CASE STUDY
Electrium, UK

COMPREHENSIVE PUNCHING CAPABILITY FOR ELECTRIUM

An LVD Strippit PX 1225 CNC punch press with an Extended Tool Magazine (ETM) gives electrical equipment manufacturer Electrium the capability to respond quickly to changing production demands while eliminating setup time.

Electrium, part of the Siemens Group, is a UK-based manufacturer of electrical equipment under the brand names of Crabtree, Wylex, Volex and Appleby.

At its Wythenshawe facility, Electrium manufactures a wide range of sheet metal components for domestic, commercial, public sector and industrial installations using LVD Easy-Form press brakes and punch presses. Batch sizes can range from a one-off to 100-off on a sheet.

Around 15 years ago it moved from using hard tooling on power presses to more flexible CNC punch presses as it moved from a high-volume, low-variety manufacturing model to lower volume, high-variety production to meet the changing needs of the market.

In that time, it has installed a number of LVD punch presses, most recently two LVD Strippit PX 1225 machines, the first in 2014 and the second, with an extended tool magazine (ETM) in 2019.

As opposed to a turret punch press, the PX machines have a single punching head with all tool rotation; tools are held in a carousel on the machine. The tool carousel has 20 tool positions and the ETM adds 40 more.

Each tool can be rotated through 360 degrees and the machine's configuration allows for extensive forming and secondary operations to be carried out as part of the punching process.

Senior Production Engineer Darran Lees says: "We make a wide range of electrical equipment for domestic and commercial installations, and the sheet metal content of that includes panel boards, end plates, boxes and fabricated components that require forming, punching and bending. The end products range from the domestic circuit protection boxes you have in your cupboard at home to large systems that go into schools, hospitals, and commercial buildings. Some will be sold via electrical wholesalers and merchants such as Screwfix and some will go direct to contractors for large projects.

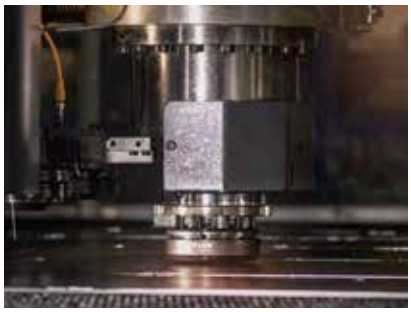
"This means that there is quite a lot of variability in what we are making, with medium to small batch sizes – down to one-offs – so we need to be very flexible in our manufacturing."

The new PX 1225 with the ETM is also used in conjunction with multitools, which further increases the number of available tools, says Darran.

"In contrast to a traditional turret punch press where you only have a single punch in each tool, if the punch is under 12 mm diameter you can have ten of them in a multitool.

"We have 20 tool holder positions on the machine, with a further 40 tool holder positions in the ETM. On top of that we have 10 multitools, five with five individual punches in them and five carrying ten punches.

"That gives us an extra 75 tools in only 10 stations and a total of 125 tools available. We need that amount of tooling to cover the range of our products.



"On one job for electrical boxes we use all twenty tool stations including 4 multitools. That is 50 different tools on one panel.

He adds that an incidental benefit is that the multitools are very cost-effective. The drop-in punches are a cheap disposable item, whereas a dedicated punch tool would cost 20 times as much. "It saves you thousands of pounds," he says.

The ability to rotate any tool through 360 degrees adds another level of versatility.

"It is absolutely important to us," says Darran. "If you saw the profiling of some of the shapes we punch, you would think that they would be done on a laser."

Perhaps the biggest benefit in terms of productivity comes from the ETM. Because all the tools are there and ready to be loaded onto the machine in seconds, setup time is almost completely eliminated. And if different tools are needed that are not already in the magazine, they can be loaded while the machine is still operating.

"We aren't doing high-volume work, so we could be doing 20 different jobs in one eight-hour shift, says Darran. "Before we had the ETM we might have taken up 25% of our production time with setup."

It also eases staffing requirements.

"If we only have an operator available rather than a setter they can still run the machine if the tools are set up in the carousel and ETM. Anyone can run the machine as long as they are trained to operate it – they don't need to know how to set it."

He adds that LVD's Touch-P control is very intuitive and user-friendly. "It is very easy to learn how to load a program and get it running. The technology on the control makes it really simple to use."

In fact, the production team at Electrium were so impressed with the Touch-P control that they had it retro-fitted to the company's older PX machine.

The final piece in the jigsaw is the ability of the PX punch presses to carry out a large amount of form work.

"I would estimate that 99% of our parts involve some kind of form tool," says Darran.

"Typical form tool functions include producing louvres and knockouts, embossing, bending and tapping. We are also keen on exploiting new tooling technologies such as rolling offset tools and a 'clicking' tool that allows you to simply click two sides of a box together without the need for any welding – which saves us time."

Summing up the benefits of the new LVD Strippit PX 1225 with the Extended Tool Magazine, Darran says: "The combination of the sheer number of tools we have available, the ability to rotate any tool through 360 degrees and the ability to carry out form work on the machine, gives us the capability to respond quickly to a large variety of production demands with minimal setup times."