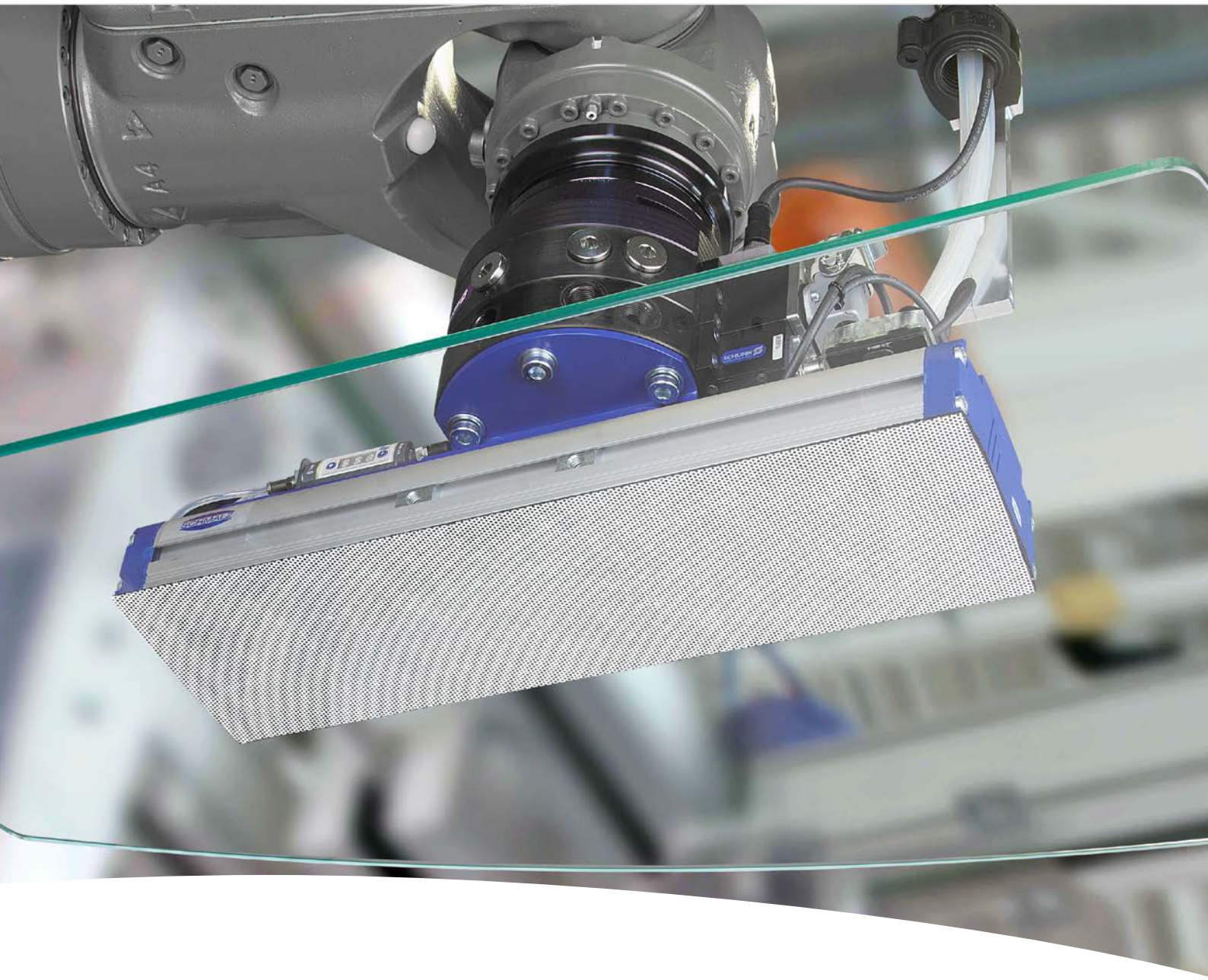


Versatile and Flexible Grip

Vacuum Area Gripping Systems

WWW.SCHMALZ.COM/AREA-GRIPPING-SYSTEMS

Area Gripping Systems FXP / FMP

Versatile and flexible for handling a wide variety of workpieces

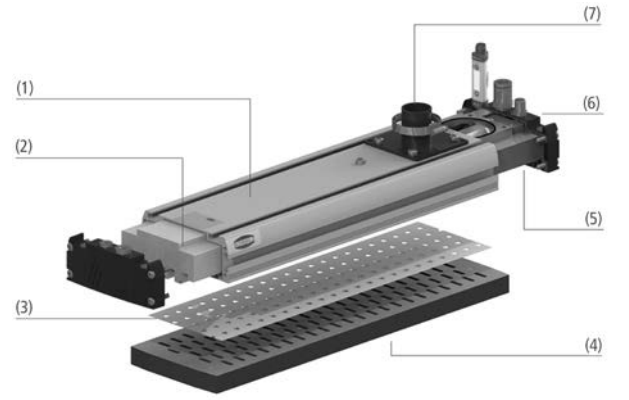
UNIVERSAL

Suitability for Industry Specific Applications

Area gripping systems FXP / FMP

Applications

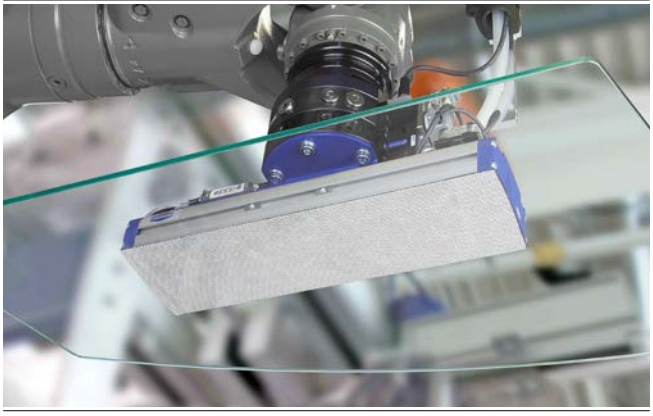
- Universal gripper for handling workpieces regardless of size, geometry, material and surface
- Handling of workpieces made from various materials, such as wood (coated or unplaned), packaging (boxes, bags or cans), metal sheets, glass, plastics, CFRP, etc.
- Handling of porous workpieces, workpieces with gaps or undefined pick-up position
- Mark-free handling of sensitive workpieces such as display glass
- Ideal for use on robots due to its low weight
- Vacuum generation optionally integrated (type FXP) or external (type FMP)



Design area gripping systems FMP-S

Design

- Aluminum basic profile (1) with side T-slots for sensors and an integrated air supply for separation
- Vacuum booster (2) for quicker evacuation; valve film (3) for the quick change of valve type and size
- Sealing element (4): suction cups with push-in function or sealing foam with adhesive film
- Optional integrated plug-in vacuum valve (5): fast evacuation and high suction volume
- End cover with integr. functions (6): compressed air connection, vacuum gauges; opt. vacuum switch and control valves
- Type FXP with integrated multi-stage ejector; type FMP with connection piece (7) for external vacuum generation



Vacuum area gripper FXP with protective layer SU for mark-free handling glass

Product Highlights

- Integrated vacuum generator enables shortest cycles; minimal interfering contours (FXP)
- Connection of electrical vacuum generators enables high volume flows and vacuum up to -0.8 bar at low operating costs (FMP)
- Vacuum booster integrated in the base profile ensures fast evacuation and short cycles
- Gripper can be optimally adapted to the application thanks to selectable sealing element (suction cups or sealing foam)
- Check valves (SVK) ideal for porous workpieces; flow resistors (SW) for smooth surfaces and swiveling up to 45°
- Intelligent versions FXP-i and FMP-i with condition monitoring functions and communication interfaces for monitoring and controlling the entire production process

86% higher suction force than comparable grippers

Flexible gripping of work-pieces wider than 20 mm

Energy efficient through flow optimization

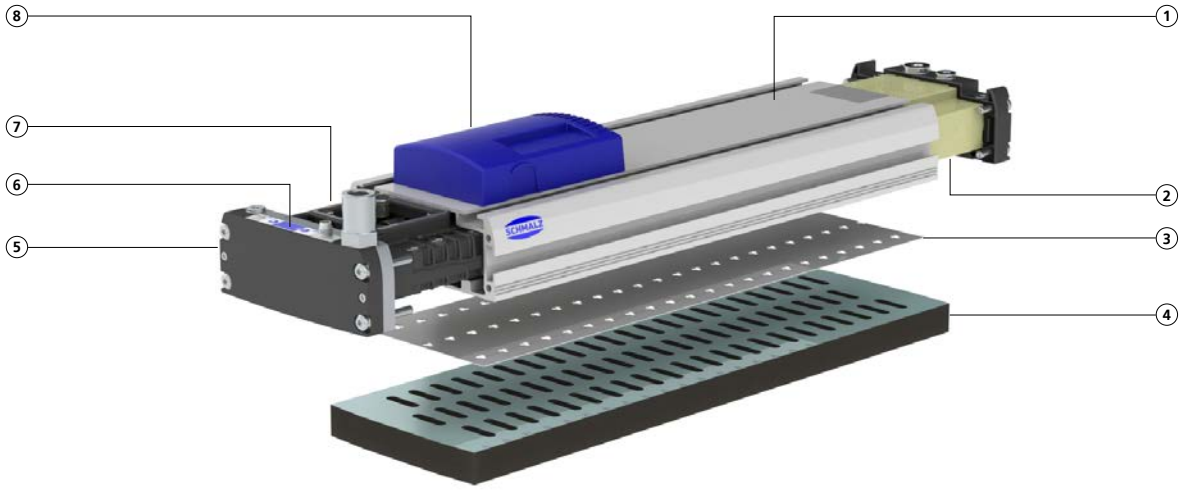


Fig. shows type FXP-i

① **Aluminum base section**
- Variable gripper length possible

② **Vacuum booster**
- Faster evacuation due to reduced inner volume
- Maximum power is reached instantly

③ **Valve film**
- For quickly changing the valve type (check valves or flow resistors) and valve size

④ **Sealing element**
- Suction cups with push-in function
- Sealing foam with optimized adhesive film (shown)

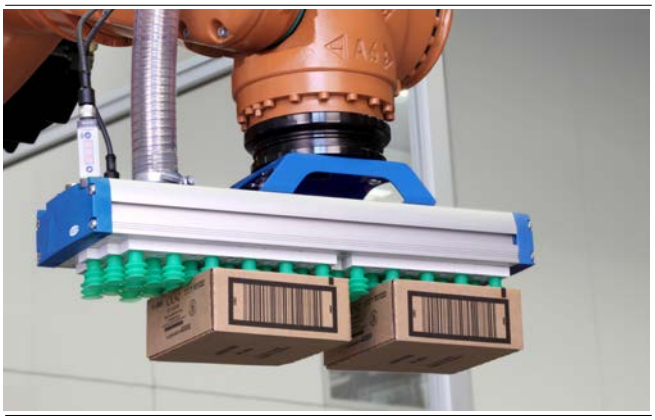
⑤ **Plug-in vacuum valve / control valves**
- Type FXP-S and FMP-S are equipped with control valves for ejector control or an integrated vacuum valve
- High functional reliability
- Minimized installation costs
- Avoidance of interfering contours

⑥ **Intelligent process monitoring**
- FXP-i and FMP-i feature condition monitoring and predictive maintenance to increase system availability
- Automatic air saving function (type FXP-i)
- NFC technology enables parameterization with smartphone
- IO-Link interface communicates value-added data in common fieldbus systems

⑦ **Plug-in ejector (type FXP)**
- Fast evacuation and high suction flow

⑧ **Silencer (type FXP)**
- Sound level only 74 dB(A)

Gripping system FMP for layer-wise stacking of construction wood



Gripping system FMP for handling cardboard boxes

Area Gripping Systems FMHD

Robust and easy to maintain for powerful handling

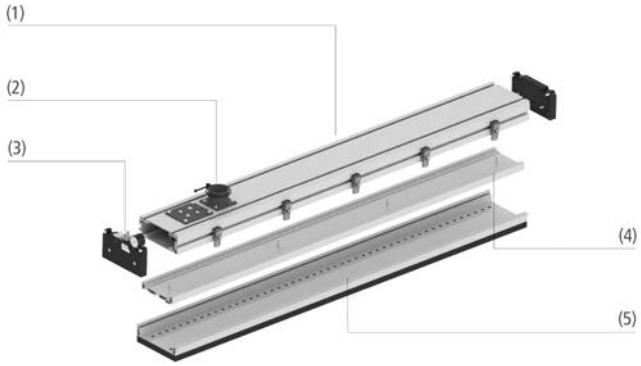
LOGISTICS WOOD

Suitability for Industry Specific Applications

Area gripping systems FMHD

Applications

- Robust gripping system with connection for external vacuum generator for the efficient handling of sawn timber, planed and glued products, plate products, construction timber, pallets and box elements
- Handling of naturally grown material with knotholes, cracks and heavily twisted, rough surfaces
- Ideal for the rough application conditions in sawmills or in woodworking and furniture construction
- Can be used for layer-wise unstacking and relocation of workpieces



Design area gripping systems FMHD

Design

- Aluminum basic profile (1) with integrated vacuum storage for high rigidity with low dead weight
- Hose connection and separating cylinder (2) for connecting the external vacuum generator
- End cover (3) with control valves for separating cylinder and blow-off function
- Valve profile (4) with integrated missile valves
- Quick change profile with sealing foam and quick-change adhesive film (5); easy to maintain

Gripping system FMHD handling rough sawn wooden boards

Product Highlights

- Ideal for highly porous and twisted workpieces
- Handling of workpieces from 35 mm width, regardless of geometry, surface and position
- Maximum process acceleration and reduced system costs through the use of smaller robots
- Up to 70 % reduction in maintenance due to three-part profile design
- Sustainable reduction in operating costs through flow optimization

Area Gripping Systems FXP-60 / FMP-60

Slim gripping system for handling in confined work areas

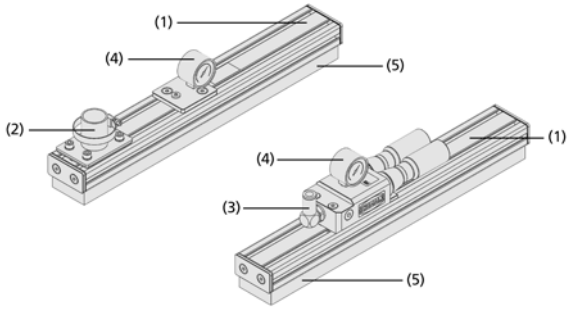
UNIVERSAL

Suitability for Industry Specific Applications

Area Gripping Systems FXP-60 / FMP-60

Applications

- Universal gripper for handling workpieces of different sizes, geometries, materials and surfaces
- Handling of the workpieces from different pickup positions
- Handling of porous workpieces and workpieces with cutouts
- Suitable for fully automated applications



Design Area Gripping Systems FXP-60 / FMP-60

Design

- Aluminum base section (1) with lateral T-slots for sensors; different gripper lengths possible
- Connection pipe (2) for external vacuum generation or compressed air connection (3) for included multi-stage ejector
- Gauge (4)
- Sealing plate (5)

Area gripper FXP-60 when handling furniture panels

Product Highlights

- Slim area gripping system with 60 mm width enables use in confined work areas
- High effective lift capacity due to modular lightweight design
- Low operating costs with high operational reliability due to particularly energy-efficient vacuum generation (installed in FXP-60)
- High-performance sealing foam with excellent sealing and long service life
- Sealing foam with quick-change adhesive film for effortless replacement without time-consuming cleaning

Area Gripping Systems FXCB / FMCB

The smart assistant for collaborative work

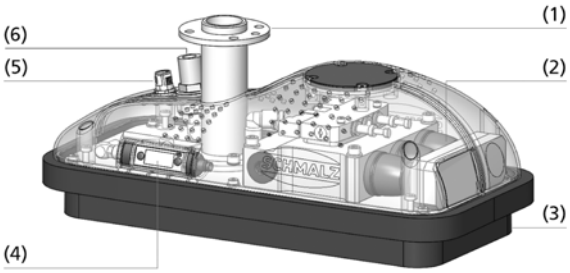
UNIVERSAL

Suitability for Industry Specific Applications

Area gripping systems FXCB / FMCB

Applications

- Gripping system with low weight and integrated pneumatic vacuum generation (type FXCB) for collaborative robot applications
- Handling workpieces in the area of intra-logistics
- Perfect for stationary handling tasks with collaborative robots
- Palletizing and depalletizing cardboard boxes
- Type FMCB for operation with external vacuum generator



Design area gripping systems FXCB

Design

- Modular gripper with 3D-printed housing
- Flange connection (1) suitable for common collaborative robots
- Integrated vacuum generation (2) through energysaving ejector modules SEP (type FXCB) or alternatively with connection for external vacuum generation (type FMCB)
- Quick-change sealing elements (3): sealing foam with adhesive film for intrinsically stable workpieces or plug-in suction cups for flexible cardboard boxes, bags, etc.
- Vacuum switch VSi (4) for system monitoring
- Compressed air connection (6) and electrical connection M12-8 (5)
- Suction area 300 x 130 mm

Gripping system FXCB with sealing foam for handling cardboard boxes

Product Highlights

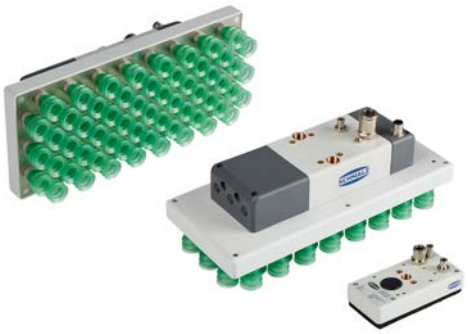
- Area gripper suitable for HRC operation, as it meets the requirements of ISO TS 15066
- Direct, easy access to the device data via NFC interface using a smartphone
- High effective payload despite light, dynamic geometry thanks to additive manufacturing (3D printing)
- Innovative communication technology enables easy integration of the gripper in Industry 4.0 environment

Area Gripping Systems FQE

Compact, lightweight and HRC-capable

UNIVERSAL

Suitability for Industry Specific Applications



Area Gripping Systems FQE

Applications

- Flexible area gripper for handling products regardless of size and geometry
- Allows handling of products from different picking positions
- Ideal for stationary handling tasks with collaborative robots
- Suitable for fully automated applications
- Typically used for pick-and-place applications or end-of-line packaging in intralogistics
- For the handling of products in the automotive, glass or electronics sector

Design Area Gripping Systems FQE

Design

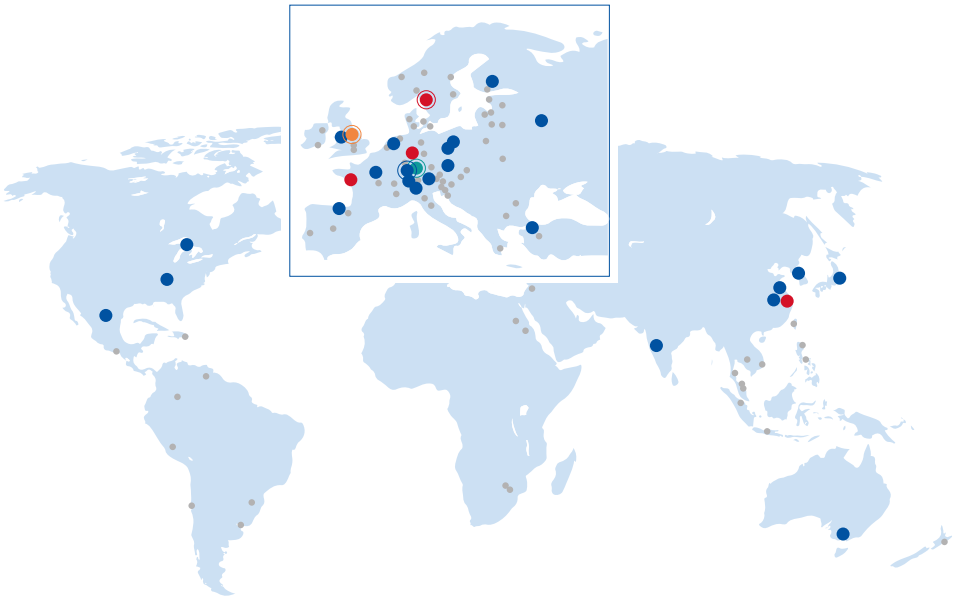
- FQE-X with integrated, pneumatic vacuum generator (ejector modules SEP) (1) or FQE-M for operation with external vacuum generator
- Silencer for minimum noise emission (2)
- Exchangeable suction plate with foam (3) or suction cups
- Integrated control valves for suction and blow-off function (4)
- Optional vacuum switch VSi (5)
- Robot flange (6)

Area gripping system FQE with suction cups for handling workpieces with partial occupancy

Product Highlights

- Innovative product design according to ISO TS 15066 enables MRK operation
- Modular lightweight construction for a low weight and thus a higher effective lift capacity
- Energy efficient, integrated vacuum generation for low operating costs
- Integrated control valves for minimum cycle times and interference contours
- Flexible gripper design enables a wide range of applications

The Schmalz Group – Worldwide On Site



SCHMALZ

Germany – Glatten

International companies:

Australia – Melbourne
Austria – Pasching
Benelux – Hengelo (NL)
Canada – Mississauga
China – Shanghai
China – Taicang
Czech Republic – Hranice
Finland – Vantaa
France – Champs-sur-Marne
India – Pune
Italy – Galliate (NO)
Japan – Yokohama
Mexico – Querétaro
Poland – Bydgoszcz
Poland – Poznan
Russia – Moscow
South Korea – Anyang
Spain – Erandio (Vizcaya)
Switzerland – Nürensdorf
Turkey – Istanbul
United Kingdom – Manchester
USA – Raleigh (NC)

Sales partners

BINAR HANDLING

Sweden – Trollhättan

International companies:

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

Palamatic

United Kingdom – Chesterfield

GPS GESELLSCHAFT FÜR PRODUKTIONSSYSTEME

Germany – Stuttgart

Vacuum Automation

WWW.SCHMALZ.COM/AUTOMATION

Handling Systems

WWW.SCHMALZ.COM/HANDLING-SYSTEMS

J. Schmalz GmbH
Johannes-Schmalz-Str. 1
72293 Glatten, Germany
T: +49 7443 2403-0
schmalz@schmalz.de
WWW.SCHMALZ.COM

schmalz.vacuumtechnology · schmalz_group · schmalzmediacenter · schmalz · j-schmalzgmbh · schmalz_de