

## GROUP 15

# INTAKE AND EXHAUST

### GENERAL

#### OUTLINE OF CHANGES

The service procedures have been established due to the following changes:

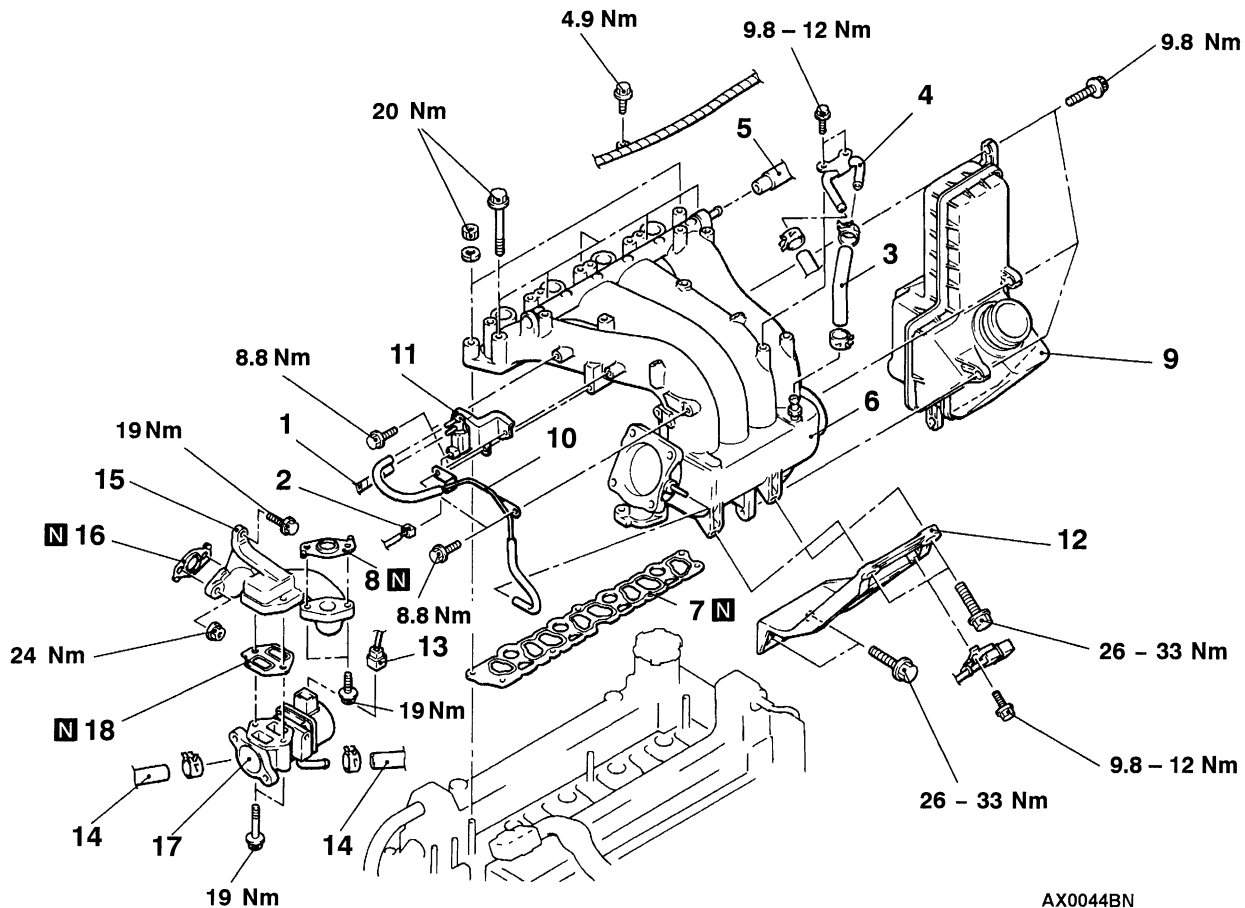
- The air by-pass valve has been discontinued <4G9-GDI>.
- The main muffler, exhaust pipe and catalytic converter have been changed <4G9>.

## INTAKE MANIFOLD <4G9-GDI>

### REMOVAL AND INSTALLATION

#### Pre-removal and Post-installation Operation

- Engine Coolant Draining and Supplying
- Air Intake Hose Assembly Removal and Installation
- Engine Cover Removal and Installation
- Ignition Coil Removal and Installation
- Throttle Body Removal and Installation (Refer to GROUP 13J.)



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#### Intake manifold removal steps

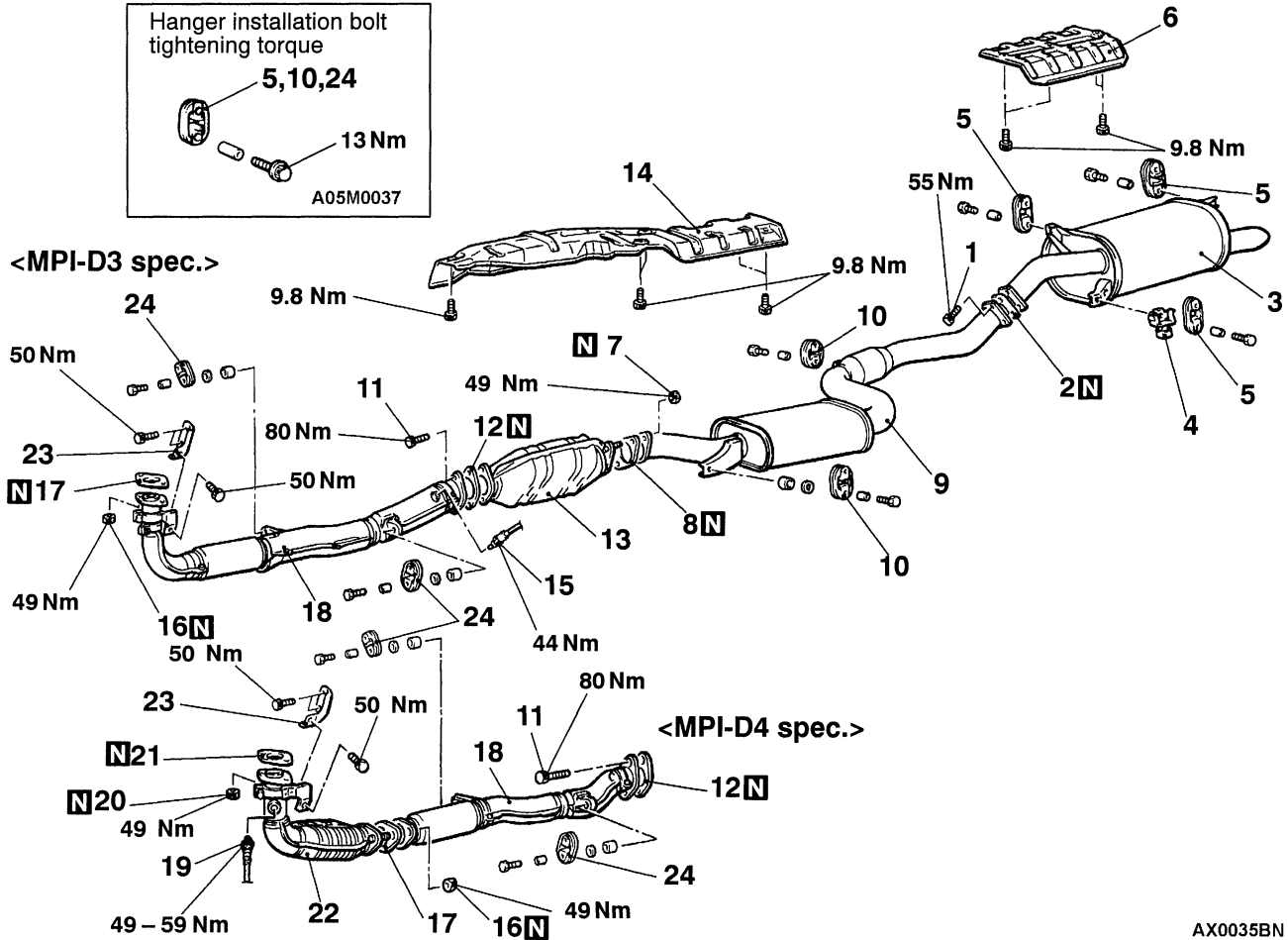
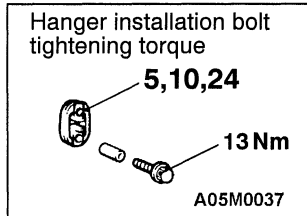
1. Vacuum hose connection
2. Purge control solenoid valve connector
3. Brake booster vacuum hose connection
4. Brake booster vacuum pipe
5. PCV hose connection
6. Intake manifold assembly
7. Intake manifold gasket
8. EGR pipe gasket
9. Surging resonator
10. Vacuum pipe and hose assembly
11. Purge control solenoid valve
12. Intake manifold stay

#### EGR valve assembly removal steps

6. Intake manifold assembly
13. EGR servo connector
14. Water hose connection
15. EGR valve support
16. EGR pipe gasket
17. EGR valve assembly
18. EGR valve gasket

**EXHAUST PIPE AND MAIN MUFFLER <4G9>****REMOVAL AND INSTALLATION**

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

**Main muffler removal steps**

1. Bolt
2. Gasket
3. Main muffler
4. Dynamic damper
5. Hanger
6. Rear floor heat protector panel

**Center exhaust pipe removal steps**

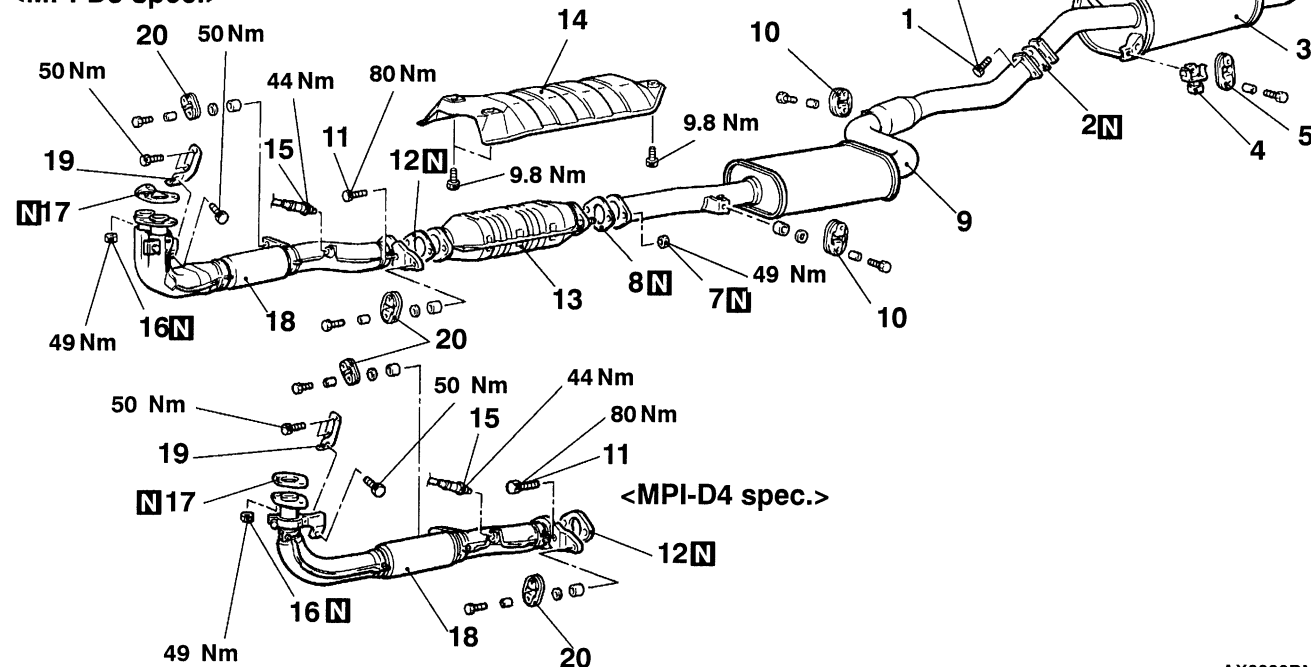
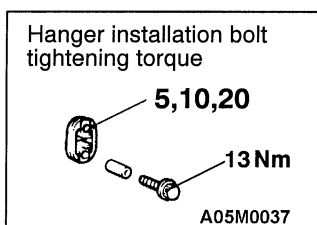
1. Bolt
2. Gasket
7. Self locking nuts
8. Gasket
9. Center exhaust pipe
10. Hanger
11. Bolt
12. Gasket
13. Catalytic converter
14. Front floor heat protector panel

**Front exhaust pipe removal steps**

11. Bolt
12. Gasket
15. Oxygen sensor<MPI-D3 spec.>
16. Self locking nuts
17. Gasket
18. Front exhaust pipe
19. Oxygen sensor <MPI-D4 spec.>
20. Self-locking nut <MPI-D4 spec.>
21. Gasket <MPI-D4 spec.>
22. Front catalytic converter <MPI-D4 spec.>
23. Front exhaust pipe bracket
24. Hanger

**NOTE**

Removal and installation service points are the same as before.



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## Main muffler removal steps

1. Bolt
2. Gasket
3. Main muffler
4. Dynamic damper
5. Hanger
6. Rear floor heat protector panel

### Center exhaust pipe removal steps

1. Bolt
2. Gasket
7. Self locking nuts
8. Gasket
9. Center exhaust pipe
10. Hanger
11. Bolt
12. Gasket
13. Catalytic converter
14. Front floor heat protector panel

## Front exhaust pipe removal steps

11. Bolt
12. Gasket
15. Oxygen sensor
16. Self locking nuts
17. Gasket
18. Front exhaust pipe
19. Front exhaust pipe bracket
20. Hanger

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## NOTE

Removal and installation service points are the same as before.