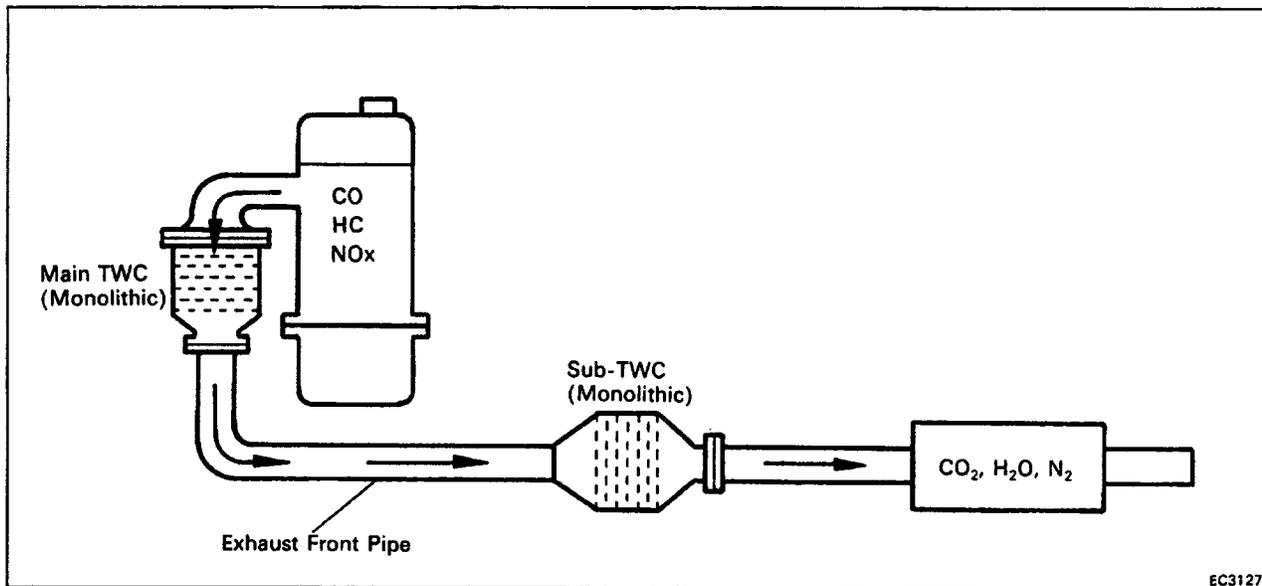


THREE-WAY CATALYST (TWC) SYSTEM

E006J-02



EC3127

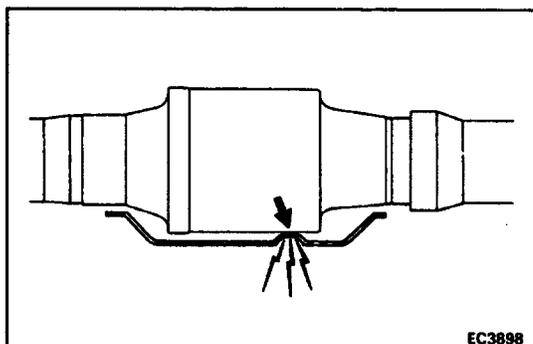
To reduce CO, HC and NO_x emissions, they are oxidized, reduced and converted to carbon dioxide (CO₂), water (H₂O) and nitrogen (N₂) by the catalyst.

Exhaust Port	Main TWC	Sub-TWC	Exhaust Gas
CO HC NO _x	OXIDATION AND REDUCTION	OXIDATION AND REDUCTION	CO ₂ H ₂ O N ₂

V00328

EXHAUST PIPE ASSEMBLY INSPECTION

1. INSPECT CONNECTIONS FOR LOOSENESS OR DAMAGE
2. INSPECT CLAMPS FOR WEAKNESS, CRACKS OR DAMAGE



EC3898

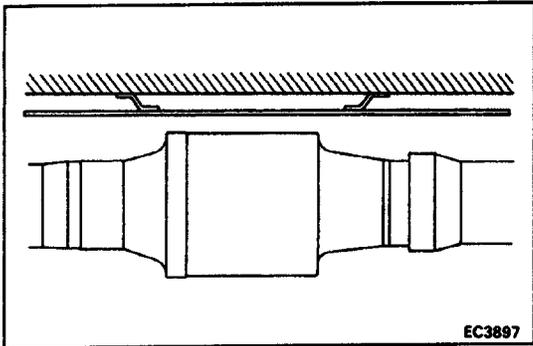
E006L-02

SUB-TWC INSPECTION

INSPECT FOR DENTS OR DAMAGE

If any part of protector is damaged or dented to the extent that it contacts the sub-TWC, repair or replace it.

EG08M-02



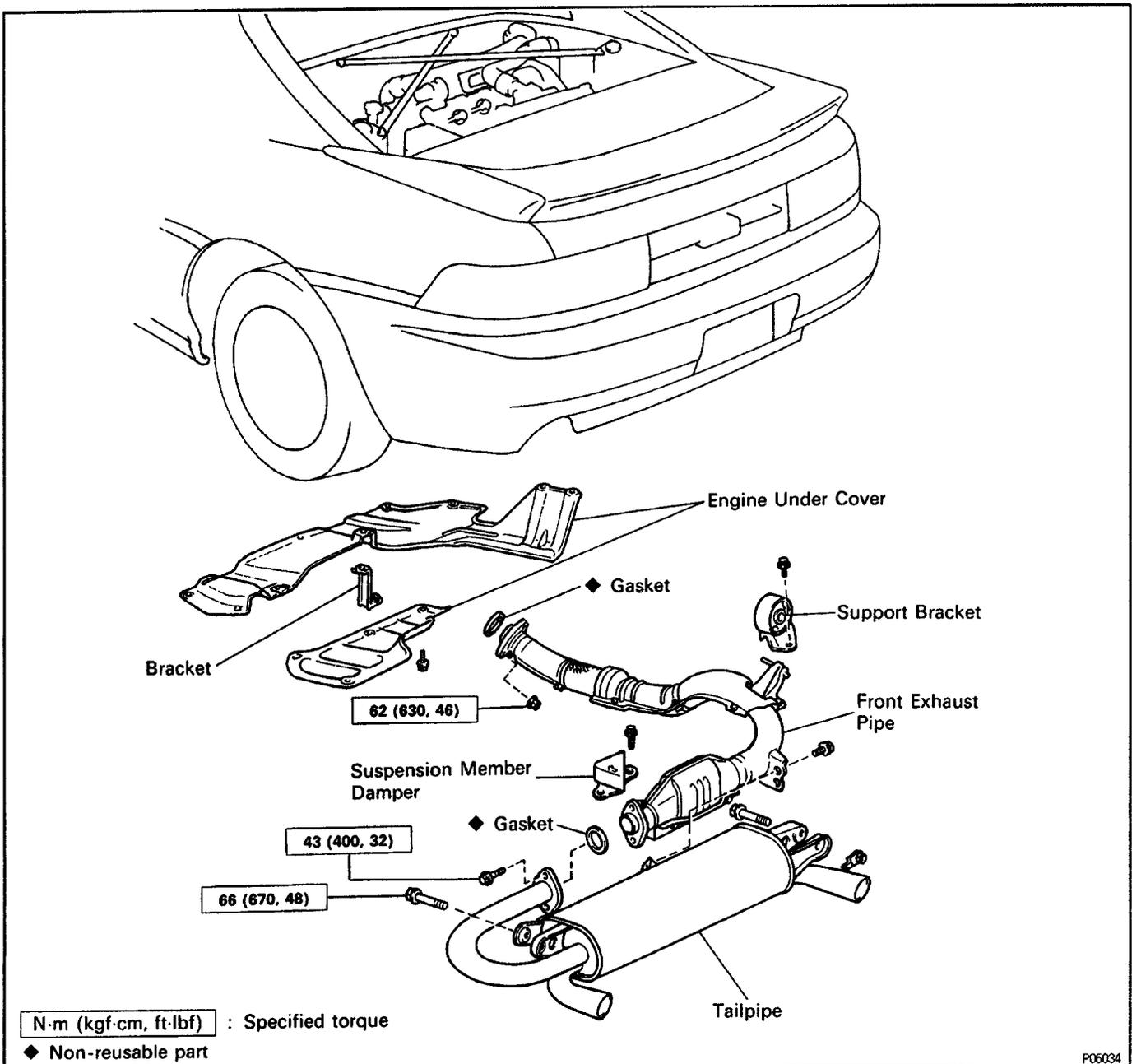
EC3897

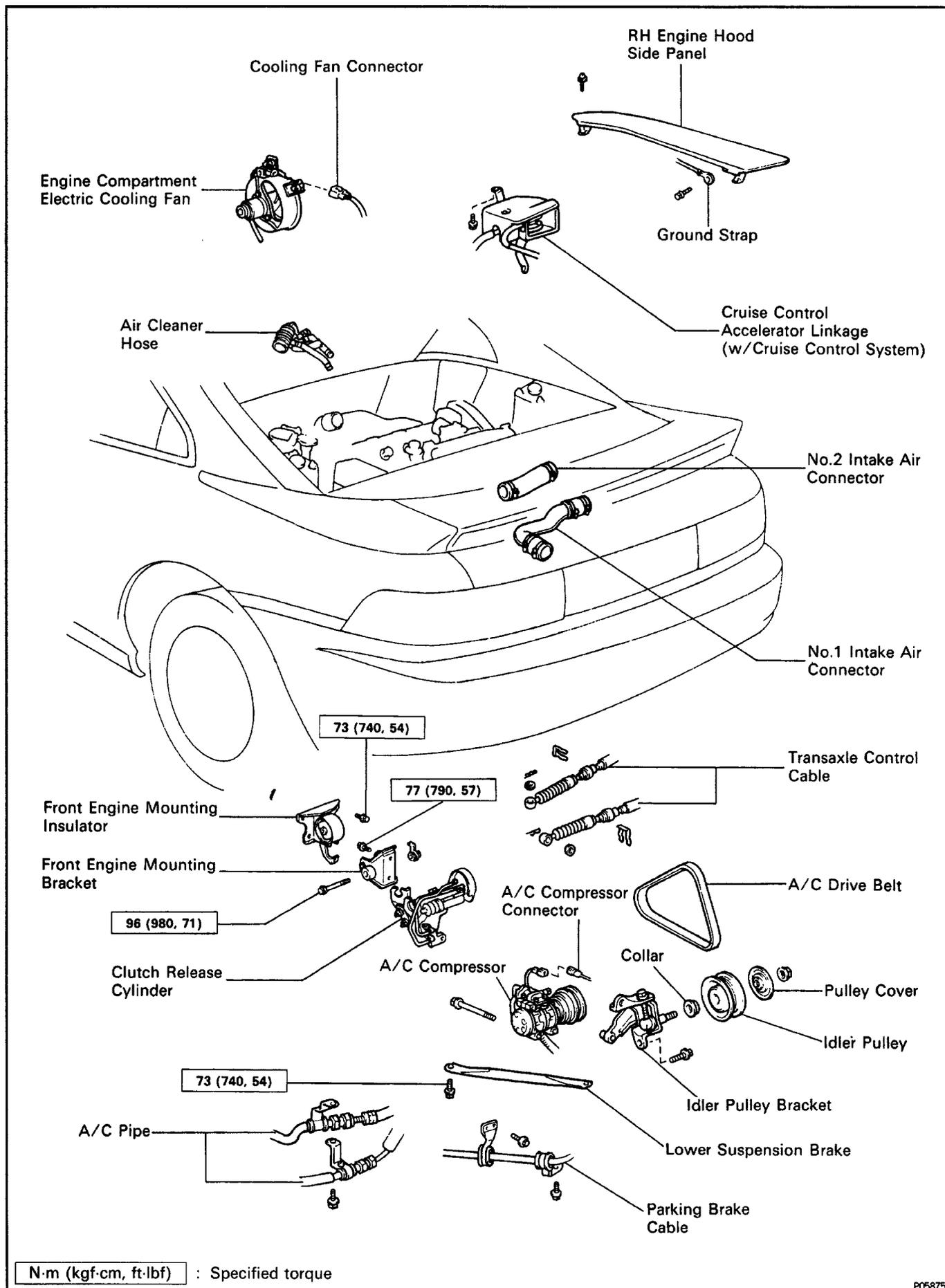
SUB-TWC HEAT INSULATOR INSPECTION

1. INSPECT HEAT INSULATOR FOR DAMAGE
2. INSPECT FOR ADEQUATE CLEARANCE BETWEEN CATALYTIC CONVERTER AND HEAT INSULATOR

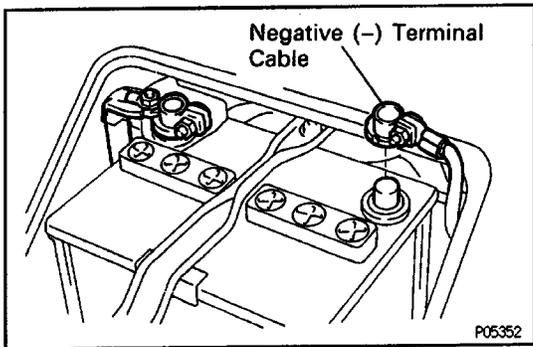
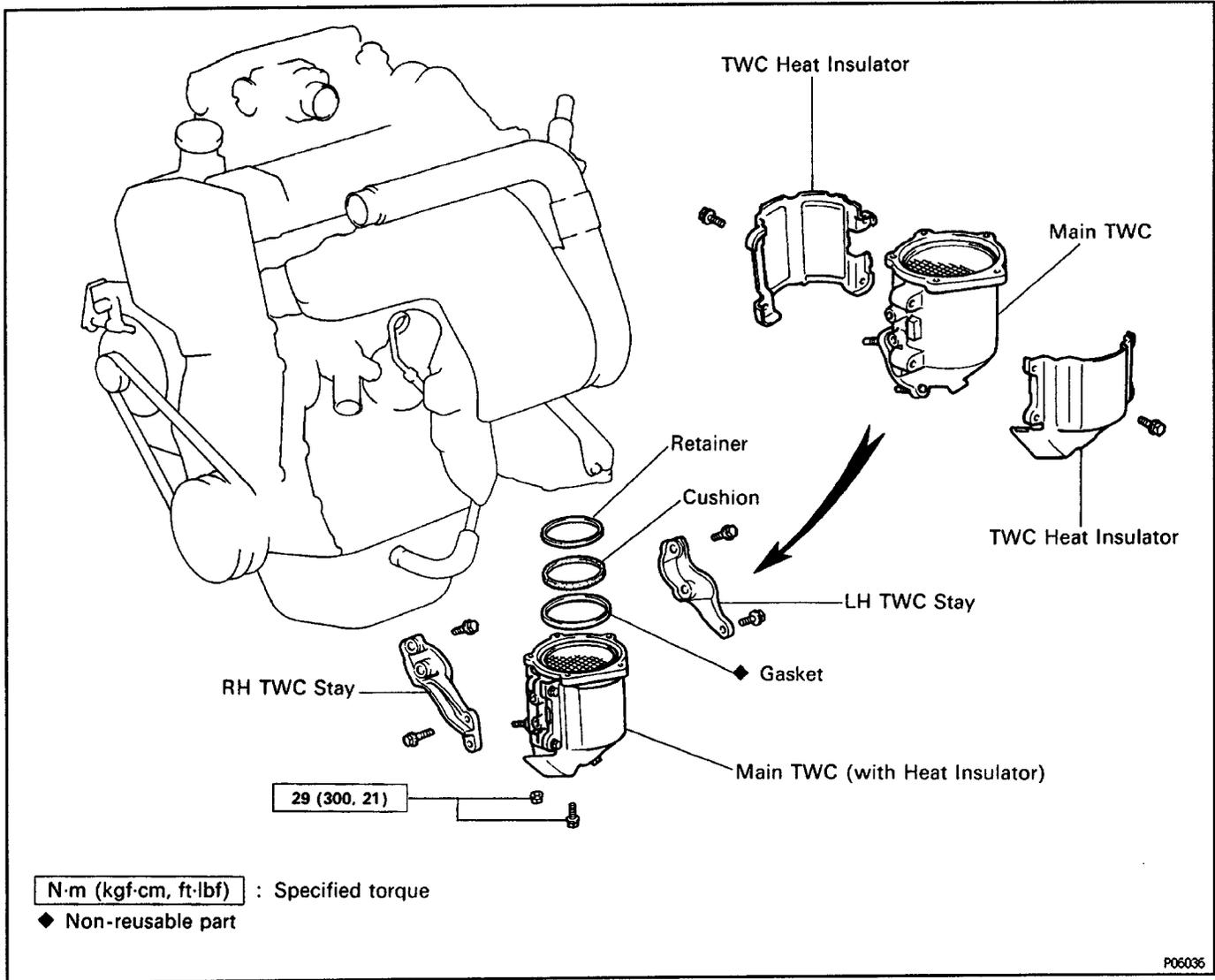
EG0XG-01

COMPONENTS FOR REMOVAL AND INSTALLATION





N·m (kgf·cm, ft·lbf) : Specified torque



MAIN TWC REPLACEMENT

(See Components for Removal and Installation)

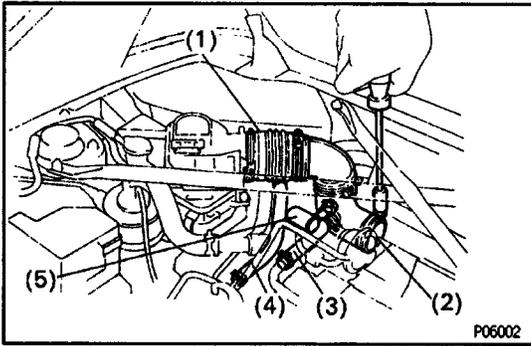
CAUTION: Check that the TWC is cool.

1. DISCONNECT CABLE FROM NEGATIVE TERMINAL OF BATTERY

CAUTION: Turn the ignition switch to "LOCK". Disconnect the negative terminal from the battery. Wait at least 20 seconds before proceeding with work.

2. REMOVE ENGINE UNDER COVERS

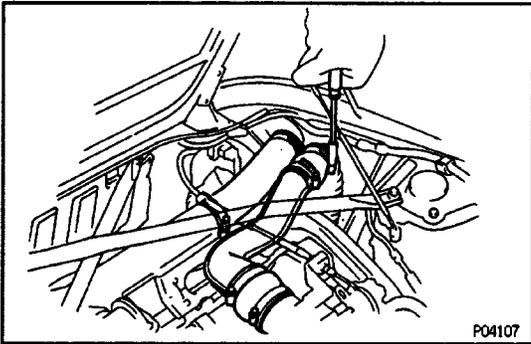
3. REMOVE RH ENGINE HOOD SIDE PANEL



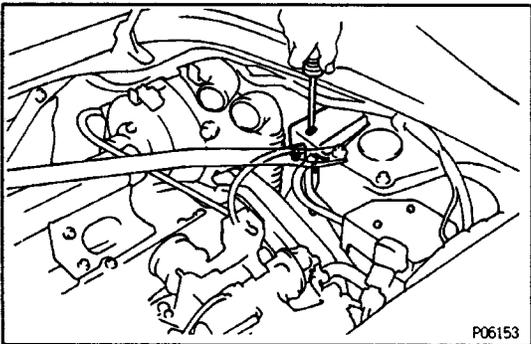
4. REMOVE AIR CLEANER HOSE

Disconnect the following hoses, and remove the air cleaner hose:

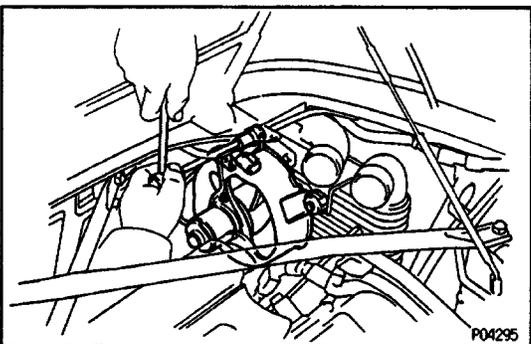
- (1) Air cleaner hose from air flow sensor
- (2) Air cleaner hose from turbocharger
- (3) PCV hose from cylinder head cover
- (4) Air hose from No.2 air hose
- (5) Air hose from air by-pass valve



5. REMOVE NO.1 AND NO.2 INTAKE AIR CONNECTORS

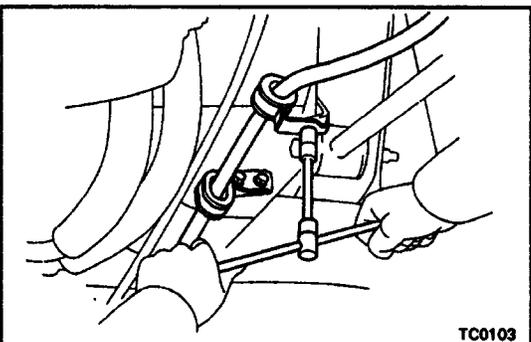


6. (w/ CRUISE CONTROL SYSTEM) REMOVE CRUISE CONTROL ACCELERATOR LINKAGE



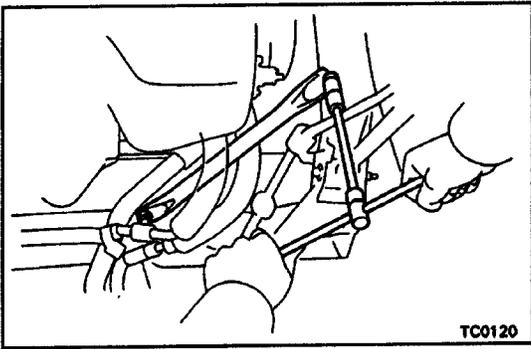
7. REMOVE ENGINE COMPARTMENT ELECTRIC COOLING FAN

- (a) Disconnect the cooling fan connector.
- (b) Loosen the three bolts, and remove the cooling fan.

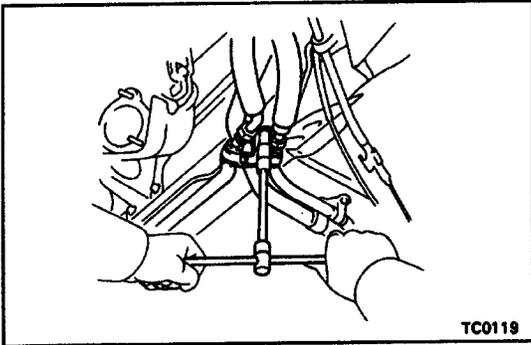


8. DISCONNECT A/C COMPRESSOR FROM ENGINE

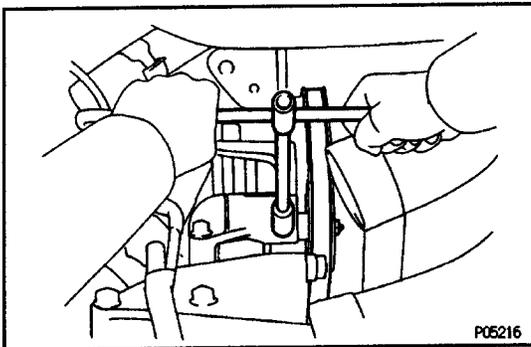
- (a) Remove the three clamp bolts, and disconnect the parking brake cable.



(b) Remove the two bolts and suspension brace.

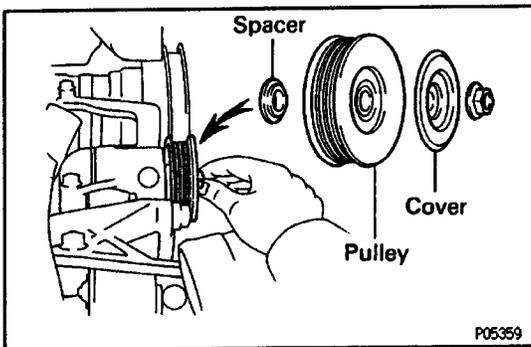


(c) Remove the clamp nut, and disconnect the two A/C pipes.

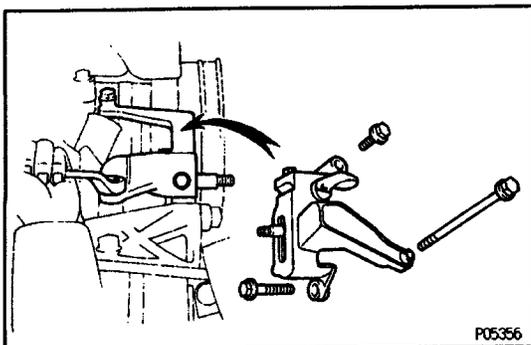


(d) Loosen the idler pulley nut.

(e) Loosen the adjusting bolt, and remove the drive belt.

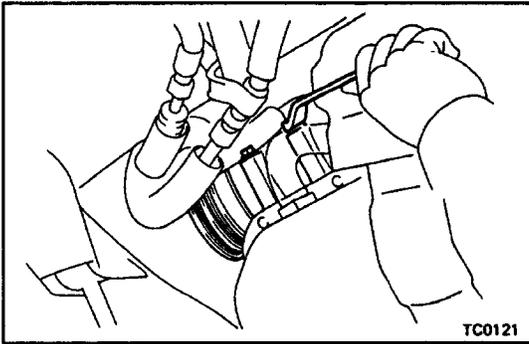


(f) Remove the nut, pulley cover, idler pulley and spacer.

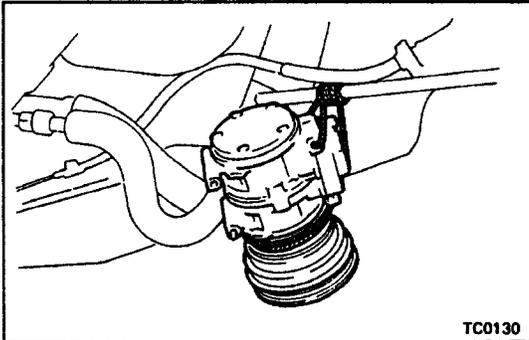


(g) Disconnect the A/C compressor connector.

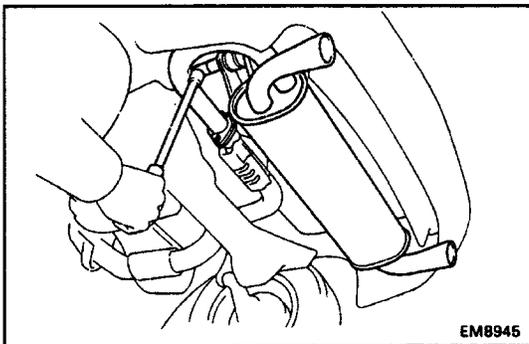
(h) Remove the three bolts and idler pulley bracket.



- (i) Remove the two bolts, and disconnect the A/C compressor from the engine.

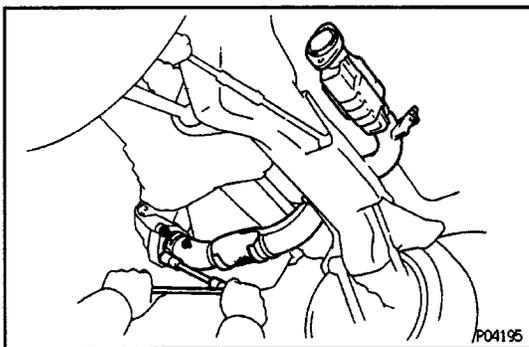


HINT: Suspend the A/C compressor to strut rod with a string.



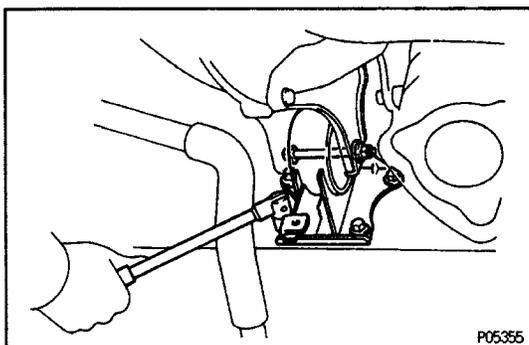
9. REMOVE TAILPIPE

- Remove the two bolts holding the front exhaust pipe to the tailpipe bracket.
- Remove the two bolts holding the front exhaust pipe to the tailpipe.
- Remove the two bolts, tailpipe and gasket.



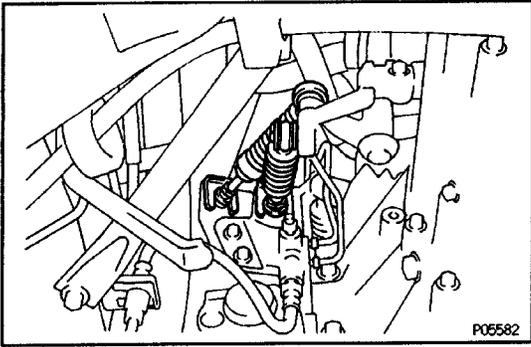
10. REMOVE FRONT EXHAUST PIPE

(See step 2 in Main TWC Replacement)



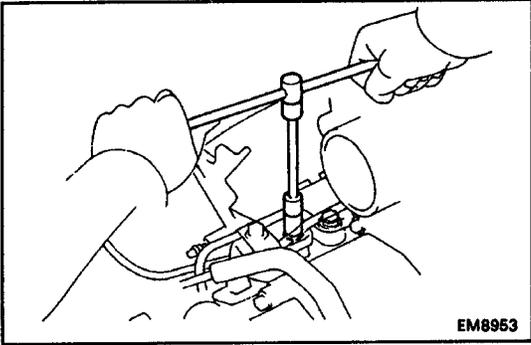
11. REMOVE FRONT ENGINE MOUNTING INSULATOR

- Remove the through bolt and nut holding the mounting insulator to the mounting bracket.
- Remove the four bolts and mounting insulator.

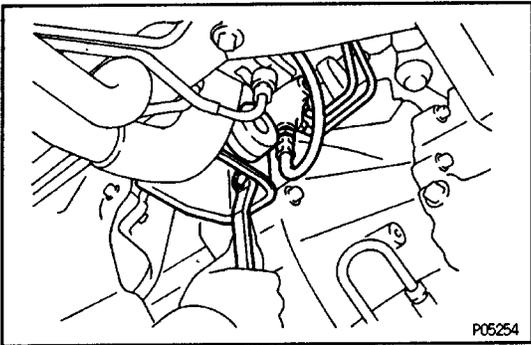


12. REMOVE FRONT ENGINE MOUNTING BRACKET AND CLUTCH RELEASE CYLINDER

(a) Disconnect the two transaxle control cables from the transaxle.



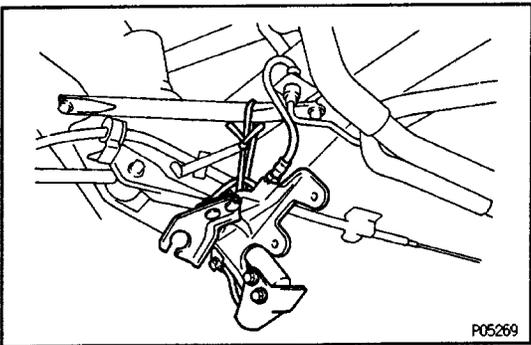
(b) Remove the two bolts holding the clutch release cylinder to the transaxle.



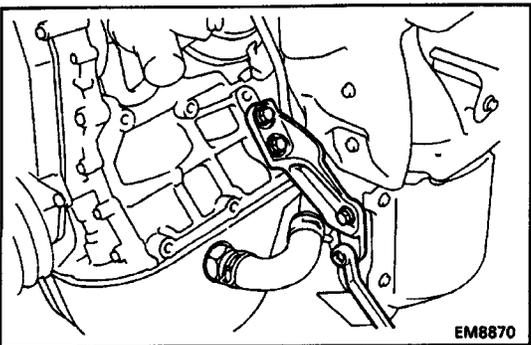
(c) Remove the two bolts and mounting bracket.

(d) Disconnect the clutch release cylinder from the transaxle.

Remove the three bolts and stiffener plate.

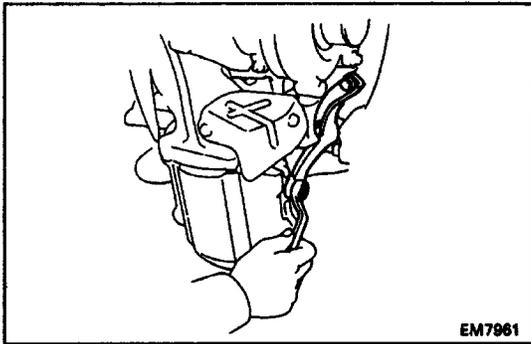


HINT: Suspend the clutch release cylinder to the suspension brace with a string.

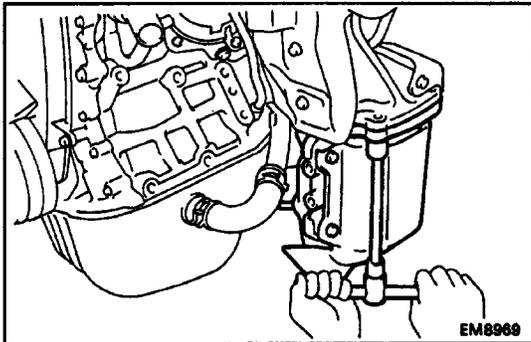


13. REMOVE MAIN TWC

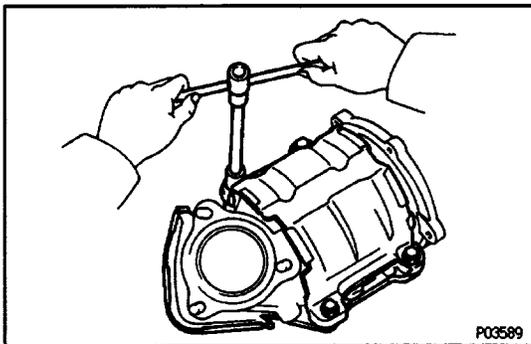
(a) Remove the four bolts and RH TWC stay.



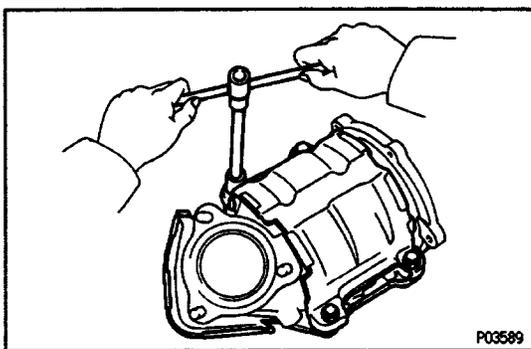
(b) Remove the three bolts and LH TWC stay.



(c) Remove the three bolts, two nuts, TWC, gasket, retainer and cushion.

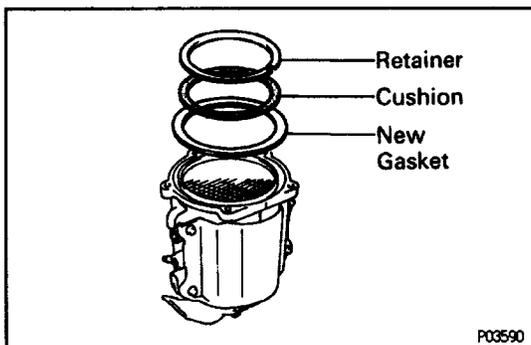


(d) Remove the nine bolts and two heat insulators from the TWC.

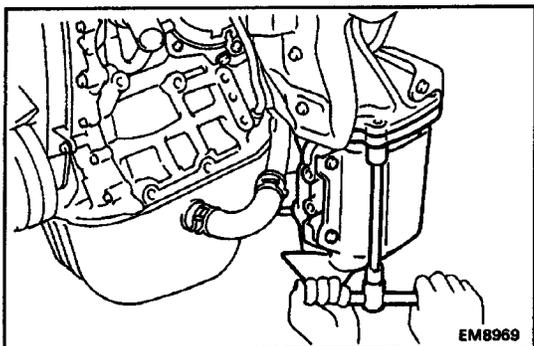


14. REINSTALL MAIN TWC

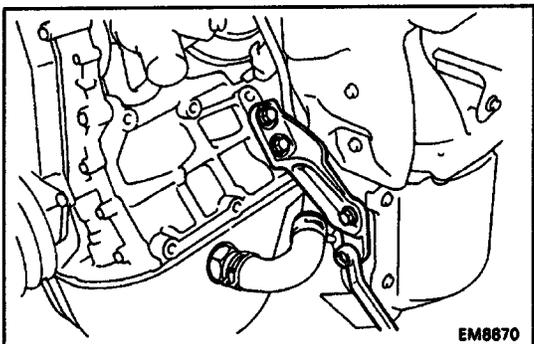
(a) Remove the two heat insulators to a new TWC with the nine bolts.



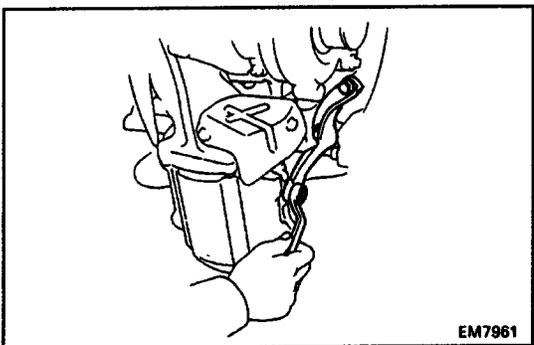
(b) Place the cushion, retainer and a new gasket on the TWC.



- (c) Install the TWC with the three bolts and two nuts.
Torque: 29 N-m (300 kgf-cm, 21 ft-lbf)

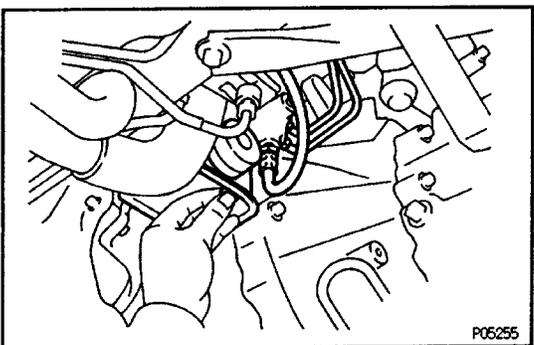


- (d) Install the RH TWC stay with the four bolts.
Torque: 59 N-m (600 kgf-cm, 43 ft-lbf)

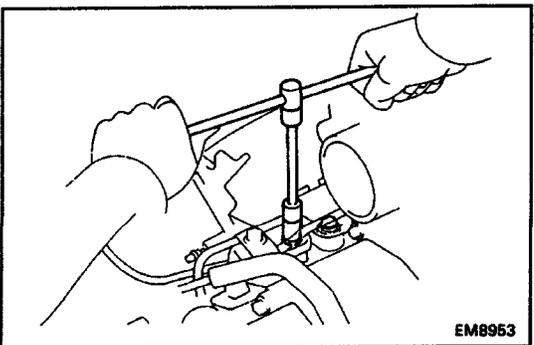


- (e) Install the LH TWC stay with the three bolts.
Torque: 59 N-m (600 kgf-cm, 43 ft-lbf)

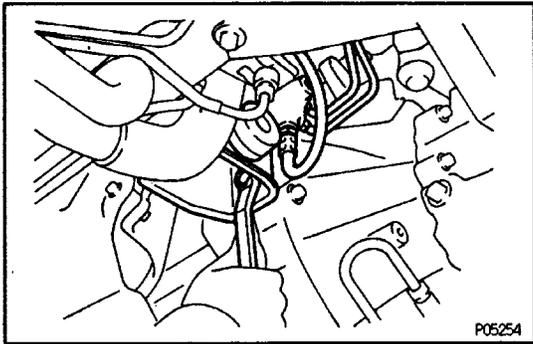
15. REINSTALL CLUTCH RELEASE CYLINDER AND FRONT ENGINE MOUNTING BRACKET



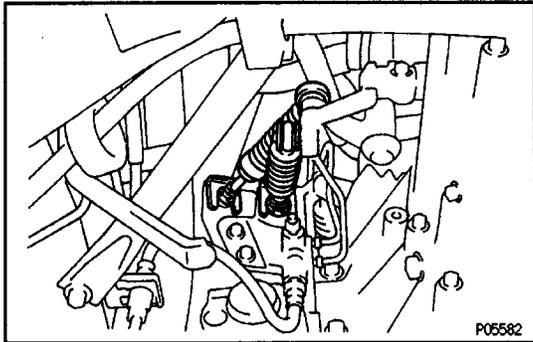
- (a) Temporarily install the release cylinder and mounting bracket with the two bolts.



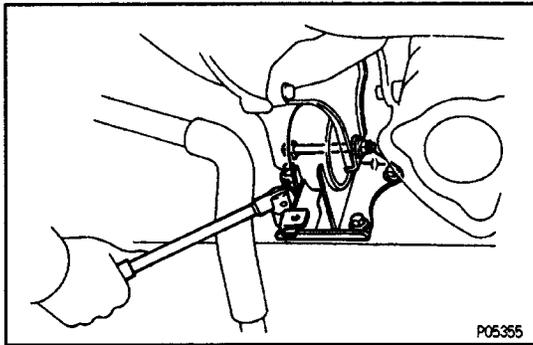
- (b) Install the clutch release cylinder with the two bolts.
Torque: 12 N-m (120 kgf-cm, 9 ft-lbf)



- (c) Tighten the two bolts holding the clutch release cylinder to the transaxle.
Torque: 77 N-m (790 kgf-cm, 57 ft-lbf)



- (d) Connect the two transaxle control cables to the transaxle.



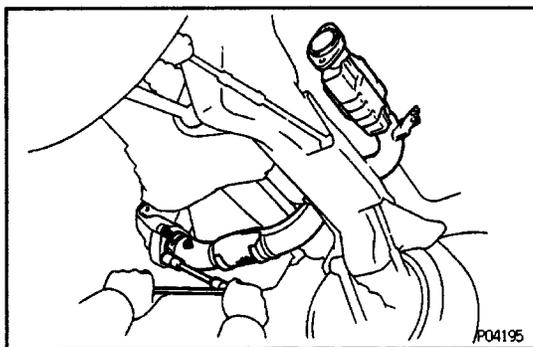
16. REINSTALL FRONT ENGINE MOUNTING INSULATOR

- (a) Install the mounting insulator to the body with the four bolts.

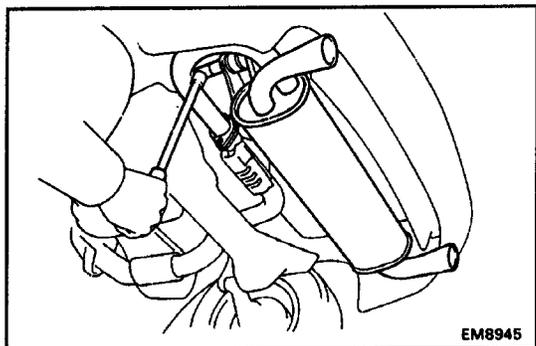
Torque: 77 N-m (790 kgf-cm, 57 ft-lbf)

- (b) Install the mounting insulator to the mounting bracket with the through bolt and nut.

Torque: 96 N-m (980 kgf-cm, 71 ft-lbf)



17. REINSTALL FRONT EXHAUST PIPE (See step 3 in Main TWC Replacement)



18. REINSTALL TAILPIPE

(a) Place a new gasket to the rear of the front exhaust pipe.

(b) Install the tailpipe to the body bracket with the two bolts and nut.

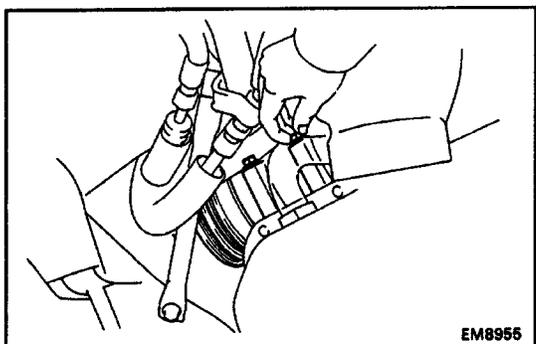
Torque: 66 N-m (670 kgf-cm, 48 ft-lbf)

(c) Install the two bolts holding the front exhaust pipe to the tailpipe.

Torque: 43 N-m (440 kgf-cm, 32 ft-lbf)

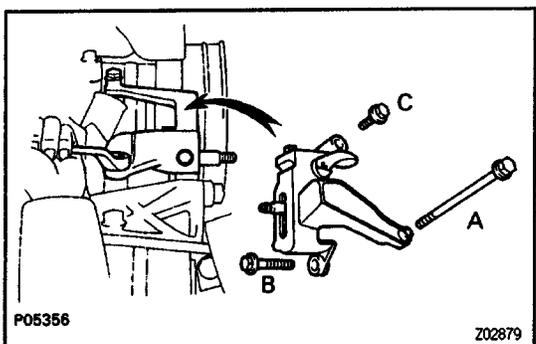
(d) Install the two bolts holding the front exhaust pipe to the tailpipe bracket.

Torque: 19 N-m (190 kgf-cm, 14 ft-lbf)



19. REINSTALL A/C COMPRESSOR

(a) Temporarily install the A/C compressor with the two bolts.



(b) Install the idler pulley bracket with the three bolts.

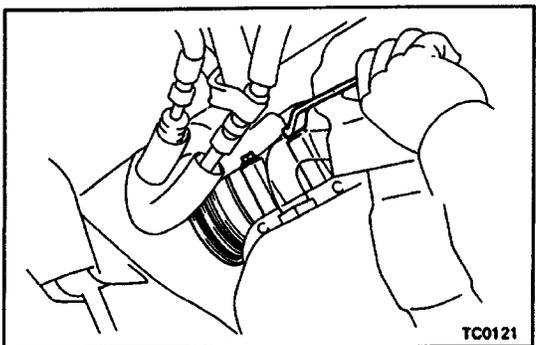
Torque:

25 N-m (250 kgf-cm, 18 ft-lbf) for A

27 N-m (275 kgf-cm, 20 ft-lbf) for B

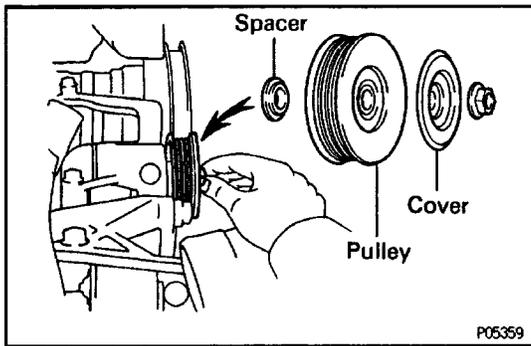
37 N-m (375 kgf-cm, 27 ft-lbf) for C

(c) Connect the A/C compressor connector.

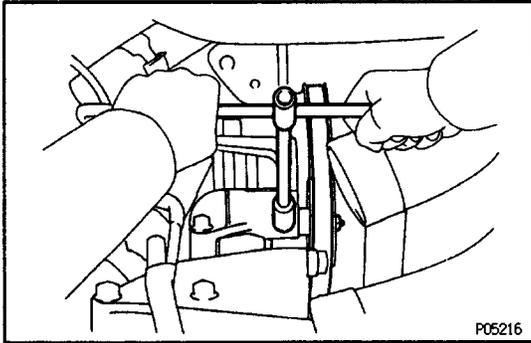


(d) Tighten the two bolts of the lower side of the A/C compressor.

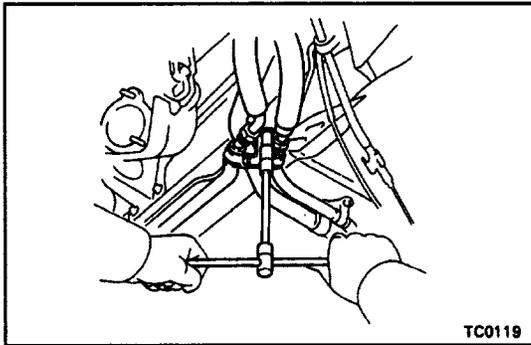
Torque: 25 N-m (250 kgf-cm, 18 ft-lbf)



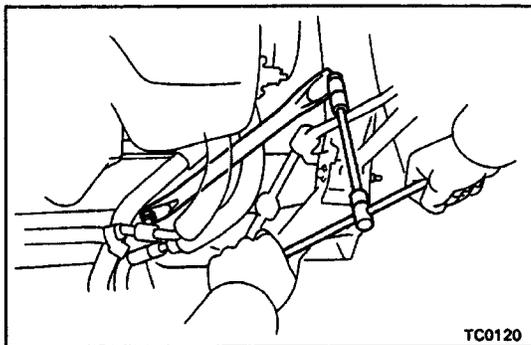
(e) Temporarily install the spacer, pulley and pulley cover with the nut.



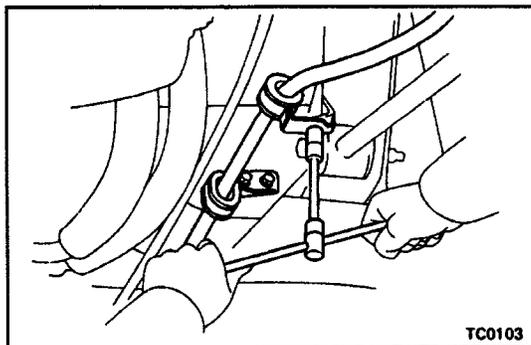
(f) Install the drive belt with the adjusting bolt.
 (g) Tighten the idler pulley nut.



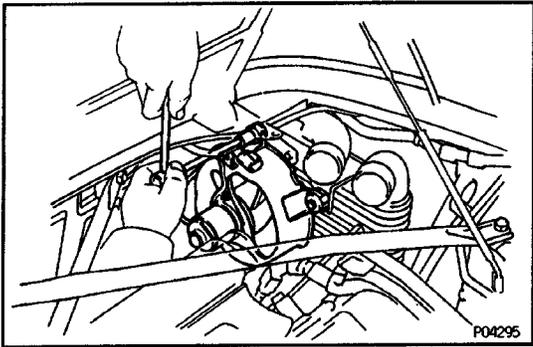
(h) Install the two A/C pipes with the nut.



(i) Install the suspension brace with the two bolts.
Torque: 73 N-m (740 kgf-cm, 54 ft-lbf)

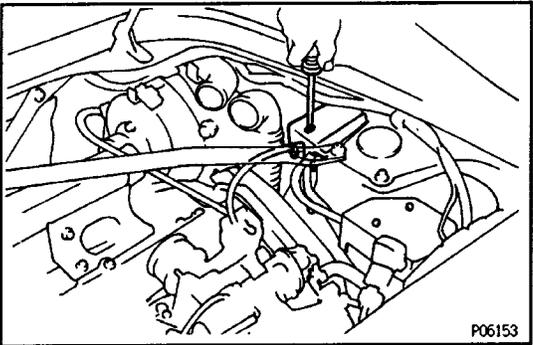


(j) Install the parking brake cable with the two clamp and three bolts.

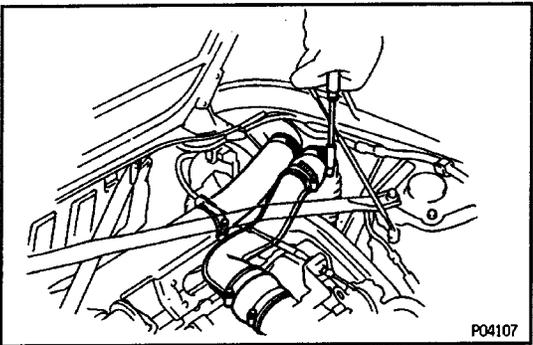


20. REINSTALL ENGINE COMPARTMENT ELECTRIC COOLING FAN

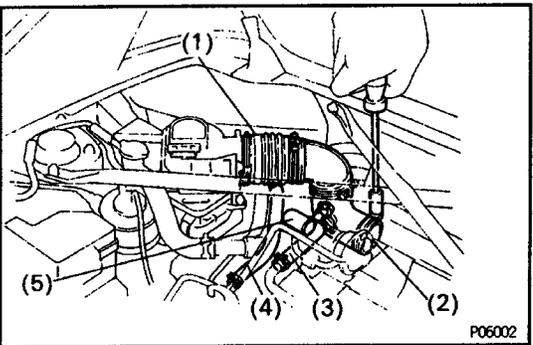
- (a) Install the cooling fan with the three bolts.
- (b) Connect the cooling fan connector.



21. (w/ CRUISE CONTROL SYSTEM) REINSTALL CRUISE CONTROL ACCELERATOR LINKAGE



22. REINSTALL NO.1 AND NO.2 INTAKE AIR CONNECTORS



23. REINSTALL AIR CLEANER HOSE

Reconnect the following hoses, and install the air cleaner hose:

- (1) Air cleaner hose to air flow sensor
- (2) Air cleaner hose to turbocharger
- (3) PCV hose to cylinder head cover
- (4) Air hose to No.2 air hose
- (5) Air hose to air by-pass valve

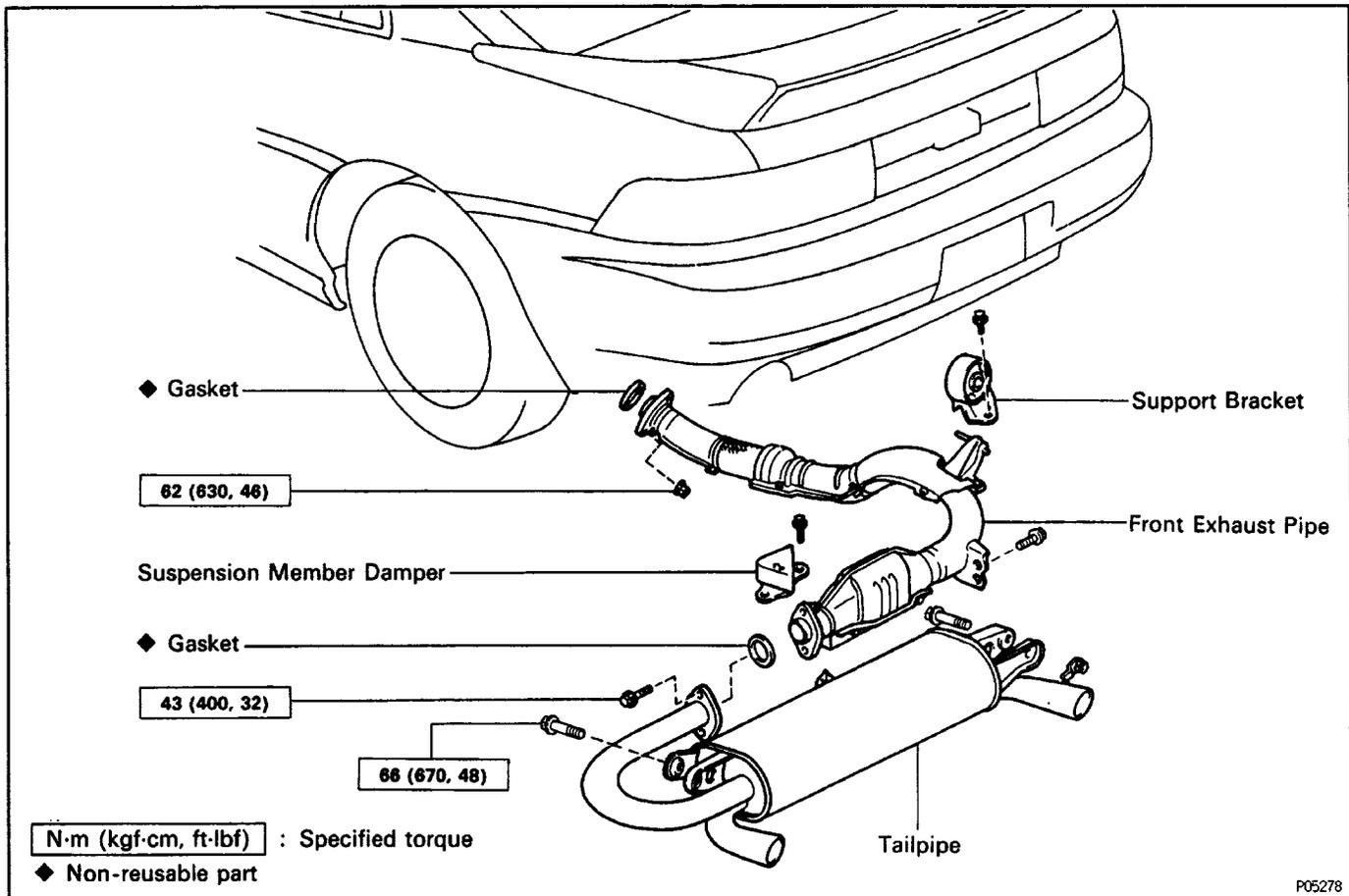
24. REINSTALL RH ENGINE HOOD SIDE PANEL

25. REINSTALL ENGINE UNDER COVERS

26. RECONNECT CABLE TO NEGATIVE TERMINAL OF BATTERY

COMPONENTS FOR REMOVAL AND INSTALLATION

E006J-03



P05278

E00XJ-01

SUB-TWC REPLACEMENT

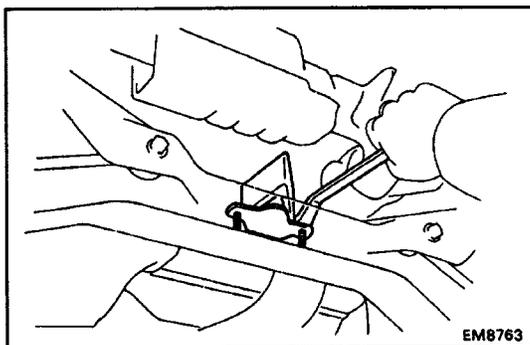
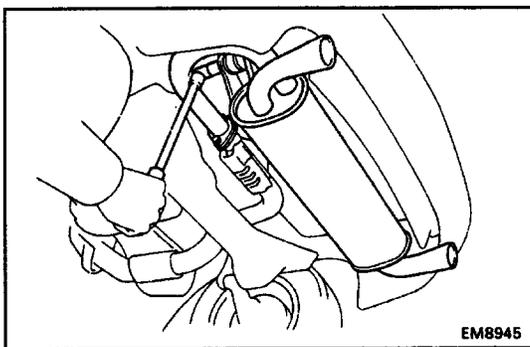
(See Components for Removal and Installation)

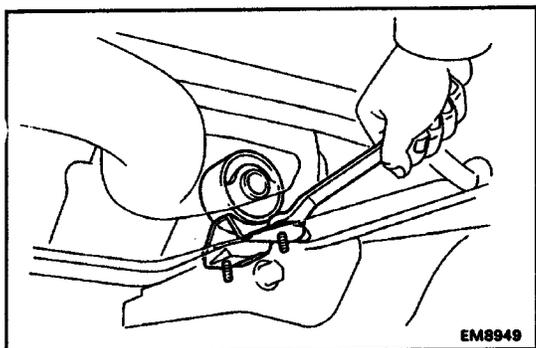
1. REMOVE TAILPIPE

- Remove the two bolts holding the front exhaust pipe to the tailpipe bracket.
- Remove the two bolts holding the front exhaust pipe to the tailpipe.
- Remove the two bolts, tailpipe and gasket.

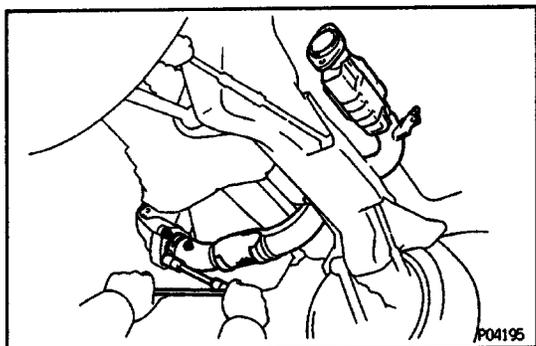
2. REMOVE FRONT EXHAUST PIPE (SUB-TWC)

- Remove the two bolts and damper.



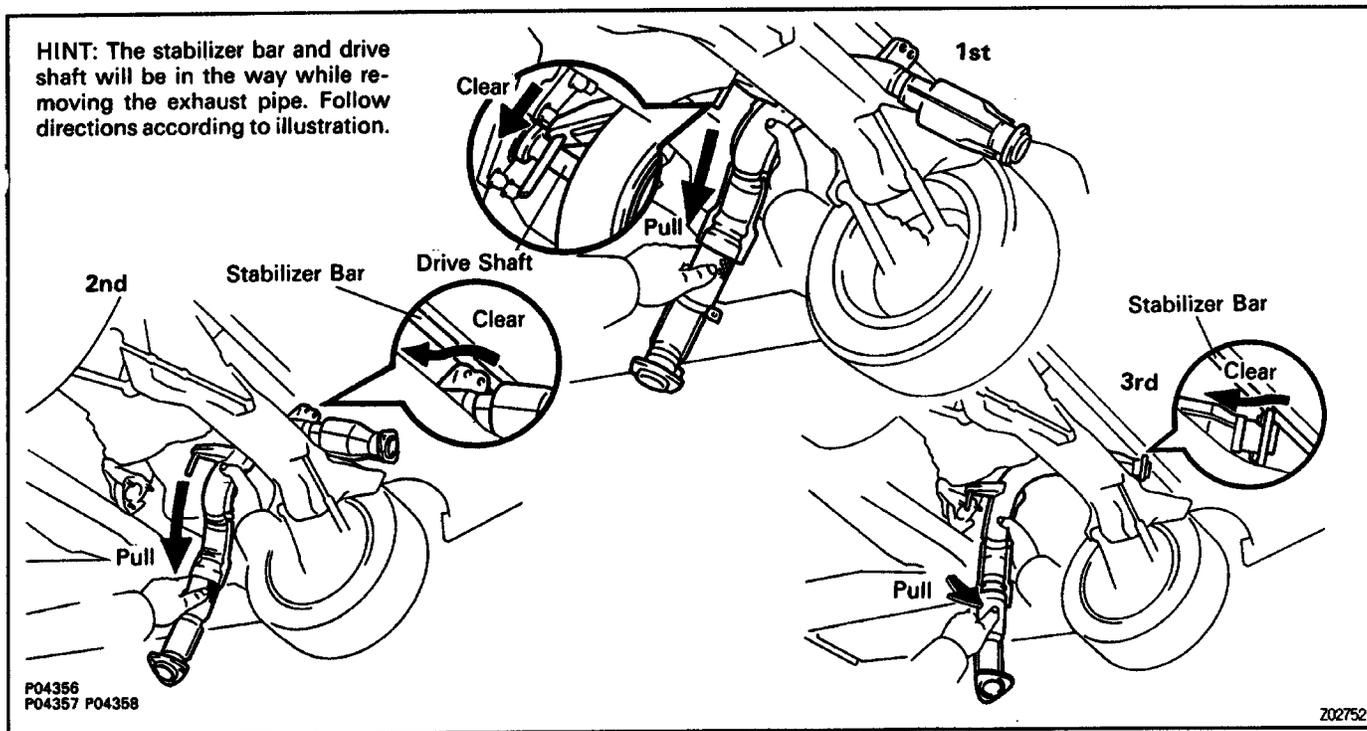


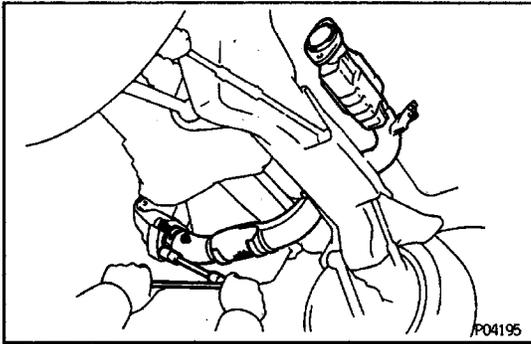
(b) Remove the two bolts and support bracket.



(c) Using a 14 mm deep socket wrench, remove the three nuts.

(d) Remove the front exhaust pipe and two gaskets.

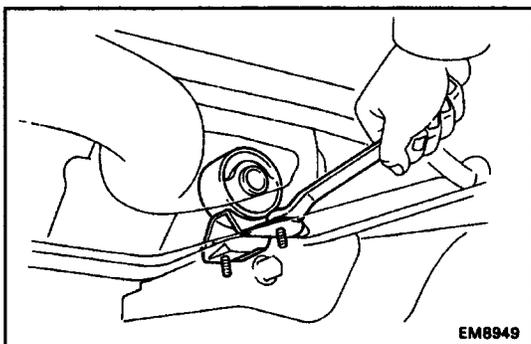
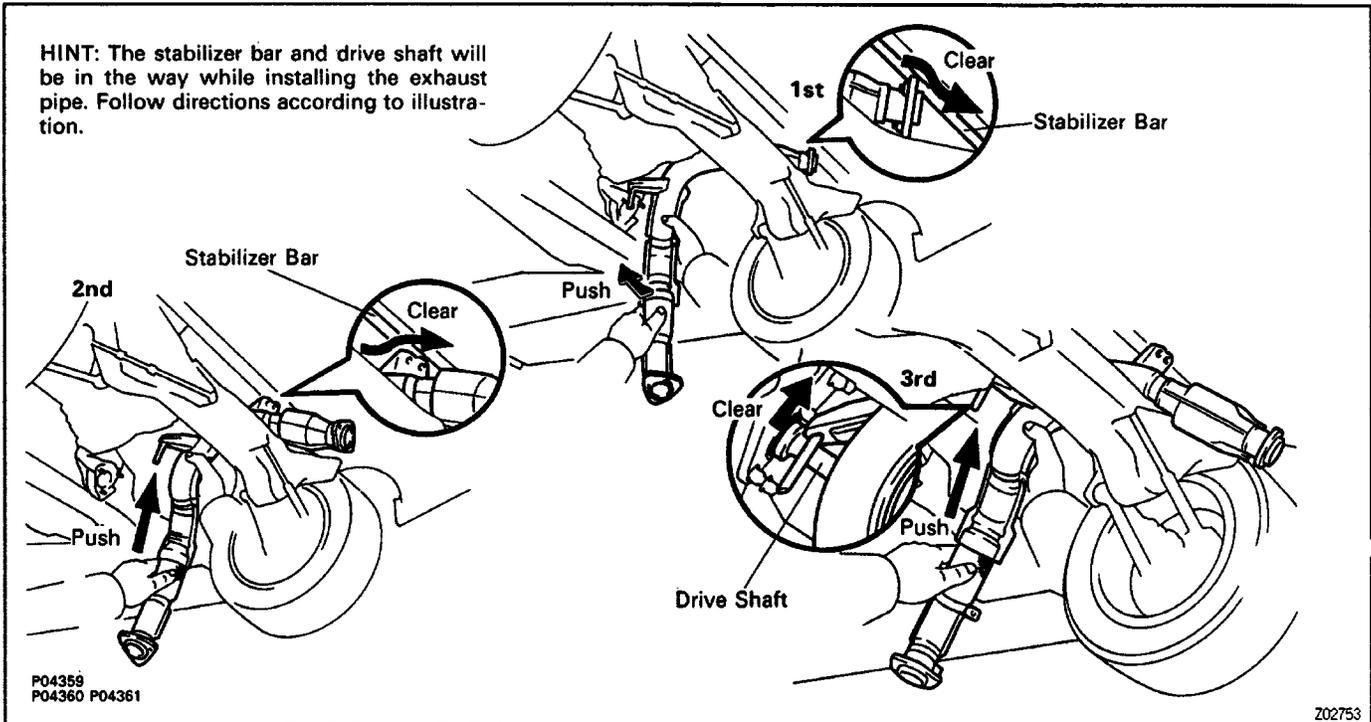




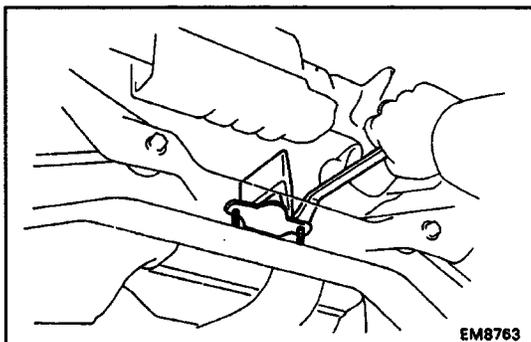
3. REINSTALL FRONT EXHAUST PIPE

- (a) Place a new gasket to the front of the front exhaust pipe.
- (b) Using a 14 mm deep socket wrench, install the front exhaust pipe with three new nuts.

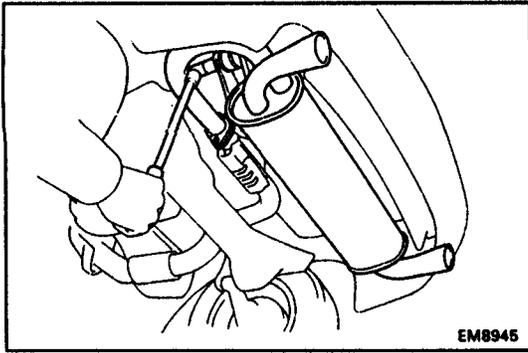
Torque: 62 N-m (630 kgf-cm, 46 ft-lbf)



- (c) Install the support bracket with the two bolts.
Torque: 21 N-m (210 kgf-cm, 15 ft-lbf)



- (d) Install the damper with the two bolts.
Torque: 21 N-m (210 kgf-cm, 15 ft-lbf)



4. REINSTALL TAILPIPE

(a) Place a new gasket to the rear of the front exhaust pipe.

(b) Install the tailpipe to the body bracket with the two bolts and nut.

Torque: 66 N-m (670 kgf-cm, 48 ft-lbf)

(c) Install the two bolts holding the front exhaust pipe to the tailpipe.

Torque: 43 N-m (440 kgf-cm, 32 ft-lbf)

(d) Install the two bolts holding the front exhaust pipe bracket to the tailpipe bracket.

Torque: 19 N-m (190 kgf-cm, 14 ft-lbf)