

铣头体的加工设计

摘 要

铣头体作为座体与主轴本体之间的过渡零件，直接的影响了机床的加工，于是铣头体的设计便显得尤为重要。

本文的主要内容分为铣头体机械加工工艺规程设计和部分工序专用夹具设计两大部分。在机械加工工艺规程设计的过程中，首先利用网络信息以及课本资料初步了解铣头体的功能以及在铣床上的位置以及作用，了解铣头体。然后运用机械制造技术等课程中所学的知识，演算出铣头体主要尺寸加工精度和铣头体的表面粗糙度，利用 AutoCAD 绘制出铣头体的二维图纸。接下来根据铣头体的零件的结构和材料初步确定出铣头体的制造工艺，之后查照毛坯的制造工艺表逐个查照各个加工标准得出各加工尺寸的加工余量，推算出毛坯的尺寸，利用 AutoCAD 画出铣头体毛坯的二维图纸。最后根据铣头体零件图中加工尺寸的加工精度和表面粗糙度要求，选择与工件合适的加工工艺和加工路线以及对应的加工设备与加工工艺设备，利用 AutoCAD 绘图软件画出完整的工艺流程图纸。接着在设计专用夹具的过程中，先根据不同工序工件加工面的不同以及各个加工面特有的特点设计出相符合的定位和夹紧方案。然后按照不同的工艺，在钻夹具中设计导向装置和钻模板，在铣夹具中设计与工件及加工方向相符合的对刀装置。最后利用 AutoCAD 绘制出专用夹具的装配图和夹具体零件图。

关键词：铣头体；工艺流程；专用夹具；加工标准

Abstract

As a transition part between the base body and the spindle body, the milling head body directly affects the machining of the machine tool, so the design of the milling head body is particularly important.

The main content of this paper is divided into milling head body machining process design and part of the process of special fixture design two major parts. In the process of machining process design, the first use of network information and textbook materials to understand the function of the milling head body and the position and role in the milling machine, understand the milling head body. Then apply the knowledge learned in the course of mechanical manufacturing technology to work out the machining precision of the main dimensions of the milling head body and the surface roughness of the milling head body, and use AutoCAD to draw the 2d drawing of the milling head body. Next, according to the structure and material of the parts of the milling head body, preliminarily determine the manufacturing process of the milling head body, and then check the blank manufacturing process table one by one according to each processing standard to get the machining allowance of each processing size, calculate the blank size, and draw the two-dimensional drawing of the milling head body blank using AutoCAD. Finally, according to the machining precision and surface roughness requirements of the machining dimension in the milling head part drawing, select the appropriate processing technology and processing route and the corresponding processing equipment and processing equipment, and use AutoCAD drawing software to draw a complete process drawing. Then in the design of special fixture process, according to the different process of the workpiece processing surface and the characteristics of each processing surface design of the corresponding positioning and clamping scheme. Then according to the different process, design the guide device and drill template in the drilling fixture, and design the tool matching device with the workpiece and machining direction in the milling fixture. Finally, AutoCAD is used to draw the assembly drawing and specific part drawing of the special fixture

Key words: milling head body; process flow; special fixture; machining standard

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