

How a Global Manufacturer Prevents Defective Parts with SPC Software

Easy monitoring and actionable reporting are key.

By Leah Pickett



Zontec SPC Software Improves Manufacturing Quality Source: iStock

ARaymond, an industrial supplier of fastening and assembling solutions, rose from humble beginnings. Founded in Grenoble, France in 1865, the family business “started out making fastening elements for the glove and footwear industry,” says Jake Fox, senior quality engineer at ARaymond’s Brunswick, Ohio location.

Today, ARaymond has 26 manufacturing sites and 11 engineering centers across 25 countries.

“We provide fastening and assembly solutions to the industrial, energies, agriculture, automotive and life markets,” Fox notes. “The Brunswick, Ohio location caters to mostly industrial and automotive, as well as some energies.”

On the whole, ARaymond operators focus on process capability and process performance, paying close attention to Cpk numbers. Cp represents process capability, and Cpk is a tool to measure the Cp value distributed between upper and lower limits. Cpk represents the capability the process could achieve if the process was perfectly centered between the specification limits.

For years, Fox and his team have used Zontec Synergy 100 software to track their daily Cpk numbers and observe trends. Crucially, they use the software to “generate Cpk reports and compare to historical Cpk levels, looking for abnormal shifts,” Fox explains.

From the data and graphs, Fox and quality manager Jeff Ebersole can “evaluate and make necessary adjustments quickly and easily.” Moreover, the software enables their team to make tooling adjustments before a bad part is produced.

In an email exchange, Fox and Ebersole elaborated on how their chosen SPC software at once improves their process and reduces defects.

Quality: How long have you been using Zontec Synergy 100 at ARaymond?

We have been using the software since 2007. We identified a need to have better visibility of our process capabilities and we liked Synergy’s ease of use for our operators.

How long did it take to learn how to use the software?

It is a Windows-based software that is very familiar to users and very easy to learn, even for beginners. Once parts are set up, within several minutes operators are able to pull up parts, enter data, and review the charts with ease.

Have the numbers of bad parts at this facility decreased since implementing the software?

We have definitely seen a downward trend in defective parts. These charts are reviewed hourly and results are compared to the control limits. In doing this, we are able to identify if the variation is within normal variation, or if there is an abnormal shift requiring adjustments. This data helps us make timely corrections and helps avoid time-consuming and costly over-adjustments.

For example, we had a bracket where the width was trending upward (Cpk trending downward), which wouldn’t allow it to fit in the application. Synergy allowed us to detect the trend and alter the tooling to allow for adjustment flexibility. This also led to an increase in our Cpk the following month. Not only did this improve our process capability, but it also helped us to avoid making a [bad part].

What changes did you notice in your process and in your business after implementing the software?

With the assistance of the Synergy software, we have driven our PPM levels below 1 PPM. Also, our machine downtime has been reduced, as we are no longer making adjustments when they are not necessary.

The Zontec Synergy software has become an integral part of our quality management process. The system has been very easy for operators to use, [and] it provides a very good visual awareness of current process conditions.

ARaymond not only uses the system to help us in monitoring our process, but also to provide data to our customers. This gives our customers the peace of mind that our manufacturing processes are consistent and capable. In analyzing the historical data, we are able to identify trends and make corrections to our process before out-of-tolerance parts are produced, which helps us continually improve and prevent defects.

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Zontec SPC Software

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