



## Spears/CP Standard Features

**Anti-Detonation Grooves** (Contact Reduction Grooves) are grooves that protect the top ring by disrupting detonation waves. Also known as contact reduction grooves, these grooves limit the piston/cylinder contact during high temperature and RPM.

**Accumulator Groove** is a V shaped groove machined in the 2nd ring land to collect excess blow-by between the top and second ring. This groove collects residual gasses during combustion and alleviates top ring flutter while increasing ring seal. **Spears/CP** groove stands for Constant Pressure Groove. This groove works as a channel on the lower part of the top land that equalizes pressure to the back of the top ring groove.

When used in combination with lateral gas ports, the CP groove helps keep gas ports clear of carbon build up. In addition, the CP groove prevents the top land from smudging into the top ring if the land rubs the cylinder bore.

**Double Pin** Oilers in conjunction with our dual fed reservoir add twice the amount of oil from the cylinder wall to the wrist pin.

**X-Forgings** are designed to minimize friction and reduce weight without compromising strength. With the use of bracing and ribs, the forging is configured by adjusting the weight balance between high and low stress areas. This design enables the use of a shorter pin for added strength and weight savings.

**Radius Domes** are used to maximize quench while eliminating possible hot spots that promote detonation.

**Cam and Barrel:** Extensive research and development has been done to find the optimum skirt shape for each piston. Having the correct cam and barrel on a part promotes the following:

1. Tighter clearances
2. Less noise
3. Better ring seal
4. More power
5. Durability

Depending on the forging and application, different cam and barrel profiles are utilized for maximum performance.

Thank you,

*Gregg Spears*



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