

*Livingston Precision Engineering (LPE) offers an extraordinary experience to anyone entering the doors at this innovative sub-contract sheet metal company. Part of the Flexible Manufacturing Group (FMG), LPE is an exceptionally diverse business that offers its customers services that range from one-off prototypes through to configured assemblies...a real eye-opener in every respect.*



Sales Director, Gordon Connell, explains that the company intentionally set out to attract a wide range of customers, offering them something beyond their competitors, a statement that puts the following words into context.

“The difference with LPE is our ability to think outside the box and apply this as openly and radically as possible, matching the best available manufacturing technology with our engineering innovation,” he says. “We don’t stop there, we fully understand the cost drivers and ensure we engage with the whole supply chain to maximise the benefits for our customers.”

**“The EML machines also offer advantages for prototypes and quick turnaround work, where LPE get an order and deliver it within 24 hours without the need for any special tooling.”**

The ability to re-engineer parts and reduce costs is proving extremely attractive to a growing number of customers across many markets. Production of parts previously manufactured in perceived low cost regions are now being manufactured by LPE at lower costs, often with shorter lead-times. A large percentage of LPE’s output is exported to

customers all around the world, and interestingly, the company’s largest export market is in these perceived low cost economies. So, how is this possible? Well, the answer is simple: investment in the right equipment, a highly skilled and motivated workforce, low overheads and total understanding and control over costs underpinned by the core engineering and innovation LPE brings to its customers.

Walking around the factory it is possible to see a large variety of different parts that are manufactured and assembled. It becomes immediately obvious that LPE has put its engineering, innovation and manufacturing knowledge to good use making brackets, covers, trays, wire harnesses, complex handrails, front panels, racks, cabinets and enclosures for customers in defence, retail, industrial, automotive, telecoms and medical markets.

Supplying spot orders or scheduled deliveries hourly, daily or weekly to meet Faxban and Kanban demand. Flexibility in delivery and always trying to meet customer preference is an accepted part of LPE’s ethos. This is not as easy as it may appear judging by the shipments of fully integrated and tested sub-racks leaving the factory, as well as kits and assemblies to cryogenic standards for medical customers – all of which head straight to the customer’s assembly area through direct line feed.

While good process control and managed logistics are vital, more than anything it is the culture and attitude in LPE that glues each key part of its offering together. In summary it would take another article to explain adequately the diversity that is apparent within LPE, FMG and their customers.

“The products that we manufacture are all around us,” says Mr Connell. “When you fill your car with fuel; draw money from an ATM; use a mobile phone or the internet; go on the underground; use a handrail on a bus; have a body scan; or go on a plane, then it is almost certain that you have used our products directly or indirectly. These being just some of the examples of parts manufactured at LPE.

Speed to market is very important to a number of LPE customers and this is where the company’s investment in the two Amada EML3610NT punch/laser combination machines offers a significant advantage over most of its competitors.

“When you see samples of the parts being produced on these machines you can see they are used to their maximum potential,” says Mr Connell. “The 4kW laser cuts complex shapes at high speed, while the punching tools

[capable of 1800 hits per minute] can be used for standard holes and louvres, as well as features such as tapped holes or raised lugs. The P&F functions can also form parts from the underside and countersink from both sides of the sheet. These capabilities reduce the number of manufacturing operations and set-ups to one.”

Brian Moffat, LPE’s Engineering Manager, adds that the machine also offers a number of advantages for prototypes and quick turnaround work, where LPE can get an order from a customer and deliver it within 24 hours without the need for any special tooling.

LPE’s 95,000 sq ft manufacturing facility at the company’s headquarters in Livingston, around 10km west of Edinburgh Airport, is dominated by Amada technology. It was bolstered in 2010 by the introduction of a second EML3610NT combination machine and two HFE seven-axis CNC press brakes, bringing the total number of Amada seven-axis press brakes to 10. As well as the two EML machines, the company has an Amada laser cutting machine and seven other punching machines. According to Production Manager Mark Wilshire, one of these, an EMZ3610 NT, is the quietest punch he has ever heard, offering great advantages over standard machines due to its accuracy and extremely high speed capabilities.



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Gordon Connell, Director



“Using Amada technology we are frequently able to out-engineer machined and cast parts,” says Mr Connell. “For instance, we recently produced a part for a global telecommunications giant using Amada machines that now costs 12p. Previously it was costing them £1.26 as a small cast ejector block that was subsequently machined. Considering the significant volumes involved, the savings for the customer were phenomenal.”

Just as important as the technology, LPE needs its machines to be working all the time. According to Mr Connell, the Amada machines have consistently given a high level of reliability with excellent service back-up, ensuring customer deliveries are met.

Along with LPE, FMG also comprises Deans Engineering (for CNC machining) and Flexible Surface Technology Ltd (for electroplating, e-coat and painting). The overall manufacturing and engineering capability makes FMG stand out in today’s demanding market. The three businesses complement each other very well, giving their customers a one stop shop for all their mechanical needs. The FMG policy of working with customers to drive value through innovation, which is proven at delivering savings so it is easy to understand why FMG has achieved a six-fold growth in business over the past eight years.

“Prior to the acquisition by FMG in 2002, LPE was a modest enclosure supplier, arguably typical of many similar companies,” says Mr Connell. “Annual turnover was in the region of £4.5 million, but now this is around £33 million, with 300 employees.”

Investment in the latest technology at LPE/FMG is vital to the company’s ongoing ability to secure competitive tenders, and this strategy is set to continue with the next investments already being discussed.

“The day we stop investing, we are dead,” states Mr Connell. “We have an underlying commitment to invest in the longevity of the company. The recent acquisition of another EML3610NT combination machine and two CNC press brakes from Amada confirms our position on this matter. The constant introduction of new technology allows us to diversify further and offer even greater levels of innovation.”

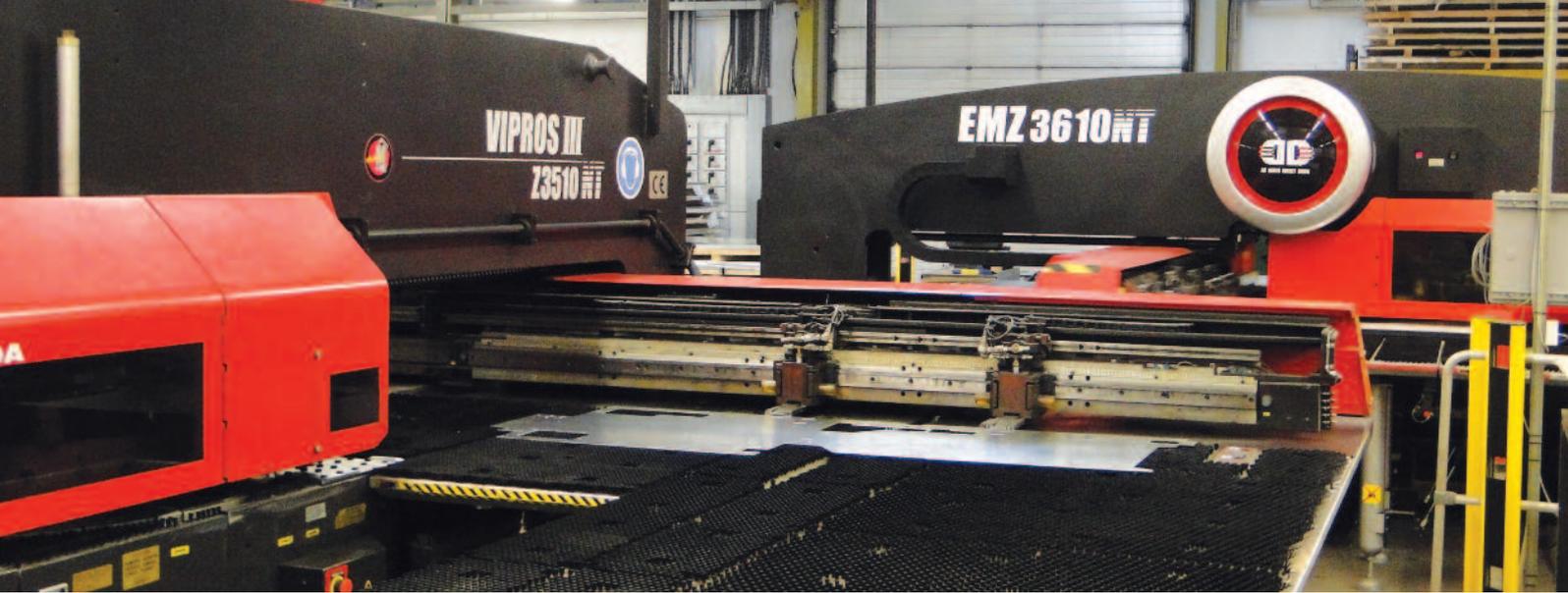
**Key Facts:**

**Turnover:** £33 million

**Staff:** 300

**Amada Equipment List :**

- EML 3610 NT Comination Machine
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- EMZ 3610 NT Punch Press
- Vipros III 3510NT Punch Press
- Vipros 368 Punch
- Vipros 2510 Punch
- LC1212 Alpha Laser
- Togu Automatic Tool Grinder
- HFE 100-3 Press Brake
- HFE 80-25 Press Brake
- HFE 80-255 Press Brake
- HFE 50-20s Press Brake
- HFE 50-20s Press Brake
- HFT 100-3 Press Brake
- HFB 125-3 Press Brake
- HFB 80-25 Press Brake



Working across two shifts that deploy lean manufacturing methodology, LPE handles parts up to 5mm thick in all materials. While many contracts are 'precision' by nature, LPE is keen to state that a significant amount of its order book is governed by general tolerance work, in batch sizes that start as small as 1-off.

"Giving customers what they want, when they want it, is vitally important," says Mr Connell. "However, the ability to engineer should not be underestimated. We invite customers to bring their parts and gain access to the latest Amada technology. We will happily demonstrate our ability to re-engineer parts and drive down cost."

Of course no cost-saving or speed-enhancing measures are undertaken at the detriment of quality, to which the company has an extremely proactive attitude. Beyond the ISO 9001 accreditation, LPE customers benefit from AQPs and FMEAs. All parts are subject to a full first article sign-off, with ownership of quality at operator level. From estimate to invoice, Livingston Precision Engineering's approach to quality is managed.

The success of LPE and its customers has not gone unnoticed. The company has been the recipient of an unprecedented three awards at the Amada Worldwide Sheet Metal Technology Fair, an annual competition for companies from across the globe to demonstrate the engineering innovation and quality of their sheet metal product offering.

"Ultimately we aim to utilise Amada technology to drive an advantage for everybody," says Mr Connell. "To date, this philosophy is proving very successful, and while we are not clever enough to predict what will happen in coming years, we are looking very positively at the future."

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### **Key Achievements**

- Livingston Precision (Engineering) Ltd founded in 1981
- Turnover grows steadily to £4.5 million
- Company acquired by FMG in 2002
- First Amada 2510 punch press installed 2002
- First Amada EML3610NT punch/laser combination machine installed in 2008
- Second Amada EML3610NT installed as part of a £1.2m investment in 2010
- Target turnover of £50m by 2012