

Repair and Maintenance Tips

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parts," said Gilman CEO Chris Hetzer. "Other things can be an increase in temperature, an increase in vibration or if you notice any unusual noise."

If any of these issues are noticed in spindles, the company is able to diagnose the problem through conversations about the issues as well as analysis of the part. "Gilman is able to repair any slide, restoring its quality and efficiency," said the spokesperson.

"Our job is to make a spindle look and operate like new when it leaves this plant," said Hetzer.

There are some basic practices to consider while using a machine to help with spindle longevity. "First of all, avoid crashes," said Hetzer. "Spindles crashing into fixtures and parts is not a good idea. The second thing is, do not allow chips to accumulate near the end of the spindle. If you get contamination inside the bearings, that will lower your life. Have good coolant control; make sure you are not splashing directly on the ceiling areas of the spindle. Last but not least, use quality tooling. If you do not use quality tooling, you will develop vibrations in the spindle that will damage the bearings."

The company offers six-month warranties on all spindle repairs. New spindles built by Gilman come with a one-year warranty. In special cases, two- to three-year warranties are offered, depending on the application.

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include Parasolid Converter and Verify machining simulation software," said a company spokesperson. "The former allows users to generate ProtoTRAK programs quickly and easily from 3D CAD Parasolid files. The latter enables users to run and verify their ProtoTRAK programs prior to cutting chips which results in lower scrap and rework costs."

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Single Board CNC Controller

The Centroid Oak board is a complete CNC control contained in one printed circuit board.

According to the company, Oak based CNC systems can take advantage of widely available price competitive AC brushless motors and drives. Designed for both new machinery installations and retrofit upgrade applications, the 12" x 8" Oak board is compact and contains an integrated DSP motion controller (MPU11), a CNC programmable logic controller (PLC) with nine fused relay outputs, along with 16 inputs, plug and play cable

connections for a variety of AC brushless servo drives, operator control panel connection, MPG (operator handwheel) connection, digitizing and tool touch off probe connection.

Preconfigured PLC programs and operator control panels for common CNC machine tools are standard and customizable for specialty CNC machines. The new Oak CNC controller communicates with the Windows based (7 or 8) CNC PC via Ethernet connection. This allows the Oak board to be mounted close to the servo drives, eliminating long runs of

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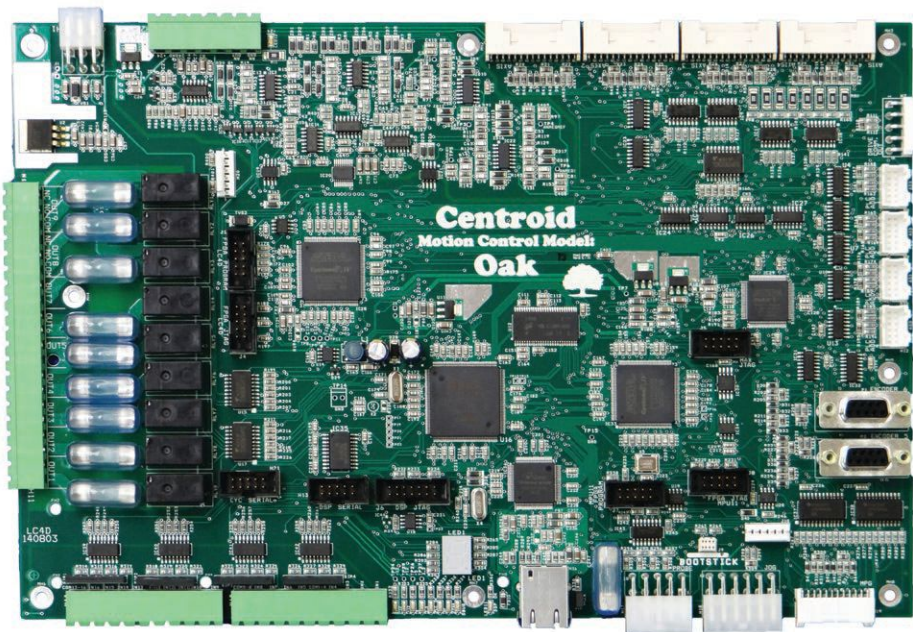
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encoder cable—decreasing cost while increasing reliability, according to the company.

On a recent retrofit application on a 1999 MSC Vectrax CNC mill, the single Oak board replaced five different printed circuit boards from the original control, along with a lot of cabling, wires and power supplies. The existing servo drives and servo motors were retained and the new Oak system provided a performance boost in several areas. Smoother, faster machine tool motion was achieved while providing the owner with a modern, easy-to-use CNC interface and straightforward windows networking and file transfer. All of the older G-code and Intercon (Centroid's conversational programming software) programs were retained and reused. This machine is now ready for another 15 years of service.

Oak can be paired with a Centroid M400 CNC operators console or with a user supplied standard VGA LCD (any size) and USB keyboard and mouse. The new M400 console now features as standard equipment a 15" touchscreen color LCD display. The console is also thinner and lighter than previous versions. Worldwide on-site CNC installation by certified Centroid installers are available, along with DIY CNC control kits. In addition to retrofit upgrades, new CNC machine tools are available with the Oak CNC controller.

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Enhanced In-House Repair Capabilities

BIG Kaiser Precision Tooling has made dramatic improvements to BIG Profit Maker, KAISER and Unilock repair services at its Illinois facility. Changes include bringing certain services in-house that until recently had to be performed overseas, significant price reductions, eliminating charges for some commodity parts and the addition of same-day services. According to the company, adjustments like these make it faster, more cost effective and easier to have mission-critical tooling repaired and maintained.

"Sending tools to us is much more convenient and cost effective for our customers," said Shawn Stevens, Repair Technician.

"For example, BIG Daishowa Profit Maker tools like Angle Heads, if the unit is crashed, broken, snapped or sheared off, we can fully fix it here now and in one day if need be. You can pretty much tear the thing in half and it will be repairable. With the added cost savings of our newly reduced repair costs, customers are spending less



for the same service."

BIG Profit Maker Repair Improvements

- Repair prices have been decreased an average of 40% to encourage customers to have repairs and periodic maintenance performed by a certified technician with the appropriate tooling

- No charge for commodity parts like cap screws, set screws and o-rings
- Same-day service available upon request
- Repairs are tested to assure runout accuracy, decibels and heat generation are within spec before being sent back to the customer
- Trade-in discounts and free inspection service of existing units are also available.

KAISER Repair Improvements

- Repairs to Series 310 EWN finish heads now done in the USA, whereas only Series 112 & 317 EWN finish heads were previously fixed here
- Typical KAISER repair can be done in

less than one week

- Loaner heads are available during repair.

Unilock Repair Improvements

- Until recently, Unilock repairs had to be sent back to Austria, but now most repairs can be done at the Illinois facility
- Repairs can be done in two days as long as the parts are available in stock.

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Inspecting Workholding During Summer Shutdown



To ensure a proper operational fixture, Royal Machine & Tool recommends the dismantling of fixtures periodically in order to clean and inspect for wear or damage.

"At Royal Machine & Tool, we think each summer shutdown period is an excellent time for a shop to inspect tooling and fixtures and see what has to be repaired or replaced, thus eliminating future and costly downtimes," said a company spokesperson. "After inspection, shop employees should make sure their work areas are set up efficiently, with tools and fixtures organized for quick and easy access." The company also recommends cleaning lighting, painting floors, cleaning out all machines coolant tanks and replacing filters.

"Most importantly, summer is the time to establish a workholding checklist to see what needs to be done to eliminate any possible interruptions and downtime in a daily shop schedule," said the spokesperson. For chucks and workholding fixtures, the company recommends taking the following inspection procedures to ensure they are in good operating condition.

- Inspect for clean mounting surfaces to ensure proper machine fit
- Inspect for any obvious cracks or failure points requiring immediate replacing, such as cracked chuck jaws or actuators
- Inspect chucks for excessive wear
- Inspect for chip contamination, making sure chuck is properly lubed
- Inspect fixtures for clearing of chips and clean mounting surfaces

- Inspect for clamps and locators damage
- Inspect for hydraulic fixtures and chucks leaks; seals may also need replacing.

The company offers a free evaluation of chucks and /or fixtures performed at its facility. "The advantage is that you have an evaluation by a professional expert (and replacement cost estimate if needed), and it does not interfere with operation," said the spokesperson. "Often customers wait until the last minute to order and do not realize that on many occasions spare parts are not readily available or that plating and welding may have to be done—and may even have to be outsourced. All of this takes time and may delay future delivery plans and interrupt planned and scheduled workflow. Royal Machine is ready throughout the summer to provide assistance when needed.

"Taking the time now to review your workholding checklist will lead to a more positive working day tomorrow and an enjoyable summer season."

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