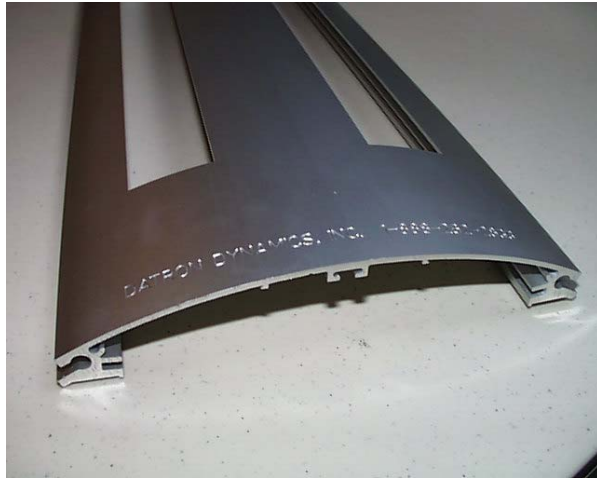




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Application Notes

Part:..... Fluorescent Lighting Fixture (two 1 1/2" x 18" holes)
Material: 48" Long Extruded Aluminum (provided by customer)
Machine Used:..... M5 - 4750 with a 2kWatt Spindle
Features Utilized: High Frequency Spindle, Z Probe & Tool Change Unit
Software Used: On-board Datron Macro Programming Language
Total Cycle Time: 3 minutes and 33 seconds (for two rectangular holes)



Machining Details:

Tool 1: 3mm (.118") high speed carbide end mill at 45,000 rpm at 100 i.p.m. feed rates for rough milling the rectangular openings

Tool 2: 1.5mm (.059") single flute end mill at 48,000 rpm at 50 i.p.m. feed rates for a finish cut and sharpening corners

The extrusion was mechanically fastened to the T-Nut table. Ethanol coolant was used. Programming time was 15 minutes.

Application Summary:

This application benefits greatly from the special features of the Datron M5-4750 high-speed machining system. The high frequency spindle provided for fast cycle times due to optimized feed rates. Eliminating secondary operations, the combination of the high frequency spindle, coolant, and tooling, yielded a high-quality part that required no de-greasing or de-burring. The large 40" x 30" work envelope allows the machining of 2 rectangular openings per set-up. The M5-4750 has room in the 40" (X) direction to mount several fixtures to accommodate various style extrusions. A "Z"-height surface probe adds unique advantages with curved surfaces. The flexibility is demonstrated by the high-quality engraving on the curved surface. The Z probe can also be used to verify extrusion tolerances prior to machining. The M5-4750 provides other unique benefits such as: low power consumption, and efficient operating costs. The 240 volt single phase, low wattage consumption offers reduced energy costs compared to other CNC equipment. The included on-board software offers many machining functions such as: drilling, rectangular and circular cut-outs or pockets, thread milling, and engraving. Eliminating the expense of a third-party Cad/Cam package, the Datron software is ideally suited for this style of application. The modular design of the M5-4750 allows for easy plug & play service to the machine. Datron Dynamics prides itself on superb customer support and service throughout all of North America.