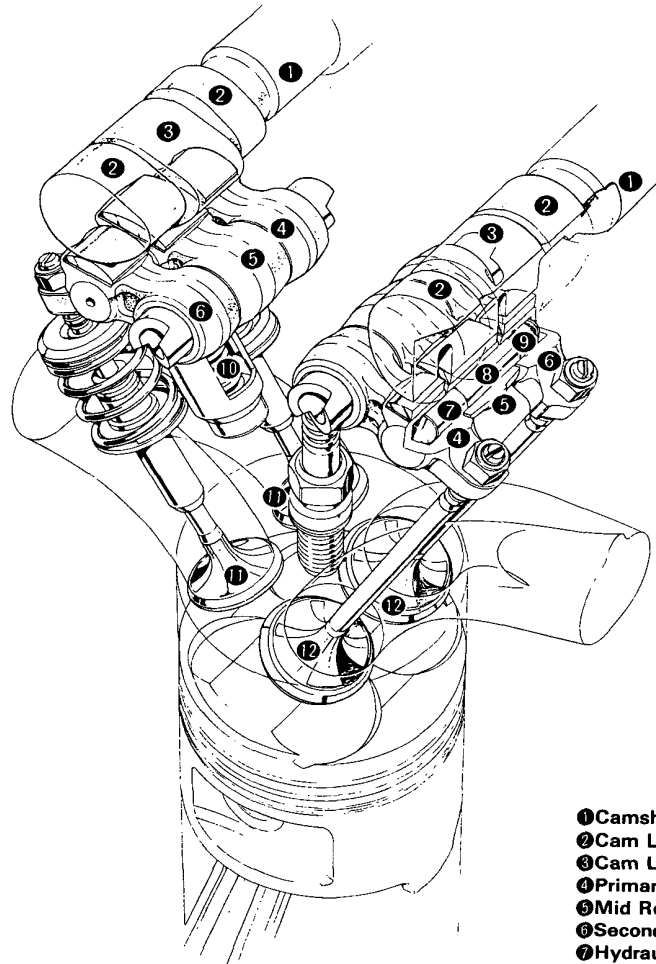


V-TEC System

System Configuration

In the Honda Variable Valve Timing and Lift Electronic Control System, the four valves per cylinder mechanism is equipped with a third rocker arm (the mid rocker arm) and a third cam lobe on both the intake and exhaust sides. Further hydraulic pistons are built into the mid rocker arm and the primary and secondary rocker arms to engage and disengage them. Each of the three cam lobes on the intake side and on the exhaust side are unique. The center cam lobes are for high rpm operation, while the primary and secondary lobes are for low rpm operation. The mid rocker arm is also equipped with a supplementary spring with a lost-motion function for reducing the amount of arm play in the low speed range, and make valve movement smoother in the high speed range.



- ① Camshaft
- ② Cam Lobes For Low Rpm
- ③ Cam Lobes For High Rpm
- ④ Primary Rocker Arm
- ⑤ Mid Rocker Arm
- ⑥ Secondary
- ⑦ Hydraulic Piston A
- ⑧ Hydraulic Piston B
- ⑨ Stopper Pin
- ⑩ Lost-motion Spring
- ⑪ Exhaust Valve
- ⑫ Intake Valve

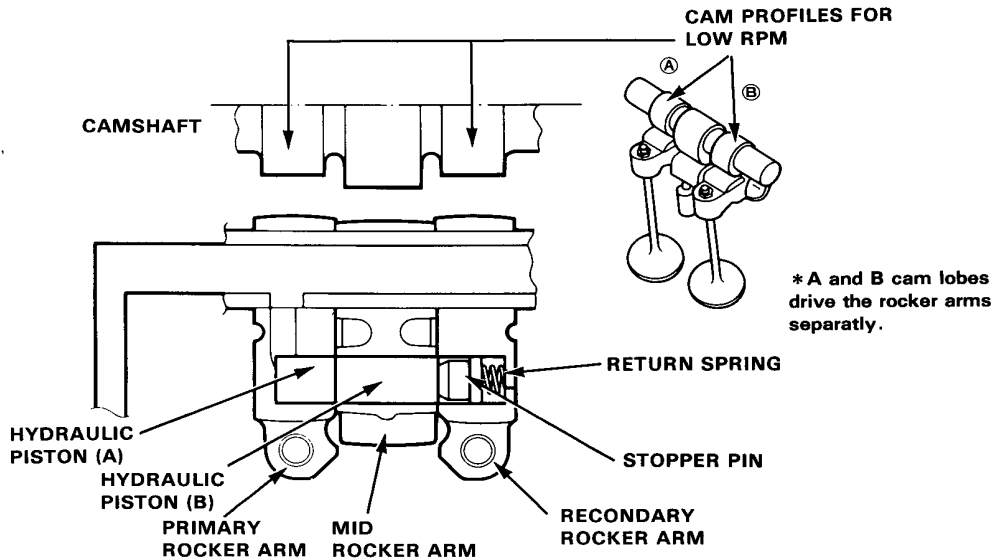


Mechanism

At Low rpm

As shown, the primary and secondary rocker arms located on both sides are not connected to the mid rocker arm but are driven separately by cam lobes A and B at different timing and lift. It should be noted that although the mid rocker arm is connected to the center cam lobe with the lost-motion spring, it is irrelevant to the opening and closing of the valves in the low rpm range.

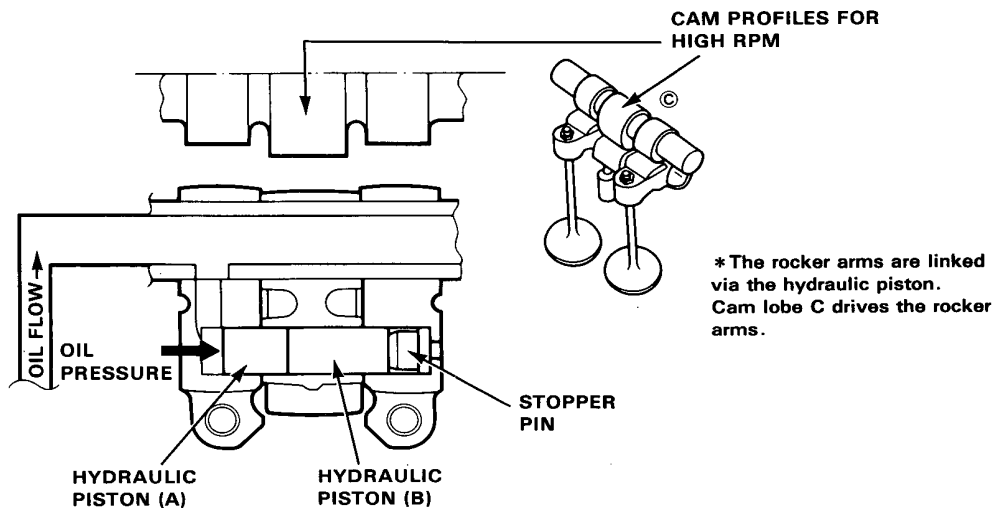
At Low rpm



At High rpm

When driving at high rpm, the built-in piston moves in the direction shown by the arrow in the figure below as a result, the primary rocker arm and mid rocker arm are linked by 2 hydraulic pistons (like a skewer) and the 3 rocker arms integrate and move as a single unit. In this state, all the rocker arms are driven by cam lobe C at high rpm, which means that the valves are driven at the valve timing and lift set for high rpm operation.

At High rpm



V-TEC System

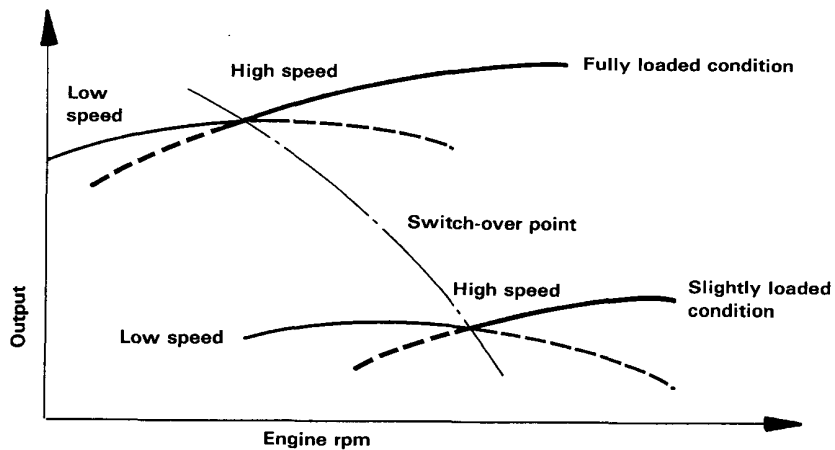
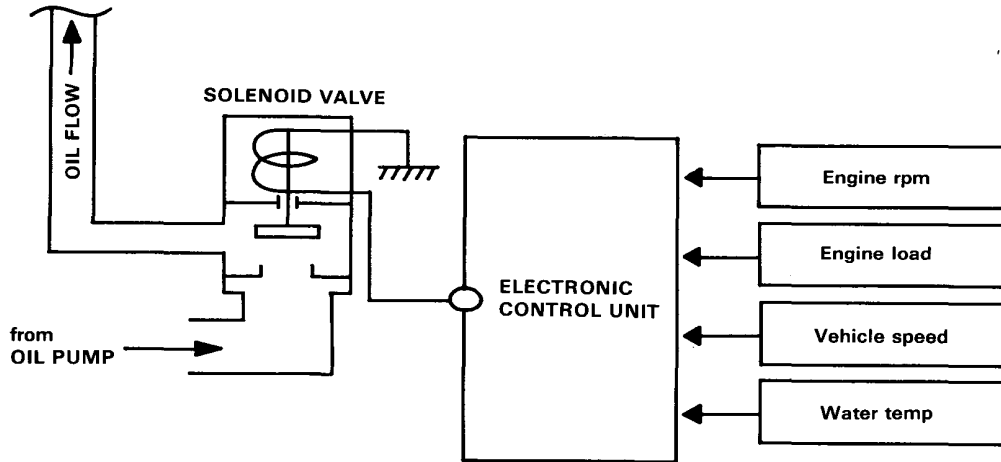
Control System

The control system for this mechanism, as shown below, constantly monitors the changes in engine status such as load, rpm and vehicle speed. This information is transmitted to the Electronic Control System Unit for precise control to assure smooth operation under any condition.

Valve Timing Change Conditions

Engine RPM : over 5,300 rpm
Vehicle Speed : over 30 km/h
Water Temperature : over 60 °C

Control System



The above graph shows changes in the switch-over point in relation to engine rpm and load.