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TRUMPF TRUDISK + SECOND TRUMPF TRUDISK = SUCCESS AT LASER ADDITIVE

Laser Additive Solutions Ltd (LAS), a rapidly expanding provider of laser processing services, has invested in its second TRUMPF TruDisk high-power solid-state laser. Featuring two fibre heads, the new laser will allow LAS to add 3D laser cutting to its ever-expanding portfolio of processes.

Formed in 2015, the team at LAS has over 30 years of combined experience in precision laser repair, manufacture and joining processes. Customers include blue-chip companies operating in the aerospace, power generation, transport and military sectors. The ISO9001-accredited company also works closely with a range of UK SMEs and universities.

“We undertake a lot of R&D projects where we develop a repair process before taking it into serial production,” explains Managing Director Peter Brown. “However, while our background is in repair we’re moving more into laser-based manufacturing.”

High-integrity parts

LAS typically handles high-integrity, high-value parts, including many for the aero-engine sector. Power generation turbine repairs are another key revenue stream, along with the repair and welding of nuclear industry parts made from exotic metals. The oil and gas market is also strong. LAS recently had a large industrial pump component on one of its machines that measured 6.5m long and weighed around 1 tonne. The machine rotates the part at a speed suitable for cladding application using a laser.

“In addition, we undertake collaborative research projects within the UK and Europe,” says Mr Brown. “That’s the reason for our acquisition of a new TRUMPF TruDisk laser: we won a project from BEIS [Department for Business, Energy and Industrial Strategy], the part-funding from which allowed us to invest.”

LAS already had a 2kW TRUMPF TruDisk solid-state laser with adaptive spot technology. Running reliably since 2015, there was never any doubt that the company would return to TRUMPF for its second laser.

“I’ve been involved with lasers for various companies since 2004, in which time I’ve bought four or five TRUMPF systems,” says Mr Brown. “You get what you pay for with lasers. I like the fact that we arrive in the morning and get a consistent laser beam rather than errors. In

my experience that's not the case with all lasers. TruDisk technology is very reliable, which is key for us. Realistically, our new laser was always going to be another TRUMPF."

Multi-purpose system

The TruDisk 3kW laser is at the heart of a new system that can perform a variety of different tasks: laser additive manufacturing/cladding to build/repair parts using powder or wire; laser welding; and laser hardening. In addition, the presence of a second fibre head will allow LAS to enter the 3D laser cutting market, where the precision and consistency of the TRUMPF laser will prove particularly beneficial.

"After reliability, beam size consistency is the key attribute we need from our laser technology," states Mr Brown. "We've measured the TruDisk laser beam profile over a number of years and know that it's consistent, as is the output power, which gives us great confidence. We've been doing a laser welding job for an aerospace sensor specialist over a number of years where we have to measure the weld down to micron level. However, with the TRUMPF TruDisk laser we only ever get excellent results. In fact, the accuracy of the weld is unbelievable in terms of both depth and width."

LAS has integrated its 3kW TRUMPF TruDisk with a high-specification KUKA robot to provide a fully automated, multi-purpose laser processing system and has retained its original 2kW TruDisk, which still runs continuously, day-in, day-out. "We had it serviced just the other week and got really encouraging feedback – the laser is still in very good condition, despite working really hard for the past seven years," says Mr Brown.

Ongoing expansion

Moving forward, the future looks extremely bright for this progressive laser processing business as it continues its growth trajectory. Since 2015, LAS has expanded to fill 2500 ft² of space across two buildings.

"In the UK we probably only have four or five competitors, but these are typically one-man bands or university-backed research centres, so we've got a pretty good niche," concludes Mr Brown. "Our customers receive a first-class service and they come back because of our knowledge and expertise. Around 90% of our business is repeat work, including from many large OEMs, which speaks volumes. If we continue doing well, we might look at a third TRUMPF TruDisk laser."

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