

Diplomant:

Venkatesh S

Job title:

Design of mobile jack for lifting clay model of cars

Assessment of the diploma thesis:

Specification:

The diploma thesis was the development of the construction of mobile lifting equipment for prototype clay-models of passenger cars, according to the specific assignment of SVOTT a.s ..

Assessment of the theoretical part:

In the introductory chapters, the author describes the technological development of the design of prototype clay models for which the lifting device is to be developed. It then deals in detail with the technology and construction of existing lifting equipment, its properties and comparison. There is enough information on the subject, so I do not have any comments about this.

Assessment of the practical part:

In the practical part, the author deals in detail with the analysis of the construction of the lifted load and its properties and possible fixation on the lifting device, for which I have no comments. It also presents and assesses various types of technical solutions and working media used for lifting loads. From these choices, he has chosen a technically suitable solution, which, of course, puts greater demands on operation and maintenance, while it is one of the least environmentally friendly solutions. In the design of the design I miss the analysis of some important elements of the lifting device, as well as their strength calculations, which, in my opinion, is a significant deficiency due to the risks in its operation and safety. For some calculations, the author draws from a reduced overall load on the structure that does not match the specification and the subsequent summary of the properties of the lifting device. Another failure I see in the absence of a design of the source of the used working medium, its own control by the operator, the safety controls and its connection to the lifting device. As a significant shortcoming, I see the absence of safety elements of the lifting device itself. One such element, although the author mentions in the end, but only as an example of use already in an existing constructively similar solution.

In the next part, the author deals with the mobility of the lifting device, which is well processed. In the same way, an overview of standard parts that are used in the design is also processed. As another substantial deficiency of the design I see the use of three different working media. Hydraulic system for load lifting itself, compressed air for moving the lifting device and electrical system for controlling used systems.

Overall rating:

The submitted diploma thesis is made from the point of view of the preparation of documents and information in a well-chosen thematic unit. However, the design proposal itself is incomplete, requiring a number of technical connections to degrade overall mobility, and does not solve some of the essential parts at all. Last but not least, the author did not achieve the required features of the proposed device, especially the given dimensions in the upper and lower positions.

- the job meets the requirements of the assignment
- the work fulfills the requirements for granting the corresponding academic title
- I recommend the work for the defense

Additional questions:

- 1) Can better design layouts and parts achieve the required device dimensions?
- 2) For what reason is the maximum design load by 10% reduced for some calculations?
- 3) Can equipment be designed so that it does not require simultaneous use of the hydraulic system, the electrical system and the compressed air system?

Design of diploma assessment

Diploma thesis on Design of mobile jack for lifting clay model of cars

by Mr Venkatesh S

I value the mark *good*

in Mladá Boleslav on 6/6/2018

Miroslav Balda

