
装载机工作装置举升机构优化与结构设计

题目 装载机工作装置举升 机构优化与结构设计 摘 要

装载机是一种重要的机械结构器械,作业设备的设计合理性和质量直接影响到积放机的性能。以现有的设计方法无法满足这种复杂产品的设计要求。随着计算机设计软件和现代设计方法的发展,尤其是对计划方法的开发和应用进行优化,设计已朝着自动化与智能化的新方向前进。继续改善

这篇文章使用优化算法优化操作起重设备,设计将成立一个操作的优化数学模型,数学模型的工作条件的土地上工作的人挖掘最大的传动绞车的工作目标,与各成员提款的长度和角度的设计变量,限制工作设备的性能和结构设计要求。然后用复合方法优化理论优化数学模型。允许优化设计软件提供一种性能良好的设计方法,满足设计需求,并在结构上合理地设计工作设备。

关键词: 装载机;工作装置;MATLAB;复合形算法;优化设计

OPTIMIZATION AND STRUCTURAL DESIGN OF THE MECHANISM OF LOADER WORKING DEVICE

Abstract

Wheel loader is an important type of construction machinery. Traditional design methods are no longer able to solve complex engineering problems. Nowadays, with computer design software and the development of modern design, especially optimized design, construction machines become increasingly automated and intelligent. Both working mechanism and modeling methodology are presented manifold.

The paper uses optimization algorithm Loader lifting mechanism to optimize the calculation, This design will create a Loader optimal design model, The mathematical model to work the device is in the ground when the shovel lifting body condition the maximum force transmission ratio as the objective function, Lifting mechanism to the length of each bar and its associated angle design variables, working device performance and structural design requirements for the binding function. Makes the optimal design software for the design of working device to provide a good dynamic performance and meets the design requirements and structured design.

Key Words: Loader; Working Mechanism; MATLAB; Complex algorithms; optimal design

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