

Feed me right!

Barfeed systems help improve productivity, throughput and quality; but they must be matched to the particular needs of the turning operation, says Steed Webzell

Price, delivery and quality have always been the cornerstones for success in the sub-contract machining and turned parts field. Today, competition from low labour rate economies is exerting increasing pressure on UK manufacturers to improve performance; notably in terms of delivered piece part costs.

Investment in high capability machine tools – along with automatic raw material and workhandling systems – offers a recognised route for UK suppliers to fight back. Not only are today's machines faster and more likely to produce even extremely complex components in a single cycle, but their



Barfeed performs key role in automation project

A Citizen M32-III CNC sliding-head mill-turn centre has been supplied by NC Engineering to Oxfordshire-based pump manufacturer Stuart Turner complete with an lemca TS560P barfeed system. The unit comprises multiple bar racks with a total capacity of 56 bars of 32 mm diameter material up to 4 m long or 224 bars of 8 mm diameter. Says Phil Horsley, general factory manager: "This helps us to extend our unmanned running and minimises bar end wastage." The company tends to run 32 mm, 25 mm, 1 $\frac{1}{16}$ in, 1 $\frac{3}{16}$ in and 8 mm bar sizes of which 98 per cent is CZ121 brass, the balance being stainless steel. The 105-person company produces more than 120,000 pumps a year and generates sales in excess of £17 million.

As part of the automation package that enables a direct 'bar to wash' scenario to be maintained, Stuart Turner uses the NC Engineering unload gantry on the Citizen to transport the parts from the sub-spindle of the machine for placement on to a slatted conveyor for feeding to a longer conveyor that runs the length of the barfeed. From this conveyor the parts are deposited into plastic boxes ready for washing and the plastic boxes are fed to the unload point on a separate conveyor that also runs beside the barfeed.



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requirement for costly, skilled labour is also lower than ever before. When their capabilities are coupled with the ability to run unattended for long periods using modern barfeed technology, labour costs can be minimised.

These principles apply across the entire range of lemca short barfeeds (Kitagawa Europe) such as the recently introduced Master 19, which the supplier says is the only 1.9 m (6 ft) barfeed in its class with the ability to retract remnants. The unit can also feed at 150 mm/sec without the need to adapt bar length to the length of the lathe spindle – again, greatly reducing waste.

The benefits of unmanned production are underlined by further developments from lemca, including the recently introduced Automata 2.5 workhandling system for automatically feeding, unloading and storing bulk components.

Now available in the UK, the Automata 2.5 advanced workhandling system boosts the productivity of a wide range of CNC manufacturing equipment, including lathes, grinders, rolling equipment and machining centres.

With a standard load/unload cycle time of just 7 seconds, the loader offers positional repeatability of ± 0.1 mm and will accommodate unmachined parts weighing up to 2.5 kg as standard. It is supplied network-ready with remote diagnostics and on-line software updates, while the use of high capacity palletisers or stackers with the gantry system allows

working with unsupervised lathes.

At the EMO machine tool exhibition in Hanover last month, new Lemca products on display included the Elite 112 and Master 880 Verso. Designed for operation with sliding-head lathes, the Elite is a new feeder for bar stock from 0.8 up to 12 mm diameter, while the Master Verso's snap-in polyurethane guides and front support bush aid complete changeovers in less than 8 minutes.

THE LONG AND THE SHORT OF IT

For many years Hydrafeed has been providing the UK market with its short magazine barfeed solutions. However, the company's standard product range now includes a full length magazine barfeed, the Autofeed.

"The focus in developing the Autofeed was a high quality, value-for-money product that reduced machine down time during set-up," explains Hydrafeed's operations director, Martyn Page.

The Autofeed is supplied in two models which handle 32 and 51 mm diameter bar. Both can be supplied to accommodate bars in either 3.2 or 3.7 m lengths to suit sliding- or fixed-head lathes in left- or right-hand feed format.

Hydrafeed has undertaken several bespoke automated projects recently, furnishing OEM customers with solutions to load raw material and remove completed components after one hit machining processes.

"This part of the business has experienced considerable growth," continues Mr Page, "which we attribute to the fact that a high quantity of simple, repetitive

turning is now imported. What remains is predominantly intricate components requiring multi-tasking machinery. Our customers are investing in this type of equipment and require assistance in automating the loading and parts removal. To this end we will continue expanding our product range with additional products being launched towards the end of the year."

Elsewhere, the recent rationalisation of bar magazine manufacturing programmes at the Faulbach, Germany, factory of FMB Maschinenbau has led to an upsurge in business over the past 12 months, especially in the US, while sales in the UK and Ireland remain strong through sole agent, Star Micronics GB.

Managing director Bob Hunt believes that the dependability of bar magazines is paramount. "It is no good investing in a highly capable and productive machine tool if the bar magazine does not feed the stock reliably, 24/7," he says. "Rapid bar change, fast set-up, central adjustment of essential functions and easy retrofit integration also contribute to maximising production output."

FMB's mainstream ST line of magazines handles bar from 2 to 100 mm diameter. The latest introductions at the top end are the Turbo 5-55 and 8-80 (minimum and maximum bar diameters respectively). Notable on these larger

magazines is a move away from aluminium frames to a cast iron for rigidity and stability when rotating larger diameter stock, particularly stainless steel, at maximum revs.

It is clear that the latest barfeed technology can deliver genuine benefits in terms of manufacturing cost reduction, a point being realised by users of Samsys Multisam 3000 barfeeds, available in the UK from Leader CNC. The company says the unit has been so successful that it has now totally superseded the old-fashioned pneumatic units previously supplied.

Available in two barfeed lengths and using a fully electric servo-driven magazine with updated software, the fast Multisam 3000 offers full flexibility for round, square and hexagonal bars.

The unit has an innovative loading cycle that uses a rotary movement to eliminate bar damage caused by cascading. Stored on an inclined rack, bars are retained and follow the movement of the selector grips prior to being placed on a V-loader that remains fixed and accurately aligned with the lathe spindle during the barfeed cycle.

The Multisam 3000 ensures smooth and accurate loading and positioning of bars without damage or deflection, even for hexagonal bars fed into lathes without a C axis through a pulsed indexing system. □



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