



## Squish and Deck Height

The Squish Band or "Quench" is defined as that area between the flat of the piston and the flat of the cylinder head at top dead center (TDC). On the compression stroke, as the piston approaches TDC, the compressed mixture of fuel and air is "squished" to the remaining space of the combustion chamber where the spark plug and valves reside. The "squeezing" of the mixture creates turbulence and is expected to promote a better and more complete combustion.

Typical figures for this measurement are in the range of .040" to .045" which allows for rod stretch, carbon build-up and other variables. Pure race engines with short duration applications may reduce this figure to .025" as some builders aren't happy until the pistons "kiss" the cylinder head. At .025" when you factor in high RPM rod stretch and piston "rock" at TDC you effectively reduce squish to zero.

It's a simple fact: The closer the flat of the piston, to the flat of the combustion chamber, the more power you will make. In a race engine with all the factors considered, you practically want the two surfaces touching one another. In F1, they machine each piston individually even for spark plug relief.

Deck Height: The distance between the flat "quench" surface of the piston and the top of the bare cylinder (no head gasket). Typically an engine is set to zero deck height with the head gasket (compressed value) defining the "squish band" value. If the value is negative this indicates the piston's "quench" surface extends above the top of the bare cylinder.

Thank you for looking,

Spears Racing

# Spears

*Racing*  
Manteca, Ca.

