

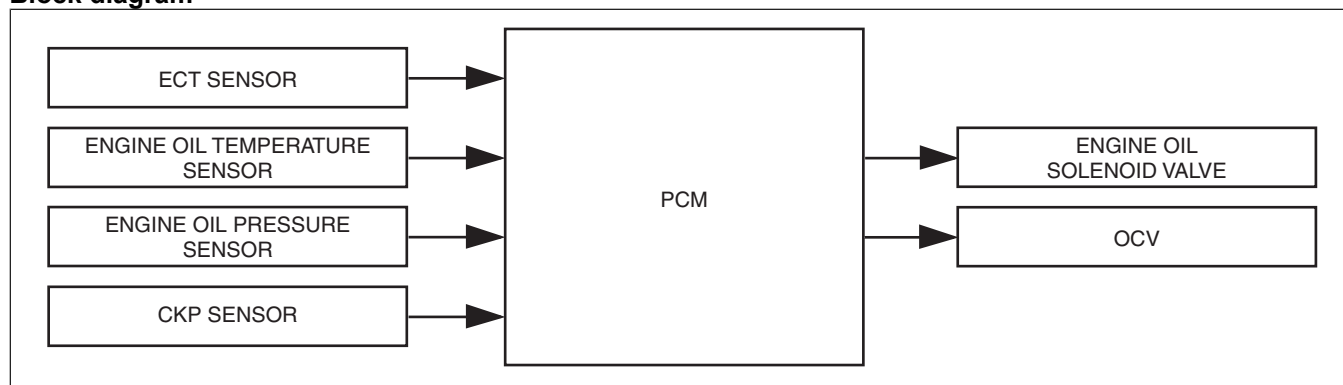
INTAKE STROKE EGR USING DOUBLE EXHAUST VALVE ACTUATION SYSTEM (IDEVA) CONTROL [SKYACTIV-D 2.2]

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Outline

- The exhaust valve is opened during the intake stroke according to the engine operation conditions.
- The PCM controls the exhaust valve open/close during the intake stroke by operating the OCV and switching the engine oil passages based on the engine operation conditions.
- By opening the exhaust valve during the intake process, high temperature exhaust gas flows back (inside EGR) and the temperature of the air in the cylinder is raised to realize combustion stability during cold temperatures.
- During DPF regeneration control (auto DPF regeneration control), supply of high temperature exhaust gas to the DPF is required, external EGR is inhibited by the EGR valve and EGR cooler bypass valve operation, and NOx is reduced by introducing internal EGR.

Block diagram



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Operation

- The PCM determines whether to open or close the exhaust valve according to the engine operation conditions.
- The PCM switches the exhaust valve between open or closed during the following operation conditions.
 - During fast idle increase
 - During warm-up under low ambient temperature conditions (Ambient temperature: **-10 °C {14 °F} or less, engine coolant temperature: 0—60°C {32—140 °F}**)
 - During DPF regeneration control (auto DPF regeneration control)
- For details on the operation of OCV in intake stroke EGR using double exhaust valve actuation system (IDEVA) control, refer to the INTAKE STROKE EGR USING DOUBLE EXHAUST VALVE ACTUATION SYSTEM (IDEVA) CONTROL (See INTAKE STROKE EGR USING DOUBLE EXHAUST VALVE ACTUATION SYSTEM (IDEVA) [SKYACTIV-D 2.2].)