Mechanical Productivity Design and Mechanical Process Analysis Framework Construction

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Abstract: The effective development of modern enterprises has fully considered the mechanical productivity, and the dependence on mechanical processes with good applicability has gradually deepened. In this context, in order to achieve sustainable development of the enterprise and meet the development requirements of advancing with the times, it is necessary to strengthen the mechanical productivity design related to it, and pay attention to the efficient use of mechanical processes, so that the relevant production plans can be smoothly implemented. Gradually improve the production level of modern enterprises and increase their production efficiency in practice. Based on this, this paper will systematically expound the design of mechanical productivity and mechanical process, in order to invigorate the better development of the enterprise.

1. Introduction
Focusing on the design of mechanical productivity and analysis of mechanical processes is conducive to maintaining a good production situation of the enterprise, promoting the development of machinery production operations more efficiently, and increasing the technical content in the implementation of relevant production plans. Therefore, it is necessary to combine the changes in the situation in practice and the long-term development requirements of the enterprise, to carry out the design work of mechanical productivity in a targeted manner, and to strictly control the design process, so that the final mechanical productivity design scheme is more perfect and has a good potential value. At the same time, the mechanical process analysis should be strengthened, and the corresponding analysis work should be put in place to promote the efficient development of mechanical production activities to meet the requirements of increasing technical content in the mechanical production process.

2. Pay Attention to The Value of Mechanical Productivity Design and Mechanical Process Application
In order to make the mechanical productivity design work in place and realize the scientific application of mechanical technology, it is necessary to understand the value of mechanical productivity design and mechanical process application. In the meantime, related content includes the following aspects:

2.1 Pay Attention to The Value of Mechanical Productivity Design
In practice, by paying attention to the design of mechanical productivity, its value is as follows: (1) Emphasis on mechanical productivity design can make the implementation of mechanical production plan more significant, increase the production efficiency of enterprises in practice; (2) Pay attention to mechanical productivity The design is beneficial to improve the efficient use of materials and processes with reliable performance, so that the mechanical productivity under the cooperation of
materials and mechanical processes can be gradually improved; (3) Emphasis on mechanical productivity design is conducive to better adapt to the situation changes in practice. To achieve sustainable development of modern enterprises and improve the status of machinery production.

2.2 Pay Attention to The Value of Mechanical Process
In practice, by paying attention to the application of mechanical technology, its value is as follows: (1) Emphasis on the application of mechanical technology, can effectively support the implementation of mechanical production planning, effectively deal with mechanical production risks, and avoid the impact on mechanical production efficiency. (2) Emphasis on the use of mechanical processes, which can have a good technical content in the mechanical production process, and gradually improve the mechanical production efficiency and quality of the enterprise in practice; (3) Emphasis on the application of mechanical processes, capable of producing enterprises provide better support, optimize machinery production methods, and gradually improve the comprehensive competitiveness of modern production enterprises.

3. Design Analysis of Mechanical Productivity
In the process of improving mechanical productivity, it is necessary to strengthen its design and clarify the corresponding design points. The main points of mechanical productivity design in practice include the following:

3.1 Pay Attention to The Improvement of Mechanical Parts
Mechanical parts are the main part of the machine and are closely related to the good mechanical productivity. Therefore, in the process of mechanical productivity design, it is necessary to pay attention to the improvement of mechanical parts. The specific performances are as follows: (1) Enhance the improved design consciousness of mechanical parts, and under the cooperation of rich practical experience and professional theoretical knowledge, carry out the targeted design work of mechanical parts, so as to optimize the function of the machine, for the machine Increase productivity to provide the required support; (2) Pay attention to the serialization of mechanical products, standardization of parts and generalization of parts, and control the improved design process of mechanical parts, so that the final mechanical parts are well applied. The functional characteristics meet the requirements of effective design of mechanical productivity; (3) Based on the improved design of mechanical parts, it is also necessary to control the selection process of parts manufactured by cutting method, and improve the utilization efficiency of parts manufactured by non-cutting method, and reduce the error in the application to ensure that it has a good fit with the mechanical equipment, thereby increasing the mechanical productivity and enriching its design content [1].

3.2 Pay Attention to The Improvement of Mechanical Materials
Whether the performance of materials involved in the implementation of mechanical production planning and mechanical parts is reliable, which is related to the level of mechanical productivity. Therefore, in the process of implementing mechanical productivity design work, it is necessary to pay attention to the improvement of mechanical materials as follows: (1) In the process of mechanical material selection, materials with strong plasticity, good toughness, suitable hardness and good thermal conductivity should be selected and used to avoid adverse effects on mechanical productivity due to material quality defects; (2) need to be used When cutting materials, it is necessary to select mechanical materials with good cutting performance, mainly because the surface quality and cutting effect of such materials are good, and the requirements for improvement of mechanical productivity can be met. At the same time, the designer should comprehensively consider the cost performance of the materials involved in the scientific design of mechanical productivity, and optimize the use of mechanical materials under the cooperation of material quality inspection and evaluation mechanism, and promote the mechanical productivity supported by reliable mechanical materials. Higher, perfect related design; (3) Based on the improved design of mechanical materials, it is necessary to control the
design process, analyze the factors affecting the material properties, and carry out targeted design improvement of mechanical materials to maintain the machinery. The application of good materials required in production practice provides the necessary support for the gradual improvement of mechanical productivity. In the process of implementing the mechanical material improvement design work, materials with good toughness and good plasticity should be considered, and with the support of heat treatment methods, the cutting performance of mechanical parts should be optimized to meet the requirements of parts standardization, and finally the mechanical productivity can be improved [2]. The schematic diagram of the machining site is shown in Figure 1.

3.3 Consider the Improvement of Mechanical Process

In the process of implementing the mechanical productivity design work plan, it is also necessary to pay attention to the improvement of the mechanical process, so that the mechanical production work supported by the mechanical process can be carried out more efficiently, and the mechanical productivity is gradually improved. The specific performances are as follows: (1) Based on the mechanical productivity design, it should be based on the consideration of the mechanical process function characteristics, combined with the efficient implementation requirements of the mechanical production plan, implement the mechanical process improvement design work, and scientifically control the design process, which will be effective. The mechanical process is applied in the process of manufacturing mechanical parts, thereby improving the mechanical productivity, and accumulating rich practical experience for its design work; (2) In the process of mechanical process improvement design, the use of automation technology should be strengthened to enhance the mechanical production process. Control effect, eliminate potential safety hazards in production, provide effective technical support for the improvement of mechanical productivity, and achieve scientific response to mechanical production risks; (3) Mechanical process improvement in practice, also need to consider the actual situation that is related to the production of enterprises, and evaluate the application effect of the improved mechanical process, so that it can meet the requirements of mechanical productivity improvement, and broaden the design ideas of mechanical productivity improvement. At the same time, it is necessary to have a correct understanding of the potential application value of mechanical process improvement, so that its practical role in the improvement of mechanical productivity can be fully exerted, laying the foundation for the application level improvement of modern mechanical processes, and maintaining good production efficiency in the process of enterprise development. In practice, the use of different measures in these aspects is conducive to improving the improved design level of mechanical processes and improving the design of mechanical productivity [3].

![Figure 1 Schematic diagram of the machining site](image-url)
4. Mechanical Process Analysis

In the process of coping with the changes in the situation in the new era and improving the level of mechanical production, it is necessary to pay attention to the use of mechanical processes and analyze them to understand the relevant content. The mechanical process related content in practice includes the following aspects:

4.1 Consider The Application of Automation Technology

The application of automation technology in mechanical production can improve the level of control work in mechanical production, deepen its automation and promote the formation of mechanical automation production system. At the same time, the automated mechanical production process can automate the production, processing and output of the product, reducing the investment of manpower and reducing the defective rate of the product. In addition, with the support of automation technology, effective control of environmental pollution can be achieved in the mechanical production process, which is an important development trend of mechanical production in the future. Through the scientific application of automation technology in mechanical process analysis, it can also effectively improve the labor conditions of the production workshop, greatly improve the production efficiency of the production workshop, improve the product quality of the enterprise, and increase the economic benefits of the long-term practice of the production enterprise. Therefore, in the process of promoting the development of mechanical technology and comprehensively improving its practical application level, we should pay attention to the application of automation technology, and realize the automatic control of mechanical production process by fully considering and integrating the factors of automatic control theory and computer network. The system promotes the entire mechanical production process to be in a controllable state, reducing its production risk while providing technical support for the sustainable development of mechanical processes [4].

4.2 Pay Attention to The Improvement of Single Piece Production Efficiency

In practice, if the labor time of the mechanical single piece can be shortened, the production efficiency of the mechanical single piece can be improved, the mechanical production efficiency can be greatly improved, and the practical application effect of the mechanical process can be enhanced. Therefore, in the process of implementing the mechanical process analysis work, attention should be paid to the improvement of single piece production efficiency. The specific performance is as follows: (1) Increase the cutting amount and speed up the cutting feed rate. In the process of using mechanical processes, the scientific selection of new tools with reliable performance can speed up the cutting speed in mechanical production practice and increase the feed rate. Therefore, in the process of promoting the development of mechanical processes, it is possible to start with the improvement of mechanical cutting tools and adopt high-speed and powerful cutting technology to shorten the working time of mechanical parts and meet the requirements of improving production efficiency; (2) adopting more Process technology. By reducing the cutting and cutting time of the cutting tool, the time for each piece to be subjected to the cutting process is shortened, thereby achieving the goal of improving the productivity of the single piece; and (3) reducing the machining allowance. Based on the application of mechanical technology, in order to improve the precision of the blank, reduce the machining allowance, and maintain a good single-piece production efficiency, it is necessary to consider the use of advanced mechanical processes such as precision forging and pressure forging. At the same time, advanced fixtures can be used to shorten the loading and unloading time of the workpiece and the auxiliary time under the support of the continuous processing method, so as to shorten the auxiliary time and improve the production efficiency of the single piece, and effectively develop and apply the mechanical process. The level of improvement lays the foundation. The relevant contents of machining precision are shown in Table 1.
Table 1 Related to Machining Accuracy

| Accuracy level | Size accuracy range | Ra value range (micron) | processing methods |
|----------------|---------------------|------------------------|-------------------|
| High precision | IT7-IT6             | 0.8-0.2                | Usually obtained by grinding |
| Medium precision | IT10-IT9       | 6.3-3.2                | Usually obtained by finishing, milling and planing |
| Low accuracy   | IT13-IT11          | 25-12.5                | Usually obtained by roughing, milling, planing, drilling |

(Note: Ra is the average deviation of the contour of one of the evaluation parameters for evaluating the surface roughness of mechanical parts)

4.3 Other Points

(1) In the process of realizing the efficient use of mechanical processes and enhancing its potential application value, it is necessary for production enterprises to pay attention to the combination of advanced processes such as cold extrusion and powder metallurgy, so as to achieve the purpose of improving the utilization efficiency of raw materials and the accuracy of blanks. Improve the mechanical production status while ensuring the effectiveness of mechanical process applications. In the process of mechanical material processing, if the use of special processing technology can be strengthened, it is beneficial to optimize the processing method of mechanical materials and increase the technical content in the processing of mechanical materials such as extra brittle and special hard. In addition, it can improve the scientific use of non-cutting technology, improve the application level of machining technology, and meet its requirements for efficient development of mass production operations [5].

(2) Equipment supervision under the support of mechanical technology can improve the rational allocation of the number of caretakers, the effective setting of automatic alarm function, etc., comprehensively improve the efficiency of the inspection of mechanical production equipment, and achieve effective cost to the production cost of enterprises. Control and provide the required reference information for the development of the mechanical process. At the same time, it is necessary to increase the research work in mechanical process, starting from the aspects of cost economy and application effect, and conducting scientific evaluation in the application of mechanical technology to maintain its good application.

5. Conclusion

In summary, the design of mechanical productivity and the analysis of mechanical processes have important practical reference significance: it can enhance the implementation effect of the mechanical production plan, and provide technical support for the efficient development of related production activities, prompting the production enterprises to practice. It can be in a good state of development. Therefore, in the future, when carrying out research work on mechanical productivity, more attentions should be given to the design and application of mechanical processes, and a comprehensive evaluation of the application effects of mechanical productivity design and mechanical processes should be carried out, so as to stabilize the development of related production enterprises and provide reliable protection. On this basis, it is conducive to increasing China's technological advantages in mechanical production and enriching the practical experience in the development of related production activities.

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