

KMF are one of Staffordshire's manufacturing success stories based in Newcastle-under-Lyme. A market leading supplier of Precision Sheet Metal components and Assemblies. The family-owned business was established 37 years ago and has achieved its success through a resolute commitment to quality, investment and innovation.

Its recent history has seen dramatic increase in turnover, driven in part by the decision to consolidate all of its manufacturing activities to one site. This, combined with an annual investment in new equipment of around £1 million per year has seen turnover grow from £9 million to over £20 million during the past five years. The result is a state-of-the-art manufacturing facility that operates 24 hours, seven days per week, with the 250 permanent staff working a mix of conventional day / nights and continental four on four off shifts. This gives KMF the flexibility it needs to deliver the high levels of service expected by its diverse customer base, which range from blue chip organisations to sole traders.

Part of the recent growth in business has come about by winning contracts that had previously been lost by UK manufacturers, including KMF Precision, to low-cost economies in Eastern Europe. Our ability to compete on a global scale is down to the high level of investment that the company is committed to, says Graham Slide, Project Manager at KMF Precision. We have to be in a position to take labour costs out of manufacturing to maintain our competitive advantage and enhance the quality of our products. The most recent investment addresses both of these areas by eliminating a labour intensive process and at the same time creates a level of consistency that was difficult to achieve using previous methods. KMF has purchased a total of three Timesavers and one VG deburring machine from Ellesco. These will be used to process all flat (and some profiled) parts to create a consistent surface finish prior to painting. Before installing the Timesavers and VG machines we used a grinding process to create the surface finish we required, says Graham Slide. However, this process generated sharp edges, which required further manual processing. Now, because we specified deburring machines, we have a process that generates the required surface and deburrs the parts at the same time.

A further advantage provided by the new machines is their ability to process Galvanised and Zintec material without detriment to the surface coating. Our previous system was just too aggressive to process this type of material and we are now in a position to investigate lots of new business as a result of this capability. Similarly, with the ability to utilise different media in the process at the touch of a button, we can process different materials to a much higher quality standard he confirms.

The Timesavers machines use a combination of abrasive belts, rotating deburring discs and roller brushes as a finishing medium. As the part is fed into the machine, held in place by a vacuum, the abrasive belt removes any initial burrs that might be present. It is then fed past the rotating disc that creates an initial surface finish on the part and also creates an even radius on all edges of the component. Before exiting the machine the parts pass the roller brush or a secondary abrasive belt to complete the surface finishing treatment, putting a straight grain back on to the part.

All of this process is controlled by the machine's touch-screen control units, which have a capability of storing up to 999 different programs to take in varying parameters such as material and process requirement. In effect, the operator/programmer has infinite control over parameters such as conveyor speed, disc rotation speed, disc pressure, grinding head pressure and material thickness. KMF have defined 5 generic program settings that are applicable for 80% of the entire work processed in the area. These programmes are identified on the manufacturing route cards keeping the process as simple as possible for the majority of work.

The larger of the machines installed at KMF is capable of processing sheet up to 1350 mm wide meaning that full size sheets, as well as small individual components can be deburred and the surface prepared. The Vacuum belt systems are key to holding small parts and for continuous high quality graining. Our previous system used pinch rollers to control the parts on the belt, this caused quality issues due to the witness marks from dwell and differing pressure settings, these were eliminated by using a vacuum belt.

The VG machine is also used for surface preparation and deburring but uses a slightly different process to achieve its results. The initial deburring is done by an abrasive belt before the part is passed through a series of oscillating cup brushes. This particular machine has been developed in line with KMF's specific requirements, particularly the belt system. The standard machine uses a series of pinch rollers, but on the KMF machine VG used a magnetic work holding system. This permanent magnet system within the belt area allows us to process much smaller parts than would normally be possible, without any problems, says Graham Slide. The machine also incorporates oscillating / rotating cup brushes that enable the machine to deburr Zintec components without removing the coating. We can also process parts that have shallow forms on them because of the style of the rotating cup brush abrasive media.

The success of the cell containing the first two Timesavers machines and the VG machine resulted in a third Timesavers being installed, specifically for the preparation of parts for one particular customer. Positioned next to a Pressbrake, parts are fed through the Timesavers machine then bent as part of an inline process. The elimination of set-ups and reduced transportation around the factory has resulted in much more efficient and higher quality processes for KMF Precision.

These installations are more than capable of processing any of our current work, says Graham Slide, but as a sub-contractor we do not necessarily know what work will be coming through our doors next. These machines give us the confidence to quote for and to take jobs on as we



know that we now have the capability and flexibility to do pretty much any deburring or grinding that might be required.

KMF Precision is aware that being based close to the Potteries the availability of skilled employees is always going to be an issue. To address this problem KMF has taken the decision to train its own staff, including the current cohort of 14 apprentices. In order to provide the right environment for this training the company has created an EAL (EMTA Awards Limited) accredited training centre equipped with latest communications technology for theoretical learning, and for practical learning a designated welding and fabrications bay. This will be operated in conjunction with the local technical college, and staffed by a team of fully-trained assessors who will be supported by two internal verifiers and one external verifier, making up the EAL training team.

This facility allows us to train and assess employees in a diverse range of qualifications in both National Vocational Qualifications (NVQ) and Vocational Related Qualifications (VRQ), concludes Graham Slide. The qualifications employees can achieve include advanced apprenticeships; health and safety; business improvement and machine maintenance.

The success of the first two Timesavers machines installed at KMF Precision has resulted in a third, stand-alone machine being installed.

Editor's notes:

Ellesco is now in its fourth decade of business and rightly claims to be the UK's leading supplier of large finishing and deburring machines. Founded in 1975, principally to market the Timesavers / Grindingmaster range of abrasive belt and brush machines, the company has, along the way, attracted other manufacturers to its exclusive portfolio, all market leaders in their own fields: Autopulit, Kuhlmeier, VG and IEPC. The vast experience of deburring and surface finishing that the company has gained over this period is being put to good use in a diverse range of industries and virtually any deburring and surface finish application can be catered for.

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