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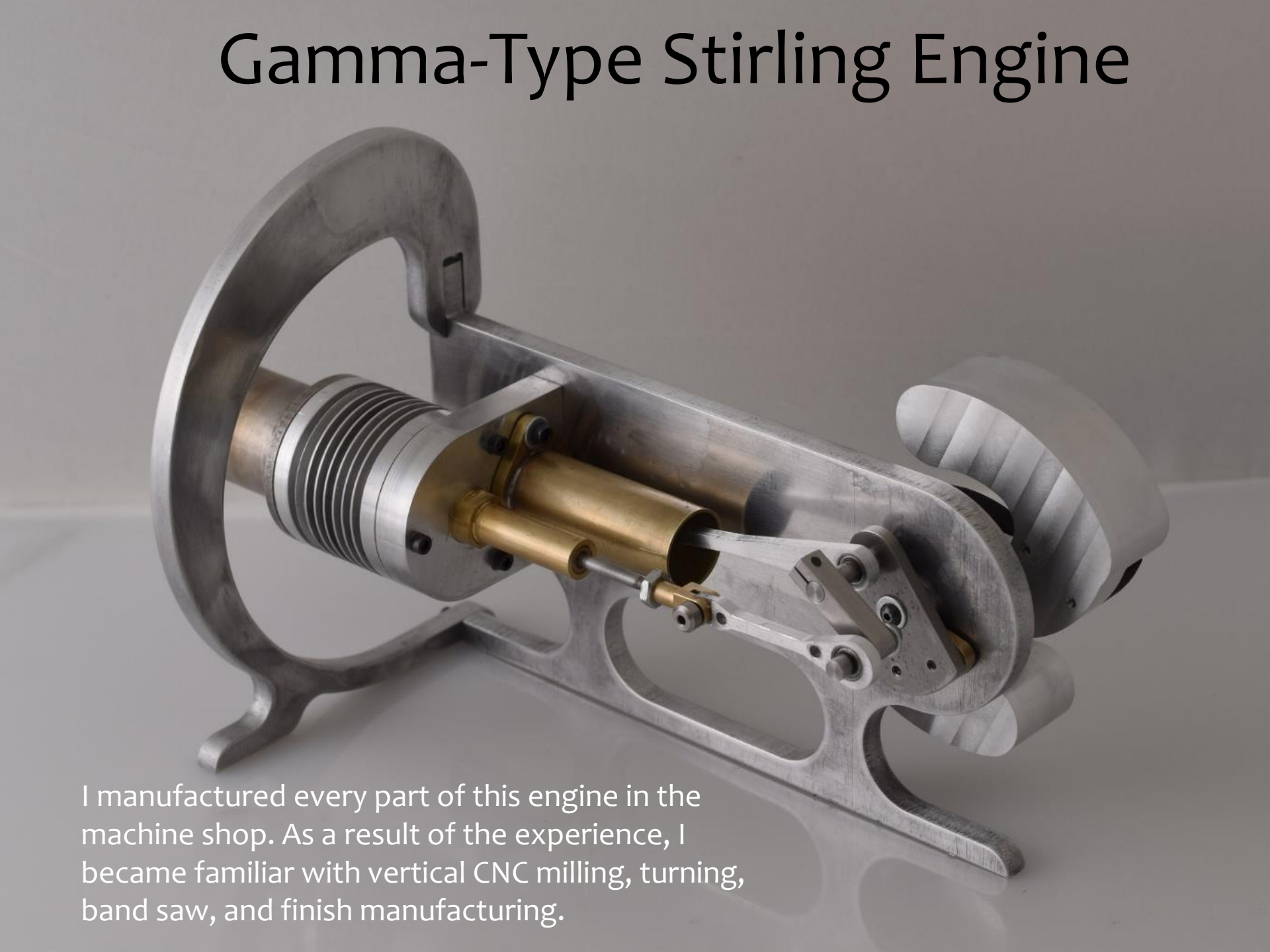
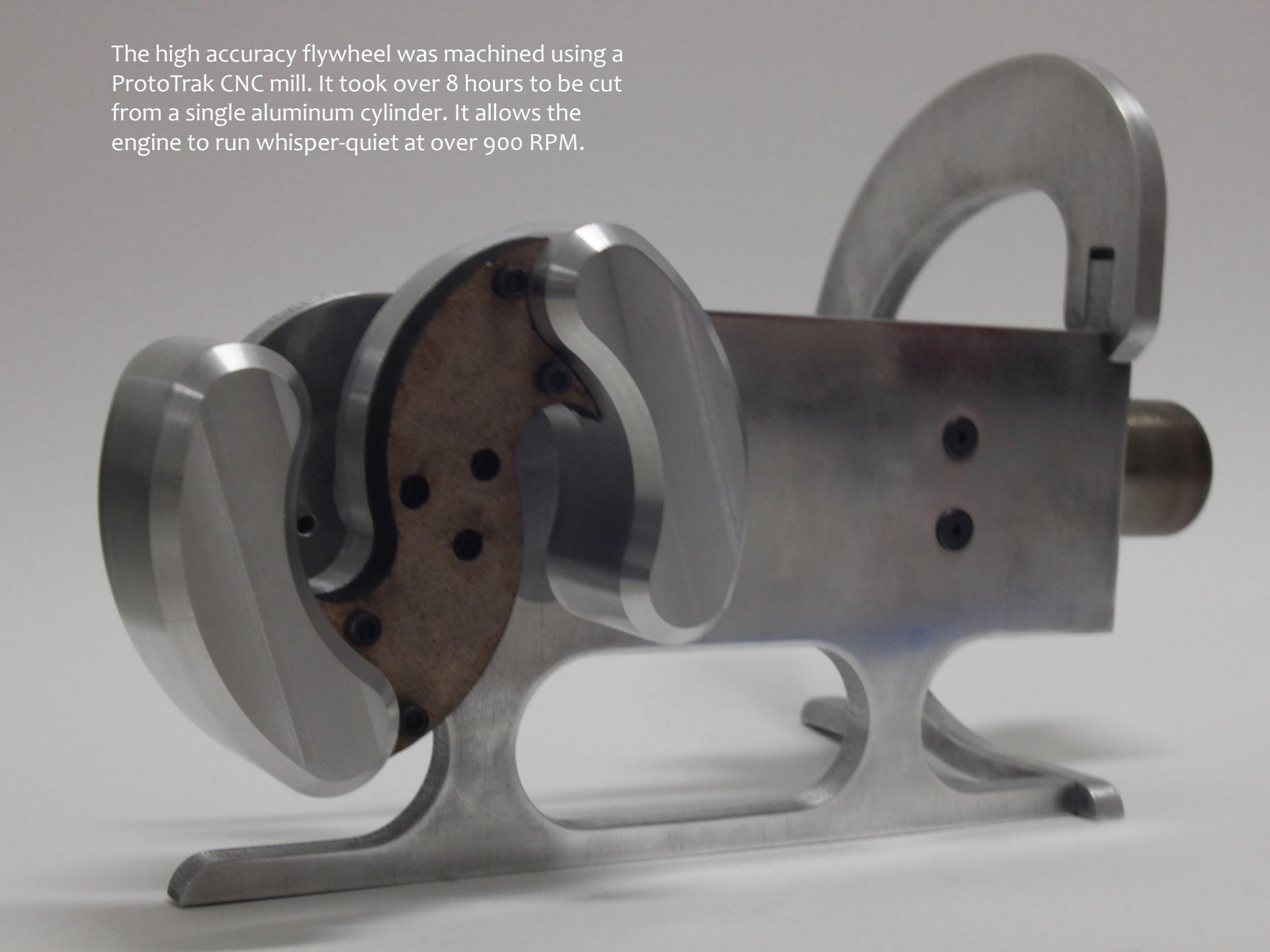
Gamma-Type Stirling Engine



I manufactured every part of this engine in the machine shop. As a result of the experience, I became familiar with vertical CNC milling, turning, band saw, and finish manufacturing.

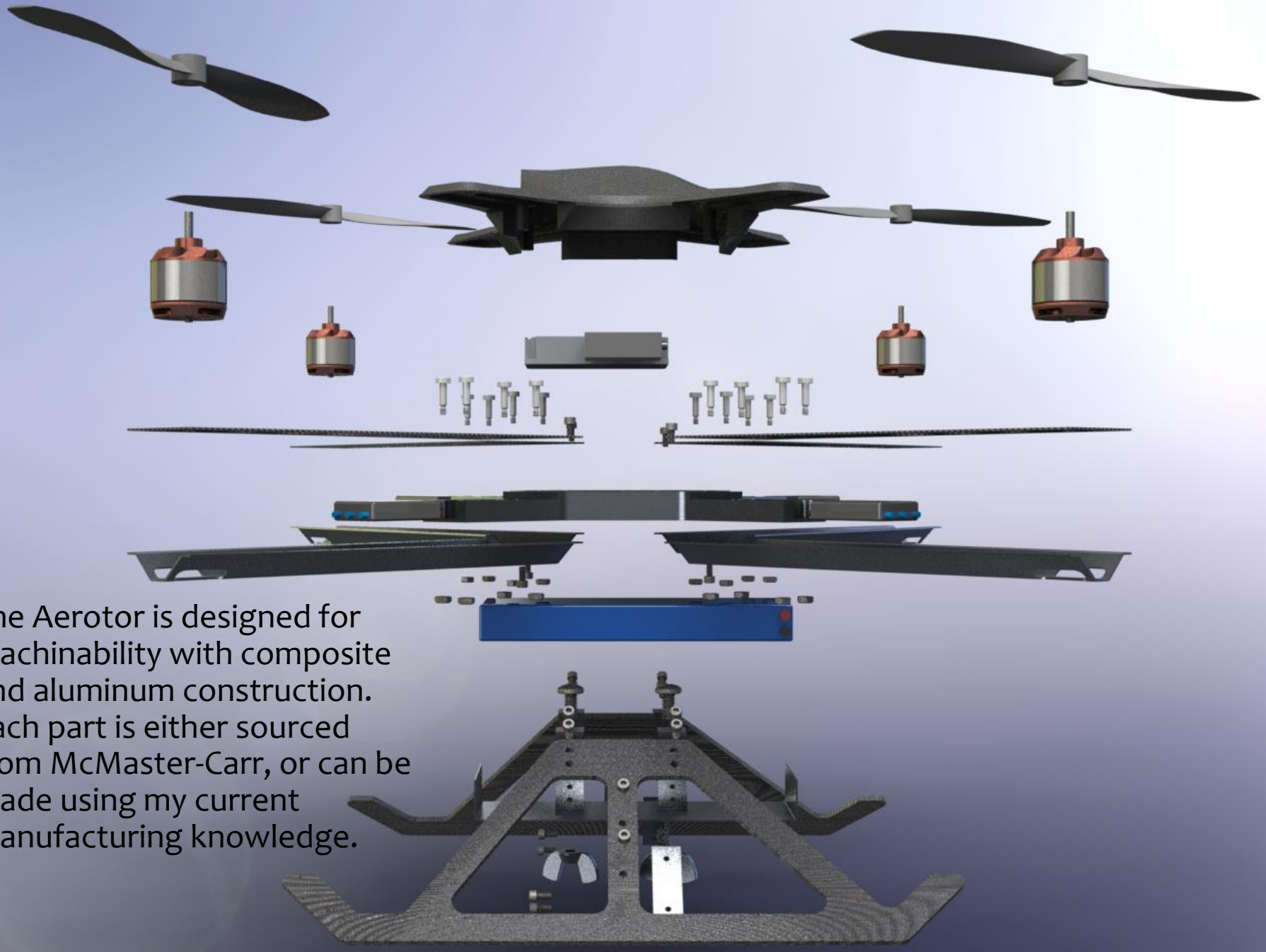
Many parts of the engine are built to tolerances under +-0.005” The piston and piston tube were made to a tolerance of +-0.001” and further lapped for a smoother fit. GD&T standards also played an important role. For instance, it was critical that the hole pattern for the heat sink match that of the mounting block.



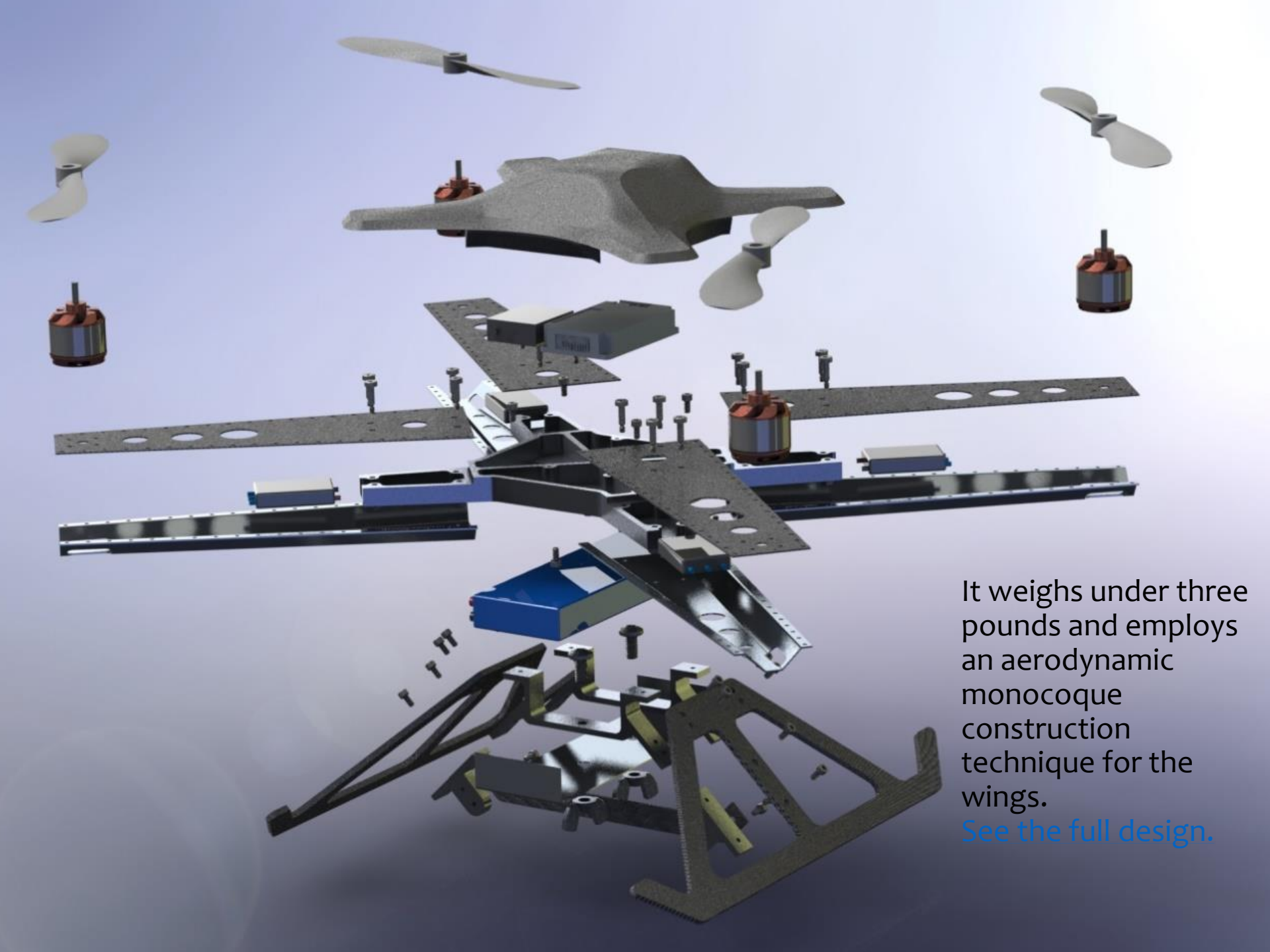
The high accuracy flywheel was machined using a ProtoTrak CNC mill. It took over 8 hours to be cut from a single aluminum cylinder. It allows the engine to run whisper-quiet at over 900 RPM.

Aerotor Quadrocopter

A concept quadrocopter, built for speed and inspired by the lines of the F-22.

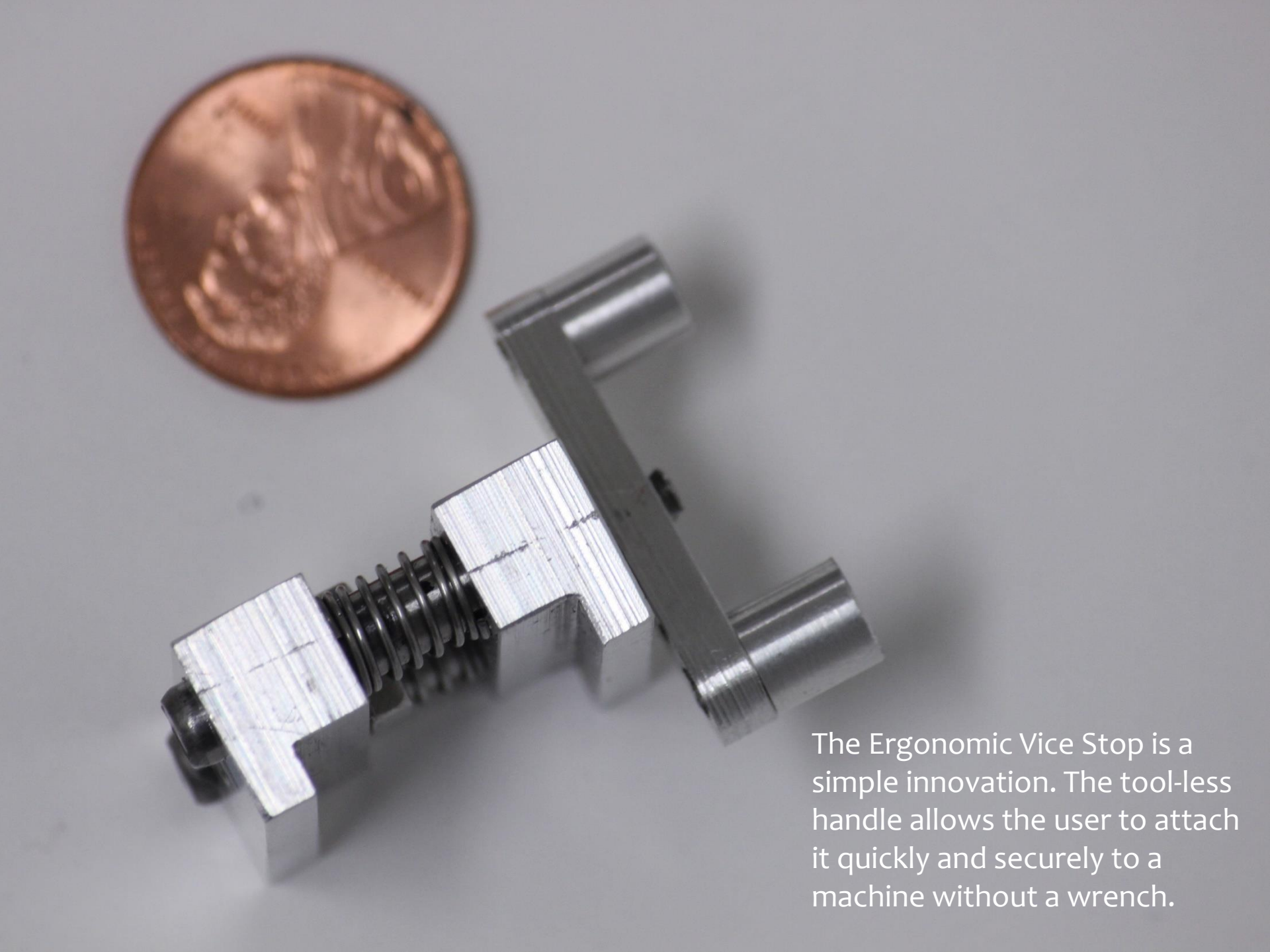


The Aerotor is designed for machinability with composite and aluminum construction. Each part is either sourced from McMaster-Carr, or can be made using my current manufacturing knowledge.



It weighs under three pounds and employs an aerodynamic monocoque construction technique for the wings.
See the full design.

Ergonomic Vice Stop



The Ergonomic Vice Stop is a simple innovation. The tool-less handle allows the user to attach it quickly and securely to a machine without a wrench.

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