




KOLBENSCHMIDT pistons with keystone-shaped connecting rod recess

Improved lubrication and cooling

In comparison to other manufacturers, KOLBENSCHMIDT pistons often feature a keystone-shaped connecting rod recess, despite the fact that a connecting rod with a parallel small connecting rod end is installed.

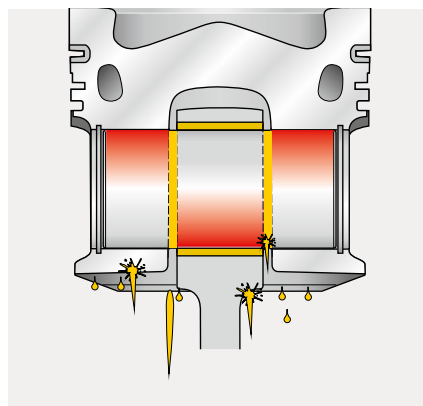
Compared to pistons with a recess for trapezoidal connecting rods, this chamfer does not run all the way to the piston crown, but rather often ends in the middle of the piston pin boss.

 **Note:**
This is not – as is often suspected – due to the shape or piston being incorrect, but is actually an intentional optimisation.

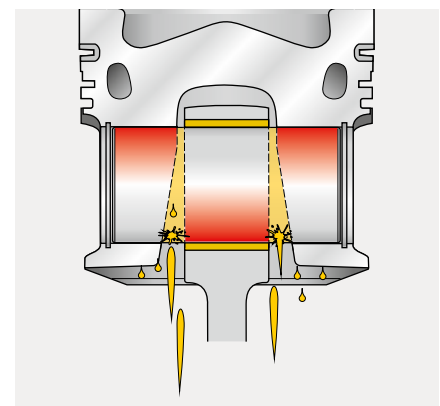
The advantages of this type of design are:

- A larger gap between the connecting rod and piston pin boss. This allows more splash oil and centrifugal oil to get to the piston pin from the crankshaft and the cooling oil nozzle.
- The greater application of oil leads to improved cooling and lubrication of the piston pin bearing at high stresses.
- The piston pin has more free space in the direction of the crankshaft (on the pressure-relieved side) to allow it to be elastically deformed.

No weakening of the piston pin boss takes place due to the chamfer design. No pressure forces are exerted onto the piston pin on the underside of the piston pin boss during combustion.



Piston with parallel connecting rod recess



Piston with keystone-shaped connecting rod recess

The surfaces on the piston pin subjected to pressure are coloured red on the diagrams for clearer comprehension.