

# New equipment

## In brief . . .

► The ability to weld using a very wide power supply source (340-460V), even with long power supply cables, is offered by the GYSMI 253 CEL **portable welding inverter** from Warwick-based GYS Ltd (Tel: 01926 338609 — [www.gys-welding.com](http://www.gys-welding.com)). In MMA mode, this 400V three-phase unit offers adjustable arc force and an adjustable Hot Start function, making it suitable for general purpose heavy-duty welding. In TIG mode, it offers easy starting, as well as automatic and adjustable Arc Down.

► A new range of **roller beds** designed to improve productivity and quality when producing large round fabrications — such as wind turbine towers, pipelines and vessels — has been introduced by Esab Ltd, Waltham Cross (Tel: 0800 389 3152 — [www.esab.com](http://www.esab.com)). Designed for use in conjunction with the company's submerged arc welding, GMAW welding and arc gouging systems, these roller beds have load capacities from 2.5 to 60 tonnes per section and can handle component diameters from around 150mm to 8.4m.

► Two new **portable welding machines** — ARC200S and ARC250S Manual Metal Arc (MMA) — have been launched by Letchworth-based Weldability-SIF (Tel: 01462 482200 — [www.weldability-sif.com](http://www.weldability-sif.com)). While the ARC200S is suitable for light sheet metal fabricators and can be used with 1.6-3.2mm-diameter mild steel electrodes, the ARC250S is suitable for light to medium sheet metal fabricators. It is rated at 250A (10% duty cycle) and can be used with 2-4mm-diameter mild steel electrodes. Both can be used with either single-phase 230V supply or three-phase 400V (for output currents in excess of 150A, three-phase input should be used).

## Quick change

In production engineering, anything that saves time or removes an operation saves money. Bison quick-change tool-posts — available from Birmingham-based Leader Chuck Systems Ltd (Tel: 0121 771 4843 — [www.leaderchuck.com](http://www.leaderchuck.com)) — have been designed to allow quick and easy setting up of lathes.

With this system, up to three tools can be used per set-up, and the indexing facility allows a single tool to be used for turning, facing and chamfering. In addition, a fast and simple means of adjusting the centre height eliminates the need for packing pieces.

The Bison range of quick-change tool-posts — made of hardened and ground steel — is available in a variety of sizes to suit lathes with centre heights from 89 to 292mm. A variety of tool-holders is available. These accept standard square, V, parting-off, boring and Morse-taper tools/shanks; and once mounted in place on the central block, tools can be quickly adjusted in height until the best cutting conditions are found and the setting is locked.



## Machine-based tool-measuring system

Achieving and maintaining tool accuracy is vital for manufacturers machining high-precision complex parts and intricate features. However, when machined chips, debris or coolant remain adhered to a cutting tool, the measurement results obtained by traditional technology such as laser beams may not be sufficiently accurate. In some instances, the situation can be improved by blasting the tool with air prior to measuring it, but this is by no means a fail-safe method.

However, the new Intelligent Tool Measurement (ITM) system from Agie Charmilles Ltd, Coventry (Tel: 024 7653 8666 —

[www.gfmc.com](http://www.gfmc.com)), addresses this problem by providing optical tool measurement at full spindle speed. ITM uses advanced image sensors to measure the tool and analyse its length, diameter, tip quantity and quality, as well as radius, for example. This data is compared with the 'real' image of the tool, for which values have been input earlier.

This existing reference data enables the ITM system to 'digitally' subtract the debris/contamination from the milling or drilling tool and therefore determine its actual geometry — plus an absolute Z reference to  $\mu\text{m}$  accuracy.

## Cost-effective horizontal machining centres

Designed to offer improved cost performance by drastically cutting the number of parts used in their construction, the Mori Seiki NHX4000 and NHX5000/40 horizontal machining centres also offer high levels of dynamic performance, including a rapid-traverse rate of 60m/min plus pallet indexing times of 1sec for the 4000 model and 1.49sec for the 5000.

These machines — available in the UK from Birmingham-based Mori Seiki (UK) Ltd (Tel: 0844 800 7650 — [www.moriseiki.co.uk](http://www.moriseiki.co.uk)) — achieve stable machining, thanks to the use of a particularly substantial bed casting that has the X and Z linear guides located high up. The weight of the moving parts, including the column, has been reduced, thereby increasing the positioning accuracy that can be achieved

— and direct scale feedback is fitted as standard. Furthermore, the machines have been designed to use around 40% less power than the conventional model; this is achieved by reducing the number of electric motors and stopping the hydraulic pump when the machine is on stand-by.

With regard to capacities, the 4000 has a work envelope of 500 × 560 × 660mm and a 400 × 400mm pallet; the corresponding figures for the 5000/40 are 730 × 730 × 880mm and 500 × 500mm. As standard, a 12,000rev/min 40-taper spindle is fitted (options are 8,000 and 20,000rev/min units). All NHX machines feature the MAPPS IV operating system, with automatic programming software as standard; Esprit CAM software is available as an option.