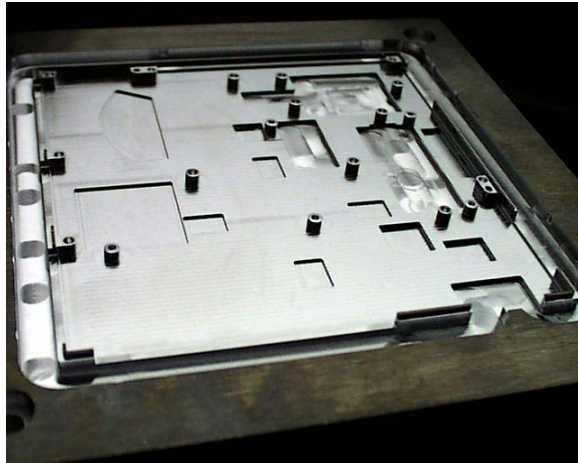




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Application Notes

Part:..... Aluminum Housing
Material: 1/2" x 7" x 7" 6061 Aluminum
Machine Used:..... M8 Raptor
Features Utilized: 2kWatt high frequency spindle,
 ATC with tool length sensor and Z Probe
Software Used:..... AutoCad and PrimCam 2D
Total Cycle Time: 17 minutes and 57 seconds



Machining Details:

Tool 1: 8mm (.315") s/f end mill at 30,000 rpm with feed rates varying from 80 i.p.m to 120 i.p.m.

Tool 2: 3mm (.118") d/f end mill at 38,000 rpm with feed rates varying from 80 i.p.m. to 240 i.p.m.

Tool 3 & 4: .100" and .070" dia. drills at 24,000 rpm with a feed rate of 40 i.p.m.

Tool 5: 1mm (.040") d/f end mill at 48,000 rpm with feed rates varying from 25 i.p.m. to 40 i.p.m.

Application Summary:

Based on the required tooling of 1/4" and less, the M8 Raptor machining system offers numerous advantages over traditional machining methods. The 60,000 RPM spindle reduced cycle time by 50%. Based on the mist coolant, burring was minimized, and no additional degreasing operations were required. A two flute 3mm end mill sweep, with a 75% step-over, achieved a smooth surface finish. This can be modified to yield desired surface finishes.

Within the standard 40" x 27" working volume of the M8, a total of 24 parts can be produced on a pallet style fixture. This allows the amortization of tool changes over 24 pieces. The cycle time can be further reduced to approximately 16 1/2 minutes per part, or 6 3/4 hours per pallet change.

The compact footprint, machining capacity, efficient power requirements, and transportability of the equipment, make the M8 Raptor a versatile machining system for dynamic industrial environments.

In conclusion: Complementing existing machining equipment, with the ability to machine efficiently with tooling of 1/4" and less, Datron high-speed machines are chosen for their capabilities and improved cycle time.