

The mark of quality

An increase in the need for process traceability is ensuring that laser marking technology continues to grow, both in terms of sales and functionality. Steed Webzell reports

It is no secret that demand for laser marking technology has soared in recent years, and anyone thinking it has peaked is sorely mistaken. Laser marking equipment developer Electrox, for example, reported a 25 per cent increase in sales again during 2007.

Electrox says that the UK market for laser marking continues to expand at an estimated 10 per cent each year across sectors that include automotive, aerospace, medical, pharmaceutical, electronics, defence, security, leisure and general engineering. The growth, says director/general manager Howard Moore, is because most manufacturing in the UK is now focused at the "quality end", where traceability is paramount and protection of intellectual property crucial, requiring anti-counterfeiting measures and product

branding. There is also a marked trend for high-end manufacturing to return to the UK from offshore, increasing market size.

The other significant contributing factor is the reduction in the cost of laser marking systems. Laser marking offers a permanent, legible mark capable of easy serialisation in either man or machine readable formats combined with low cost of ownership and virtually no health and safety implications. The reduced price difference between laser and other marking technologies makes it affordable for a greater number of companies.

TAILORED SYSTEMS

The Electrox Raptor, based on the company's EF Technology laser platform (launched at EMO), claims to be the lowest cost standard system on the market, while it also sports a four-year warranty. Electrox can also tailor systems to customer requirements. Including elementary modifications such as adapting the workstation to the height of existing



equipment – or even the height of the operator – it has also created simple solutions to apparently complex problems. Recently, for example, it created a system to mark both paper labels and metal data plates in a single set-up. Based on a standard Maxim workstation with pneumatically operated automatic doors, lowered workstation and fume extraction, Electrox developed a 3-axis, fully programmable two-station marking system. One station handles laser-engravable paper stock and the other the metal (usually anodised aluminium) data plates. Special fixtures were designed and manufactured to load paper and metal parts side-by-side. The laser head moves automatically from one station to the other as required.

The growing adoption of laser marking systems is being aided by product developers bringing increasingly easy-to-use equipment to market. A case in point is the EasyMark II from Rofin Baasel. The company says the new system provides access to areas of laser marking that were once only the domain of laser specialists.

The compact EasyMark II operates from a conventional 240 V power socket, does not require any external cooling and has the same safety rating as a CD



Electrox' Raptor, top, and Laser Lines' Ulyxe above

player thanks to a fully enclosed marking area. Versatile in operation, EasyMark II uses a diode-pumped Nd:YVO4 laser source and is capable of marking a range of materials including metal and plastic. Optional linear and rotary axes mean that marking operations on both flat and curved surfaces can be achieved easily with minimum operator input. The system has a marking field of 120 by 120 mm and can accommodate components of 450 by 150 by 200 mm in size. Rofin says suitable applications include medical device manufacture, tool production and job shop tasks.

Laser system integrator ES Technology, also part of the Rofin Group, has introduced its Drill-Mark 6000, which allows tooling manufacturers to mark up to 6,200 components per hour. The machine concept incorporates dual part presentation hoppers and dual marking fixtures, thus enabling one drill (or any other cylindrical component) to be processed by the laser while another is loaded into the second fixture. A simple Windows-based user interface provides the operator with full control of the marking process.

Component fixtures are raised or lowered depending upon the drill diameter for the correct focus position, while additional stepper motors move the fixtures between the marking position and the hoppers. The system can process parts between 3.0 and 16.0 mm diameter and can handle standard, jobber and long series drill types.

The introduction of greater speed to



On-demand marking

Headquartered in Meximieux, France, CM Investments – trading as Wallis Universal – has created a retailing phenomenon for its ‘universal’ replacement TV remote controls, and laser product marking using a Technifor TD410 is part of its lean manufacturing system. Customers anywhere in the world can place orders on the Wallis website, and whether it is for 1 or 1,000-off, the unit production cost to Wallis is the same.

To mark the different units, Wallis Universal employs a Technifor TD410 compact laser marking system incorporated into a small, self-contained manufacturing cell, operated by one person and engineered by Wallis with the assistance of technicians from Technifor SAS in Miribel.

The marking process is initiated by printing a list of orders placed overnight on the company’s website. When the barcodes on these orders are scanned, a picture of the requested unit appears on a screen next to the marking station. It doesn’t matter if the order is for 50 of the same products – the operator sees 50 of the images on the screen – or 50 different remotes. The appropriate blank is inserted into the system where it is marked by the Technifor laser with the appropriate symbols, shapes and serial number.

Once complete, the remote is removed from the system and dropped into a blister pack together with a copy of the invoice. A label is also printed as the unit is being marked.

the laser marking process has also been high on the recent development agenda at Trumpf. The company says its latest TruMark Series 6000 laser marking machine provides speedier laser marking thanks to a new generation of deflection systems. These allow an increased output gain of up to 75 per cent in the infrared, green and ultraviolet ranges compared to earlier models.

HIGHER EDGE SHARPNESS

Trumpf’s VectorMark impact market has been superseded by the new TruMark 7020. This model can be fitted with fibre-optic output enabling its homogeneous beam profile to achieve higher edge sharpness and mark definition. In addition to marking, this robot-friendly system can also be used for rapid annealing, soldering and plastics welding. Simultaneous processing of two workpieces is made possible by twin fibre-optic connections.

Elsewhere, Laser Lines has launched its new Ulyxe laser marking system, offering reduced cost, smaller footprint and longer maintenance intervals.

Suitable for direct part marking on most materials, Ulyxe is probably the smallest diode pumped laser marker system on the market. The laser source, scanning head, digital controls and monitoring functions are all integrated within a single compact housing. A robust polyurethane case with user-friendly touch screen interface completes the package. Ulyxe is easy to integrate with production lines or turnkey systems, requiring only a power supply and PC with USB connection. Once installed, the system can operate for thousands of hours without maintenance.

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. Materials that can be laser marked with Ulyxe include virtually all metals and plastics. □