VVT-i

The VVT-i high tech system reliably conveys the driver's intentions to the engine.

Responsive driving in city traffic, smooth acceleration on the highway, and the highest fuel efficiency in class are all realized in a single package.

What is VVT-i (Variable Valve Timing-intelligent)

The open/close timing of the valves is controlled by computer in accordance with driving conditions such as the engine speed and acceleration level. Smooth air intake and exhaust are achieved and there is significant improvement in the low and midrange torque band. The driver is able to experience the sensation of comfortable acceleration on demand since the engine responds faithfully as the driver presses down on the accelerator. VVT-i not only makes responsive handling possible but also makes a major contribution to improved fuel economy and cleaner exhaust emissions.

■ Effect of continuous valve timing changes

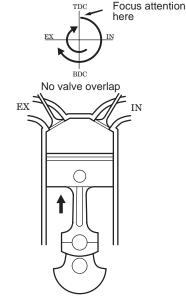
During idling

During normaldriving

Elimination of valve timing overlap Valve timing overlap is increased

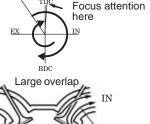
Acceleration for steep upgrade climbing and during high speed passing

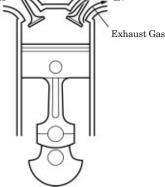
Intake valve closes quickly



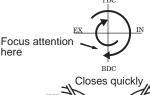
Exhaust infiltration from the cylinder to the intake side is prevented by delaying the opening of the intake valve.

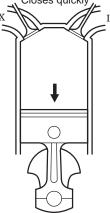
A good air mixture is always fed inside the cylinder, combustion is stabilized and the rpm level during idling is reduced for improved fuel consumption.





As a result of increasing the timing overlap in which the exhaust valve and intake valve are both open, the exhaust gas is able to flow to the intake side. HC intake and combustion are then performed again which thereby reduces the combustion temperature as well as the level of NOx. Improved fuel consumption is also realized because of the further reduction in the intake resistance.





By early closing the intake valve the air fuel mixture taken into the cylinder is not discharged and the air intake is maximized to produce powerful acceleration.

SALES POINT With the VVT-i, the valve timing continuously changes to allow the engine to function like a low to moderate speed engine when driving at low to moderate speeds and to function like a high speed engine when driving at high speed. Increased torque is realized in all rpm ranges; improved fuel efficiency and cleaner exhaust emissions are achieved as well.