.90 V or 0.87 kÙ
16	Case Gnd.	Sec. Pulley Press. Sensor	Idle in Neutral	0.88-.094 V

Note: The high clutch pressure switch is a normally open switch. At the time of this printing, the pressure specification to close the switch was not available.

Additionally, this high clutch pressure switch is not mentioned in Nissan factory information nor is it shown in wiring diagrams. The transmission used to produce this material has this pressure switch wired to terminal 17. Internally, this wire also splices to one of the wires going to the EEPROM. The EEPROM has a total of 5 wires plugging into it. One shares a ground with both the fluid temperature sensor and the secondary pulley pressure sensor (Terminal 25). Another is a 5 volt power supply for the EEPROM and the secondary pulley pressure sensor (Terminal 16). The remaining two wires go to terminals 1 and 15. Typically, this style pressure switch receives voltage from the TCM. When the switch closes, it pulls the voltage to ground providing a confirmation signal to the computer. This would suggest that the EEPROM is receiving this signal as a hard input as well.

Figure 6

CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION

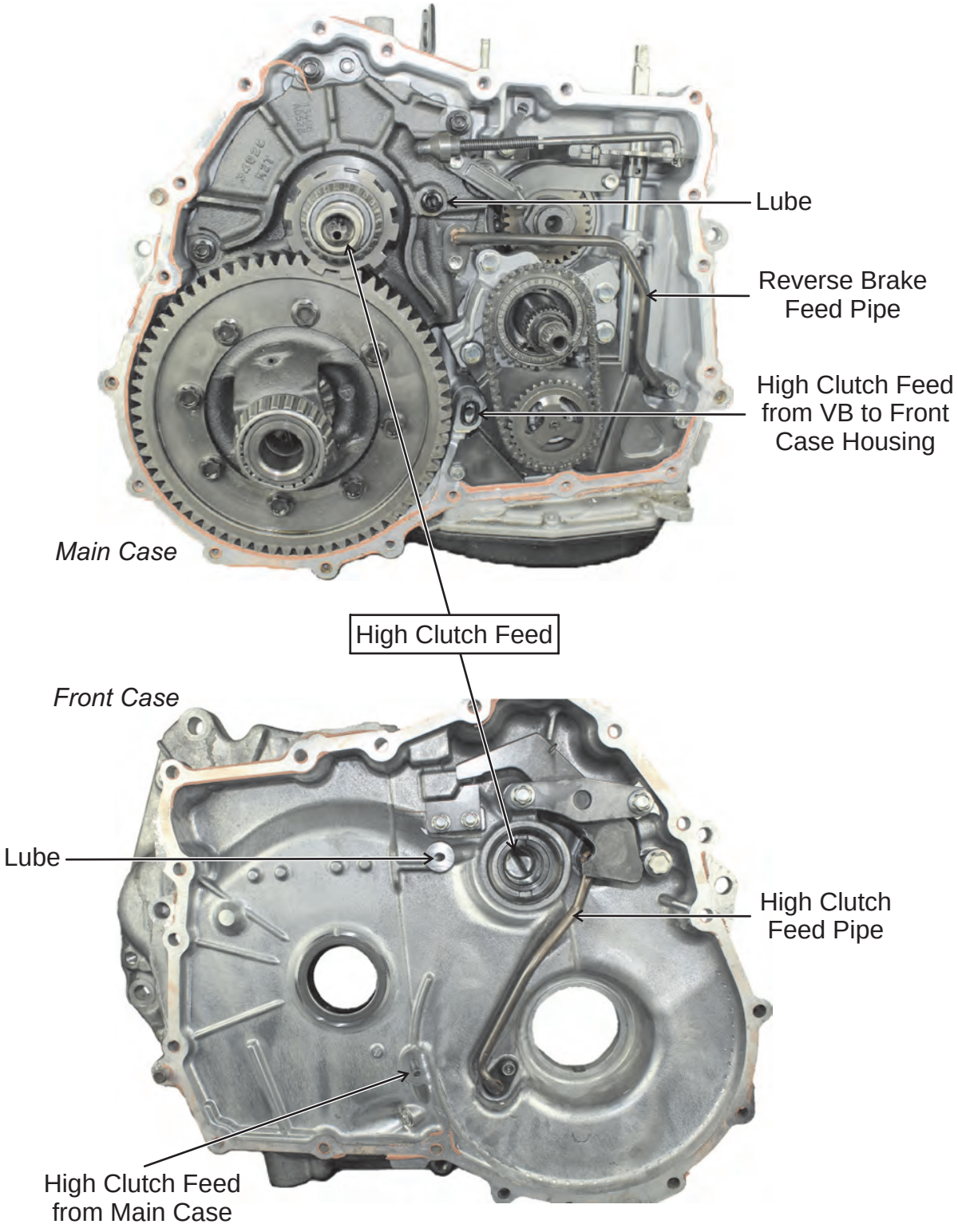
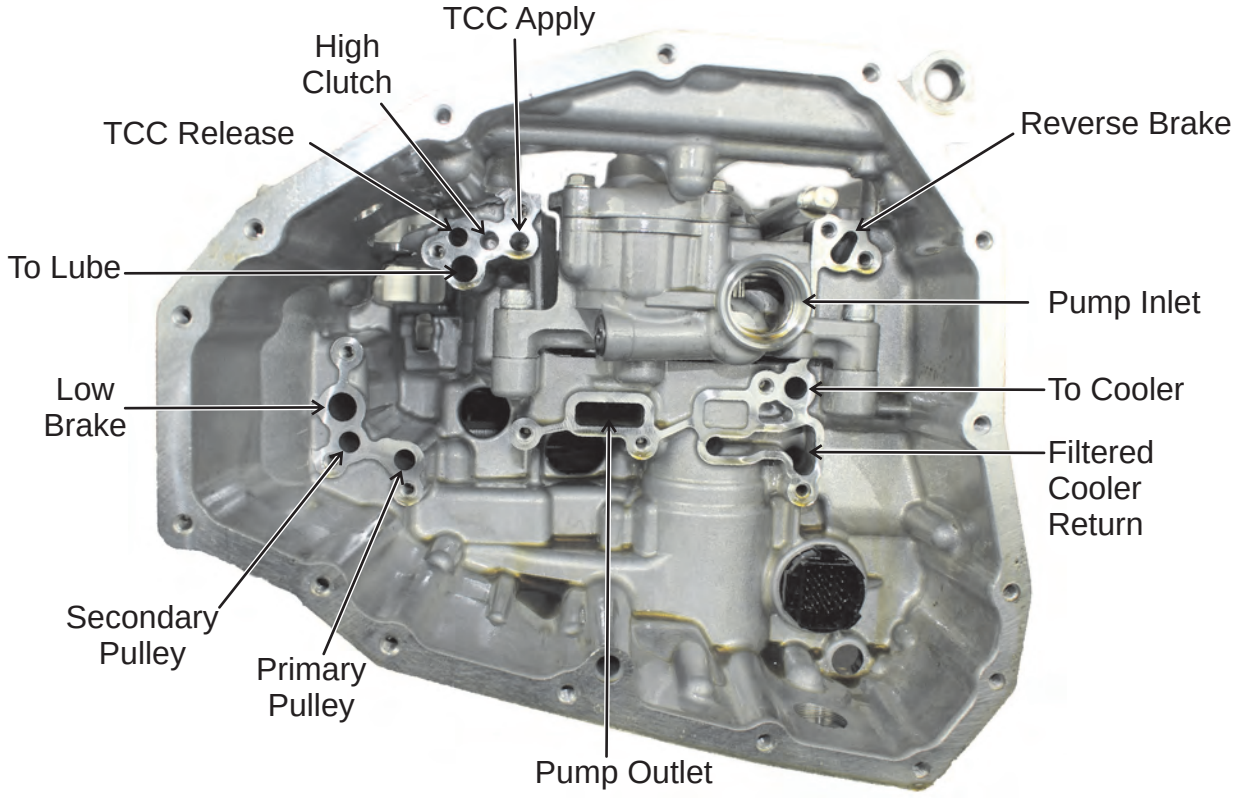


Figure 7

CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION



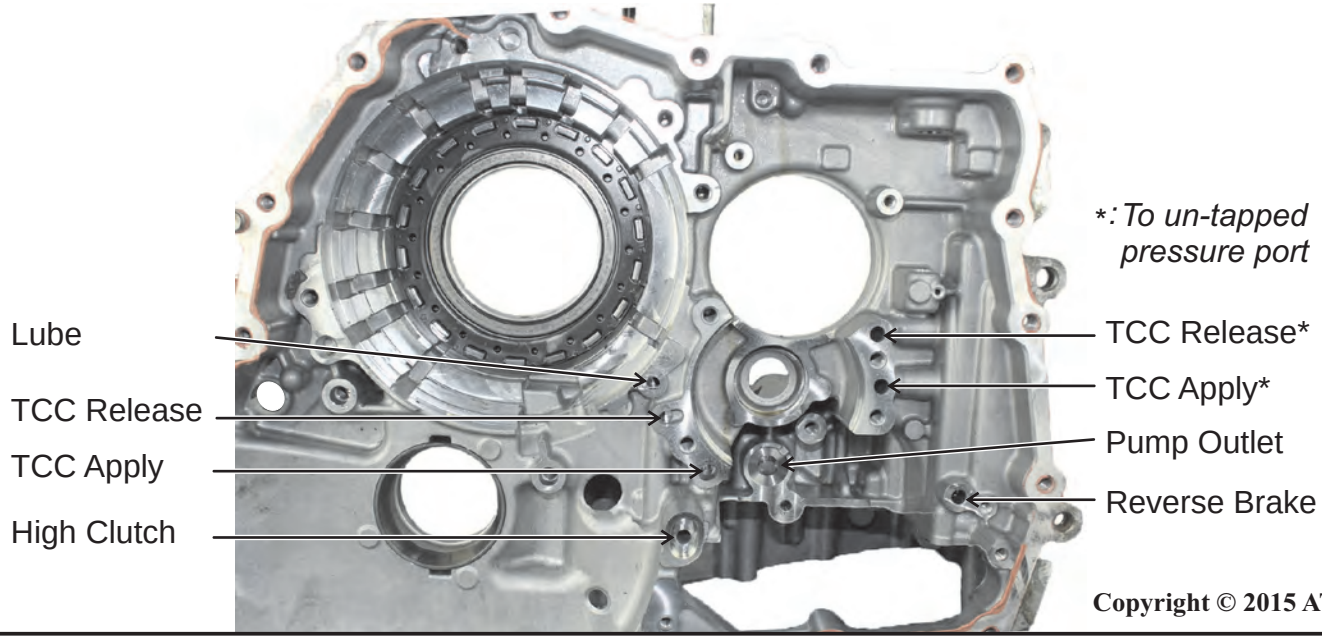
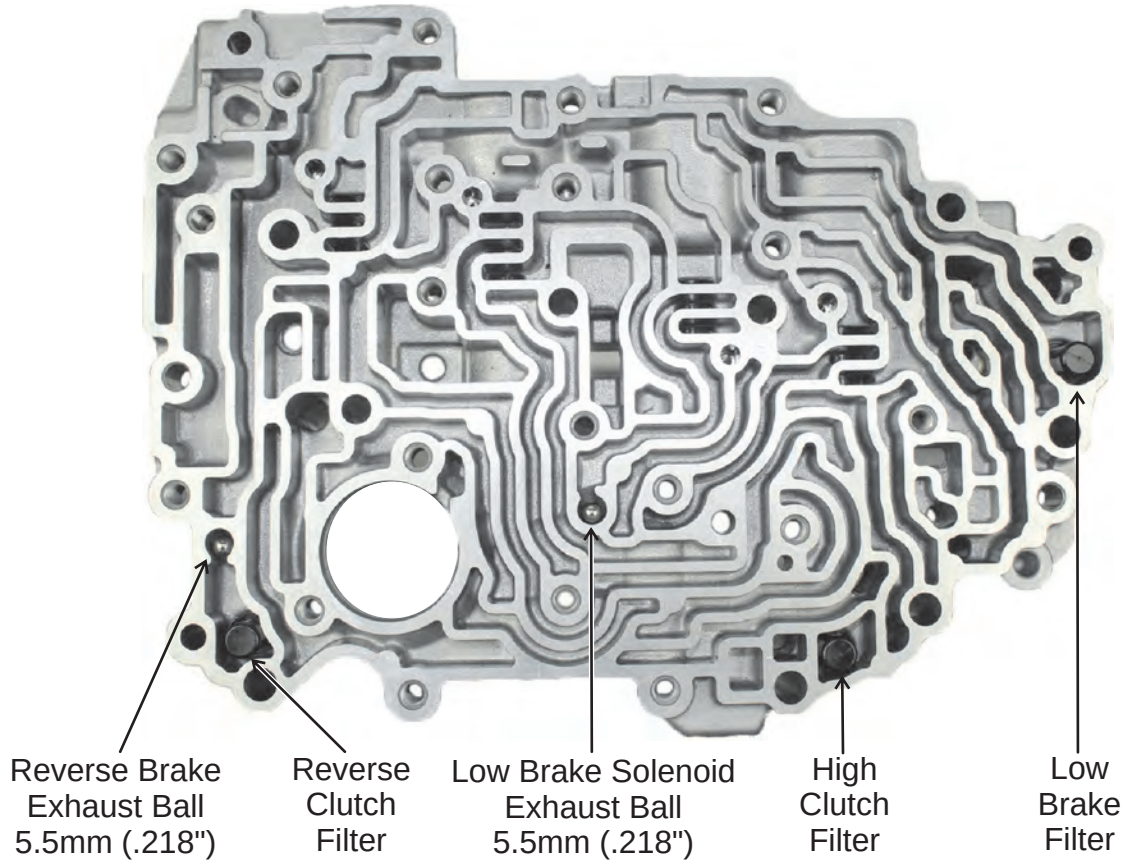


Figure 8

CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION



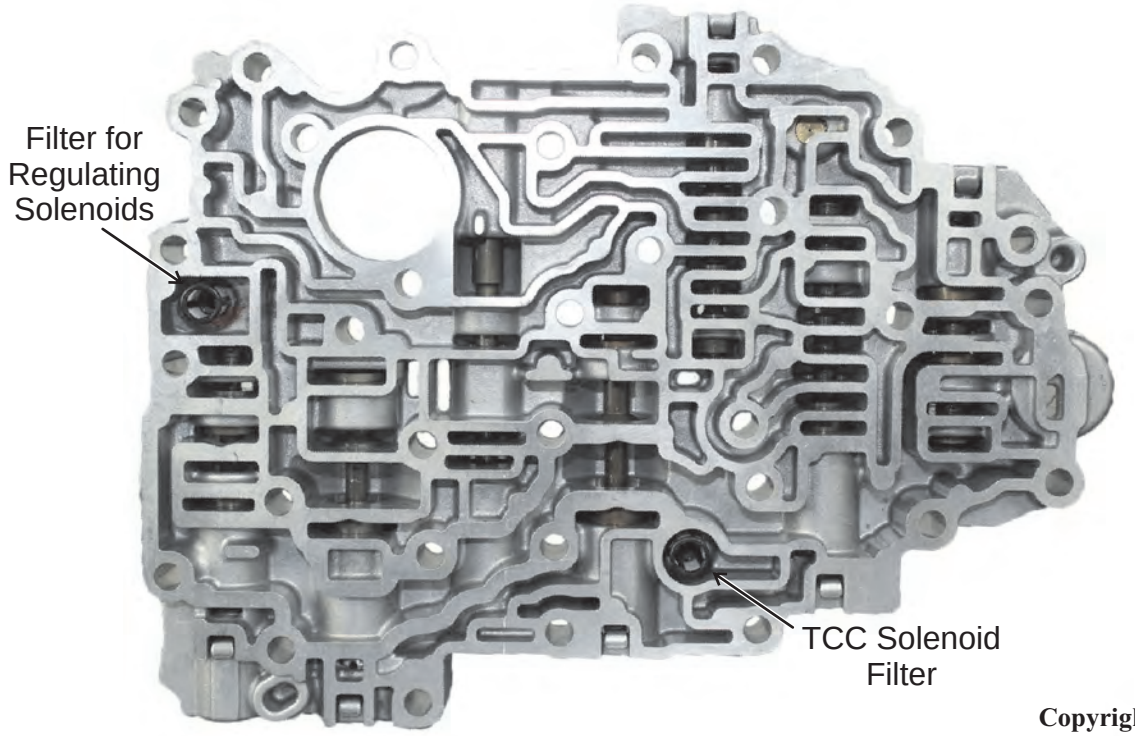
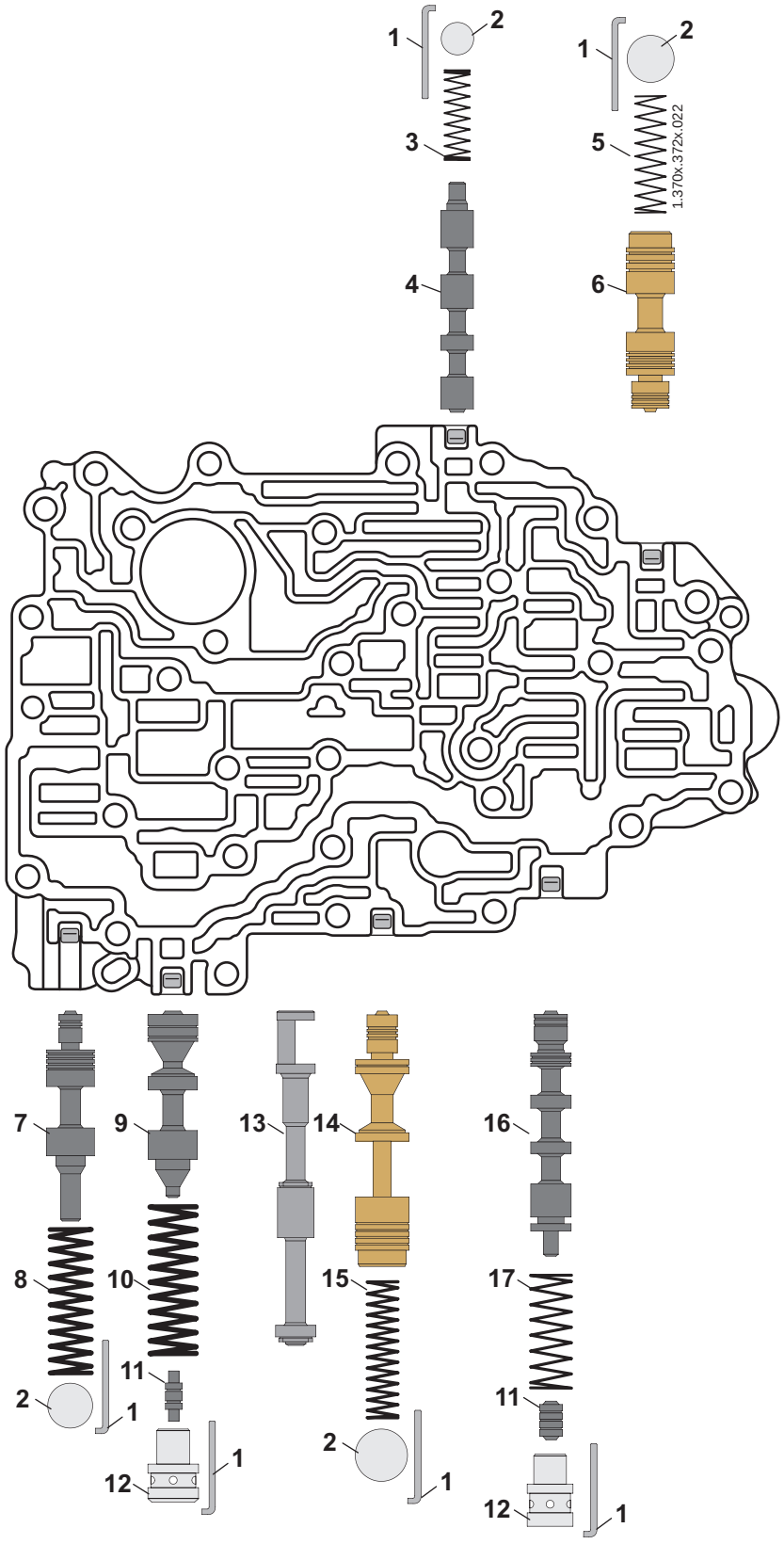


Figure 9

CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION



1. Retainer
2. Bore Plug
3. 1.064 x .319 x .022 x 11
4. Select Relay Valve
5. 1.370 x .372 x .022 x 11
6. Primary Pulley Reg. Valve
7. Solenoid Regulator Valve
8. 1.685 x .485 x .055 x 12
9. TCC Regulator Valve
10. 1.722x.540x.062 x 11
11. Boost Valve
12. Boost Valve Sleeve
13. Manual Valve
14. Secondary Pulley Reg. Valve
15. .595 x .360 x .038 x 14
16. TCC Control Valve
17. 1.325 x .480 x .035 x 9

Disclaimer: *Valve names provided by ATSG based on function. Names may change when O.E. information becomes available.*

Figure 10

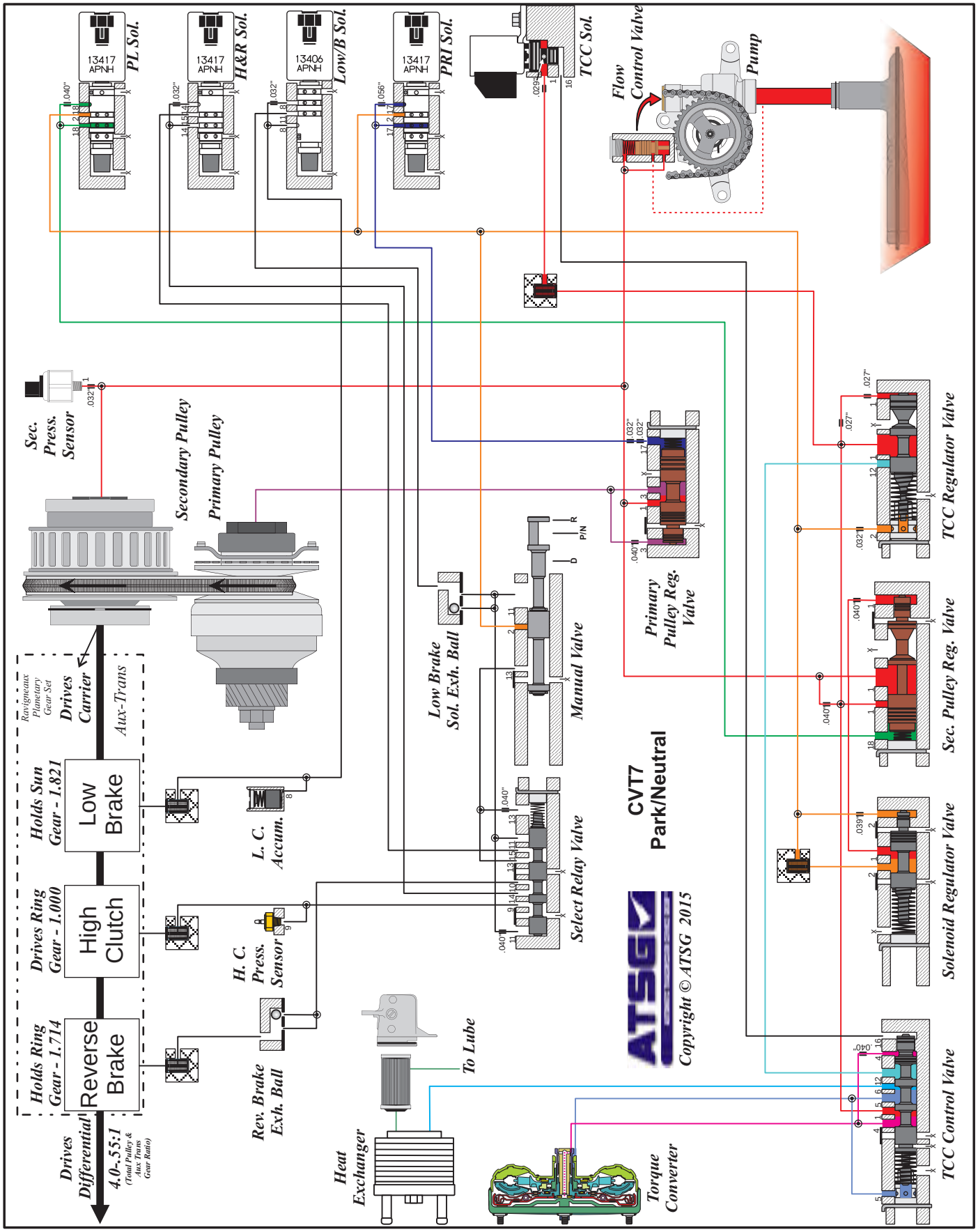

13417 APNH
PL Sol.
13417 APNH
H&R Sol.
13406 APNH
Low/B Sol.
13417 APNH
PRI Sol.
TCC Sol.
Flow Control Valve
Pump
Sec. Press. Sensor
Secondary Pulley
Primary Pulley
Primary Pulley Reg. Valve
TCC Regulator Valve
Sec. Pulley Reg. Valve
Solenoid Regulator Valve
TCC Control Valve
Low Brake Sol. Exh. Ball
Manual Valve
Select Relay Valve
CVT7
Park/Neutral
L. C. Accum.
H. C. Press. Sensor
Rev. Brake Exh. Ball
To Lube
Heat Exchanger
Torque Converter
Ravigneaux Planetary Gear Set
Drives Carrier
Aux-Trans
Holds Sun Gear - 1.821
Low Brake
Drives Ring Gear - 1.000
High Clutch
Holds Ring Gear - 1.714
Reverse Brake
Drives Differential
4.0-.55:1
(Total Pulley & Aux Trans Gear Ratio)
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Figure 11

CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION

Fluid Fill Information

- Use only Genuine NISSAN CVT Fluid NS-3. Using transmission fluid other than Genuine NISSAN CVT Fluid NS-3 will damage the CVT, which is not covered by the (NISSAN new vehicle limited) warranty. ***Total fluid capacity - 6.9L (7 1/4 Quarts)***

- Always use shop paper. Never use shop cloth.

- Replace a drain plug gasket with new ones at the final stage of the operation when installing.

- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.

- After replacement, always perform CVT fluid leakage check.

1. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
2. Select "FLUID TEMP" and confirm that the CVT fluid temperature is 40°C (104°F) or less.
3. Check that the selector lever is in the "P" position, then completely engage the parking brake.
4. Lift up the vehicle.
5. Using a 19mm socket remove the drain plug. Using a 5mm allen socket, remove the overflow tube and drain the CVT fluid from the oil pan.
6. Install the charging pipe set (KV311039S0) (A) into the drain hole. Tighten the charging pipe by hand.
7. Install the ATF changer hose (B) to the charging pipe. Press the ATF changer hose all the way onto the charging pipe until it stops.
8. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.
9. Remove the ATF changer hose and charging pipe, then install the drain plug. NOTE: Perform this work quickly because CVT fluid leaks.
10. Lift down the vehicle.
11. Start the engine.
12. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "L", and shift it to the "P" position. NOTE: Hold the lever at each position for 5 seconds.
13. Check that the CONSULT "Data monitor" in "FLUID TEMP" is 35°C (95°F) to 45°C (113°F).
14. Stop the engine.
15. Lift up the vehicle.
16. Remove the drain plug, and then drain CVT fluid from oil pan.
17. Repeat steps 6 to 16 (one time).
18. Install the overflow tube to 3.5 Nm.
19. Install the charging pipe set (KV311039S0) (A) into the drain hole. Tighten the charging pipe by hand.
20. Install the ATF changer hose (B) to the charging pipe. Press the ATF changer hose all the way onto the charging pipe until it stops.
21. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 lmp qt) of the CVT fluid.
22. Remove the ATF changer hose and charging pipe, then install the drain plug. NOTE: Perform this work quickly because CVT fluid leaks.

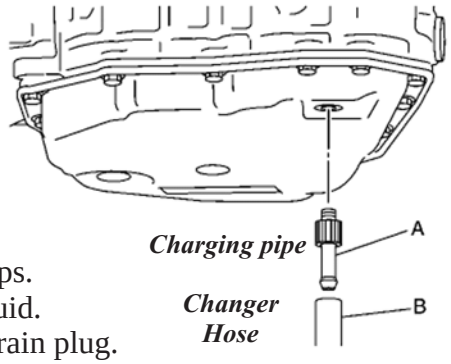

Figure 12

CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION

Fluid Fill Information

23. Let down the vehicle.
24. Start the engine.
25. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "L", and shift it to the "P" position. NOTE: Hold the lever at each position for 5 seconds.
26. Check that the CONSULT "Data monitor" in "FLUID TEMP" is 35°C (95°F) to 45°C (113°F).
27. Lift up the vehicle.
28. Remove the drain plug and confirm that the CVT fluid is drained from the overflow tube. Perform this work with the vehicle idling.
29. When the flow of CVT fluid slows to a drip, tighten the drain plug to 34.3 Nm.
30. Let down the vehicle.
31. Select "Work Support" in "TRANSMISSION" using CONSULT.
32. Select "CONFIRM CVTF DETERIORTN".
33. Touch "Erase".
34. Stop the engine.

Charging Pipe
Part # KV311039S0

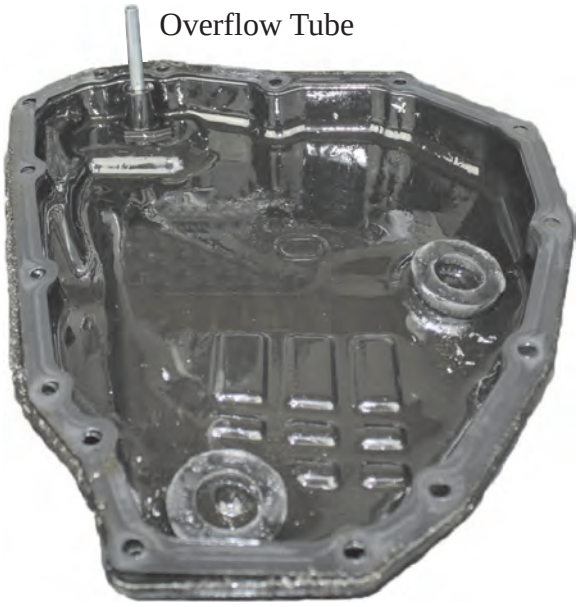

Figure 13

CVT 7 - JF015E/RE0F11A/F1CJB

INTRODUCTION

NISSAN DTC LIST

DTC	DESCRIPTION
DTC U0073	COMMUNICATION BUS A OFF
DTC U0100	LOST COMMUNICATION (ECM A)
DTC U0140	LOST COMMUNICATION (BCM)
DTC U0141	LOST COMMUNICATION (BCM A)
DTC U0155	LOST COMMUNICATION (IPC)
DTC U0300	CAN COMMUNICATION DATA
DTC U1000	CAN COMM CIRCUIT
DTC U1117	LOST COMMUNICATION (ABS)
DTC P062F	EEPROM
DTC P0705	TRANSMISSION RANGE SENSOR A
DTC P0706	TRANSMISSION RANGE SENSOR A
DTC P0711	TRANSMISSION FLUID TEMPERATURE SENSOR A (Performance)
DTC P0712	TRANSMISSION FLUID TEMPERATURE SENSOR A (Circuit Low)
DTC P0713	TRANSMISSION FLUID TEMPERATURE SENSOR A (Circuit High)
DTC P0715	INPUT SPEED SENSOR A
DTC P0720	OUTPUT SPEED SENSOR
DTC P0740	TORQUE CONVERTER (Circuit open or shorted to power)
DTC P0743	TORQUE CONVERTER (Circuit shorted to ground)
DTC P0744	TORQUE CONVERTER (Performance)
DTC P0746	PRESSURE CONTROL SOLENOID A (Performance)
DTC P0846	TRANSMISSION FLUID PRESSURE SEN/SW B (Performance)
DTC P0847	TRANSMISSION FLUID PRESSURE SEN/SW B (Circuit Low)
DTC P0848	TRANSMISSION FLUID PRESSURE SEN/SW B (Circuit High)
DTC P0863	TCM COMMUNICATION
DTC P0890	TCM
DTC P0962	PRESSURE CONTROL SOLENOID A (Circuit Low)
DTC P0963	PRESSURE CONTROL SOLENOID A (Circuit High)
DTC P0965	PRESSURE CONTROL SOLENOID B (Performance)
DTC P0966	PRESSURE CONTROL SOLENOID B (Circuit Low)
DTC P0967	PRESSURE CONTROL SOLENOID B (Circuit High)
DTC P0998	SHIFT SOLENOID F (Circuit Low)
DTC P0999	SHIFT SOLENOID F (Circuit High)
DTC P099B	SHIFT SOLENOID G (Circuit Low)
DTC P099C	SHIFT SOLENOID G (Circuit High)
DTC P1586	G SENSOR
DTC P1588	G SENSOR
DTC P2765	INPUT SPEED SENSOR B
DTC P2857	CLUTCH A PRESSURE (Sol. F Low Brake Apply Performance)
DTC P2858	CLUTCH B PRESSURE (Sol. G High Clutch Apply Performance)
DTC P2859	CLUTCH A PRESSURE (Sol. F Low Brake Release Performance)
DTC P285A	CLUTCH B PRESSURE (Sol. G High Clutch Release Performance)

Figure 14