

Crane Shaking Platform Design

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Most of the control methodology of Mobile hydraulic crane is not as energy efficient as people think or want, and the desire to innovate novel, energy-efficient control strategy is the target of most hydraulic experts. To develop or test the control method under real road and off-road conditions, a platform that could simulate the movement and vibration of the crane truck is desired. To design and build the multi-operation platform, a design process includes brain storming, design selection, FEA (Fundamental Element Analysis), mechanical sizing, hydraulic sizing and Bill of Material is required and preferred. After going through all the steps mentioned above, the design that use simple cylinders in the vertical position has been selected, and the proper dimension has been settled down. Most of the part are directly sponsored by Parker, CO, the sponsor of MAHA lab. The design method and process is duplicable and could be used to design other similar or relative products.