Technology

The advent of the 4th Industrial revolution has only accelerated the integration of technology into our society and the utilization of IOT related gadgetry threatens to push us over the edge with reliance on the microprocessor. Let's not even begin the discussion on AI! When Elon Musk offers up caution on that topic, we should all pay much closer attention.

But stepping back just a bit from the above the race for the latest, greatest, fastest, most complex automated manufacturing systems available to industry, what about the CNC machining centers.

Evolution of CNC Machining

Metalworking and fabrication was performed by numerical controlled or NC machines before the invention of CNC machining. These NC machines were created in the late 1940s by John T. Parsons, who worked closely with the Massachusetts Institute of Technology.
It was not until later in the 1960's and early 1970's that the idea of combining computer aided design/manufacturing was being explored as the next generation of machining centers was birthed. By 1989 the true CNC machine tool industry was birthed. Now that digital technology had entered the fray, automation in production processes has become more efficient than ever.

Advantages of CNC Machining

The advantage of CNC machining is represented in accuracy, productivity, efficiency and safety. Human interaction is significantly decreased when using a CNC machine, as a result the amount of errors is lower. Some large fabrication companies even leave the CNC running over an extended period of time unmanned. If there is a problem with the machine, the software automatically stops the machine and calls the operator.

With all the advantages of the further evolution from the 3 axis to the 5 axis machines and the increased complexity of processes they are able to accomplish, the industry has not been without it's pains. Regardless of their simplicity or complexity, one thing always required is troubleshooting and repairing.

While poor or lack of maintenance is a universal problem, the CNC arena also presents a couple of other maintenance issues. Those are improper tools and settings. The wrong tool or setting can spell disaster not only for the product on the table but for the CNC itself.

The other issue of increasing importance here and the 4th industrial revolution is that of improper or incorrect programming. With proper training many of these issues can be overcome and/or mitigated with time.

What part does quality power play?

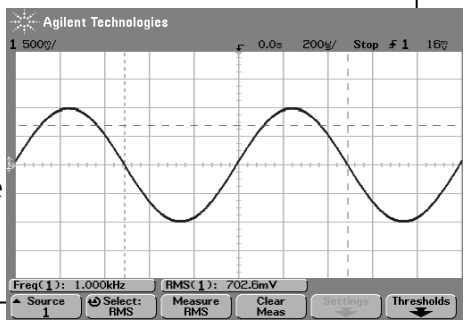
As the computer processors of CNC machining centers have continued to evolve and become more complex, so have the issues with random lockup's, loss of synchronization and other unexplainable "No Trouble Found" service calls. It is often thought that the CNC is a ruggedized industrial piece of equipment that barely requires a climatized environment, much less a quality electrical infrastructure suitable for a 21st century data center.

More is required of the engineering department than just setting the machine and turning on the key and handing over the owner's manual and programming instructions of the CNC. Our industrial clients from around the world have come to realize that investing in new technology is not enough to improve profitability.

4th Generation Technology

Capitalizing on the benefits of Industry 4.0 and all that it may offer requires a sure foundation. SineTamer® is that first step. Virtually all OEM's build in a simplified surge suppressor, typically a common MOV type device. The challenges arise when unexplained occurrences begin to plague the machine, and no one has an answer, since surge protection is "built-in".

SineTamer® is not your common surge device. It is an engineered transient disturbance filter that is designed to monitor all 360° of the sine wave. According to numerous studies one of the predominant power quality issues involves loss of synchronization of processes and unexplained reboots or resets. Many of these events are triggered by false zero crossings of the sine wave, which the typical surge arrestor can never prevent.



Results from the field!

A CNC dealer in Africa experimented by installing SineTamer® at their expense on 70 machines. The report back was that at a minimum over 50% of the warranty related call outs and calls into the service line had been eliminated.

In Brazil user of ROMI machines experienced a 95% reduction in downtime due to elimination of drive failures and various resets and a one month ROI.

A user of IEMCA had been experiencing multiple downtime related issues from loss of programming and lightning/surge related events. Once the two level cascade approach was installed, electrically related downtime ceased and the ROI was 2.5 months.

SineTamer® is currently being utilized by end users on machines manufactured by… *Mazak, HAAS, Okuma, XYZ, ROMI, Daewoo, Trumph, Puma, Hitachi, Toyoda, IEMCA, Zahoransky, Hermle…* along with many other brands around the world!

One additional story, of which we have a multitude of, comes from a Mazak user in Ecuador. Programming loss and confusion related events were costing the client a minimum of $25,000 of losses per month. Post implementation of the SineTamer® cascade system, the engineering team reported 100% success with an ROI of 1 day.

In virtually any scenario, the right environment can only increase the odds of success. SineTamer® is the answer to the question you may not have even asked.

For the security of your electronic infrastructure contact us or one of our global partners at info@sinetamer.com.