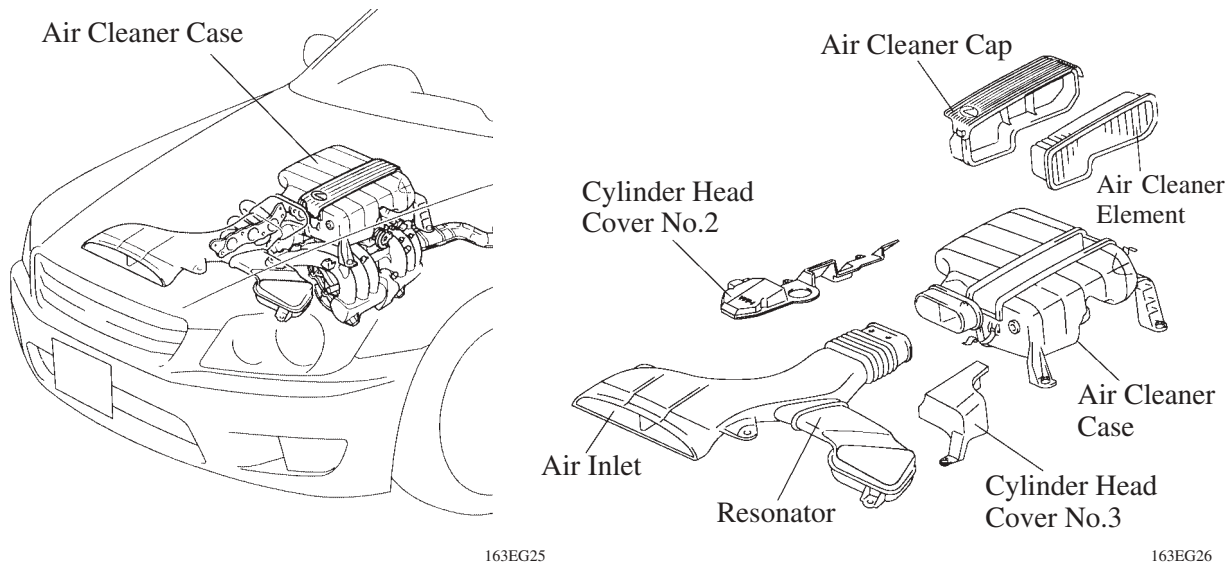


■ INTAKE AND EXHAUST SYSTEM

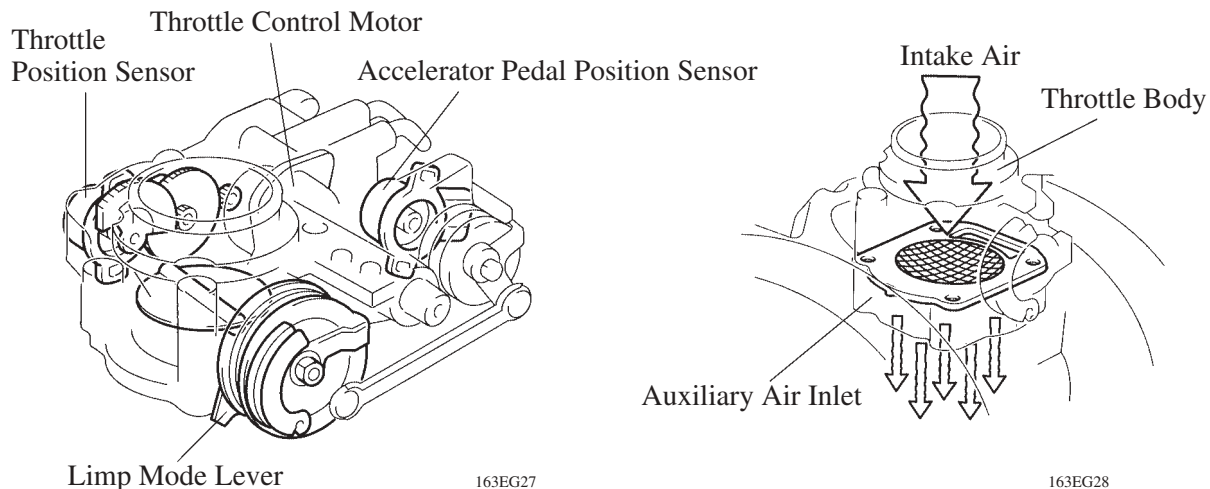
1. Air Cleaner

- The air cleaner case has been mounted directly above the engine to reduce the amount of noise radiated from the engine proper. Furthermore, the components have been optimized for weight reduction.
- A frameless, full-fabric air cleaner element has been adopted to realize a compact and lightweight design while ensuring proper filtering performance. Furthermore, the assembly construction has been optimized for improved serviceability.



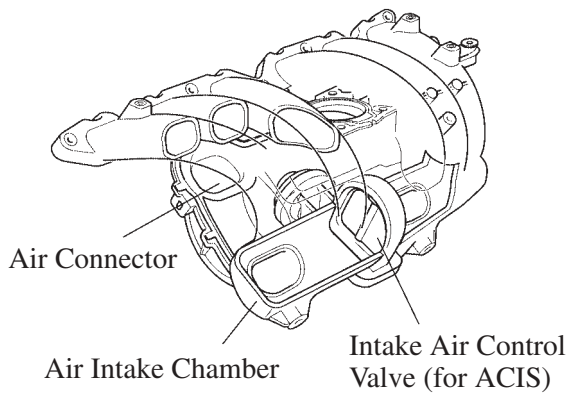
2. Throttle Body

- The adoption of the ETCS-i (Electronic Throttle Control System - intelligent) has realized excellent throttle control. The ETCS-i effects the control of the ISC (Idle Speed Control) system, the TRC (Traction Control) system, snow mode, and the cruise control system through a single throttle valve. For details, [see page 63](#).
- Both the accelerator pedal position sensor and the throttle position sensor have adopted two systems (main and sub) to improve reliability. In addition, a limp mode lever is provided to enable the vehicle to be driven through the mechanical operation of the throttle valve in the event of a system malfunction.
- A gasket with mesh is provided between the throttle body and the auxiliary air inlet to subdivide the intake air pulsation in order to rectify the intake air flow in the intake manifold.

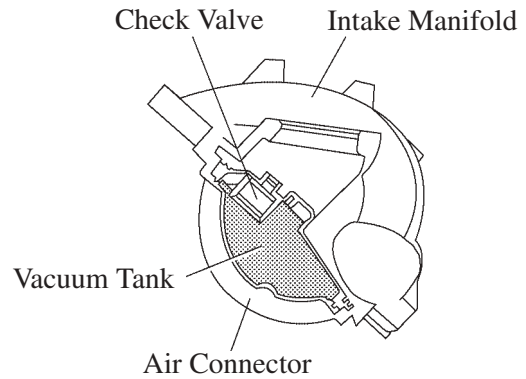


3. Intake Manifold

- The intake manifold is new made of plastic for reducing weight and lessening the transfer of heat from the cylinder head. Furthermore, the intake manifold, air connector, and the vacuum tank have been integrated to achieve a lightweight and compact design. Also, a vacuum tank is formed in the space that is sealed between the upper and lower air connectors.
- An intake air control valve is provided in the center of the air intake chamber. This valve is activated by the ACIS (Acoustic Control Induction System) and is used to alter the intake pipe length to improve the engine performance in all speed ranges. For details, [see page 67](#).



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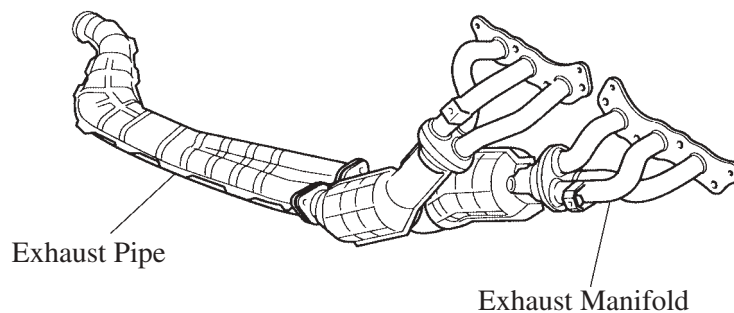


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4. Exhaust Manifold and Exhaust Pipe

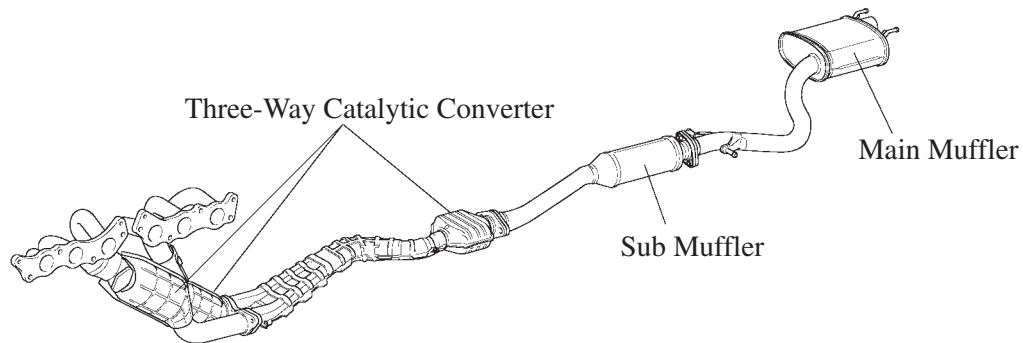
- The length of the branches has been made equal and a dual type exhaust manifold and exhaust pipe have been adopted to improve torque in the low- to medium-speed range.



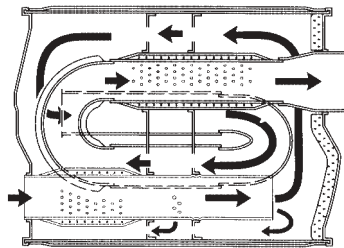
163EG31

5. Muffler

- A main muffler and sub muffler with large capacities are used to reduce the exhaust noise.
- A long pipe construction has been adopted in the main muffler to reduce low-frequency booming noise.



163EG32



Main Muffler Cross-Section

163EG33