



DESIGN AND MANUFACTURE OF TYPICAL SPORTS MODEL

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ABSTRACT

In recent years, the market of sports handicrafts is becoming more and more popular with the people. Articles through market research, compared to the advantages and disadvantages of different sports crafts. We designed and produced a set of typical sports models. This model provides the reference and direction for the development of the industry.

Key Words: sports, milling, plexiglass, handicrafts

I. INTRODUCTION

With the smooth holding of the Beijing Olympic Games, the enthusiasm of the people on the sport is constantly rising. In recent years, our athletes have also achieved remarkable results in some non-traditional projects. The state has developed a national sports program. This plan allows everyone to participate in sports, but also to the modernization of our country and the well-off society has been fully protected. According to the needs of the entire market, businesses introduced more and more sports related crafts. With the development of the times and technology, handicraft production is also more and more into the modern processing factors. Modern processing reduces labor consumption while improving the quality of handicrafts. This makes the people happier to spend^[1-2].

II. Research and analysis

Before the design, we compared the advantages and disadvantages of various processing methods, including cost and quality analysis. Which CNC milling caused our attention. CNC milling in addition to ordinary milling machine with the characteristics of the following, there are the following characteristics^[3]:

1) Milling machine's adaptability, flexibility is good. The machine can process contours that are particularly complex or difficult to control the size of the parts, but also can be processed by ordinary machine tools can not be processed or difficult to process parts;

2) CNC milling machine can be processed once a clamping positioning, the need for multi-channel processing of the parts;

3) CNC milling machine high precision machining and processing quality is stable and reliable. It has a high degree of automation and high productivity. These features reduce the operator's labor intensity and operational errors. So it is conducive to the automation of production management.

Taking into account the above considerations, we decided to use CNC milling machine for processing, that is, with the shape of milling production of flat sports model.

III. Design

The milling machine can not automatically change the tool during machining. So we decided to choose a series of similar types of sports models for processing. We have collected relevant material from magazines and networks, as shown in Figure 1.



Fig.1 Sports picture data

After determining the original painting, we have to draw the graphics and the preparation of the program. We use Master Cam's Mill program module to do this step. In the course of the actual operation, we found that the use of software for painting when the distortion occurs. After research, we used the HA-AlgorithmPhotoVector1.9888-LRH software to vectorize the picture. The picture is painted as a template. We use a certain skill, so that the plane model showing a sense of space. Finally, depending on the tool size of the milling machine, we modified the model size and where it was not machined. After a series of complex drawings, we completed the final design.

IV. Making

After the design is complete, we begin production. After comparing the cost and quality of production, we chose plexiglass in both aluminum and plexiglass raw materials. On the one hand, plexiglass can increase the beauty and texture of the work. On the other hand, it can improve production efficiency^[4].

First, the design of a good sports model graphics into the software. The software automatically generates the program and forms the NC file. Then we will NC file into the CNC milling machine CNC system. Then we have processed the material, as shown in Figure 2. The part obtained at this time is the rough blank of the model. It also needs to be polished and decorated later. So we use a tool and other tools on the rough edge of the polished. After completing all the steps, we got the final sports model works, as shown in Figure 3.

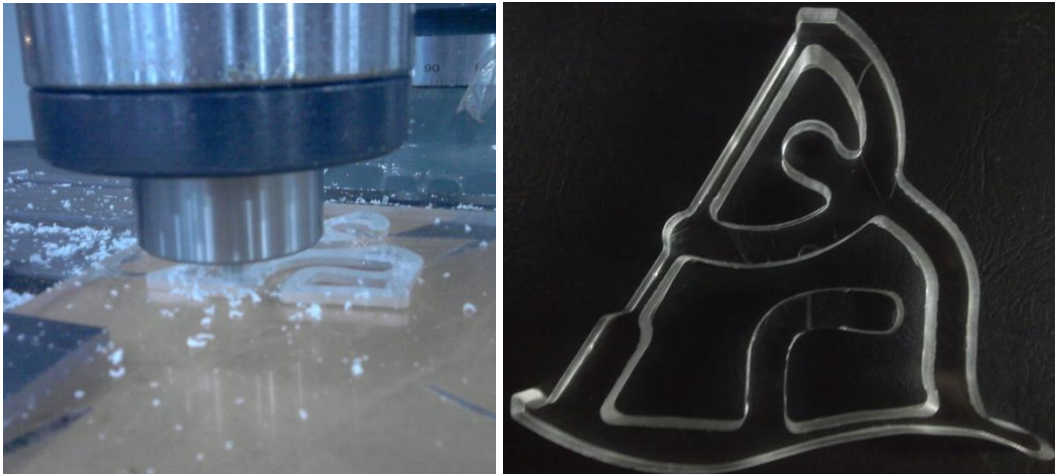


Fig.2 Roughing of CNC Milling Machine Fig.3 Sports model representative

V. Results analysis

We use the plexiglass to make the production of low-cost crafts. It also has a beautiful appearance of the characteristics of generous. This enhances the visual sense of the work, reflecting the movement of the Smart and power. In addition, we use CNC milling machine for modern processing. This makes the technical content of handicrafts high and high processing efficiency.

However, due to the design of the pattern and the machine itself, the art of beauty is affected by a certain impact. This affects its commercial value.

VI. CONCLUSION

National sports is a daunting and long process. Its business value is not overnight. The market can take advantage of this opportunity to explore more product chain, and slowly improve the quality of goods and influence.

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