



DATRON DYNAMICS, INC.
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Application Notes

Part: Front face of enclosure
Material: 7/8" aluminum
Machine Used: M5-4750
Features Utilized: 2 kwatt spindle, tool changer and "Z" probe
Software Used: Datron macro programming language and PrimCam
Total Cycle Time: 20 minutes - 37 seconds



Machining Details:

Tool 1: .080" dia. s/f endmill at 43,000 rpm / 50 i.p.m.
Tool 2: .235" dia. s/f endmill x .6" cut at 32,000 rpm / 80 i.p.m.
Tool 3: .235" dia. s/f endmill x .875" cut at 32,000 rpm / 70 i.p.m.
Tool 4: .118" dia. s/f endmill at 40,000 rpm / 60 i.p.m.
Tool 5: 45 deg. bevel cutter at 25,000 rpm / 40 i.p.m.
Tool 6: .080" outside radius cutter at 25,000 rpm / 30 i.p.m.

Summary of the Application:

We were able to offer a complete machined part with superb surface finishes and an excellent cycle time. The high frequency spindle was a key factor in an impressive cycle time by machining the groove details, rectangular recesses and small inside radii at very high feed rates. The combination of the high rpm spindle, high relief tooling and Ethanol coolant offered a burr free part with no secondary cleaning operations required. The large working volume of the M5 will allow nine parts to be secured to the table for one production cycle of approximately 3 hours, with no or minimal operator interaction. The cycle time could also be reduced by amortizing tool change over the nine parts (6 tool changes only required instead of 54). In conclusion, this part is perfect for the Datron machine because all the strengths, benefits and features of the system are utilized.