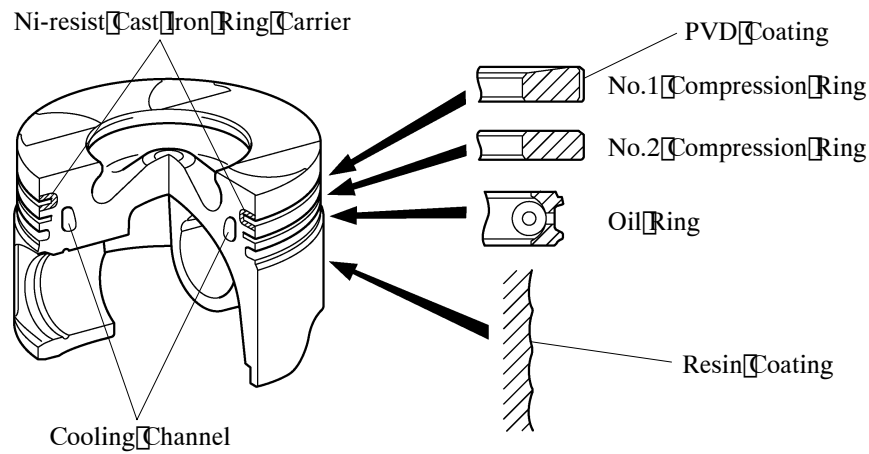


2. Engine Proper

Piston

- The shape of the combustion chamber has been optimized to improve combustion efficiency and fuel economy, and to discharge cleaner emissions.
- The piston skirt has been coated with resin to reduce friction and improve initial seizure resistance.
- The cooling channel has been optimized in order to improve the cooling efficiency of the piston.
- The top ring groove uses an Ni-resist cast iron ring carrier to improve wear resistance.
- A PVD (Physical Vapor Deposition) coating has been applied to the surface of the No.1 compression ring, in order to improve its wear resistance.
- The piston skirt portion has been coated with resin to reduce the friction loss.



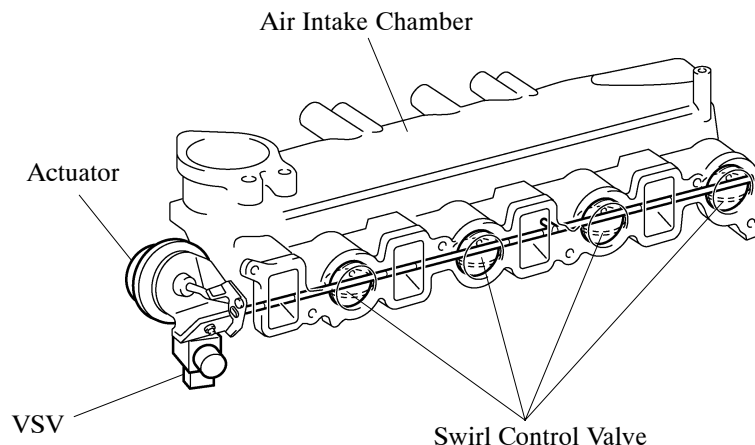
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3. Intake and Exhaust System

Intake Manifold

- A vacuum-actuated swirl control valve is provided in one of the two intake ports provided for each cylinder. A swirl control valve consists of a stainless steel shaft and an actuator, which are integrated in the valve. For details on swirl control valve control, see page EG-181.
- The following changes have been made in order to optimize EGR performance:
 - The bottom surface inside the air intake chamber has been made flat.
 - The capacity of the air intake chamber has been increased.
 - The position of the intake inlet has been changed.



276PD20