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## 便携式液压剪钳的设计

### 摘 要

随着现代化工程设施和装备的涌现,对各种导线需求越来越大,加工方式越来越多,在实际工作中受各种工具尺寸的限制,更难保证导线的加工质量。传统剪钳需要很高的剪切力,人工施加不便,并且不能实现更换刀头,形式单一,该液压件剪钳设计主要致力于缩小传统液压剪钳尺寸过大,利用可更换刀头可实现多功能用途,利用已经学到的机械设计知识、液压原理及计算公式严谨的设计该系统,合理的设计每一个零件的尺寸,科学的计算,确保零件的质量和强度。将便携式液压剪钳的刀架设计成方便拆装的工具头,在刀架内部设计滑道,保证加工过程的安全性、稳定性,用两个销钉连接滑道两侧的受力平衡的滑道。本次设计在提高劳动生产率的同时,实现了液压剪钳的多功能用途,工作可靠,操作方便,维修简单。

**关键词：液压系统；便携式；剪钳**

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## ABSTRACT

With the emergence of modern engineering facilities and equipment, the demand for all kinds of wires is increasing, and the processing methods are increasing. In practical work, it is more difficult to guarantee the processing quality of wires because of the limitation of various tool sizes. Traditional cutting pliers need high shear force, artificial inconvenience, and cannot achieve replacement segment, form a single, the hydraulic cutting pliers design is mainly devoted to narrow the traditional hydraulic cutting pliers size is too big, use replaceable head can achieve multifunctional purposes, use of learned knowledge of mechanical design, hydraulic principle and calculation formula of the rigorous design of the system, reasonable design the size of each part, scientific computing, ensure the quality of the parts will and strength. Portable hydraulic cutting pliers head considering the replacement tool head, designed to be easy tear open outfit, head by head body and chassis of two parts, with pin connection, and the design way, tool post to ensure the stability of the working process, because the rest has to consider the hand even, with two pins connect it, pin which located in slide to the side. The design in the improvement of labor productivity at the same time, the realization of the hydraulic cutting pliers of multifunctional purpose, reliable work, easy to operate, simple maintenance.

**Key words: Hydraulic system; Portable; Plie**

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