

# First off the mark

Marking systems are smaller, more versatile, more practical, more powerful and far cheaper than even five years ago. Steed Webzell reports



that can be used the same as any other CNC machine, with fully interpolated axes giving accurate positioning on even the most complex of components. Typical of the company is its development of EF Technology, which complements its systems based on fibre, Nd:YAG, UV and CO<sub>2</sub>. ElectroX laser markers are self-tuning (deliver optimum performance automatically) sealed boxes that simply plug into a wall socket

*E-Box uses ElectroX' EF technology*

without the need for constant adjustment, complex set-ups, chiller units or frequent maintenance.

#### CRITICAL ADVANCE

A critical advance in ElectroX laser marking systems is the development of the company's own new intelligent electronics and DSP techniques. In particular, the new controller comes with massively increased memory to store many more files and fonts locally that can be accessed from the laser's user control panel. Mark files can also be loaded and processed directly from USB memory, SD card or Ethernet.

Another key advance is the ElectroX software that enables users to operate a marking system without any requirement for a PC to be present on the production line and which can be integrated with the factory software. This eliminates the risk

**A**s relevant to the production process as any other machine tool, laser marking systems are now accessible to every manufacturer in much the same way that CNC machine tools came within their reach during the 1980s.

Gone are the bulky water cooling systems, the complex controls, the capriciousness and the high maintenance. Laser markers can be small, precise, repeatable, reliable, virtually maintenance-free and readily affordable even for smaller companies.

ElectroX has created marking systems

## Single-phase system suits Posithread

Posithread, a Newcastle-based specialist manufacturer of threading and grooving systems, supplies many of its products to the oil and gas industry where they are used to help produce safety critical parts. It is essential therefore that the identification marks on the individual inserts and toolholders remain clearly visible.

The company has recently invested in a new EasyMark II system from Rofin-Baasel. EasyMark II operates from a single phase 240 V power source and does not require any external cooling. Having a fully enclosed marking area, EasyMark II is designated as a laser class 1 device and therefore has the same safety requirements and classification as a CD player. The heart of the system is a diode pumped Nd:YVO<sub>4</sub> laser source capable of marking metals and plastics. The additional rotary axis used by Posithread enables the system to mark both flat and curved components with the minimum of operation intervention.

With a marking field of 120 by 120 mm and the capacity to accommodate components up to 450 by 150 by 200 mm in size, the system easily fulfils the marking requirements of Posithread.



## Laser technology makes its mark at Penny + Giles

The Christchurch facility of Penny + Giles produces rotary and linear positioning sensors for closed-loop feedback, all of which are now laser marked using equipment supplied by Technifor.

"We have previously marked sensors using various methods, including chemical-etching, vibro marking and adhering information labels to the sensors, as well as heat shrinking labels on electrical cables," says production engineer Dave Poulton, who adds that a new project provided the opportunity to change the process.

"We initially considered ink jet printing, but the mark was going on to a black substrate that would have required a light coloured ink, increasing the cost of the consumables," he explains. "We took a fresh look at the application and concluded that laser marking may provide the answer. We tried several suppliers with different laser types and proved that YAG laser marking could achieve the required results." Following positive process validation Penny + Giles invested in a Technifor LaserTop 410 compact YAG laser marking workstation.

"The time required for the marking process has been cut significantly, by around 80 per cent in most cases. For example, the marking of a motorsport sensor assembly using chemical etching has been reduced from around 7 minutes to just 35 seconds with the laser marking directly on to its stainless steel body."

that if the PC fails, the marker fails. Of equal consequence, the software accepts a comprehensive range of file formats, including DXF files, and has been future-proofed to accept as many new communication systems as are foreseeable. This is important because of the continual stream of new regulations, such as the UID and e-pedigree regulations, demanded both internationally and domestically as anti-counterfeiting measures – particularly, but not only, required in the medical, automotive and aerospace industries.

For many manufacturers, mark positioning carries as much importance as mark quality, which is why FOBA has developed IMP (intelligent mark positioning) for sectors such as automotive, medical and mould and die. Available in the UK from Kaye-Dee, IMP is an integrated, through-the-lens vision system for the FOBA laser where part verification, mark content and laser control are performed under one platform. IMP reduces set-up time, simplifies focusing, eliminates waste due to misaligned marks, reduces fixturing costs and reduces operator errors.

Using a simple three-step process, it is

possible to set-up a job in less than 20 minutes and changeover from one part to another in less than two. Teaching IMP where to place the mark will help guarantee that the mark will be positioned and oriented in the correct location thus eliminating waste due to incorrect part marking.

### PREMIUM SPACE

With space at a premium, size is an issue for almost all manufacturers and size and weight of laser marking equipment is a consideration as it would be for any other machine tool. For this reason, the recently introduced TruMark 3020 laser marker from Trumpf is less than a quarter of the size of the company's existing VectorMark laser, allowing it to be easily integrated into other systems. It also uses comparatively little power: approximately 80 per cent less than its forerunners.

The scanner, laser head and power supply with hybrid cable are simply plugged in for quick and easy installation, while plug-in cards allow modular expansion of the control system.

Continuing the compact theme is the new Ulyxe marker from Laser Lines.

Suitable for direct part marking on most materials, Laser Lines says that Ulyxe is probably the smallest diode pumped laser marker system on the market. Based on an all-in-one design concept, the laser source, scanning head, digital controls and monitoring functions are all integrated in a single compact housing. Not that any functionality is sacrificed: the Ulyxe software editor allows the user to create marking files that can include text, graphics, barcodes and 2D data matrix codes. Advanced functionality provides for automatic serial numbering, batch coding and date/time stamping operations. Additionally, the graphical editor supports the import of logos in both CAD vector (PLT and DXF) and bitmap (BMP, JPG, GIF) formats.

At the other end of the scale is the new ORCA 7-axis laser engraving centre from ACSYS Laser Systems which can accommodate large parts up to 1,000 kg within its 1,200 by 900 mm working area. Among its features is an Optical Part Recognition module that allows ORCA to recognise individual parts on a mixed item tray, identify where each item needs marking and automatically guide the laser to the precise location. □