

## Leading cold forming supplier transforms production planning with Preactor



Floform is a global supplier of cold formed components for the automotive, power semiconductor industries and a wide scope of applications requiring rivet fasteners. The company has been cold forming metals into complex shapes at its UK factory since 1959 and now has a specialist product range that includes electrodes for spark plugs, injector sleeves for diesel engines, heat sinks for power semiconductor devices, headed components for numerous auto electrical applications and commercial and industrial rivets.

While its primary markets are the US and Europe, it has a world-wide customer base with major customers including Volvo, Ford, Bosch, Federal Mogul, Securistyle and Honeywell. When Floform needed to improve its planning and scheduling capabilities as part of its commitment to ongoing system and business development, it found the best fit solution in Preactor.



Floform has three major process groups with very distinctive manufacturing routings. The first of these is injector sleeves and bi-metallic copper/steel semiconductor bases with these being typically made in low to medium volumes with a lead time of 1-4 weeks depending on material availability. An average routing would begin with cropping the slug which reduces material waste before annealing and assembly of the steel to copper in the semiconductor base. After the required cold formed press operations a variety of finishing processes may be undertaken before packing and despatch. Copper-cored nickel-sheathed spark plug electrodes comprise the next group; these are made in medium to high volumes and again have a lead time of 1-4 weeks depending on material availability. Slugs from both materials used are cropped before being bonded together and then rough formed by cold extrusion. These undergo a final forming process before packing and despatch.

The third process group, diode bases for automotive applications and commercial & industrial rivets, is primarily made in high volumes albeit with the same lead times as the other groups. A typical route would begin with multistage cold forming – high speed 4 or 5 die machines, to be followed by an interim series of operations including cleaning, roll forming, subcontractor plating etc, before being packed and despatched. What each have in common is that the majority of orders are on a Make to Order (MTO) basis unless a specific agreement has been made with a customer to hold a level of stock.

Working this way however raises a significant number of business challenges that Floform has to deal with, not least the fact that lead times on its supply of copper bar and nickel coil can vary between 5 to 8 weeks, all of which are longer than the actual customer lead time which necessitates

accurate forecasting and stock control. The cost of these materials make it unsustainable for Floform to simply hold high stock levels “just in case”, nor does it make it desirable for its suppliers to do so without forward commitment. A lack of forward visibility from a number of customers again adds to the reasons why the company cannot justify holding unnecessary material stocks which in turn increases the overall lead time to despatch of product.



There are also resource and capacity considerations, such as there being limited numbers of personnel available for manual operations and production constraints due to certain parts only being capable of being produced on one specific machine within a group of similar machines. Floform also had a historical situation in which personnel operating machines only worked in specific areas which led to a lack of skills flexibility which again added to the overall constraints on the business.

The company had already responded as best it could to these challenges as part of its ongoing development and had implemented machine layout changes to reduce work movement and improve the efficiency ratio of personnel. It had also increased training of personnel in other areas to improve flexibility, invested in automation to reduce the reliance on manually operated machines while optimising process and improving efficiency ratios by fine tuning individual operations.

One area which still needed attention was production planning and scheduling. Dean Hardy is Floform’s Production Planner and he describes how this used to be prior to the investment in Preactor. “Before Preactor was introduced Floform used an MRPII system which calculated requirements using infinite capacity planning. There was a limited review of sales orders before they were entered onto the system and when MPS/works orders were entered onto the production line they were inevitably thrown immediately into a continual backlog situation. In turn this generated unrealistic requirements for subcomponents and raw material ordering. This meant the need for a group of 6-8 people to review the ‘work-to’ lists in a meeting and make priorities daily.”

The result was high levels of Work in Progress (WIP) which covered up a lot of daily issues and shortfalls in the system but also increased the cost to Floform. This was not helped by the person responsible for ordering the material working independently of the planning team and ordering material using the unrealistic data generated by the system. Hardy again, “At this time we held a large consignment stock of copper which was funded by our main supplier which again covered up any shortfalls in the system. As soon as this consignment stock agreement was finished by our supplier, we had to carry the cost of keeping any material and it became imperative to minimise these levels.” Ultimately, the pressure on Floform to optimise costs through reduction in manpower and tighter control on WIP and stocks forced the company to look at more effective and efficient planning environment.

The process of sourcing a suitable solution started around 1998/99 with the company drawing up a list of expectations for the new system. In particular it would have to work adequately from information generated in its MAX MRPII system because the company wanted to keep all its other functionality, finance etc, and not replace the whole system. Hardy describes the early stages of the selection process as being, “like a minefield because there seemed to be so many companies offering fairly similar products with only slight differences. Preactor however seemed to be a system which was already widely used in many different environments and industries and was fairly easy to obtain information about.”

Floform also visited a Computer Aided Manufacturing (CAM) technology exhibition at the NEC, spoke to a number of potential suppliers and invited three of them to come to Floform to demonstrate their products and speak to a select team of people from within the company. Preactor was one of these companies which led to a subsequent attending of a Preactor evaluation and information seminar in Coventry. Hardy comments on the findings of this final stage of the selection process. "To be honest, there wasn't a huge amount of difference between the capabilities of the different systems but Preactor had the support and product in place and was very competitive on the price." It was important for Floform to have a finite capacity scheduler capable of modelling different what-if scenarios and handling a range of constraints, most notably people, material availability and machines. As such, Floform recognised it would allow the company to replace the need for a group of people to carry out daily planning, to more accurately plan around the constraints, to generate more accurate work to lists and to increase the accuracy of material ordering.

Having made the decision to invest in Preactor, Floform needed to develop an implementation strategy which began with determining which data from its MRPII system would need to be transferred into Preactor for each download. After this was established, the IT department had to generate the download file which would be transferred into Preactor. Other information required for the successful running of Preactor included the mapping of all relevant machines, resources, constraints and entering these into the Preactor database. In addition to working internally as a tightly knit team, Floform also worked closely with Preactor Solution Provider SFJ Systems not just on a system development and implantation level but also in terms of training. The former was carried out by a combination of site visits, phone discussions and emails while the latter took place at Preactor's headquarters in Chippenham. This ensured that in addition to an understanding of the system itself, those personnel who would actually be using Preactor had appropriate training on the day to day use of the work-to lists. For Hardy, the most important part of the process was the support of the Floform personnel continuing with the old system whilst system development took place which helped minimise any potential negative effect on the business.

After a period of 8 months, Preactor went successfully live in October 2001 and has been consistently delivering the expected benefits ever since. Not only has there been a significant reduction in manpower required for detailed planning of the shop floor activities, there is now a better working relationship between Planning and Production and a greater overall sense of trust. Production personnel have been empowered to work towards achievement of their work-to lists which in turn results in a much improved level of cross section communication. This is complemented by the Planning department now able to order raw material demands rather than an independent department as before. From a production perspective, the visibility provided by Preactor has improved accuracy of the company's capabilities leading to a better understanding of when expensive raw materials need to arrive therefore helping to minimise the cost of material stocks and WIP. It has also brought a greater clarity of restrictions and capacity constraints on production outputs.

Hardy is also keen to point out that the benefits brought by the Preactor solution have been matched by the quality of the service and help that is always available through SFJ Systems. As for the future, Floform is continuing its policy of ongoing development. 2009 will see the introduction of a new Windows-based ERP system in 2009 which will bring greater levels of refinement and control over its existing MRPII system. What won't be changing however will be the company's use of Preactor which will be integrated to the new system in order to continue delivering the benefits the company already enjoys and potentially even more.