



Vacuum Automation

Solutions for the Food Industry



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Schmalz: Vacuum Technology for Intelligent Automation and Ergonomic Handling

1800
employees
working hard for our customers.

31
locations
for outstanding customer service worldwide.

8
percent
of our revenue is invested in innovative ideas and new products.

720
copyrights
are proof of our groundbreaking innovations.



Schmalz is one of the market leaders in vacuum automation and ergonomic handling systems. The products of the internationally positioned company are used in logistics applications as well as in the automotive industry, the electronics sector and furniture production. The Vacuum Automation unit includes a broad spectrum of components such as suction cups or vacuum generators, gripping systems and clamping solutions for holding workpieces, for example on CNC machining centres. In the Handling Systems unit, Schmalz offers innovative handling solutions such as vacuum lifters and crane systems. With the Energy Storage unit, the company has established a further mainstay in the field of stationary energy storage systems.

The combination of comprehensive advice, a strong focus on innovation and first-class quality ensures sustainable added value for customers. Intelligent solutions from Schmalz make production and logistics processes more flexible and efficient – and at the same time fit for advancing digitalisation.

Schmalz is represented in all major markets with its own locations and trading partners in around 70 countries. The family-owned company, headquartered in Glatten in the Black Forest, employs around 1,800 people at 31 locations worldwide.

Vacuum Automation



Components



Systems



Clamping solutions

Handling Systems



Vacuum lifters and crane systems

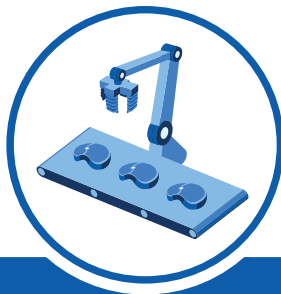
Vacuum Technology in the Food Industry

Vacuum technology has become an integral part of today's food industry. Vacuum technology is particularly useful for sorting products on conveyor belts and transferring or inserting them into packaging.

To ensure that different food products such as fish and meat, vegetables and fruit, confectionery and pasta or even eggs can be handled gently, the suction cups must adapt flexibly to the surface characteristics of the food product. In this way, leakage can be prevented and the product can be transferred safely and quickly.

In the food industry, the highest demands are placed on the suction cup materials to prevent contamination of food products. Schmalz vacuum suction cups for the food industry are manufactured from FDA-compliant materials and comply with EC Regulation No. 1935/2004.

PROCESS STEPS AND VACUUM AUTOMATION SOLUTIONS IN THE FOOD INDUSTRY



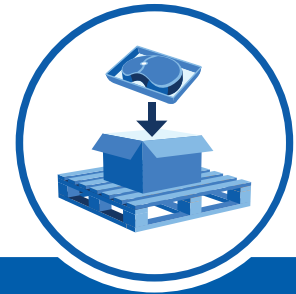
Food Processing

Direct contact with food during singulation, transfer and sorting



Food Packing

Packing food in its primary packaging



Handling of Packed Food and End-of-Line

Moving packed food, e.g. at the end of production



Direct Food Contact With Fish and Meat



Direct Food Contact With Vegetables, Fruit and Eggs



Transfer to Primary Packaging



Packaging and Logistics Processes

Food Processing

Direct Food Contact With Fish and Meat

REQUIREMENTS AND SOLUTIONS



Finger gripper mGrip for the separation of sliced meat



Flow gripper SFG when handling frozen chicken nuggets

Raw Meat and Fish

- Handling of delicate products with different shapes, such as chicken thighs, steaks or fish
- Highest hygiene standards and maximum process safety for protein-containing food products require grippers that are easy and thorough to clean

Solutions

- Thanks to its modular design and adaptable opening angles, gripping force and finger positions, the finger gripper mGrip can be adapted to any workpiece
- The grippers are optionally available with degree of protection IP69K and enable efficient cleaning according to clean-in-place and clean-out-of-place

Frozen Food Products Such as Burger Patties

- Burger patties or vegan alternatives are often handled frozen and have a rough surface
- Small ice crystals or crumbs can be released during handling

Solutions

- Our silicone suction cups and finger module inserts are soft, adaptable and cold-resistant
- Our finger grippers and flow grippers are manufactured from FDA-compliant material. The products are easy to clean

SELECTED PRODUCTS

Finger Grippers mGrip



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Control Modules SRCU / coDrive



WWW.SCHMALZ.COM/SRCU-CODRIVE

Flow Grippers for Food SFG



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Bellows Suction Cups FSGA SI-HD (1.5 Folds)



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Food Processing

Direct Food Contact With Vegetables, Fruit and Eggs

REQUIREMENTS AND SOLUTIONS



Finger gripper mGrip for the separation of peppers

Precise Handling of Delicate Vegetables and Fruit

- To ensure a longer shelf life for fruit and vegetables, the product's own protective covering (peel) must not be damaged
- Packaged food products such as lemons, onions or potatoes in nets are automatically picked up from the conveyor belt and placed in outer packaging

Solutions

- Gentle transport without damaging the product structure is possible thanks to the individually adjustable gripping force
- Fast and safe pick-and-place applications thanks to reliable gripping adapted to the workpiece lead to maximum efficiency in the process



Egg suction cup FG X when handling eggs

Gentle Handling of Eggs

- Special care is required when handling raw eggs in packing and sorting machines and in incubators
- Here, complete containers, some with eggs in slightly different sizes, have to be moved at the same time

Solutions

- Immediately after touching the eggs, a maximum lifting effect is achieved, with the bellows acting as a damper
- The steep, conical sealing lip holds eggs optimally and increases lateral stability

SELECTED PRODUCTS

Flow Grippers for Food SFG



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Bellows Suction Cups FSGA SI-HD (1.5 Folds)



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Finger Grippers mGrip



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Egg Suction Cups FG X, FGA X, FGB X



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Food Packing

Transfer to Primary Packaging

REQUIREMENTS AND SOLUTIONS



Chocolate suction cup SPG for automated tray filling

Confectionery

- Chocolates are irregularly shaped and often have delicate decorations that need to be protected. They must be placed gently in the tray
- To avoid contamination in the packaging, metal detectors are often used

Solutions

- Our silicone suction cups allow gentle handling without damage thanks to their soft and supple sealing lip
- The suction cups are available in a metal-detectable variant and thus enable maximum process reliability



Flow gripper SFG when handling baked goods

Dough and Baked Goods

- Delicate pastries, cookies or pasta nests must be gripped carefully during the packaging process to protect them from damage
- Raw dough is sticky and deforms when gripped, whereas freshly baked goods must be removed hot from the baking tray

Solutions

- The flow grippers grip safely and reliably at a low vacuum to avoid damaging the fragile structure of the products
- Temperature-resistant suction cups or the finger gripper mGrip are suitable for processes where deformation needs to be prevented

SELECTED PRODUCTS

Chocolate Suction Cups SPG



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Flow Grippers for Food SFG



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Bellows Suction Cups FSDC



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Finger Grippers mGrip



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Handling of Packed Food and End-of-Line

Packaging and Logistics Processes

REQUIREMENTS AND SOLUTIONS



Bellows suction cup PSPF when handling packaged arugula salad

Opening and Transferring Bags

- Bags are removed with suction cups, opened and prepared for filling with food products
- Bellows suction cups from Schmalz hold the bags reliably thanks to their adaptable, flexible sealing lip

Handling of Cardboard

- Suction cups made of the hard-wearing material Elastodur offer outstanding sealing properties with a long service life
- Ejectors for efficient, pneumatic vacuum generation with intelligent functions for energy and process control



ZLW lightweight layer gripper for gripping complete layers

End-of-Line Palletizing of Bags

- Bags made of plastics or paper require flexible grippers that adapt to the respective shape
- Our sack grippers with their adaptable sealing lip ensure safe handling

End-of-Line Palletizing of Cardboard

- Complete product layers are implemented automatically with a layer gripping system
- The grippers can be individually adapted to the requirements of the process

SELECTED PRODUCTS

Bellows Suction Cups PSPF



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Bellows Suction Cups SPB1 (1.5 Folds)



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Compact Ejectors SCPLb / SCPLc



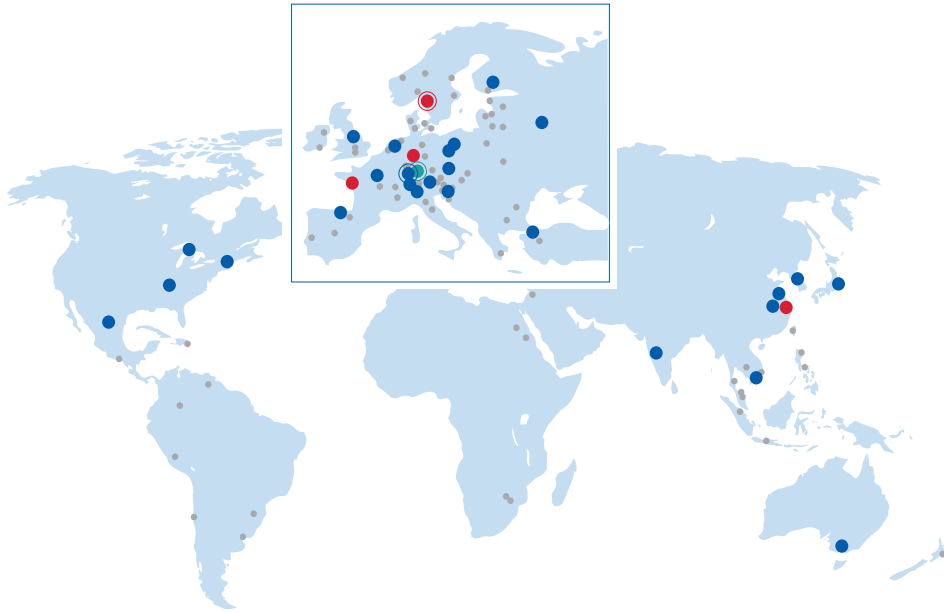
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Sack Grippers PSSG-X



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THE SCHMALZ GROUP – WORLDWIDE ON SITE



● Germany – Glatten

● International companies:

Australia – Melbourne
Austria – Pasching
Benelux – Hengelo
Canada – Mississauga
China – Shanghai
China – Taicang
Czech Republic – Hranice
Finland – Vantaa
France – Champs-sur-Marne
India – Pune
Italy – Galliate
Japan – Yokohama
Mexico – Querétaro

Poland – Bydgoszcz
Poland – Poznan
Russia – Moscow
South Korea – Anyang
Slovenia – Vrhnika
Spain – Erandio
Switzerland – Nürensdorf
Turkey – Istanbul
United Kingdom – Chesterfield
USA – Boston
USA – Raleigh
Vietnam – Ho Chi Minh City

● Sales partners

Binar Handling

● Sweden – Trollhättan

● International companies:

China – Shanghai
France – La Haie-Fouassière
Germany – Staufenberg



● Germany – Stuttgart

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Handling Systems

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