Automatic reorganizer from BV-package to BV2- and BV4- package

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Specialization   Bridging programme for Master of Electromechanical Engineering Technology

Current situation

The Vandersanden company makes bricks. Almost 90% of there packages are normal BV-packages. For a few countries or some other companies who buy there product, the package has to be different from the BV-package. A BV-package has to change to BV2- or BV4- package. This includes placing rows of 'feet' under the whole BV-package for a BV2-package and on top of that placing two more small pallets in the middle of the whole BV-package makes a BV4-package.

? Problems

The current machine that is being used is slow and dangerous. When the machine lifts up a package, the operator has to go under the lifted package and lay down the rows of 'feet' or the two smaller pallets. This procedure is labour intensive, dangerous and slow. They can only produce 20 packages in an 8 hour work shift.
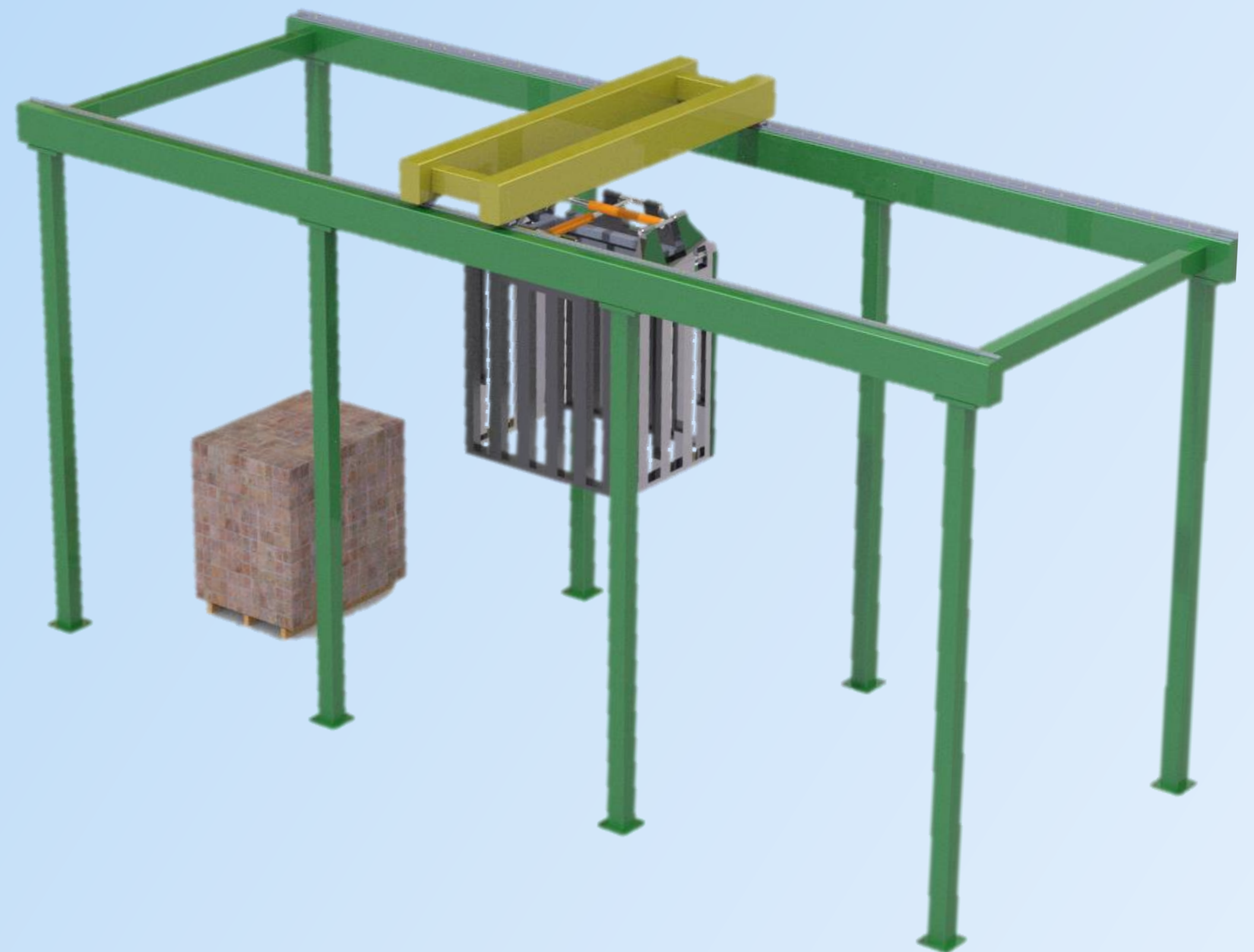
Requirements

The most important requirements of the new machine are the following :
- Buffer zone of at least 4 packages, in- and output buffer.
- Safety of the operator must be improved.
- Automatic placement of the 'feet' and the smaller pallets.
- At least the same amount of finished packages per work shift.
- The machine has to be controlled by only 1 person.

Concept

The concept I came up with, contains al of the requirements mentioned before. There will be one line of packages. They start in the input buffer and move one package at a time towards the processing part. In the same line lays the output buffer which makes a simple, but efficient layout for the machine. The buffers can be easily reached by the forklifts. The processing part will take a whole package with big clamps of the pallets and move it away. Afterwards the smaller clamps will place the 'feets' on the empty pallet. The big package can then be replaced on the feet again.

3D Creo Model

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