

MECHANICAL PRODUCT DESIGN AND DEVELOPMENT PROCESS IN CHINA

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INTRODUCTION

The development process for a bucket wheel stacker-reclaimer in the Chinese machinery industry will be discussed. In general, this process consists of six main stages: design input, conceptual design, technical design, manufacturing, product validation, and design finalization. A detailed description of the technical design, which incorporates parametric design, finite element analysis, dynamics analysis, and discrete element analysis, will be highlighted. In addition, intelligent manufacturing features of the current Changsha factory during the manufacturing phase will also be presented.

The ongoing trend of light weighting in the engineering machinery and automotive industries, leading to the increased adoption of new materials, will be presented including the new challenges associated with the welding of these new materials and dissimilar metal welding.



Figure 1: Mechanical product design and development process.



Figure 2: Bucket-wheel stacker-reclaimer.