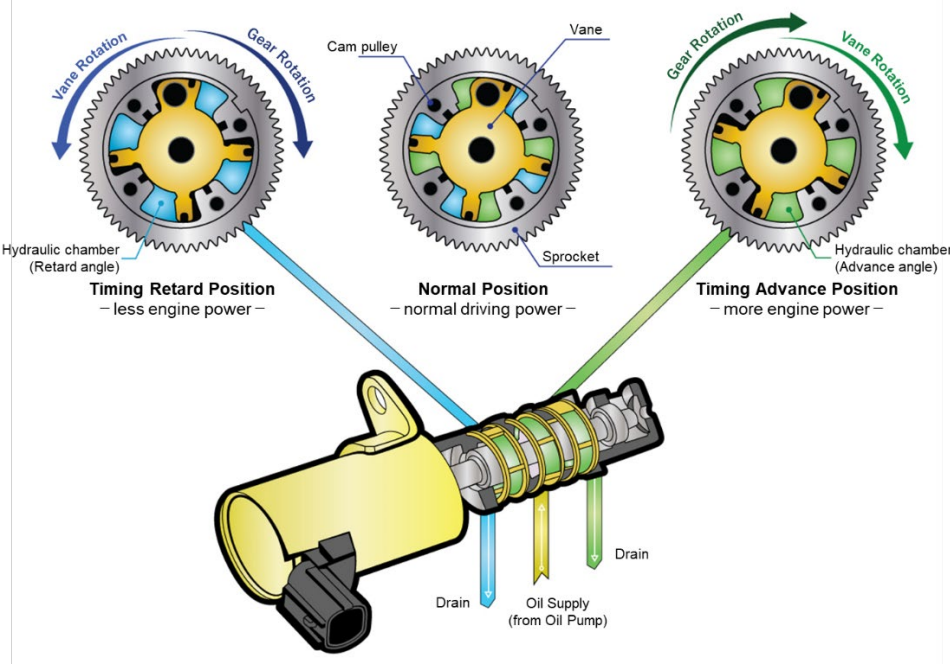
WHAT IS VALVE TIMING CONTROL?

Valve timing control (VTC) is a system that controls the opening and closing timing of the intake and exhaust valves corresponding to the operating state of the engine.
In general, opening the intake valve at an earlier timing (advance) draws more air and fuel into the combustion chamber in the compression stroke, acquiring more power as a result. However, the amounts of air and fuel entering the combustion chamber decrease when the intake valve opening is delayed (retarded), thereby improving the fuel economy and reducing the amount of exhaust gas.
In the hydraulic variable valve timing system, the cam pulley is secured to the sprocket, and the camshaft is locked with the vane housed in an oil-filled hydraulic chamber inside the cam pulley. Power is transmitted from the crankshaft to the sprocket, and a cam pulley is then transferred to the camshaft through the oil in the hydraulic chamber. Subsequently, the hydraulic pressure is fed to either the advance or retard hydraulic chamber to change the camshaft phase.



TYPICAL SYMPTOMS IN CASE OF FAILURE

Symptoms in case of failure

- Idling becomes unstable
- Engine misfire or stumble occurs under high load, such as during hill climbing or acceleration
- Abnormal noise occurrence
- Malfunction indicator light (MIL) turned on