



POWERFORGED pistons.com

**SPEED-PRO®
POWERFORGED® PISTONS**

**TECHNICALLY ADVANCED
PIN HOLE PLACEMENT.**

In performance engines, the greatest stress occurs on the upper end of the piston pin bore. This stress concentration is one of the main reasons for fatigue failure.

In developing the new POWERFORGED® piston, Speed-Pro® engineers utilized integrated engineering and manufacturing to develop a piston with tighter tolerances and a straighter, stronger pin bore.

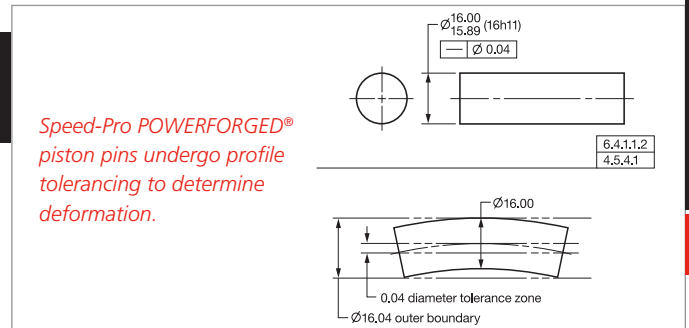
THE HEART OF THE PISTON

The piston pin and pin bore design are critical to allow the piston to perform in demanding operating conditions. During engine operation, the connecting rod is responsible for transmitting combustion power to the crankshaft. As a result, the piston pin and corresponding pin bore absorb extreme and continuous radial loads. Ideal pin and pin bore design reduces piston scuffing, allows quieter operation, and enables tighter tolerances.



ACCOMMODATING PIN DEFORMATION

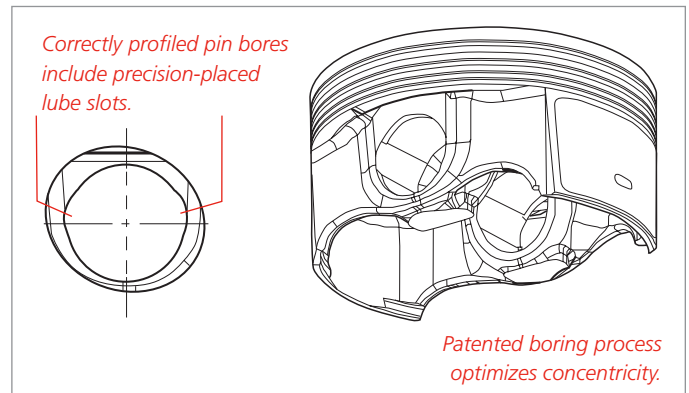
By design, the load on the piston pin causes the pin to deflect or bend, creating tremendous stress on the pin bore. This stress is magnified if the pin bore is not sized specifically to the pin itself, or if the pin bore is not profiled correctly to accommodate the bending of the pin. (This piston pin deflection can also squeeze lubricant out of the bore, resulting in excessive wear and additional heat and stress.) Speed-Pro engineers factor in these variables to create precise piston pins and pin bores that will prevent these issues.



Speed-Pro POWERFORGED® piston pins undergo profile tolerancing to determine deformation.

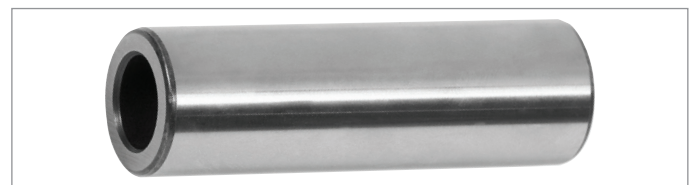
COMPUTER AIDED CONCENTRICITY

Speed-Pro POWERFORGED pistons utilize a patented process for boring its pin holes. The result is a pin bore that is straight and square to the outside piston diameter, with optimized concentricity. Through Finite Element Analysis (FEA), the pin bore is correctly profiled to accommodate piston deformation, and includes precisely located lube slots to improve lubrication during pin deflection.



PERFECTLY MATCHED PINS

Each Speed-Pro POWERFORGED piston includes a perfectly matched pin that is manufactured alongside the piston. Each piston is uniquely bored to match the corresponding pin, whether it is a floating pin or pressed pin design. In addition, each pin is perfectly finished and manufactured to the most stringent tolerances.



IMPROVED PERFORMANCE THROUGH ADVANCED TECHNOLOGY.