

GROUP 15

INTAKE AND
EXHAUST

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GENERAL INFORMATION

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The exhaust pipe is divided into three parts.

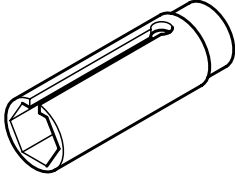
SERVICE SPECIFICATION

M1151000300398

Item	Standard value	Limit
Manifold distortion of the installation surface mm	0.15 or less	0.20

SPECIAL TOOL

M1151000600377

Tool	Number	Name	Use
	MD998770	Oxygen sensor wrench	Removal and installation of oxygen sensor

AIR CLEANER

REMOVAL AND INSTALLATION

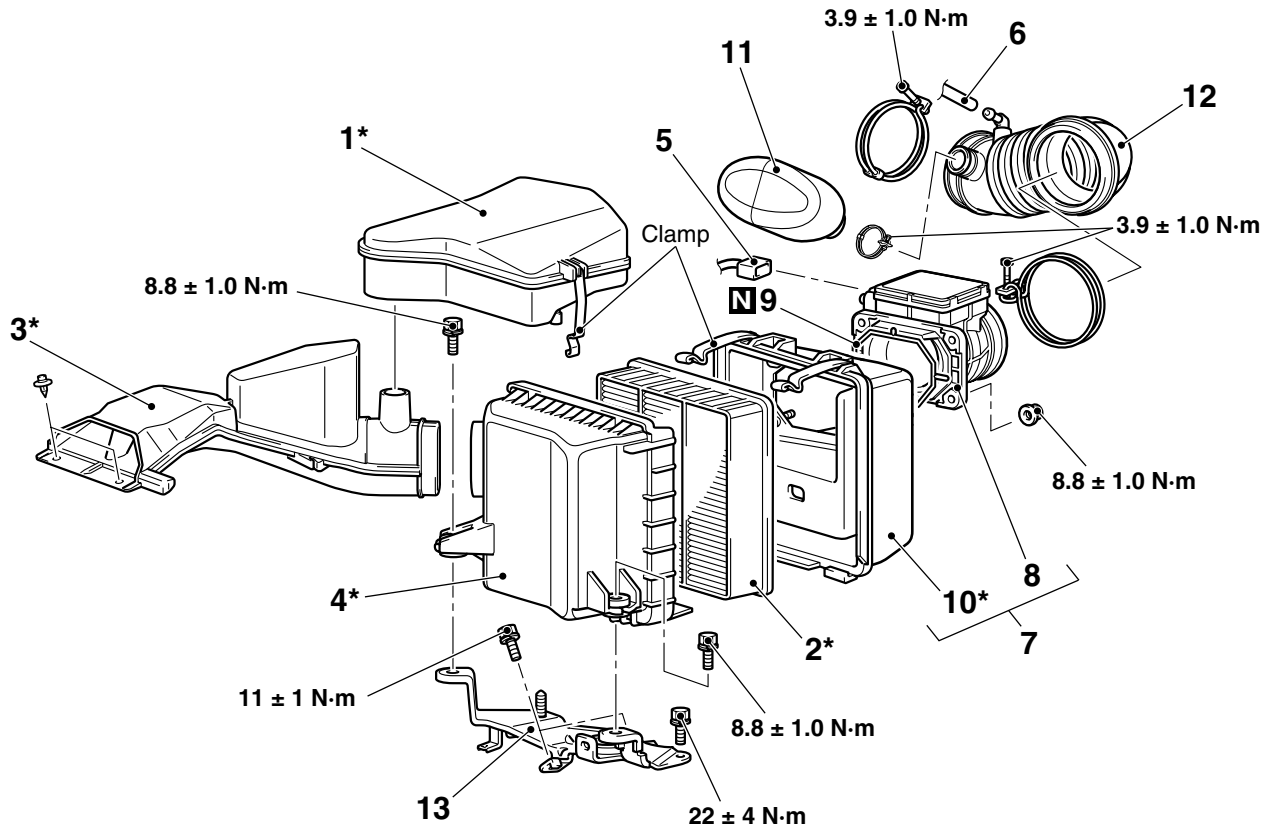
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CAUTION

Parts marked by * are made of recycled-paper mixed plastic material, so observe the following precautions.

- Avoid any shock or load to these parts when removing and installing them.
- When installing, securely set the air cleaner cover and the resonator clamp to the air cleaner body.

*NOTE: Parts marked by * are made of recycled-paper mixed plastic material. Dispose of according to state and local laws*



AC203703AB

Removal steps

1. Resonator
2. Air cleaner element
3. Air duct
4. Air cleaner body
5. Air flow sensor connector
6. Breather hose connection
7. Air cleaner cover and air flow sensor assembly

Removal steps (Continued)

8. Air flow sensor assembly
9. Gasket
10. Air cleaner cover
11. Resonator
12. Air intake hose
13. Air cleaner bracket

INTAKE MANIFOLD

REMOVAL AND INSTALLATION

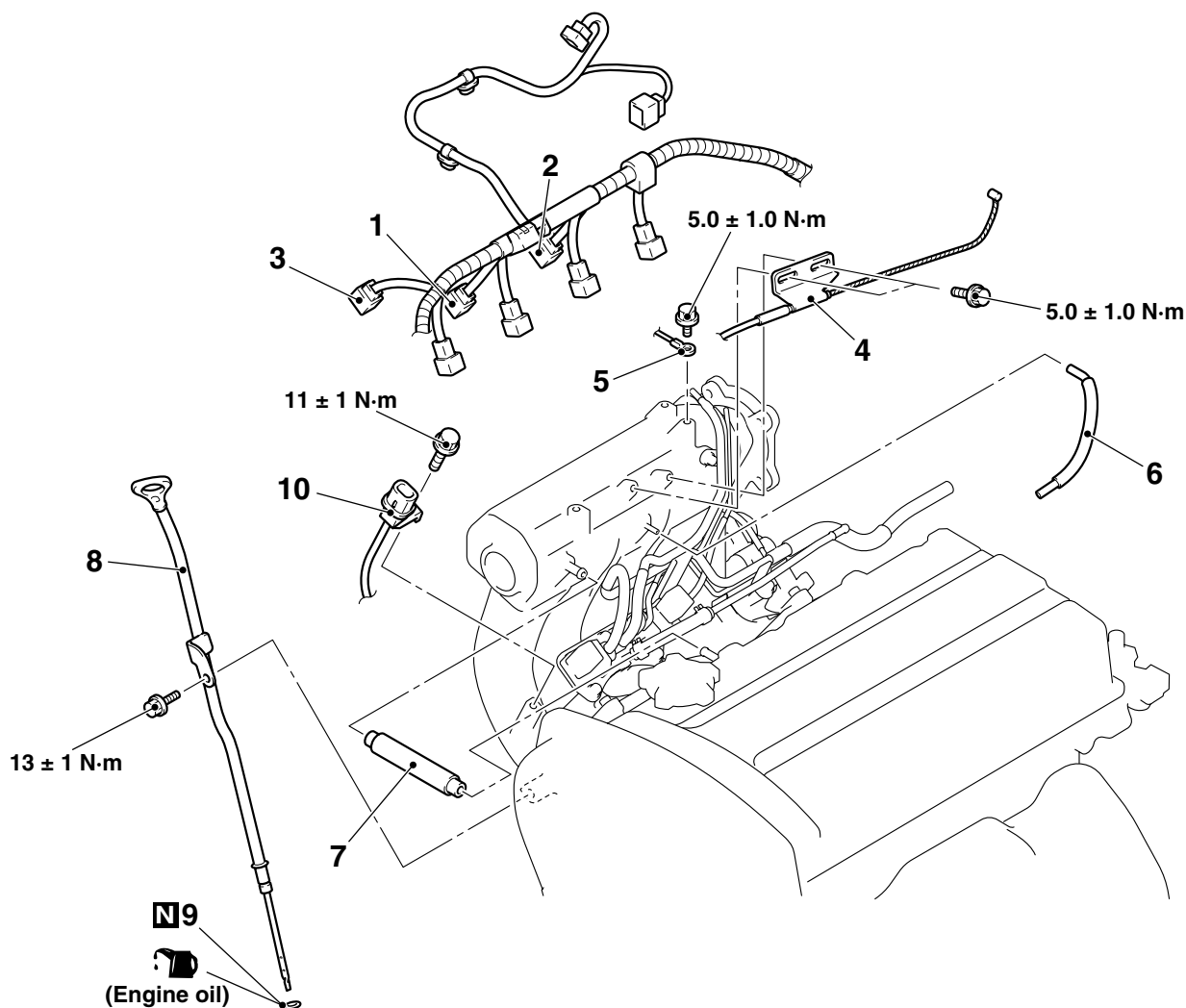
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Pre-removal Operation

- Fuel Line Pressure Reduction [Refer to GROUP 13A, On-vehicle Service – Fuel Pump Connector Disconnection (How to Reduce Pressurized Fuel Lines) [P.13A-310](#).]
- Throttle Body Removal (Refer to GROUP 13A, Throttle Body [P.13A-319](#)).
- Fuel Delivery Pipe and Fuel Injector assembly Removal (Refer to GROUP 13A, Injector [P.13A-318](#)).

Post-installation Operation

- Fuel Delivery Pipe and Fuel Injector assembly Installation (Refer to GROUP 13A, Injector [P.13A-318](#)).
- Throttle Body Installation (Refer to GROUP 13A, Throttle Body [P.13A-319](#)).
- Accelerator Cable Adjustment (Refer to GROUP 17, On-vehicle Service – Accelerator Cable Check and Adjustment [P.17-3](#)).
- Fuel Leak Check



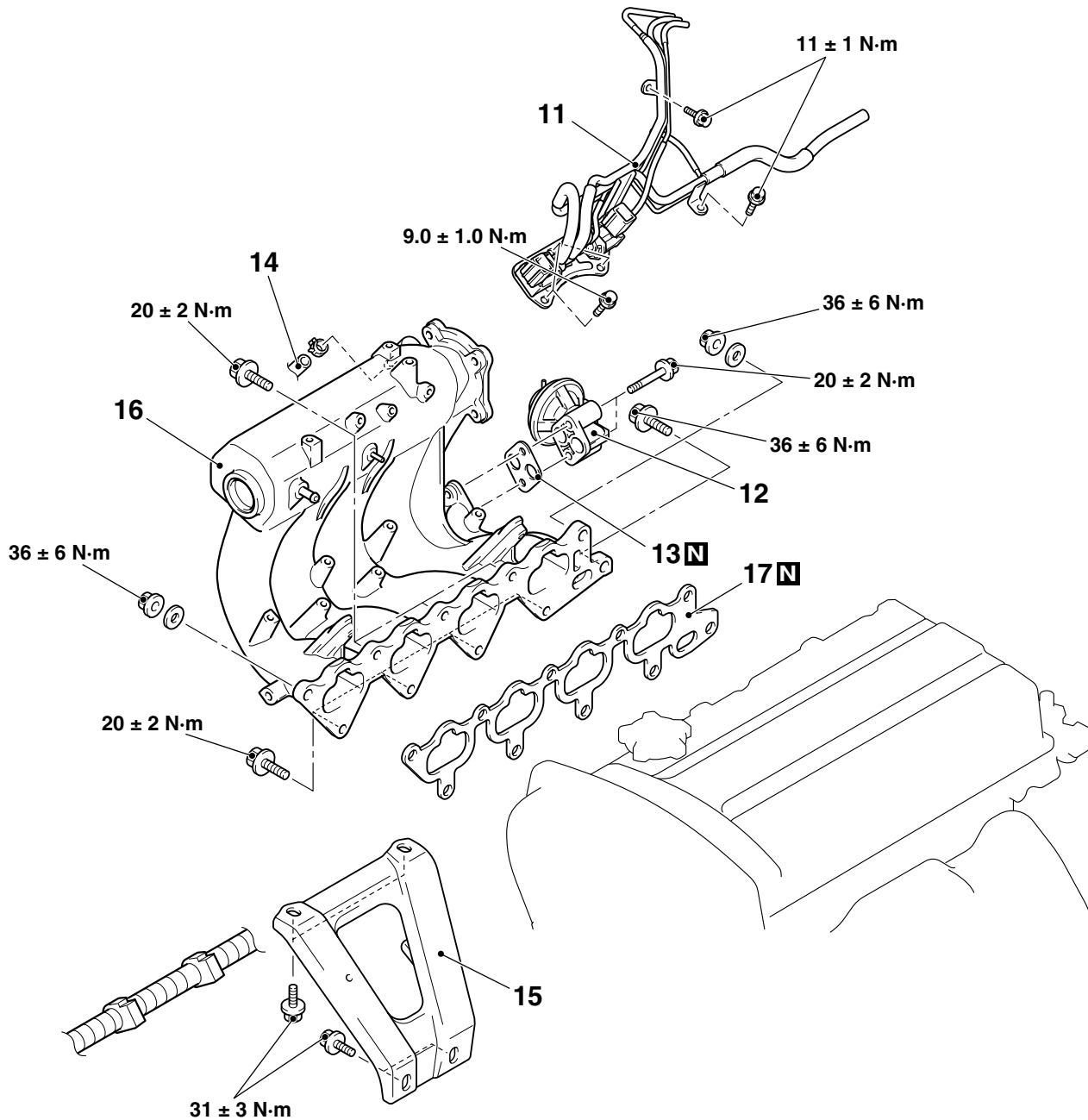
AC301313AB

Removal steps

1. Purge control solenoid valve connector
2. EGR control solenoid valve connector
3. Detonation sensor connector
4. Accelerator cable connection

Removal steps (Continued)

5. Earth cable connection
6. Emission control equipment hose
7. PCV hose
8. Oil level gauge and guide
9. O-ring
10. Detonation sensor connector clamp



AC301314 AB

Removal steps

11. Vacuum hose and pipe assembly
12. EGR valve
13. EGR valve gasket
14. Brake booster vacuum hose connection

Removal steps (Continued)

15. Intake manifold stay
16. Intake manifold assembly
17. Intake manifold gasket

INSPECTION

Check the following points; replace the part if a problem is found.

Intake Manifold Check

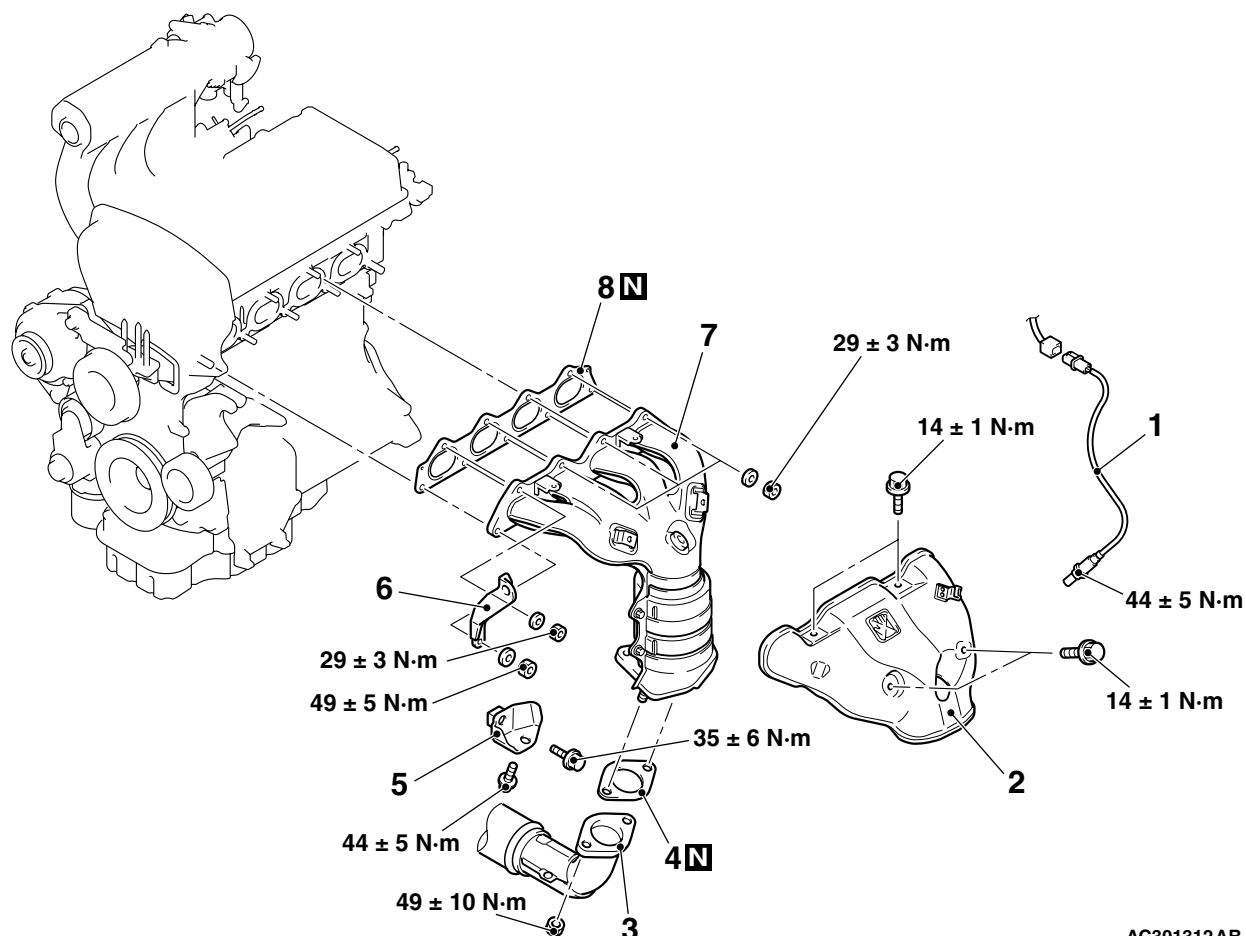
1. Check for damage or cracking of any part.

M1151003100553

2. Clogging of the negative pressure (vacuum) outlet port, or clogging of the exhaust gas recirculation passages.
3. Using a straight edge and feeler gauge, check for distortion of the cylinder head installation surface.
Standard value: 0.15 mm or less
Limit: 0.20 mm

EXHAUST MANIFOLD**REMOVAL AND INSTALLATION**

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AC301312AB

Removal steps

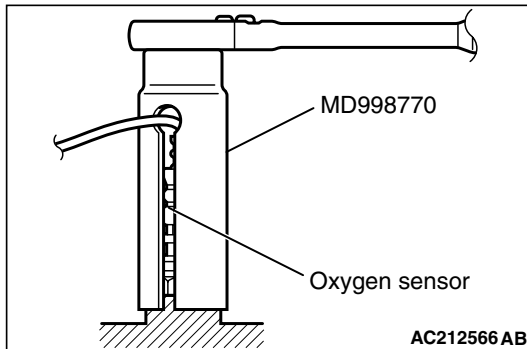
- <<A>> >>A<<
1. Oxygen sensor
 2. Exhaust manifold cover
 3. Front exhaust pipe connection
 4. Exhaust pipe gasket

Removal steps (Continued)

5. Exhaust manifold bracket
6. Engine hanger
7. Exhaust manifold
8. Exhaust manifold gasket

REMOVAL SERVICE POINT

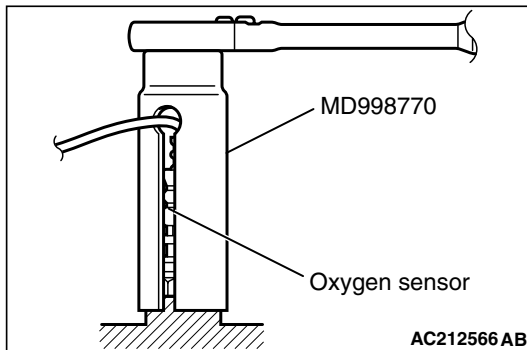
<<A>> OXYGEN SENSOR REMOVAL



Use special tool oxygen sensor wrench (MD998770) to remove the oxygen sensor.

INSTALLATION SERVICE POINT

>>A<< OXYGEN SENSOR INSTALLATION



Use special tool oxygen sensor wrench (MD998770) to install the oxygen sensor.

INSPECTION

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Check the following points; replace the part if a problem is found.

Exhaust Manifold Check

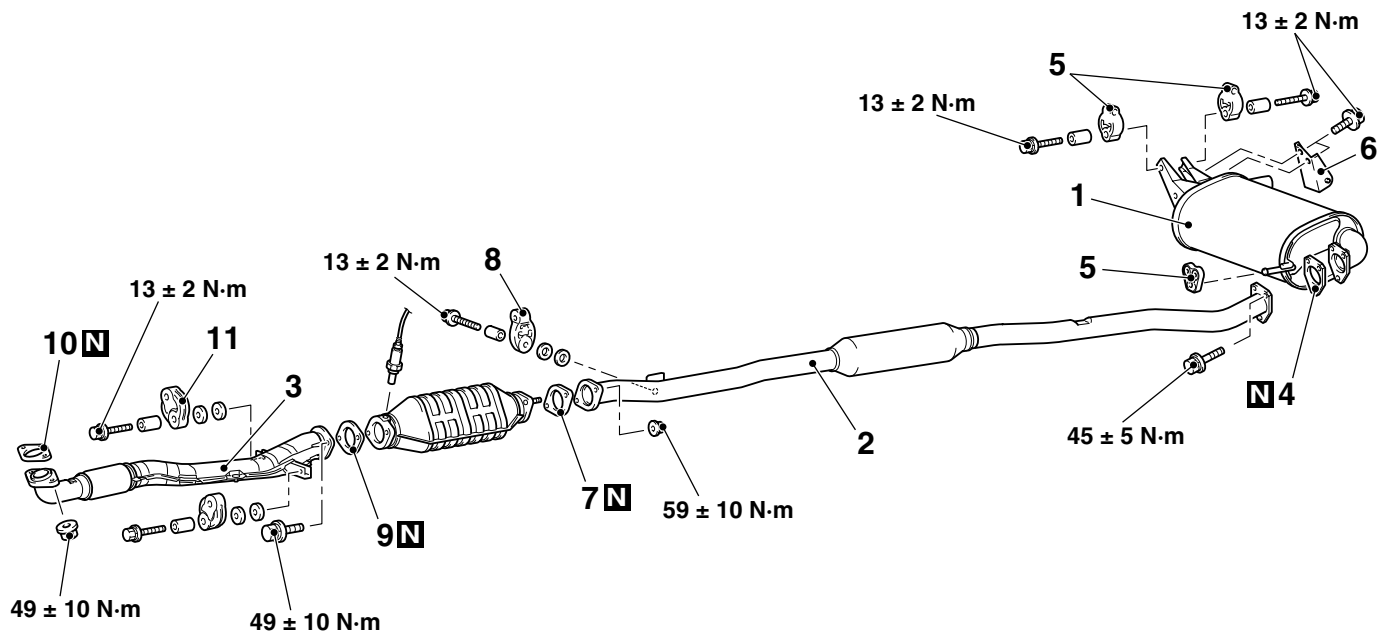
1. Check for damage or cracking of any part.
2. Using a straight edge and a feeler gauge, check for distortion of the cylinder head installation surface.

Standard value: 0.15 mm or less

Limit: 0.20 mm

EXHAUST PIPE AND MAIN MUFFLER**REMOVAL AND INSTALLATION**

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AC301054 AB

Exhaust main muffler removal steps

1. Exhaust main muffler
4. Exhaust pipe gasket
5. Hanger
6. Exhaust pipe damper

Centre exhaust pipe removal steps

2. Centre exhaust pipe
4. Exhaust pipe gasket
7. Exhaust pipe gasket
8. Hanger

Front exhaust pipe removal steps

- Centre under cover (front) (Refer to GROUP 51, Under Cover [P.51-18](#)).
- 3. Front exhaust pipe
- 9. Exhaust pipe gasket
- 10. Exhaust pipe gasket
- 11. Hanger