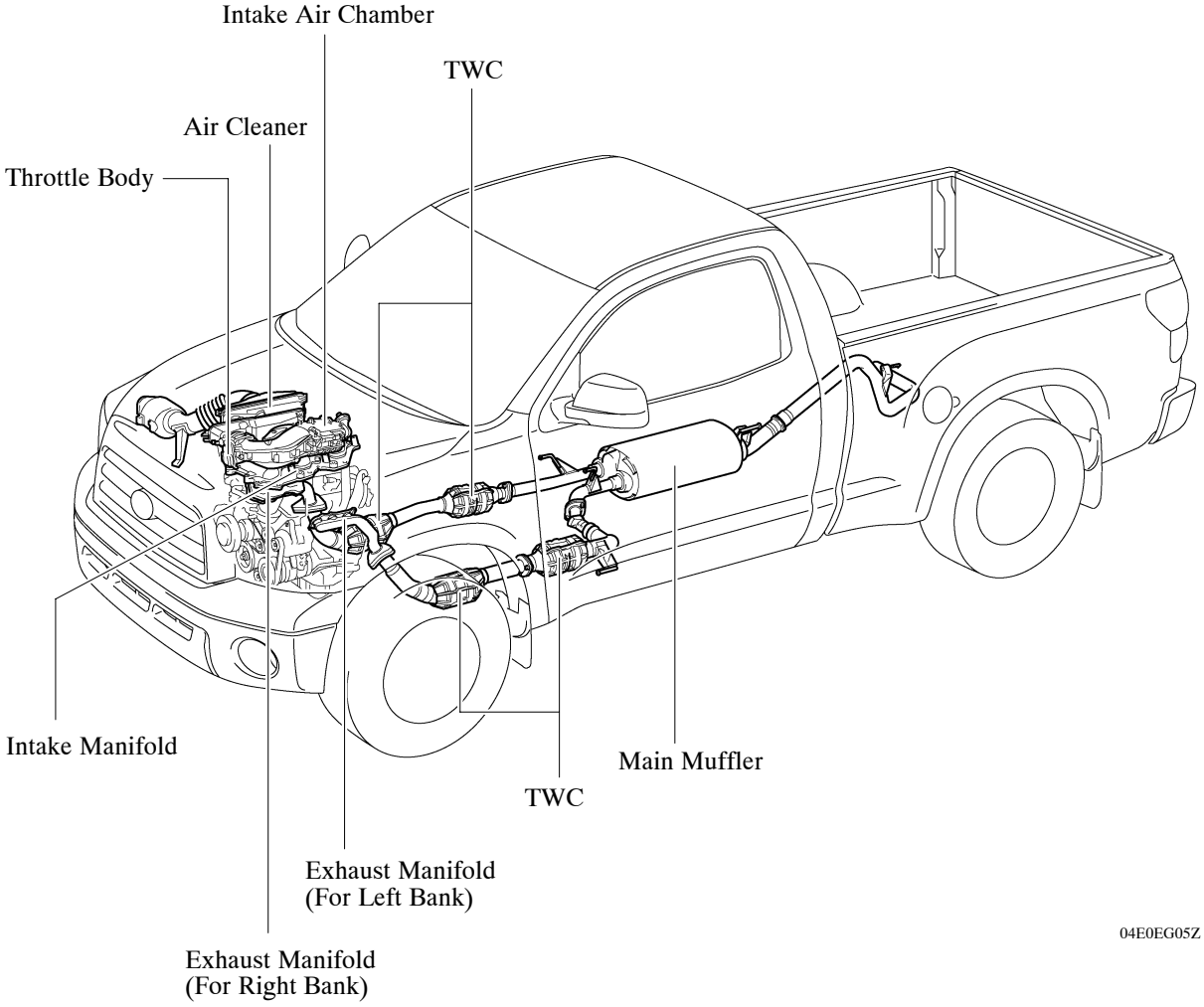
## ■INTAKE AND EXHAUST SYSTEM

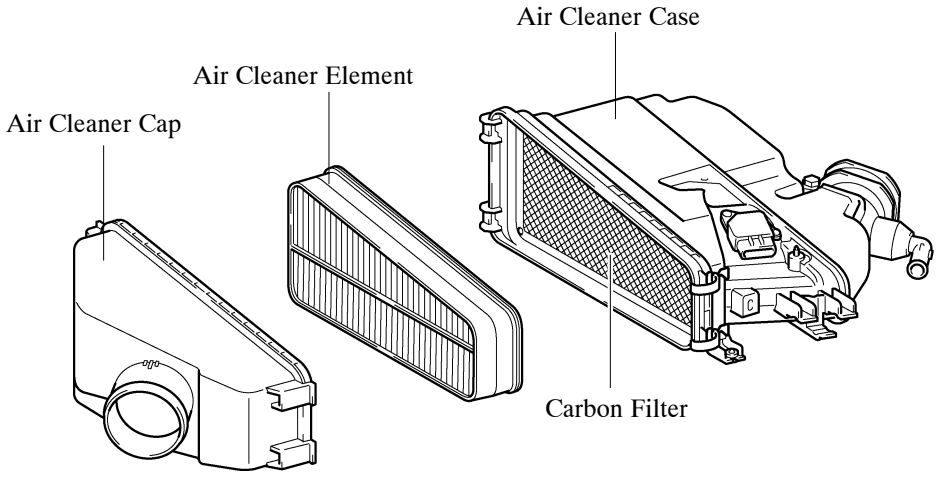
### 1. General

- A cable-less type throttle body is used and it realizes excellent throttle control.
- The ETCS-i (Electronic Throttle Control System-intelligent) is used to ensure excellent throttle control in all operating ranges. For details, see page EG-53.
- The ACIS (Acoustic Control Induction System) is used to improve the engine performance in all speed ranges. For details, see page EG-60.
- An intake air chamber made of plastic is used for weight reduction.
- A lightweight aluminum alloy is used for the intake manifold.
- Stainless steel exhaust manifolds and exhaust pipes are used.



## 2. Air Cleaner

- A full-fabric type air cleaner element is used.
- A carbon filter, which adsorbs the HC that accumulates in the intake system when the engine is stopped, is used in the air cleaner case in order to reduce evaporative emissions. This filter is maintenance-free.



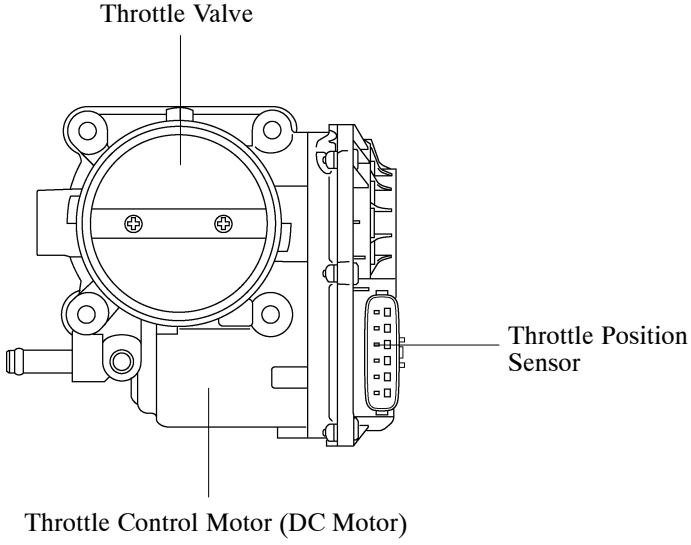

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## 3. Throttle Body

A cable-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. For details, see page EG-53.

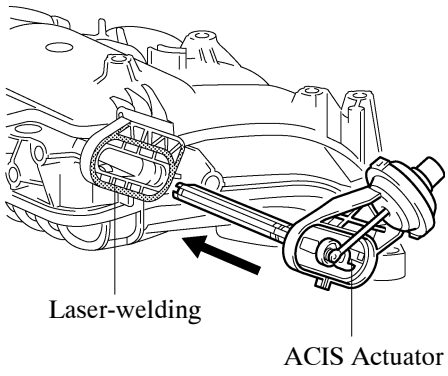
- As a throttle control motor, a DC motor with excellent response and minimal power consumption is used. The ECM performs duty ratio control of the direction and the amperage of the current that is supplied to the throttle control motor in order to regulate the throttle valve angle.




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## 4. Intake Air Chamber

- The intake air chamber contains an ACIS (Acoustic Control Induction System) actuator. The ACIS actuator actuates the intake air control valve that is used to change the intake pipe length to improve engine performance in all engine speed ranges. For details, see page EG-60.
- The ACIS actuator is laser-welded onto the intake air chamber.




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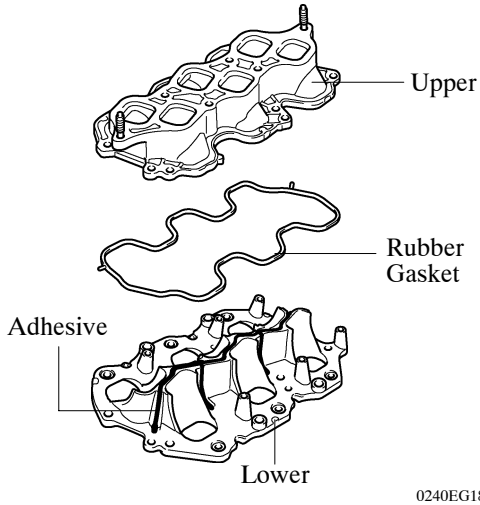
***— REFERENCE —***

*Laser-welding:*

*In laser-welding, a laser-absorbing material (the intake air chamber) is joined to a laser-permeable material (the ACIS actuator). Laser beams are then radiated from the laser-permeable 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-permeable material and causes both materials to become welded.*

## 5. Intake Manifold

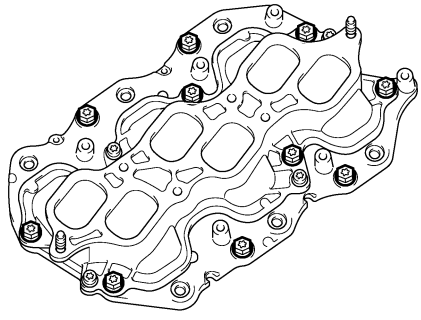
This intake manifold consists of two pieces, the upper and lower parts, which are sealed with a rubber gasket and adhesive.




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**Service Tip**

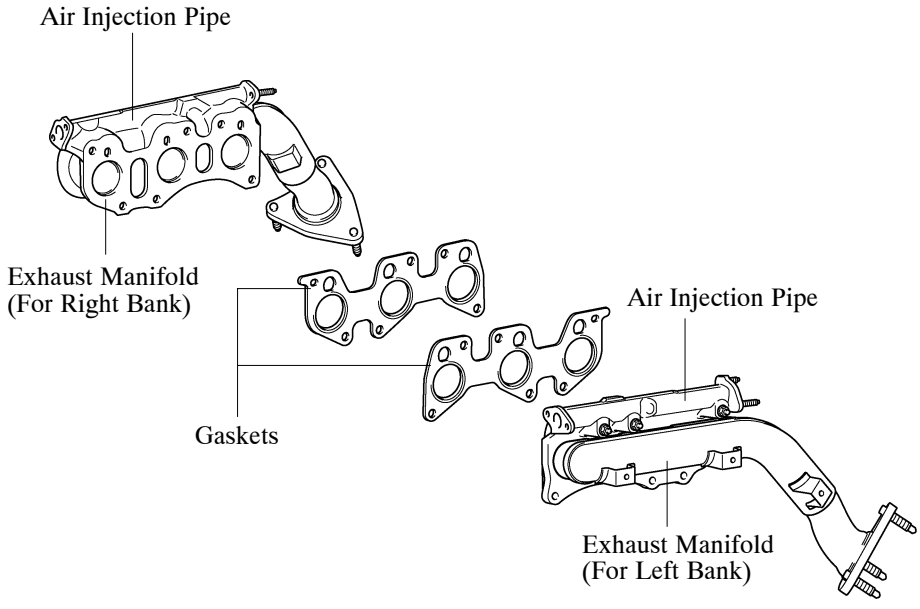
- Do not disassemble the upper and lower portions of the two-piece intake manifold, which are sealed with a rubber gasket and adhesive. To remove the intake manifold, remove the 10 bolts that are shown in illustration.
- These bolts have hexagonally shaped heads.



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## 6. Exhaust Manifold

- A stainless steel exhaust manifold is used for weight reduction.
- Along with the adoption of the air injection system, air injection pipes are provided for the right and left bank exhaust manifolds.

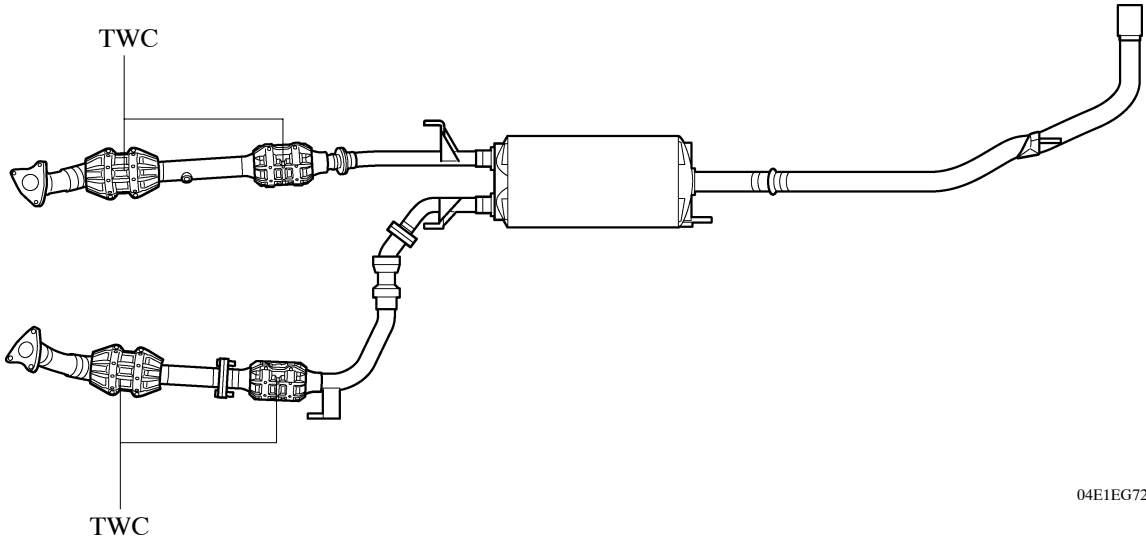



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## 7. Exhaust Pipe

- A stainless steel exhaust pipe is used for weight reduction and rust resistance.
- Two ceramic type TWCs (Three-Way Catalytic converter) are provided in the exhaust front pipe for the left bank and also two for the right bank. The exhaust emission performance of the engine is improved as a result of these TWCs.




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