

TORNOS PUMPS PRODUCTIVITY INTO ALLSPEEDS

As a world leading manufacturer of sub-surface wire & rope cutting tools, sub-surface sucker rod pumps and lightweight hydraulic jacks for the military, aviation, rail, bridging, oil & gas, marine and demolition industries, Allspeeds Ltd has a component list of over 18,000 parts that are incorporated into its various product ranges and assemblies. With such a diverse range of parts, the Accrington based company has recently acquired a Tornos Delta 20 turning centre to eliminate bottlenecks with its production of small turned components.



Cycle time improvement from 90 seconds to 25 on the new Delta.



Cycle time reduction from 3.5 minutes to 45 seconds on the new Delta.

The innovative manufacturer that produces branded products such as Tangye, Webtool, Millingford, Kopp and Blake Hydram, operates a number of high specification machining and turning centres for the production of its high quality product ranges. However, the company's previous 2-axis turning centre dedicated to producing small turned parts was creating a backlog of up to 8 weeks on many product lines. The limited capabilities of the turning centre resulted in components requiring secondary milling and drilling operations on alternate machines.

To alleviate the problem, Allspeeds Engineering Director, Mr Keith Elliot reviewed the marketplace for a solution. As Mr Elliot comments: "Prior to the arrival of the Tornos Delta in November 2011, the majority of parts required secondary operations and this meant we always had significant amounts of

work-in-progress on the shop floor with parts moving from one machine to another. Scheduling our work was sometimes difficult as we couldn't run the optimum number of parts on the 2-axis lathe. This would mean tying up the machine for long periods, which would in turn delay subsequent parts. The arrival of the Tornos now enables us to run our optimum batch sizes whilst bringing parts in-house that were previously subcontracted out."

When researching the marketplace for a suitable sliding head turning centre, Allspeeds reviewed the options available from all vendors. However, it was the capability versus cost argument that won it for the 40 employee company. As Mr Elliot continues: "I reviewed all the available options and Tornos offered us exactly what we needed. Machine tools from alternate suppliers were loaded with options



Tangye hydraulic jacks produced at Allspeeds.

that we didn't require and this carried a hefty price tag. Whilst Tornos could also offer such options, the Delta proved to have excellent main and sub-spindle capabilities with more than enough power and the correct tool configurations to meet all our needs."

As a first time user of sliding head technology, Allspeeds is astounded by the benefits associated with the technology. First and foremost, the Tornos Delta has eliminated secondary operations on alternate machines by completing all small turned parts in one-hit. This has improved productivity by over 50% whilst freeing up machinist's time to a scale equivalent of saving one member of staff. This productivity saving can be noted on two parts in particular. One part has witnessed a cycle time reduction from 3.5 minutes to just 45 seconds per part. A second part that was previously turned in 30 seconds and then transferred to a secondary drilling operation that took an additional minute is now machined complete in 25 seconds. A saving of 90 seconds. Furthermore, the company no longer has to spend 30 minutes setting the drill for each batch run; an addition to the cycle time that is spread out across the batch run.

"We used to have one employee permanently on our 2-axis turning centre with secondary processes taking up capacity of our other machines. With the Tornos, this member of staff can operate our large turning centres and the Delta simultaneously," says Mr Elliot. This simultaneous operation is despite the unusually low batch numbers produced on the Tornos. Batches on the Delta can be as small as 5 to 20 and range up to runs of 500+ at Allspeeds. "Despite sliding head lathes being renowned for large batch runs, our diverse product range means that we have to be

extremely flexible. To this end, the Delta is relatively simple to program and set, additionally the guide bushless system allows us to use the machine as a fixed head lathe."

The introduction of the Tornos Delta 20 5-axis turning centre has also delivered quality improvements for Allspeeds. By completing components in one-hit there is no geometric deviation or human error than can be caused by moving parts from one machine to the next. Additionally, the Tornos Delta can run at spindle speeds up to 10,000 rpm as opposed to the 4,000 rpm of the previous machine. Not only does this allow the Delta to improve surface finish and quality, but the Delta runs at high spindle speeds with no rattling and vibration from the barfeeding unit, which further enhances component quality.

Emphasising the productivity savings, the Tornos Delta is capable of completing what was previously one months' work in 10 days. The productivity of the Delta has surprised Allspeeds to such an extent that the company is only running the machine for two days a week. As Mr Elliot concludes: *"The productivity of the Tornos has been a revelation. Not only has it removed any bottlenecks from the turned parts division, it has freed up staff, improved quality and component consistency. In the future, if our order book allows it, we may be looking at conducting sub-contract orders to ensure the Tornos is running to its optimum. We are delighted with the machine and the respective service and support the company has provided us."*



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