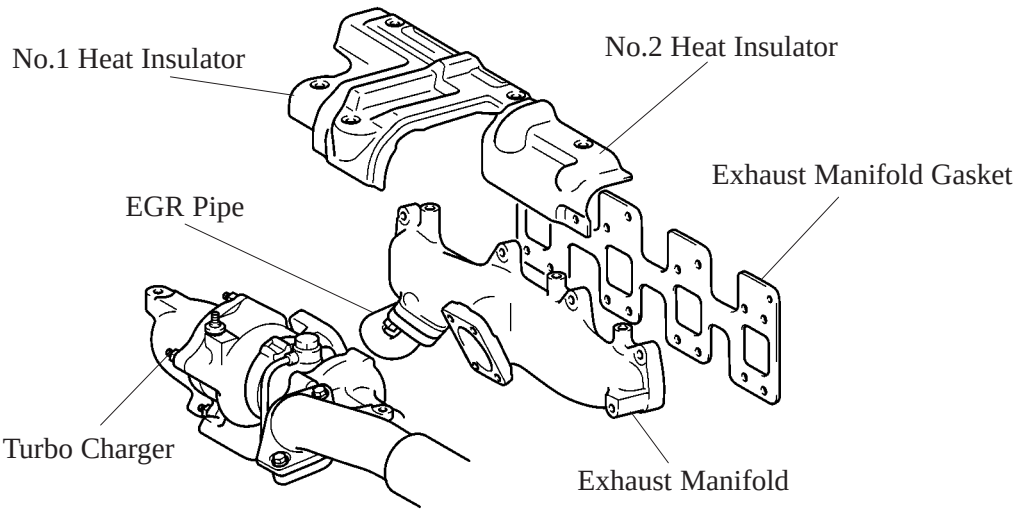
■EXHAUST SYSTEM

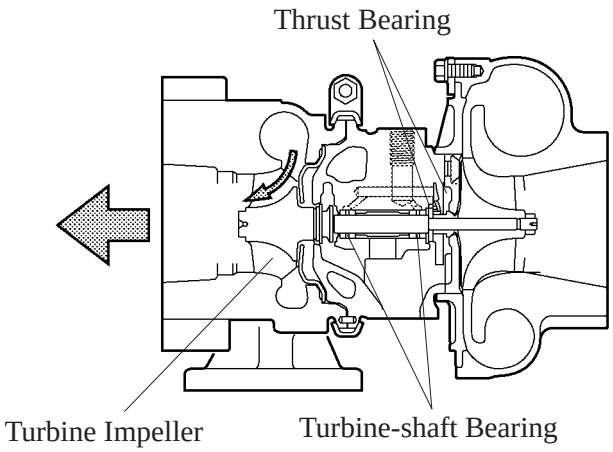
1. Exhaust Manifold

- The exhaust manifold is made of high-strength spheroidal graphite cast iron. A takeoff flange for the EGR gas has been provided between cylinders #3 and #4.
- The exhaust manifold gasket has a double layer construction.
- Large heat insulators have been adopted to ensure the proper heat insulation performance.



2. Turbocharger

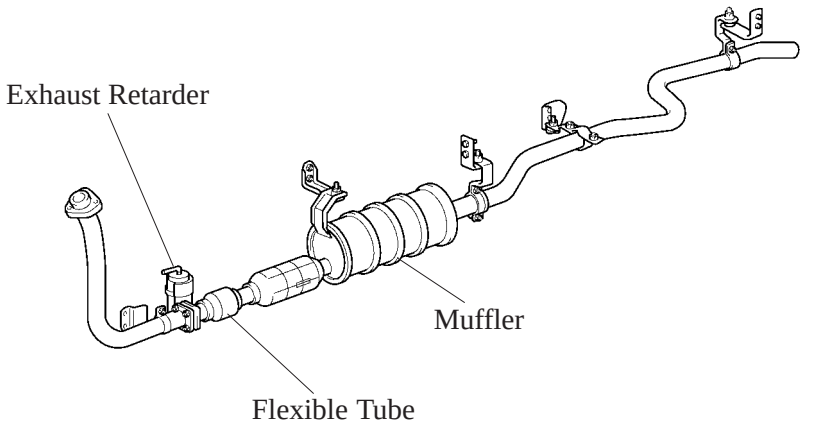
- A compact and lightweight RHF5H turbocharger made by IHI has been adopted.
- The impeller has been made more compact and the construction of the thrust bearing has been changed to reduce friction. Thus, the oil consumption rate has been reduced despite the higher speed of operation.
- A diagonal flow turbine* has been adopted to reduce the inertial moment of the rotor assembly and improve response.



*: Diagonal flow turbine: This turbine is shaped to draw gas at a certain angle so that the inflow angle is closer to the axial direction of the discharge to minimize the change in the direction of the gas flow at the turbine impeller. This results in a significant reduction in the outer diameter of the turbine impeller and the inertial mass. Therefore, a compact and highly responsive turbocharger can be achieved while maintaining the proper efficiency.

3. Exhaust Pipe

- On all models, the front pipe is made of stainless pipe that is lightweight and rust resistant.
- A large, 60.5 mm (2.38 in.) diameter pipe is used for the center and tail pipes to reduce back pressure and exhaust emissions. A flexible tube is used at the center pipe to reduce vibrations.
- The muffler is a round, 17.8L (3.92 lmp·gal) type. Its internal construction has been optimized to reduce back pressure, exhaust noise, and weight. On the previous model, the muffler was suspended from the body at one point. This has been changed to two points, one in front and one in the back of the muffler, to ensure durability and reduce vibrations.

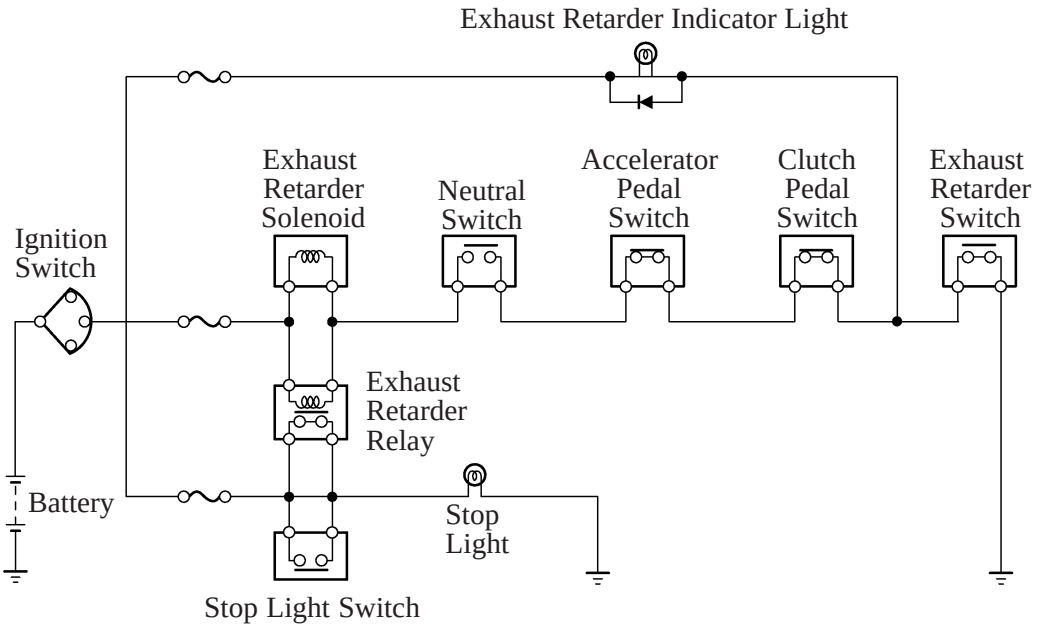


4. Exhaust Retarder

General

An exhaust retarder is provided as standard equipment. It consists of a valve that is provided midstream of the exhaust pipe. When this valve closes, it restricts the passage of the exhaust gas, which increases the effectiveness of the engine brake. When the exhaust brake is applied, the stoplights illuminate to alert the drivers behind that the vehicle is braking.

▶ System Diagram ◀



▶ Function of Main Components ◀

Components	Function
Exhaust Retarder Solenoid	Switches between the vacuum and atmospheric pressure that are being applied to the vacuum cylinder in order to open and close the exhaust retarder valve.
Exhaust Retarder Switch	When the driver pulls on the exhaust brake main switch (which is integrated with the wiper control switch), the exhaust brake becomes active and the indicator in the meter illuminates.
Accelerator Pedal Switch	Linked to the accelerator pedal, this switch detects the ON/OFF conditions of the accelerator. When the driver presses on the accelerator pedal, this switch turns OFF the current to the exhaust retarder solenoid.
Clutch Pedal Switch	Linked to the clutch pedal, this switch detects the ON/OFF conditions of the clutch. When the driver presses on the clutch pedal, this switch turns OFF the current to the exhaust retarder solenoid.
Neutral Switch	Detects whether the transmission is in neutral or some other position.
Exhaust Retarder Relay	Illuminates the stoplights when the exhaust retarder is activated.

▶ Conditions Required to Activation Exhaust Brake ◀

Conditions
Exhaust retarder switch ON
Accelerator pedal released
Vehicle speed higher than a predetermined value
Transmission shifted to a position other than neutral
ABS not activated