

The Jorgensen Group

Denmark



Jorgensen Engineering a/s

Denmark



brüel international

Ireland



Little Island Engineering

Australia



Tripax Engineering

Germany



brüel international

Netherlands



brüel international

Switzerland



brüel international



Tripax Washco

Jorgensen complete solutions - fully tailored to your products...

Jorgensen has supplied processing equipment and know-how to customers all over the world for more than 70 years.

Jorgensen develops, produces and markets customised solutions within conveying, packaging handling, loading/unloading systems for retorts and filling lines for milk powder and SCM. The Jorgensen Group also markets equipment and complete preparation lines for vegetables and berries. The newest member of the group - Brüel International - supplies fully automatic washing and handling equipment for reusable packaging and pallets.

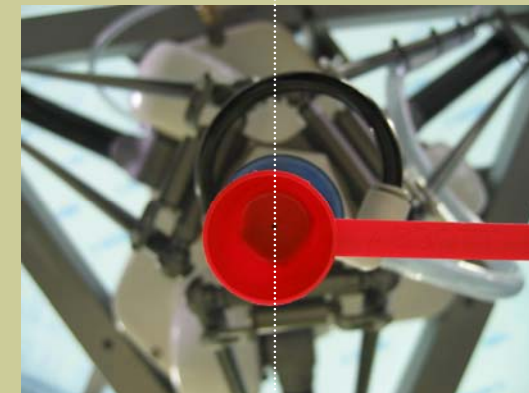
Jorgensen is considered to be one of the leaders within several of its business areas offering individual complete solutions...

challenge us!

2-06



Jorgensen
- complete solutions



Robotic system

Jorgensen robotic system

- New robotic concept coming up with innovative ideas -

Robotics in food industry

Introduction:

The requirements to the food industry are constantly growing. Beyond the usual competition parameters as cost reductions and rationalization gains the focus on safety, environment and hygienic circumstances in production is still increasing.



Complete robotic system

To meet with the requirements on efficiency and quality safety, the Danish company Jorgensen Engineering a/s has developed a new robotic concept for a wide range of applications. In other words, it is now possible to pick and place items like scoops, cans, cups, cartons and stand-up pouches - at a very large speed and accuracy.



High capacity robot for baby food line

Generally:

The concept consists of one or more robotic stations each having a vision system both supervising the production and detecting faults. Each station, which can make up to 120 picks per minute and the belonging inspection is configured to the major control system that coordinates and optimises the entire production flow.

Flexibility, short changeover time and modular structure are the keywords behind the new robotic system. In other words, the new handling concept opens the gates to a variety of applications such as efficient simultaneous packing of product with a quick changeover time to another product mix.



Scoop controlling "policeman" inserting to both sides

Short changeover time on product change and large flexibility on product choice are some of the main advantages. Moreover, the new robotic system allows a much bigger product variety compared to the traditional and mechanical systems on the market.

The new robotic system from Jorgensen sets a new standard within safety, hygienic design and cleaning-friendliness. The construction minimizes the risk of loose parts, etc. falling down in the product resulting in disastrous consequences.



Scoop infeed and scoop return

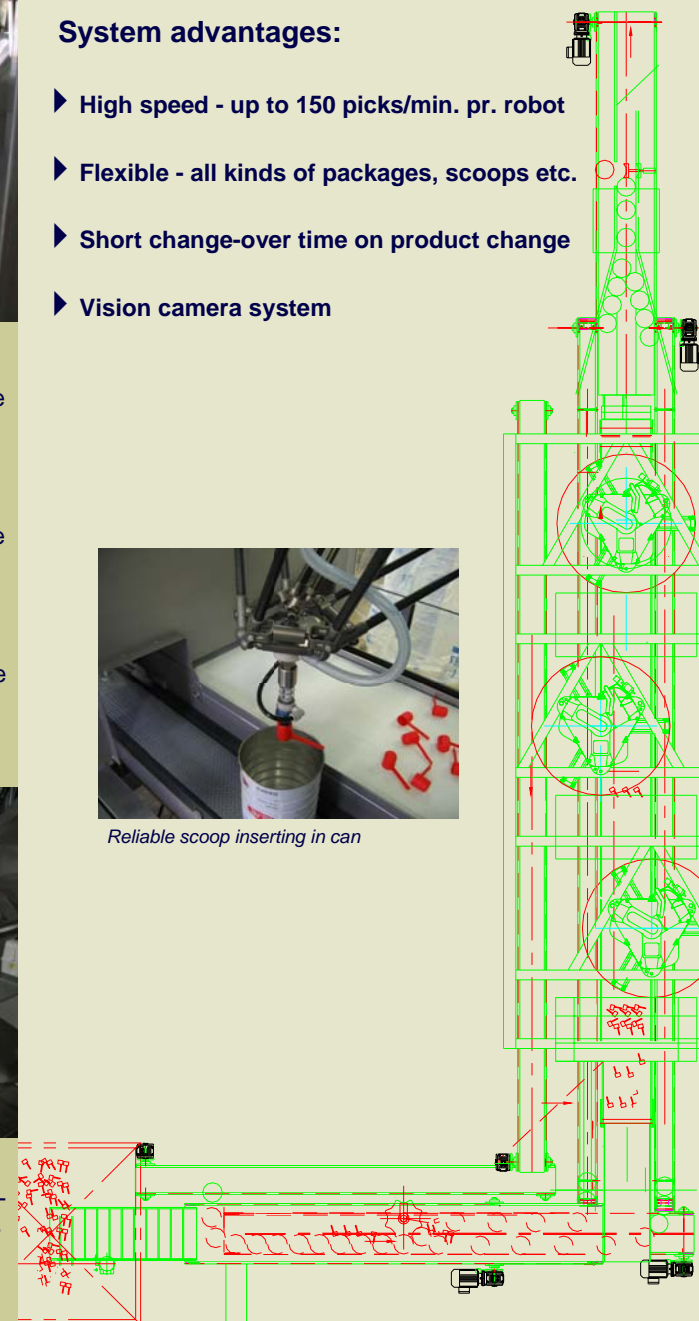
Finally, the modular principle makes it possible to fit the capacity to the future needs and it can easily be integrated to the existing lines.

System advantages:

- ▶ High speed - up to 150 picks/min. pr. robot
- ▶ Flexible - all kinds of packages, scoops etc.
- ▶ Short change-over time on product change
- ▶ Vision camera system



Reliable scoop inserting in can



Case:

Jorgensen's innovative huge step into the robotic technology is primarily due to one specific project to one of the world's leading health care producers, Abbott Laboratories, who has more than 70,000 employees.

The Abbott Infant Formula Division is currently expanding their baby food division in Ireland. Abbott's requirements for capacity, functionality, safety and hygiene are very large. Jorgensen has been chosen for this project to deliver a complete can packaging line - from depalletizing of empty cans to palletizing of finished product (milk powder and scoops).



Control system

System description:

Beyond correct vacuum and gassing of the product - which is Jorgensen's speciality - the scoop of course plays a significant role in the product. And here the new robotic system comes out. Unlike traditional scoop inserter methods - mechanical and vibrational as well - the robots guarantee a more reliable and safe operation, supplying an end product, which keeps the stringent quality requirements both on contents and scoop. And, as a supplement, a quick turnover to new can types and scoop sizes.

Everything is a matter of coordination. The system consists of three robotic stations placed in a row - physically integrated in a stainless steel construction and electronically in a major control system. Each robot has its own vision system with camera, connected to the control system and thus provides efficient and reliable identification and control of the scoops. The robot is continuously being informed about the

exact position of the scoop. Below the robots there are three parallel conveyor belts. In the middle, the scoops are being put forward, on both sides surrounded by conveying belts, and the empty cans are being let forward. By means of especially developed suction cups, the first robot inserts the scoops in the cans on belt one.



Vision camera system

The next robot and the vision system insert the scoops in cans on belt no. two similarly. By means of sensors the exact speed of the cans on both conveying belts is indicated so that the robots can coordinate the scoop insertion.

The third and last station is the "policeman" of the system. The vision system checks the two outer conveying belts for cans without scoops. The last robot is able to carry out the scoop insertion to both sides. Cans without scoops, which might pass the last robot, will be



Can reject system

detected by the fourth and last video system and the can will at once be rejected from the process on a chute. This means a system, which by 100% guarantees an end product including the vital scoop.

The max. capacity for the entire robotic system is approx. 350 scoops/cans per minute, handling 7 different kinds of cans and 4 different kinds of scoops.