

# # C616663 : MAJOR INDUSTRIAL ENGINEERING

KEY WORD: QUALITY MANAGEMENT / CASTING / LATHING

THAVACHCHAI LOVICHIT : A DESIGN OF QUALITY MANAGEMENT SYSTEM FOR THE MANUFACTURING PROCESS OF METAL CASTING AND LATHING.

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The purpose of this study was to design the quality management system and to propose an appropriate quality system in documentary forms for the manufacturing process of metal casting and lathing by selecting a factory manufacturing valves and fittings as a case study.

In the preliminary study, it was found that this factory was managed by a family-business style. In addition, there were no concepts and processes for the quality management system which could cause some problems. The major problems were the cast iron parts from the manufacturing process of metal casting which did not meet the standards and had to be remelted. Moreover, in the manufacturing process of lathing which turned and assembled the cast iron parts into finished products, there were defective parts which did not pass the specifications of the Hydrostatic Pressure Test. These parts, especially the gate valves, had to be disassembled and reworked by lathing process .

This study has proposed an appropriate quality management system which is compatible with the present working environment, as well as the qualifications of the staff in the studied factory. The proposed quality management system is as follow:

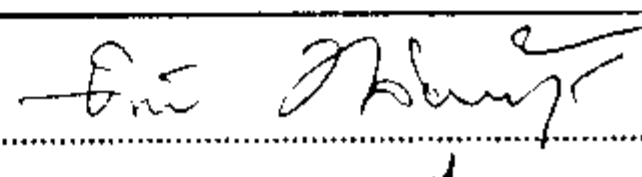
1. An organization chart compatible with the quality management system .
2. A quality management system for the raw materials and incoming parts .
3. A quality management system for the manufacturing process of metal casting and lathing .
4. A quality management system for the final process .
5. Documentation on the quality system : procedure manual and work instruction for implementing quality control and inspection and maintaining its system consistently.

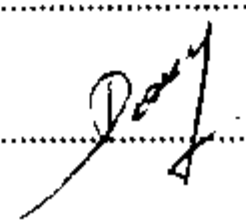
The result of the study by statistical techniques proposed in the quality system also revealed that the percentage of the finished products, the 100 mm. cast iron gate valves, which did not pass the Hydrostatic Pressure Test decreasing from 19% to 6.5% by improving the lathing method .

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