

多工位冲床专用机械手设计

摘要

文章对工业机械手的概念进行了描述，包括它的配置、分类、自由度、坐标类型、气动技术特性和继电器控制特性并介绍了在国内和国外发展的现状如何。

在这篇文章中，先进行了一个整体的结构设计，设计内容包括机械手的坐标形式，自由度等，给出了相应的技术参数。同时，也对其他部件进行了设计，包括手腕结构，机械臂等部件。处理数据后得出旋转气缸的驱动扭矩和手腕转动需要的驱动扭矩。

用设计机械手的气动系统的方式，绘制其系统运行示意图，再去研究其系统运行示意图的参数图，使得绘制效率有很大的提高，也增强了绘制的质量。

通过继电器程序控制器进行操控，并搭配适宜的电磁继电器，根据机械手的工作过程为继电器程序控制器建立控制计划，绘制机械手工作流程图，并控制机器人绘制设备。

关键词：机械手，气动，继电器程序控制器

ABSTRACT

This paper briefly introduces the concept of industrial manipulator, the configuration and classification of manipulator, the degree of freedom and coordinate type of manipulator, the characteristics of pneumatic technology, the control characteristics of relay and the development situation at home and abroad.

This paper will design the overall structure of the manipulator, determine the coordinate form and degree of freedom of the manipulator, and determine the technical parameters of the manipulator. At the same time, the gripper structure of the manipulator is designed, the wrist structure of the manipulator is designed, and the driving torque required for the wrist rotation and the driving torque of the rotating cylinder are calculated. The mechanical arm structure is designed.

By designing the pneumatic system of the manipulator, drawing the working principle diagram of the pneumatic system of the manipulator, and studying the parameter diagram of the working principle diagram of the pneumatic system, the drawing efficiency and the drawing quality are greatly improved.

The relay program controller is used to control the manipulator, select the appropriate electromagnetic relay, establish the control plan for the relay program controller .

Keywords: manipulator , pump , air pressure drive .

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