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## GROUP 15

# INTAKE AND EXHAUST

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# AIR INTAKE SYSTEM

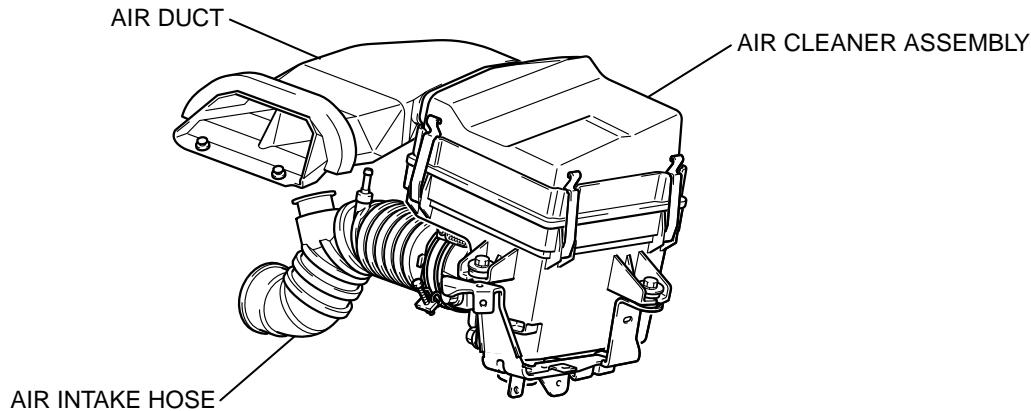
## AIR DUCT AND AIR CLEANER

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- Unrestricted fresh ambient air enters from above the radiator, engine performance has been enhanced and intake air noise has been reduced.

- The air cleaner is made from recycled paper mixed with plastic to reduce industrial wastes and protect the environment.
- Environmentally-friendly unleaded rubber materials are used for the air intake hose.

## CONSTRUCTION DIAGRAM



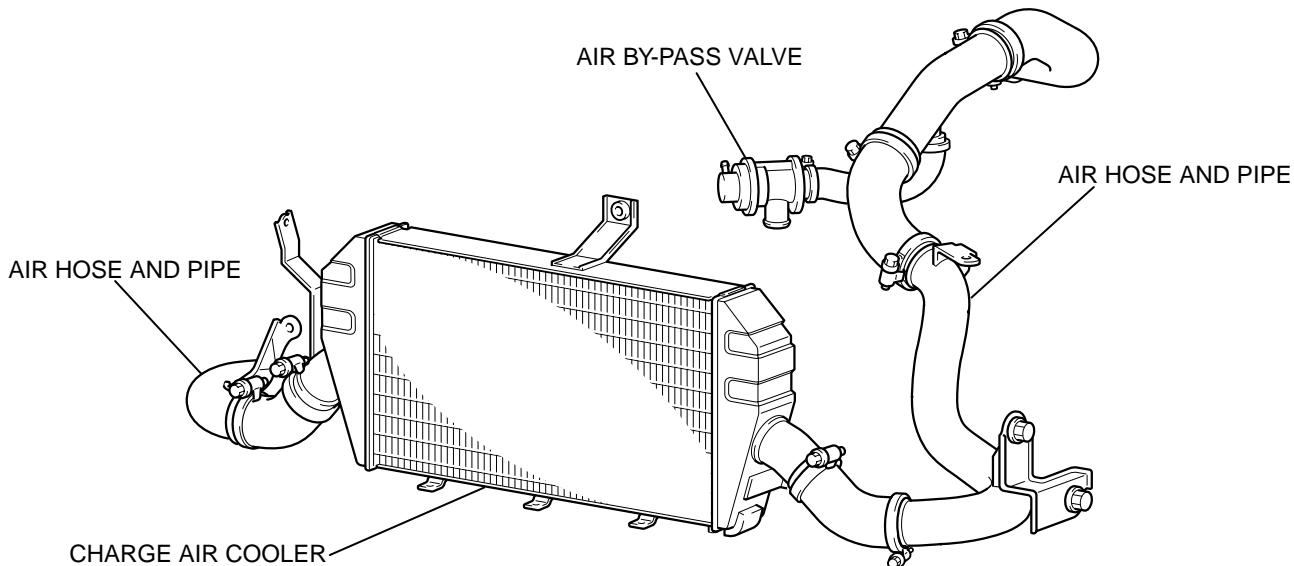
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## CHARGE AIR COOLER

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By mounting an air cooled charge air cooler to reduce the intake air temperature after boosting, engine output has been improved.

## CONSTRUCTION DIAGRAM



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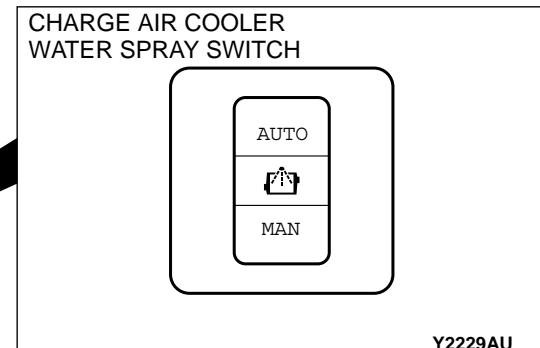
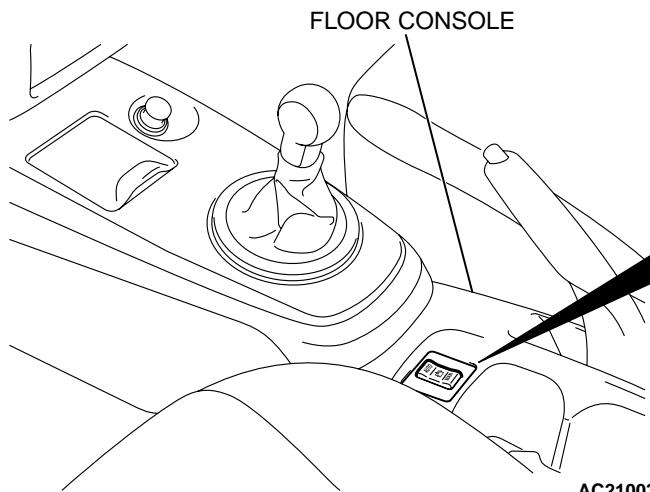
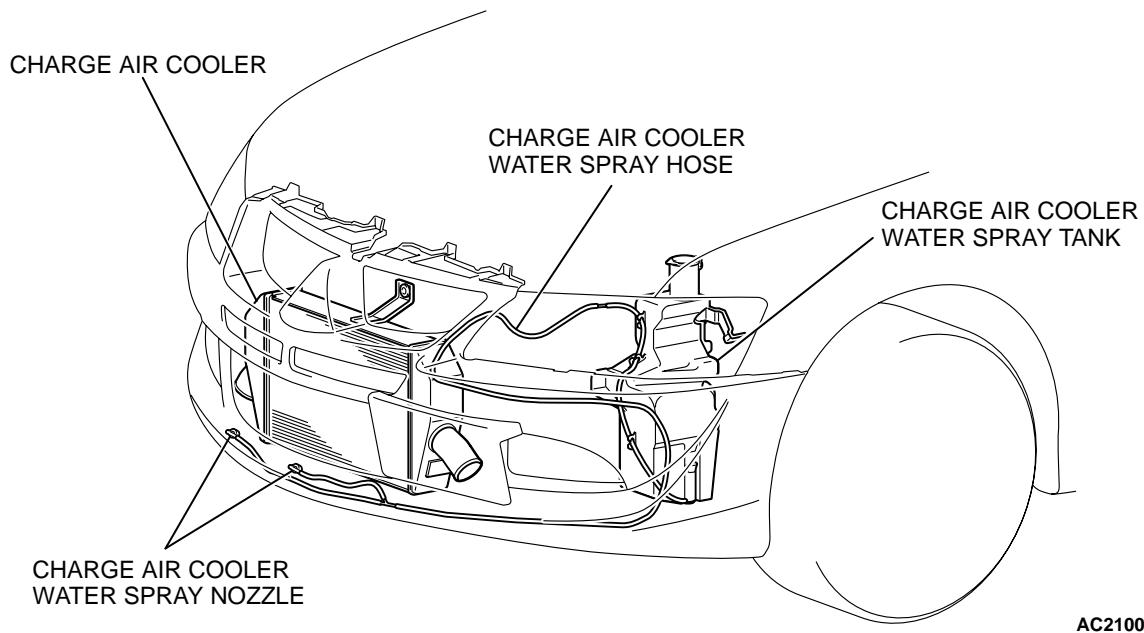
## CHARGE AIR COOLER WATER SPRAY

To complement the charge air cooler efficiency in ranges where the cooling efficiency of the air cooled charge air cooler is insufficient, and attain high performance in various environments, the system cools by spraying water from a special washer tank for the charge air cooler to the front of the charge air cooler. Features of the charge air cooler water spray system are:

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- Sprays water when the water spray switch on the floor console is operated.
- Enables switching between the driver-operated manual mode and the auto mode, which automatically sprays water at the optimum operating conditions by signals from the engine control module (ECM) according to the engine state.
- Two water spray nozzles are located at optimum positions to enhance the charge air cooler efficiency.

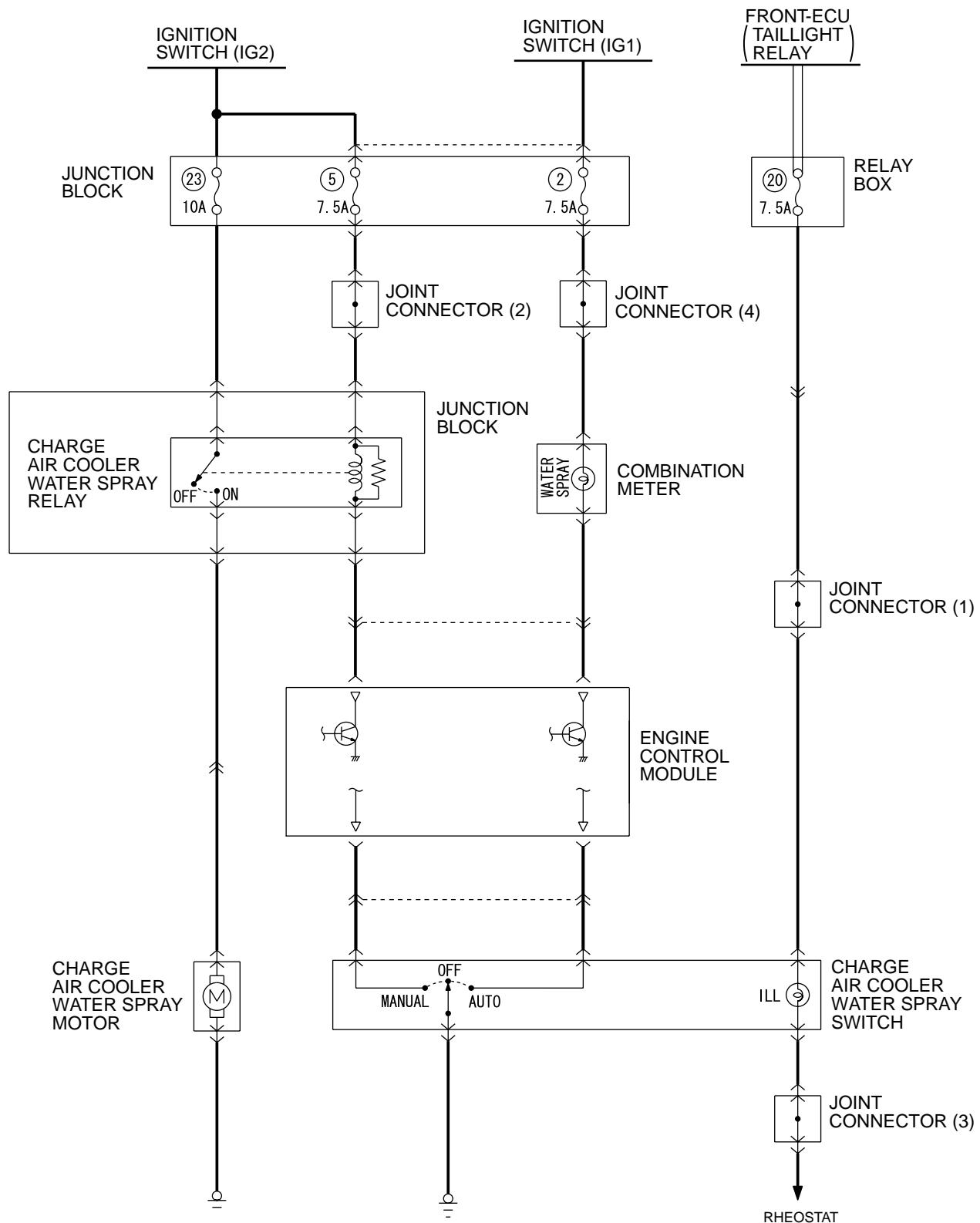
## CONSTRUCTION DIAGRAM



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## SYSTEM DIAGRAM

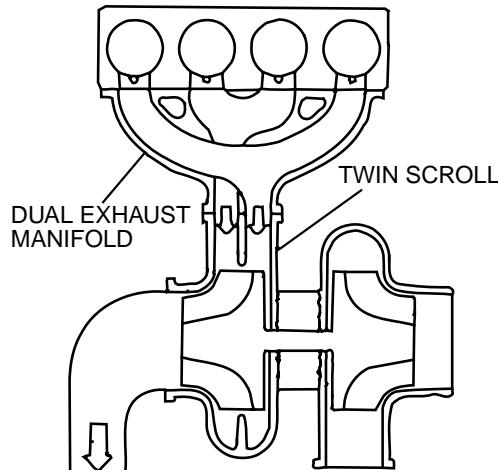


## EXHAUST SYSTEM

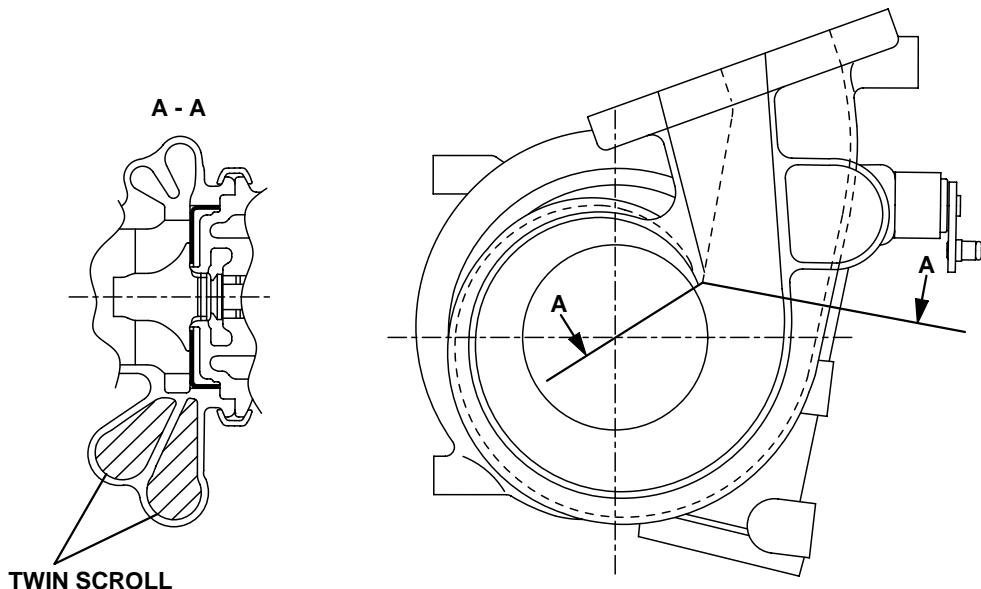
## TURBOCHARGER

Dual exhaust passages from the engine to the turbine housing prevents obstruction of the flow and guides the exhaust gas smoothly to the turbine to improve low and mid-range torque and engine response.

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## EXHAUST PIPE AND MUFFLER

The exhaust system consists of 3 separate sections: front exhaust pipe, center exhaust pipe, and main muffler. It has the following features:

- Straight layout of exhaust piping to reduce vibration and exhaust pressure in exhaust system.
- Rubber hangers reduce vibration from the exhaust system.

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- All stainless exhaust piping reduces corrosion and heat.
- Thermal insulating cover and materials on front pipe improve emission control performance.
- Seal ring reduces driving noise and vibration during idling.
- The main muffler has a back pressure variable valve.

## CONSTRUCTION DIAGRAM

