

ENGINE2 SECTION

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

FUEL INJECTION (FUEL SYSTEMS) FU(SOHCw/oOBD)

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES) EC(SOHCw/oOBD)

EXHAUST EX(SOHCw/oOBD)

IGNITION IG(SOHCw/oOBD)

ENGINE (DIAGNOSTICS) EN(SOHCw/oOBD)

FUEL INJECTION (FUEL SYSTEMS) FU(DOHC TURBO)

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES) EC(DOHC TURBO)

INTAKE (INDUCTION) IN(DOHC TURBO)

MECHANICAL ME(DOHC TURBO)

EXHAUST EX(DOHC TURBO)

IGNITION IG(DOHC TURBO)

ENGINE (DIAGNOSTICS) EN(DOHC TURBO)

EXHAUST

EX(SOHCw/oOBD)

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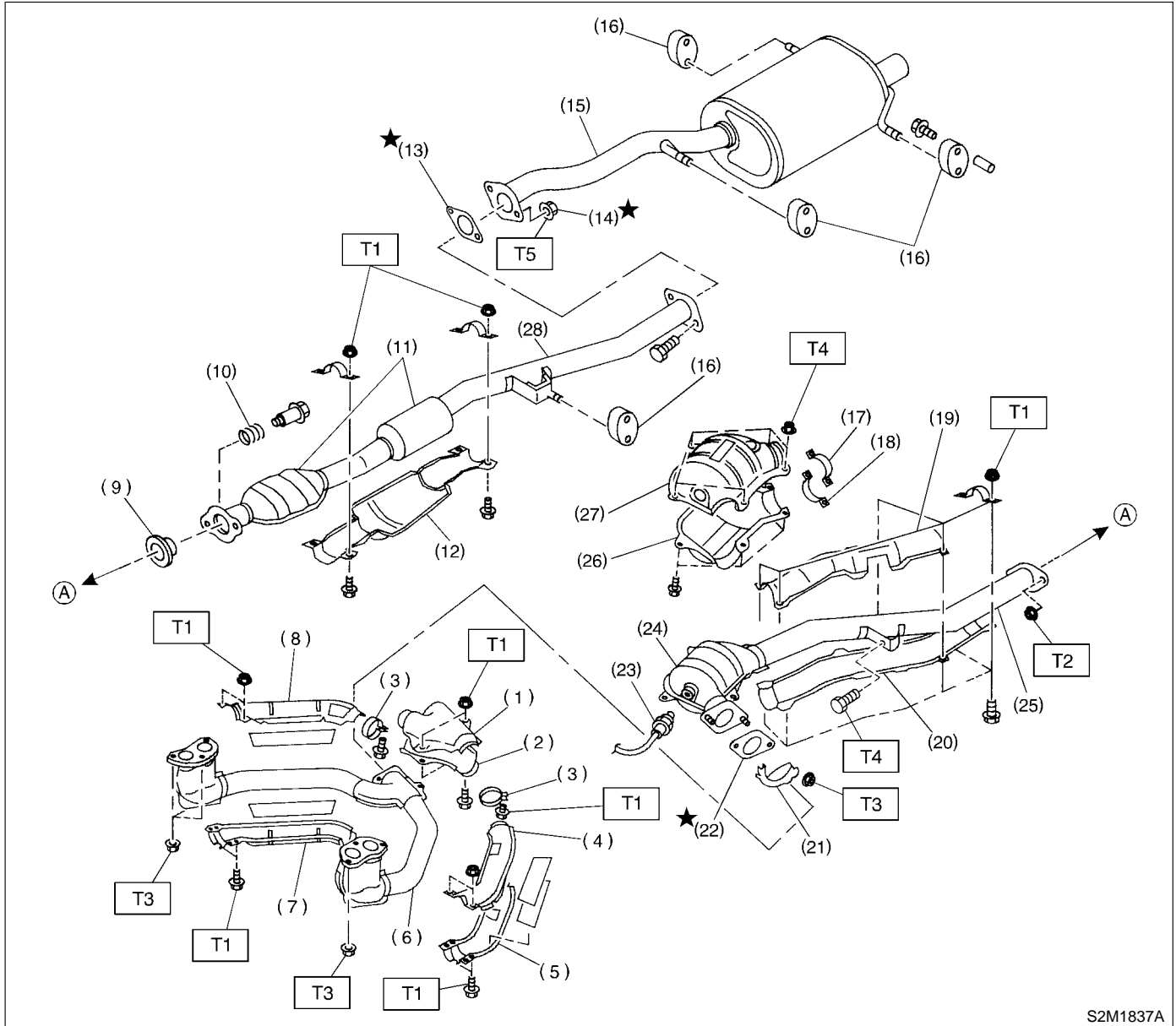
GENERAL DESCRIPTION

Exhaust

1. General Description S162001

A: COMPONENT S162001A05

1. WITH CATALYTIC CONVERTER S162001A0504



S2M1837A

GENERAL DESCRIPTION

Exhaust

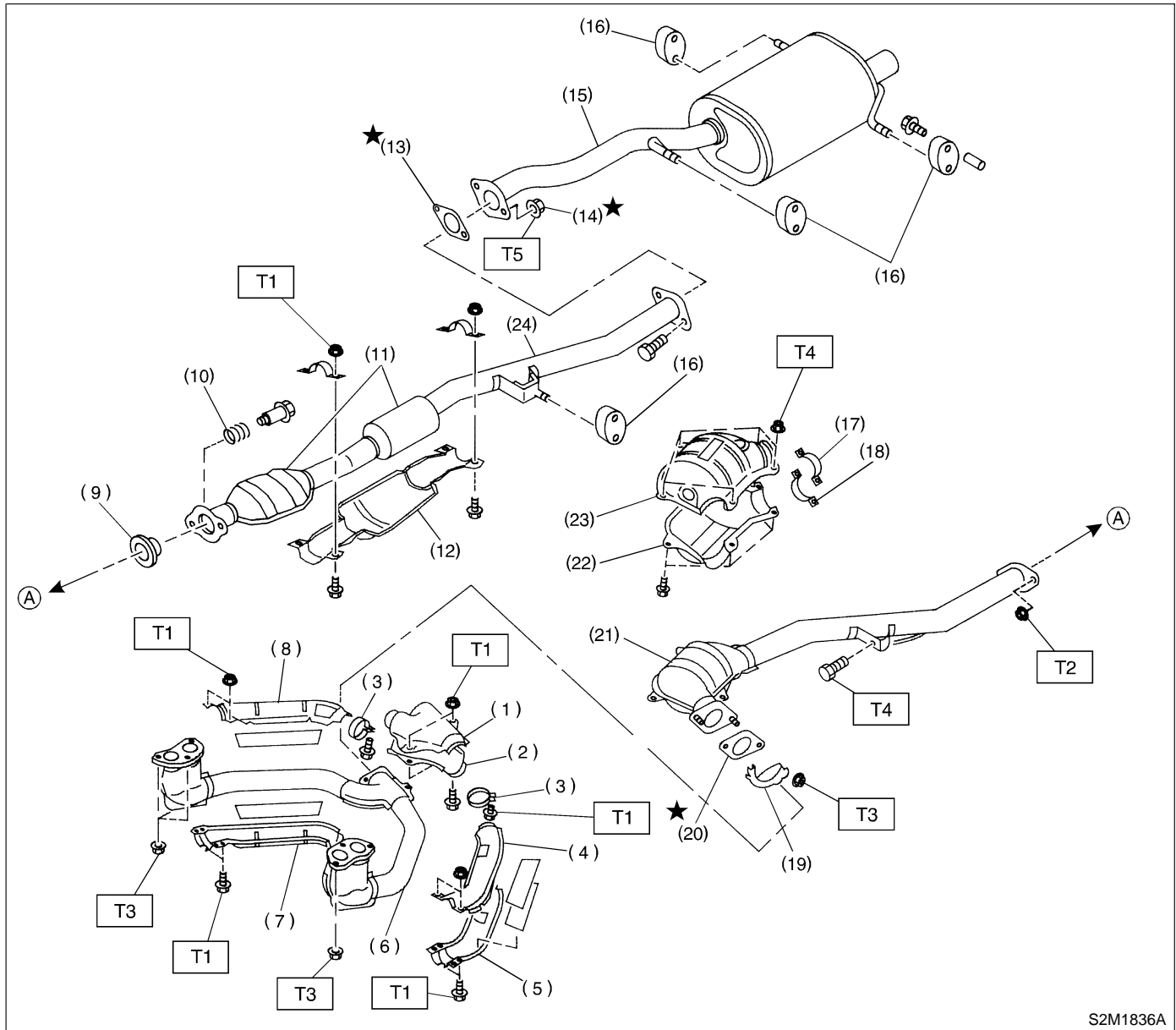
-
- | | | |
|---|--------------------------------------|---|
| (1) Upper front exhaust pipe cover
CTR | (10) Spring | (25) Center exhaust pipe |
| (2) Lower front exhaust pipe cover
CTR | (11) Chamber | (26) Lower front catalytic converter
cover |
| (3) Clamp | (12) Rear exhaust pipe cover | (27) Upper front catalytic converter
cover |
| (4) Upper front exhaust pipe cover
LH | (13) Gasket | (28) Rear exhaust pipe |
| (5) Lower front exhaust pipe cover
LH | (14) Self-locking nut | |
| (6) Front exhaust pipe | (15) Muffler | |
| (7) Lower front exhaust pipe cover
RH | (16) Cushion rubber | |
| (8) Upper front exhaust pipe cover
RH | (17) Upper clamp | |
| (9) Gasket | (18) Lower clamp | |
| | (19) Upper center exhaust pipe cover | |
| | (20) Lower center exhaust pipe cover | |
| | (21) Protector | |
| | (22) Gasket | |
| | (23) Oxygen sensor | |
| | (24) Front catalytic converter | |
-
- Tightening torque: N·m (kgf-m, ft-lb)**
- T1: 13 (1.3, 9.4)**
- T2: 18 (1.8, 13.0)**
- T3: 30 (3.1, 22.4)**
- T4: 35 (3.6, 26.0)**
- T5: 48 (4.9, 35.4)**
-

GENERAL DESCRIPTION

Exhaust

2. WITHOUT CATALYTIC CONVERTER

S162001A0503



S2M1836A

- (1) Upper front exhaust pipe cover CTR
- (2) Lower front exhaust pipe cover CTR
- (3) Clamp
- (4) Upper front exhaust pipe cover LH
- (5) Lower front exhaust pipe cover LH
- (6) Front exhaust pipe
- (7) Lower front exhaust pipe cover RH
- (8) Upper front exhaust pipe cover RH

- (9) Gasket
- (10) Spring
- (11) Chamber
- (12) Rear exhaust pipe cover
- (13) Gasket
- (14) Self-locking nut
- (15) Muffler
- (16) Cushion rubber
- (17) Upper clamp
- (18) Lower clamp
- (19) Protector
- (20) Gasket
- (21) Center exhaust pipe

- (22) Lower front catalytic converter cover
- (23) Upper front catalytic converter cover
- (24) Rear exhaust pipe

Tightening torque: N·m (kgf·m, ft·lb)

T1: 13 (1.3, 9.4)

T2: 18 (1.8, 13.0)

T3: 30 (3.1, 22.4)

T4: 35 (3.6, 26.0)

T5: 48 (4.9, 35.4)

EX(SOHCw/oOBD)-4

B: CAUTION S162001A03

- Wear working clothing, including a cap, protective goggles, and protective shoes during operation.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust or dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly, and replacement.
- Be careful not to burn your hands, because each part on the vehicle is hot after running.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or safety stands at the specified points.
- Before disconnecting electrical connectors of sensors or units, be sure to disconnect negative terminal from battery.

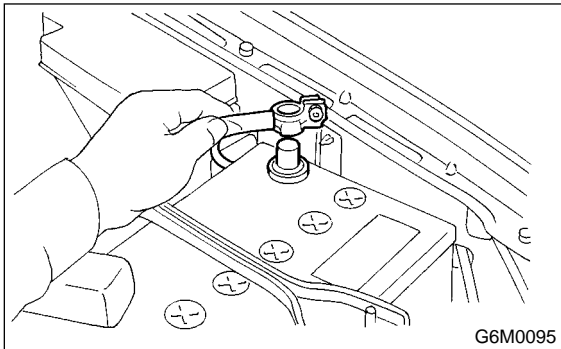
FRONT EXHAUST PIPE

Exhaust

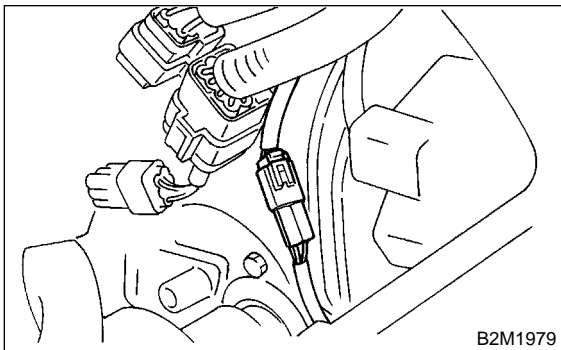
2. Front Exhaust Pipe S162065

A: REMOVAL S162065A18

- 1) Disconnect battery ground cable.



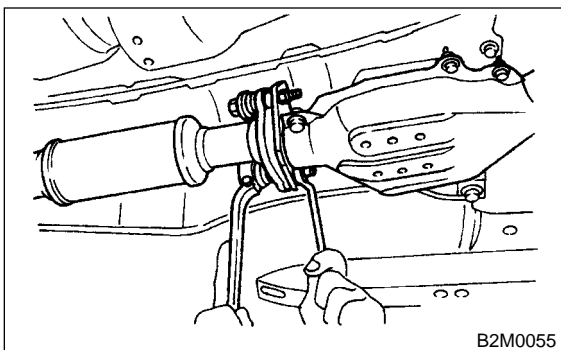
- 2) Disconnect front oxygen sensor connector.
(With catalytic converter)



- 3) Lift-up the vehicle.
- 4) Remove under cover. <Ref. to EI-11, REMOVAL, Front Under Cover.>
- 5) Separate front and center exhaust pipe assembly from rear exhaust pipe.

WARNING:

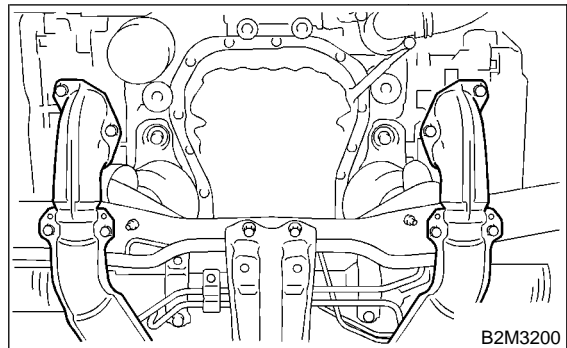
Be careful, exhaust pipe is hot.



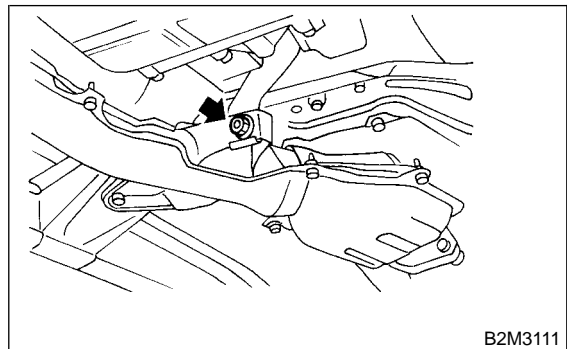
- 6) Remove bolts which hold front exhaust pipe onto cylinder heads.

CAUTION:

Be careful not to pull down front and center exhaust pipe assembly.



- 7) Remove bolt which installs front and center exhaust pipe assembly to hanger bracket.

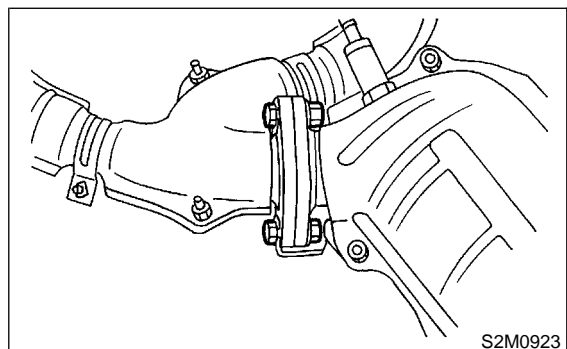


- 8) Remove front and center exhaust pipe assembly from the vehicle.

CAUTION:

- Be careful not to let front and center exhaust pipe assembly fall off when removing as it is quite heavy.
- After removing front and center exhaust assembly, do not apply excessive pulling force on rear exhaust pipe.

- 9) Separate front exhaust pipe from center exhaust pipe.

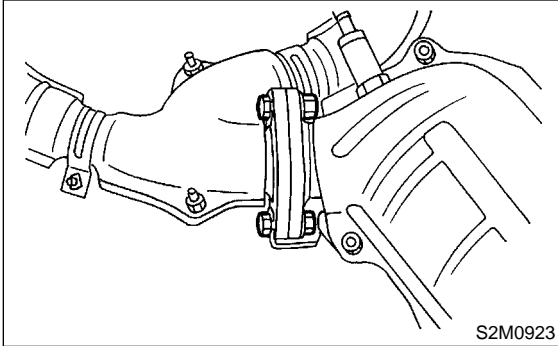


B: INSTALLATION S162065A11

1) Install front exhaust pipe to center exhaust pipe.

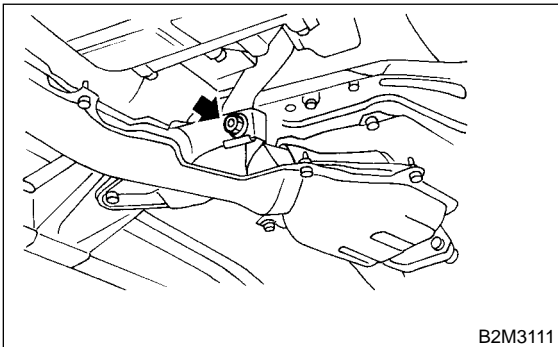
CAUTION:
Replace gaskets with new ones.

Tightening torque:
30 N·m (3.1 kgf-m, 22.4 ft-lb)



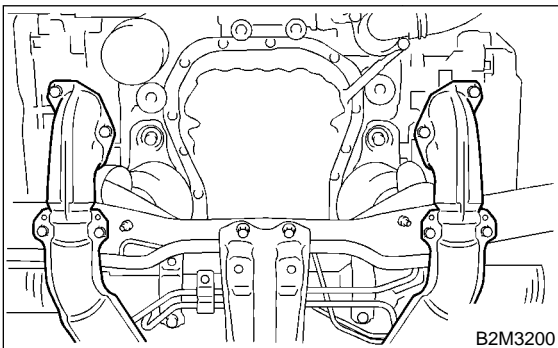
2) Install front and center exhaust pipe assembly to the vehicle.

3) Temporarily tighten bolt which installs front and center exhaust pipe assembly to hanger bracket.



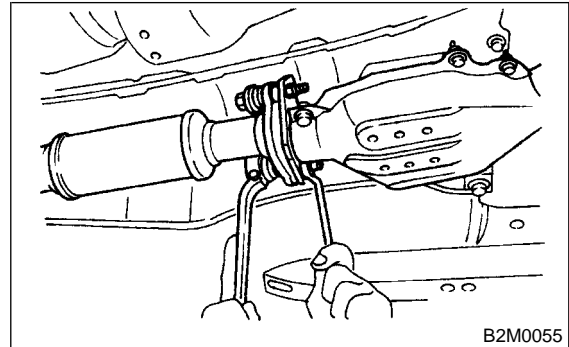
4) Tighten bolts which hold front exhaust pipe onto cylinder heads.

Tightening torque:
30 N·m (3.1 kgf-m, 22.4 ft-lb)



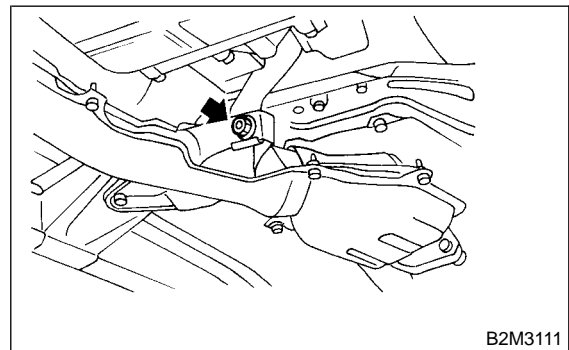
5) Tighten bolts which install front and center exhaust pipe assembly to rear exhaust pipe.

Tightening torque:
18 N·m (1.8 kgf-m, 13.0 ft-lb)



6) Tighten bolt which holds front and center exhaust pipe assembly to hanger bracket.

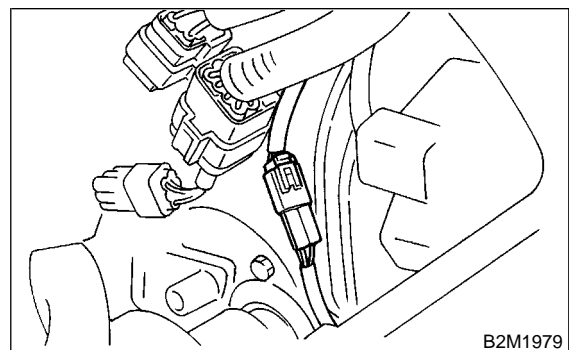
Tightening torque:
35 N·m (3.6 kgf-m, 26.0 ft-lb)



7) Install under cover. <Ref. to EI-11, INSTALLATION, Front Under Cover.>

8) Lower the vehicle.

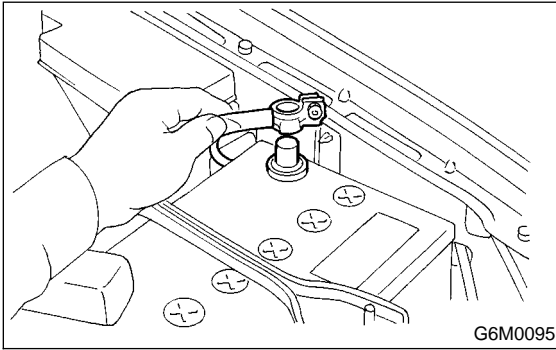
9) Connect front oxygen sensor connector. (With catalytic converter)



FRONT EXHAUST PIPE

Exhaust

10) Connect battery ground cable.



C: INSPECTION S162065A10

- 1) Make sure there are no exhaust leaks from connections and welds.
- 2) Make sure there are no holes or rusting.

3. Center Exhaust Pipe S162067

A: REMOVAL S162067A18

After removing the center and front exhaust pipes as one unit, separate them. Refer to the procedure for removing the front exhaust pipe. <Ref. to EX(SOHCw/oOBD)-6 REMOVAL, Front Exhaust Pipe.>

B: INSTALLATION S162067A11

Install the center exhaust pipe and front exhaust pipe as one unit. Refer to the procedure for installing the front exhaust pipe. <Ref. to EX(SOHCw/oOBD)-7 INSTALLATION, Front Exhaust Pipe.>

C: INSPECTION S162067A10

- 1) Make sure there are no exhaust leaks from connections and welds.
- 2) Make sure there are no holes or rusting.

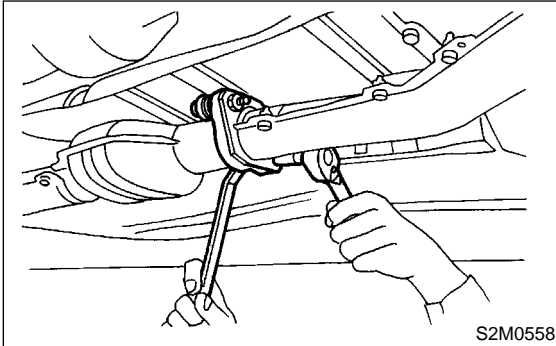
4. Rear Exhaust Pipe S162068

A: REMOVAL S162068A18

- 1) Separate rear exhaust pipe from center exhaust pipe.

CAUTION:

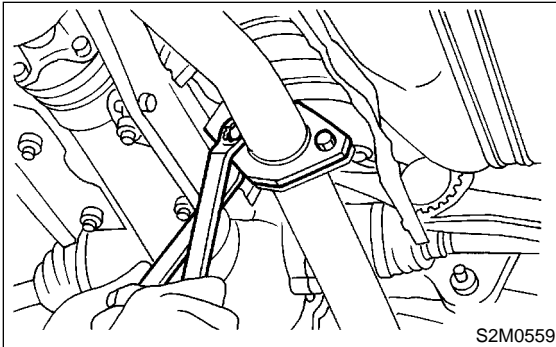
Be careful, exhaust pipe is hot.



- 2) Separate rear exhaust pipe from muffler.

CAUTION:

Be careful not to pull down rear exhaust pipe.

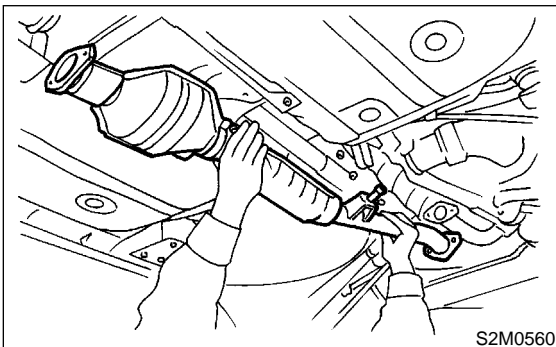


- 3) Remove rear exhaust pipe bracket from rubber cushion.

NOTE:

To facilitate removal, apply a coat of SUBARU CRC to pipe bracket in advance.

SUBARU CRC (Part No. 004301003)



B: INSTALLATION S162068A11

CAUTION:

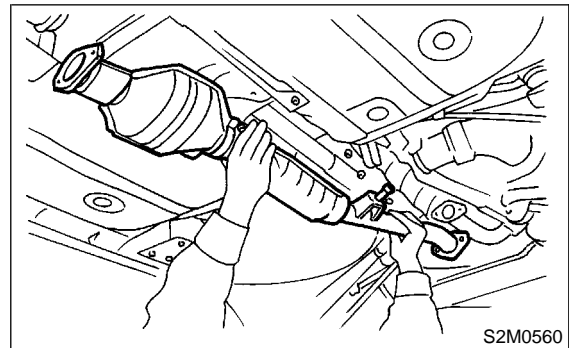
Replace gaskets with new ones.

- 1) Install rear exhaust pipe bracket to rubber cushion.

NOTE:

To facilitate removal, apply a coat of SUBARU CRC to mating area of rubber cushion in advance.

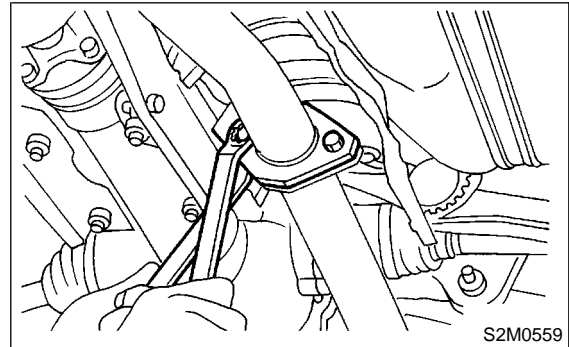
SUBARU CRC (Part No. 004301003)



- 2) Install rear exhaust pipe to muffler.

Tightening torque:

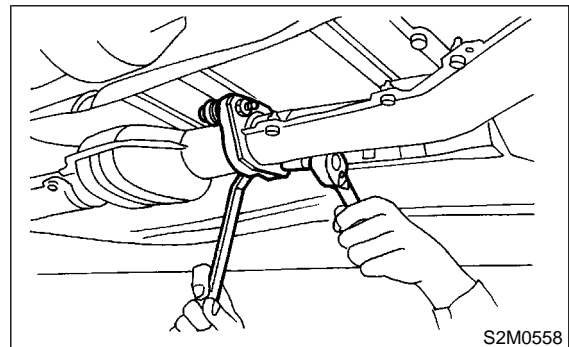
48 N·m (4.9 kgf·m, 35.4 ft·lb)



- 3) Install rear exhaust pipe to center exhaust pipe.

Tightening torque:

18 N·m (1.8 kgf·m, 13.0 ft·lb)



C: INSPECTION S162068A10

- 1) Make sure there are no exhaust leaks from connections and welds.
- 2) Make sure there are no holes or rusting.
- 3) Make sure the cushion rubber is not worn or cracked.

MUFFLER

Exhaust

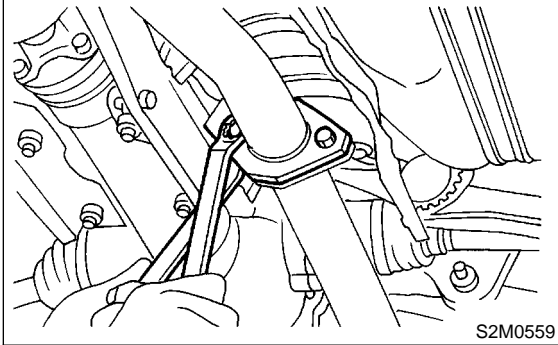
5. Muffler S162066

A: REMOVAL S162066A18

1) Separate muffler from rear exhaust pipe.

CAUTION:

Be careful, exhaust pipe is hot.



2) Remove left and right rubber cushions.

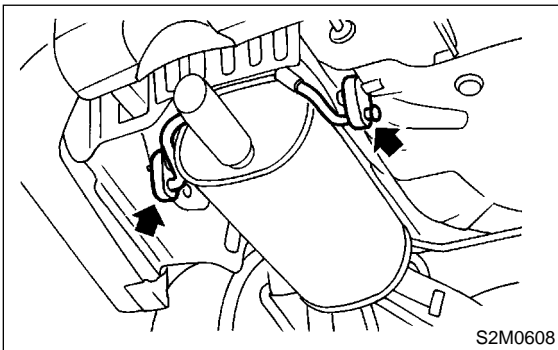
CAUTION:

Be careful not to drop the muffler during removal.

NOTE:

To facilitate removal, apply a coat of SUBARU CRC to mating area of rubber cushions in advance.

SUBARU CRC (Part No. 004301003)

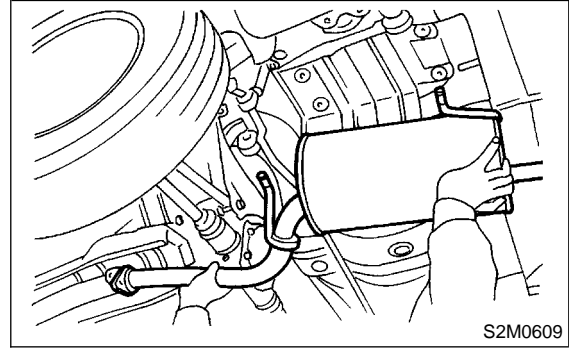


3) Remove front rubber cushion, and detach muffler assembly.

NOTE:

To facilitate removal, apply a coat of SUBARU CRC to mating area of rubber cushion in advance.

SUBARU CRC (Part No. 004301003)



B: INSTALLATION S162066A11

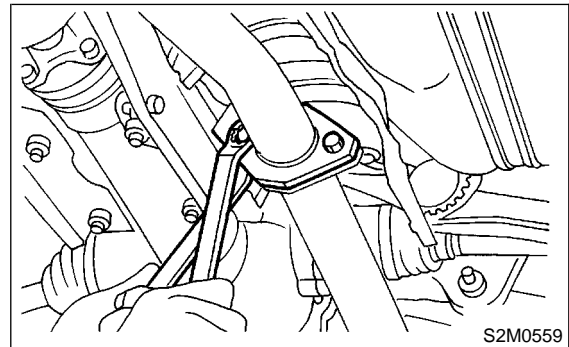
Install in the reverse order of removal.

CAUTION:

Replace gasket with a new one.

Tightening torque:

48 N·m (4.9 kgf·m, 35.4 ft·lb)



C: INSPECTION S162066A10

1) Make sure there are no exhaust leaks from connections and welds.

2) Make sure there are no holes or rusting.

3) Make sure the cushion rubber is not worn or cracked.