COMPRESSION INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5]

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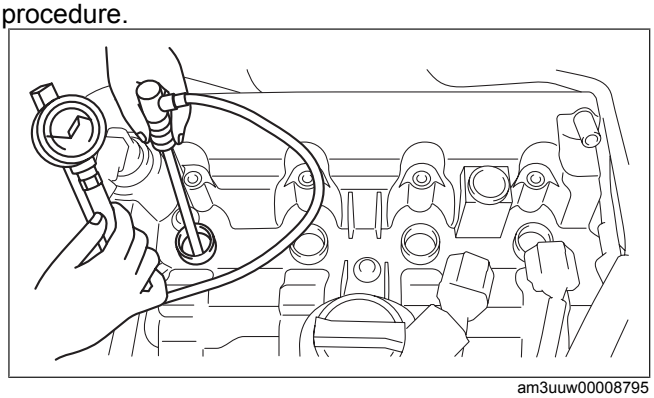
Warning
- **Hot engines and oil can cause severe burns. Be careful not to burn yourself during removal/ installation of each component.**
- **Fuel vapor is hazardous. It can very easily ignite, causing serious injury and damage. Always keep sparks and flames away from fuel.**
- **Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Fuel can also irritate skin and eyes. To prevent this, always complete the "Fuel Line Safety Procedure". (See BEFORE SERVICE PRECAUTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)**

1. Verify that the battery is fully charged. (See BATTERY INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See BATTERY INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].)
   - Recharge it if necessary. (See BATTERY RECHARGING [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See BATTERY RECHARGING [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].)
2. Warm up the engine to the normal operating temperature.
3. Perform "Fuel Line Safety Procedures". (See BEFORE SERVICE PRECAUTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
4. Remove the following parts.
   (1) Plug hole plate. (See PLUG HOLE PLATE REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
   (2) Ignition coil/ion sensors. (See IGNITION COIL/ION SENSOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
   (3) Spark plugs. (See SPARK PLUG REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
   (4) Fuel pump relay
   (5) Fuel injector relay
5. Measure the compression pressure using the following procedure.
   (1) Press a compression gauge into the spark plug hole.
   (2) Fully depress the accelerator pedal.
   (3) Crank the engine and measure the compression pressure.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Compression [SKYACTIV-G 2.0, European (L.H.D. U.K.) specs.]

Standard: 978 kPa {9.97 kgf/cm^2, 142 psi} [300 rpm]

Minimum: 783 kPa {7.98 kgf/cm^2, 114 psi} [300 rpm]

Maximum difference between cylinders: 166 kPa {1.69 kgf/cm^2, 24.1 psi} [300 rpm]

Compression [SKYACTIV-G 2.0, Except European (L.H.D. U.K.) specs.]

Standard: 885 kPa {9.02 kgf/cm^2, 128 psi} [300 rpm]

Minimum: 708 kPa {7.22 kgf/cm^2, 103 psi} [300 rpm]

Maximum difference between cylinders: 150 kPa {1.53 kgf/cm^2, 21.8 psi} [300 rpm]

Compression [SKYACTIV-G 2.5]

Standard: 954 kPa {9.73 kgf/cm^2, 138 psi} [300 rpm]

Minimum: 763 kPa {7.78 kgf/cm^2, 111 psi} [300 rpm]

Maximum difference between cylinders: 161 kPa {1.64 kgf/cm^2, 23.4 psi} [300 rpm]

Note
- Because the SKYACTIV-G 2.0 and SKYACTIV-G 2.5 retards the intake valve closing timing, compression pressure is low.

(4) Perform Steps (1) to (3) for all cylinders.
(5) If it is less than the minimum specification, or there is a cylinder with a maximum value that exceeds the other cylinders, add a small quantity of engine oil through the spark plug hole and perform Steps (1) to (3).
   - If the pressure increases by adding the engine oil, the piston ring or the cylinder surface is worn, or they are damaged. Perform overhaul servicing.

- If the pressure does not increase, valve seizure, valve attachment malfunction, or pressure leakage from the cylinder head gasket might be occurring. Perform overhaul servicing.

(6) If the measured value is high, it is possible that there is an error in the electric variable valve timing system.

6. Remove the compression gauge.
7. Install the following parts.
   (1) Fuel injector relay
   (2) Fuel pump relay
   (3) Spark plugs. (See SPARK PLUG REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
   (4) Ignition coil/ion sensors. (See IGNITION COIL/ION SENSOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
   (5) Plug hole plate. (See PLUG HOLE PLATE REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)