Using AutoCAD Software to Assist in Analyzing the Application of Modern Machinery Manufacturing Technology and Processing Technology

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Abstract. With the renewal and development of modern mechanical manufacturing technology, traditional mechanical manufacturing technology cannot meet the needs of the industry. To promote the development of modern mechanical processing industry, we need to continuously improve the level of mechanical manufacturing technology and processing technology. AutoCAD software, as a computer-aided software, is often used for two-dimensional drawing and basic three-dimensional design. It is widely used in modern machinery manufacturing and processing. This paper first introduces the characteristics of modern mechanical manufacturing technology and processing technology, and then uses AutoCAD software to assist in analyzing the current situation and practical application of modern mechanical manufacturing technology and processing technology.

Keywords: Modern Mechanical Manufacturing, Processing Technology, Application, AutoCAD Software

1. Introduction
Modern mechanical manufacturing technology and processing technology are important elements in mechanical production¹. New processing technology and manufacturing technology play an important role in promoting the development of national economy and industrial production. With the development of social economy and the production of enterprises, the requirements for the manufacturing quality and use performance of mechanical industrial equipment are becoming higher and higher²,³. The feasibility of mechanical design will be restricted by the processing technology and manufacturing technology, which requires the continuous development of modern mechanical manufacturing technology and processing technology. Manufacturing technology and processing technology is an important part of modern machinery manufacturing. Improving the level of manufacturing technology and processing technology is the basic requirement of modern machinery industry⁴,⁵. Therefore, the modern mechanical industry should continuously improve and innovate according to the technical characteristics of mechanical manufacturing technology and processing technology⁶.
2. Characteristics of modern mechanical manufacturing technology and processing technology
Modern machinery manufacturing technology and processing technology have strong progressiveness, mainly in five aspects as shown in Figure 1 below.

![Figure 1. Characteristics of modern mechanical manufacturing technology](image)

2.1. Characteristics of modern mechanical manufacturing technology
Advanced mechanical manufacturing technology and process are used for product manufacturing, product research and development, market development, actual production and other preparatory work, and integrated into an organic whole. With the increasing competition in the machinery manufacturing industry, modern machinery manufacturing technology is required to have the characteristics shown in Figure 2.

![Figure 2. Characteristics of modern mechanical manufacturing technology](image)

2.2. Characteristics of modern machining technology
There are many modern machining methods. Only by choosing the right method can we guarantee the requirements of modern machining technology. In the machining process of the mechanical industry, the machining method should be selected accurately to ensure the accuracy of the process. Adopt special processing methods to process and improve the system of processing technology itself.

In addition, the features of the processing technology include the equipment, positioning and material processing features of the processing technology, as shown in Figure 3 below.
3. Situation of modern mechanical manufacturing technology and processing technology

3.1. The trend of informatization and networking
With the development and popularization of Internet technology, network technology is more and more used in modern machining technology and mechanical manufacturing technology, which promotes the significant improvement of machining and manufacturing efficiency and quality. Modern manufacturing has gradually changed from numerical control system to flexible manufacturing, computer integrated manufacturing and intelligent manufacturing. More and more modern machining and manufacturing enterprises apply network integrated manufacturing and global operational systems. All links of machining and manufacturing have realized the integration of automation and intelligence, which not only reduces the cost, improves the efficiency, but also improves the quality of products. Therefore, modern mechanical manufacturing technology and processing technology are developing to information, integration and networking.

3.2. More and more special processing technologies
With the development of technology and social progress, the demand for the development and use of new materials is higher and higher. This trend has led to the promotion and development of the whole machinery manufacturing technology and processing technology. With the increasing demand of machining products with special properties, more and more mechanical equipment are using new materials to manufacture parts. Special machining technology not only has very high technical requirements for the machining process, but also the shape of the parts is often more complex. Obviously, the traditional machining methods and means can not meet the needs of special processing. Therefore, more and more special machining technology is used by manufacturers to solve material problems and precision shape parts processing problems.

4. Practical application of modern mechanical manufacturing technology and processing technology
As an important part of production in manufacturing enterprises, parts processing is an important part of daily production. With the development of virtual technology and the application of simulation technology, in the processing and manufacturing of parts, parts can be designed in three dimensions,
and then reasonable combination and overlap can be carried out according to the three-dimensional characteristics of parts, so as to reduce the manufacturing links of physical samples as much as possible, reduce production costs and improve efficiency. In the manufacturing process, stereo lithography and laminated solid manufacturing are mainly used. With the application of more and more advanced technology in the production process of mechanical enterprises, the rapid processing and forming technology of parts will be more rapid development and popularization.

In order to avoid the disorder of parts processing and improve the quality and efficiency of parts production and processing, more and more machining enterprises apply parts classification coding in the process of parts processing and production. Reasonable parts classification and coding technology and related technologies can significantly improve the quality and efficiency of parts classification and coding.

5. Conclusion
Modern machinery manufacturing technology and processing technology are the key to the development of modern machinery manufacturing enterprises. Only by vigorously improving the level of manufacturing technology and processing technology can modern machinery industry achieve sustainable scientific development. Therefore, the enterprise should continue to innovate and improve, improve innovative technology, and constantly improve production quality and efficiency. In addition, we should grasp the characteristics and development trend of modern mechanical manufacturing technology and processing technology, promote the application of information technology and integrated technology of processing technology and mechanical manufacturing technology, and actively use computer-aided software, such as AutoCAD, to improve work efficiency in the manufacturing process. Only in this way can we be invincible in the fierce market economy competition.

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