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Subject: Superior Crankshafts

By Keith Blockus

Superior has recently introduced its new improved replacement crankshafts for 180 HP Textron-Lycoming 360 series engines. With this product, we have created the finest, most reliable crankshaft available for the Superior XP-360. This crankshaft has undergone rigorous certification testing and has been eagerly received by the overhaul community, as well as being recognized as a major design improvement of our XP-360 engine.

The majority of the certification testing on this crankshaft was done at over 200 HP. Torsional vibration surveys, with strain gages and slip rings, were also performed insuring that there are no stresses, at any RPM range of approved operation, too severe for the crankshaft. The crankshaft was also instrumented and run for well over ten-million cycles at over 110% rated RPM, insuring that overspeed conditions will not compromise the safety of this critical component.

The crankshaft forging is made from aerospace grade SAE 4340 Vacuum-Arc-Remelt (V.A.R.) alloy steel per AMS 6414. This is an aerospace grade, tough, structural alloy with tightly controlled chemical and compositional properties. Crankpins, mains, and other wear surfaces are nitrided for high case hardness to reduce abrasion, and highly polished to reduce friction.

To reduce engine vibration, component wear, and pilot fatigue, each crankshaft is painstakingly dynamically balanced to within one-quarter ounce-inch - far beyond standard crankshaft balancing. Inside the front main oil reservoir you'll find a smooth, groove-free, plated I.D. surface that won't hold oil acids or corrode, alleviating any worries about future Lycoming-style SB 505 corrosion inspections or band-aids.

Of course, many other dimensional tolerances, surface finishes, and processes are held to the highest standards for this very important component of your engine. These crankshafts are available in small crankpin (180HP), constant-speed and fixed-pitch configurations, with additional versions coming soon, contact Superior for more information.