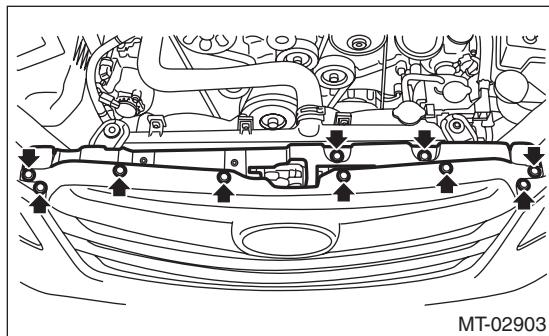


3. Manual Transmission Assembly

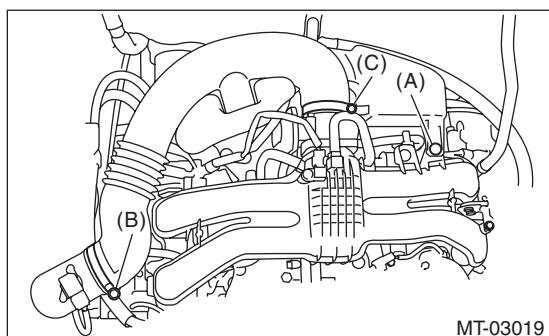
A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Remove the front wheels.
- 3) Open the front hood completely.
- 4) Remove the air intake duct. <Ref. to IN(H4DO)-14, REMOVAL, Air Intake Duct.>
- 5) Remove the 10 clips and detach the grille bracket.



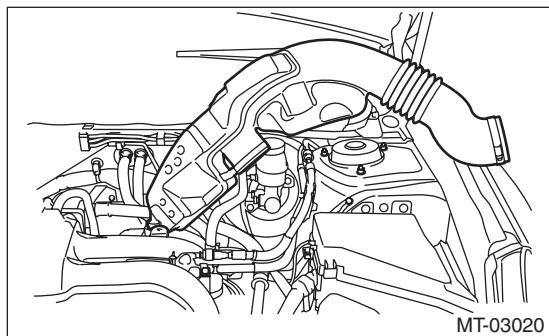
MT-02903

- 6) Disconnect the ground cable from battery.
- 7) Remove the radiator fan.
- 8) Remove the clip (A) from the air intake boot.
- 9) Loosen the clamp (B) connecting the air intake boot and air cleaner case (rear).
- 10) Loosen the clamp (C) which connects the air intake boot and throttle body.



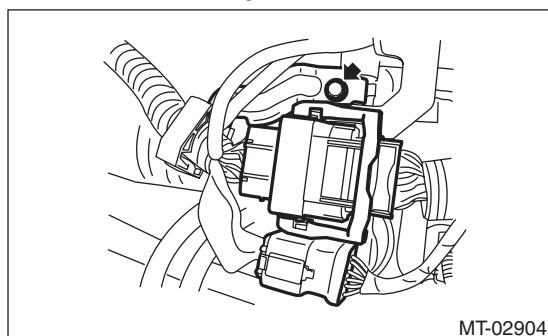
MT-03019

- 11) Remove the air intake boot from the throttle body, and move it to the left side wheel apron.



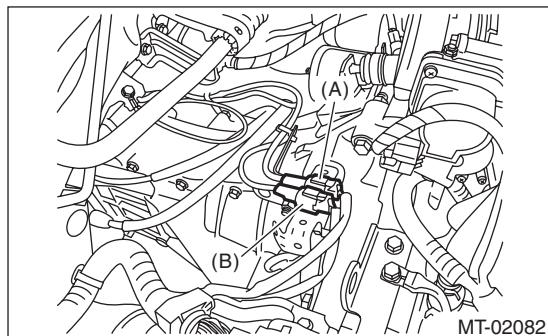
MT-03020

- 12) Disconnect the engine harness connector.



MT-02904

- 13) Disconnect the connector back-up light switch & neutral position switch.

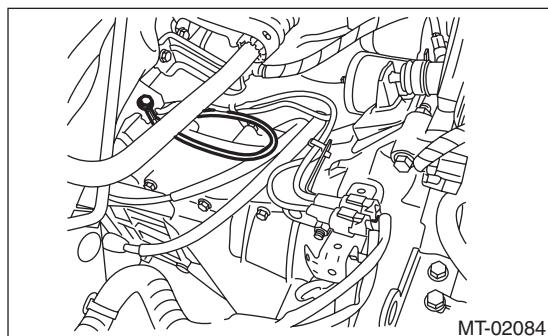


MT-02082

(A) Neutral position switch connector (brown)

(B) Back-up light switch connector (gray)

- 14) Disconnect the transmission radio ground terminal.



MT-02084

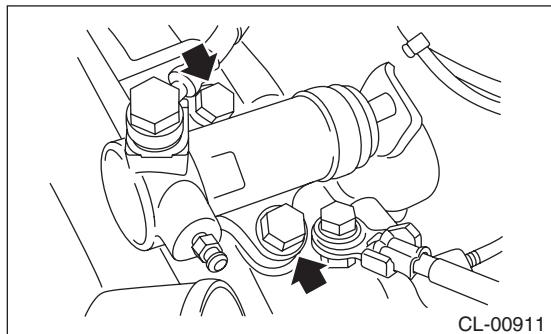
- 15) Remove the throttle body. <Ref. to FU(H4DO)-15, REMOVAL, Throttle Body.>

- 16) Remove the starter. <Ref. to SC(H4DO)-7, REMOVAL, Starter.>

Manual Transmission Assembly

MANUAL TRANSMISSION AND DIFFERENTIAL

17) Remove the operating cylinder from the transmission, and suspend on a wire.



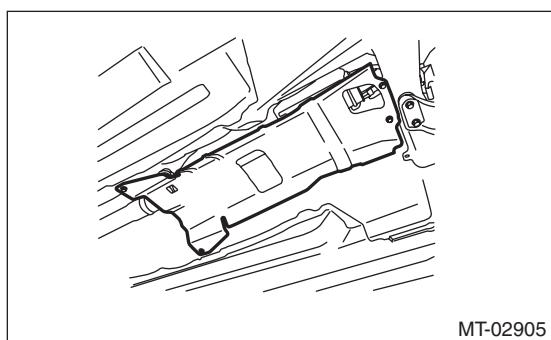
18) Lift up the vehicle.

19) Remove the front under cover. <Ref. to EI-33, REMOVAL, Front Under Cover.>

20) Drain transmission gear oil completely. <Ref. to 6MT-24, REPLACEMENT, Transmission Gear Oil.>

21) Remove the center exhaust pipe. <Ref. to EX(H4DO)-5, REMOVAL, Front Exhaust Pipe.> <Ref. to EX(H4DO)-12, REMOVAL, Center Exhaust Pipe.>

22) Remove the heat shield cover.



23) Remove the steering shaft universal joint. <Ref. to PS-20, REMOVAL, Universal Joint.>

24) Remove the propeller shaft. <Ref. to DS-10, REMOVAL, Propeller Shaft.>

25) Remove the MT gear shift cable and MT gear select cable from MT gear shift lever. <Ref. to CS-61, REMOVAL, MT Gear Shift Lever.>

CAUTION:

- Do not bend MT gear shift cable and MT gear select cable at a sharp angle.
- Disconnect the MT gear shift cable and MT gear select cable at the MT gear shift lever side.
- Always use new MT gear select cable if the cable is removed from selector lever COMPL of transmission side.

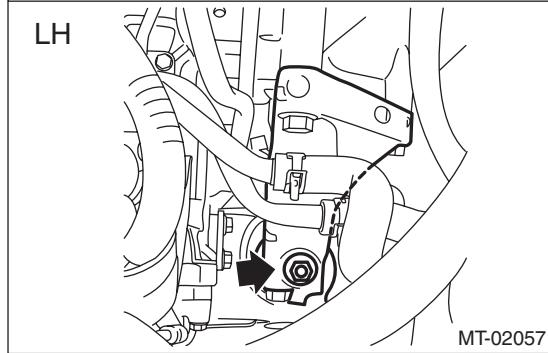
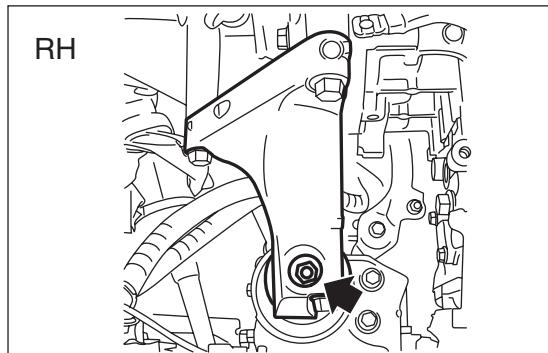
26) Disconnect the stabilizer link from the front arm. <Ref. to FS-29, REMOVAL, Front Stabilizer.>

27) Remove the bolt securing the ball joint of the front arm to the housing, then separate the front arms and the housing. <Ref. to FS-32, REMOVAL, Front Ball Joint.>

28) Separate the front drive shafts on both sides from the transmission. <Ref. to DS-48, REMOVAL, Front Drive Shaft.>

29) Lower the vehicle.

30) Remove the nuts connecting the engine mounting and the transmission main mounting bracket.



Manual Transmission Assembly

MANUAL TRANSMISSION AND DIFFERENTIAL

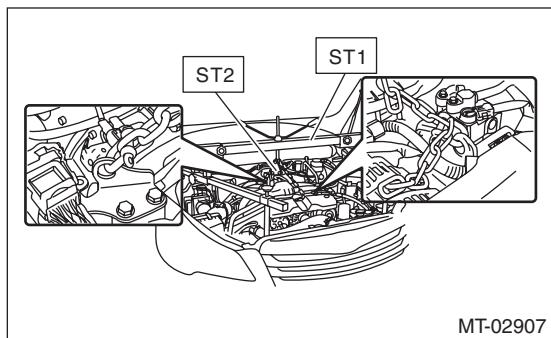
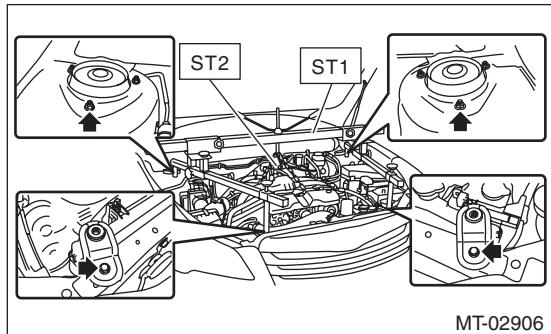
31) Set the ST on the vehicle.

CAUTION:

- Set the chain so that it does not contact the sensors.
- Set the arms of ST (ENGINE HANGER) at the locations shown in the figure.

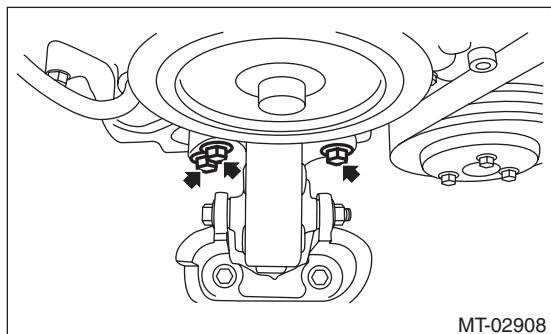
ST1 99099AJ000 ENGINE HANGER

ST2 99099AJ010 CHAIN BALANCER



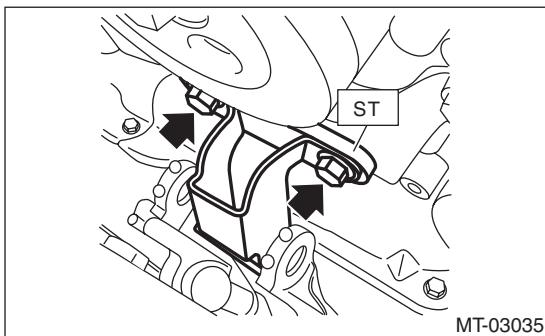
32) Lift the engine slightly and remove the bolts of front cushion rubber.

33) Remove the nut and bolt of the front cushion rubber, then remove the front cushion rubber.



34) Temporarily attach ST by using two bolts.

ST 41099AJ130 SPECIAL TOOL FB



35) Lift up the engine unit high enough to install the bolt and nut to vehicle.

CAUTION:

- Do not lift up higher than enough level to install the ST to avoid damage to the hoses and pipes inside the engine room.
- Do not tighten the bolts and nuts excessively, or the engine mounting bracket may be deformed.

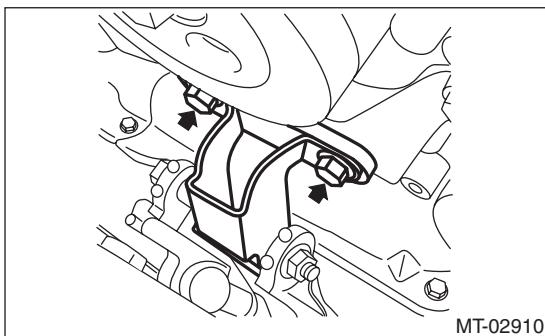
NOTE:

If it is difficult to pull out the stud bolt from transmission mounting bracket, slightly shake the engine unit while lifting up.

36) Tighten the mounting bolts on the engine side.

Tightening torque:

25 N·m (2.6 kgf-m, 18.4 ft-lb)



37) Remove the ST (ENGINE HANGER).

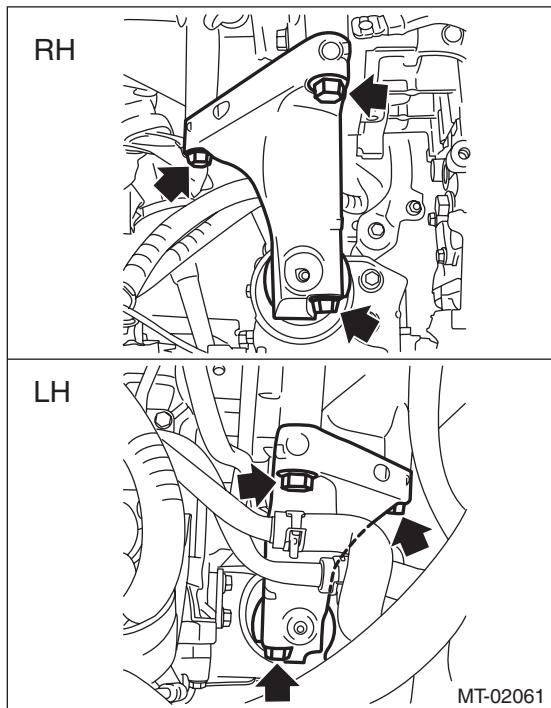
Manual Transmission Assembly

MANUAL TRANSMISSION AND DIFFERENTIAL

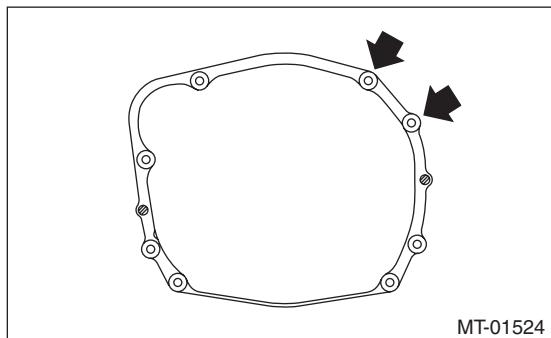
38) Remove the transmission main mounting bracket.

NOTE:

First, remove the transmission mounting bracket on the right side of vehicle, and then tilt the engine unit to remove the left transmission mounting bracket.



39) Remove the two mounting bolts on the upper side of the transmission.



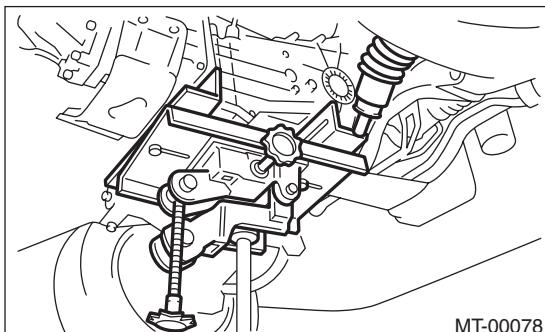
40) Set the ST (ENGINE HANGER) again to loosen the chain sling.

41) Lift up the vehicle.

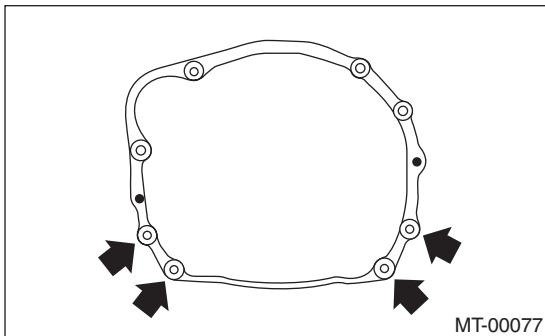
42) Place the transmission jack under the transmission.

CAUTION:

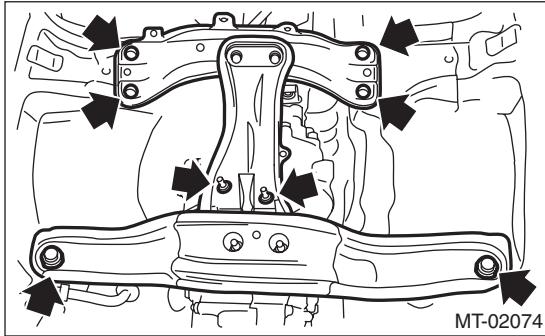
Always support the transmission case with a transmission jack.



43) Remove the bolts and nuts which hold lower side of transmission to engine.



44) Remove the front crossmember and rear crossmember from the vehicle.



45) Lower the transmission rear end (dust cover rear end).

CAUTION:

When lowering the transmission rear end, be careful not to let the converter case and steering mechanical parts contact each other.

NOTE:

Lower the transmission rear end by approx. 80 mm (3.1 in) (reference).

46) Rotate the handle of ST (ENGINE HANGER) to apply tension to the chain sling.

Manual Transmission Assembly

MANUAL TRANSMISSION AND DIFFERENTIAL

47) Remove the transmission assembly.

NOTE:

- Move the transmission jack towards the rear until the main shaft is withdrawn from the clutch disc.
- Remove it while moving the transmission jack up and down so that the engine and transmission remain directly aligned.

48) Remove the transmission cushion rubber.

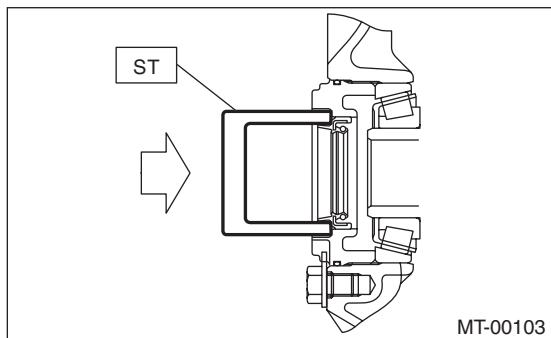
B: INSTALLATION

1) Replace the differential side retainer oil seal.
<Ref. to 6MT-35, REPLACEMENT, Differential Side Retainer Oil Seal.>

NOTE:

Be sure to replace the differential side retainer oil seal after removing the front drive shaft.

ST 18675AA000 DIFFERENTIAL SIDE OIL SEAL INSTALLER



2) Install the transmission cushion rubber to the transmission assembly, and tighten bolt (A).

3) Install the transmission cushion rubber to the center crossmember, and tighten the nut (B).

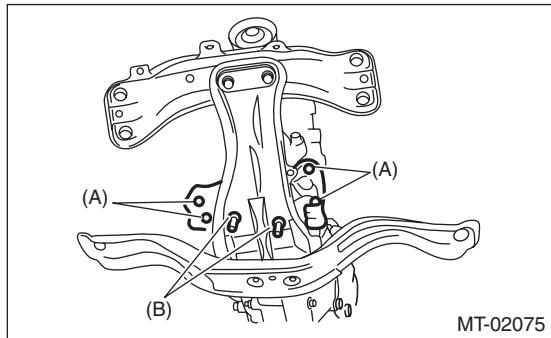
Tightening torque:

Bolt (A)

35 N·m (3.6 kgf-m, 25.8 ft-lb)

Nut (B)

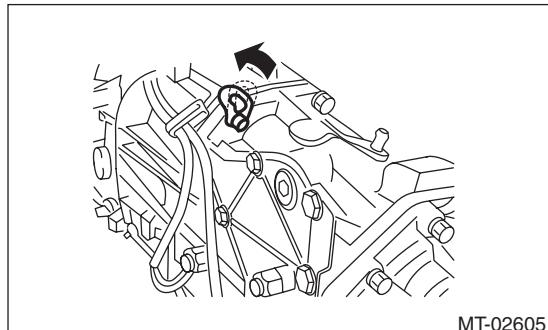
35 N·m (3.6 kgf-m, 25.8 ft-lb)



4) Tap the transmission hanger in the rear side of transmission with a rubber hammer to bend it until it is in close contact with the transmission case.

CAUTION:

Do not apply excessive load or impact to the transmission case.



5) Install the transmission onto the engine.

CAUTION:

This operation requires at least two persons.

NOTE:

Keep the engine level.

- (1) Lift up the transmission gradually using a transmission jack.
- (2) Engage at the spline section.

NOTE:

Be careful not to hit the main shaft against the clutch housing cover.

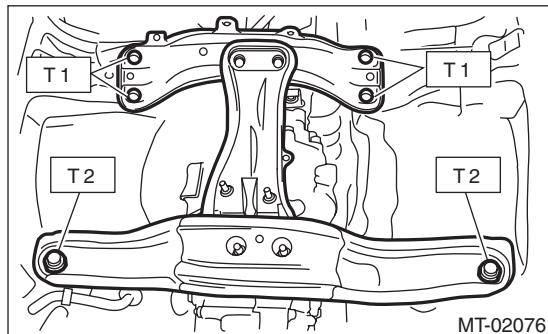
6) Temporarily tighten the bolts and nuts which hold lower side of transmission to engine.

7) Install the front crossmember and rear crossmember.

Tightening torque:

T1: 75 N·m (7.6 kgf-m, 55.3 ft-lb)

T2: 140 N·m (14.3 kgf-m, 103.3 ft-lb)



8) Take out the transmission jack.

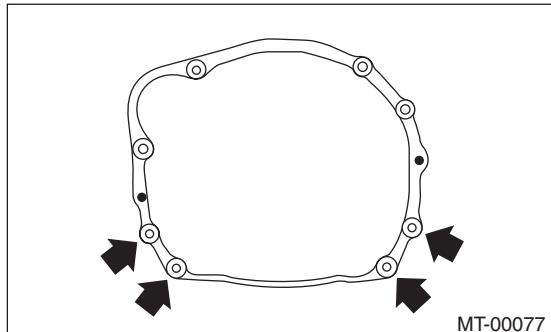
Manual Transmission Assembly

MANUAL TRANSMISSION AND DIFFERENTIAL

9) Tighten the bolts and nuts which hold the lower side of transmission to the engine.

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)

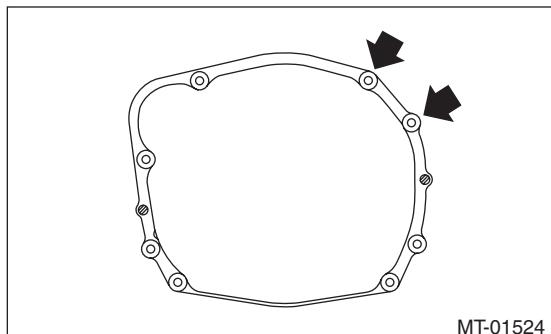


10) Lower the vehicle.

11) Install the two mounting bolts on the upper side of the transmission.

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)



12) Remove the ST (ENGINE HANGER).

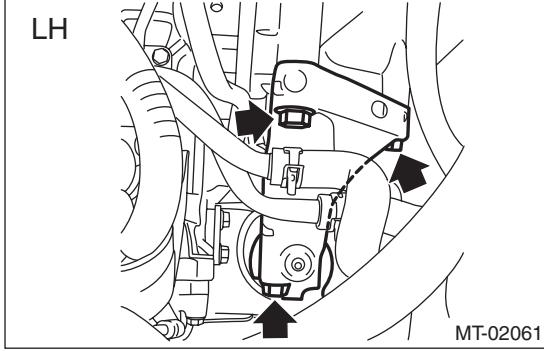
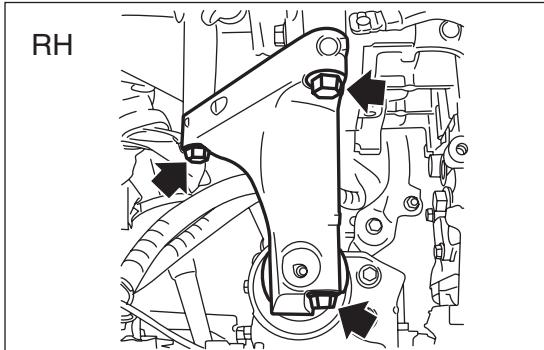
13) Install the transmission main mounting bracket.

NOTE:

Incline the engine, and install the transmission main mounting bracket for the left side of the vehicle first.

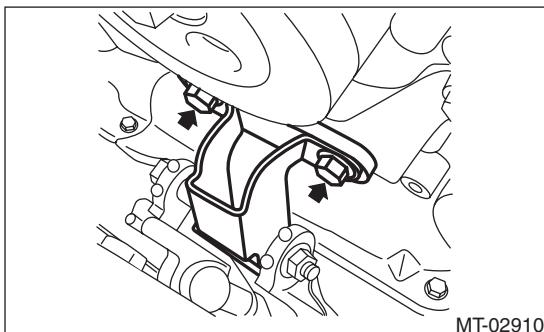
Tightening torque:

75 N·m (7.6 kgf-m, 55.3 ft-lb)



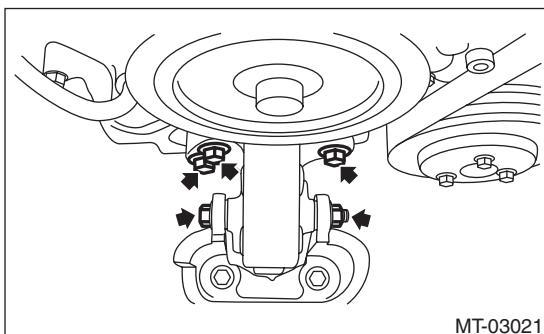
14) Attach the ST (ENGINE HANGER) again.

15) Remove the bolts from ST (SPECIAL TOOL FB).



16) Remove the bolt and nut to remove ST (SPECIAL TOOL FB).

17) Temporarily attach the front cushion rubber with bolts.



18) Install the bolt and nut to the front cushion rubber.

Manual Transmission Assembly

MANUAL TRANSMISSION AND DIFFERENTIAL

19) Tighten the bolts and nuts of front cushion rubber.

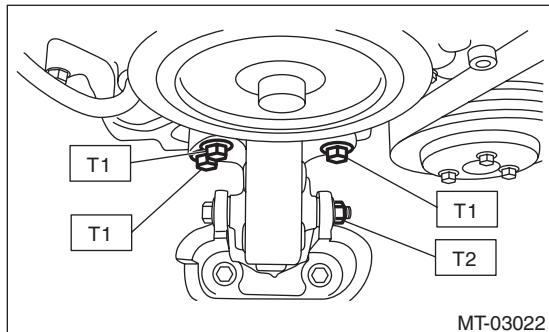
NOTE:

Always start tightening from the bolts on the engine side.

Tightening torque:

T1: 25 N·m (2.5 kgf-m, 18.4 ft-lb)

T2: 45 N·m (4.6 kgf-m, 33.2 ft-lb)

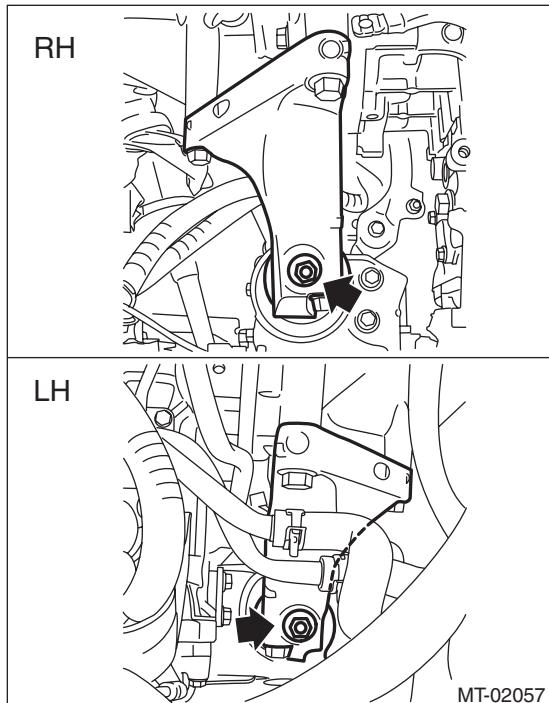


20) Remove the ST (ENGINE HANGER) from the vehicle.

21) Tighten the nuts connecting the engine mount and the transmission main mounting bracket.

Tightening torque:

45 N·m (4.6 kgf-m, 33.2 ft-lb)

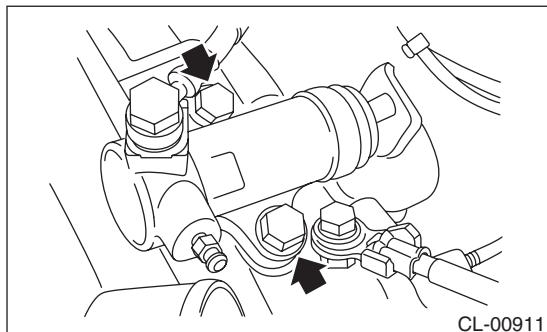


22) Install the starter. <Ref. to SC(H4DO)-10, INSTALLATION, Starter.>

23) Install the operating cylinder.

Tightening torque:

37 N·m (3.8 kgf-m, 27.3 ft-lb)



24) Lift up the vehicle.

25) Install the front drive shaft into the transmission. <Ref. to DS-49, INSTALLATION, Front Drive Shaft.>

26) Insert the front arm ball joint into the housing lower part. <Ref. to FS-33, INSTALLATION, Front Ball Joint.>

27) Attach the stabilizer link to the front arm. <Ref. to FS-31, INSTALLATION, Front Stabilizer.>

28) Install the MT gear shift cable and MT gear select cable to MT gear shift lever. <Ref. to CS-64, INSTALLATION, MT Gear Shift Lever.>

CAUTION:

- Do not bend MT gear shift cable and MT gear select cable at a sharp angle.
- Always use new MT gear select cable if the cable is removed from selector lever COMPL of transmission side.

29) Install the propeller shaft. <Ref. to DS-11, INSTALLATION, Propeller Shaft.>

30) Install the steering shaft universal joint. <Ref. to PS-21, INSTALLATION, Universal Joint.>

31) Install the heat shield cover. <Ref. to EI-174, INSTALLATION, Heat Shield Cover.>

32) Install the center exhaust pipe. <Ref. to EX(H4DO)-8, INSTALLATION, Front Exhaust Pipe. > <Ref. to EX(H4DO)-12, INSTALLATION, Center Exhaust Pipe.>

33) Install the front under cover. <Ref. to EI-33, INSTALLATION, Front Under Cover.>

34) Lower the vehicle.

35) Install the throttle body. <Ref. to SC(H4DO)-10, INSTALLATION, Starter.>

36) Connect the following connectors.

(1) Transmission radio ground terminal

Tightening torque:

13 N·m (1.3 kgf-m, 9.6 ft-lb)

(2) Neutral position switch connector (brown)

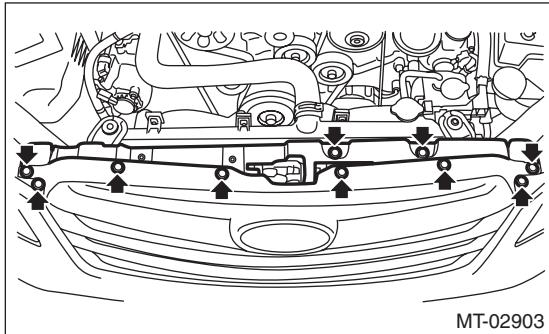
(3) Back-up light switch connector (gray)

(4) Engine harness connectors

Manual Transmission Assembly

MANUAL TRANSMISSION AND DIFFERENTIAL

- 37) Fill transmission gear oil through the transmission oil level gauge hole. <Ref. to 6MT-24, Transmission Gear Oil.>
- 38) Install the air intake boot assembly. <Ref. to IN(H4DO)-13, INSTALLATION, Air Intake Boot.>
- 39) Install the radiator fan.
- 40) Attach the grille bracket.



- 41) Install the air intake duct. <Ref. to IN(H4DO)-14, INSTALLATION, Air Intake Duct.>
- 42) Install the front wheels.
- 43) Adjust the detent of the MT gear shift lever. <Ref. to CS-67, ADJUSTMENT, MT Gear Shift Lever.>
- 44) Connect the battery ground terminal.