

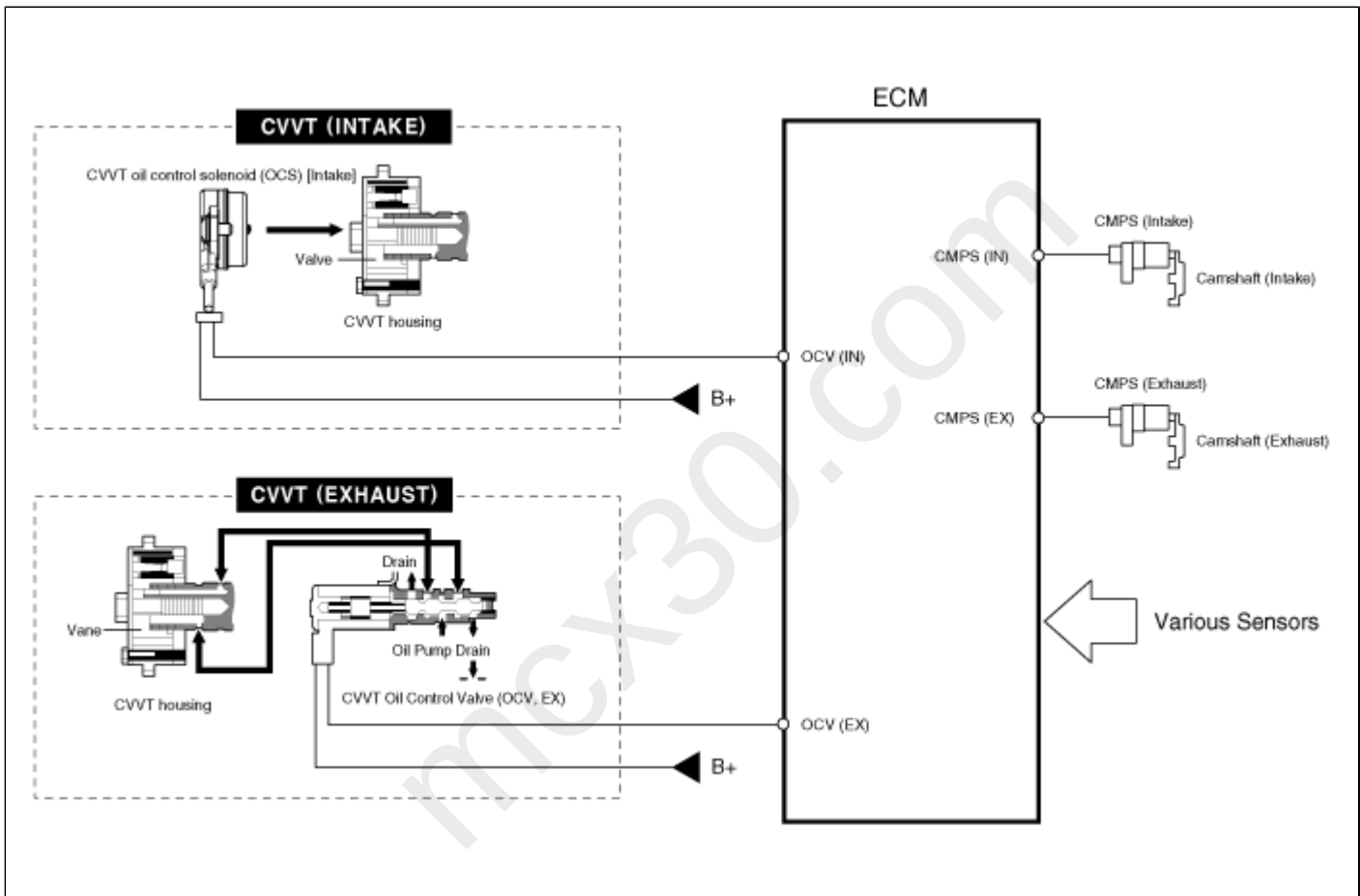
Description

The continuous variable valve timing (CVVT) system advances or retards the opening of an intake or exhaust valve according to the ECM signals that are determined based on engine RPM and load.

Due to CVVT control, a valve overlap or underlap occurs between the intake valve and exhaust valve, resulting in the reduction of pumping loss, recirculation of exhaust gas, improvement in combustion stability and volumetric efficiency, and increase in expansion work. This in turn improves fuel efficiency and engine performance and reduces emission gases (NO_x and HC).

The CVVT system is composed of a CVVT oil control valve (OCV), CVVT oil temperature sensor (OTS), and a cam phaser; The OCV receives a pulse width modulation signal from the ECM and controls the flow of oil to supply oil to the cam phaser, the OTS measures the temperature of the engine oil, and the cam phaser changes the phase of the camshaft using the engine oil pressure.

The oil supplied from the CVVT OCV rotates the rotor connected to the camshaft inside the cam phaser. The rotor, in turn, rotates the camshaft in the direction of engine rotation (intake advanced / exhaust retarded) or in the opposite direction of engine rotation (intake retarded / exhaust advanced) to change the phase angle of the cam.



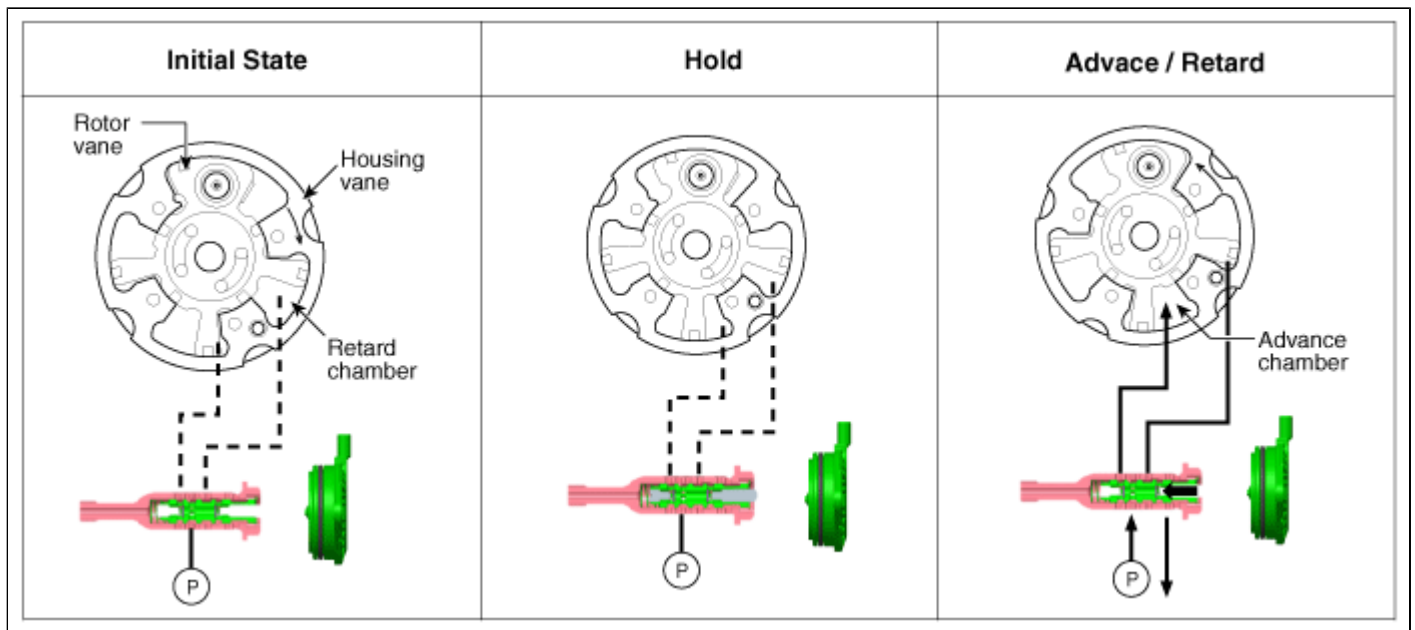
Operation Principle

The CVVT has the mechanism rotating the rotor vane with hydraulic force generated by the engine oil supplied to the advance or retard chamber in accordance with the CVVT oil control valve control.

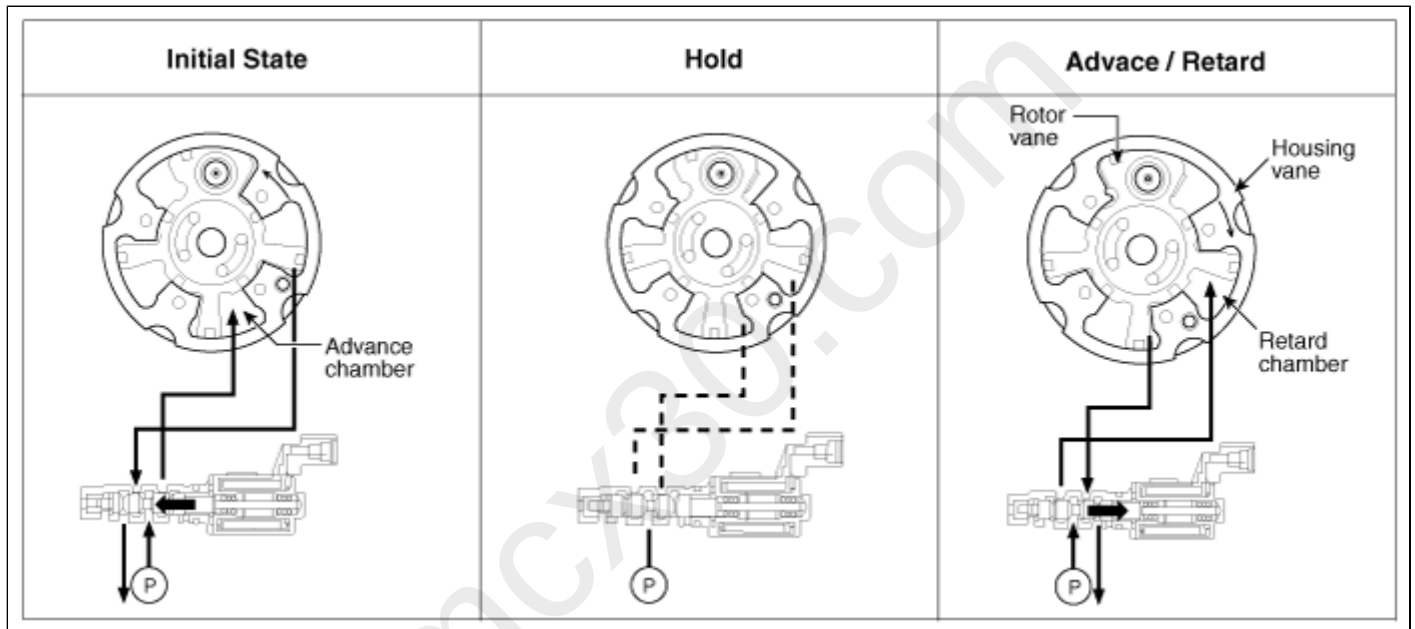
i Information

• A separate solenoid valve is installed on the chain cover in the intake side for closing and releasing a separate lock pin.

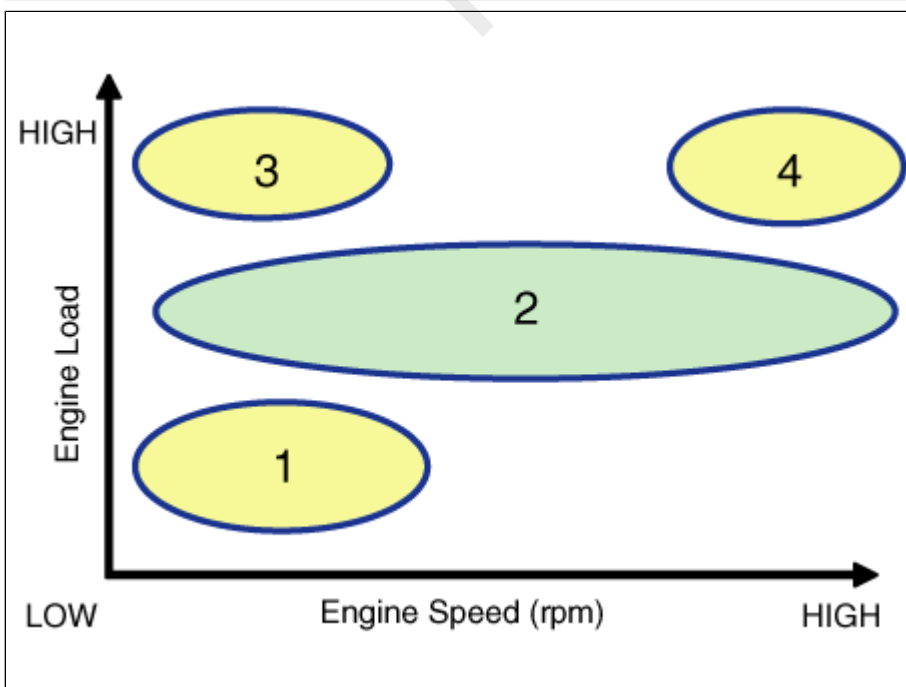
1. Intake CVVT

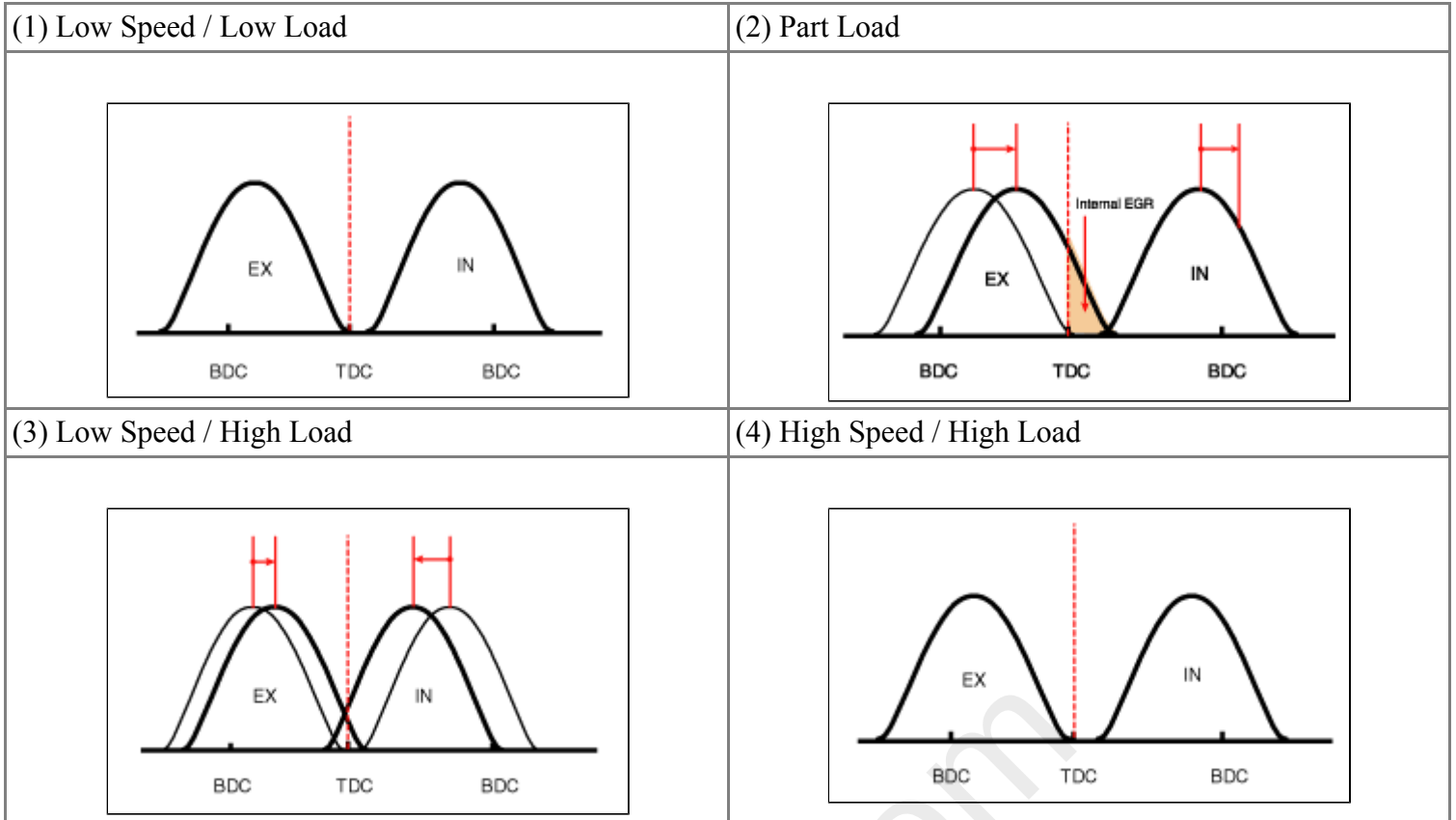


2. Exhaust CVVT



[CVVT System Mode]





Driving Condition	Exhaust Valve		Intake Valve	
	Valve Timing	Effect	Valve Timing	Effect
(1) Low Speed /Low Load	Completely Advance	* Valve Under-lap * Improvement of combustion stability	Middle	* Valve Under-lap * Improvement of combustion stability
(2) Part Load	Retard	* Reduction of HC	Retard	* Delays the closing time of intake valve to reduce pumping loss
(3) Low Speed /High Load	Completely Advance	* Reduction of pumping loss	Advance	* Improvement of volumetric efficiency
(4) High Speed /High Load	Completely Advance	* Reduction of pumping loss	Advance	* Improvement of volumetric efficiency

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