

Figure 19: Stress on Bracket

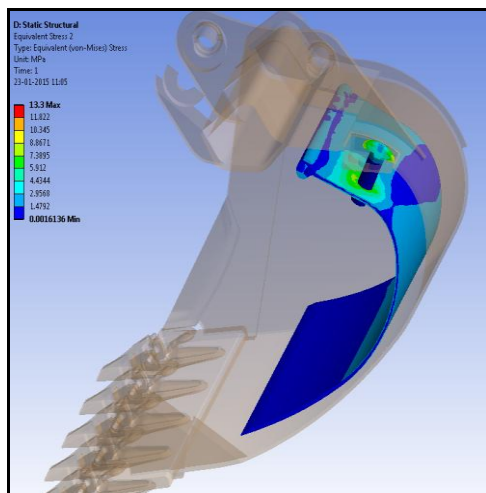


Figure 20: Stress on Plate

Above figures show that von-Mises stresses induced are within permissible limit (see figure 20). Also force on pusher is greater enough to shear the soil. Stress limit given while checking are well above prescribed values. Furthermore we can correct these by proper welding to give sufficient strength to bracket.

4. Conclusion

The design and analysis of the model shows the basic concept for development of such attachment. Implementation of such mechanism on actual bucket will reduce need for jerking. Also it will increase bucket capacity. The mechanism may be replicated on excavator bucket of any size. Furthermore it may be actuated hydraulically to improve its functioning.

5. Future Scope

Further validation and actual test field results are needed for this model to measure the ejection forces and to commercialize the product. In addition additional testing is required to check the feasibility of the attachment for larger excavators.

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Author Profile



Abhay Pande received B.E. Mechanical Degree from P.R.M.I.T.R. Badnera. Currently he is a final year student of M.Tech. (CAD/CAM) in Y.C.C.E. Nagpur, India. He studied on this project in JCB India Ltd., Pune.

Rajkumar Chadge is an Assistant Professor from Y.C.C.E. Nagpur. He is College Guide for this project work.

Sachin Kharat is working in JCB India Ltd., Pune. He is in Advanced Engineering Dept., India Design center. He is an Industrial Guide for this project.

