



Schmalz Robotics

Smart Hands for Every Cobot

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Schmalz Robotics

Vacuum gripping solutions for lightweight robots and cobots

“With its components, Schmalz is ensuring that cobot systems can be commissioned with utmost speed and simplicity.”

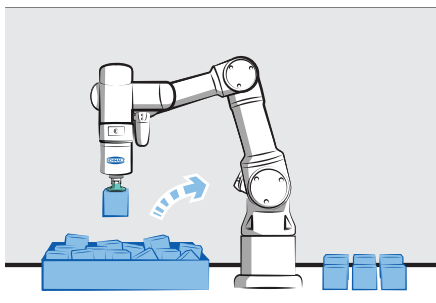
Matthias Frey,
Business Development Robotics



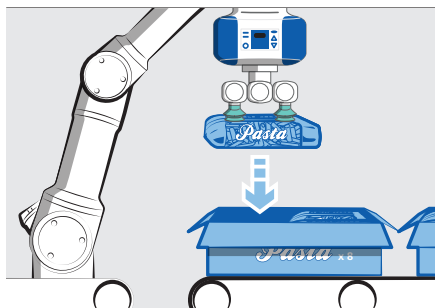
Lightweight robots and cobots play a key role in digitalization. They take on a wide range of tasks and make production more flexible. At the same time, they are relatively inexpensive and easy to program – and in this way, they make it easier to get started with automation. When it comes to the use of lightweight robots in the areas of assembly, logistics and packaging, the sky is the limit.

But the easier cobots are to use, the more important it is to choose the right gripping system. The robot can only pick up, move, position, process, assemble, sort, stack and put down a wide variety of goods and parts in combination with suitable grippers. Schmalz is the market leader in vacuum automation and develops individual, flexible gripping systems for use with lightweight robots. Thanks to our decades of experience in handling technology and our application expertise, we are able to offer our customers a significant competitive advantage.

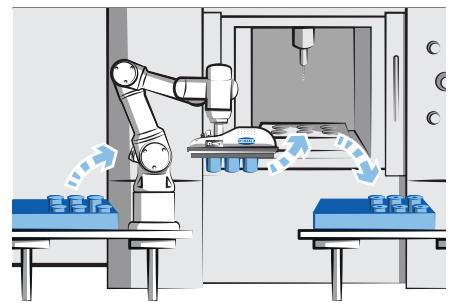
TYPICAL AREAS OF APPLICATION



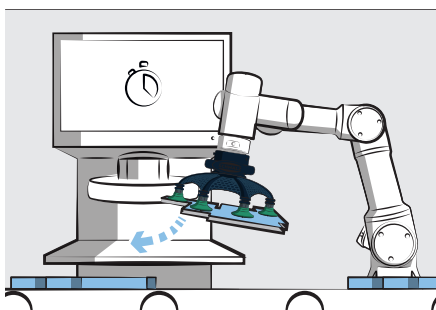
Pick-and-place



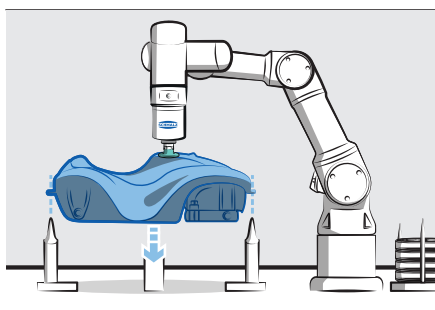
Packaging and palletizing



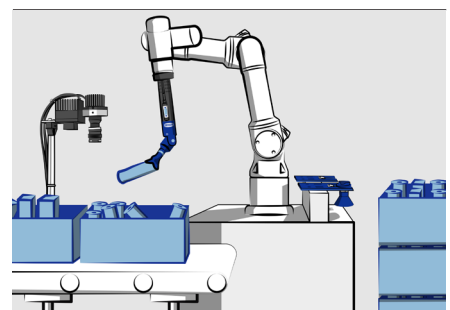
Loading and unloading machines



Quality control and lab testing



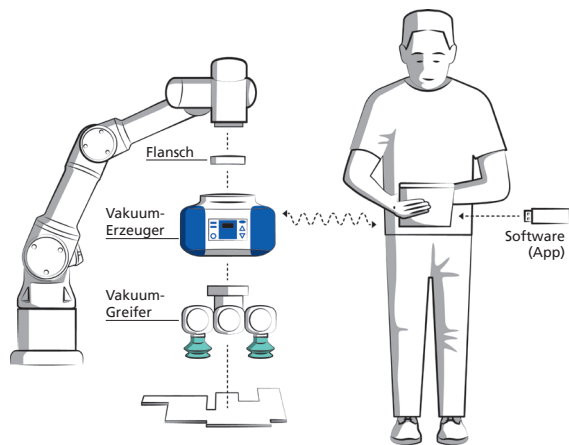
Assembly



Bin picking

Plug-and-Work Solutions

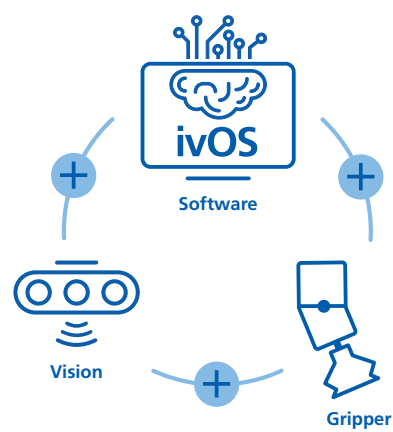
Ready-to-connect handling sets for your cobot



Schmalz offers application specific handling sets suitable for robots from various manufacturers. The sets contain all the necessary components, from vacuum generation and grippers to intuitive configuration software.

Schmalz Solution Kits ivOS

AI solutions for handling applications



The Solution Kits ivOS facilitate and accelerate the implementation of automated handling applications. Consisting of innovative gripper technology, modern 3D sensor technology and AI-based software, demanding handling applications in various industries are designed efficiently - for example the loading and unloading of sheet metal processing machines with unknown and varying parts. Intelligent gripping made by Schmalz.

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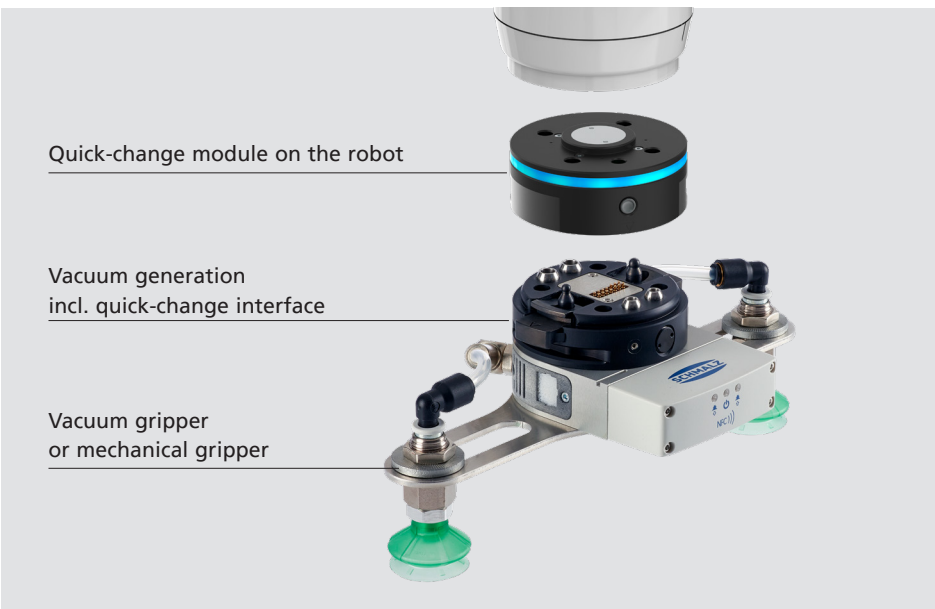
MATCH

End-of-Arm Ecosystem MATCH

Any Robot, any Gripper, any End Effector

Multifunctional end-of-arm platform for robotics

- ✓ For all common cobots and conventional 6-axis robots
- ✓ Integrated media feed-through (fluidic and electrical)
- ✓ Quick-change function (automatic or manual)
- ✓ Easy startup thanks to software support
- ✓ Load capacity up to 25 kg



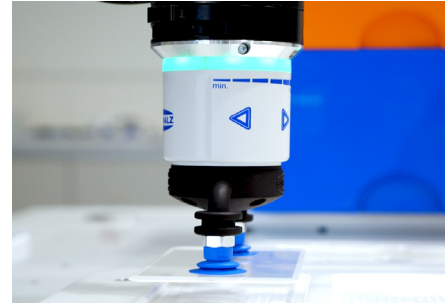
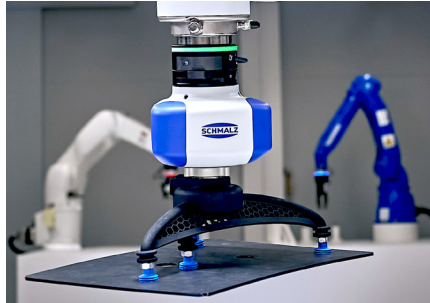
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Electrical Vacuum Generation

Compact, smart and compressed air independent

Schmalz CobotPumps ECBPMi and ECBPi for vacuum generation end-of-arm

- ✓ ECBPMi: suction rate 1.6 l/min, load capacity up to 4 kg
- ✓ ECBPi: suction rate 12 l/min, load capacity up to 10 kg
- ✓ IO-Link interface
- ✓ NFC interface for configuration via smartphone
- ✓ Compatible with Ecosystem MATCH



The electrical vacuum generators ECBPi and the mini version ECBPMi can easily be connected to all common lightweight robots. They do not require compressed air and therefore no hoses. The cobot remains mobile, flexible and easy to set up. In a minimal installation space, the ECBPMi generates a suction rate of 1.6 l/min and is suitable for loads up to 4 kg. With a maximum suction rate of 12 l/min and a load capacity of 10 kg, the ECBPi covers a wider range of applications. Users also benefit from intelligent functions for energy and process monitoring.

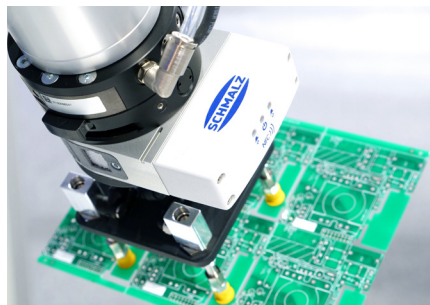
 [WWW.SCHMALZ.COM/ECBPMI .../ECBPI](http://WWW.SCHMALZ.COM/ECBPMI.../ECBPI)

Pneumatic Vacuum Generation

Powerful and efficient

Vacuum generator RECBi MATCH with high suction rate for a large variety of applications

- ✓ Suction rate 52,5 l/min, load capacity up to 25 kg
- ✓ Two separate vacuum circuits possible
- ✓ IO-Link interface
- ✓ NFC interface for configuration via smartphone
- ✓ Compatible with Ecosystem MATCH



For high suction capacities, as required in fast pick-and-pack processes in logistics, the pneumatic vacuum generator RECBi MATCH is an efficient solution. Thanks to its high suction rate of 74 l/min, it also reliably handles porous or flexible workpieces such as cardboard boxes. The suction performance is applied directly to the gripper, which increases process reliability and reduces cycle times. The efficient eco nozzle technology, in conjunction with an automatic air saving function, ensures energy efficient operation.

Modular Gripper System PXT

Flexible gripping systems for lightweight robots

Flexible system for the automation of various handling processes with lightweight robots

- ✓ Modular system – anytime adaptable and expandable
- ✓ For load capacities up to 25 kg and gripper dimensions up to 800 x 600 mm
- ✓ Preconfigured flanges for common lightweight robots
- ✓ Minimized interference contours due to integrated air guide (optional)
- ✓ Compatible with Ecosystem MATCH
- ✓ Configurable online



The modular gripper system PXT optimizes the design of flexible gripping systems and is ideal for lightweight robotics thanks to its low dead weight. Solutions for a wide range of handling processes can be implemented with just a few standardized components. The integrable vacuum guide ensures maximum application flexibility and practicality. Assembly and changeover are simple, fast and require only a few tools.

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Lightweight Grippers SLG

Configured online, automatically designed, additively manufactured

Individually configured grippers for cartons, bags and other freely shaped workpieces

- ✓ Individual configuration tailored to the workpiece
- ✓ Intelligent design thanks to the software
- ✓ For load capacities up to 10 kg and gripper dimensions up to 350 x 350 mm
- ✓ Minimal interference contours thanks to integrated air guide
- ✓ Compatible with Ecosystem MATCH



The lightweight grippers SLG are perfect for handling sheet metal, flat workpieces such as cardboard boxes and pouches as well as for pick-and-place applications with lightweight, Delta or SCARA robots. Ideal for end-of-line palletizing and injection moulding removal, its HRC-compatible design makes it ideal for use in human-robot collaborations. Freely scalable, with an automated design and plug-and-play function, it offers maximum flexibility and efficiency.

Layer Grippers ZLW and Sack Grippers PSSG

The solutions for palletizing processes with lightweight robots

Automated EOL palletizing processes with lightweight robots for any workpiece shapes and bags

- ✓ Feeding of workpiece layers into the production
- ✓ Pick-and-place in the production process
- ✓ Handling a wide variety of workpieces such as packages, pouches, jars, cans and buckets as well as paper, plastic and fabric bags



The lightweight layer gripper ZLW is the ideal choice for automated palletizing processes with lightweight robots. It impresses with its variable gripping surface and efficiently handles versatile workpieces such as packages, jars or buckets. Thanks to its low weight and high energy efficiency, it minimizes costs and maximizes process reliability.

The sack grippers PSSG offer easy, reliable handling of bags made of a wide variety of materials. Its modular design and innovative sealing element guarantee durability and ease of maintenance.

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Bin Picker SBPG

Vacuum gripper for bin picking

Ready-to-connect bin picking gripper with flexible swivel arm

- ✓ Suction cup quick-change function
- ✓ Low dead weight from approx. 500 g
- ✓ Integrated vacuum generation with suction capacity of 180 l/min
- ✓ HRC compliant design according to ISO TS 15066



Area gripping system in lightweight design RFBP

With the bin picker SBPG, Schmalz has developed a ready-to-connect gripper for picking from containers – regardless of whether they are placed in a chaotic or pre-sorted manner. Vacuum generation and monitoring are already integrated. A special bin picking suction cup ensures optimum sealing and holding force even when gripping at corners and edges. The high suction rate ensures a fast and secure grip even on porous parts. The quick-change unit for suction cups and actuators provides even more flexibility when gripping. Schmalz offers an optional swivel module for the SBPG. It enables reliable emptying even in corners and even with deep boxes. With the lightweight vacuum area grippers RFBP, the bin picker SBPG has a fully-fledged accessory for gripping with suction cups or foam for various workpieces.

Area Grippers FXCB / FMCB and FQE

Flexible grippers for collaborative logistics processes

Flexible handling of workpieces in collaborative environments, e.g. palletizing cardboard boxes

- ✓ Variants with integrated or external vacuum generation
- ✓ For load capacities up to 35 kg
- ✓ Grippers available in sizes 120 x 60 mm, 220 x 80 mm and 300 x 130 mm
- ✓ HRC compliant design according to ISO TS 15066



The area grippers FXCB / FMCB and FQE are suitable for handling workpieces of different sizes and geometries weighing up to 35 kg. As a variant with sealing foam, the grippers can reliably and safely handle, for example, rigid cardboard, boxes and components with recesses. The variants with suction cups are ideal for handling flexible workpieces such as sacks, bags or trays. Vacuum generation is either integrated or can be connected externally. Integrated control valves with suction and blow off function allow short cycle times.

 [WWW.SCHMALZ.COM/FXCB .../FMCB](http://WWW.SCHMALZ.COM/FXCB.../FMCB)

 WWW.SCHMALZ.COM/FQE

Schmalz Special Grippers

Various gripping principles for optimal handling

Schmalz offers the right gripper solution for almost any handling task

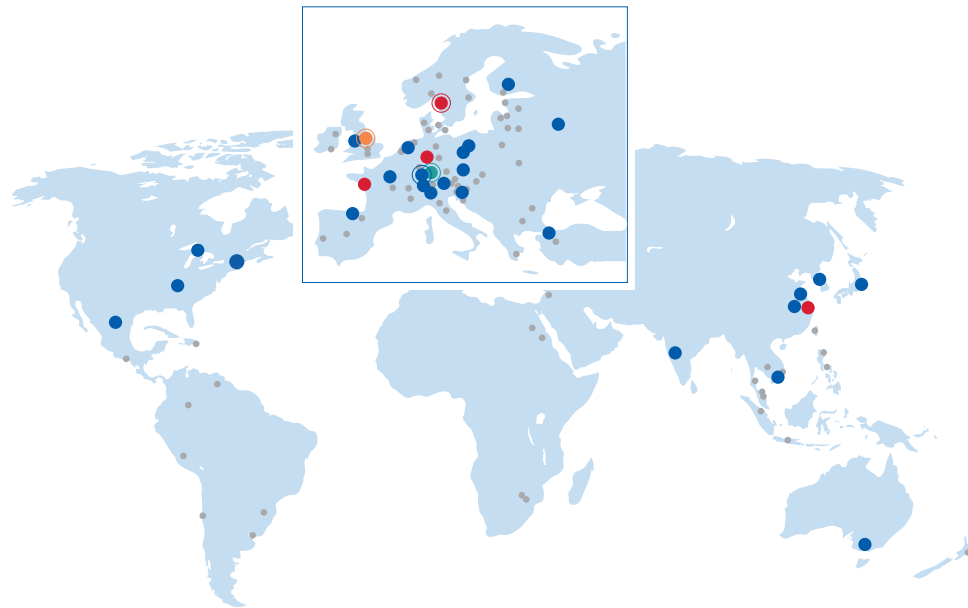
- ✓ Magnetic gripper SGM-SV for maximum holding forces on ferromagnetic workpieces
- ✓ Flow gripper SCG-HSS for assembled printed circuit boards
- ✓ Finger gripper mGrip for food and other small products



The flow gripper SCG-HSS with flexible pin curtain adapts optimally to workpieces with highly structured surfaces such as assembled printed circuit boards. The magnetic gripper set SGM-SV with high holding forces offers an ideal solution for handling perforated sheets, laser-cut parts, sheets with holes and cutouts. The finger gripper mGrip grips food sensitively and hygienically.



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Vacuum Automation

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Handling Systems

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