



**DATRON DYNAMICS, INC.**  
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## Application Notes

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**Part:** ..... Polishing belt for the semi-conductor industry  
**Material:** ..... 0.074" Polyurethane  
**Machine Used:** ..... M5 4750  
**Features Utilized:** ..... 600 Watt H/F Spindle, Z Compensation Probe and Tool Length Sensor  
**Software Used:** ..... Datron Macro Programming Language  
**Total Cycle Time:** ..... 178 seconds machining (13" x 20 1/2" area) / 98 seconds for Z



**Machining Details:**  
 1/8" double flute ball nose end mill with right hand spiral  
 30,000 rpm at 250 i.p.m.  
 depth of cut .023" in one pass (no finish cut)

Correction measuring

### Summary of the Application:

We are able to offer an excellent turn-key solution for the machining of the polyurethane belt. The large machining surface allows two belts to be machined simultaneously reducing operator interface. The high frequency spindle offers a high-speed feed rate, resulting in reduced cycle time. The 4<sup>th</sup> rotary axis allows for the potential of rotating the belts, after machining each section, without any operator interfacing. The Z Compensation Probe ensures machining of precise groove depths, regardless of any material thickness variances. The Tool Length Sensor enables quick measurement of a new tool, and reduces the chance of error due to an incorrect tool length preset. In conclusion, the many unique features of the Datron M5 system are utilized to the fullest in this application. Datron Dynamics locality to the customer, the ability to offer a turn-key solution and superb customer service, will offer seamless implementation and support of this project.