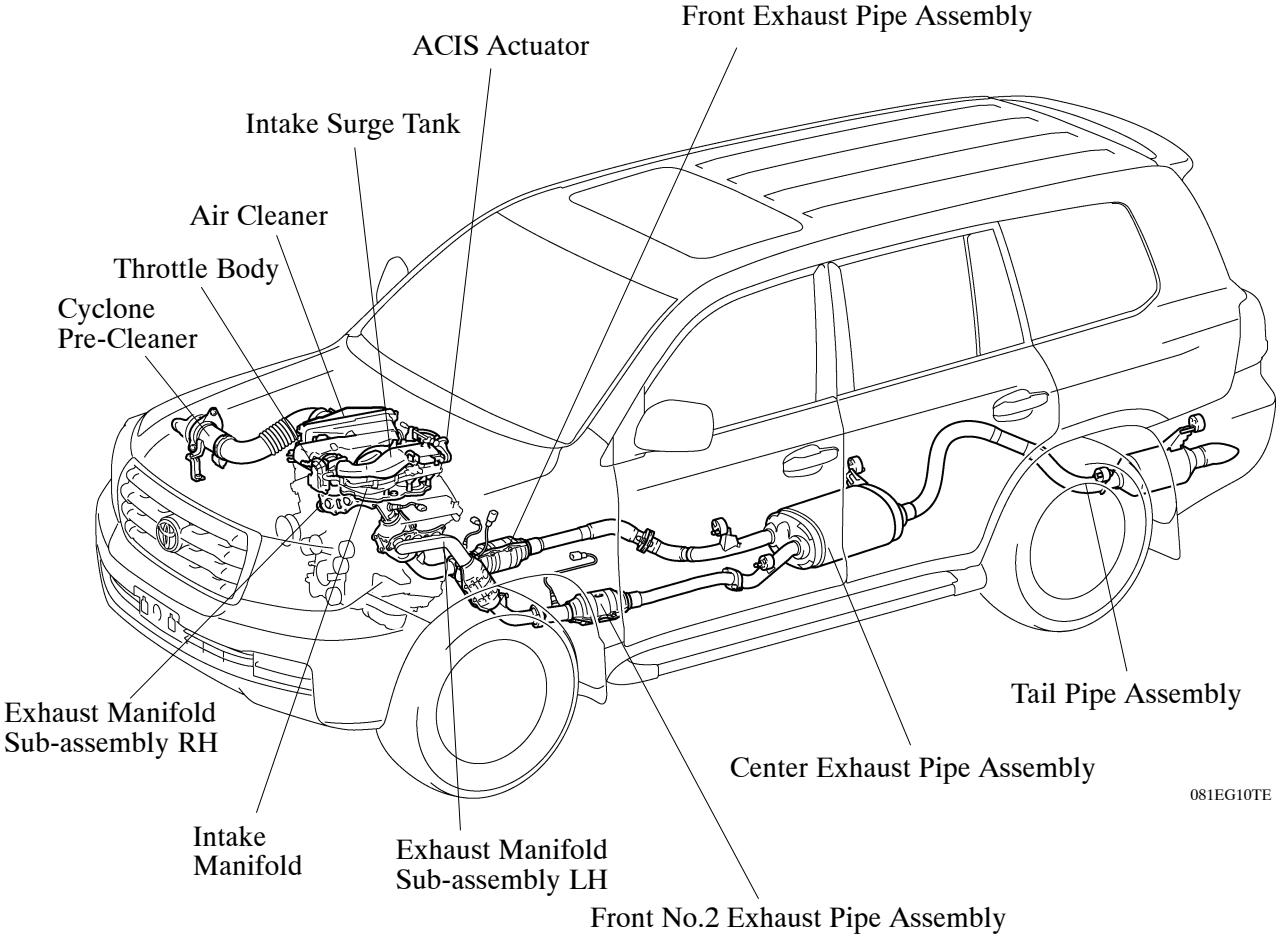
■INTAKE AND EXHAUST SYSTEM

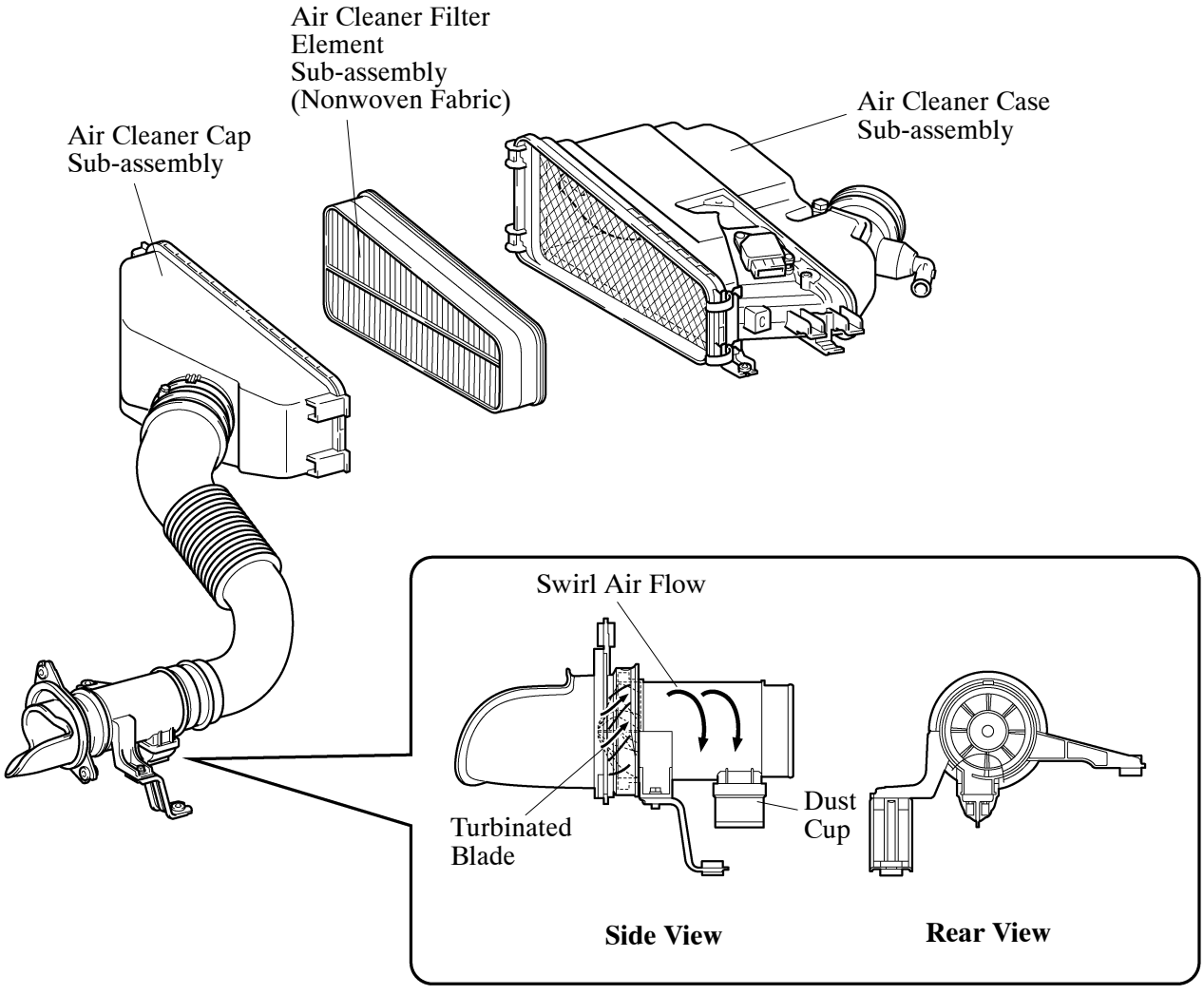
1. General

- A cyclone pre-cleaner has been provided in the air cleaner inlet.
- A link-less type throttle body is used and it realizes excellent throttle control.
- A plastic intake surge tank 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-60.
- 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-66.



2. Air Cleaner

- A nonwoven, full-fabric type air cleaner filter element is used.
- A resonator has been provided in the air cleaner case to reduce the amount of intake air sound.
- A cyclone pre-cleaner has been provided in the air cleaner inlet. 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.

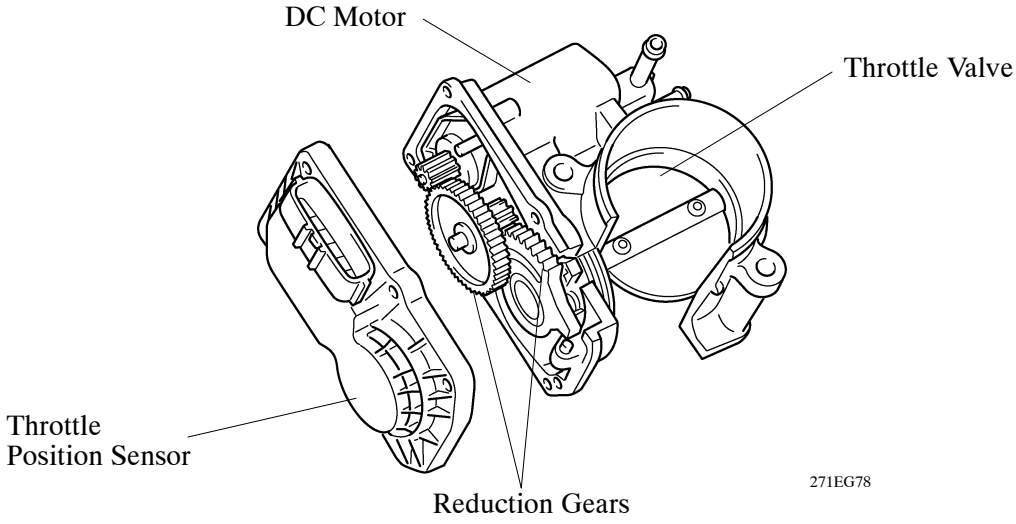


Cyclone Pre-cleaner

081EG11Y

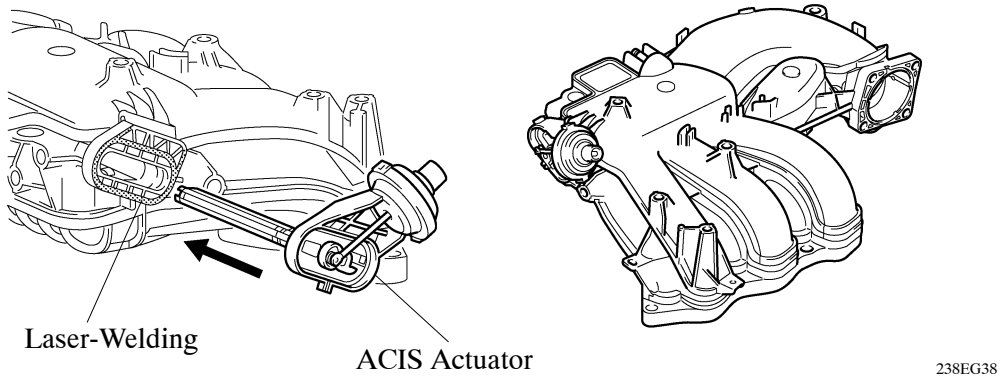
3. Throttle Body

- 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 Surge Tank

- The intake surge tank is made of plastic to realize lightweight.
- The intake surge tank consists of upper and lower section and contains an intake air control valve. This valve is activated by ACIS (Acoustic Control Induction System) and is used to alter the intake pipe length to improve the engine performance in all speed range.
- The ACIS actuator is laser-welded onto the intake surge tank. Many of the components are made of plastic for weight reduction.



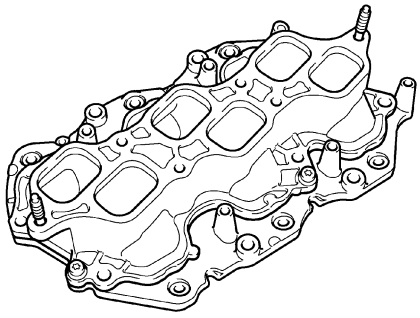
— REFERENCE —

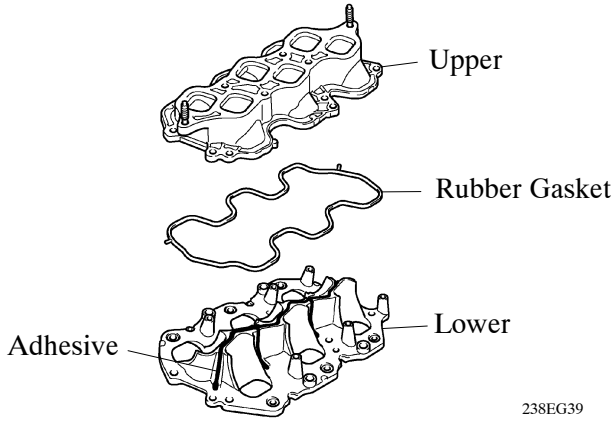
Laser-Welding:

In laser-welding, a laser-absorbing material (for the intake surge tank) 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. Intake Manifold

- Light weight aluminum alloy is used for the intake manifold.
- This intake manifold consists of two pieces, the upper and lower, which are sealed with a rubber gasket and adhesive.

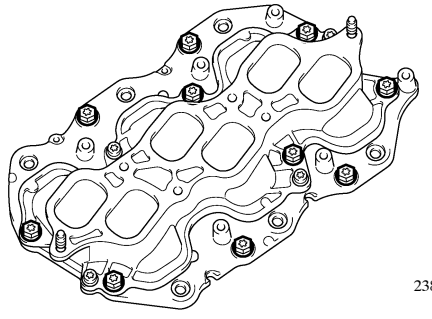




238EG39

Service Tip

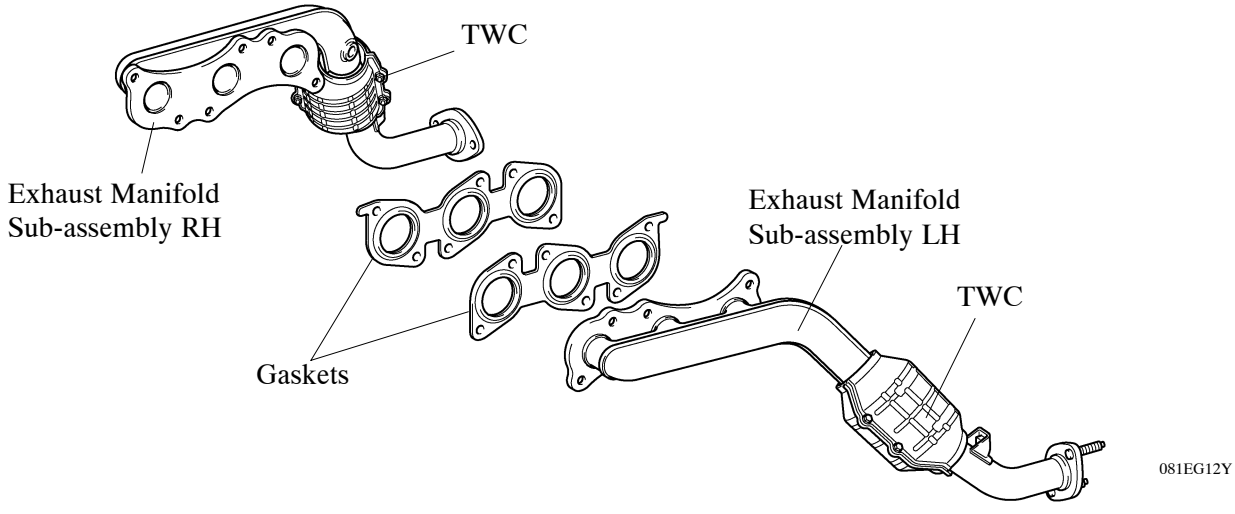
- Do not disassemble the upper and lower portions of the two-piece intake manifold, which are sealed with a rubber gasket and adhesive.
- To remove the intake manifold assembly, remove the 10 bolts that are shown in the illustration.
- These bolts have the head of hexagon shape.



238EG40

6. Exhaust Manifold

- The exhaust manifolds are made of stainless steel for weight reduction and rust resistance.
- A ceramic type TWC (Three-Way Catalytic Converter) is used. This TWC is incorporated on each of the right and left banks.



081EG12Y

7. Exhaust Pipe

- A stainless steel exhaust pipe is used for weight reduction and rust resistance.
- The ceramic type TWC is used.
- A ball joint is used to join the front exhaust pipe assembly and the center exhaust pipe assembly. As a result, a simple and reliable construction for reducing vibration has been realized.

