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Abstract

This study was conducted to analyse the structure dynamics of a walking tractor via shaker. The tests have been done on ChangLhek D.N.M. K 99 which was made by Inter Agricultural Company Ltd. An electrodynamic shaker delivered the sine sweep force to the walking tractor structure. Experimental steps were as followed; mark 54 nodes, coordinate and link nodes of the walking tractor, hang the walking tractor over the floor in a balance and stability state, then apply the sine sweep force, measure the transfer function, analyse the function by Modal Analysis Program named " SMS MODAL ANALYSIS SYSTEM " and consider the vibration of the modes structure and the nearest frequency of the working frequency in order to modify the Structural Dynamics : Mass, Stiffness, and Damping. On this study, the stiffness in the range of working frequency of mode #1 has been increased (working frequency is at 40 Hz, diesel engine is at 2400 rpm.) to protect resonance frequency of structure, the frequency has been modified from 44.5 Hz to 89.32 Hz. Also the left and the right handles have been modified at coordinates point of 44Y/50Y, 44Y/51Y and 46Y/51Y (All Y direction). Therefore it is unneccessary to modify the body and the engine because of its strength.