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Validation of a Reloading Vehicle Design by Finite Element Analysis

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Abstract : Reloading vehicles are the vehicles which are generally equipped with a crane and used to carry a stowage from a point and locate onto the vehicle or vice versa. In this study, structural analysis of a reloading vehicle was performed under the loads which are predicted to be exposed under operating conditions via the finite element method. Among the finite element analysis results, the stress and displacement distributions of the vehicle and the contact pressure distributions of the guide rings within the stabilization legs were examined. Vehicle design was improved by strengthening certain parts according to the analysis results. The analyses performed for the final design were verified by the experiments involving strain gauge measurements.

Keywords : structural analysis, reloading vehicle, crane, strain gauge
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