TURBOCHARGER [SKYACTIV-D 2.2]

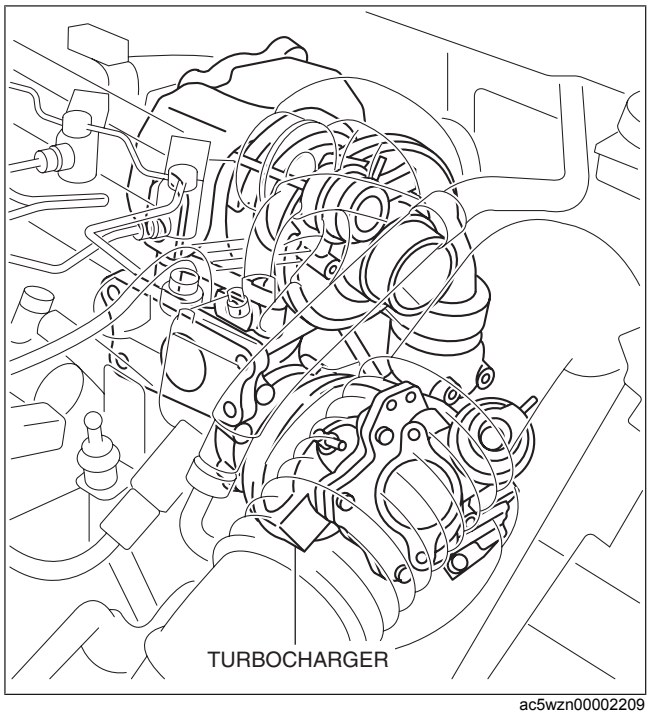
id0113z7706500

Purpose, Function

- The small-type turbocharger and large-type turbocharger are arranged in tandem enabling switching of the air charging between stage 1 and stage 2 by switching the intake/exhaust passages using each type of valve.

Construction

- The turbochargers are installed behind the engine compartment.



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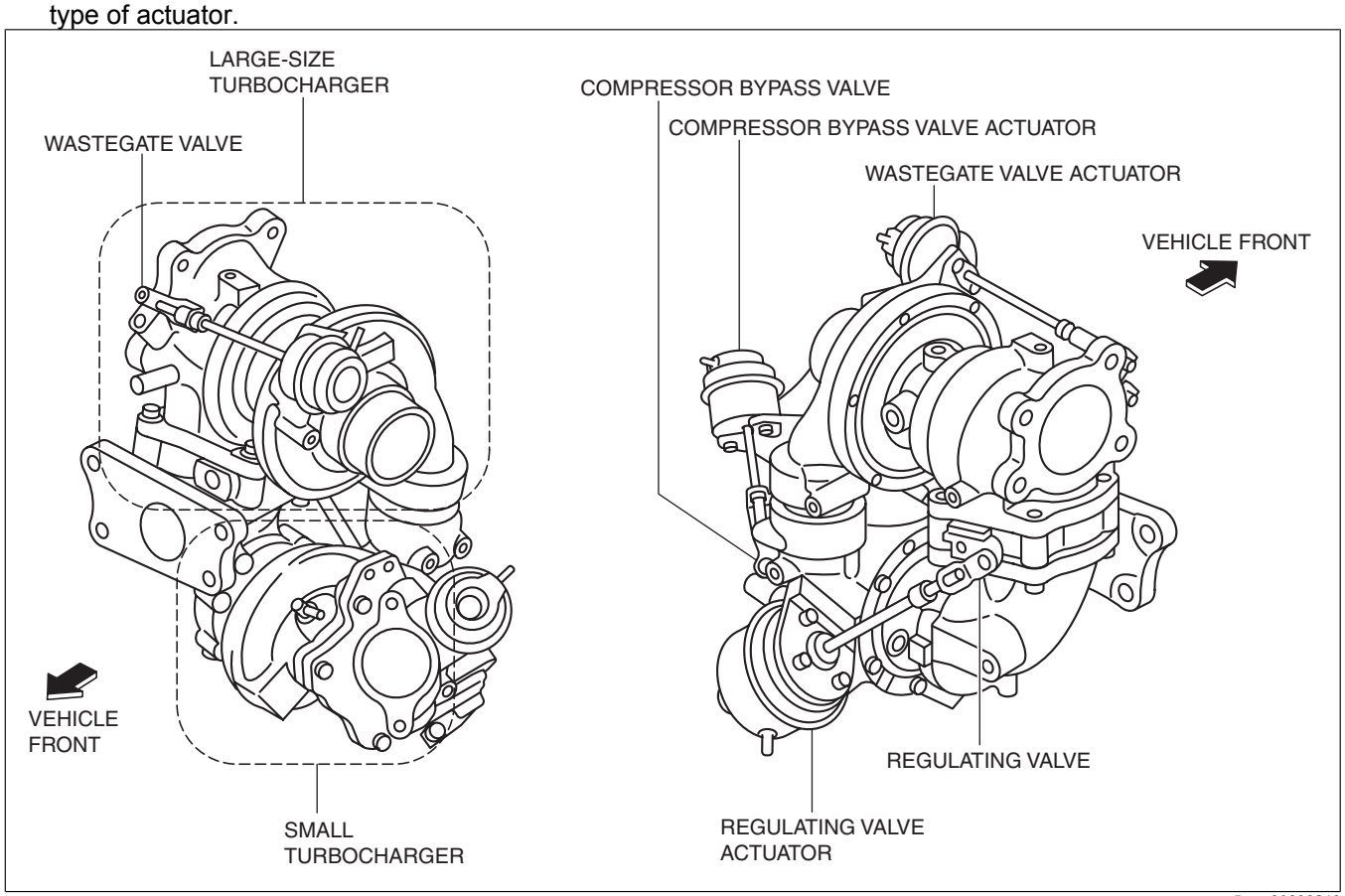
- The turbochargers consist of a large-type turbocharger, small-type turbocharger, each type of valve, and each type of actuator.



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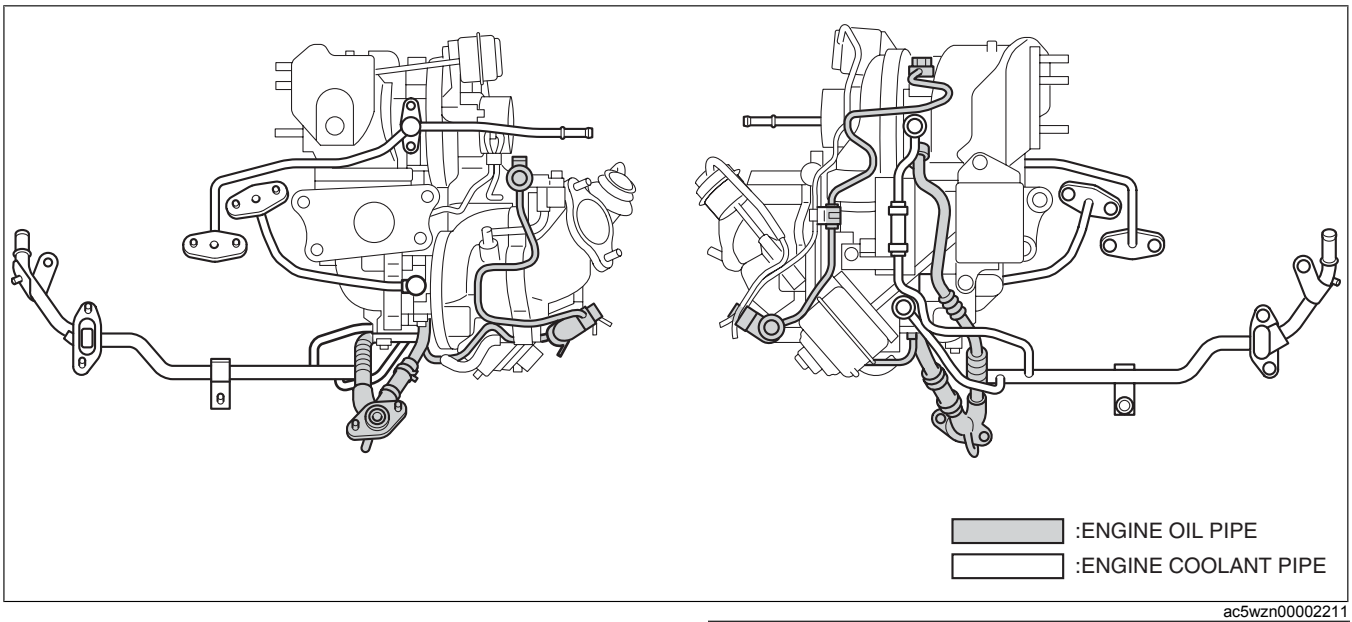
- To assure turbocharger functionality, a cooling pipe and engine oil pipe are installed.



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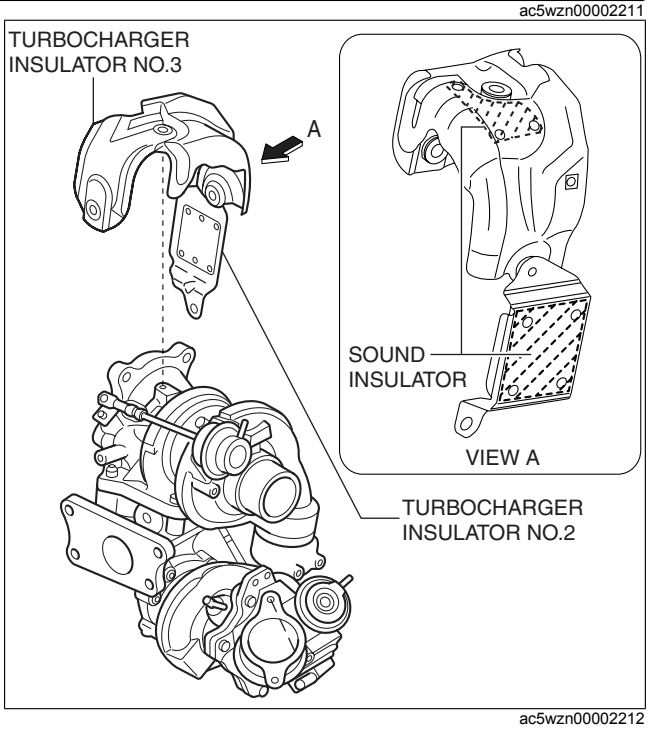
- Noise suppression material is employed on turbocharger insulator No.2 and No.3 to reduce engine noise transmitted to the vehicle cabin.



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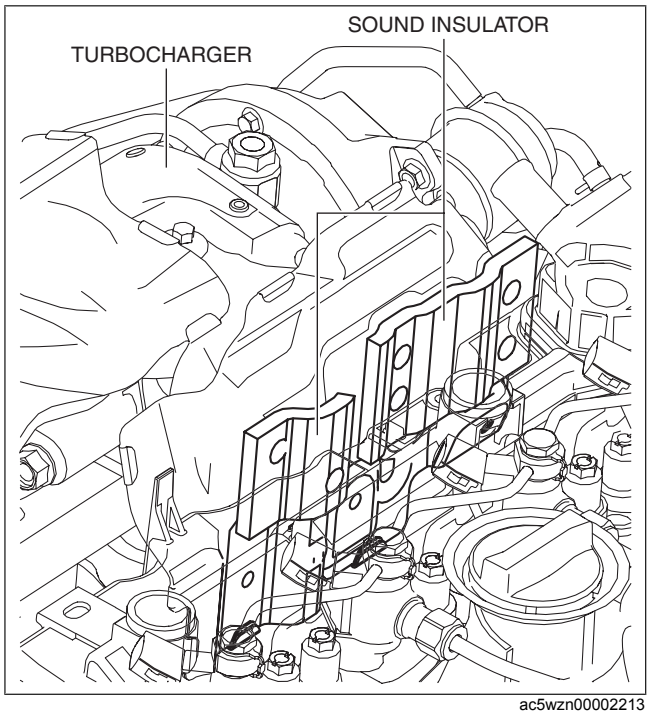
- Noise suppression material is employed between the turbochargers and the engine to reduce engine noise transmitted to the vehicle cabin.



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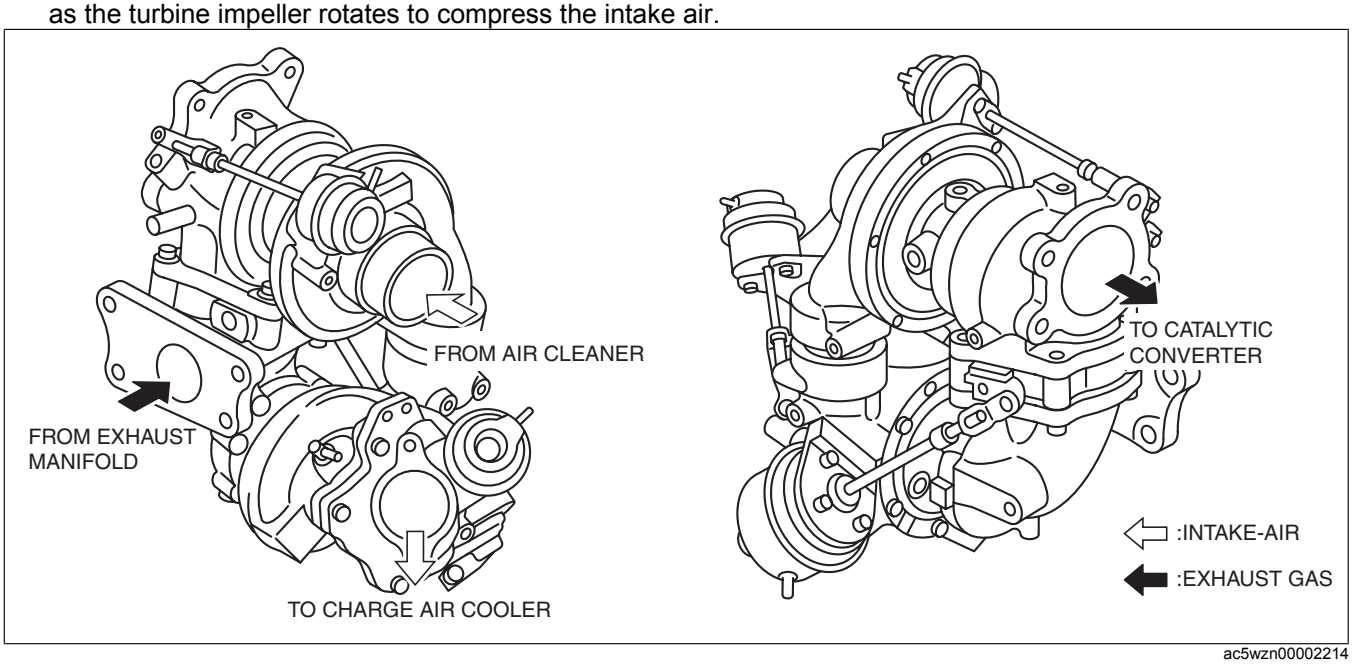
Operation

- When exhaust gas flows from the turbine impeller of the turbocharger, the compressor impeller on the same axle as the turbine impeller rotates to compress the intake air.



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- By the opening/closing of the compressor bypass valve, regulating valve, wastegate valve according to the engine operation conditions, air charging by the large-type turbocharger and small-type turbocharger is controlled in two stages.

Compressor bypass valve

- Normally, the spring force presses against the rod, keeping the compressor bypass valve closed. When the vacuum generated by the vacuum pump operation is applied to the diaphragm chamber of the compressor bypass valve actuator, the rod is pulled to open the compressor bypass valve.

Regulating valve

- Normally, the spring force presses against the rod, keeping the regulating valve open. When the vacuum generated by the vacuum pump operation is applied to the diaphragm chamber of the regulating valve actuator, the rod is pulled to close the regulating valve.

Wastegate valve

- Normally, the spring force presses against the rod, keeping the wastegate valve open. When the vacuum generated by the vacuum pump operation is applied to the diaphragm chamber of the wastegate valve actuator, the rod is pulled to close the wastegate valve.