

INTAKE & EXHAUST SYSTEM

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[FBC SYSTEM]

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GENERAL

SPECIFICATIONS

Air cleaner	
Type	Dry type
Element	Unwoven cloth type
Exhaust pipe	
Muffler	Expansion resonance type
Suspension system	Rubber hangers

TIGHTENING TORQUE

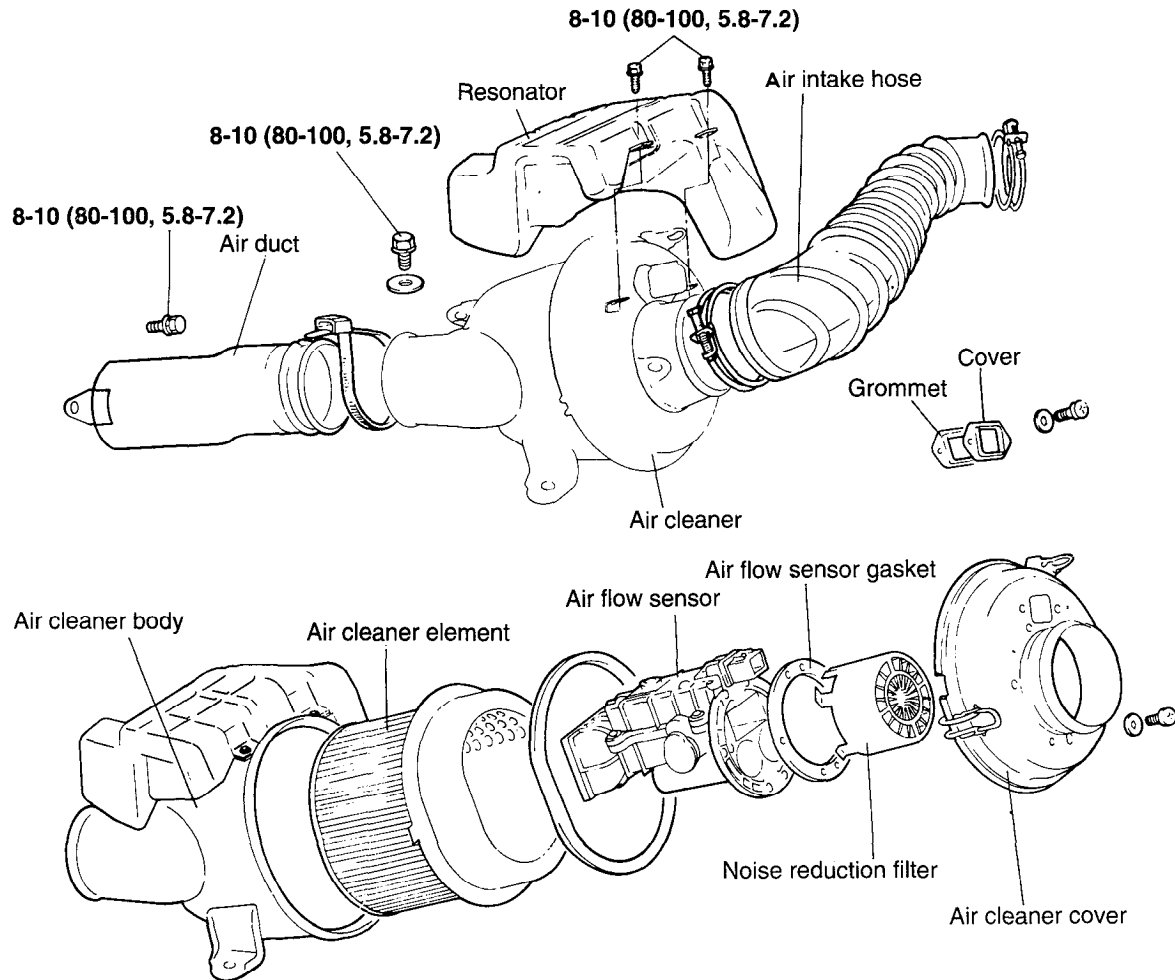
	Nm	kg.cm	lb.ft
Air cleaner mounting bolts	8-10	80-100	5.8-7.2
Air cleaner mounting bracket bolts	15-22	150-220	11-16
Intake manifold to cylinder head nuts and bolts	15-20	150-200	11-14
Intake manifold stay to cylinder block bolts	18-25	180-250	13-18
Throttle body to surge tank bolts	15-22	150-220	11-16
Exhaust manifold to cylinder head nuts	15-20	150-200	11-14
Exhaust manifold cover to exhaust manifold bolts	27-33	270-330	20-24
Oxygen sensor to exhaust manifold	40-50	400-500	29-36
Front exhaust pipe to exhaust manifold nuts	30-40	300-400	22-29
Front exhaust pipe bracket bolts	30-40	300-400	22-29
Front exhaust pipe to catalytic converter bolts	40-60	400-600	29-43
Catalytic converter to main muffler ass'y nuts	30-40	300-400	22-29
Main muffler hanger support bracket bolts	10-15	100-150	7.2-11

TROUBLESHOOTING

Symptom	Probable cause	Remedy
Exhaust gas leakage	Loose connections Broken pipe or muffler	Re-tighten Repair or replace
Abnormal noise	Detached baffle plate in muffler Broken rubber hanger Pipe or muffler contacting vehicle body Broken pipe or muffler	Replace Replace Correct Repair or replace

AIR CLEANER

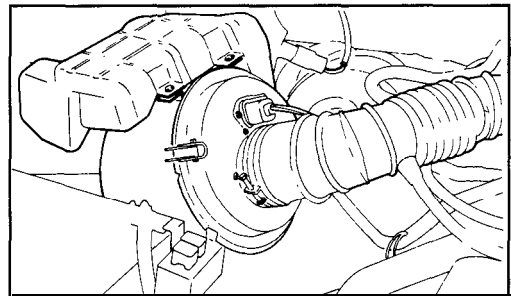
COMPONENTS



TORQUE : Nm (kg.cm, lb.ft)

REMOVAL

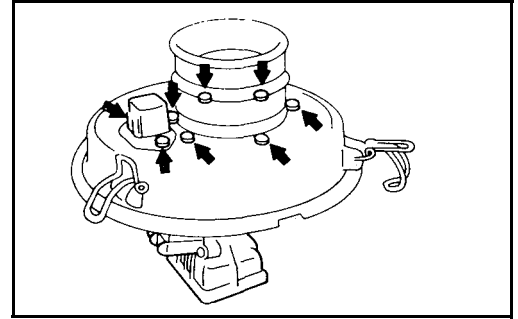
1. Disconnect the air flow sensor connector.
2. Remove the resonator.
3. Remove the air intake hose and air duct connected to the air cleaner.
4. Remove the three bolts attaching the air cleaner mounting brackets.
5. Detach the air cleaner.



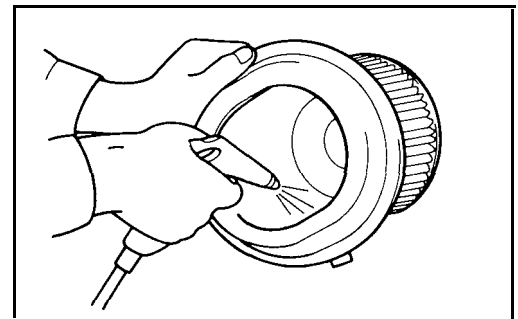
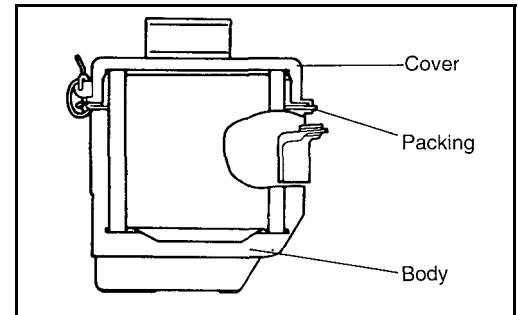
6. Remove the air flow sensor from the air cleaner case.

CAUTION

Do not pull on the air flow sensor harness, because the grommet is attached to the air cleaner case.

**INSPECTION**

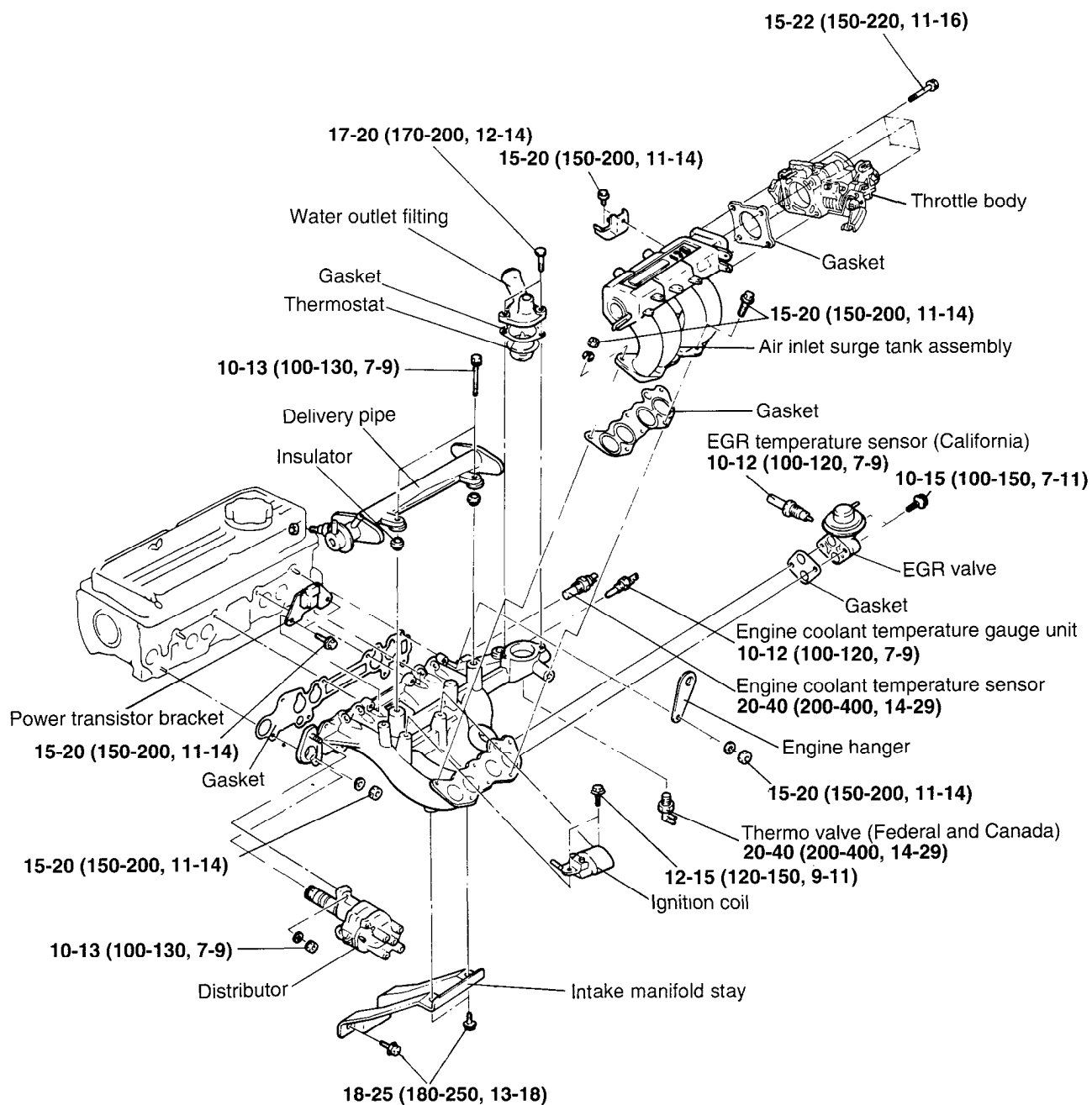
1. Check the air cleaner body, cover, or packing for distortion, corrosion or damage.
2. Check the air duct for damage.
3. Check the resonator for crack, damage.
4. Check the air cleaner element for restriction, contamination or damage.
If the element is slightly restricted, remove the dust and other contaminants by blowing air from the inside through the element.
5. Check the air cleaner housing for restrictions, contamination or damage.

**INSTALLATION**

Install the air cleaner in the reverse order of removal.

SURGE TANK AND INTAKE MANIFOLD

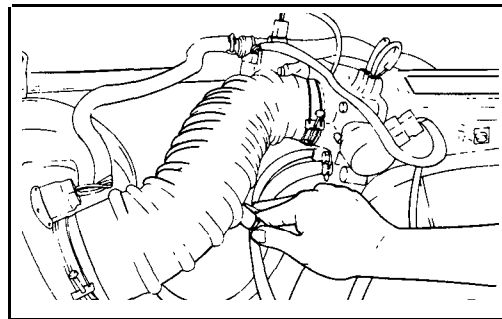
COMPONENTS



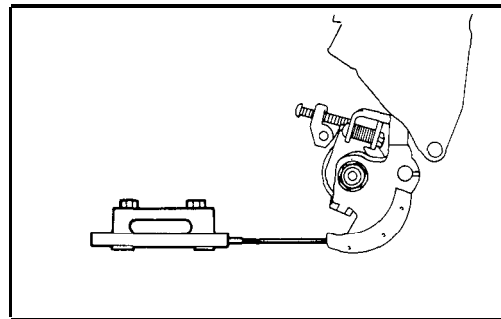
TORQUE : Nm (kg.cm, lb.ft)

REMOVAL

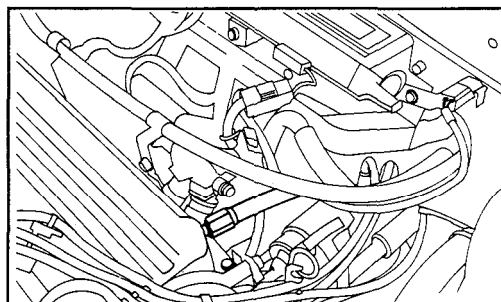
1. Remove the air intake hose connected to the throttle body.



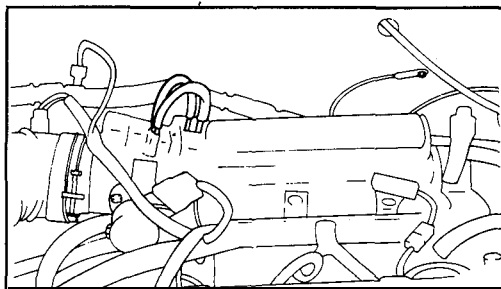
2. Remove the accelerator cable.
3. Remove the water hose and throttle body.



4. Remove the P.C.V. hose and brake booster vacuum hoses.



5. Disconnect the vacuum hose connections.



6. Disconnect the high pressure fuel hose connection after relieving pressure in the fuel pipe line to prevent fuel overflow. (Refer to "Fuel system").
7. Remove the surge tank assembly and gasket.
8. Disconnect the fuel injector harness connector.

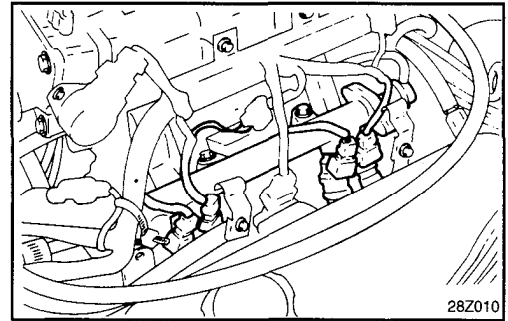


9. Remove the delivery pipe with the fuel injectors and pressure regulator attached.

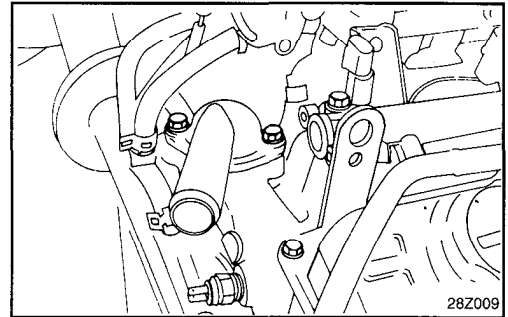
CAUTION

Be careful not to drop the injectors when removing the delivery pipe.

10. Remove the insulator from the intake manifold and disconnect the heater hose.



11. Disconnect the wiring harness connector between the water temperature gauge unit and the water temperature sensor assembly.
12. Remove the water outlet fitting and gasket.
13. Remove the thermostat.
14. Remove the distributor and ignition coil.
15. Remove the intake manifold stay.
16. Remove the intake manifold.



INSPECTION

Surge Tank

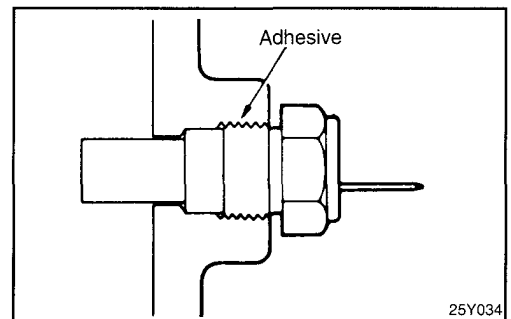
1. Check the surge tank for defects or cracks. Replace if necessary.

Intake Manifold

1. Check for damage or cracking of any part.
2. Check the coolant passages for restrictions. Clean if required.

INSTALLATION

1. Install the water temperature gauge unit and the water temperature sensor assembly.
For more details refer to GROUP 25.

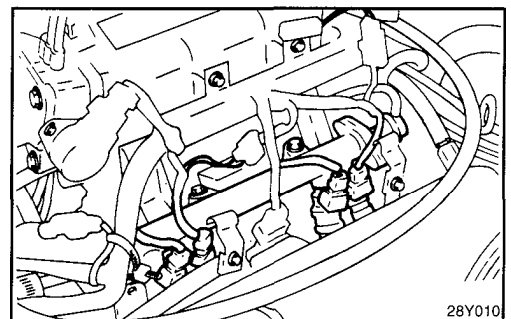


2. Install the delivery pipe with the fuel injectors and pressure regulator attached.

CAUTION,

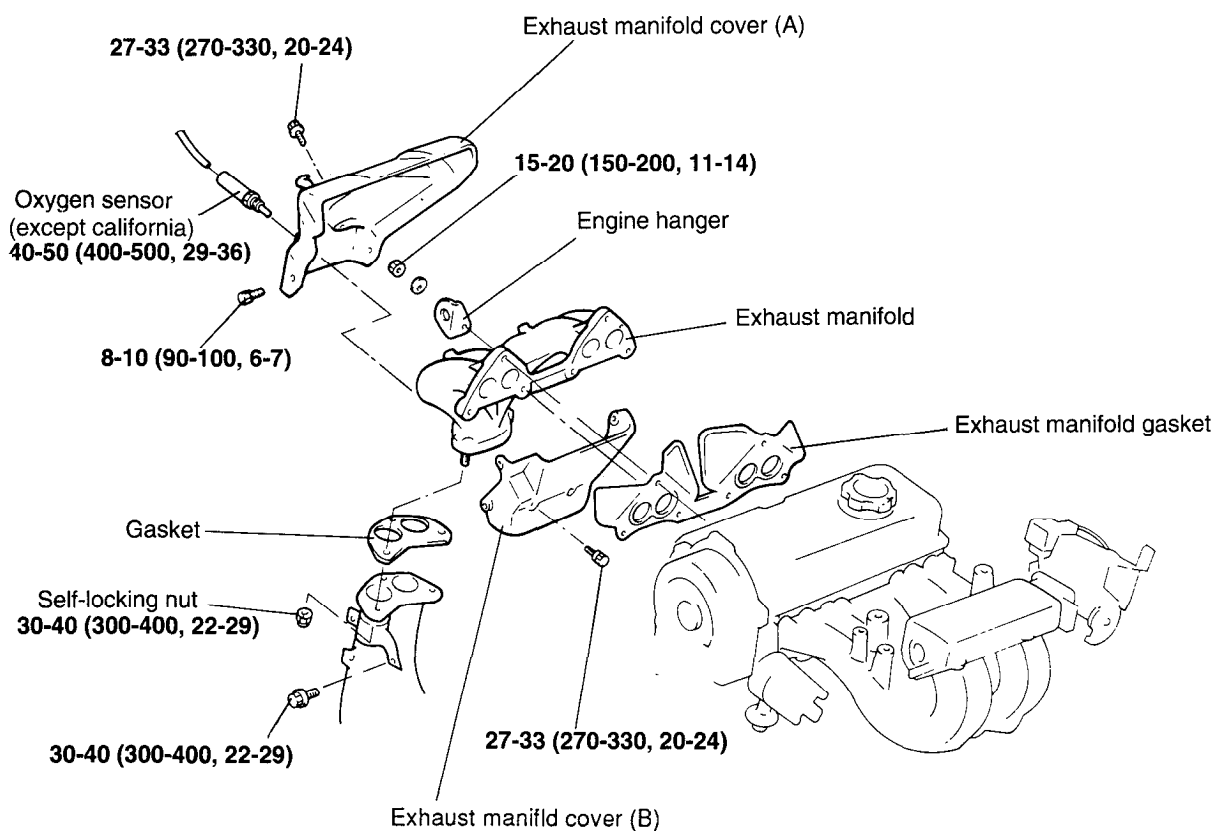
Be careful not to drop the injectors when removing the delivery pipe.

3. Ensure that the insulators are correctly inserted into the delivery pipe hole.



EXHAUST MANIFOLD

COMPONENTS



TORQUE : Nm (kg.cm, lb.ft)

INSPECTION

Exhaust Manifold

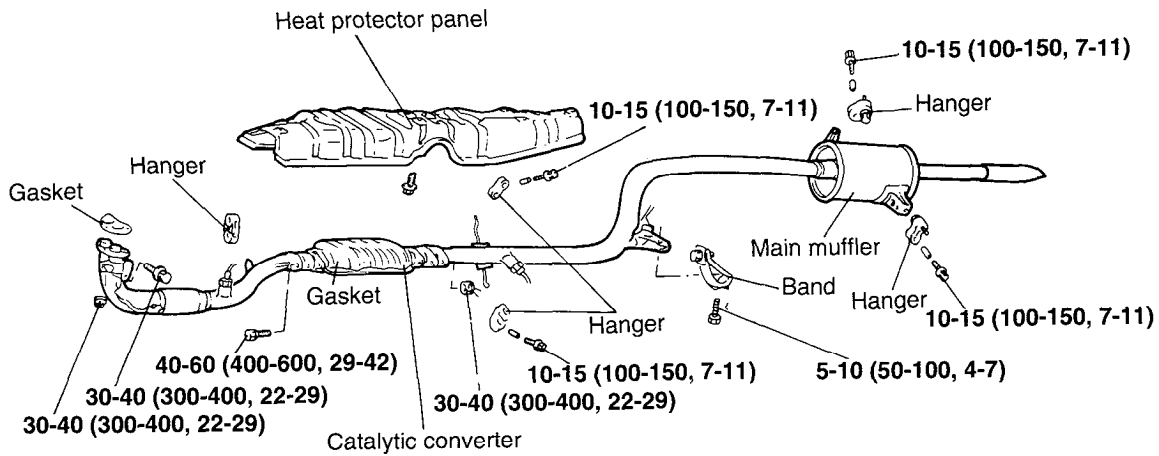
Check for damage or cracking.

Exhaust Manifold Gasket

Check for flaking or damage of the gasket.

MUFFLERS

COMPONENTS



TORQUE : Nm (kg.cm, lb.ft)

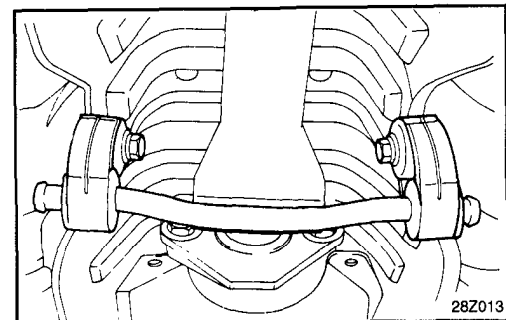
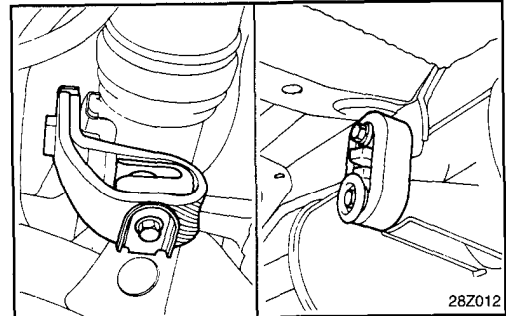
REMOVAL

Main Muffler

CAUTION

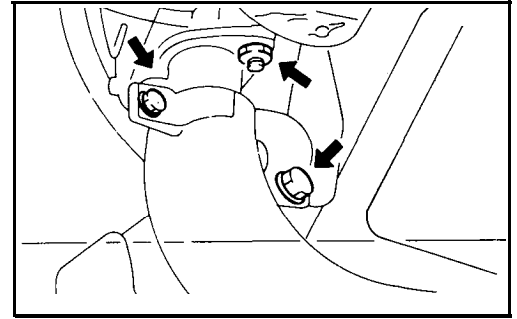
Before removing or inspecting the exhaust system, ensure that the exhaust system has cooled sufficiently.

1. Disconnect the main muffler from the catalytic converter.
2. Remove the rubber O-rings and take out the main muffler.



Front Exhaust Pipe

1. Remove the front exhaust pipe-to-catalytic converter mounting bolts.
2. Remove the front exhaust pipe clamp bolt and remove the exhaust manifold-to-front exhaust pipe mounting nuts.

**INSPECTION**

1. Check the mufflers and pipes for corrosion and damage.
2. Check the rubber hanger and bands for deterioration and cracks.

INSTALLATION

1. Temporarily install the front exhaust pipe, the catalytic converter assembly, the center exhaust pipe, and the main muffler, in that order.
2. Tighten the parts securely. Make sure there is no interference with any body components.

GENERAL**SPECIFICATIONS**

Air cleaner	
Type	Dry type
Element	Unwoven cloth type
Exhaust pipe	
Muffler	Expansion resonance type
Suspension system	Rubber hangers

TIGHTENING TORQUE

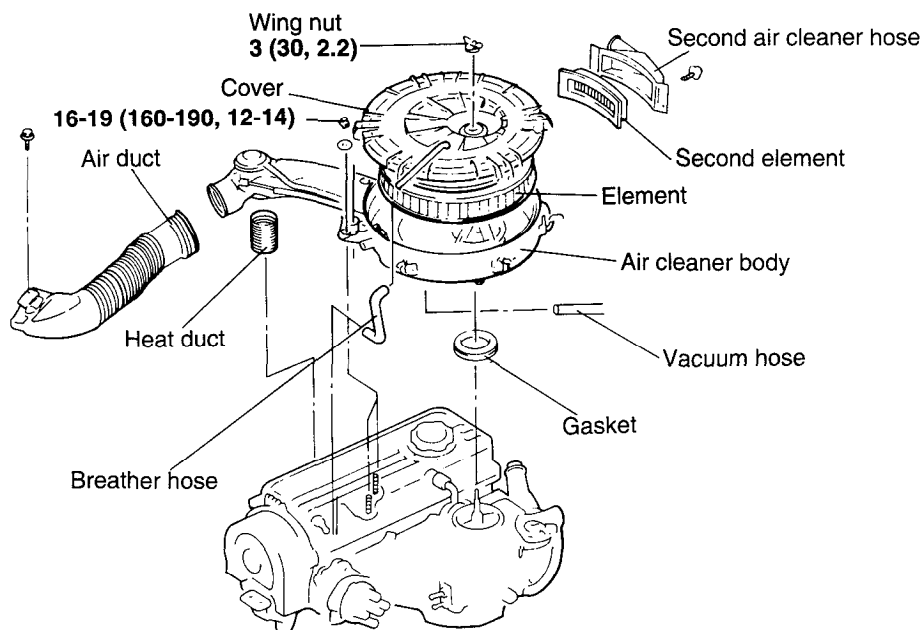
	Nm	kg.cm	lb.ft
Air cleaner wing nut	3	30	2.2
Air cleaner flange nut	16-19	160-190	12-14
Intake manifold to cylinder head	15-20	150-200	11-14
Intake manifold stay to cylinder block bolts	20-30	200-300	15-21
Exhaust manifold to cylinder head nuts	15-20	150-200	11-14
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TROUBLESHOOTING

Symptom	Probable cause	Remedy
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Abnormal noise	Detached baffle plate in muffler Broken rubber hanger Pipe or muffler contacting vehicle body Broken pipe or muffler	Replace Replace Correct Repair or replace

AIR CLEANER

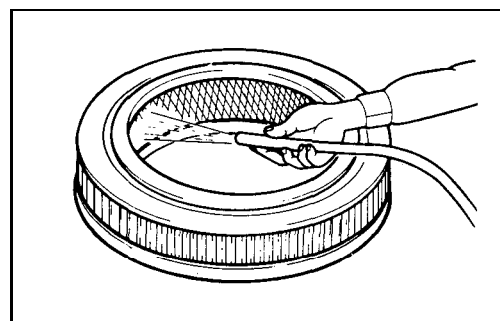
COMPONENTS



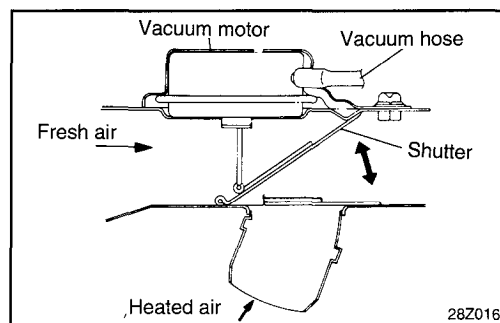
TORQUE : Nm (kg.cm, lb.ft)

INSPECTION

1. Check body and cover for deformation, corrosion or damage and correct or replace if necessary.
2. Check for dust in body.
3. Check element for clogging, contamination or damage.
4. If element is slightly clogged, remove dust by blowing air from inside of element.
5. Check to see that heated air control valve operates properly.



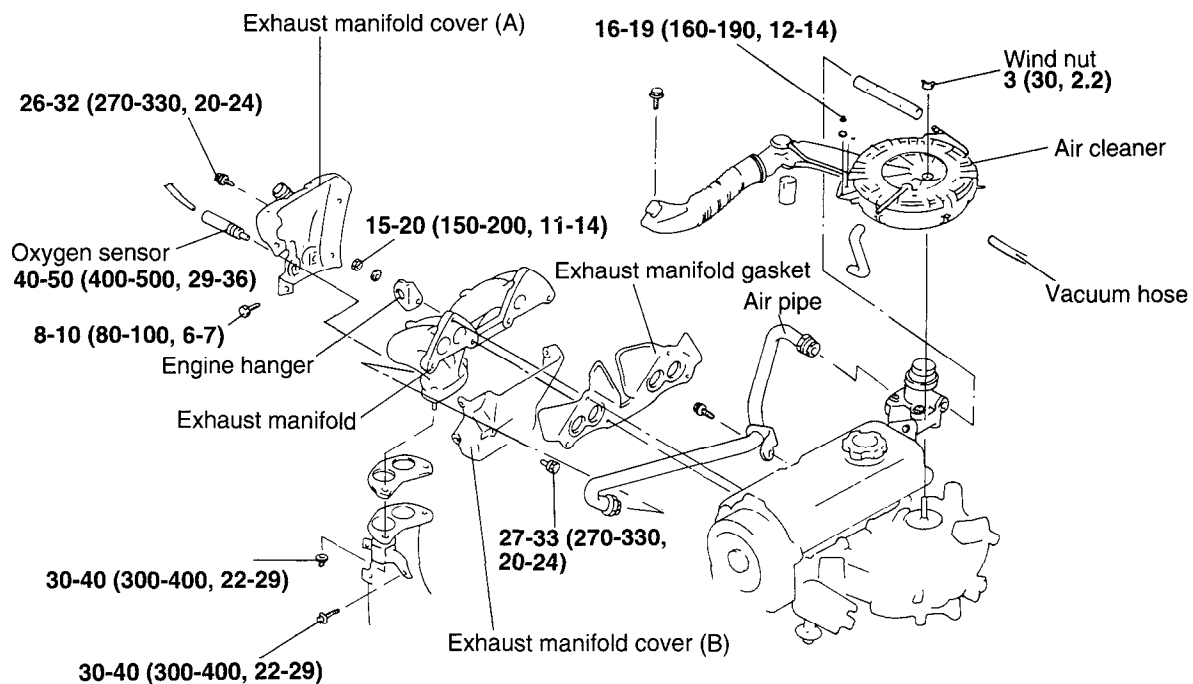
Temperature of thermo sensor	Intake manifold vacuum	Shutter position
Below 30°C (86°F)	Over 190 mm Hg	Fully open
	Under 70 mm Hg	Fully closed
Above 45°C (113°F)	Under 550 mm Hg	Fully closed



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EXHAUST MANIFOLD

COMPONENTS



TORQUE : Nm (kg.cm, lb.ft)

INSPECTION

Exhaust Manifold

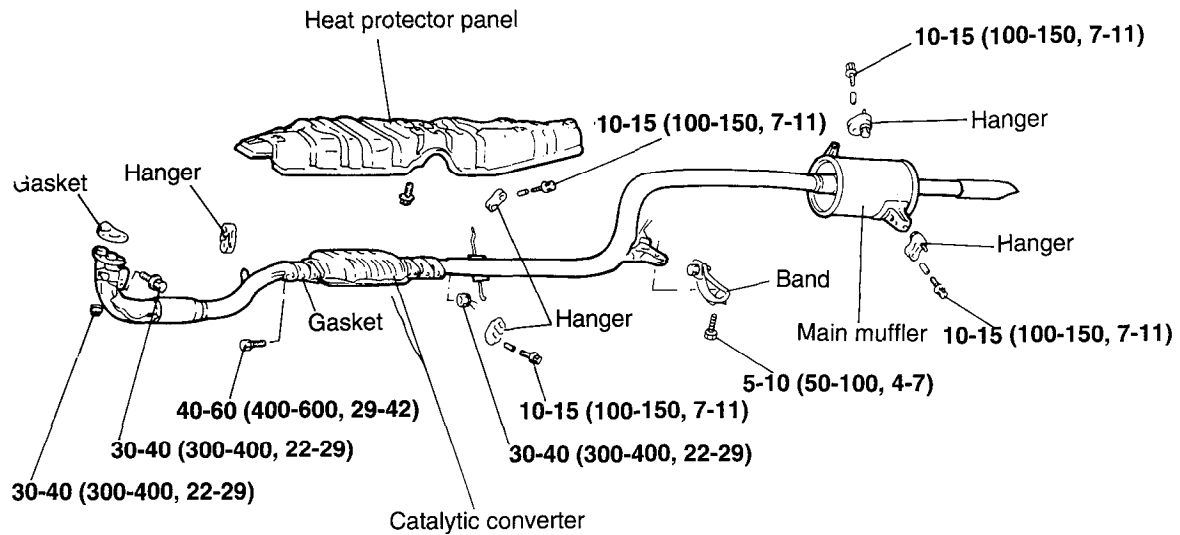
Check for damage or cracking.

Exhaust Manifold Gasket

Check for flaking or damage of the gasket.

MUFFLERS

COMPONENTS



TORQUE : Nm (kg.cm, lb.ft)

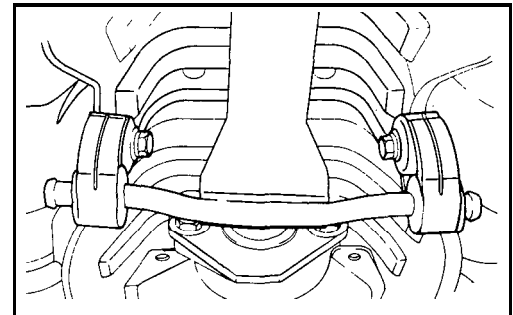
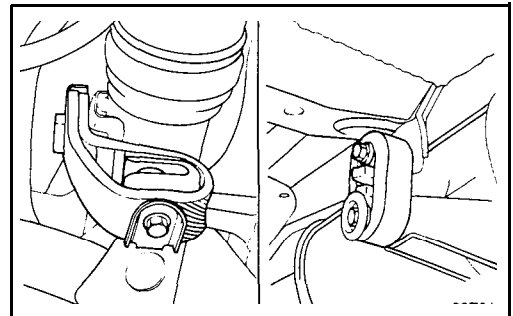
REMOVAL

Main Muffler

CAUTION

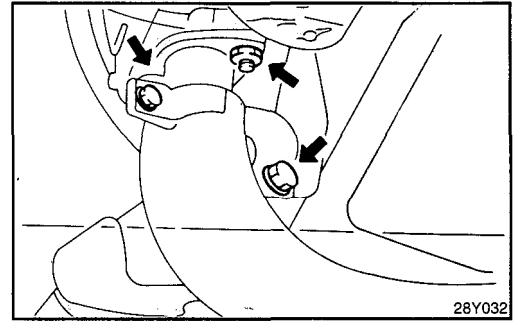
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**INSPECTION**

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INSTALLATION

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2. Tighten the parts securely. Make sure there is no interference with any body components.