Two simple additions are the beginning of increased uptime with standard grinders

The latest grinding machines often feature technological enhancements to increase productivity, but more manufacturers are finding that upgrading, rebuilding or remanufacturing existing but technologically obsolescent grinders can achieve the same objective at a lower cost.

Variable speed spindle drives can be installed and programmed in one day or less. The productivity advantage of maintaining a constant SFPM (Surface Feet Per Minute) is magnified when a shop has more control over the grinding wheel's speed. Being able to slow down the spindle speed when roughing or increasing it when sizing and finishing isn't an option, it's a necessity. Another huge advantage is allowing grinding wheels the ability to perform in any situation by being freed of predetermined RPM settings.

Coherent-jet coolant nozzles

Variable Speed Spindle Drive

Coherent-jet coolant nozzles to improve productivity by at least 20 percent. These nozzles enable shops to incorporate coolant systems that offer higher nozzle pressures. This type of nozzle enable shops to apply high-tech coolants, such as Picocool 5254 nonpetroleum synthetic coolant. To use coherent-jet nozzles, the grinding machine needs to be enclosed, and then when coolant contacts the wheel at the same speed as the wheel, it keeps the wheel surface clean and increases chip clearance.

To summarize these two add-on's can be done with relative ease as well as nominal cost. Payback starts with the very first parts that come off the machine. Going past these upgrades, any and all of the rest on the next page can be integrated to enhance performance.

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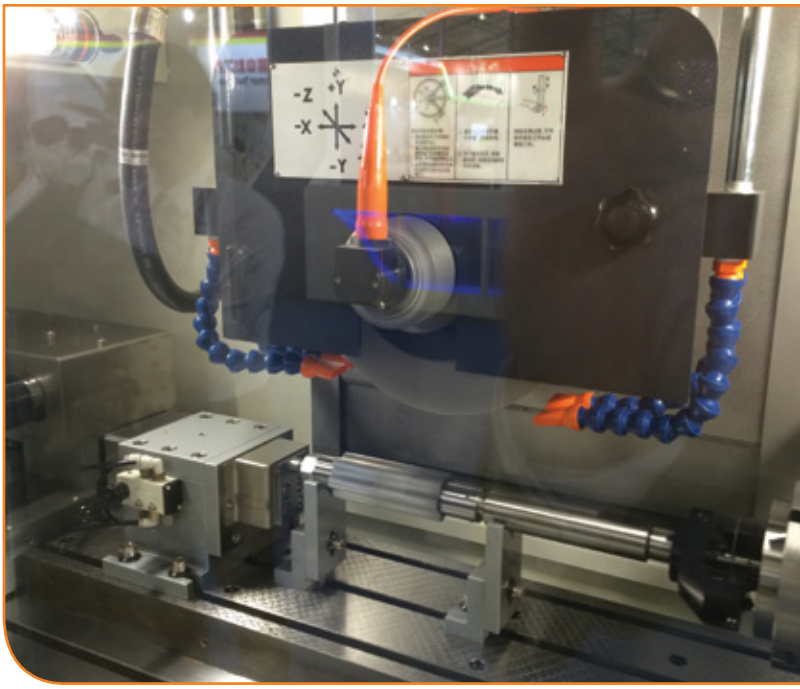
As manufacturing constantly advances, CNC controls have gone from an expensive and difficult to learn technology to a virtual requirement for remaining competitive in the manufacturing marketplace.

Sony digital readout with Magna scale to a precision grinding machine to provide a quick visual reference to dimensions and tolerances, which reduces labor hours.

Reduce grinding time for low-rms surface finish applications with a rare-earth magnetic coolant filtration system, which permits use of productivity-enhancing hybridmetal-bond superabrasive grinding wheels. These wheels have fine mesh particles that require extremely clean coolant to be applied at high pressure.

Install a heat exchanger or refrigeration system in the coolant tank to stabilize the parts being ground and to lower grinding time. At 68 degrees, the coolant helps control part expansion to achieve more consistent size control during in-process gaging.

Use a dynamic balancing system with a precision grinding spindle, so the wheel is always in balance. As ceramic and conventional abrasive grinding wheels wear and become smaller, they can go out of balance. For productivity's sake, don't let them.



Dynamic Balancing System

Stay competitive by installing a simple positioning robot. These are getting simpler to program, are incredibly precise and do not call in sick.

Keeping old precision grinding equipment in operation for as long as possible is sensible and prudent, but failing to bring it up to contemporary standards is like leaving money on the shop floor. Retrofitting is still about a third the cost of new.

Photo courtesy of Balance Systems

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