

INDUSTRY 4.0 MISSION CONTROL AT VELDEN ENGINEERING

INDUSTRY 4.0

What is Industry 4.0? Industry 4.0 creates what many call a “Smart Factory”. Where computer software systems like FactoryWiz monitor physical processes, such as CNC machines, robots or assembly lines etc and present real-time information to users to make better decisions based on facts. This information can then be shared between other systems such as an ERP system or MRP system.

Velden Engineering, a family owned sub-contract engineering company based in Bolton, Lancashire, has an excellent reputation for supplying quality machined products to blue chip customers, in a diverse range of industries. Established in 1973, the Managing Director, Austin Kitchen is second generation and has been responsible for driving the business forward by introducing the latest, cutting-edge technologies, such as automation, laser technologies, robots and IoT. "We are very aware of our customer's expectations and the onset of the fourth industrial revolution, Industry 4.0, demands that we provide our customers with the benefits of smart factory monitoring plus direct communications and automation with full monitoring and reporting, in order to meet their stringent demands.



Our first investment in monitoring software was in 2012 and was on the back of winning a contract which required us to run 3 HMC's 24/6, highly efficiently for a period of 18 months. Our experience with this software proved that we did not receive the depth of information we required to make informed decisions and the system wasn't suitable to deploy throughout our factory as it was only able to monitor certain types of machine control such as our latest Okuma machines.

In 2014 we began to consider data monitoring again as it became clear that our customers required even shorter lead-times, which could only be achieved through immediate reaction to any production issues. At the time we were also considering reinvesting in our vertical machining centres and we believed that a few new machines run efficiently, could outperform several of our older ones but we had no way to easily prove how efficiently the older machines were performing nor to explain machine downtime.

After our previous experience of data monitoring software, we were only willing to invest in a system which could be proven to be able to monitor different types of machines and processes. In early 2015, we installed FactoryWiz, supplied and supported by CNC Applications Ltd, initially, on a series of our latest IP based CNC machining centres and lathes, which gave us instant detailed monitoring of full machine data, including operating times, idle times with reasons for idling, machine alarms etc.

The benefits gained from FactoryWiz on the new machines were immediately evident. CNC Applications then continued to prove the system by enabling monitoring on some of our older CNC machines and non CNC machines, such as our Favretto grinder. This success granted the full

investment being signed off with FactoryWiz being rolled out throughout the site on to the majority of our other key machines. These including waterjet, laser cutting, punch and benders in addition to monitoring processes such as our tin plating plant.

A key benefit in working with CNC Applications was the flexibility of being able to design and commission our own custom dashboards, which all use the information recorded by the FactoryWiz system. These dashboards are displayed in several points around the factory and production offices and provide us with real time data and history. Such high visibility ensures we are informed and allows us to react quickly. The shop floor hosts “Mission Control”, a bank of 9 large monitors displaying information on machines, processes and performance. The same information is displayed at the corresponding machine, where the operator is not only able to view the data but can also record events and reasons behind performance reduction. In addition to “Mission Control” and our on-machine display, we can also remotely access FactoryWiz data from our smart phones and tablets. FactoryWiz allows my managers and I to view our performance during our full 24 hour 5 day operating hours, giving us the opportunity to make informed decisions, even remotely, if necessary.

The information which FactoryWiz gives us is complete and invaluable plus it allows us total visibility across the company. We now know exactly what is causing a problem and can make decisions to rectify the issue. Knowledge is certainly power in our opinion and our team have readily accepted FactoryWiz and found the system easy to understand and operate.

Adding data monitoring to all our machines is also the first step towards eventually utilising and sharing the resulting information live into our customers’ and suppliers’ systems, which is a key aim of the Industry 4.0 vision. The benefit of FactoryWiz is the data collected is easily accessible to our Vmans ERP system and is, therefore, the perfect data monitoring platform for us moving forward.

The next expansion of FactoryWiz is already planned and will include adding data monitoring to more of our conventional machinery, saws and in our welding section. The eventual goal is to have our entire factory monitored and supply chain connected, allowing us to further control our costs and have absolute facts on which to base our decisions moving forward. From a management perspective, the quality of data already being provided, will enable us to continue to be competitive well into the future.”



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