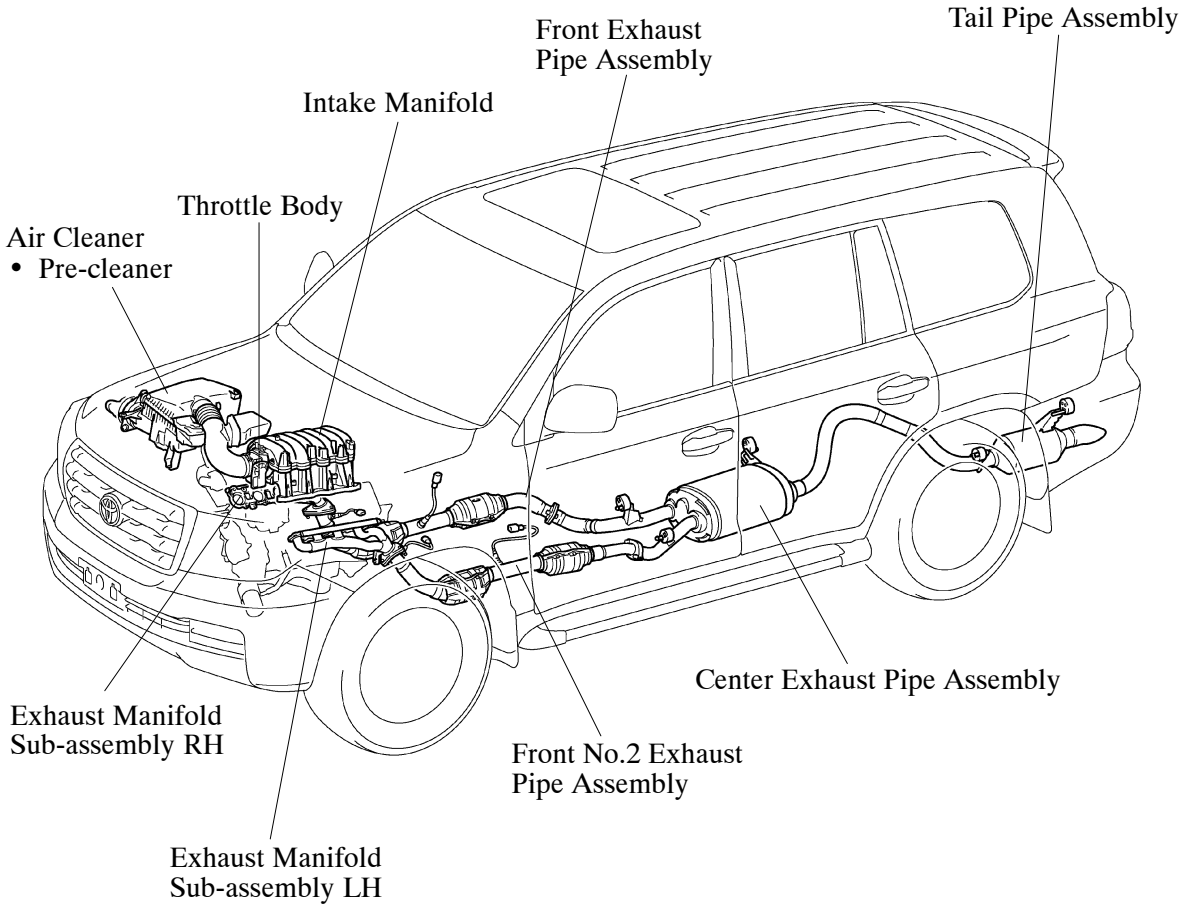
■INTAKE AND EXHAUST SYSTEM

1. General

- A cyclone pre-cleaner is provided on all models except European models*.
- A link-less type throttle body is used and it realizes excellent throttle control.
- A plastic intake manifold is used.
- Stainless steel exhaust manifolds and exhaust pipes are used.
- The ETCS-i (Electronic Throttle Control System-intelligent) is used to ensure excellent throttle control in all operating ranges. For details, see page EG-116.
- The ACIS (Acoustic Control Induction System) is used to improve the engine performance in all speed range. For details of ACIS control, see page EG-123.

*: European models other than package models for South Africa, New Caledonia, Russia and Central America



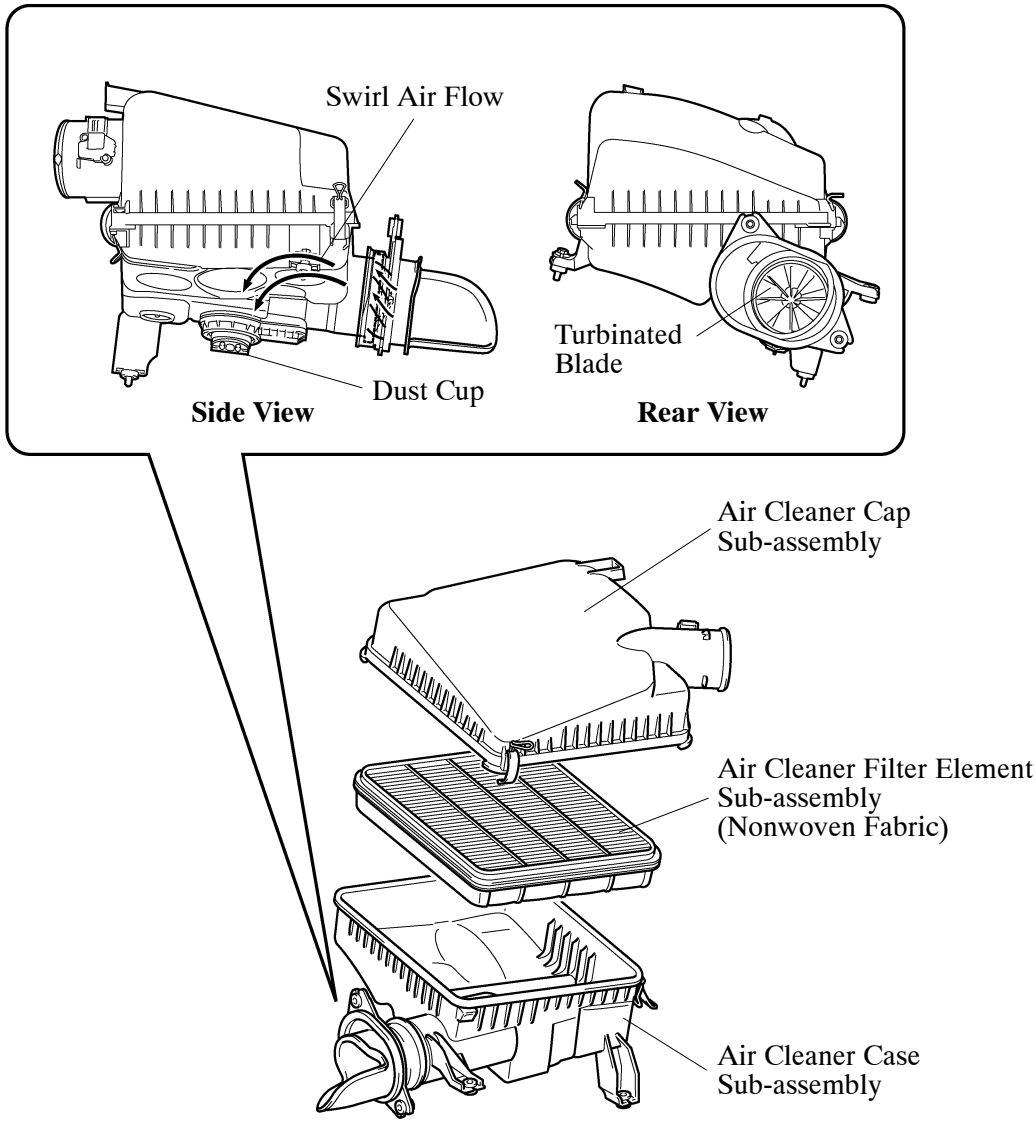
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Models with Cyclone Pre-cleaner

2. Air Cleaner

- A nonwoven, full-fabric type air cleaner filter element is used.
- A cyclone pre-cleaner has been provided in the air cleaner case. This cyclone pre-cleaner has a screw shape (turbinated blade) and gathers dusts which has rather big size in a dust cup by swirling the inlet air. The dust cup is removable, so the dust gathered can be disposed.

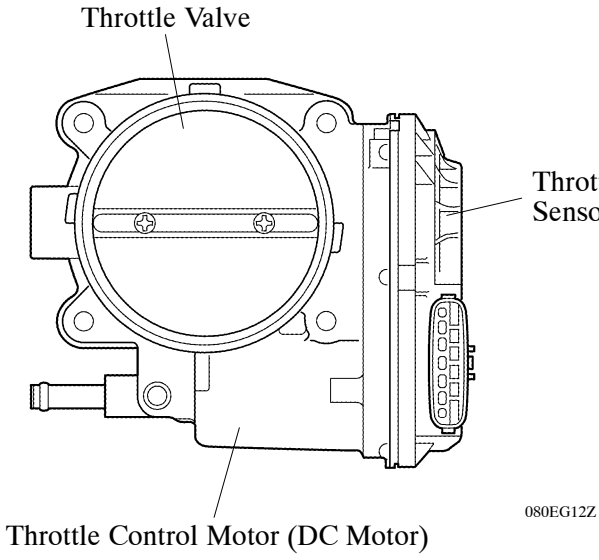
Cyclone Pre-cleaner



Models with Cyclone Pre-cleaner

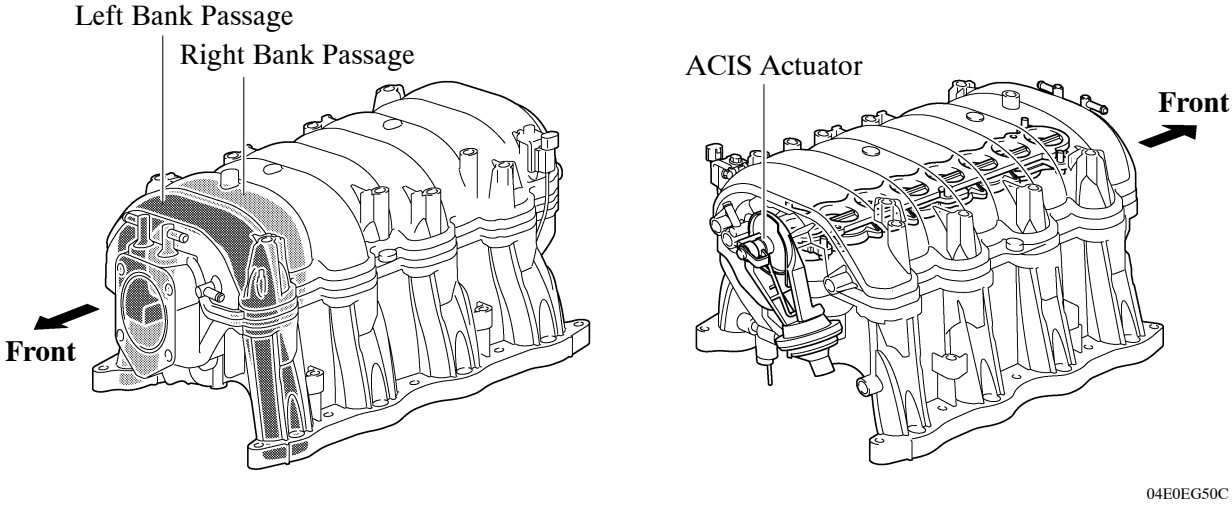
3. Throttle Body

- A link-less type throttle body in which the throttle position sensor and the throttle control motor are integrated is used. It realizes excellent throttle valve control.
- As a throttle control motor, a DC motor with excellent response and minimal power consumption is used. The ECM performs duty ratio control of the direction and the amperage of the current that is supplied to the throttle control motor in order to regulate the throttle valve angle.



4. Intake Manifold

- A plastic intake manifold is used for weight reduction.
- The low-to-mid speed range torque is improved by increasing the length of the intake manifold port.
- The intake manifold contains valves for the ACIS (Acoustic Control Induction System), and the actuator is laser-welded to the intake manifold.



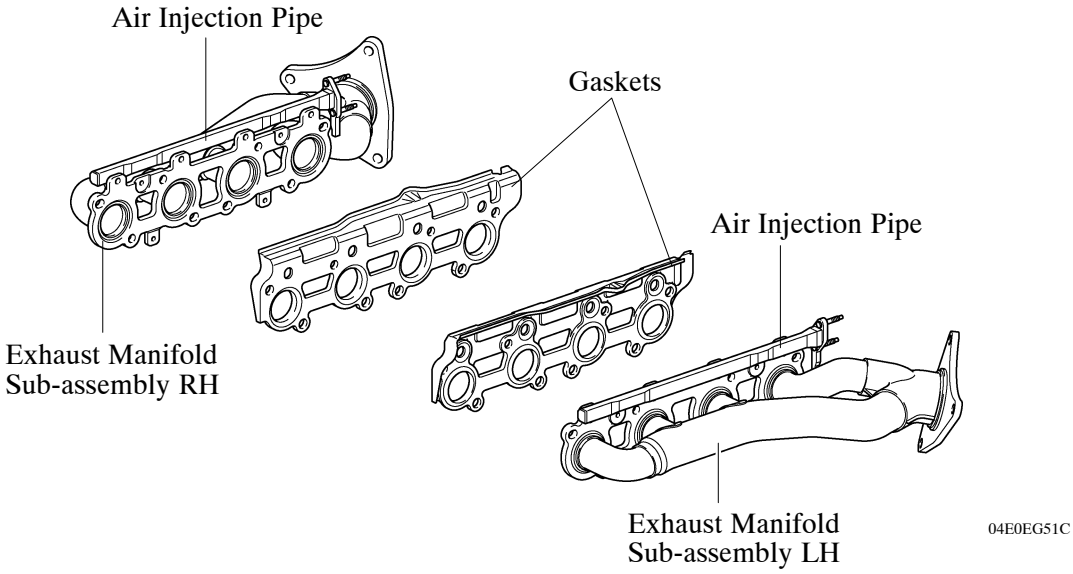
— REFERENCE —

Laser-welding:

In laser-welding, a laser-absorbing material (for the intake manifold) is joined to a laser-transmitting material (for the ACIS actuator). Laser beams are then irradiated from the laser-transmitting side. The beams penetrate the laser-transmitting material to heat and melt the surface of the laser-absorbing material. Then, the heat of the laser-absorbing material melts the laser-transmitting material and causes both materials to become welded.

5. Exhaust Manifold

- A stainless steel exhaust manifold is used for weight reduction and rust resistance.
- On models with the air injection system, air injection pipes are provided for the right and left bank exhaust manifolds.



Models with Air Injection System

6. Exhaust Pipe

- A stainless steel exhaust pipe is used for weight reduction and rust resistance.
- The ceramic type TWC is used.

