Second time around

Broadbent Stanley brought back to the UK and refurbished two of its own machines that had been supplied to a customer in the Gulf and then duly supplied them to another firm in the same region

For modest outlay, rebuilding or retrofitting new controls to a tiring shopfloor favourite can provide enormous benefits. Steed Webzell reports

High accuracy machining, fast traverse rates and powerful controls are the preserve of sophisticated, latest technology machine tools. Or are they? The justification for selecting a new machine or refurbishing an existing one generally hinges on access to the latest technology and the accuracies that can be realised from an ageing machine.

"Competently refurbished machines are at least as efficient, if not better than many new machines," states Paul Hinchliffe, the managing director of Asquith Butler, a machine tool company that sells both new and refurbished models. "It is a fallacy to believe that an older machine cannot have the accuracies of a new one and, accompanied by the appropriate mechanical modifications, latest technology controls can be employed just as easily and effectively on refurbished machines. We have rebuilt to high performance a number of Asquith Butler machines on behalf of customers, including those in high tech industries such as aerospace and scientific research. In refurbished machines, we can achieve accuracies over a given length of within 10 micron straightness and flatness."

Asquith Butler engineers rebuild a machine from the 'foundation fastenings' up. Mechanical components (ballscrews, guideways, hydraulics and pneumatics) are re-machined and re-qualified to as-new specification, and – by employing the latest materials and design techniques – higher speed and feedrates can be achieved. Performance can be further enhanced by the specification of advanced technology – for instance, high frequency spindles or special-purpose/5-axis heads.

The advantage of refurbishing rather than buying new is both cost and convenience. According to Asquith Butler, with the current costs of steel and castings, refurbishment is usually barely half the cost of an equivalent new machine. An existing machine requires no new foundations, no additional floor space, and only the existing services.

RETURN TO BUILDER

Within the past 18 months Broadbent Stanley has supplied two new 14 inch hollow spindle CNC lathes to one of its customers in the Jebel-Ali Freezone region of the Gulf, reports managing director Graham Thomas, "but it's not often we buy our own machines back". He explains that when the second new machine was installed late last year the customer pointed out he still had his two Stanley hollow spindle, manual lathes supplied new in the 1980s, which were now redundant following the installation of the new CNC models, and would Mr Thomas like to buy them back? A price was duly agreed and both were shipped back to the UK. Both models were HSP 9 7/8 inch spindle bore variants, one a 2 m bed the other a 3 m version, but even before the machines landed back on British soil the latter was sold back to the Gulf, although this time to Oman.

Prior to the commencement of any rebuild, Broadbent Stanley personnel carry out a detailed survey on the machine to ensure there are no surprises in store at a later date or in the case of a customer machine, no hidden costs. All work carried out is documented to form a build history with a copy presented to the customer with a 12-month warranty.

The 'sold' machine was subject to such a survey then stripped with all casting and component parts checked prior to refurbishment and painting. All slideways were re-ground to 'as new' tolerance, while the apron/crosslide assembly was completely refurbished with new bushes and bearings. The machine is fitted with Broadbent Stanley's own design semi-automatic thread repair cycle and was refurbished along with the hydraulic copying unit. The headstock gears and shafts were in remarkably good condition considering the machine's age and the amount of work it had done, but again received new bearings throughout along with a re-ground spindle.

Broadbent Stanley says that not all machine tools are worth rebuilding and it's sometimes cheaper to scrap a worn out machine and buy new, but in the case of some larger, heavy duty, quality machine tools, a rebuild by a specialist company will give the machine another 20 or 30 years' service.

A service contract with Wheelabrator Plus paid dividends for a leading aircraft coatings firm

HEAVY DUTY AND QUALITY

Highlighting the demand for rebuilding services, another specialist in this field, Halifax Numerical Controls recently announced its biggest ever order for six machines to the value of £982,000.

Against international competition from companies in the US, Sweden and Holland, HNC will rebuild and retrofit new CNC controllers to six large machine tools from US aero engine maker Pratt & Whitney.

Pratt & Whitney, seeking machines for a new venture in China, concluded good quality rebuilt models offer better value. Among the assets acquired with a now defunct Volvo aero engine maintenance factory in Stockholm, were two Dorries and one Schiess vertical turning lathes, a VAES vertical grinder, a Union 5-axis horizontal borer and a Deckel FP6 machining centre.

All machines will have new electrics fitted throughout and be retrofitted with the latest GE-Fanuc Oi controllers, servos and drives. Delivery is due in November.

Another company prospering in the rebuild arena is Blue Diamond Machine Tools, which has recently completed a DSG oil country lathe, removing the tired and unserviceable Phillips control and fitting a New Fagor 8050 CNC.

"Having been CNC retrofitting for 15 years, we find that medium to large machines have an excellent payback value and are a preferred option rather than replacing with new," says company managing director Brian Burn. "Furthermore, the recent installation of a 6 m Favretto double column slideway grinder has opened up the prospect for the larger equipment to have a facelift. With the lack of high quality second-hand machines we think that refurbishment and CNC retrofitting is coming into its own."

A repeat customer of BDMT is Aberdeen-based Smith International, an API service repair centre.

"Our work is very much dependent on precision machines to produce the quality products for the North Sea drilling industry," says operations manager Jim Miller. "Our preferred supplier, Blue Diamond, has inspected and carried out repair work on our machines to maintain the tolerances required in the manufacture of rotary shouldered connections. Recent repairs include two each DSG oilfield lathes and two Lehman oilfield lathes, required for geometric and mechanical remedial work."□

Extended care

Blast equipment efficiency levels have taken off at a leading aircraft coatings company after a new service contract with Wheelabrator Plus led to an 80 per cent increase in uptime. The 12-month contract covered the entire portfolio of shotblast equipment at sites in Lincoln and Ripley. Since taking out the contract, machine downtime has been reduced considerably, with equipment running approximately 90 per cent of the time, where previously this was just 50 per cent.

The contract includes twice-monthly visits to both sites and routine services for every machine. During each visit a designated Wheelabrator Plus technician inspects each machine, recommends replacement of any worn or damaged components and provides a detailed analysis report.

"The cost of having a Wheelabrator Plus service contract in place is rapidly recouped," explains Ray Parsons, Wheelabrator Group's UK general service manager. "On-site replacement of damaged or out-of-date parts reduces unnecessary waste, downtime and production costs. Customers also know they have a machine that complies with the latest health and safety regulations."