

# IT DOESN'T TAKE A ROCKET SCIENTIST TO UNDERSTAND THE VALUE OF REMOTE DIAGNOSTICS

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*PC-based controls allow remote-access troubleshooting of shop floor assets to reduce downtime and cut costs.*

One of the most notable early applications of remote diagnostic technology is the Apollo space program, where NASA technicians were able to gain access to the controls and systems of spacecraft miles above the earth. Today, remote-access is used in a wide range of earthbound applications including auto racing diagnostics, "virtual" business meetings, medical procedures, and personal computer or cable television repairs. Remote diagnostics are also a growing trend in manufacturing, as the advent of PC-based controls not only boosts the accuracy and productivity of machine tools, but also makes them immediately accessible to service and maintenance technicians from afar. Increasing globalization and complexity of machinery and software are driving the need for remote diagnostics, as these Internet-based solutions connect technicians directly to a customer's networked control, cutting the distance and cost of access to experienced engineering personnel.

Uptime is the key to productivity, and when a machine tool goes down getting it back online as quickly as possible is paramount. Remote access allows for quick diagnosis of a problem and helps identify the corrective action needed to fix it. It can also be used to improve performance or prevent a problem from occurring in the first place. Remote access allows service techs to see a machine's control exactly as the operator sees it, and then investigate, troubleshoot and often remedy the customer's issue without a service visit. Downtime is shortened considerably for the customer, while the machine builder eliminates travel costs, and is able to use valuable service technician time more efficiently.

Remote diagnostics also play a role in predictive maintenance, as well as machine reliability and availability. Data is collected and

used to analyze and detect trends by comparing it with known or expected behavior data. After a performance degradation is detected, the failure moment can be predicted by extrapolation and planned maintenance is executed, or replacement parts ordered, in time to prevent a failure.



Results of our remote diagnostics program at Cincinnati Incorporated have shown that approximately 80 percent of the service issues we receive, most of which are programming errors, can be corrected remotely. Using remote access, we have helped customers as far away as Saudi Arabia resolve machine issues and resume operations in hours, versus days. In the rare instance the problem cannot be solved remotely, having remote access to the machine allows the service team to get a

"preview" of the issue and then dispatch a service technician with the correct parts.

While customers are demanding faster response times, some may be reluctant to provide access to their machine controls. These concerns are alleviated with the use of passwords and login numbers that allow the customer to control access. Shops with older machines can also take advantage of remote diagnostics via control upgrades. A new PC-based control can generate a quick ROI by giving reliable, "vintage model" press brakes, shears or other workhorse machine tools a productivity boost, with the added benefit of remote diagnostics, extending the life of the machine.

As technology and communication methods continue to evolve, remote diagnostics are likely to play a greater role in the monitoring and troubleshooting of machine tools. Remote diagnostics cannot eliminate on-location service completely, but they just might be "mission critical" someday, just like the astronauts.