



Halifax Numerical Controls improves productivity and expands service offering with Renishaw's calibration solutions



Background:

In the highly competitive world of machine tool manufacturing, companies need to work as efficiently as possible. Identifying and exploring ways to use technology to save time and improve performance are essential to maintaining a competitive edge – and keeping it sharp.



Challenge:

Using outdated methods and equipment to manually align beds in their automatic grinding machines was proving a labor intensive, inaccurate, and therefore costly exercise for Halifax Numerical Controls (HNC) of Yorkshire, UK. The challenge was to find a way to achieve tighter tolerances more efficiently and effectively.



Solution:

HNC turned to Renishaw's high-performance calibration products to save hours of labour, improve accuracy and reliability and, in the process, create exciting opportunities to develop a new revenue stream for their business.



The XK10 alignment laser system just speeds the whole process up, makes it more reliable, and there's a full set of alignment results recorded for each of our machines

HNC (UK)





Halifax Numerical Controls (HNC), founded in 1998, is a world-leader in advanced rubber and composite roll manufacturing machinery. Its broad product range spans everything from machines for small precision and rollers for the print industry to very large diameter conveyor rollers used in mining and quarrying.

Initially, HNC focused on machine retrofits, servicing, and custom builds. However, in 2009, growing competition from overseas manufacturers spurred the company to find a new niche in the rubber-roller market.

Since then, the company has radically transformed the roll-production industry by combining cutting-edge technology with its extensive experience of machine-tool engineering. Today, HNC's range of automatic rubber roll grinders and groovers are the most advanced machines of their type in the world, with 80% of its machines destined for export from their UK factory.

A critical aspect of building HNC's grinding machines is the accurate alignment of machine beds. Due to a distinct lack of specialist equipment for this purpose, HNC had previously used a telescope and fishing line to measure a bed's straightness. Not only was this time consuming as readings had to be manually recorded and plotted on graph paper. In addition, the accuracy of measurements was also prone to discrepancies depending on which operator was conducting the measurements and other factors such as temperature.

HNC recognised they needed a solution that could quickly and easily measure and record straightness, flatness, and alignment of axes to improve the accuracy and efficiency of their machine building process. Mike Diskin, Managing Director of HNC, explains:

“ The old process was nothing short of archaic. We were asking two guys to get a rail within 12 microns, yet the difference between both could be as much as five microns. And anyone opening the workshop door and letting the breeze in would be politely asked to “Shut that door!” as the sudden drop in temperature would often change the readings again.

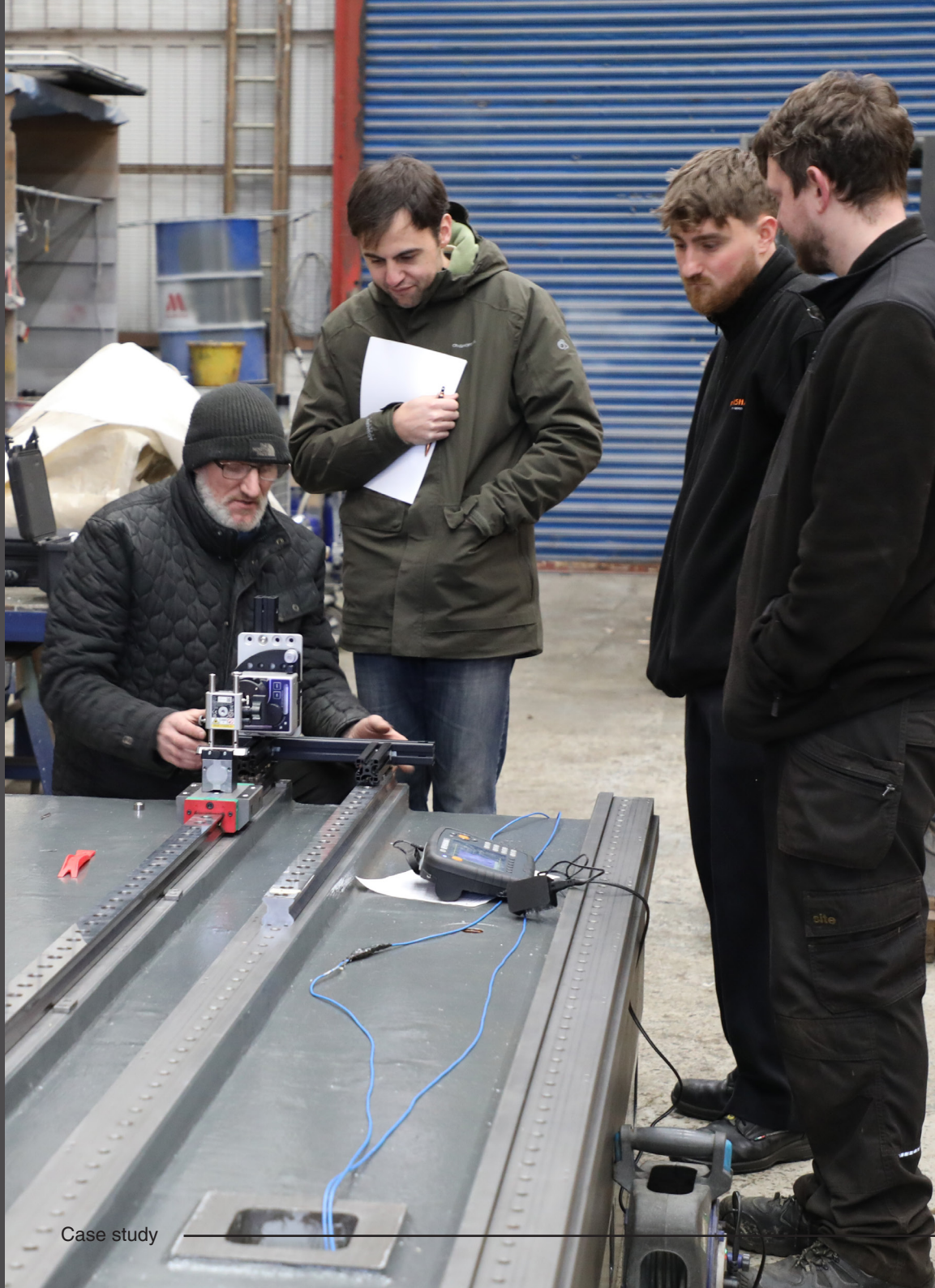
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Solution

Halifax Numerical Controls (UK)



Case study

Building on a long-standing relationship with Renishaw dating back to the 1980s, Mike knew the company had an outstanding reputation for creating high-quality manufacturing systems and software. After meeting with a Renishaw expert at MACH 2022 who explained a potential solution, HNC invested in a suite of Renishaw calibration products.

- First was the XK10 alignment laser system to accurately record straightness, flatness, squareness, and other machine-tool alignment parameters to reduce machine assembly time and optimise overall performance.
- Second was the XL-80 laser interferometer system – a lightweight, modern upgrade to HNC's existing Renishaw ML10 laser system, which offered high-performance measurement and calibration for motion systems.
- And third was the QC20 ballbar. This upgrade to their Renishaw QC10 ballbar, provides wireless connectivity and, among other things, offers quick, simple, and effective verification of machine-tool performance.



The XK10 alignment laser system has been instrumental in streamlining HNC's machine calibration process. "Before we started using the XK10 alignment laser it used to take approximately four hours to take a set of readings with the telescope and manually plot the graph," notes Mike Diskin. "Now we can take a set of readings in approximately 20 minutes and print out the graph."

Beyond saving time, the Renishaw tools enable real-time adjustments and more proactive maintenance. The QC20 ballbar, for instance, provides diagnostic insights for preventative servicing. "If you do it regularly on a monthly basis, you can predict in six months' time, for example, that this ball screw might need replacing," Mike Diskin notes. "It is very good."

HNC took advantage of on-site training from Renishaw to get up and running quickly. And with the equipment being modular and portable, the company now plans to offer alignment and calibration services to other manufacturers, unlocking a new revenue stream.



Results

Renishaw's solutions, particularly the XK10 alignment laser system, have significantly and positively impacted HNC. The company has dramatically reduced the time required for machine alignments from four hours to just 20 minutes. This has allowed HNC to produce machines more quickly and generate a full set of recorded alignment results for each machine.

HNC's new capabilities have also created new opportunities to expand their service offering. "We have plans in the near future to provide this service to our customers," says Mike Diskin, "with the intention of setting up another arm to the business."

HNC's customers clearly benefit from these improvements. Not only are machines being manufactured and delivered faster, but HNC will now be able to quickly diagnose alignment issues on their customers' existing machines as well.

By investing in Renishaw's advanced measuring solutions, HNC has transformed its machine alignment processes, saving time, improving accuracy, and unlocking new business opportunities. In fact, the positive impact the new tools have had on HNC perfectly illustrates the power of precision measurement in achieving manufacturing excellence.



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The impact was immediate and profound. Before, calibrating a bed took a good half-day to set it up. Now we can do it in 15 minutes, and in another five minutes you have recorded and plotted a set of readings. You do not even have to graph it out, and you can do it in real-time if you want. So, what took the best part of a morning now takes 20 minutes. It just speeds the whole process up, makes it more reliable, and there's a full set of alignment results recorded for each of our machines.

Mike Diskin, Managing Director of HNC (UK)

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