



CASE STUDY

People, Equipment, and Parts: 3 Critical Aspects of Quality Control

Product quality doesn't start on the manufacturing floor, and it doesn't end when a product is shipped, either. Quality is a philosophy, a standard we at KMC hold ourselves to from the minute a new employee starts their first day to long after a part helps a vehicle run. It's the only way we will achieve our goal to deliver 100 percent defect-free products to our customers.

There are three critical, interdependent factors when it comes to quality control: people, equipment, and parts. Over the years we have analyzed, overhauled, and continuously improved these key areas because our manufacturing partners shouldn't expect anything less. Following are the insights we've gained from the journey.

People: Personalized Employee Training

People are the lifeline to any manufacturing company – even in these times of ever-increasing machine automation. Most new hires in the metal stamping industry have general manufacturing experience and need a proper training program to better introduce them to lab and product equipment.

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Recently, KMC invested in personalized training for our employees ensuring they aren't only dedicated to the quality of the product we make, but gain a deep knowledge of how KMC uniquely makes it. The training program includes educating employees on equipment beyond the instruction manual, blueprint design, Geometric Dimensioning and Tolerancing (GD&T), all aspects of engineering and production, and even enrolling them in classes at the Milwaukee Area Technical College (MATC) when needed.

This company-wide training program has helped new employees get up to speed more quickly, reduce scrap, and improve our quality inspection process. With continued education, our people are equipped to grow beyond their hired position and become operators, supervisors, and trainers themselves.

Equipment: Innovative Investment

Technology is changing rapidly and in ways that can make the quoting, engineering, production, and testing processes more accurate and efficient. We continue to invest and reinvest in our equipment in order to support our staff of experts, excel at reliable manufacturing, and demonstrate outstanding customer service.

Throughout the last several years we've added vision systems, instant measuring machines, and a brand new coordinate measuring machine (CMM). The CMM is probably the most versatile machine we have because it has proved invaluable in every aspect of our operations. KMC's CMM, coupled with the employee training program, has contributed to:

- Shortened measurement time from six minutes to two minutes
- Increased throughput by 300 percent
- Reduced inspection times on the production floor and lab by over 60 percent

The CMM, from Hexagon Manufacturing Intelligence, offers laser scanning, CAD integration, and highly accurate data capture that is especially important when working with tight tolerances. Everything we do on the people and equipment side is meant to benefit the goal we're all working toward: defect-free parts.

Parts: Tolerance and Testing

One question we always ask before quoting a project is, "Are we capable of meeting the tolerance the customer is requesting?" Asking questions about the manufacturability of a design allows us to take an honest look at whether we can meet the customer's needs.

KMC is a big proponent of prototyping during the quoting phase. Our product engineers work directly with the potential customer's engineers to better understand the need, application, and long-term use of the part they have requested. Manufacturability is be all end all to our entire quality commitment. If we cannot meet the tolerance requested based on the design that was given to us, our design team will propose an alternative prototype that still fits the application, but is easier to consistently produce without error. Technology like the CMM helps us complete complex draw work at a rapid and timely pace.

Once production begins, KMC operators follow ISO/TS requirements for safety and quality and check products multiple times in one staging for consistency and efficiency. That's not to say we don't make mistakes. But when we do, they are caught and fixed before any part leaves the facility.

Continuously Improving Quality Control

By continuously improving our processes, increasing team knowledge, and investing in high-quality equipment we've been able to see the results of our quality control efforts reflected in customer satisfaction after each project. Every manufacturer can benefit from taking this holistic approach.

