

TECHNOLOGY OFFER

PROCESSING AND AUTOMATIZATION

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OCTOPUS GRIPPER – Bionic Gripper for Automated Bulk Handling of Piece Goods (BB144)

THE PROBLEM

Gripping systems are needed especially when packages are not unloaded by hand, but by an automated or robot-based system. Modern gripping systems are often adapted to certain package sizes and only work well if the packages are neatly stacked.

THE SOLUTION

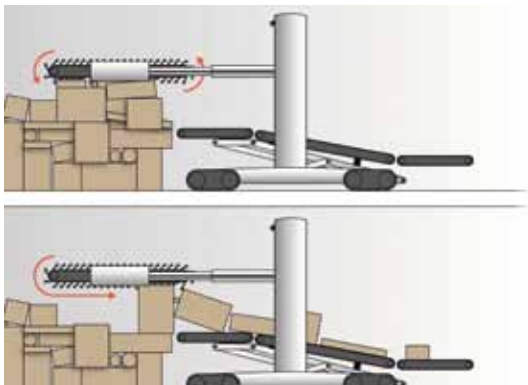
The inventors who built the Octopus Gripper were inspired by nature. They developed a new gripper that is able to pick and handle one package out of an unsorted stack of other packages. This novel gripping system was inspired by tentacles, which are known for their ability to securely grip a diversity of different shapes on account of their multiple arrangements.

The new gripping system developed at the Bremer Institut für Produktion und Logistik-BIBA, consists of numerous arms, each is equipped with one vacuum cup which, in turn, is connected to a low-pressure source. In operation, the vacuum cups attach to the exterior surface of a package and hold it in place. As in nature, a multitude of arms accounts for the secure hold of the package. All kinds of gripper variations are imaginable, furnished with either few or a great many of gripping tentacles.

The prototype of the invention is currently being further developed and applied in a funded research project which includes other industrial partners.

ADVANCES AND APPLICATIONS

- Enables an automated unloading of unordered piece goods (packages)
- Goods can be "scooped out" of a container
- Does not require special (near field) sensor technology or sophisticated controls
- Processes are made easier, more fault-tolerant and more robust



Working principle of the
robot system with gripping
tentacles on a revolving belt

FIELD OF APPLICATION

Manufacturers of gripping solutions
for logistical applications

KEYWORDS

Package gripper, package logistics,
unloading containers

PROPERTY RIGHTS

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Approved

OFFER

Licensing, cooperation and
further development

AN INVENTION OF

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