Application Notes

DATRON DYNAMICS, INC.
454 Route 13
Phone: 603-672-8890
Fax: 603-672-8067

Part: ..... Reverse face of enclosure

Material: ..... 7/8" aluminum

Machine Used: M5 4750

Features Utilized: ..... 2 kwatt spindle, tool changer and "Z" height probe

Software Used: ..... Datron macro programming language & PrimCam

Total Cycle Time: ..... 18 minutes & 37 seconds

Machining Details:

Tool 1: .315” dia. s/f endmill at 30,000 rpm / 100 i.p.m.
Tool 2: .118” dia. s/f endmill at 40,000 rpm / 60 i.p.m.
Tool 3: 8-32 thread mill at 38,000 rpm / 30 i.p.m.

The frame was secured by mounting bolts within the inner display area not yet removed. For the final inner display machining, the exterior frame was secured by clamps. The reverse side was registered to the front side by two 1/8" locator pins.

Summary of the Application:

The reverse side of the front frame was the most demanding of the application. The Datron machine offered an impressive production time due the intricate challenges involved in the design. The small gasket groove located deep within the frame not only required a small diameter end mill but also on a long ¼” diameter shank in order to clear the inner side walls. The deep machining with small inside radii possess difficult challenges for any machining system. The undercuts (not machined on sample due to custom tooling required) also will be very demanding. The only way to efficiently machine these intricate details would be by machining at a high rpm rate. The Datron system with a 60,000 rpm spindle made these formidable barriers very straight forward machining.