
INTAKE AND EXHAUST



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GENERAL INFORMATION

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The intake manifold is made of an aluminium alloy, and the shape provides an increased intake inertia effect and has a good volumetric efficiency.

The exhaust manifold is made of stainless steel. The exhaust pipe is divided into three parts; the front pipe, the centre pipe, and the main muffler.

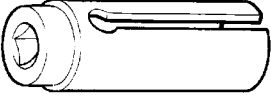
SERVICE SPECIFICATION

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

SPECIAL TOOL

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Tool	Number	Name	Use
	MD998770	Oxygen sensor wrench	Removal/Installation of oxygen sensor

INTAKE MANIFOLD

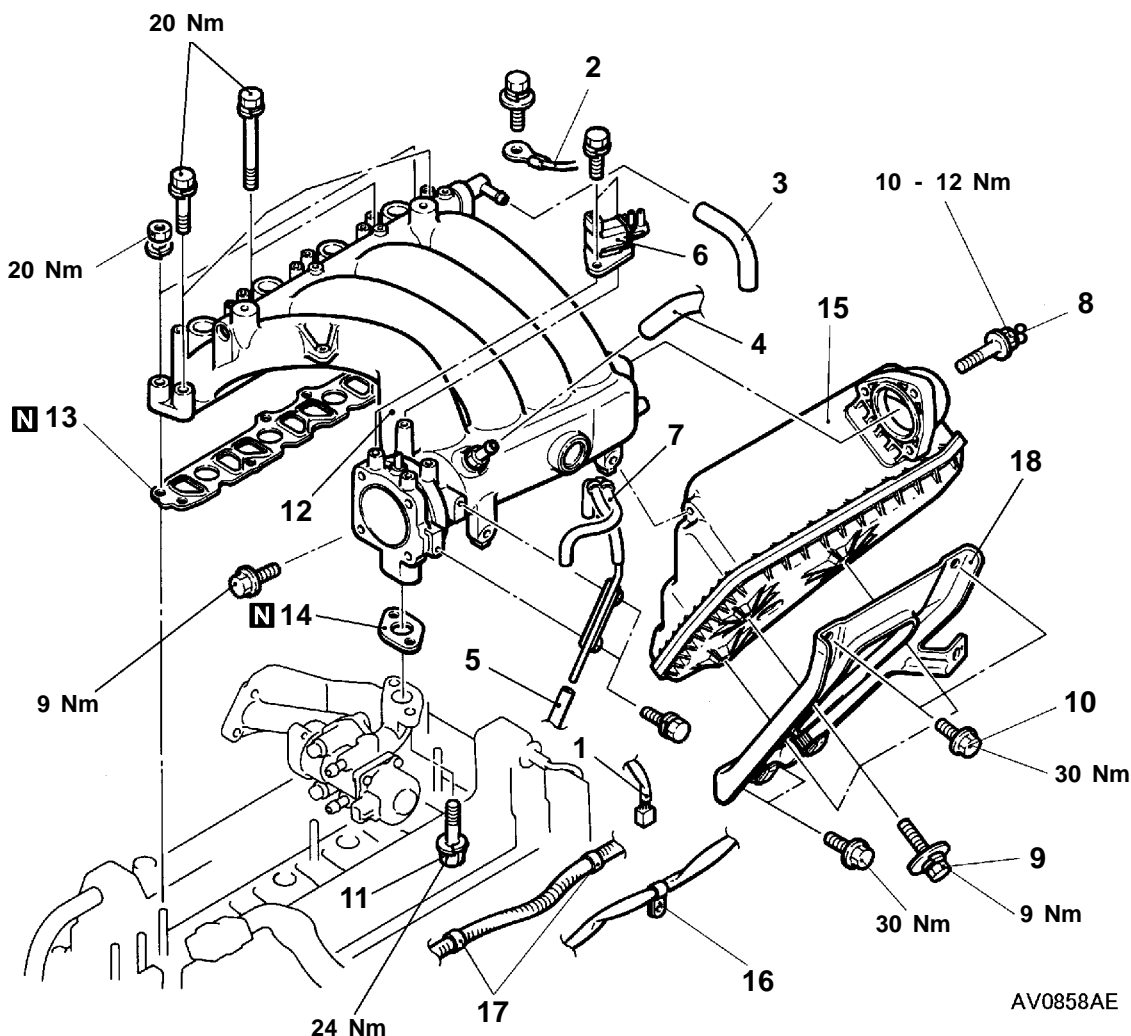
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REMOVAL AND INSTALLATION

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Pre-removal and Post-installation Operation

- Engine Coolant Draining and Supplying (Refer to GROUP 14 - On-vehicle Service.)
- Engine Cover Removal and Installation
- Air Cleaner Assembly Removal and Installation
- Ignition Coil Removal and Installation (Refer to GROUP 16.)
- Throttle Body Removal and Installation (Refer to GROUP 13A.)



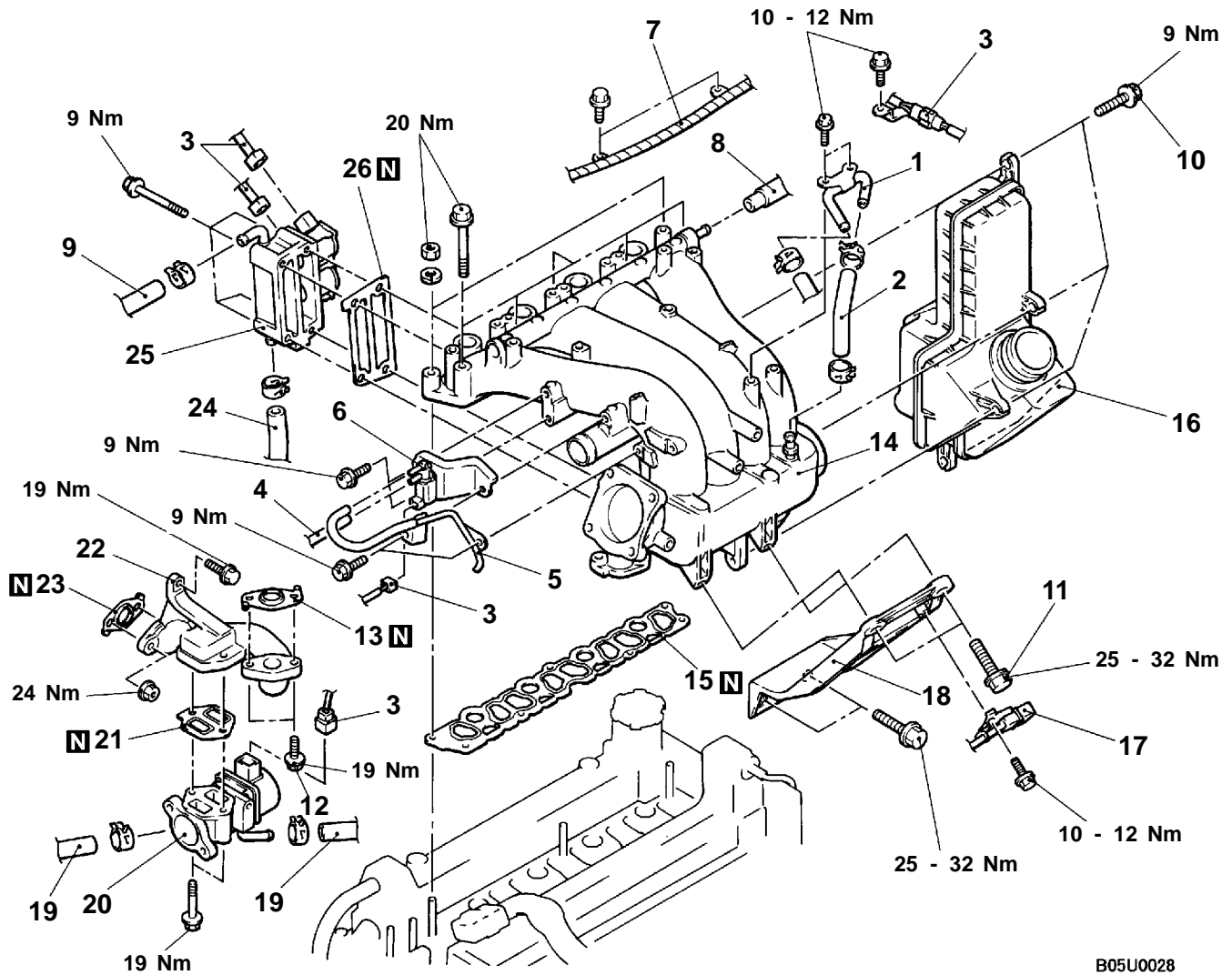
Removal steps

1. Engine harness connector and clamp
2. Earth cable connection
3. PCV hose
4. Brake booster vacuum hose connection
5. Vacuum hose connection
6. Purge solenoid valve
7. Vacuum pipe and hose assembly
8. Intake manifold and air intake plenum resonator assembly connecting bolt
9. Intake manifold stay and air intake plenum resonator assembly connecting bolt
10. Intake manifold and stay connecting bolt
11. Intake manifold and EGR valve support connecting bolt
12. Intake manifold
13. Intake manifold gasket
14. Gasket
15. Air intake plenum resonator assembly
16. Power steering hose clamp
17. Alternator harness clamp
18. Intake manifold stay

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Pre-removal and Post-installation Operation

- Engine Coolant Draining and Supplying (Refer to GROUP 14 - On-vehicle Service.)
- Engine Cover Removal and Installation
- Ignition Coil Removal and Installation (Refer to GROUP 16.)
- Air Cleaner Assembly Removal and Installation
- Throttle Body Removal and Installation (Refer to GROUP 13B.)



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Intake manifold removal steps

1. Brake booster vacuum pipe
2. Brake booster vacuum hose
3. Harness connector
4. Vacuum hose
5. Vacuum pipe and pipe
6. Purge control solenoid valve
7. Harness clamp
8. PCV hose connection
9. Water hose connection
 - Front exhaust pipe assembly (Refer to P.15-8.)
10. Intake manifold and air intake plenum resonator assembly connecting bolt
11. Intake manifold and stay connecting bolt
12. Intake manifold and EGR valve support connecting bolt
13. EGR pipe gasket
14. Intake manifold assembly
15. Intake manifold gasket

16. Air intake plenum resonator assembly
17. Harness connector clamp
18. Intake manifold stay

EGR valve removal steps

3. Harness connector
12. Intake manifold and EGR valve support connecting bolt
13. EGR valve gasket
19. Water hose connection
20. EGR valve
21. EGR valve gasket
22. EGR valve support
23. EGR valve gasket

Air bypass valve removal steps

14. Intake manifold assembly
24. Water hose connection
25. Air bypass valve
26. Air bypass valve gasket

INSPECTION

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

INTAKE MANIFOLD CHECK

1. Check for damage or cracking of any part.
2. Check for obstruction of the negative pressure (vacuum) outlet port, and for obstruction of the water passage or gas passage.
3. Using a straight edge and thickness gauge, check for distortion of the cylinder head installation surface.

Standard value: 0.15 mm or less

Limit: 0.20 mm

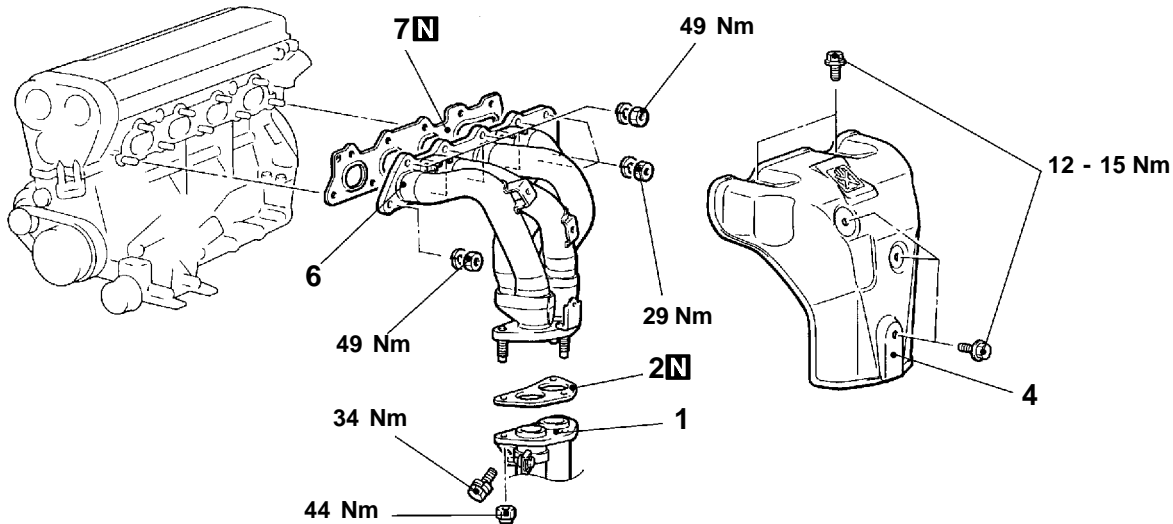
EXHAUST MANIFOLD

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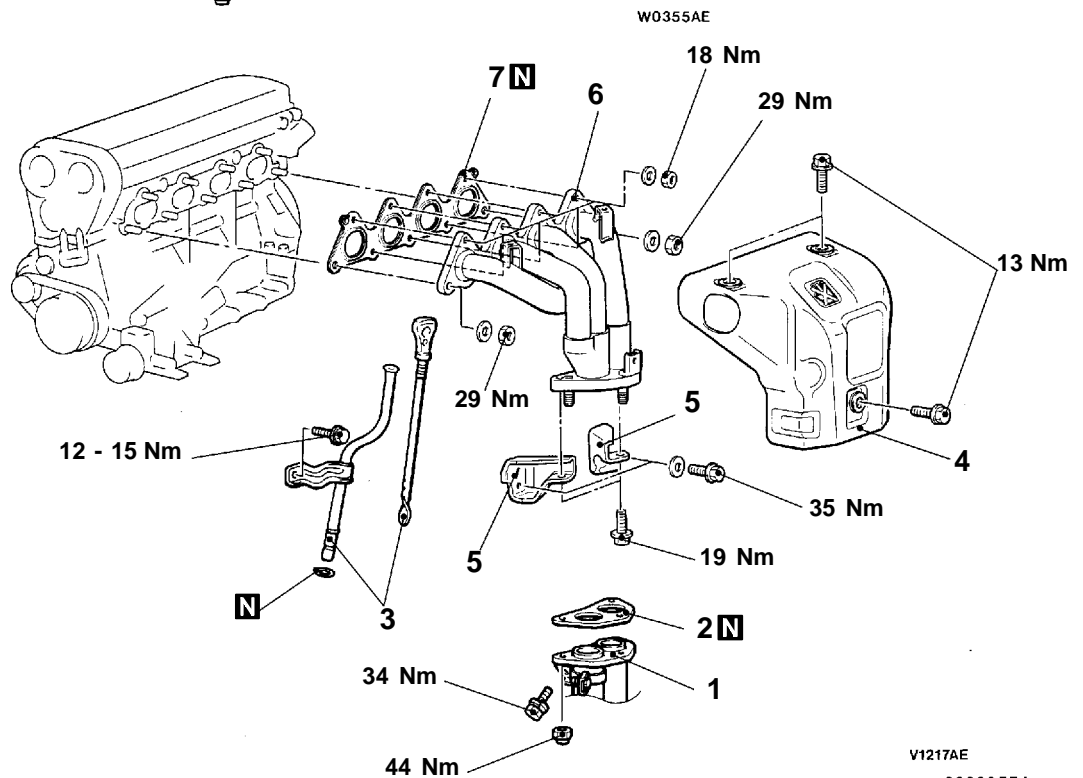
REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation
Under Cover Removal and Installation

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Removal steps

1. Front exhaust pipe connection
2. Gasket
3. Oil level gauge assembly <4G9>
4. Heat protector

5. Exhaust manifold bracket <4G9>
6. Exhaust manifold
7. Exhaust manifold gasket

INSPECTION

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EXHAUST MANIFOLD CHECK

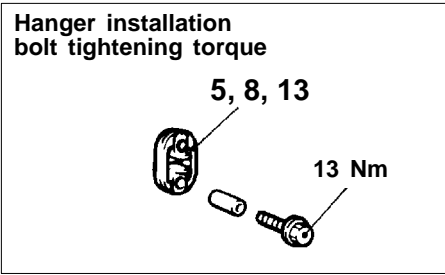
1. Check for damage or cracking of any part.
2. Using a straight edge and thickness gauge, check for distortion of the cylinder head installation surface.

Standard value: 0.15 mm or less**Limit: 0.20 mm**

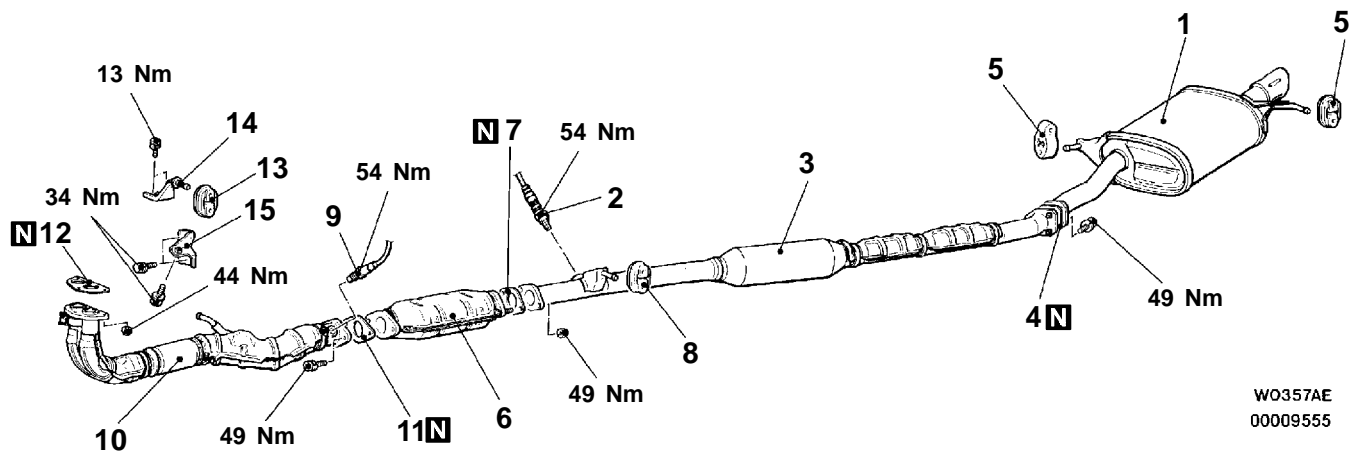
EXHAUST PIPE AND MAIN MUFFLER

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation
Under Cover Removal and Installation



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Main muffler removal steps

1. Main muffler assembly
2. Gasket
3. Hanger

Catalytic converter removal steps

6. Catalytic converter
7. Gasket
11. Gasket

Center exhaust pipe removal steps

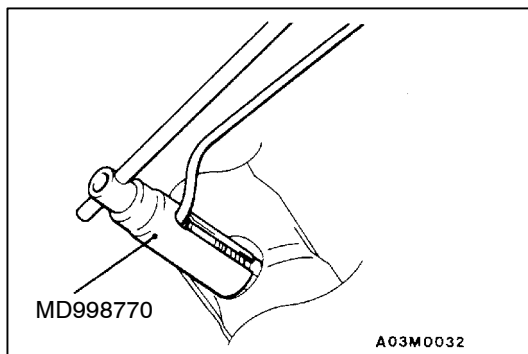


2. Oxygen sensor <4G6>
3. Center exhaust pipe
4. Gasket
7. Gasket
8. Hanger

Front exhaust pipe removal steps



9. Oxygen sensor
10. Front exhaust pipe
11. Gasket
12. Gasket
13. Hanger
14. Front hanger bracket
15. Front exhaust pipe bracket



REMOVAL SERVICE POINT

◀A▶ OXYGEN SENSOR REMOVAL

INSTALLATION SERVICE POINT

▶A◀ OXYGEN SENSOR INSTALLATION