

## ACHIEVING THE IMPOSSIBLE

The challenge of delivering assured repeatable accuracy within a high precision engineering environment is one that few companies would take on – and even more so when the accuracy levels now demanded are below 1 micron. But System 3R has built on their unrivalled reputation in providing these solutions and has now introduced their new MacroNano Technology that achieves this sub-micron accuracy level.

Their unique referencing elements and workholding transference systems have become the industry benchmark over the past 40 years where conventional machining has driven the accuracy parameters down to the 2 micron level. Now, these same market-leading principles in design and manufacture have been employed by System 3R to produce a totally compatible chuck and pallet system that confidently operates at these finite sub-micron tolerances.

In recent tests by the world-renowned Fraunhofer Institute for Production Technology IPT in Aachen, Germany in ultraprecision machining of workpieces, initial measurements showed repeatability and system accuracy 'well below 1 micron'. The best observed values were as low as 0.1micron!

Today, nanotechnology is used across a wide range of industries including medical devices, clocks & watches, scientific instruments, optics, electronics, defence, aerospace and automotive.

Such high precision engineering to achieve these tolerances requires a very rigid coupling on the machine table – especially one that is not affected by the machine's frequency and vibration. Utilising their innovative VDP (vibration damped palletisation) technology, System 3R have built-in this vital attribute into the MacroNano pallets.

MacroNano chucks lock in the pallets carrying the workpieces on to the machine table and the workpiece is transferred from one production process to another on the pallet – thus the sub-micron accuracy levels are maintained. This mechanical interface between machine table, workpiece, machine spindle and tool is constant whether milling, grinding, turning or in an EDM machine.

So, whether producing 'one-offs', in small-scale serial production or in batch production, the accuracy levels will remain the same and are confidently reproducible by using the proven zero-point referencing from System 3R.

Tel: 01844 274455 Fax: 01844 348800

Email: [info@system3r.co.uk](mailto:info@system3r.co.uk)

Web: [www.system3r.com](http://www.system3r.com)

## THREE-IN-ONE

With the Mando Adapt and Jaw Adapt system, companies can quickly and effectively transform a standard Hainbuch collet chuck into a mandrel for internal workpiece fixturing or into a large capacity jaw chuck.

Award-winning workholding specialist Leader Chuck Systems offers these two exciting new products that add an unrivalled level of flexibility to lathe workholding, Mando Adapt and Jaw Adapt can quickly and effectively transform a standard Hainbuch collet chuck into a mandrel for internal workpiece fixturing (MandoAdapt), or into a jaw chuck (JawAdapt) that enables larger workpieces, up to almost double the diameter, to be held securely by the same chuck body.

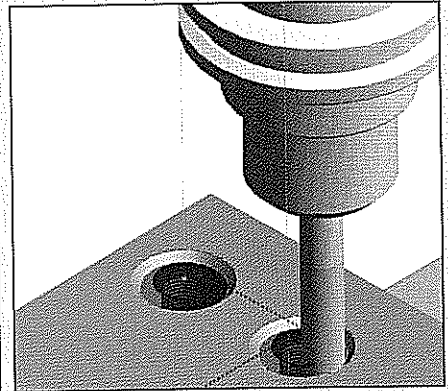
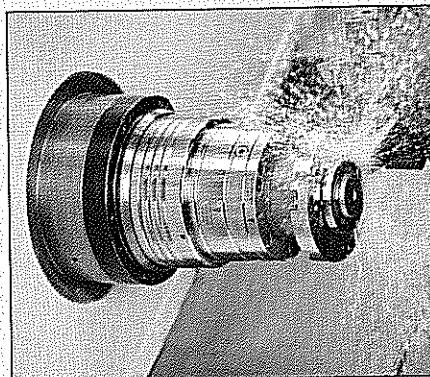
Compared with conventional separate chuck set-ups for multi-turning tasks, MandoAdapt and JawAdapt provide users with a three-in-one lathe workholding system to cover all chucking eventualities at a relatively low-cost, as well as vastly reduced changeover times. Designed exclusively for use with the ultra-accurate Hainbuch collet chuck, for which Birmingham-based Leader Chuck Systems is the exclusive UK agent, both systems maintain the high clamping accuracy for which the Hainbuch system is renowned - guaranteed within 5 micron TIR. Both products are easy and quick to implement; after removing the chuck's collet, both MandoAdapt and JawAdapt accurately locate via a central location/locking screw and tapered ring mechanism. To revert to normal collet operation, the screw is simply released and the collet re-inserted. The chuck body remains untouched and mounted on the machine at all times, which contributes to the high levels of concentricity consistently achieved.

MandoAdapt is currently available for 42, 52, 65, 80 and 100 mm Hainbuch Modular and Combi pull back chucks, giving a mandrel clamping range of 13 to 100 mm diameter. Soft mandrels can also be supplied, which can be self-machined to suit specific requirements. As its name suggests, JawAdapt converts a collet chuck into a jaw chuck, enabling a 65 mm chuck, for example, to accommodate workpiece diameters of up to 120 mm. Following removal of the standard Hainbuch collet, the chuck collet acts as three master jaws with serrations aiding location accuracy and stroke adjustment of JawAdapt. Location is again via the central screw. JawAdapt is currently available for 65, 80 and 100 mm Hainbuch Combi pull back chucks.

Tel: 0121 771 4843

Email: [mjones@leaderchuck.com](mailto:mjones@leaderchuck.com)

Web: [www.leaderchuck.com](http://www.leaderchuck.com)



## COMBINING EASE-OF-USE AND SOPHISTICATED TOOLPATH GENERATION

From Planit comes the latest release of, they say, their market leading Edgcam computer aided manufacturing (CAM) software, 2009 R1. With unrivaled ease-of-use and sophisticated toolpath generation, Edgcam is capable of programming milling, turning and mill-turn machines. This latest release contains improvements specifically designed to increase the productivity of manufacturing companies.

Many of the improvements in 2009 R1 directly address requests from existing Edgcam users; including the new Associative Machining Technology. This automatically calculates the correct cutting feeds and speeds for a program based on the tooling, part material and the machine tool specification. Feeds and speeds are automatically updated if any of the parameters are changed.

Furthering Edgcam's support for 5-axis machining, 2009 R1 introduces a nutated head/rotary table configuration.

With increasing demand for rapid manufacturing, the capabilities of Edgcam Strategy Manager have been further extended to improve support for twin-turret turning, with a command available in the Mill-Turn environment to reduce the number of tool changes required.

Further enhancements have been made to the new Rough Turn Cycle, including 'Stock Runout', a function which automatically decides the amount of overrun required when machining, and improved control over cut direction.

Another popular enhancement developed to save machining time is the introduction of in-process stock. Stock is updated as toolpaths are applied, and utilised by subsequent operations, thereby reducing programming time.

The new Rest Finishing cycle supports all milling tool types, with toolpath generation time up to 30 times faster than its predecessor.

In 2009 R1, Edgcam's ToolStore has undergone a major overhaul, with an improved user interface, better tool selection and significant performance improvements.

Tel: 0118 975 6084

Web: [www.edgcam.com](http://www.edgcam.com)

Email: [trevorglue@planit.com](mailto:trevorglue@planit.com)