Design based on inventorMP3 model

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Abstract: This paper focuses on the analysis and research of MP3 three-dimensional modeling and virtual assembly based on inventor software technology and related knowledge. By understanding the physical MP3 and analyzing the structure of MP3, it is composed of several parts. What is the role of each part? and how to combine the relevant knowledge of inventor to three-dimensional modeling? how to from the beginning of the main body step-by-step to the whole process of the entity?

1. Introduction

With the development of computer technology and network technology, a new technology has been formed in the design of graphic and text—— Inventor technology. Inventor technology is a kind of computer aided software technology, which has the function of 3D modeling, confidence management and other functions [1-2]. In the process of product design, software technology is guided by product function and design. according to the relationship between the related components in the product design, through the three-dimensional modeling and virtual assembly, the design of the product is clearly displayed in front of people. This paper analyzes and studies the MP3 three-dimensional modeling and virtual assembly based on inventor software technology and related knowledge [3-4].

2. MP3 appearance composition

The model is a model of MP3 appearance parts, which is divided into: main parts, Control key parts, play key parts, auxiliary function key parts, open key parts, clip parts, shaft parts, a total of seven parts. There is a certain correlation between each part. If the outer diameter of the control key is the same as the size of the front circular groove, the size of the inner diameter of the control key is the same as the size of the playing key's outer diameter.

2.1. Main parts and Control key parts

First create the project file: start the software and create a new project file in the state when Inventor does not open any files. Click the project button to create the project, select the project type as a single user project, and make the project name and save the path. Use stretching instruction to create the main body part, as shown in Figure 2-1.
2.2. Control key parts and play key parts
Use the rotation feature to implement the control keys and playback keys, as shown in Figure 2-2.

2.3. Open key parts
Select the right side groove of the top of the body and add the tensile feature, as shown in Figure 2-3.
2.4. Clip parts
Create a sketch on top of the main connector structure, draw the connection structure of the clip to the main body and add the stretching features of the new key entity. Create a sketch, draw a sketch of the clip connection structure on top of the main link structure, and stretch it upwards. When the top clip connection structure is created, there is also a need to create the bottom side. Use the mirror feature to connect the top clip to the bottom of the structure, so that both sides of the clip connection structure are complete. As shown in Figure 2-4.

2.5. Headphones parts
First create a new sketch, draw out the upper part of earplugs and headphones, you need to draw the left half, because this time with the rotation of the drawing feature, will be drawn to the left half of the picture selected, and then a line for the axis of rotation, when the ear part of the headset has been completed. As shown in Figure 2-5.
2.6. Parts assembly
First open the software, select Standard.ipn and click to determine, create a view, select the directory that has been done, open the entity, adjust the location of parts, select the play key, and then select the main body, with the main body as the benchmark, then select the direction, set a good direction, adjust the distance. Select the control key to adjust the control key in the same direction as the play key, but not over the playback button, a little distance can be. The auxiliary function key and open key can be adjusted together, because they are the same size and the position that is adjusted to the main body is the same, with the top of the main body as the benchmark, upward adjustment. The splint is adjusted to the back of the main body, adjusting the position on the back of the body as a benchmark.

Finally is the shaft, the shaft is the thing that connects the splint and the main body, adjust the direction of the axis to the top of the main body, choose a good location, and finally click on the animation, all the adjusted positions are merged together, tick the smallest dialog when recording, click Play, and then see the entity step-by-step restore to the beginning of the position, The assembly video is ready. As shown in Figure 2-6.

Fig.2-6 Assembly drawing

3. Summary
In this paper, the part model of MP3 is designed by using inventor software, and the assembly of parts is realized.

References
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