



QT Manufacturing

QT Manufacturing located in Dallas, Texas was founded in 1990. Since its founding, QT Manufacturing's primary goal has been to provide complete plastic injection molding, tooling, CNC machining, and prototype solutions. With that goal in mind, QT has assembled a team of 30 employees with more than 250 years of combined hands-on experience to tackle the high precision projects that manufacturers overseas find difficult to produce on time and within tolerance.

QT provides the expertise to design, build, and operate durable, high performance molds with minimal and simple maintenance requirements. QT's CNC machining capabilities produce high-volume precision parts for complex assemblies. All molds are subjected to thorough testing to insure that they perform as designed and are production ready.

The Situation

The management team at QT Manufacturing was faced with growing customer demands and a need for additional space to grow the business. The old facility had become overcrowded and the separation of the CNC department and warehouse from the main production area hampered the flow of production.

QT Manufacturing had simply outgrown the 11,000 sq. ft. facility located in Lewisville, Texas, and needed more space. The decision was made to move the manufacturing operation to a larger facility, which would allow them to house all operations under one roof and provide for future expansion.

The management team decided to engage TMAC to assist in the development of a new facilities layout to be incorporated into a 31,000 sq. ft. facility located in Dallas, Texas. This new layout would incorporate Lean manufacturing principles and provide for optimal production flow.

The Solution

TMAC utilized a team-based approach for the development of a new layout customized to fit the new building acquired by QT Manufacturing. An overall project framework of Define, Measure, Analyze, Improve and Control (DMAIC) was used to execute the development of the layout.

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The QT team members chosen to work with TMAC on this project were initially trained on basic Lean Manufacturing principles before any facility design work began. The initial step for the project was to define requirements and design criteria for the new facility. The next step in the process was to document the current state facility and equipment on AutoCAD, as well as, the new facility building footprint.

TMAC then worked with the QT team to develop current state Area Maps and Arrow Diagrams depicting the flow of production. Applying Lean principles to the current production process, TMAC worked with the team to develop alternative layout concepts to fit the new building, focused on improving production flow and material handling.

TMAC worked with the team and QT's management to finalize the layout design to meet the design criteria. Careful attention was paid to the flow of materials throughout the production process. Using the knowledge gained through the Lean training, the QT team was able to incorporate a Pull Kanban System which provides greater control and traceability over the work in process in the production process. The new facilities layout not only accommodates current production needs, but room was provided in the layout for future expansion into new business.

The Results

TMAC started working with QT Manufacturing in February 2014 and the layout and move was completed by November 2014. QT has seen dramatic improvement in production throughput since completion of the move. Overall production throughput has increased by 30% or more across the organization. The Tooling Department has seen the greatest improvement with production throughput doubling since the implementation of the new facility layout. The management at QT has seen a noticeable difference in the overall employee morale and culture at the new facility. There is a new sense of pride and ownership of the new facility by the employees and a 5S mentality is visibly present throughout the facility. The new facility and layout helps to advertise and sell QT Manufacturing capabilities to customers when they visit the facility.

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