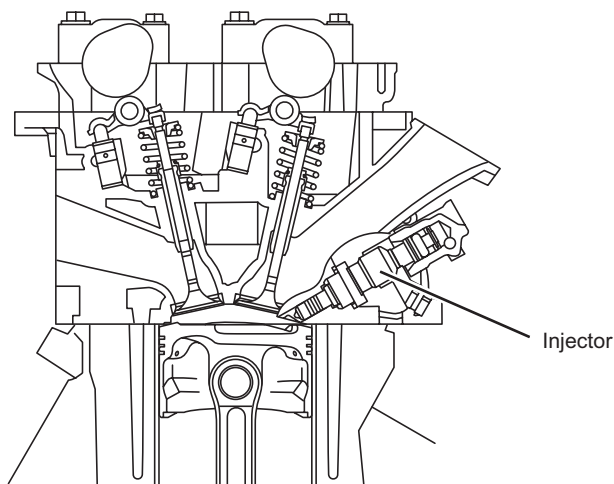


Direct injection 4-stroke Gasoline Engine (D-4)

- The D-4 (Direct injection 4-stroke gasoline engine) directly injects highly pressurized fuel into the cylinders. This engine effects comprehensive control of the fuel injection timing, air-fuel ratio, throttle valve position, etc., to realize both a high power output and low exhaust emissions.
- The high-pressure slit nozzle injector atomizes fuel into a fine mist while expanding it to form a large, fan-shaped pattern. Then, the fuel mist enters the combustion chamber while drawing in a large volume of air. The fuel mist that is sprayed at high-pressure expands into the combustion chamber on its own energy, without depending on the air current. Thus, it mixes efficiently with the intake air in order to achieve ideal combustion in all driving ranges.

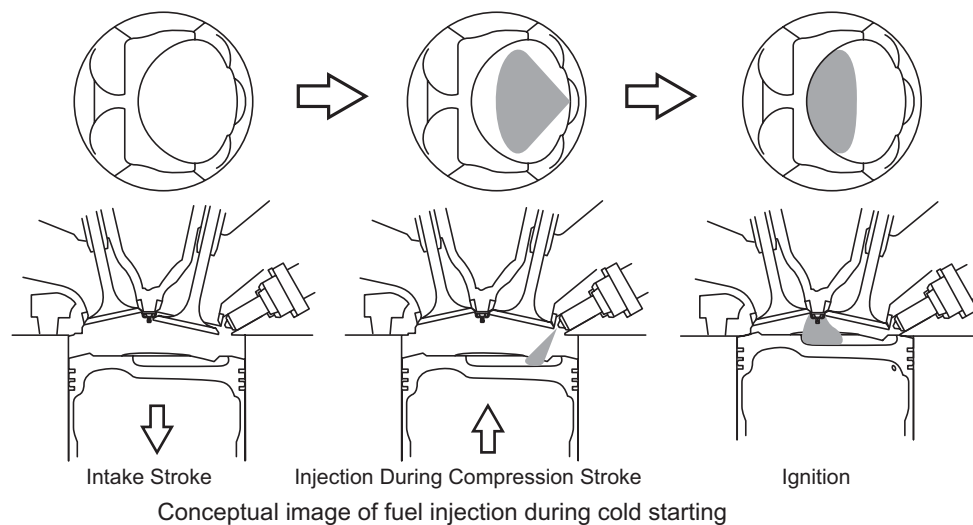


Direct injection 4-stroke Gasoline Engine(D-4)

A4270037P

Air Fuel Ratio Control

- One of the two independent straight ports contains an SCV (Swirl Control Valve), which opens and closes to enhance both charging efficiency and combustion efficiency.
- When the engine is operating at low speed and low load conditions, the SCV remains fully closed. Thus, only one port is used for intake, in order to promote the mixture of air and fuel. This also accelerates the intake flow speed, which enhances combustion and improves fuel economy.
- When the engine is operating at high load conditions, the SCV opens to allow the intake of air through both straight ports. This increases the intake air volume and improves charging efficiency. At the same time, this creates a vertical swirl current (tumble current) in the combustion chamber to promote the mixture of air and fuel, thus improving performance.
- Fuel is injected during the compression stroke immediately after cold-starting. This enables the catalyst to warm up quickly, resulting in a dramatic reduction in exhaust emissions.



A4270038P