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Model Year Start: 2015	Model: NX200T	Prod Date Range: [10/2014 -]
Title: U661F (AUTOMATIC TRANSMISSION / TRANSAXLE): AUTOMATIC TRANSAXLE FLUID: HIGH TEMPERATURE ADJUSTMENT; 2015 - 2020 MY NX200T NX300 [10/2014 -]		

HIGH TEMPERATURE ADJUSTMENT

PROCEDURE

1. ADJUST FLUID LEVEL AT HIGH TEMPERATURE

CAUTION:

- Use caution while the engine is idling and the radiator fan is operating.
- Be careful not to burn yourself when the fluid temperature is high.

- Warm up and stop the engine.[*4]
- Connect the Techstream to the DLC3 with the engine switch off.
- Turn the engine switch on (IG) and turn the Techstream on.

NOTICE:

To reduce load, make sure that all electrical systems, such as the air conditioning, lighting system, electric fan and audio system, are off.

- Enter the following menus: Powertrain / Transmission / Data List.
- Select the Data List menu: A/T Oil Temperature 1

Powertrain > Transmission > Data List

TESTER DISPLAY
A/T Oil Temperature No.1

- Select the Data List menu: Engine Speed

Powertrain > Transmission > Data List

TESTER DISPLAY
Engine Speed

- Check the ATF temperature.

NOTICE:

- If the fluid temperature tends to decrease when the fluid temperature is between 85°C (185°F) and 90°C (194°F) with the engine idling, make sure that fluid temperature is above 90°C (194°F) before starting work.
- If the fluid temperature tends to increase when the fluid temperature is between 85°C (185°F) and 90°C (194°F) with the engine idling, make sure that fluid temperature is below 85°C (185°F) before starting work.
- If the fluid temperature tends to not change when the fluid temperature is between 85°C (185°F) and 90°C (194°F) with the engine idling, make sure that fluid temperature is 87.5°C (189.5°F) before starting work.

- Depress and hold the brake pedal.
- Start the engine.
- Slowly move the shift lever from P to D, and then back to P.
- Lift the vehicle.

NOTICE:

Set the vehicle on a lift so that the vehicle is kept level when it is lifted up (make sure the tilt angle from the front to rear and side to side of the vehicle is within +/-1°).

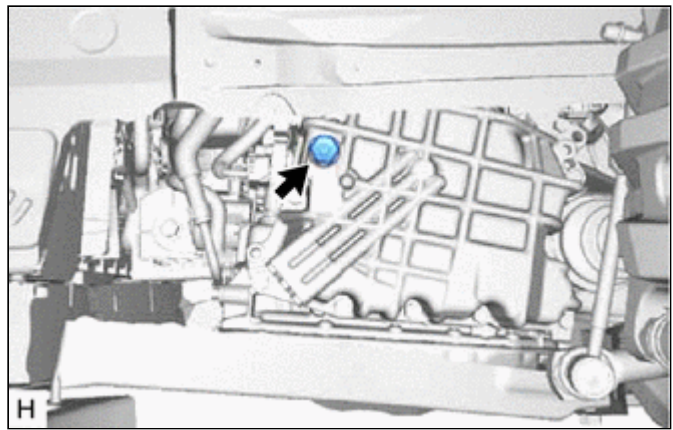
- for Sport Package:
 - Remove the No. 1 engine under cover.

Click here [INFO](#)

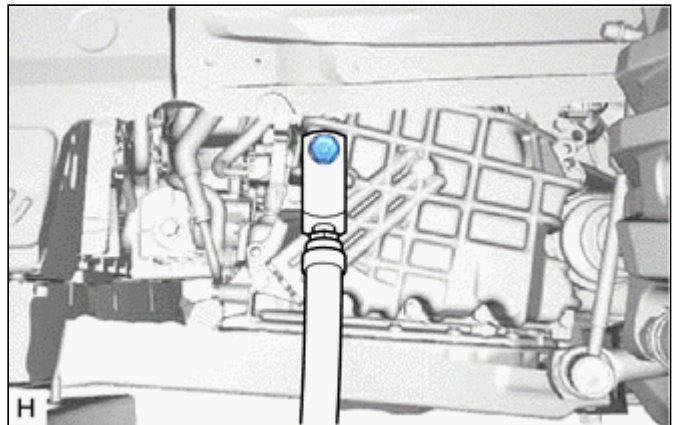
- Remove the rear engine under cover LH.

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- When using the WS ATF level gauge system:
 - Remove the refill plug and gasket.



- (2) Install the transmission fill adapter into the transaxle fill port.



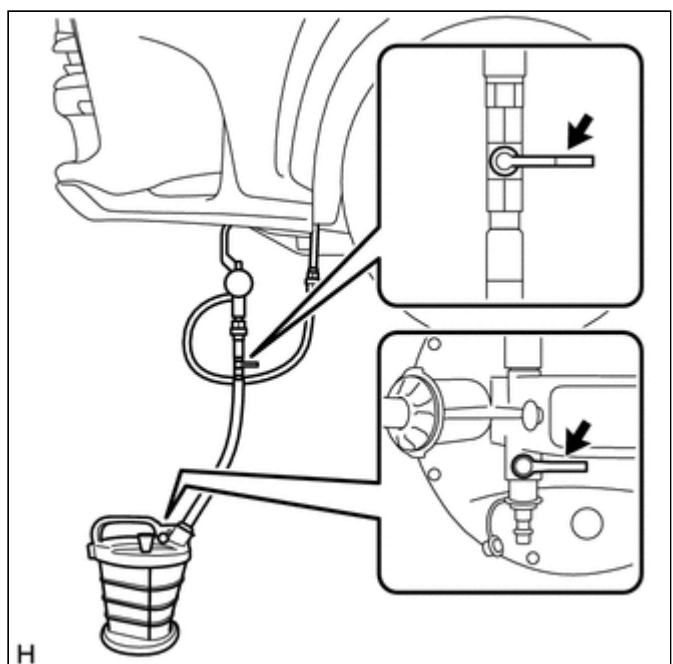
- (3) Attach the vacuum regulator manifold quick connect fitting to the transmission fill adapter.



- (4) Attach the fluid extraction tank hose quick connect to the vacuum regulator manifold.

NOTICE:

Ensure both of the fluid extraction tank valves are OFF by turning the valve handle perpendicular to the hose.

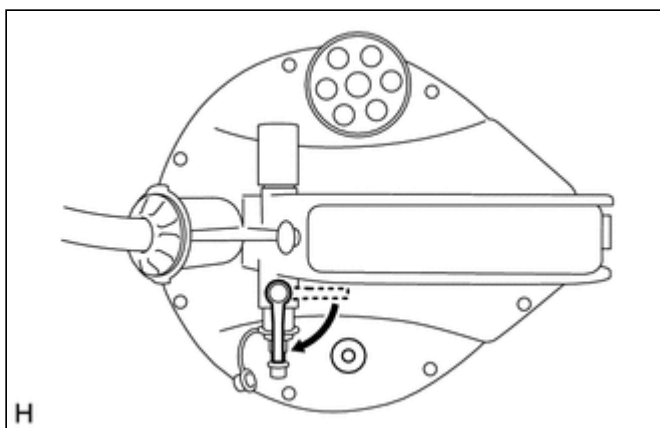


- (5) Connect a shop air hose to the fluid extraction tank.

CAUTION:

Do not exceed 100 psi of shop air pressure to the fluid extraction tank.

- (6) Open the fluid extraction tank lower valve by turning the handle in-line with the hose.



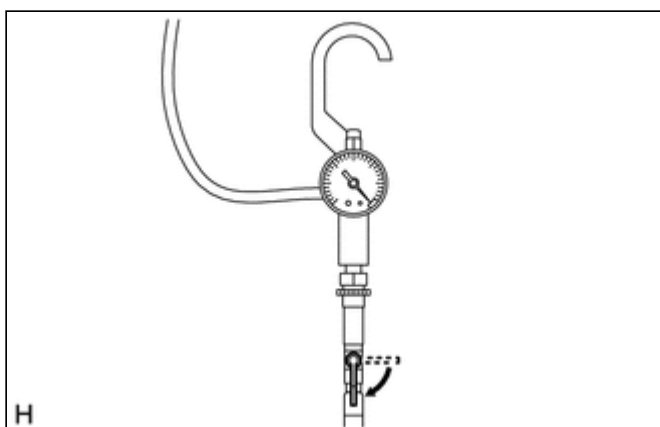
- (7) Open the fluid extraction tank upper valve by turning the handle in-line with the hose.

NOTICE:

Ensure the vacuum regulator manifold gauge is between 2 and 5 in. Hg (10 and 20 KPa).

HINT:

Vacuum will be applied to the transaxle when both of the fluid extraction tank valves are opened to prevent fluid loss when removing/installing the overflow plug.



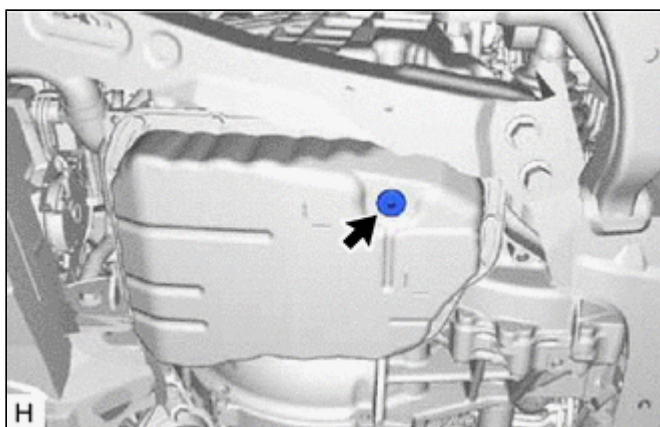
- (8) Using a 6 mm hexagon socket wrench, remove the overflow plug and gasket.

CAUTION:

A small amount of HOT fluid may leak from the overflow plug port during removal.

HINT:

Place an oil drain pan under the overflow plug to collect any transaxle fluid.



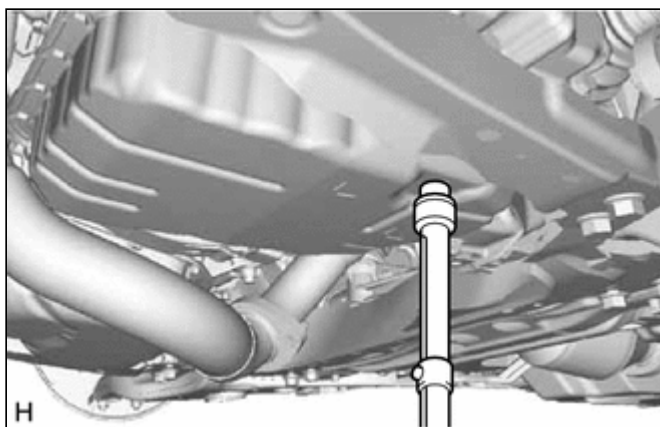
- (9) Install the WS ATF level gauge into the overflow plug port using the 12 mm adapter and hand-tighten the WS ATF level gauge until it is fully seated against the oil pan.

NOTICE:

Ensure the sliding tube is fully retracted into the gauge housing before inserting into the transaxle inspection port.

HINT:

The level/measurement indicator on the WS ATF level gauge will read 0 mm when the sliding tube is fully retracted.



- (10) Adjust the WS ATF level gauge to the correct measurement according to the table below and lock the sliding scale by securing the thumb screw.

Specified Measurement:

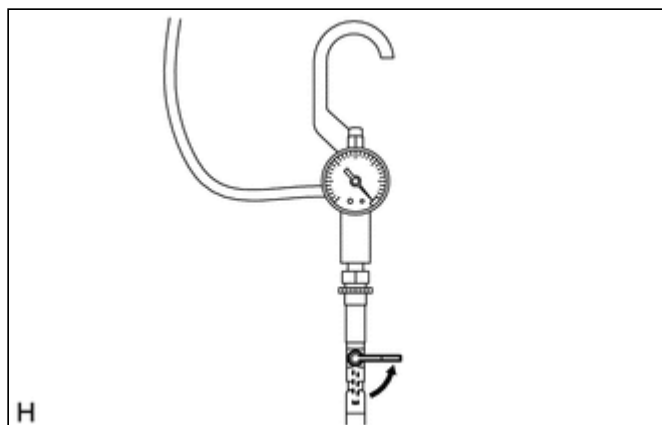
SPECIFIED MEASUREMENT AT FLUID TEMPERATURE OF 85°C (185°F) TO 90°C (194°F)

SPECIFIED MEASUREMENT AT FLUID TEMPERATURE OF 85°C (185°F) TO 90°C (194°F)	
Engine Idle Speed (rpm) 600 to 700	68.7 mm (2.70 in.)
Engine Idle Speed (rpm) 700 to 800	65.4 mm (2.57 in.)

NOTICE:

Before proceeding with the inspection, ensure the transaxle fluid temperature is between 85°C (185°F) to 90°C (194°F) and the engine idle speed is within the range specified in the table above.

- (11) Close the fluid extraction tank upper valve by turning the handle perpendicular to the hose. This will stop vacuum flow to the transaxle and the vacuum gauge should read 0 in. Hg (0 KPa)



- (12) Observe transaxle fluid leaking from the hose at the bottom of the WS ATF level gauge.

NOTICE:

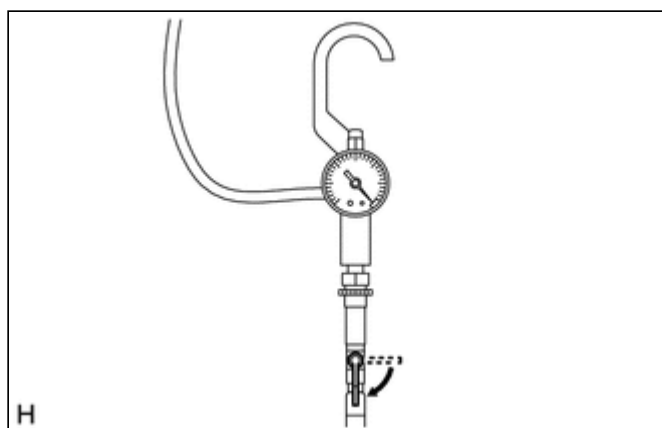
- If fluid flows out slowly and only drips, then the transaxle fluid level is within specifications.
- If fluid flows out rapidly, allow excess fluid to drain to a slight drip.
- If no fluid flows out, add fluid into the refill hole until fluid comes out of the overflow plug hole. Wait until the fluid flow slows and only drops come out (refer to "Fluid Level Adjustment Procedure" for instructions).

- (13) Confirm fluid level is within specifications per step (10) to (12).

- (14) Open the fluid extraction tank upper valve by turning the handle in-line with the hose. This will allow vacuum to be applied to the transaxle and the vacuum gauge should read between 2 and 5 in. Hg (10 and 20 KPa).

NOTICE:

Ensure vacuum is being applied to the transaxle before proceeding to step (15).



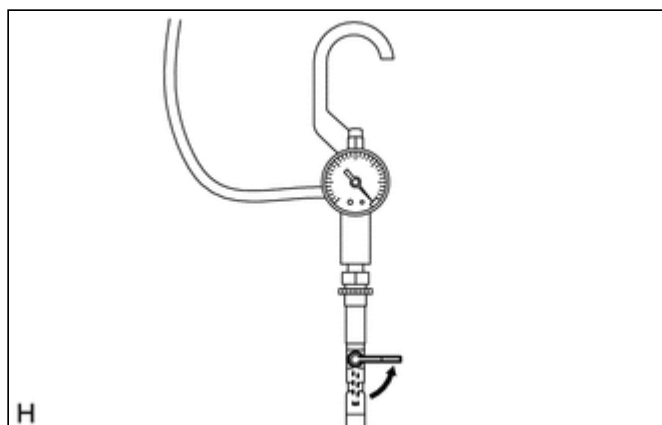
- (15) Remove the WS ATF level gauge.

- (16) Install the overflow plug with a new gasket.

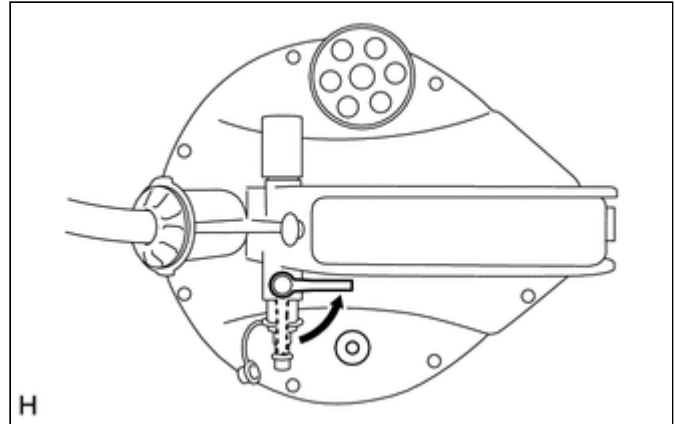
Torque:

40 N·m {408 kgf·cm, 30 ft·lbf}

- (17) Close the fluid extraction tank upper valve by turning the handle perpendicular to the hose. This will stop vacuum flow to the transaxle and the vacuum gauge should read 0 in. Hg (0 KPa).



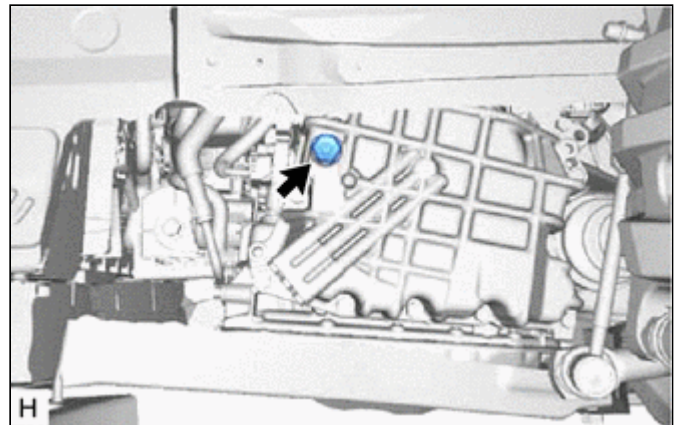
- (18) Close the fluid extraction tank lower valve by turning the handle perpendicular to the hose.



- (19) Disconnect the shop air hose from the fluid extraction tank.
 (20) Disconnect the fluid extraction tank hose quick connect from the vacuum regulator manifold.
 (21) Disconnect the vacuum regulator manifold quick connect from the transmission fill adapter.
 (22) Remove the transmission fill adapter from the transaxle fill port.

(o) When not using the WS ATF level gauge system:

- (1) Loosen the refill plug.



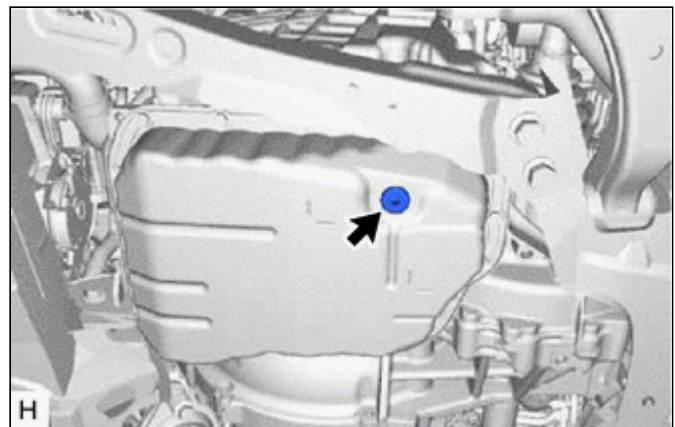
- (2) Using a 6 mm hexagon socket wrench, remove the overflow plug and gasket.[*1]

CAUTION:

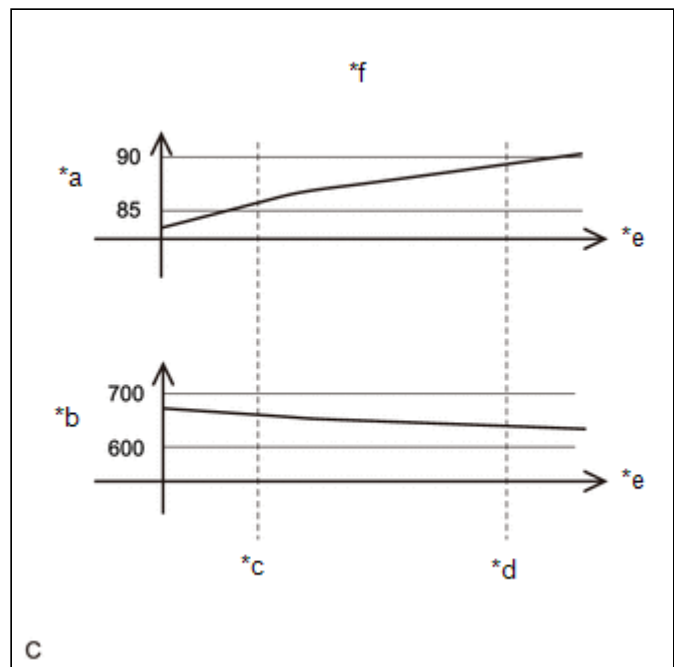
Be careful as the fluid coming out of the overflow plug hole is hot.

NOTICE:

- Before removing the overflow plug, make sure that the fluid temperature is between 85 and 90°C and the engine idle speed is within the range specified in the tables provided in step [*3].
- When adding fluid (step [*3]), add the specified amount in accordance with the engine idle speed.
- If fluid does not come out, install the overflow plug, add fluid to the refill hole until fluid comes out, and perform the procedure from step [*4] again.



- (3) Make sure that the fluid temperature and engine speed remain within the appropriate range until the overflow plug is tightened in step [*2].

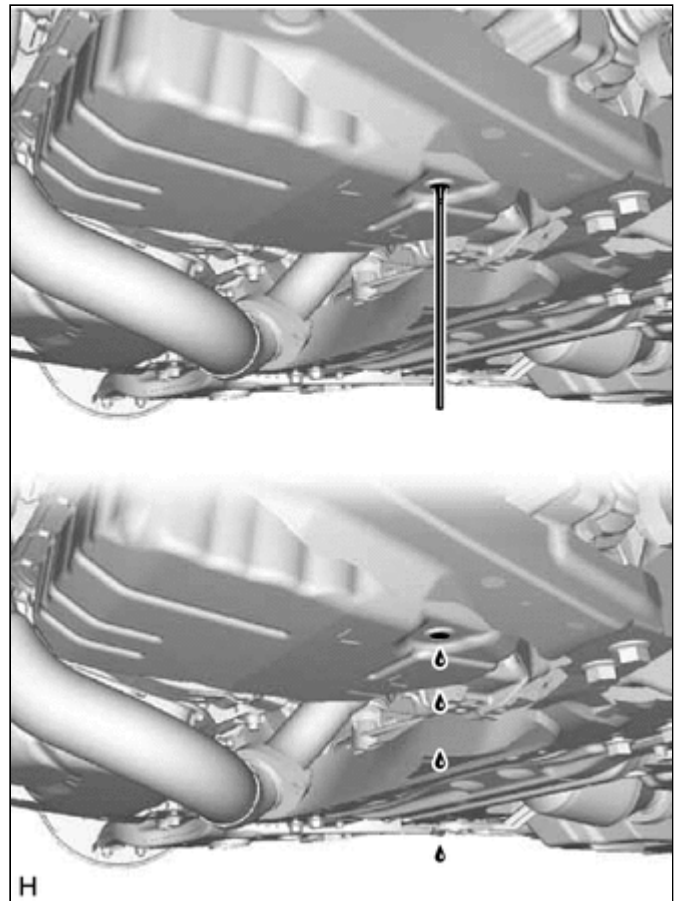


*a	Fluid Temperature [°C]
*b	Engine Idle Speed [rpm]
*c	Overflow Plug Removed
*d	Overflow Plug Installed
*e	Time
*f	Example: When adjusting with the engine idle speed between 600 and 700 rpm

(4) Wait until the fluid flow slows and only drips come out.

HINT:

If the fluid temperature is increasing, the fluid flow will not completely stop because the fluid expands as its temperature increases.



(5) Using a 6 mm hexagon socket wrench, install the overflow plug with a new gasket.[*2]

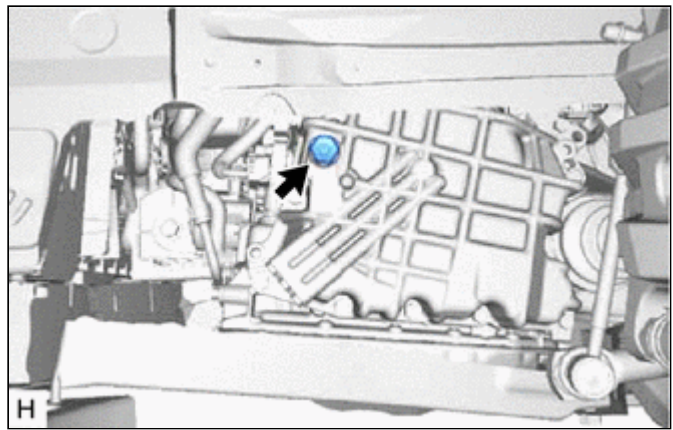
Torque:

40 N·m {408 kgf·cm, 30 ft·lbf}

(6) Lower the vehicle.

(7) Turn the engine switch off.

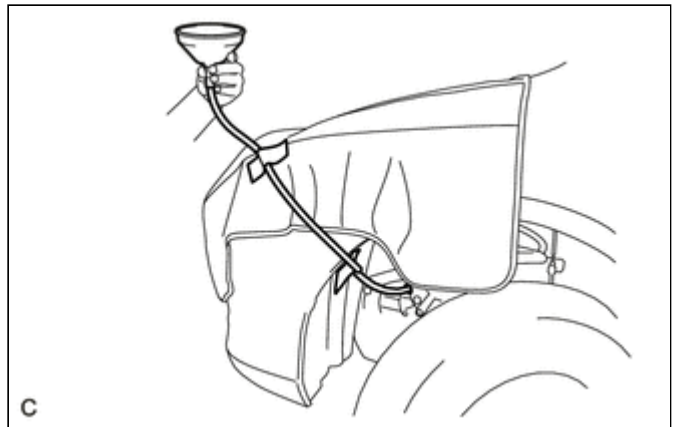
(8) Remove the refill plug and gasket.



(9) Install a hose and funnel to the refill hole as shown in the illustration.

NOTICE:

- When the fluid level is correct and the fluid temperature is approximately 40°C, the transaxle is designed so that the fluid level is at the same height as the end of the overflow tube. When adjusting the fluid level with a fluid temperature of 85 to 90°C, drain the amount of fluid that has expanded due to heat (step [*1]). After the fluid has been drained, make sure to add the amount of fluid specified in the tables below.
- Pay extra attention when adding fluid because adding an excessive or insufficient amount of fluid may cause a malfunction in the automatic transaxle.
- Do not insert the hose into the refill hole excessively.
- Be sure to use tape or equivalent to prevent the hose from sagging.



HINT:

Make sure to use a hose with a length of 1250 mm (4.1 ft.) and an outer diameter of 16 mm (0.63 in.).

(10) Add the specified amount of fluid to the refill hole.[*3]

Specified Amount to be Added:

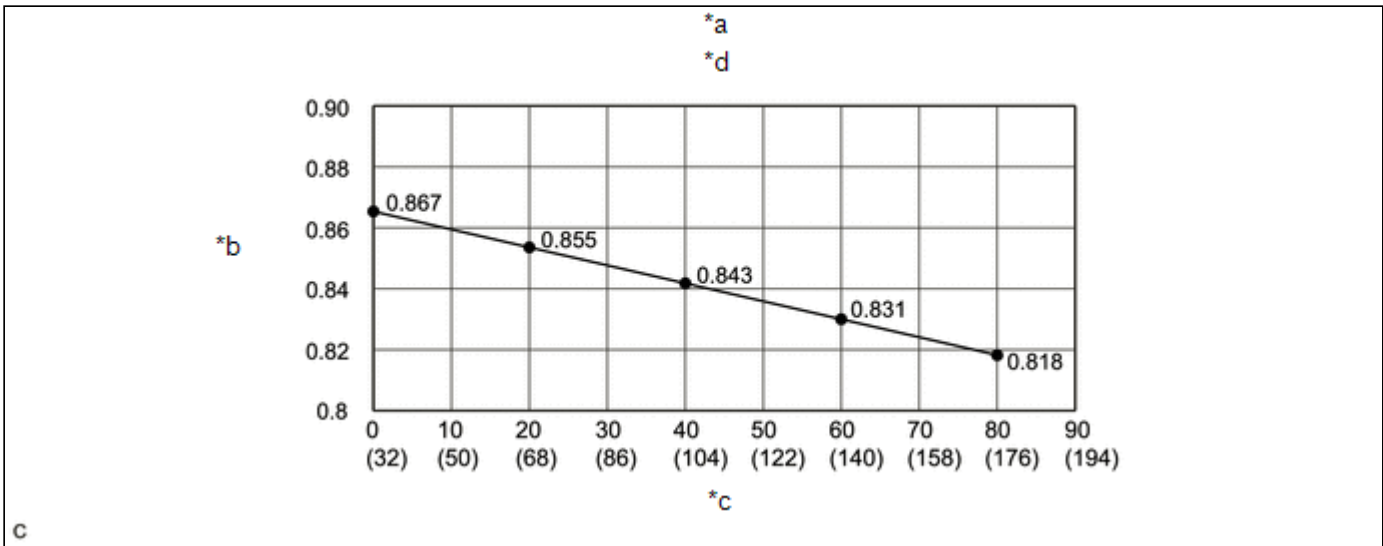
SPECIFIED AMOUNT TO BE ADDED AT FLUID TEMPERATURE OF 85°C (185°F) TO 90°C (194°F)	
Engine Idle Speed (rpm) 600 to 700	221 g (7.79 oz.)(273 cc (16.7 cu in.))
Engine Idle Speed (rpm) 700 to 800	203 g (7.16 oz.)(251 cc (15.3 cu in.))

NOTICE:

- If fluid remains inside the hose, the amount of fluid will be outside the specifications. Therefore, when adding fluid, make sure that no fluid remains inside the hose.
- The acceptable margin of error when adding fluid is +/-20 g (0.7 oz.) or +/-25 cc (1.5 cu in.).
- The values provided in the brackets in the table are for reference when the temperature of the fluid to be added is between 10°C (50°F) and 30°C (86°F).
- Use Toyota Genuine ATF WS.
- If fluid comes out (the amount of fluid is not as specified), perform the procedure from step [*4] again.

HINT:

If determining the specified amount of fluid to be added by volume, calculate it based on weight and density at each temperature.



*a	This example shows the volume of fluid to be added with a fluid temperature of 10°C (50°F) to 30°C (86°F).	*b	Density [g / cc]
*c	Temperature of fluid to be measured [°C (°F)]	*d	Relation between temperature and density of Toyota genuine ATF WS

(p) Install the refill plug with a new gasket.

Torque:

49 N·m {500 kgf·cm, 36 ft·lbf}

(q) Disconnect the Techstream from the DLC3.

2. REBUILD WORK

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