PRODUCTION NETWORKS FOR LEGO PRE-PACKAGING

Christian J. Hellerup, Valdemar J. Qvist, Simon S. Kristensen, and Thomas H. Knudsen

[1]Department of Materials and Production, Aalborg University
Fibigerstraede 16, DK-9220 Aalborg East, Denmark
Email: {chelle19, vqvist17, skri17, thkn17}@student.aau.dk, web page:
http://www.mechman.mp.aau.dk/

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ABSTRACT

LEGO is a pioneer in technology and development, so they are always striving to improve their production processes. At LEGO the pre-packaging system can be optimized in a way that will save LEGO milliseconds. This paper will focus on optimizing the pre-packaging system through LS-Dyna and experimental validation.

The pre-packaging system is designed in SolidWorks and imported into LS-Dyna to accurately capture the effect of a LEGO element falling into the compartment of the wing unit. The opening and closing time of the gates, geometry and material choice is analysed throughout this paper.
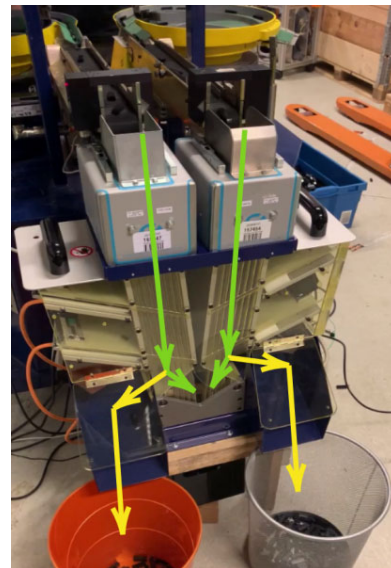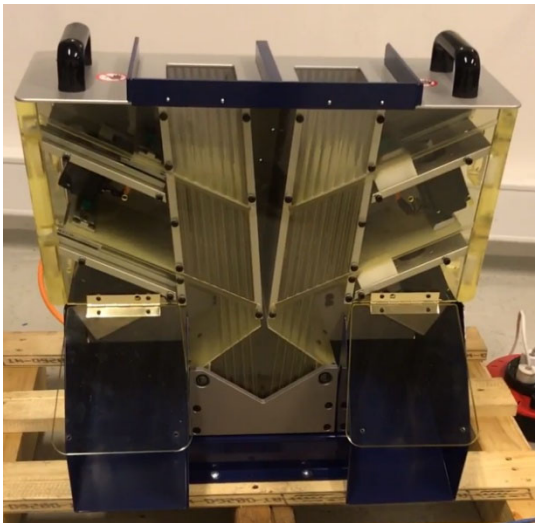
Figure 1: The wing unit used for pre-packaging at LEGO and the element flow through the wing unit

The wing unit consists of four compartments and has two channels which makes it possible to run two different types of elements at the same time. The bottom gates sort the defect elements into the buckets as seen by the yellow arrows, and the non-defect elements follow the green path.

Acknowledgement