Review Form 3

Journal Name:	**Journal of Engineering Research and Reports**
Manuscript Number:	**Ms_JERR_120063**
Title of the Manuscript:	**Finite element static analysis of the main beam of mobile moulder grooving machine**
Type of the Article	**Finite element static analysis of the main beam of mobile moulder grooving machine**

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
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PART 1: Review Comments

Compulsory REVISION comments	**Reviewer's comment**	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write few sentences regarding the importance this manuscript for scientific community. Why do you like (or dislike) this manuscript? Minimum 3-4 sentences may be required for this part.	This manuscript holds significant importance for the scientific community involved in mechanical engineering and structural analysis. By focusing on the 1600t mobile moulded frame trenching machine, it provides a detailed exploration of the machine's main load-bearing component, the main beam, through finite element analysis (FEA). This approach not only verifies the structural integrity and safety of the main beam under various operational conditions but also lays the groundwork for potential optimization opportunities in its design. I appreciate the manuscript's thoroughness in introducing the structural composition and operational aspects of the trenching machine before delving into FEA. This foundational understanding is crucial for contextualizing the subsequent analysis and conclusions drawn regarding the main beam's performance and stability. Moreover, the study's emphasis on dangerous working conditions like pouring and leg changing underscores its practical relevance in ensuring the trenching machine's reliability and safety during intensive operations. Overall, this manuscript contributes valuable insights into both theoretical analysis methodologies and practical engineering considerations within the field.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	**YES**	
Is the abstract of the article comprehensive? Do you suggest addition (or deletion) of some points in this section? Please write your suggestions here.	**YES**	
Are subsections and structure of the manuscript appropriate?	**YES**	
Please write few sentences regarding the scientific correctness of this manuscript. Why do think that this manuscript is scientifically robust and technically sound? Minimum 3-4 sentences may be required for this part.	This manuscript demonstrates scientific correctness and technical soundness through its methodical approach to finite element analysis (FEA) using ANSYS APDL software. By establishing a parametric model of the trenching machine and focusing on the main beam, which is identified as a critical load-bearing component, the study ensures a rigorous analysis of stress and displacement under typical and extreme operational conditions. The inclusion of dangerous scenarios such as pouring and leg changing further enhances the manuscript's scientific robustness by testing the structural stability of the main beam comprehensively. This systematic examination not only validates the design's safety but also provides a solid foundation for potential optimizations, thereby contributing significantly to the field of mechanical engineering and FEA methodology.	
Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. **-**	**YES**	

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Minor REVISION comments **Is language/English quality of the article suitable for scholarly communications?**	YES	
Optional/General comments		

PART 2:

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

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