

TORNOS ENGINEERS CHAIN OF SUCCESS AT APB

When APB Engineering of Sandhurst acquired a competitors business over ten years ago, it did so for the order book and the customer list. The business with over seven Bechler CAM Auto turning centres was productive but was losing work to businesses that had invested in CNC sliding head technology.



Motorcycle oil chain components/assembly manufactured by APB.

Started in 1984 by Managing Director Mr Adam Busby, APB saw its opportunity to turn the new acquisition into a profitable entity by purchasing a sliding head lathe. With this in mind, Mr Busby reviewed the sliding head market and found that Tornos was the only manufacturer at the time to offer a turning centre with a fully independent sub spindle and tooling that would fit all axes. Compared to competitor machines this made Tornos more productive with reduced cycle times through its sub spindle. The Tornos machines also proved more cost effective as the tool holders were interchangeable between tooling stations, another feature not available on competitor machines. With productivity, tooling costs and integration immediately proving more attractive, Mr Busby bought a Tornos DECO 20 in 1998.

As Mr Busby recalls: "The Tornos DECO machines were way ahead of their competitors and this not only influenced our decision in 1998, it has influenced our decision to buy an additional two Tornos DECO machines since. We conducted trial parts and Tornos was considerably faster than competitor machines. It also had a powerful driven tooling unit and a large and more accessible swarf area that made emptying and cleaning the machine a simplistic task with minimal downtime."

The first Tornos machine gave APB versatility, capability and productivity levels that soon noted the removal of seven CAM Autos. The 26 mm diameter capacity machine was employed to produce electrical terminals and medical components in average batch quantities of 1000 off. As soon as it was introduced, the DECO 20 was machining anything from



Bank of Tornos machines at APB (DECO 20, DECO 26a and DECO 20a).

nylons and plastics to brass, stainless and mild steels. Despite operating one shift the Tornos was immediately working 24/7 whereas the CAM Autos had to be manned at all times.

In an innovative approach to extend unmanned running of the Tornos beyond 24 hours, APB developed a fixture to retrofit to its Robobar SSF barfeeder to accommodate twice as many bars regardless of diameter. The fast to fixture system is now used on the DECO 20 and DECO 26a regularly.

The second Tornos, the DECO 26a arrived at APB in 2003 as a result of additional capacity needs. As Mr Busby says: "The work on our CAM auto's was straight forward and the first Tornos gave us the potential to produce complex parts. Once we started

down this route, the complex work grew taking us beyond our capacity levels. When we needed a new machine, a Tornos seemed the logical answer. Our work was increasingly diverse in complexity and dimensions, so the DECO 26a with a 32 mm diameter capacity was ideal for larger work."

"We get involved at the design and development stage of customer products and having the capability to make complex parts has been critical. Now we manufacture exhibition displays and parts for the leisure, electronics, motorcycle and hand tool industries with some really interesting applications," says Mr Busby.

One project the company has been involved in from the development stage is a motorcycle component



The APB facility in near Sandhurst, Berkshire, UK.

The present



A batch of components produced on the Tornos DECO's.

that automatically oils the drive chain to improve bike performance, maintenance and running.

The four part assembly for Acumen Electronics works within the 3D map or "brain" of the Chain oiler to increase the flow rate relative to the chosen flow number and the speed of the vehicle. The motorcycle engine power transmitted through the chain varies with the square of the speed, so the chain gets more oil as the speed rises. This constant lubrication system is currently produced at around 10,000 systems per year. However, interest from motorcycle manufacturers could take this system from a retrofit for motorbike enthusiasts to a factory fitted system potentially incorporated into millions of motorcycles.

With such projects expanding rapidly, APB acquired its third Tornos machine in 2006, a DECO 20a. As Mr Busby says: "We have impeccable quality standards and we work with some customers that have been with us since day one. The ability to manufacture complex parts with fast turnaround times has seen our business expand."

"We now produce in the region of 750,000 parts every year with batch sizes as small as 100 off. We make some parts with a ± 1 micron tolerance, something many machines aren't capable of. The machine capability combined sees us making parts from the motorcycle assembly to a bio-reactor for growing organic heart valves as well as more run of the mill parts like rivets for icing guns."

"In conclusion the three Tornos DECO's have been invaluable to our business. The service we receive is excellent and if spares are ever required they are always available, we are delighted with our Tornos turning centres," concludes Mr Busby.

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