GROUP 15

INTAKE AND EXHAUST

CONTENTS

AIR INTAKE SYSTEM

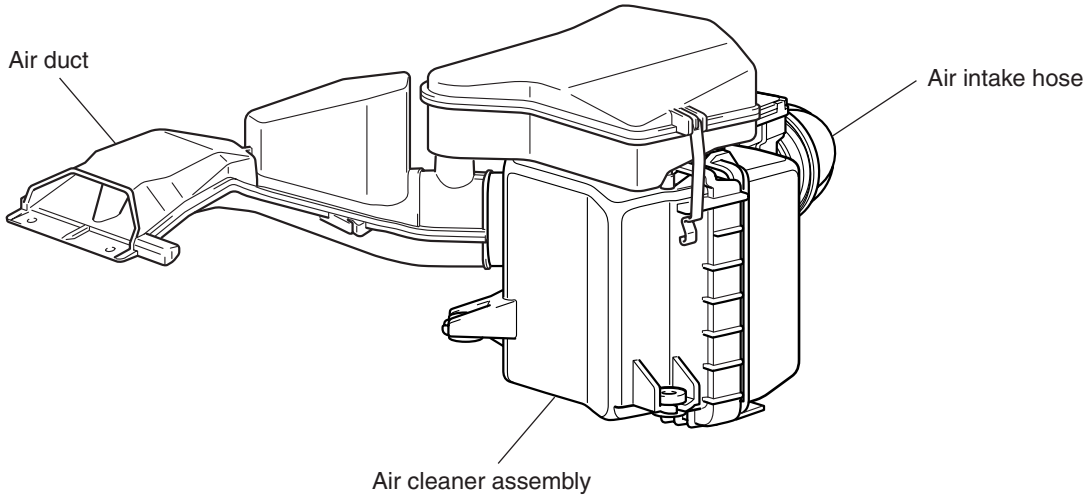
AIR DUCT AND AIR CLEANER

M2150004000225

- 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.
- Recycled, burnable resin materials containing used paper are used to reduce industrial wastes and protect the environment.
- Environmentally friendly unleaded rubber materials are used to make the air intake hose.

CONSTRUCTION DIAGRAM

<4G63-Non-Turbo>



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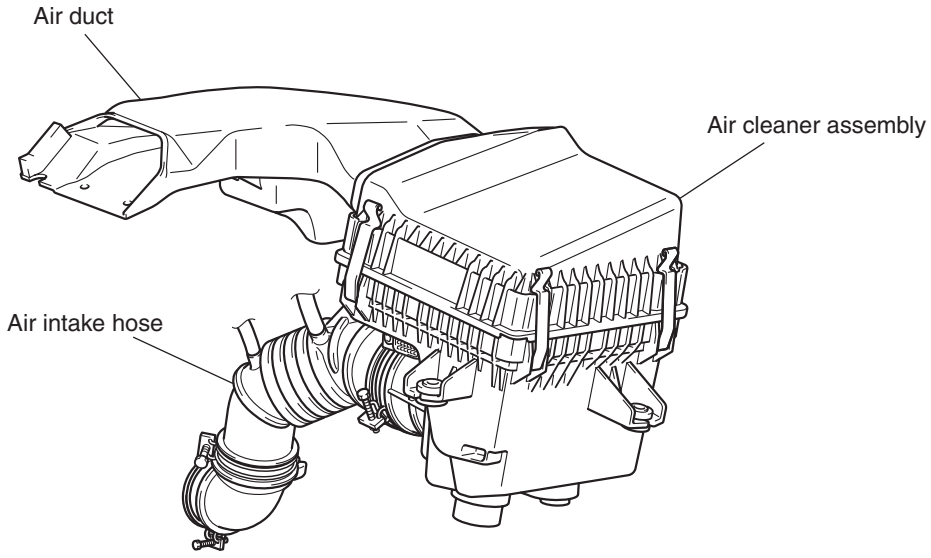

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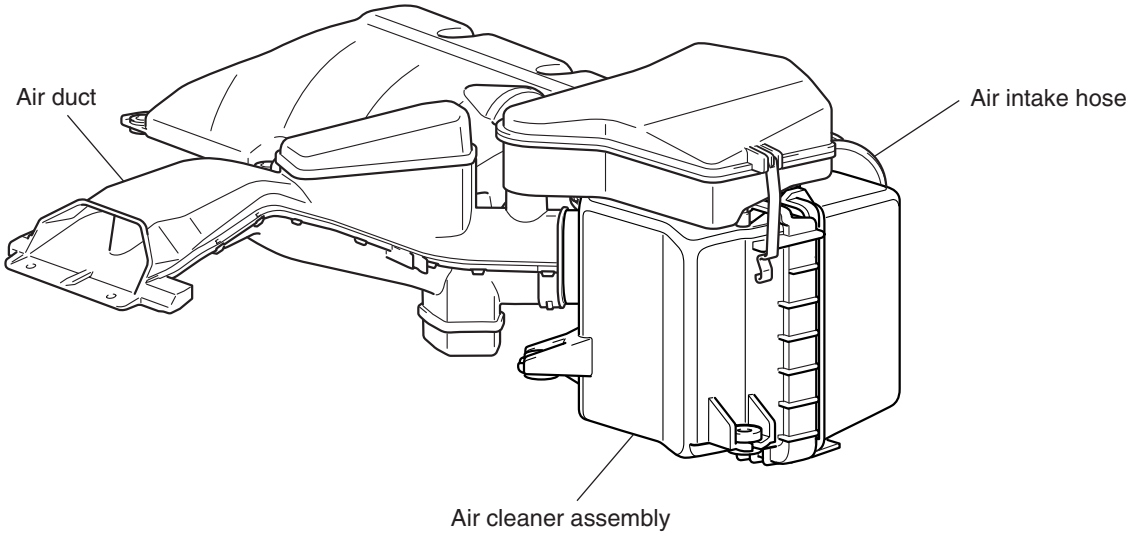


AC309206AB

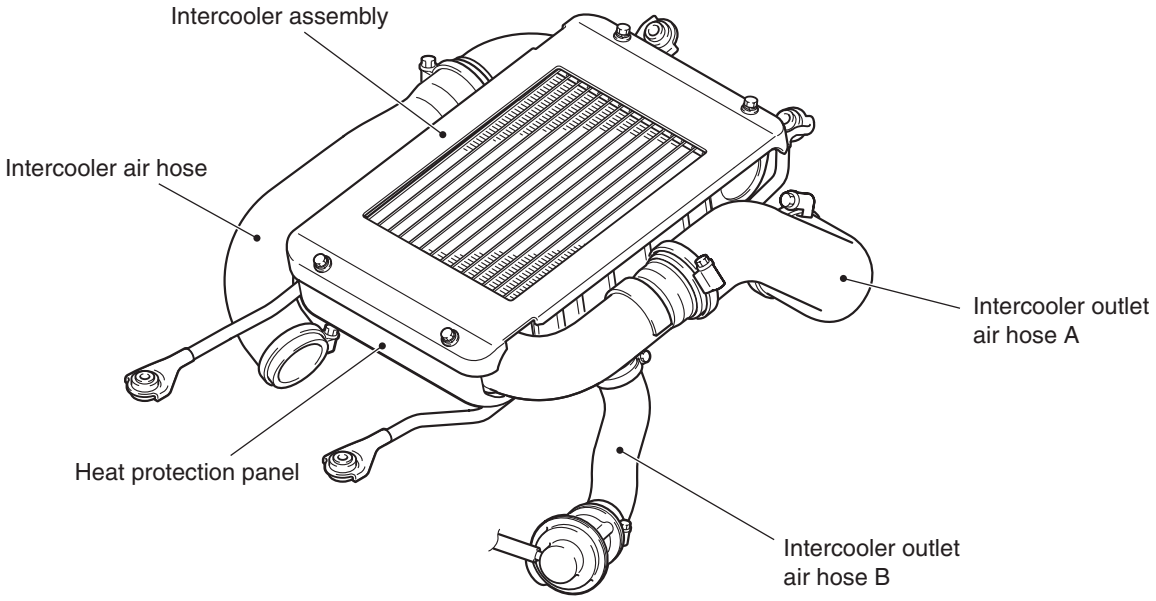
INTERCOOLER <4G63-Turbo>

M2150007000291

The air-cooled intercooler is installed on the upper part of the engine to lower the intake air temperature after supercharging, allowing to increase the engine power. In addition, it has the following features.

- The optimized fin shape and installation of the heat protection panel increase the cooling capacity.
- Environmentally friendly unleaded rubber materials are used to make the intercooler air hose.

CONSTRUCTION DIAGRAM



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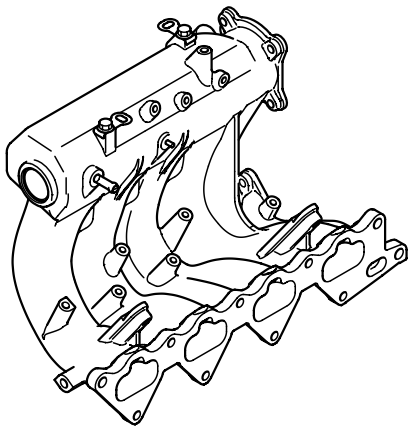
INTAKE MANIFOLD

M2150005000110

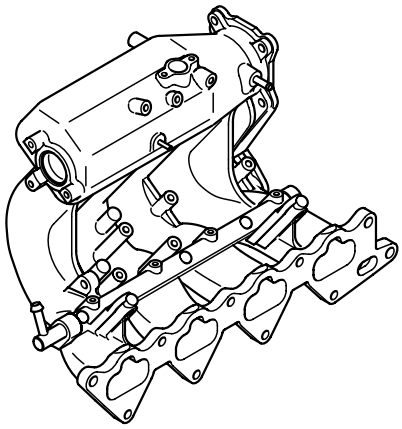
<4G63-Non-Turbo>



AK400863

In terms of basic structure, the intake manifold are the same as the 4G63 engine intake manifold used in the SPACE RUNNER and SPACE WAGON.

<4G63-Turbo>



AK401022

The aluminum inlet manifold equipped with the EGR passage is adopted.

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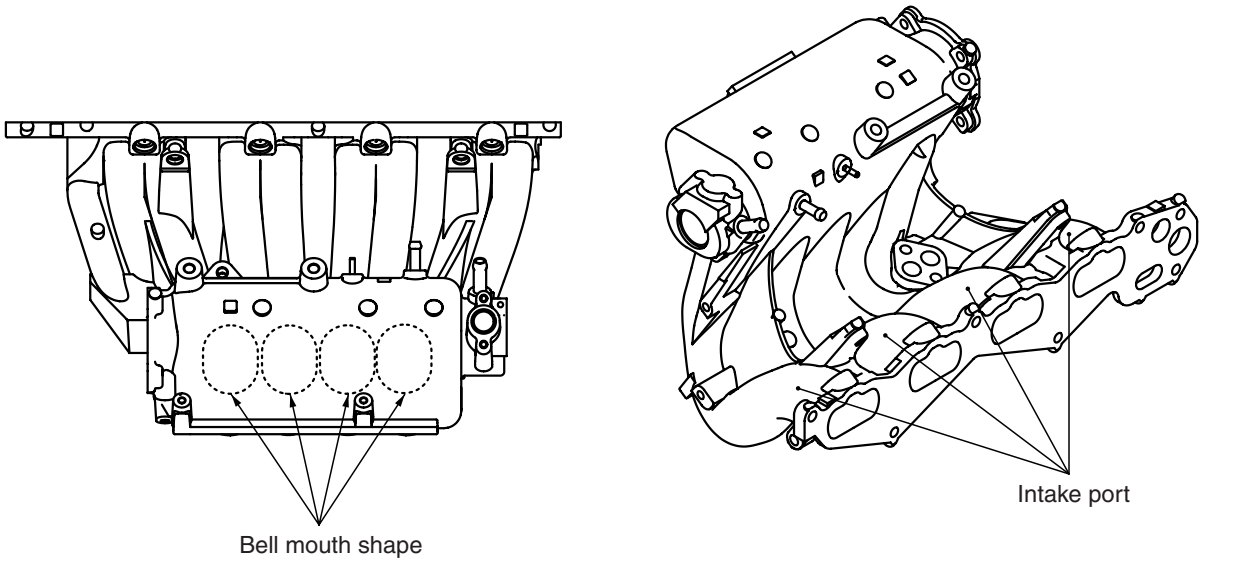


AK302279AD

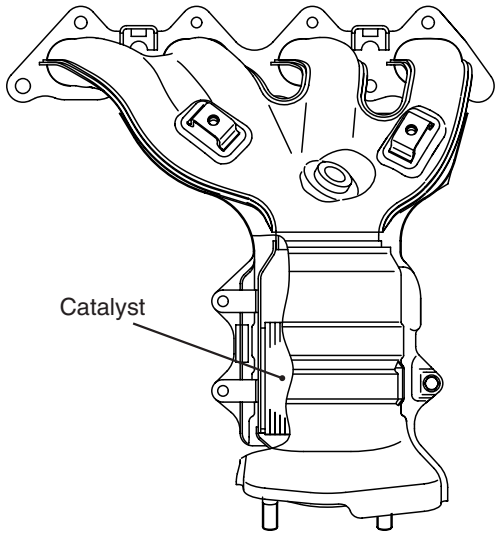
The intake manifold is designed to improve the low, middle and high torque by optimizing the port diameter and length. A port opening with an optimized bell mouth shape and improved the inside roughness of the port reduces airflow resistance.

EXHAUST SYSTEM

EXHAUST MANIFOLD

M2150006000254

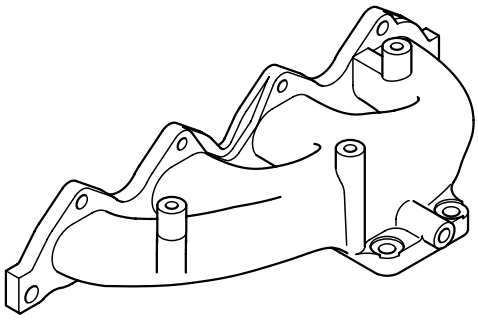
<4G63-Non-Turbo>



AK204404AB

A clam shell exhaust manifold with incoporated catalic converter has been adopted. The this has helped to reduce the time for activating catalyst when starting the engine and to reduce weight.

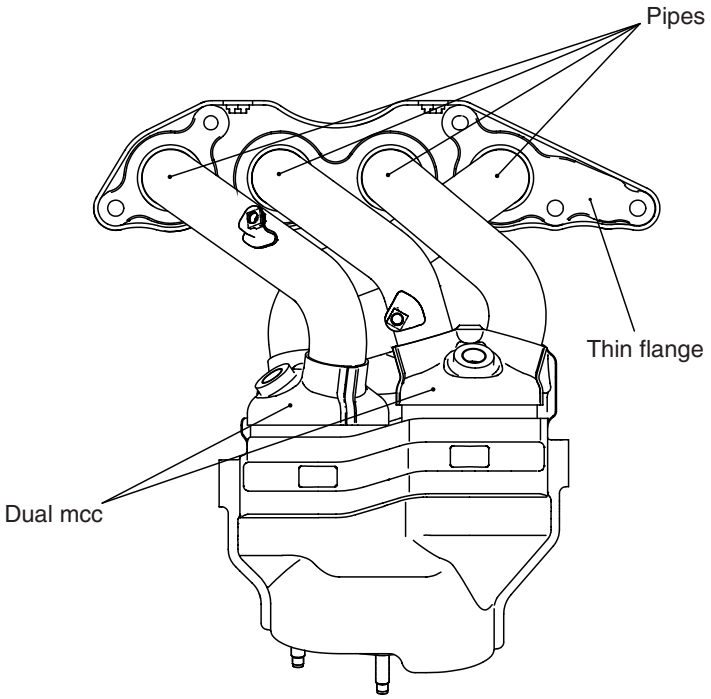
<4G63-Turbo>



AK401023

Since a turbocharger was carried, the exhaust manifold made from stainless steel was adopted.

<4G69>



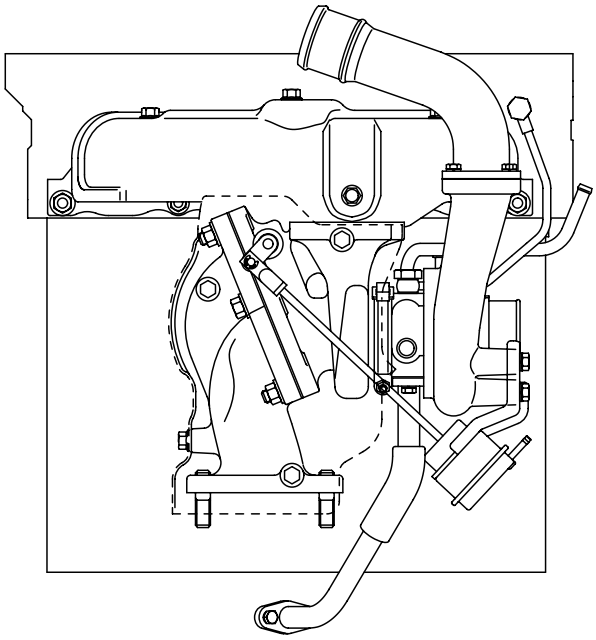
AK304022 AB

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.

TURBOCHARGER

M2150009000071



AK204405

A turbocharger has been adopted to achieve high response. The turbocharger system is the TD04HL-15T-7.

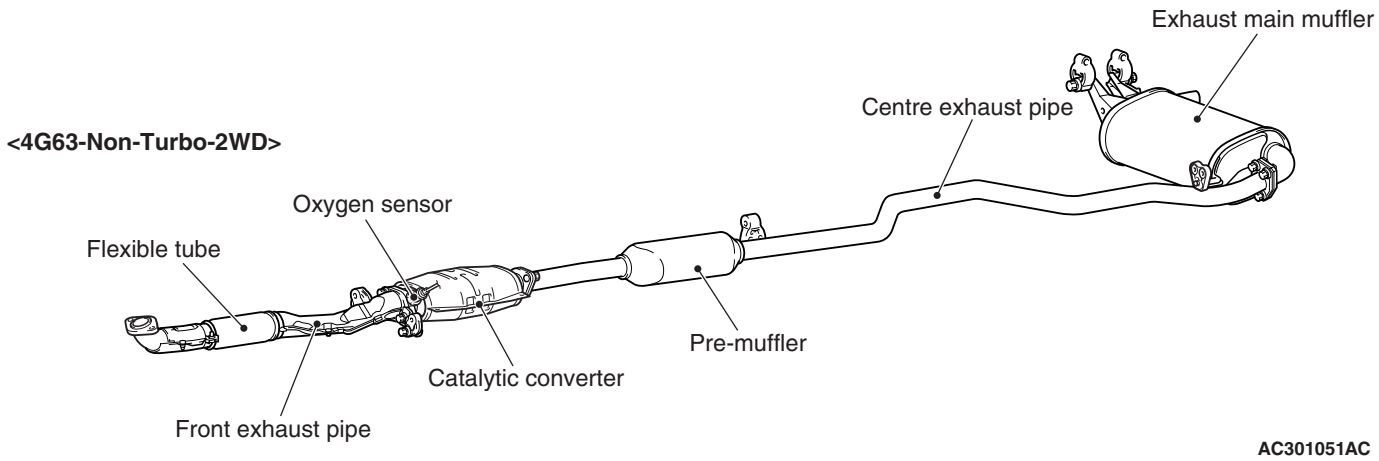
EXHAUST PIPE AND MUFFLER

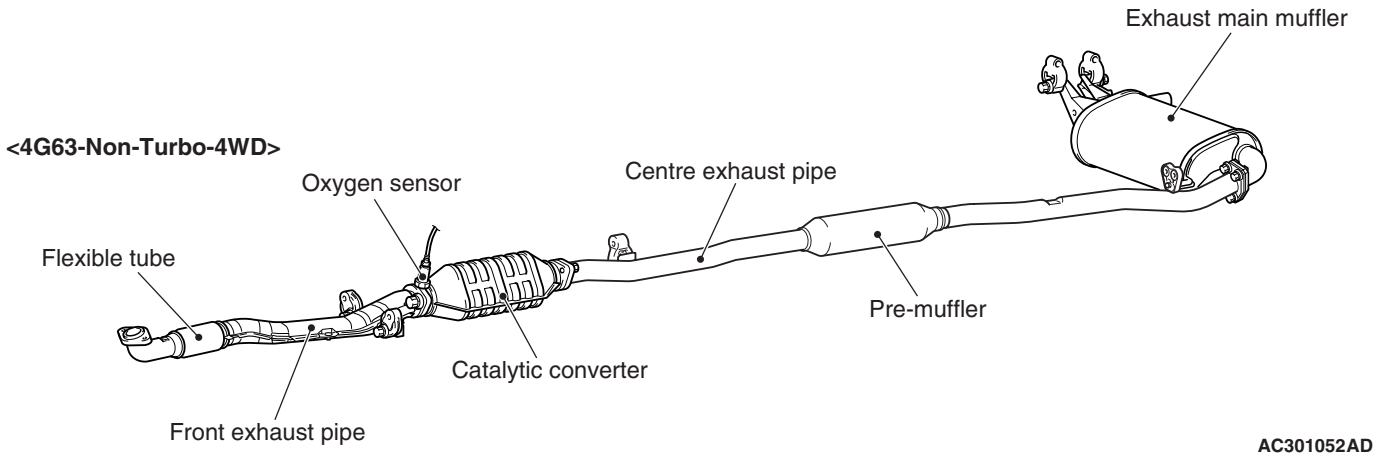
M2150003000244

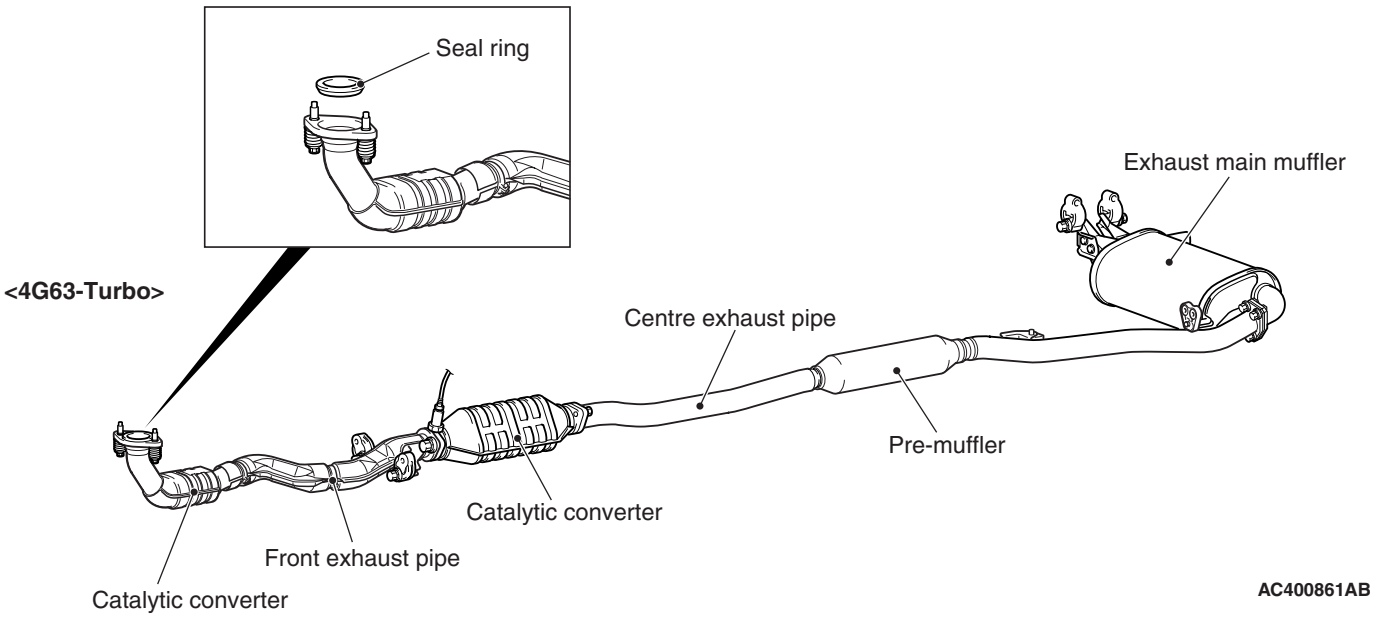
Exhaust pipe consisting of 3 separation system: front exhaust pipe, centre exhaust pipe, and exhaust main muffler, has the following features:

- The adoption of all stainless exhaust piping has enhanced resistance to corrosion and heat.
- Installation of thermal insulating cover and materials on front pipe has improved emission control performance.
- The front pipe incorporates a flexible tube to reduce vibration when the engine is idling. <Except for 4G63-Turbo>
- Seal ring reduces driving noise and vibration during idling. <4G63-Turbo>

CONSTRUCTION DIAGRAM







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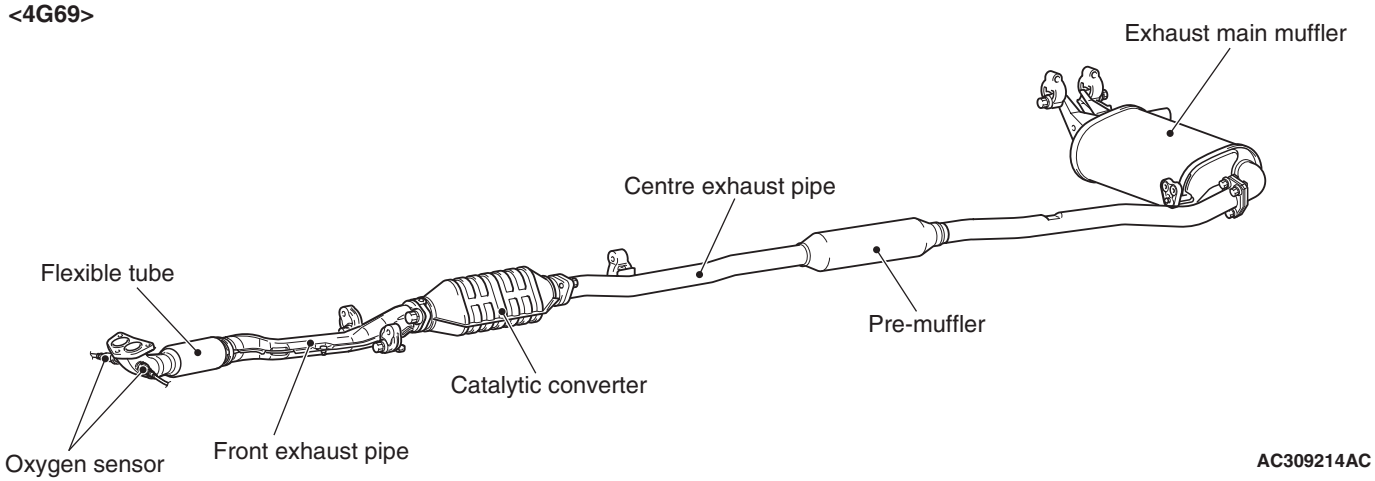
Exhaust main muffler
Centre exhaust pipe
Flexible tube
Pre-muffler
Catalytic converter
Oxygen sensor
Front exhaust pipe
AC309214AC