

Elite sparring partners

With ultra-high hit rates taken as 'read' by most fabricators, punch press manufacturers have had to 'think smart' to deliver a new generation of 'prize fighters', as Steed Webzell discovers

Amada's recently introduced EM series of AC servo direct twin-drive punch presses can deliver hit rates in the realm of 500 hits/min (at 5 mm stroke and 25.4 mm pitch), with combined axis speeds of 128 m/min, Amada realised that speed alone would not attract sufficient interest in its new range of machines.

The unique selling point of the EM is its all-electric drive system, which not only helps manufacturers counter the pinch of ever increasing energy bills, but also lessens the impact that engineering operations have on the environment. In tandem with reduced maintenance requirements, it is estimated that operating costs are cut in half when using EM. The average output of the machine is approximately 5 kW, which compares favourably with hydraulic machines, where some larger models are known to output around 25 kW.

SECRET STORE

The secret of this innovation lies in the load levelling power circuit, a

mechanism that collects and stores in a capacitor the energy generated when braking is applied to the ram, enabling the stored energy to be used to accelerate the ram. It is an industry development that has already generated high levels of interest. To put the demand in perspective – at Amada's manufacturing facility in Japan, the company makes around 120 punch presses a month. At time of introduction, the EM represented just 5-10 per cent of production. Today, that figure has risen to 100 per cent – Amada no longer manufactures hydraulic models!

Already there are over 30 EM machines in the UK alone, some at OEMs in the strip lighting and workshop cabinet sectors, but most at sub-contract fabrication shops.

Ermaksan in UK

Turkish-built CNC punch presses from Ermaksan are now available in the UK from Dugard, which now represents Europe with equipment branded under the Dugard Ermaksan name.

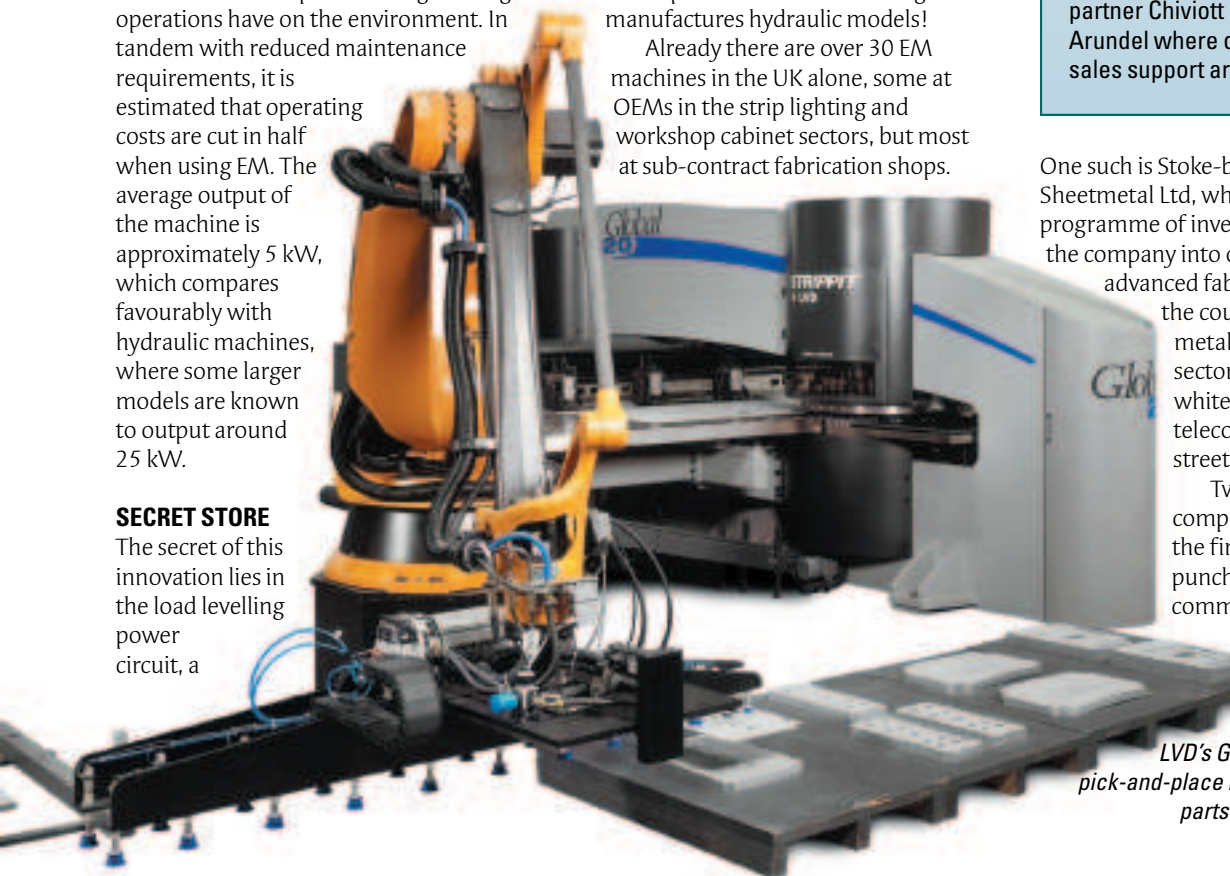
While a selection of Ermaksan products are installed at Dugard's Hove headquarters, the full range is represented at the showroom of partner Chiviott Machine Tools in Arundel where demonstration and sales support are also provided.

One such is Stoke-based Hallmark Sheetmetal Ltd, where a recent programme of investment has turned the company into one of the most advanced fabrication facilities in the country, supplying sheet metal components for UK sectors such as heating, white goods, IT, telecommunications and street furniture.

Two years ago the company took delivery of the first Amada EM Series punch press to be commissioned in the UK.

Company owner Paul Martin says the machine is

LVD's Global 20 with integrated pick-and-place robot which can handle parts up to 1,000 by 2,000 mm



allowing Hallmark to become more competitive in the face of the offensive from the Far East, especially as it is fitted with an MP250M automated sheet manipulation module and partnered by a new 7-axis HFE100 Amada press brake.

"We experience three levels of business that I call strangers, cyclers and runners," he explains. "Strangers come along once in a 'blue moon' and tend to be high variety, low volume jobs. Cyclers occur monthly or bi-monthly, while runners are week-in, week-out contracts. The EM has helped with our work patterns tremendously. What we processed previously using a two-shift system and two punch presses in 160 hours, now takes 75 hours in a single day shift using the EM. We run it for 10 hours unattended for two or three nights a week with the same ongoing job. When I add the energy savings and the extra business the machine has attracted, it is clear that the EM has made a significant difference to our bottom line."

Another punch press supplier offering electric ram machines, and similarly announcing various sales successes, is Rainer. According to this company, a 20 ton Eletek electric ram CNC punching machine with 1,564 mm throat was delivered to a UK customer in the roofing and cladding industry last month. The machine replaced an existing Rainer hydraulic model originally supplied in 2001. The Eletek can process material up to 6.4 mm thick and runs at an output of only 5 kW an hour.

IN A SPIN

Regarding conventional hydraulic punch presses, there has been much development activity at entry level – the new Trumatic 1000 Rotation from Trumpf, for example. The TC1000R has the same process capabilities as a larger Trumatic including 3D forming and tapping, and the ability to produce extrusions automatically in a single set-up. It is also the first machine to include a new Trumpf navigation system that guides beginners through the



Amada customer Hallmark Sheetmetal has built an advanced fabrication facility with electric punch press technology both speeding production and saving energy

programming of simple parts and into the use of ToPs 300 software, which allows more complex features to be produced.

The first UK installation of the TC1000R took place recently at Hampshire-based Adept Precision Sheetmetal, which primarily serves the lighting and medical equipment sectors. "In addition to saving us programming time, we're now able to complete more processes in a single machine set-up which ensures our cost competitiveness," explains managing director Ken Lock.

Trumpf has also enjoyed success with its larger TCR models. At Newhaven, OEM Cash Bases has a component throughput of 25,000 a week to help the company manufacture custom cash drawers, cash and note holders, and a range of parts for high security cash handling operating mechanisms. Cash Bases recently installed a TC5000R to support its 10,000 customer configurations.

"We needed a reliable machine and one that required very little time to set," says Peter Elliff, group operations director. "The flexibility, speed, accuracy and quick programming were also reasons why we selected the TC5000R.

"In addition to punching and profiling, we're using the machine to produce dimples, joggles and loops," he continues. "And as we become more familiar with it, we'll certainly be exploiting the machine's ability to form up to 25 mm returns."

To enhance the intrinsic productivity of the TC5000R, Cash Bases also specified Trumpf's Trumatool 40 system. This allows the entire tool library to be stored 'live' and therefore set-up, and so can produce any dynamic nest from the entire parts spectrum.

IT'S A ROBOT'S LIFE

At LVD the company has just launched its high speed, high productivity Global 20 1225, a 200 kN CNC turret punch press with an automated load, pick and sort system. The robotic system handles cut part dimensions up to 1,000 by 2,000 mm with an unload time of 12 seconds per part. It features four independent sheet holders that are lowered to securely hold or retract the sheet according to the shape of the cut part and its position on the sheet. Two external independent vacuum cups are available to handle automated unloading of larger dimensioned cut parts. The

system is also protected against collisions.

LVD is currently enjoying a period of strong punch press sales in the UK. For instance, the company has recently sold two ST1212 CNC turret models to sub-contractors in the south of England.

At Hermitage Sheet Metal in Hitchin, the company is putting its new ST1212 to use producing parts for the electronics, aerospace, defence and medical industries. Among the company's many customers are GEC-Marconi Avionics, Vosper Thornycroft Controls, Elopak and Oxford Instruments.

The company wanted a large turret machine with a suitably compact footprint. Most jobs are delivered in small batches on tight lead-times which means rapid toolchange is essential. The ST1212 supplied by LVD features indexable multi-tool technology and, as an existing Strippit machine user, Hermitage did not have to change its entire tooling system to accommodate the new technology.

RB Punching Services in Aylesbury, a supplier to the medical and IT sectors, wanted to inject new technology into its facility and reduce cycle times. The ST1212 was selected partly because of its



Trumpf's TCR punching machine with tool rotation and forming is helping Cash Bases

patented SmartStroke technology which automatically calculates the optimum ram hover height to maximise punching performance and provide flexibility for punching and forming applications. LVD's sales and marketing manager Matt Fowles estimates that both installations have cut cycle times by approximately 35-40 per cent.

IN WITH THE NEW

New in 2006, the Salvagnini S4S punching and shearing machine features more than 30 improvements over last year's S4N model. A new manipulator; an integrated brush conveyor and deviator; Cartesian unloading and

stacking possibilities; and the SiX controller are just a few of the new S4S features that deliver increased speed and reliability.

The new S4S machines have increased productivity and throughput by accelerating the manipulator stroke rate and by performing raw material feeding and centring in cycle. The Salvagnini America Application Department claims that the new S4S will consistently produce the same number of parts as three turret machines.

New from Finn Power (available in the UK from Press & Shear Machinery) is the C6 Compact turret press, capable of punching, nibbling and forming sheet up to 8 mm thick over a 3 by 1.5 m working area. Increased operating speed up to 150 m/min is promoted by a rack and pinion in the x-axis and a double ballscrew in y-axis.

The new machine is also available as an Express unit with automatic loading and unloading, and can be connected to all Finn Power flexible manufacturing systems.

Although punch presses are established technology, the latest developments ensure that in the race between lasers and punch presses, the winner is not always clear cut. □

Mating season

At Euroblech 2006 in Hanover next month, Mate Precision Tooling will unveil the latest in tool system technology for punching machines.

One such is Mate Sheetmarker tools which permanently mark sheet metal parts with assembly codes, sequential serial number, time and date. Because the tool is designed with a backing spring, variations in sheet flatness or warping can be compensated automatically by the tool to retain even and consistent marking.

Also new is Mate Rollerball tooling that forms ribs, flanges and raised areas across the entire work surface of light gauge sheet metal. The Rollerball provides the benefit of making forms not possible with single-hit forming tools and is designed to take advantage of the extended programming capabilities of hydraulic punch presses where the ram can be held in the down position.

Enter 140 at
www.machinery.co.uk/enquiry