
INTAKE AND EXHAUST

CONTENTS

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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.

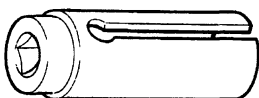
SERVICE SPECIFICATION

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Items	Standard value	Limit
Manifold distortion of the installation surface mm	0.15 or less	0.2

SPECIAL TOOL

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

ON-VEHICLE SERVICE

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INTAKE MANIFOLD VACUUM CHECK

Refer to GROUP 11A – On-vehicle Service.

INTAKE MANIFOLD

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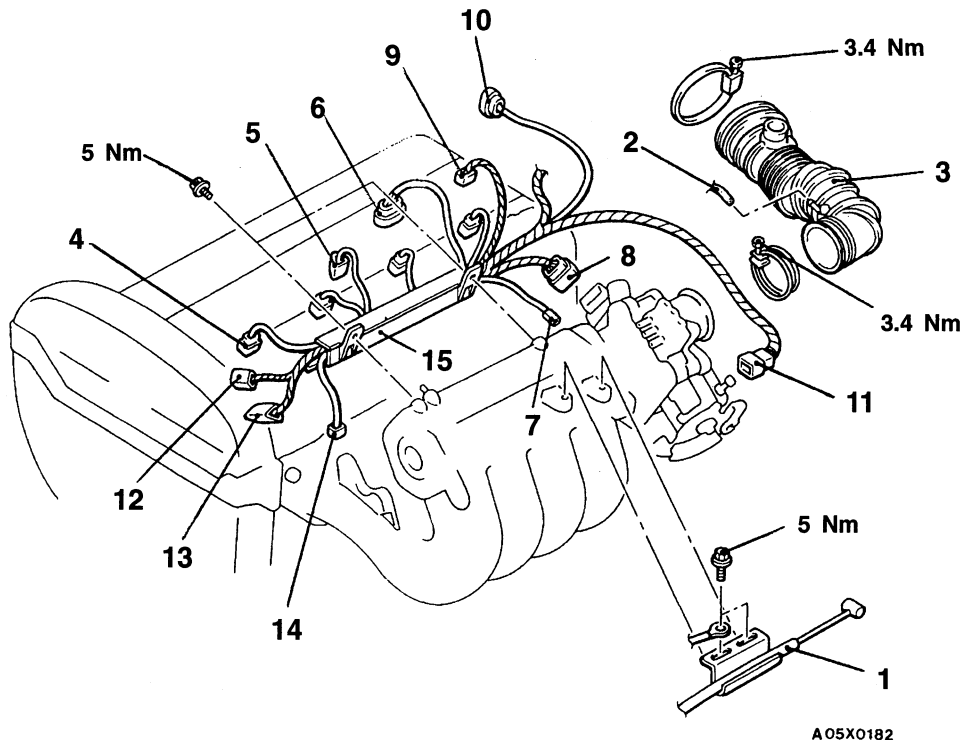
REMOVAL AND INSTALLATION

Pre-removal Operation

- (1) Fuel Discharge Prevention (Refer to GROUP 13A – On-vehicle Service.)
- (2) Engine Coolant Draining (Refer to GROUP 14 – On-vehicle Service.)
- (3) Battery Removal

Post-installation Operation

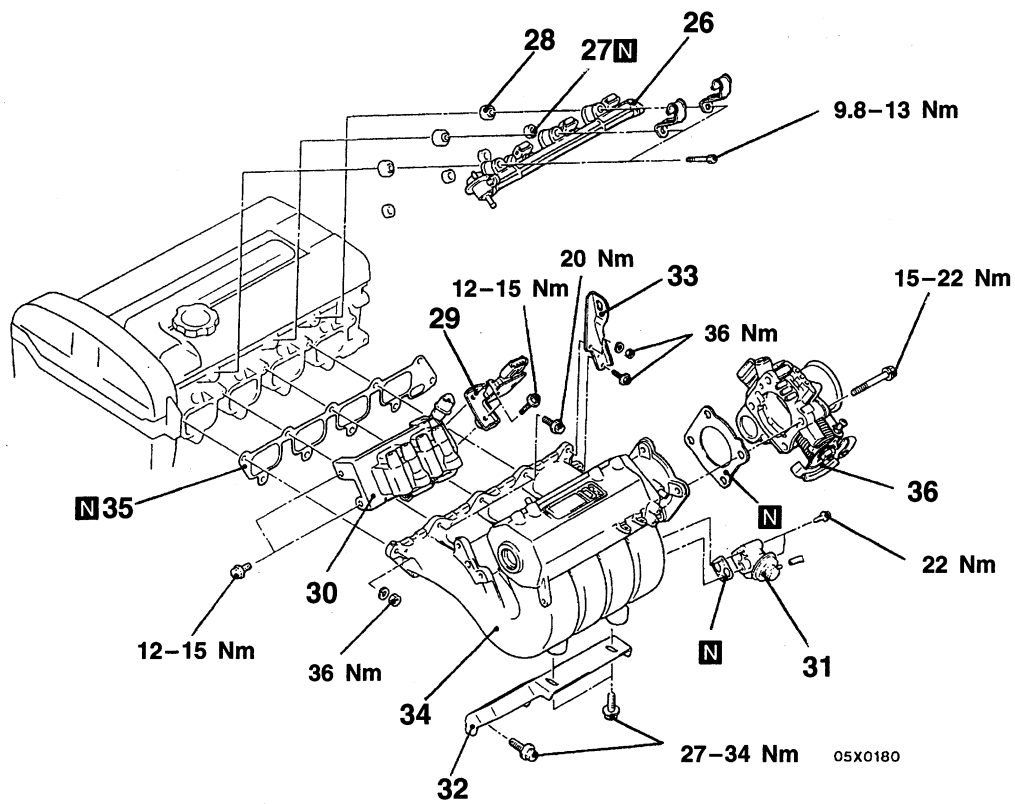
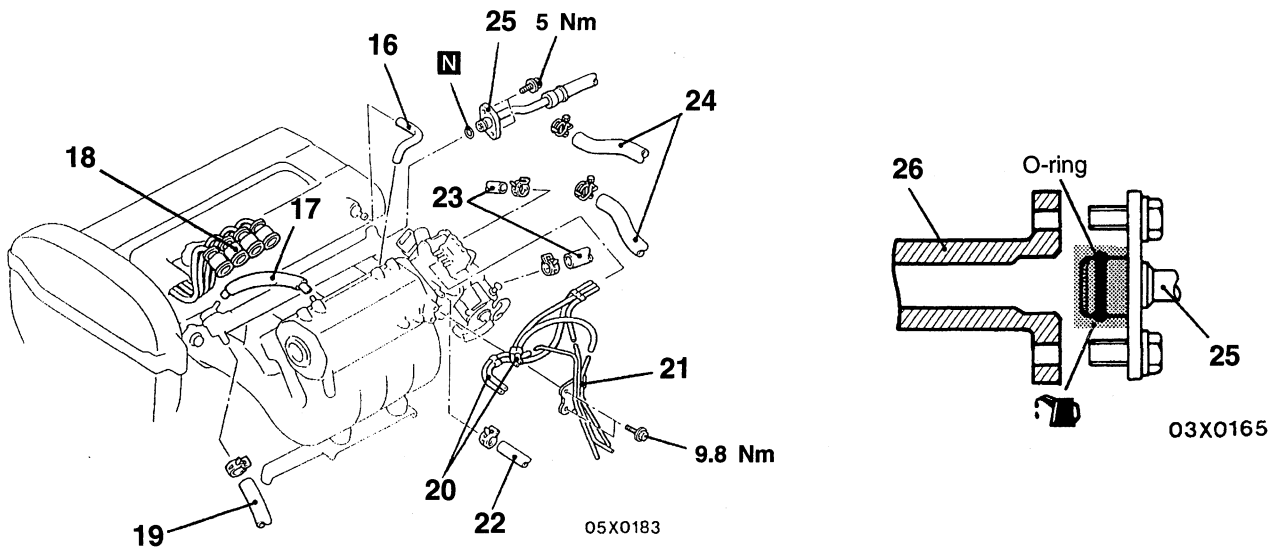
- (1) Battery Installation
- (2) Engine Coolant Supplying (Refer to GROUP 14 – On-vehicle Service.)
- (3) Accelerator Cable Adjustment (Refer to GROUP 17 – On-vehicle Service.)



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Removal steps

1. Accelerator cable connection
2. Breather hose
3. Air intake hose
4. Injector connector
5. Ignition coil connector
6. Power transistor connector
7. Capacitor connector
8. TPS connector
9. Detonation sensor connector
10. Engine coolant temperature sensor connector
11. ISC connector
12. Camshaft position sensor connector
13. Crankshaft position sensor connector
14. A/C compressor connector
15. Control wiring harness



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- 16. PCV hose connection
- 17. Vacuum hose connection
- 18. Spark plug cable connection
- 19. Fuel return hose connection
- 20. Vacuum hose connection
- 21. Vacuum pipe
- 22. Brake booster vacuum hose connection
- 23. Water hose connection
- 24. Heater hose connection
- 25. High-pressure fuel hose connection
- 26. Delivery pipe, injector and pressure regulator

- 27. Insulator
- 28. Insulator
- 29. Power transistor
- 30. Ignition coil
- 31. EGR valve assembly
- 32. Intake manifold stay
- 33. Engine hanger
- 34. Intake manifold
- 35. Intake manifold gasket
- 36. Throttle body



▶ A ◀

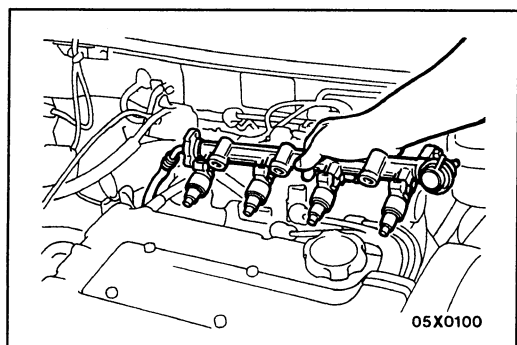
REMOVAL SERVICE POINTS

◀A▶ HIGH-PRESSURE FUEL HOSE DISCONNECTION

Relieve pressure in the fuel pipe line to prevent fuel outflow. (Refer to GROUP 13A – On-vehicle Service.)

Caution

Cover the fuel pipe line with shop towel after relieving pressure as certain pressure may still remain.



◀B▶ DELIVERY PIPE, FUEL INJECTOR AND PRESSURE REGULATOR ASSEMBLY REMOVAL

Remove the delivery pipe with the fuel injector and pressure regulator attached.

Caution

Do not drop the injector when removing the delivery pipe

INSTALLATION SERVICE POINT

▶A◀ HIGH-PRESSURE FUEL HOSE CONNECTION

When connecting the high-pressure fuel hose to the delivery pipe, apply a small amount of new engine oil to the hose union, and then insert, being careful not to damage the O-ring.

Caution

Do not let engine oil get into the delivery pipe.

INSPECTION

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

INTAKE MANIFOLD CHECK

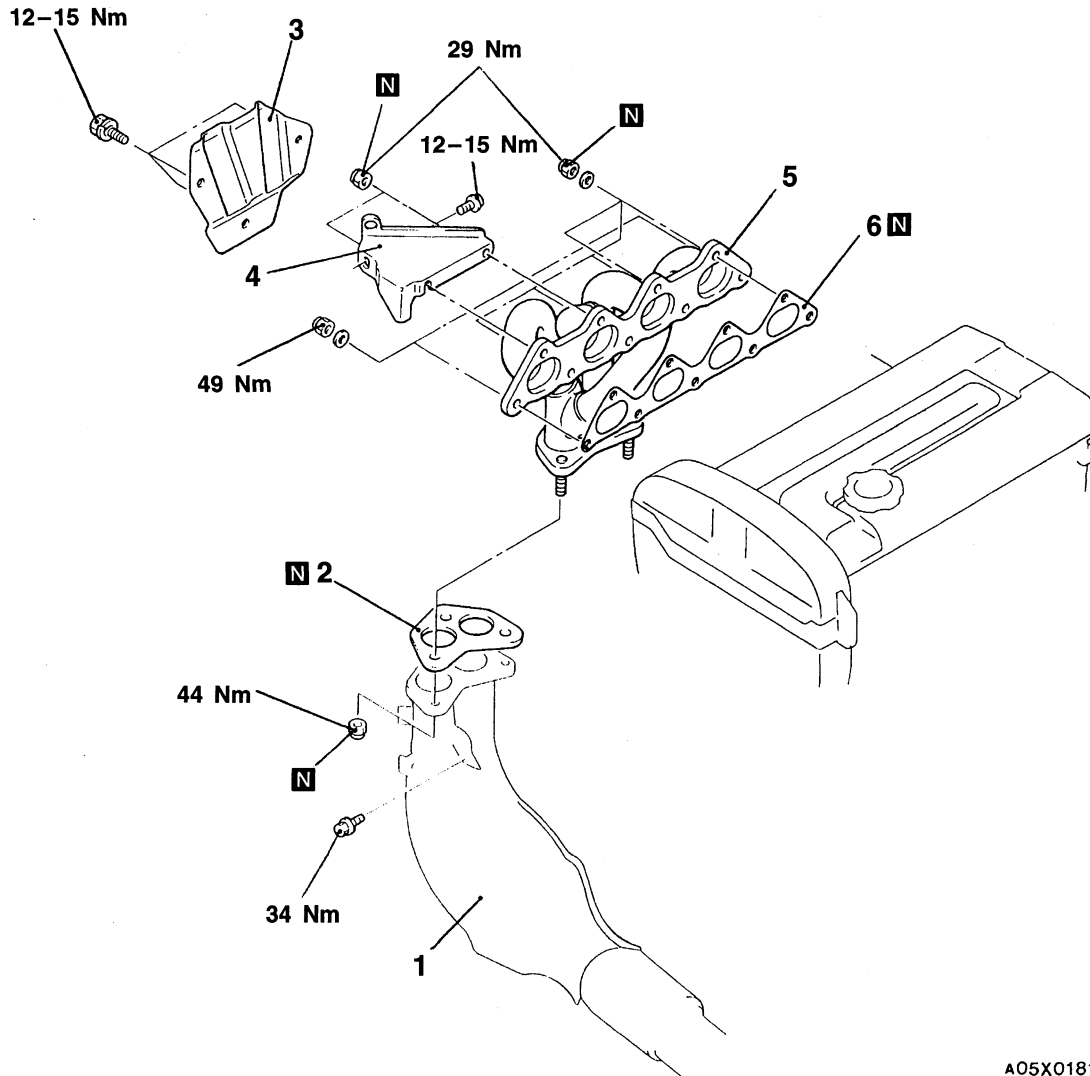
1. Check for damage or cracking of any part.
2. Check for obstruction of the negative pressure (vacuum) outlet port, and for obstruction of the water passage or gas passage.
3. Using a straight edge and a thickness gauge, check for distortion of the cylinder head installation surface.

Standard value: 0.15 mm or less

Limit: 0.2 mm

EXHAUST MANIFOLD

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REMOVAL AND INSTALLATION

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Removal steps

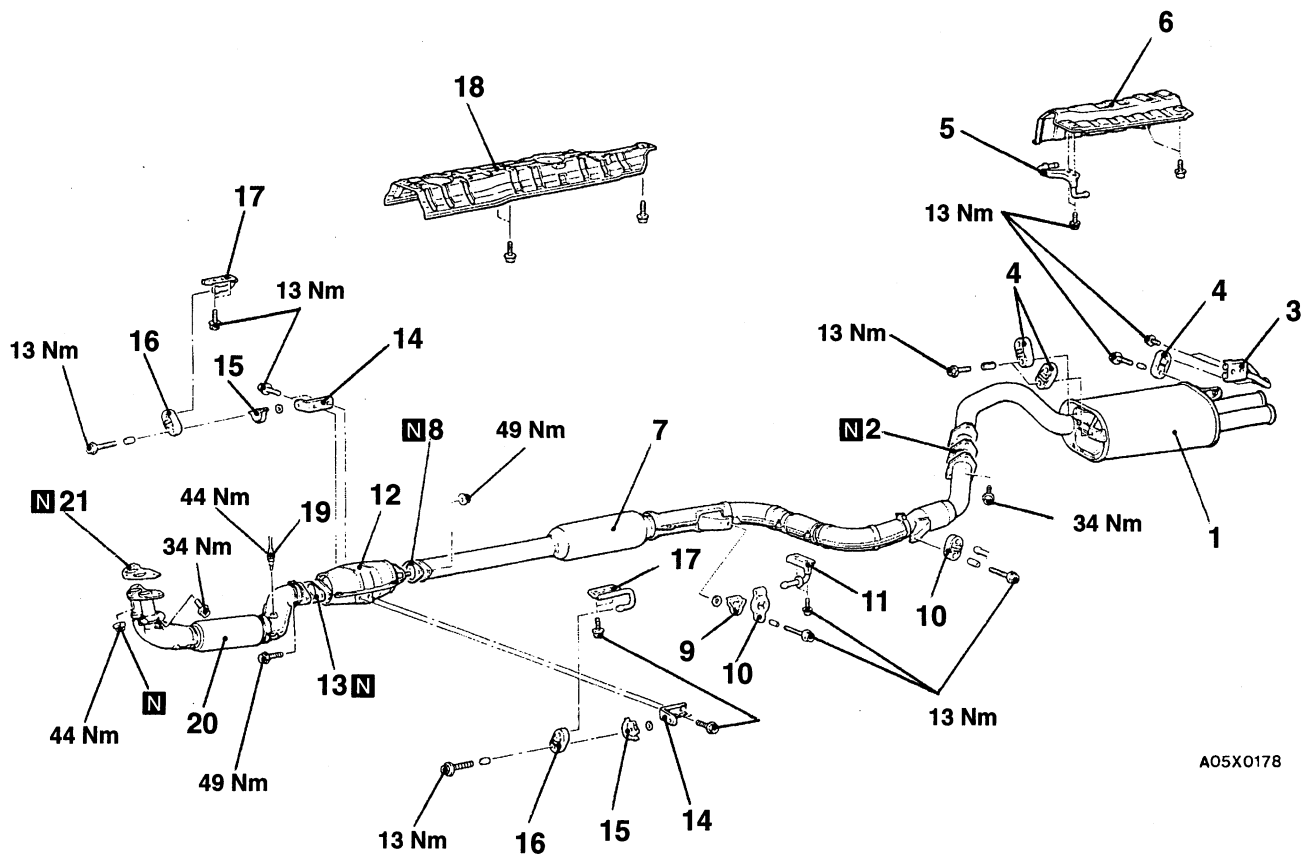
1. Front exhaust pipe connection
2. Gasket
3. Heat protector
4. Engine hanger
5. Exhaust manifold
6. Exhaust manifold gasket

EXHAUST PIPE AND MAIN MUFFLER REMOVAL AND INSTALLATION

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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
4. Hanger
5. Rear hanger
6. Rear floor heat protector panel

Centre exhaust pipe removal steps

7. Centre exhaust pipe
8. Gasket
9. Hanger protector
10. Hanger
11. Center hanger

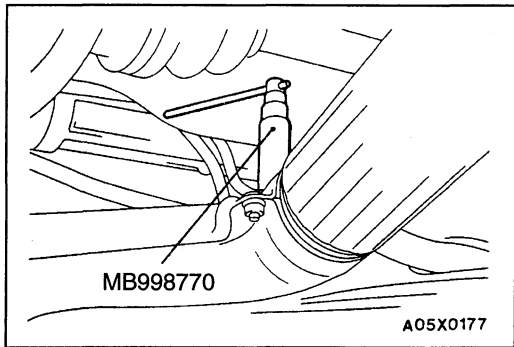
Catalytic converter removal steps

12. Catalytic converter
13. Gasket
14. Catalytic converter bracket
15. Hanger protector
16. Hanger
17. Front hanger
18. Front floor heat protector plate

Front exhaust pipe removal steps

19. Oxygen sensor
20. Front exhaust pipe
21. Gasket



**REMOVAL SERVICE POINT****◀A▶ OXYGEN SENSOR REMOVAL****INSTALLATION SERVICE POINT****▶A◀ OXYGEN SENSOR INSTALLATION**