

2. Transmission

A: GENERAL PRECAUTION

(1) Remove or install transmission in an area where chain hoists, lifting devices, etc. are available for ready use.

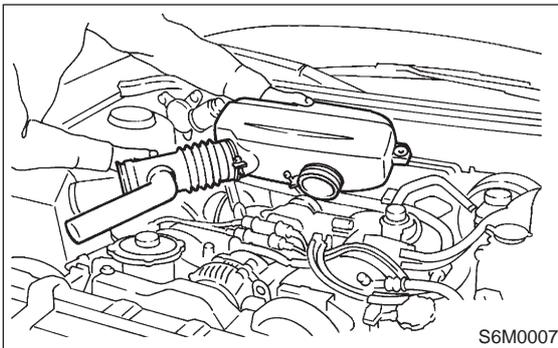
(2) Be sure not to damage coated surfaces of body panels with tools or stain seats and windows with coolant or oil. Place a cover over fenders, as required, for protection.

(3) Prior to starting work, prepare the following: Service tools, clean cloth, containers to catch coolant and oil, wire ropes, chain hoist, transmission jacks, etc.

(4) Lift-up or lower the vehicle when necessary. Make sure to support the correct positions. <Ref. to 1-3 [G7B0].>

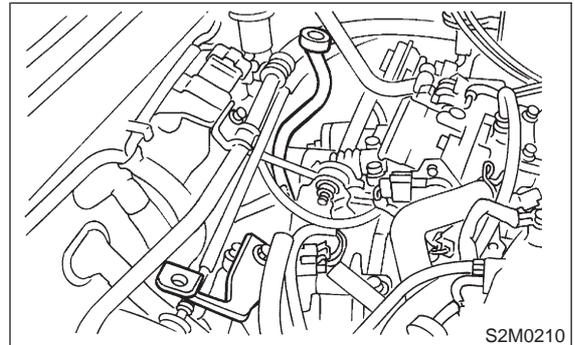
B: REMOVAL

- 1) Open front hood fully, and support with stay.
- 2) Disconnect battery ground terminal.
- 3) Remove air intake duct and chamber.

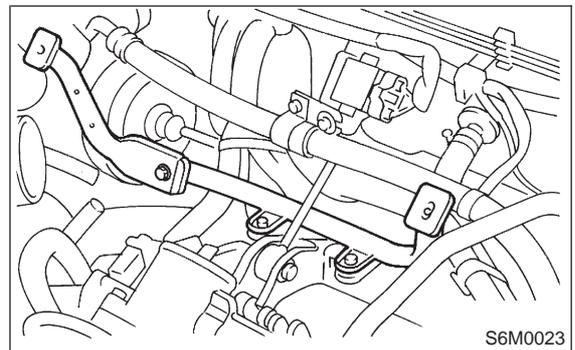


4) Remove chamber stay.

- MT vehicles

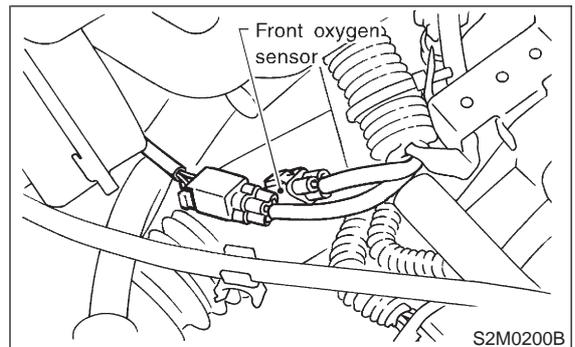


- AT vehicles

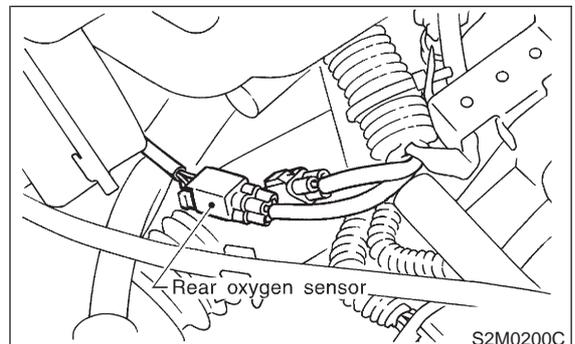


5) Disconnect the following connectors.

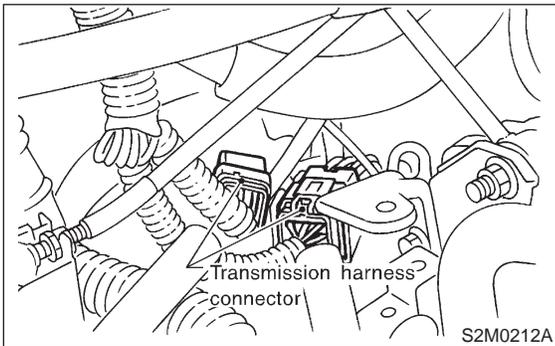
- (1) Front oxygen sensor connector



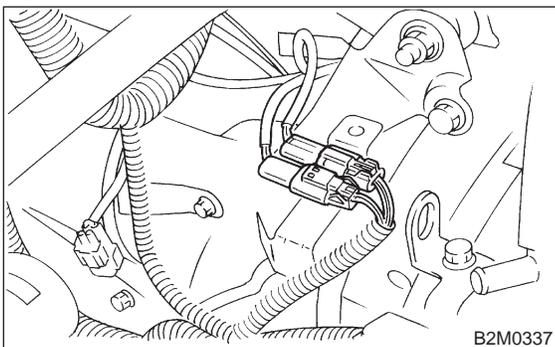
- (2) Rear oxygen sensor connector (California spec. vehicle)



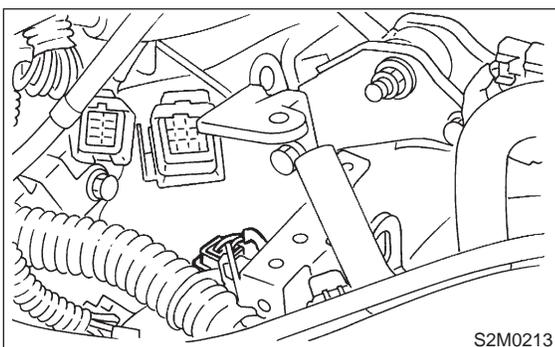
- (3) Transmission harness connector (AT vehicles)



- (4) Transmission ground terminal
(5) Neutral position switch connector (MT vehicles)
(6) Back-up light switch connector (MT vehicles)

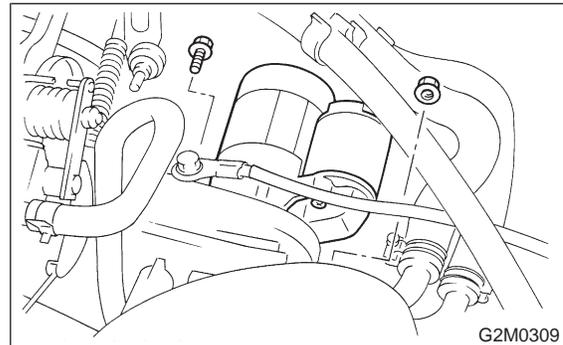


- (7) Vehicle speed sensor 2

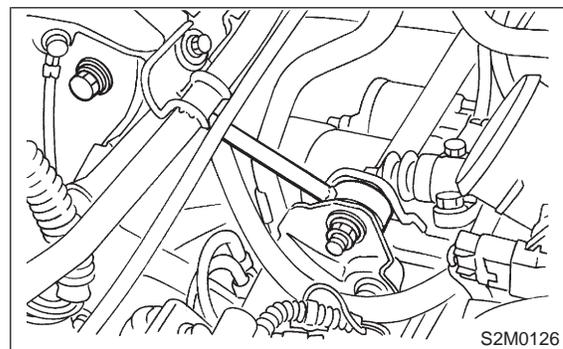


- 6) Remove starter.
(1) Disconnect connectors and terminal from starter.

- (2) Remove bolt which installs upper side of starter.
(3) Remove nut which installs lower side of starter, and remove starter from transmission.

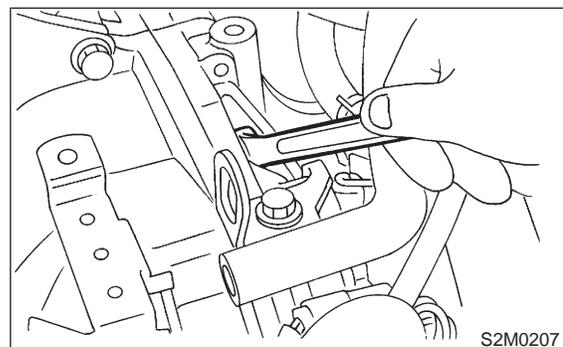


- 7) Remove pitching stopper.



- 8) Separate torque converter from drive plate. (AT vehicles)

- (1) Remove service hole plug.
(2) Remove bolts which hold torque converter to drive plate.



- (3) While rotating the engine, remove other bolts using ST.

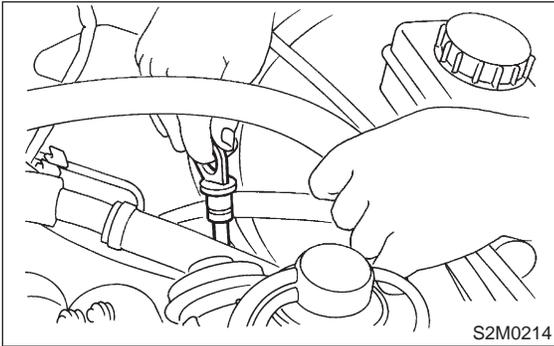
ST 499977000 CRANK PULLEY WRENCH

CAUTION:
Be careful not to drop bolts into torque converter housing.

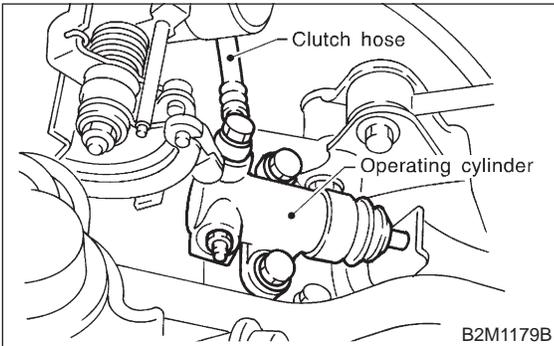
9) Remove ATF level gauge. (AT vehicles)

CAUTION:

Plug opening to prevent entry of foreign particles into transmission fluid.



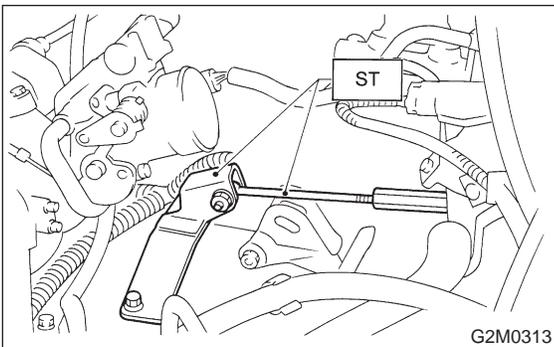
10) Remove operating cylinder. (MT vehicles)



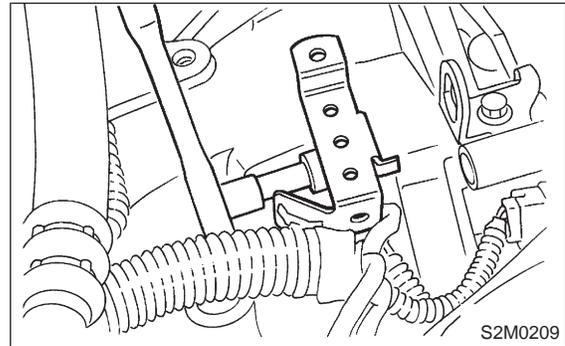
11) Set ST.
ST 41099AA020 ENGINE SUPPORT ASSY

NOTE:

Also is available Part No. 927670000.



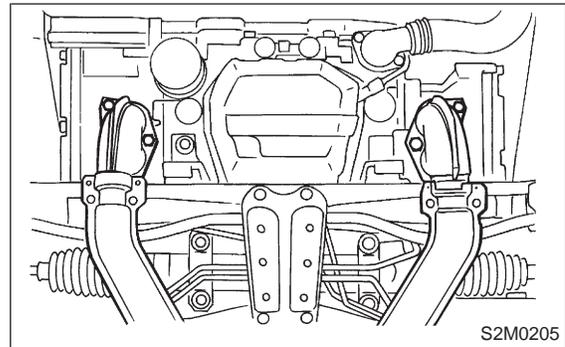
12) Remove bolt which holds right upper side of transmission to engine.



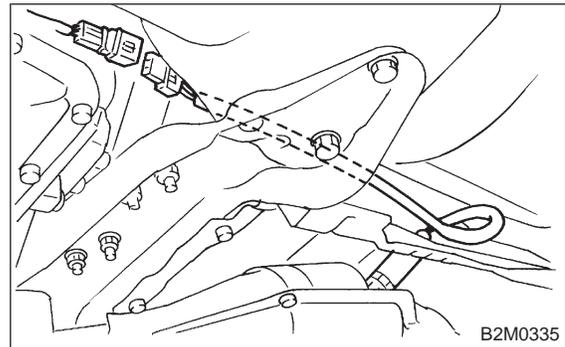
13) Remove exhaust system.

(1) Lift-up the vehicle.

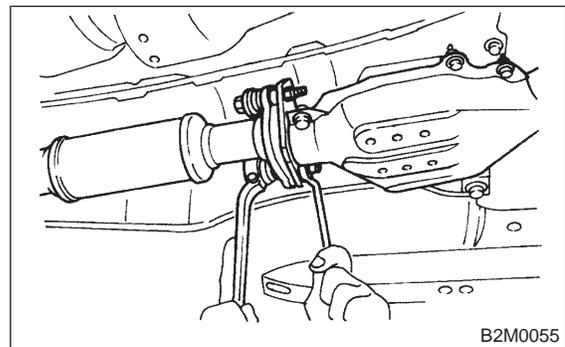
(2) Remove nuts which install front exhaust pipe onto engine.



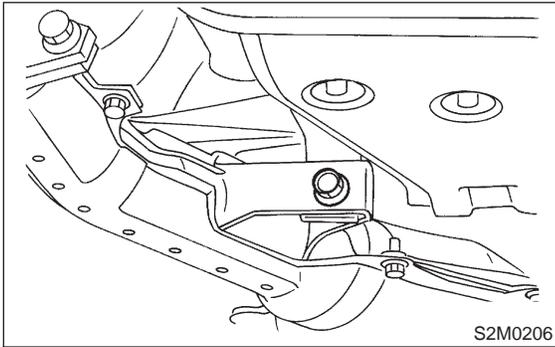
(3) Disconnect connector from rear oxygen sensor. (Except California spec. vehicle)



(4) Separate center exhaust pipe from rear exhaust pipe.

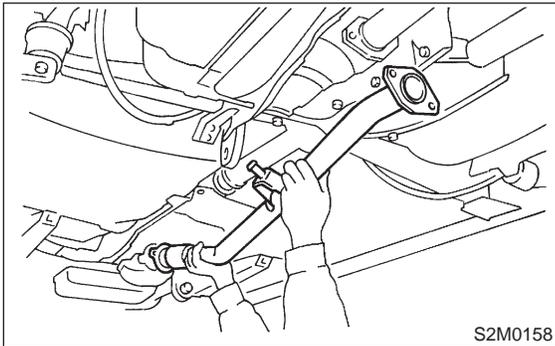


(5) Remove bolt which installs center exhaust pipe to hanger bracket.

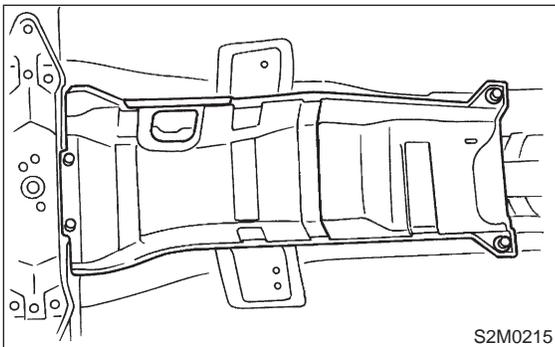


(6) Take off front and center exhaust pipes.
(7) Remove rear exhaust pipe.

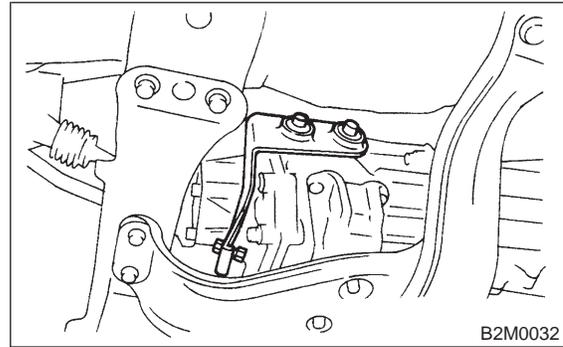
CAUTION:
When removing exhaust pipes, be careful each exhaust pipe does not drop out.



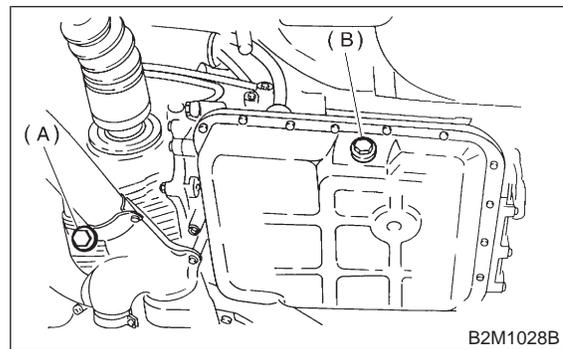
(8) Remove heat shield cover of rear exhaust pipe.



(9) Remove hanger bracket from right side of transmission.

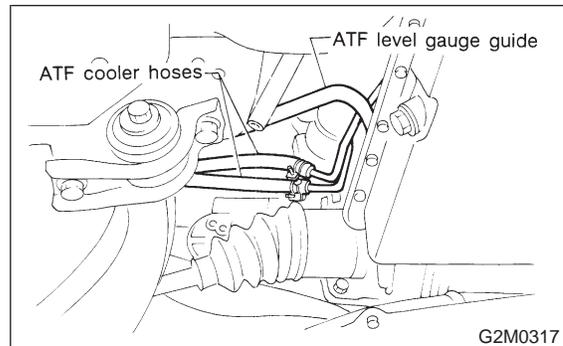


14) Drain ATF to remove ATF drain plug. (AT vehicles)



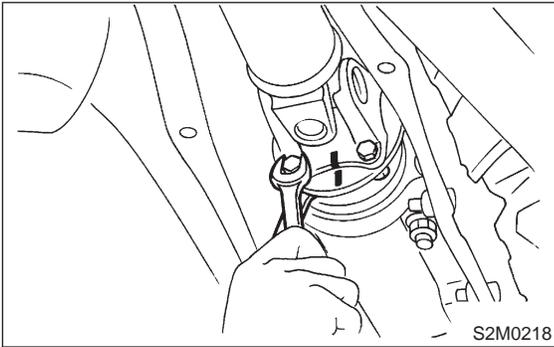
(A) Front differential oil drain plug
(B) ATF drain plug

15) Disconnect ATF cooler hoses from pipes of transmission side, and remove ATF level gauge guide. (AT vehicles)



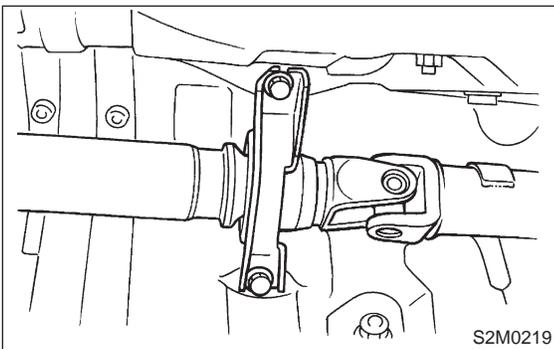
16) Remove propeller shaft.
(1) Remove front cover of rear differential mount.

(2) Separate propeller shaft from rear differential.



(3) Remove bolts which hold center bearing onto body.

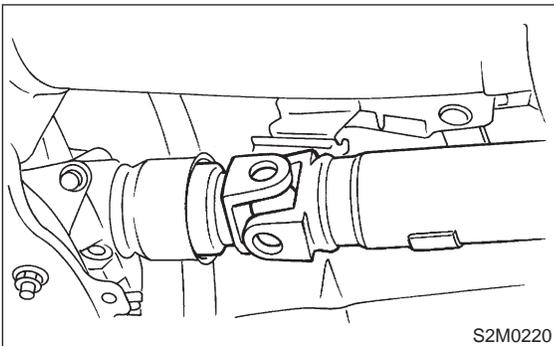
CAUTION:
Be careful not to drop propeller shaft.



(4) Remove propeller shaft from transmission.

CAUTION:

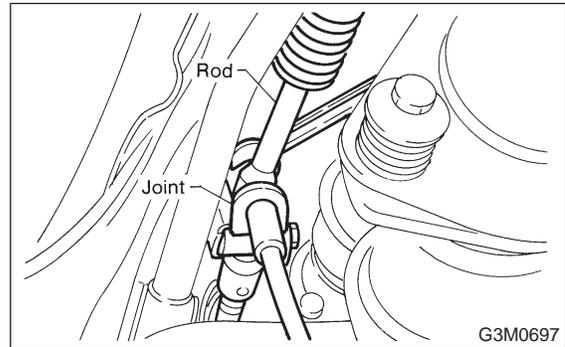
- Be sure to use an empty container to catch oil flowing out when removing propeller shaft.
- Be sure not to damage oil seals and the frictional surface of sleeve yoke.
- Be sure to plug the opening in transmission after removal of propeller shaft.



17) Remove gear shift rod and stay from transmission. (MT vehicles)

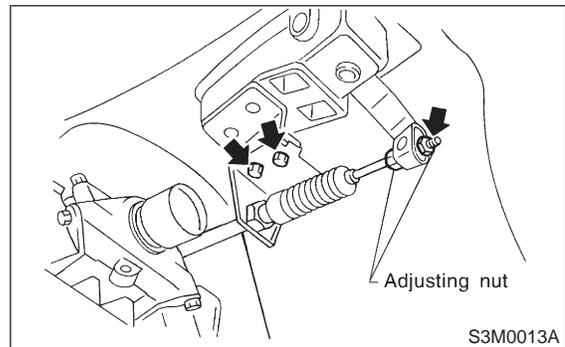
- (1) Remove spring.
- (2) Disconnect stay from transmission.

(3) Disconnect rod from transmission.

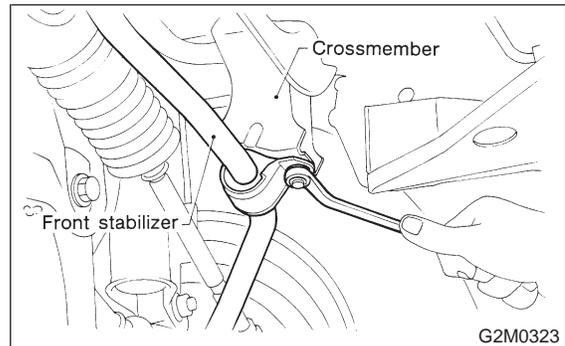


18) Remove shift selector cable. (AT vehicles)

- (1) Disconnect shift selector cable from selector lever.
- (2) Remove cable bracket from body.

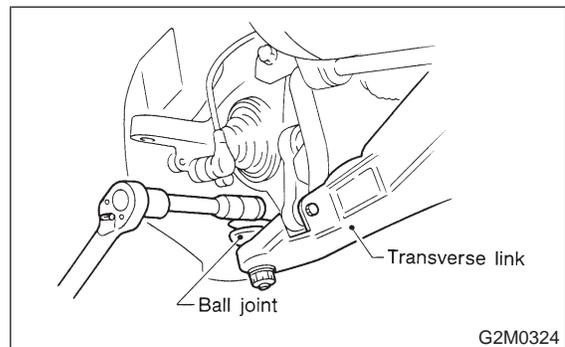


19) Remove bolts which install stabilizer clamps onto crossmember.



20) Remove front drive shafts from transmission.

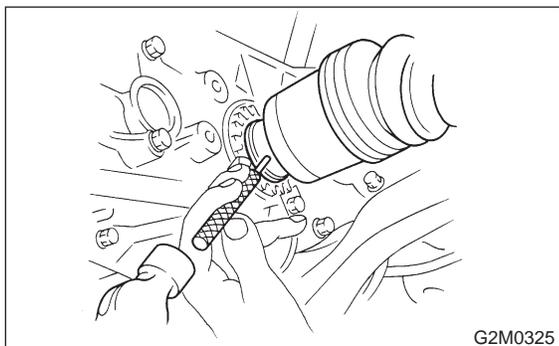
- (1) Remove transverse link from housing.



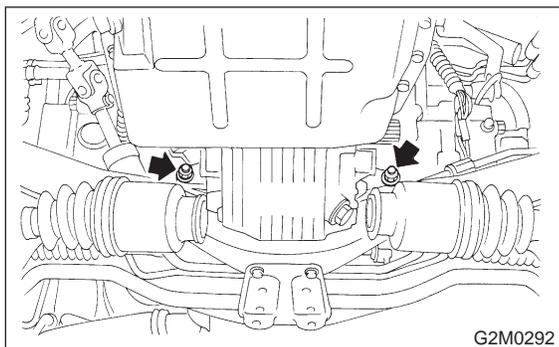
- (2) Lower transverse link.
- (3) Remove spring pins and separate front drive shafts from each side of the transmission.

CAUTION:

Discard removing spring pin. Replace with a new one.



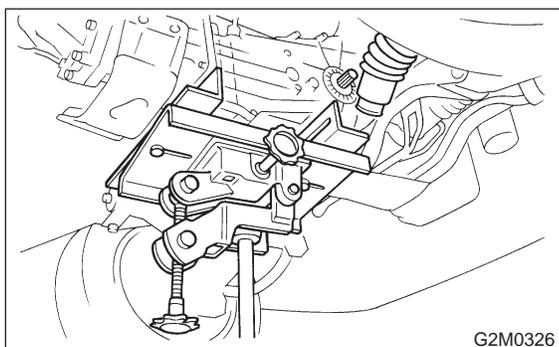
- 21) Remove nuts which hold lower side of transmission to engine.



- 22) Place transmission jack under transmission.

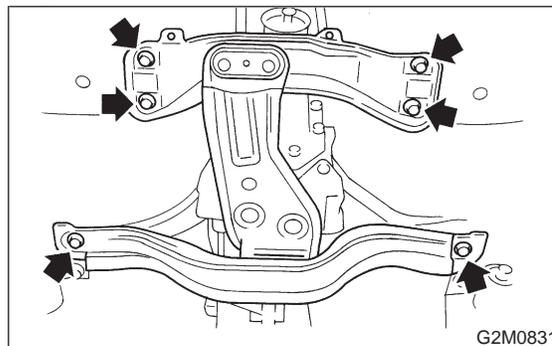
CAUTION:

- Always support transmission case with a transmission jack.
- On AT vehicles, make sure that the support plates of transmission jack don't touch the oil pan.

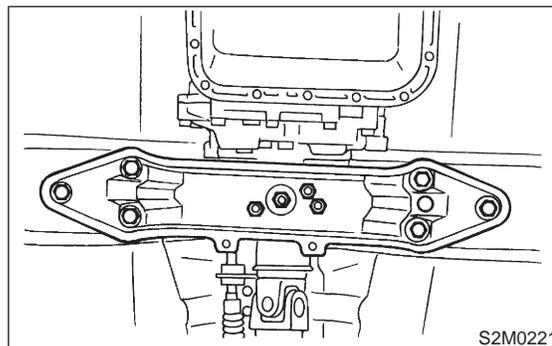


- 23) Remove transmission rear crossmember.

● MT vehicles



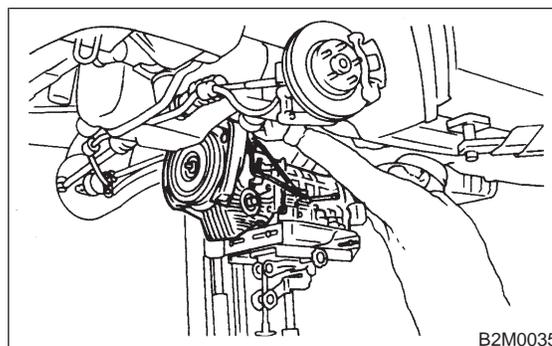
● AT vehicles



- 24) Remove transmission.

CAUTION:

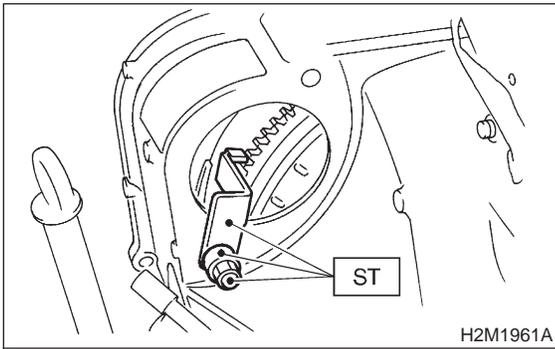
- Move transmission jack toward rear until mainshaft is withdrawn from clutch cover. (MT vehicles)
- Move transmission and torque converter as a unit away from engine. (AT vehicles)



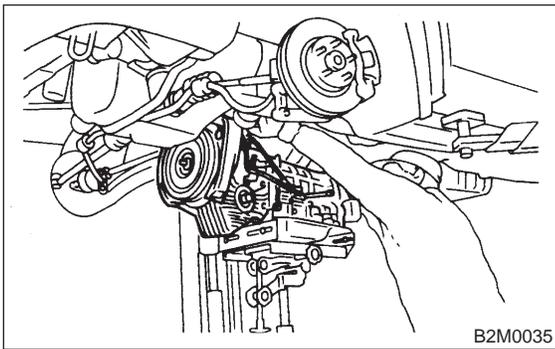
C: INSTALLATION

1) Install ST to torque converter clutch case. (AT vehicles)

ST 498277200 STOPPER SET



2) Install transmission to engine.
(1) Gradually raise transmission with transmission jack.



(2) Engage them at splines.

CAUTION:

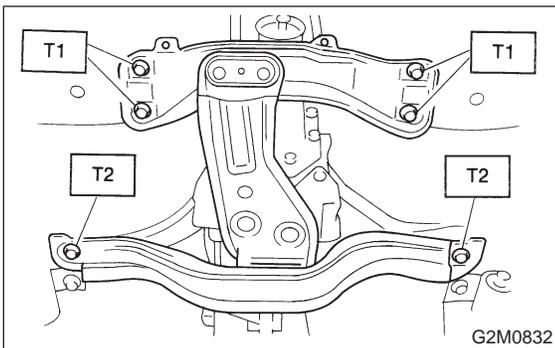
Be careful not to strike mainshaft against clutch cover. (MT vehicles)

3) Install transmission rear crossmember.

● MT vehicles

Tightening torque:

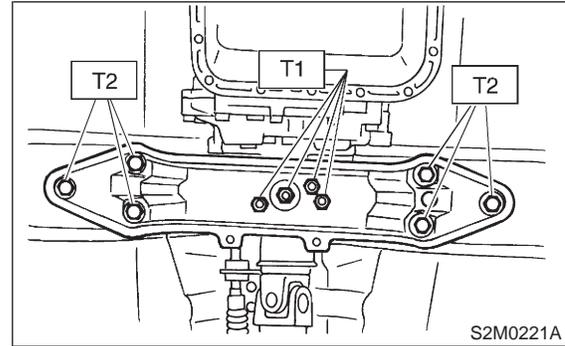
T1: 69±15 N·m (7.0±1.5 kg-m, 51±11 ft-lb)
T2: 137±20 N·m (14±2 kg-m, 101±14 ft-lb)



● AT vehicles

Tightening torque:

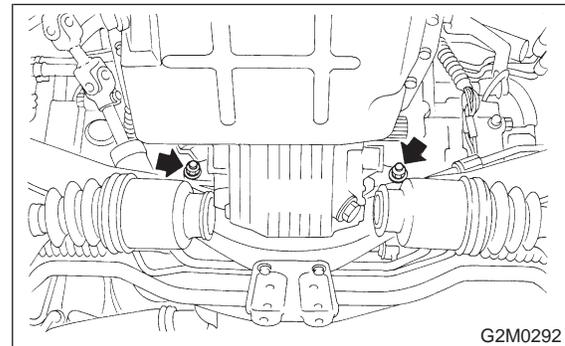
T1: 37±10 N·m (3.8±1.0 kg-m, 27±7 ft-lb)
T2: 69±15 N·m (7.0±1.5 kg-m, 51±11 ft-lb)



4) Take off transmission jack.
5) Tighten nuts which hold lower side of transmission to engine.

Tightening torque:

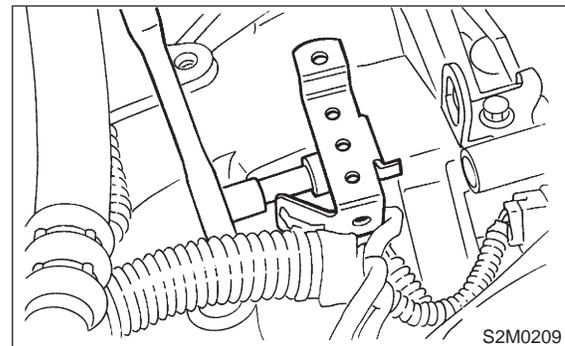
50±4 N·m (5.1±0.4 kg-m, 36.9±2.9 ft-lb)



6) Tighten bolt which holds right upper side of transmission to engine.

Tightening torque:

50±4 N·m (5.1±0.4 kg-m, 36.9±2.9 ft-lb)



7) Install torque converter to drive plate. (AT vehicles)

- (1) Tighten bolts which hold torque converter to drive plate.
- (2) Tighten other bolts while rotating the engine by using ST.

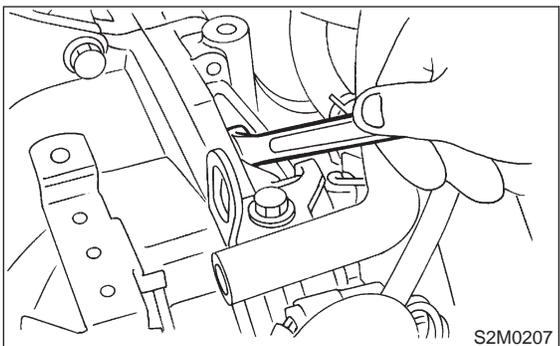
ST 499977000 CRANK PULLEY WRENCH

CAUTION:

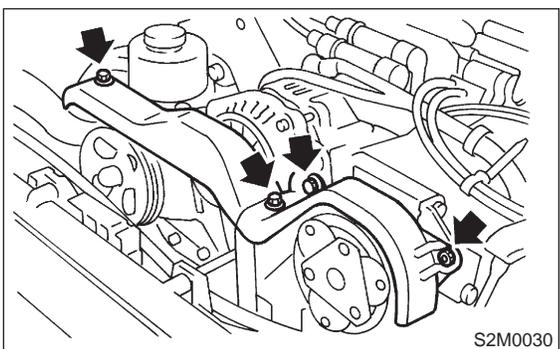
Be careful not to drop bolts into torque converter housing.

Tightening torque:

$25 \pm 2 \text{ N}\cdot\text{m}$ ($2.5 \pm 0.2 \text{ kg}\cdot\text{m}$, $18.1 \pm 1.4 \text{ ft}\cdot\text{lb}$)



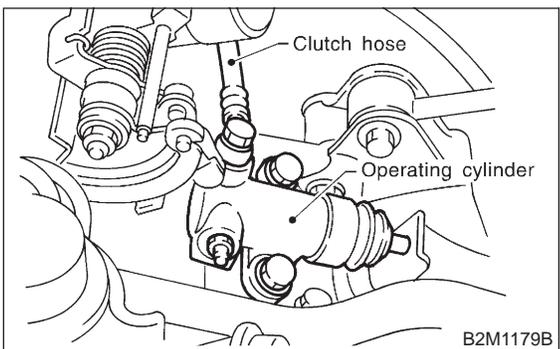
- (3) Clog plug onto service hole.
- (4) Install V-belt covers.



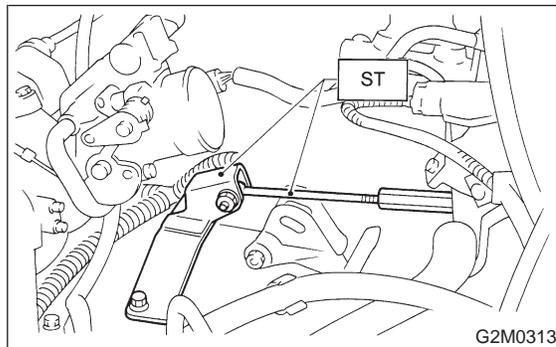
8) Install operating cylinder. (MT vehicles)

Tightening torque:

$37 \pm 3 \text{ N}\cdot\text{m}$ ($3.8 \pm 0.3 \text{ kg}\cdot\text{m}$, $27.5 \pm 2.2 \text{ ft}\cdot\text{lb}$)



9) Remove special tools.

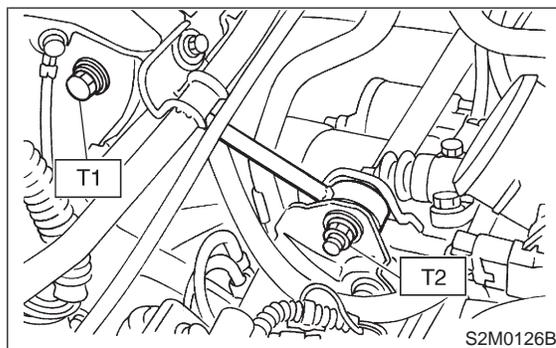


10) Install pitching stopper.

Tightening torque:

T1: $57 \pm 10 \text{ N}\cdot\text{m}$ ($5.8 \pm 1.0 \text{ kg}\cdot\text{m}$, $42 \pm 7 \text{ ft}\cdot\text{lb}$)

T2: $49 \pm 5 \text{ N}\cdot\text{m}$ ($5.0 \pm 0.5 \text{ kg}\cdot\text{m}$, $36.2 \pm 3.6 \text{ ft}\cdot\text{lb}$)

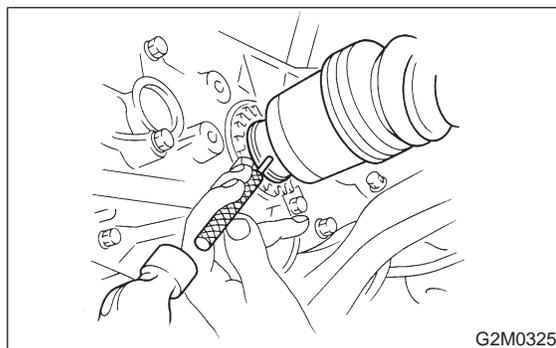


11) Install front drive shafts into transmission.

- (1) Lift-up the vehicle.
- (2) Install front drive shaft into transmission.
- (3) Drive spring pin into chamfered hole of drive shaft.

CAUTION:

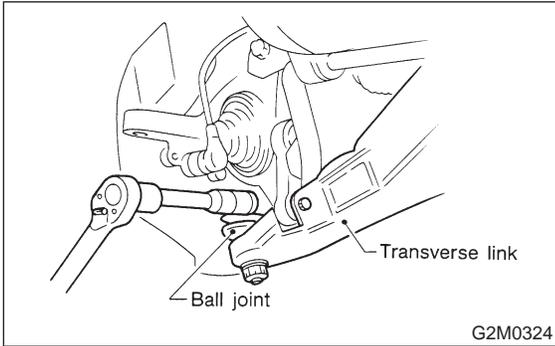
Always use a new spring pin.



- (4) Install ball joints of lower arm into knuckle arm of housing, and tighten installing bolts.

Tightening torque:

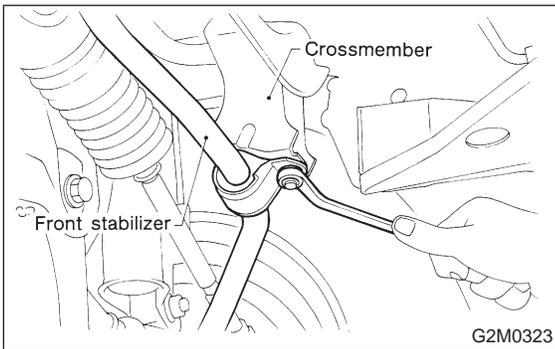
49±10 N·m (5.0±1.0 kg·m, 36±7 ft·lb)



- 12) Install stabilizer clamps onto front crossmember.

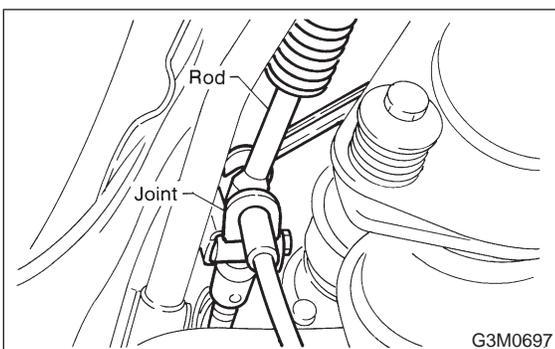
Tightening torque:

25±4 N·m (2.5±0.4 kg·m, 18.1±2.9 ft·lb)



- 13) Install gear shift rod and stay. (MT vehicles)

- (1) Install gear shift rod onto transmission.



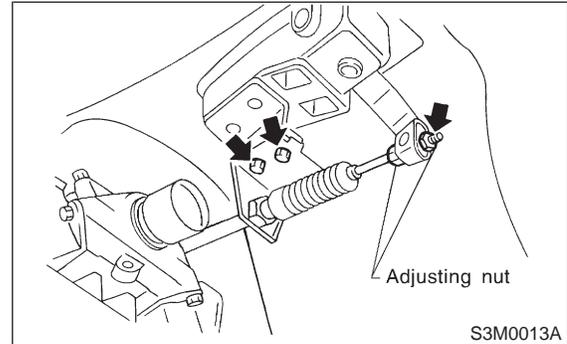
- (2) Install stay onto transmission.
(3) Install spring.

- 14) Install shift selector cable onto selector lever. (AT vehicles)

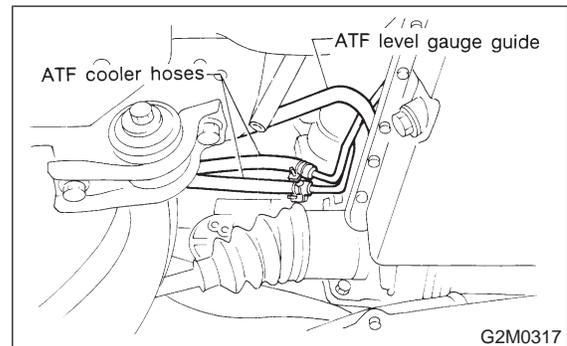
- (1) Install selector cable into selector lever.
(2) Install cable bracket onto body.

NOTE:

Tighten selector cable adjusting and lock nut after checking selector lever operation.



- 15) Install ATF level gauge guide, and ATF cooler hoses onto pipe. (AT vehicles)

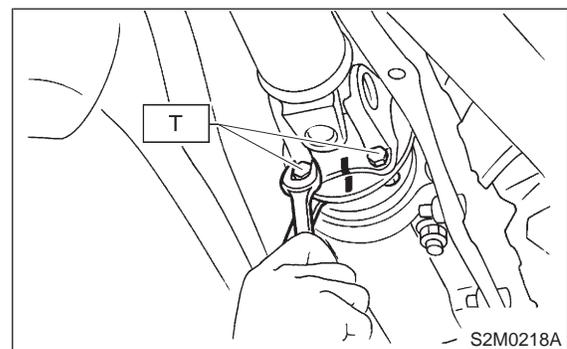


- 16) Install propeller shaft.

- (1) Install propeller shaft into transmission.
(2) Tighten bolts which install propeller shaft onto companion flange of rear differential.

Tightening torque:

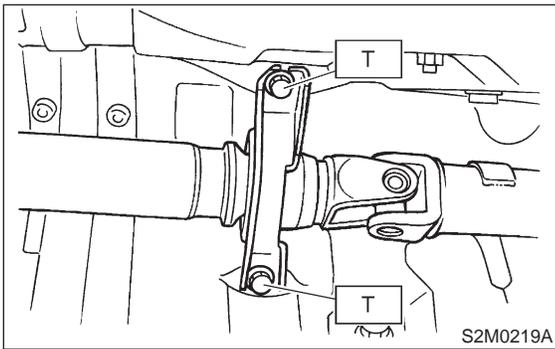
T: 31±8 N·m (3.2±0.8 kg·m, 23.1±5.8 ft·lb)



(3) Install center bearing bracket on body.

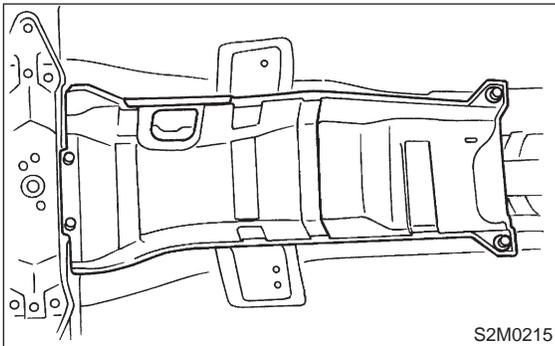
Tightening torque:

T: 52 ± 5 N-m (5.3 ± 0.5 kg-m, 38.3 ± 3.6 ft-lb)



17) Install exhaust system.

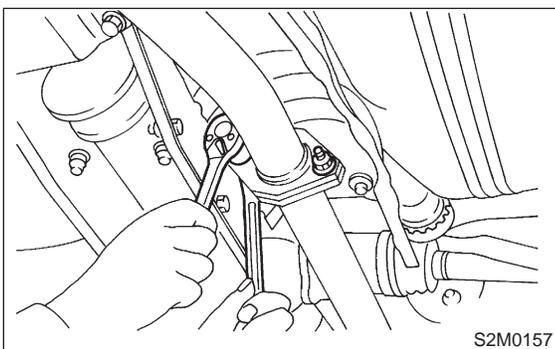
(1) Install heat shield cover.



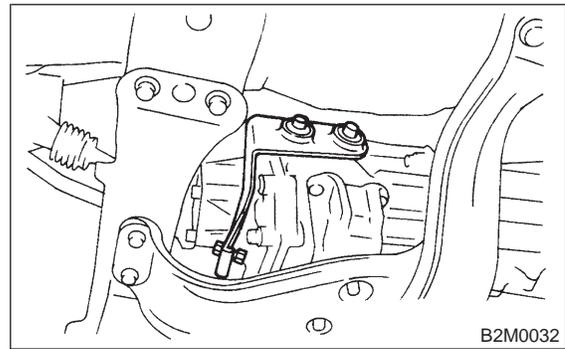
(2) Install rear exhaust pipe to muffler.

Tightening torque:

48 ± 9 N-m (4.9 ± 0.9 kg-m, 35.4 ± 6.5 ft-lb)



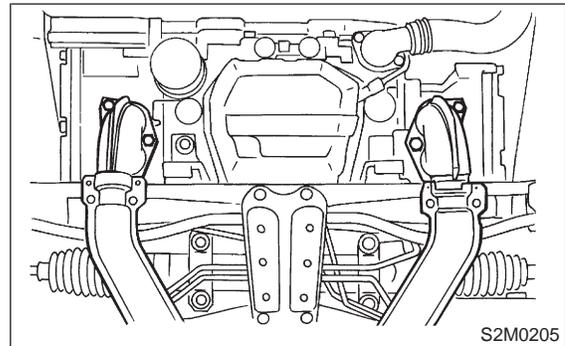
(3) Install hanger bracket on right side of transmission.



(4) Install front exhaust pipe onto engine.

Tightening torque:

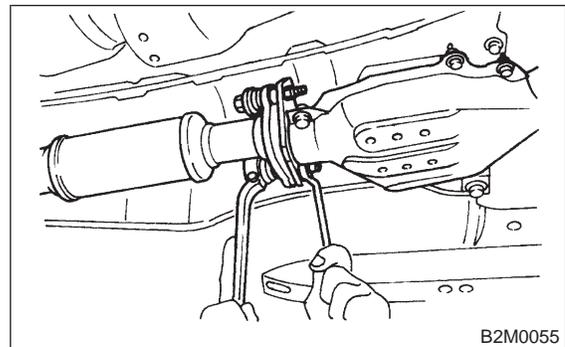
30 ± 5 N-m (3.1 ± 0.5 kg-m, 22.4 ± 3.6 ft-lb)



(5) Install center exhaust pipe to rear exhaust pipe.

Tightening torque:

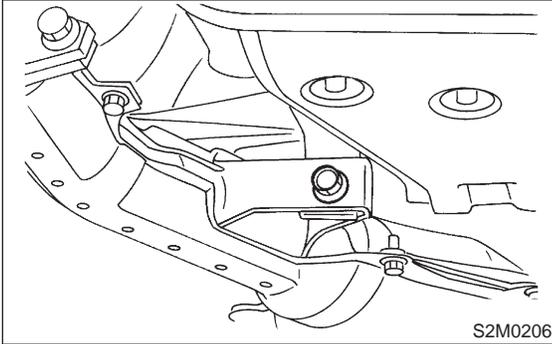
18 ± 5 N-m (1.8 ± 0.5 kg-m, 13.0 ± 3.6 ft-lb)



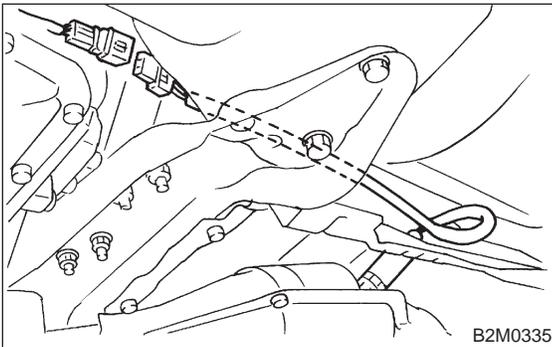
(6) Tighten bolt which installs center exhaust pipe to hanger bracket.

Tightening torque:

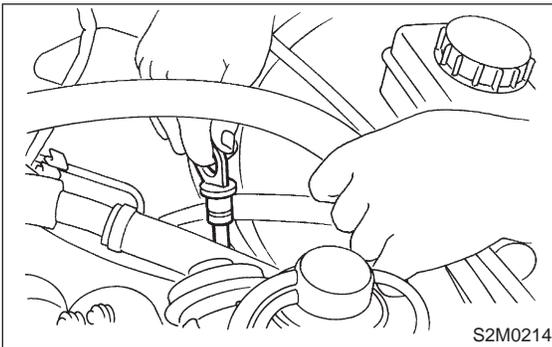
$30 \pm 5 \text{ N}\cdot\text{m}$ ($3.1 \pm 0.5 \text{ kg}\cdot\text{m}$, $22.4 \pm 3.6 \text{ ft}\cdot\text{lb}$)



(7) Connect connector to rear oxygen sensor.
(Except California spec. vehicle)



18) Install ATF level gauge. (AT vehicles)



19) Connect the following connectors.

- (1) Transmission harness connectors
- (2) Transmission ground terminal
- (3) Front oxygen sensor connector
- (4) Rear oxygen sensor connector (California spec. vehicle)
- (5) Vehicle speed sensor 2
- (6) Neutral position switch connector (MT vehicles)
- (7) Back-up light switch connector (MT vehicles)

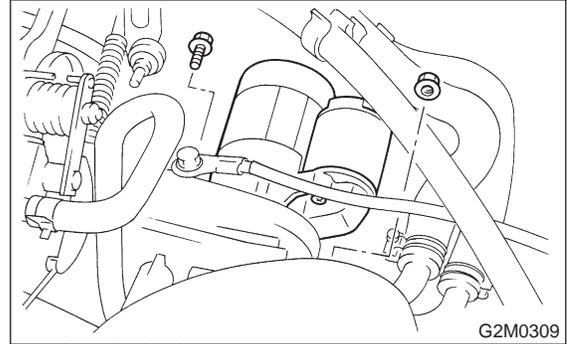
20) Install starter.

- (1) Install starter onto transmission case, and connect connectors and terminals.

(2) Tighten bolt and nut which install starter onto transmission.

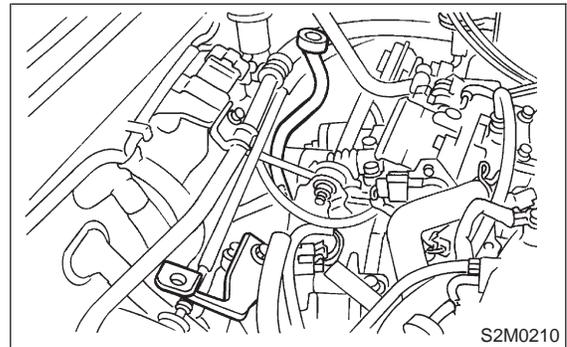
Tightening torque:

$40 \pm 4 \text{ N}\cdot\text{m}$ ($4.1 \pm 0.4 \text{ kg}\cdot\text{m}$, $29.7 \pm 2.9 \text{ ft}\cdot\text{lb}$)

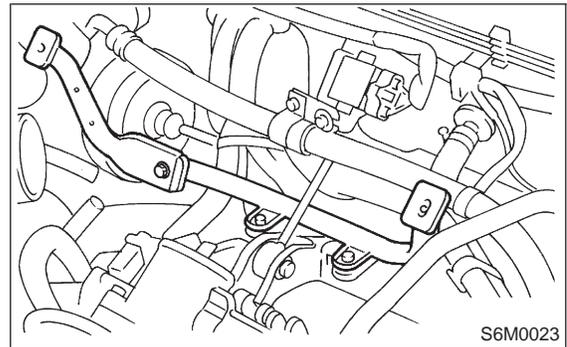


21) Install chamber stay.

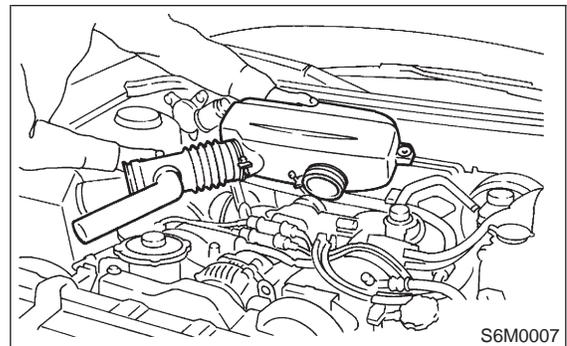
- MT vehicles



- AT vehicles



22) Install air intake duct and chamber.



23) Connect battery ground cable.

24) Fill ATF. (AT vehicles)

<Ref. to 3-2 [S1A0].>

25) Check selector lever operation. (AT vehicles)

<Ref. to 3-2 [T2C0].>

26) Take off vehicle from lift arms.

27) Check the vehicle on road tester. (AT vehicles)

<Ref. to 3-2 [W7A0].>

MEMO: