

CNC Machine Design for Maximized Uptime

Purpose

As a machine manufacturer, DATRON Dynamics understands the importance of minimized downtime in a manufacturing environment, and while we focus on building machines that simply do not break, we can never completely prevent this from happening. That being the case, we have spent considerable time and resources developing a response program designed to get our customer's machines up and running in the shortest time-period possible.

The concept

Through 35 years of experience in the design and service of CNC machines, DATRON has found that our success is based on the partnerships that we form with our customers — and empowering them with knowledge of our equipment helps them to use it more efficiently. With that empowerment in mind, our R&D group set out to design machines that feature accessible mechanics and electronics and facilitate the easy replacement or exchange of parts by the operator. They also developed operational parameters whereby the machine actually protects itself. For example, it will not permit the operator from driving an axis beyond the end of the ballscrew. Or, in the event that an operator drove a tool into the bed, the tool would break, but the machine shuts off, preventing further damage to the bed or valuable blanks. Further, they developed a Microsoft® Windows®-based control that is familiar to the user and automatically re-calibrates the machine following part exchange to guarantee accuracy and repeatability. With an overall machine design where service requires a basic skill level equivalent to turning a screwdriver, our customers are able to replace parts themselves in a time frame that is faster than any service person could even get on site. Here's how it works:

It all starts in Germany

Have you ever gotten behind the wheel of a German-made automobile and noticed that things just make sense? The precision of the doors make that special sound when you shut them behind you. All the instruments are in the right place. And the motor just hums. That's because German engineering is based on due diligence — solving problems before they arise. At DATRON we look down the road to gain a firm understanding of exactly how our equipment will be used and to provide our customers with everything they could possibly need to make their job easier. This includes everything from precisely made components that are easy to swap to exclusive use of low voltage that poses no risk during the replacement of those components. The majority of our parts can be swapped within 30 minutes.

Further preparation on the home front

Right here in North America, we troubleshoot with a customer by phone to diagnose their needs and determine if the issue can be solved immediately or if part shipment is required. Our inventory is loaded with replacement parts that can be shipped to arrive at the customer's site by 10AM the following day.

Tackling service issues head-on

In the case of service issues, we've found that 90% of the time problems can be solved over the phone within an hour — in many cases without any exchange of parts. By leveraging the power of our Microsoft® Windows®-based controller, with a push of a button DATRON machines perform auto diagnostics and produce emailable Anomaly Reports that show machine status and recall any errors that may have led to the issue. This helps us to swiftly diagnose the problem and, if necessary, get a spare part out the door and delivered to our customer on the next business day. Then, by use of phone, fax or email, our skilled technicians walk the operator through part replacement. In some cases, we direct operators to our online customer extranet to view diagrams or photos that aid them during our instruction. Once the part is replaced, the operator simply reboots, the machine performs an automatic re-calibration and our customer's production resumes.

A comparative contrast

Many of DATRON's competitors are structured to derive substantial portions of their overall revenue from on-going service of their equipment. A spindle replacement for example, requires a visit from a service technician to swap the part and re-calibrate the machine. With the DATRON methodology, we get our customers up and running quicker by working synergistically with them to solve problems. From our standpoint, this improves our profitability by minimizing the overhead associated with field technicians, maintaining a satisfied customer base (as a result of minimizing downtime) and ultimately promoting additional machine sales. From the a customer's standpoint, the DATRON method builds knowledge, independence, expertise, pride and efficiency within their workforce.

Wrapping it up

At DATRON we take great pride in the superior engineering that provides customers with durable, reliable machines and makes them both efficient and profitable. In working hand-in-hand with our customers in the event of a service issue, we provide qualified expertise and goal-oriented help that gets them up and running in the shortest possible time. If there's a way to do this faster, we simply haven't found it.