
GROUP 15

INTAKE AND EXHAUST

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AIR INTAKE SYSTEM

AIR DUCT AND AIR CLEANER

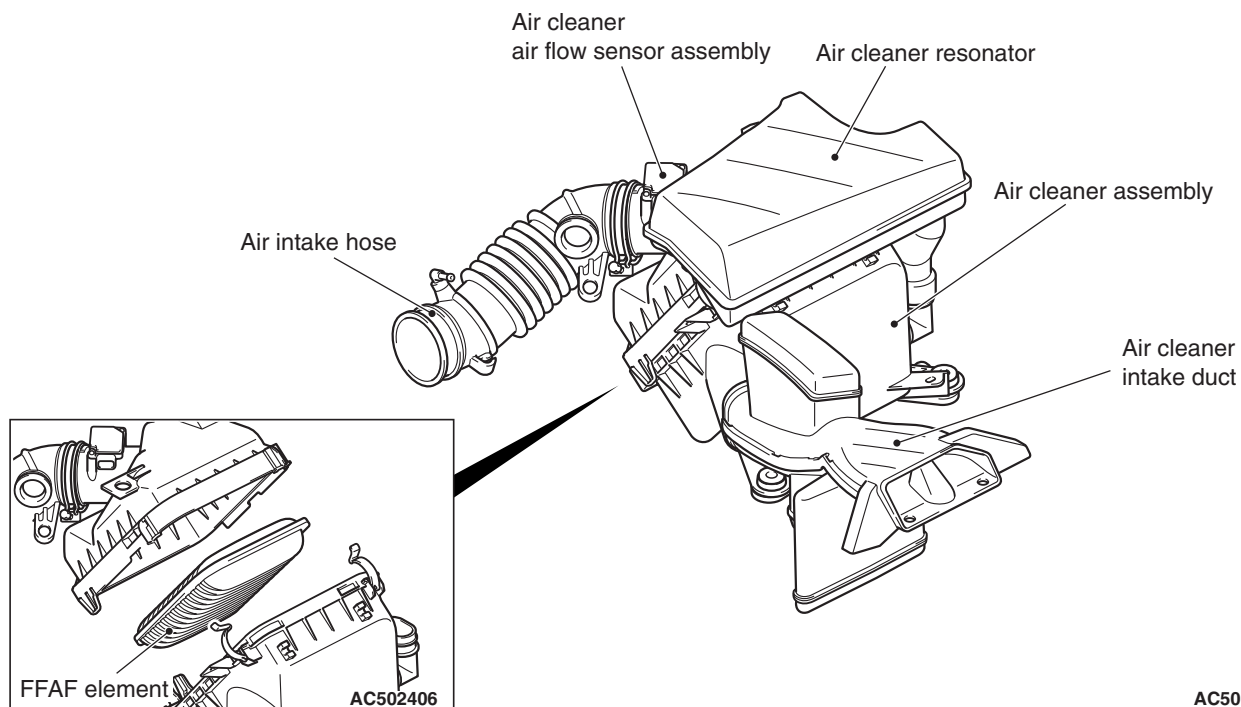
M2150004000366

- A front air intake system that actively sucks cooling air from the front through the top of the radiator has been adopted in order to improve engine performance and reduce air intake noise.
- With consideration for the global environment, a lead- and chlorine-free elastomer has been adopted for the air intake hose, reducing the weight of air intake hose.

- An FFAF* element has been adopted for the air cleaner element, with consideration to the reduction of industrial wastes, reducing the weight of the air cleaner element.

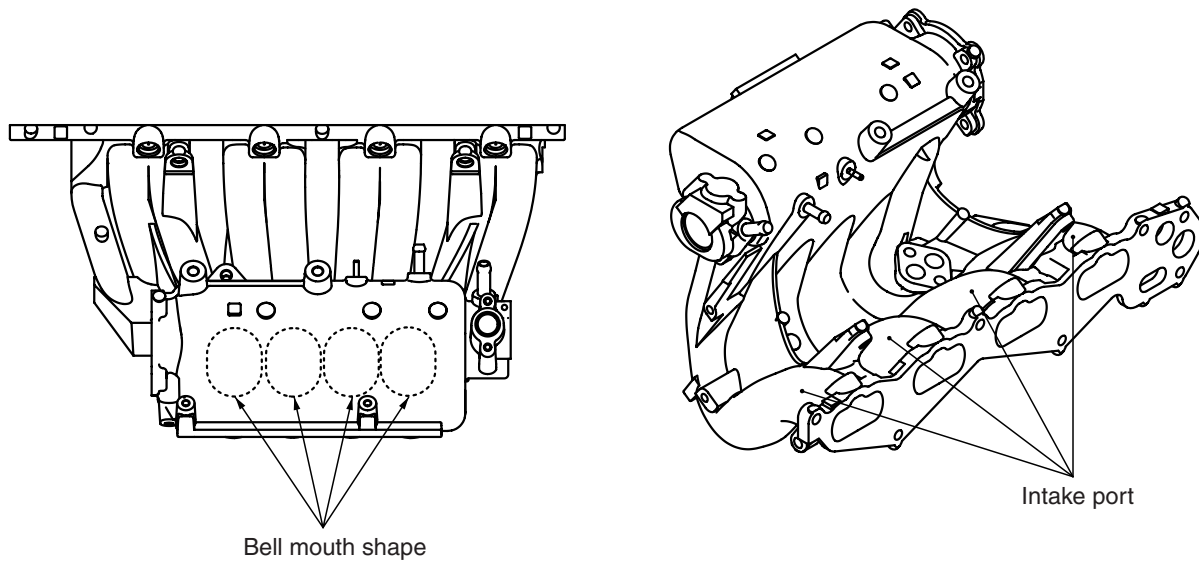
*NOTE: *: The FFAF (full fabric air filter) is an element consisting of nonwoven cloth only.*

CONSTRUCTION DIAGRAM

AC501988
AC502407AB

INLET MANIFOLD

M2150010000031



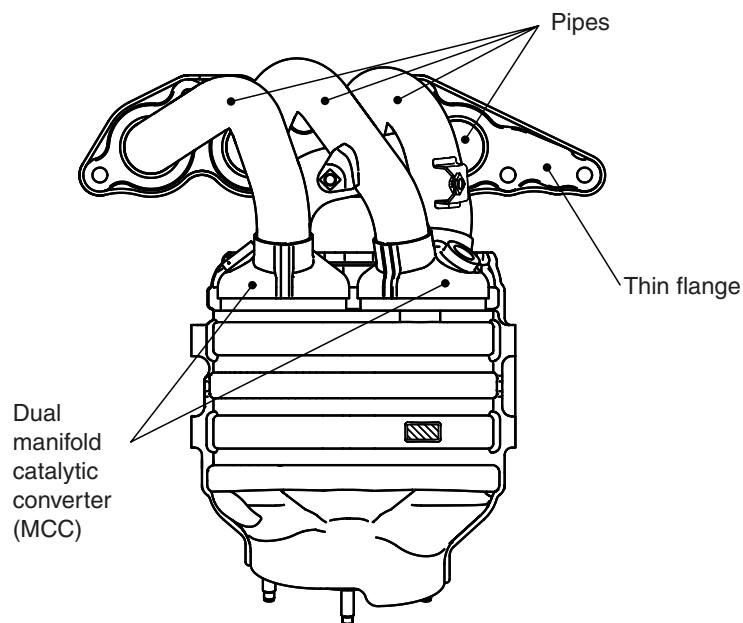
AK302279AD

The inlet manifold is designed to improve the low, middle and high torque by optimizing the port diameter and length. A port opening with an optimized bell mouth shape and improved the inside roughness of the port reduces airflow resistance.

EXHAUST SYSTEM

EXHAUST MANIFOLD

M2150006000179



AK300854 AE

The exhaust manifold is design to reduce the heat capacity and to improve exhaust gas performance by piping the assembly.

The improvement in the engine performance is designed by preventing the exhaust interference through the dual piping. The improvement of the exhaust gas performance just after the engine start is designed through the quicker warm-up in the catalyst by installing MCC on the dual portion.

The weight reduction is designed by reducing the flange plate thickness.

EXHAUST PIPE AND MUFFLER

M2150003000404

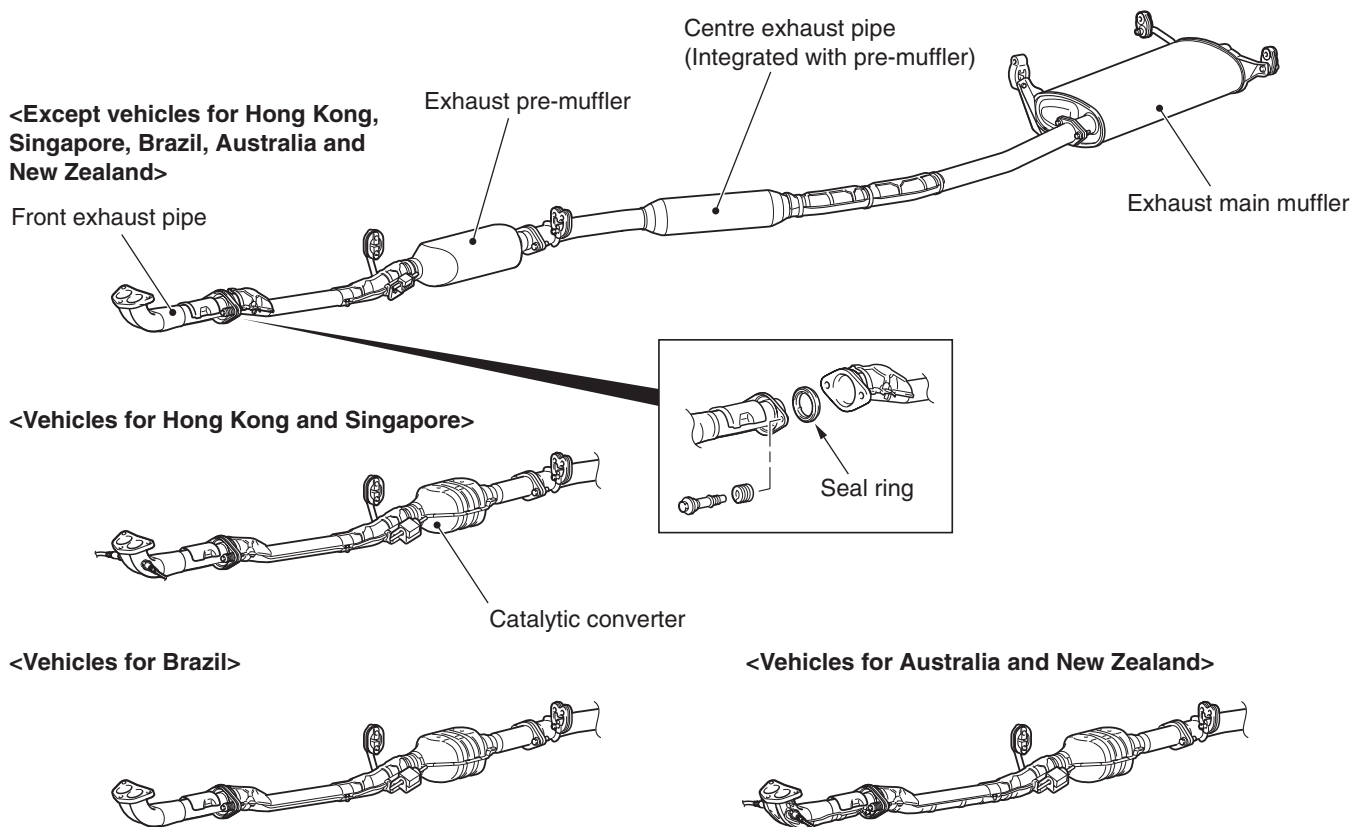
Exhaust pipe consisting of four separation system: front exhaust pipe, exhaust pre-muffler*¹, catalytic converter*², centre exhaust pipe, and exhaust main muffler, has the following features:

- Seal ring reduces driving noise and vibration during idling.
- Stainless steel has been adopted for the exhaust pipe to improve corrosion resistance. And the weight reduction is designed by reducing the pipe steel thickness.
- The main muffler with a built-in variable valve has been adopted to reduce exhaust noise and improve engine performance.

NOTE:

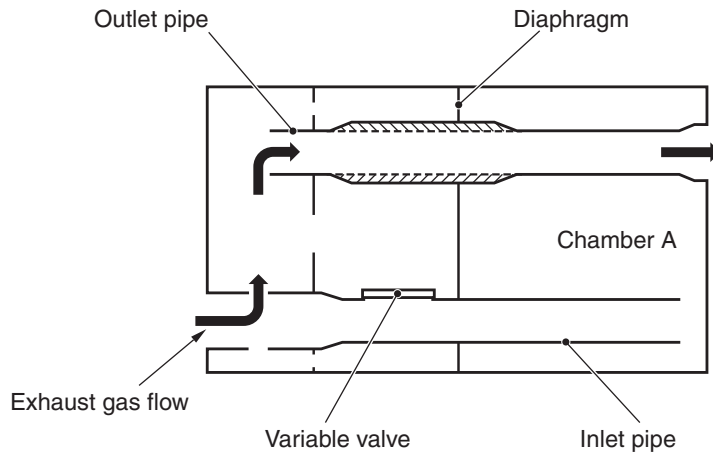
- *1: Except vehicles for Hong Kong, Singapore, Brazil, Australia and New Zealand
- *2: Vehicles for Hong Kong, Singapore, Brazil, Australia and New Zealand

CONSTRUCTION DIAGRAM



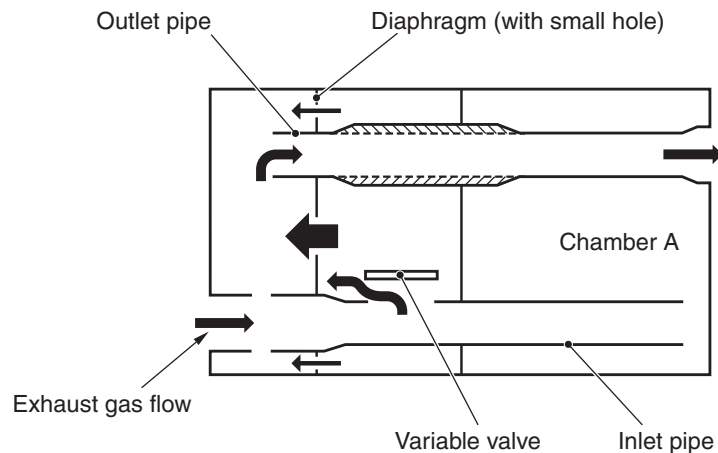
STRUCTURE AND OPERATION

MAIN MUFFLER WITH A BUILT-IN VARIABLE VALVE



AC301920AC

When the engine speed is low, the pressure inside the exhaust main muffler is low, which causes the variable valve in the inlet pipe to close. Exhaust gas goes through the small holes of the inlet pipe and is exhausted from the outlet pipe. Since the chamber A is sealed, it acts as a resonator, producing sound resonance to improve silence performance.



AC301921AC

Pressure of the chamber A increases as the engine speed increases, which causes pressure of exhaust gas to open the variable valve in the inlet pipe. Most amount of exhaust gas does not go through the small holes of the inlet pipe but goes through the variable valve. Exhaust gas then goes through many small holes of the diaphragm and into the outlet pipe. As a result, the exhaust resistance is decreased and engine performance is improved.

NOTES