





Schmalz – World of Vacuum Technology

Strict customer-orientation and trend-setting innovations, excellent quality and comprehensive advisory skills make Schmalz the world's leading partner for vacuum technology in automation, handling and clamping technology.

As a worldwide active company with excellent products and services, we offer our customers trend-setting solutions. We have many enthusiastic customers in all sectors where production processes are made more efficient with the aid of vacuum technology.

Schmalz Services – Supporting You All The Way



Consultation

Professional project planning and expert realisation of your individual solution – profit from our experience!

Procurement

Attractive terms and reliable delivery service – Schmalz provides security for all your purchases.

Start of operations

We support you during the start of operations and assist you throughout the entire process.

Operation

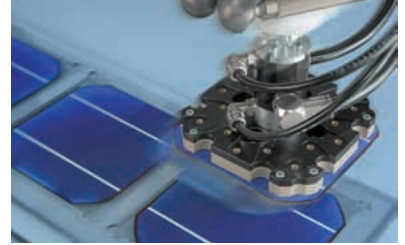
Schmalz service technicians optimise the performance capability of your system. Innovative vacuum solutions ensure a high degree of equipment availability.

Training

Schmalz imparts knowledge – carefully tailored to the needs of your company's employees.

Repair service

The vacuum specialists of the Schmalz Group assist you in emergencies worldwide – quick and straightforward.



Vacuum Components

In all areas of automation technology, Schmalz customers benefit from expert systems consulting and groundbreaking, innovative solutions. The Schmalz vacuum components product range includes everything you need to build a fully functional vacuum system.

Typical application of vacuum components

Handling work pieces in automated processes, especially in robot applications and automated portals.

The Schmalz product range

- Vacuum suction pads
- Special grippers
- Mounting elements
- Vacuum generators
- Valve technology
- Switches and system monitoring
- Filters and connections

For application in the following industries

- Metal/metal sheets
- Automotive
- Wood
- Plastics
- Packaging
- Solar

This brochure offers a brief overview of the Schmalz product range of vacuum components.

Additional information:



Vacuum component catalogue

Detailed information about Schmalz vacuum technology products can be found in our comprehensive vacuum component catalogue. We would be glad to send you a copy in print form or as a CD-ROM.

www.schmalz.com

The Schmalz Online Shop

The Schmalz online shop at www.schmalz.com contains over 3,000 items with extensive technical information, design data and CAD data. You can also find information regarding industry solutions as well as practical application examples of Schmalz products. Along with a variety of helpful services and downloads, a personal account at the online shop makes it easier and faster to place an order at attractive terms.



Vacuum Suction Pads

Vacuum suction pads come in a wide range of shapes, sizes and materials. They act as the connecting element between the machine and workpiece, and are implemented to lift and transport objects of all kinds.



Universal suction pads

- Flat suction pads (round/oval)
 - Different shapes, dimensions and sealing lips available
 - Ideal for the use on workpieces that are flat or slightly curved, as well as narrow ones.
- Bellows suction pads (round/oval)
 - Different shapes, dimensions and numbers of folds available
 - Damping effect for use with sensitive workpieces
 - Adaptability to surfaces of different heights
- Sealing profiles
 - A wide range of different shapes and diameters available
 - Sealing profiles for producing own suction pads

Special suction pad versions for application in the following industries

- Metal sheets/automotive
- Packaging
- Solar
- Wood
- CD/DVD
- Plastics
- Electronics

Special Grippers

The range of special grippers includes a wide range of grippers with differing sizes, shapes and principles of operation. They are used wherever a vacuum suction pad cannot be used to grip workpieces.



Floating suction pads

- The grippers float above the workpiece surface on an air cushion for a low-contact handling
- Handling of sensitive workpieces such as films, wooden veneers, circuit boards, as well as porous workpieces

Magnetic grippers

- Safe gripping using a permanent magnet – even during a power failure
- Handling of perforated metal sheets, complex laser-cut workpieces and metal sheets with holes and apertures

Needle grippers

- Form-fitting gripping using extending needles
- Handling of porous and/or unstable workpieces such as textiles, insulating materials, foam materials, fibre reinforced materials, fleece, felt, carpets, filter mats, fabrics, polystyrene and metal foam

Wafer grippers

- Extremely fast, secure, precise and careful handling
- High positioning accuracy and integrated depositing function
- Handling of solar wafers and cells

Coanda grippers

- Fast handling thanks to low suction times and an optional blow-off module
- Handling of slightly bent, flat, sensitive and/or porous workpieces such as films, paper, wood veneer, circuit boards, or fibreglass fabric

Mounting Elements

Mounting elements act as a connecting element between vacuum components, and are also implemented for building custom designed vacuum systems. The modular system ensures an optimal combination of elements.



Sections and connectors

- High-strength aluminium sections
- Wide range of accessories for building the base structure of vacuum systems to individual requirements

Holders

- They are used to connect suction pads, special grippers and spring plungers to the framework
- Connection to aluminium sections, square and round tubes
- High flexibility when mounting and adjusting vacuum suction pads

Spring plungers

- Spring-mounted holding of suction pads and special grippers
- Compensation of height differences
- Soft placement on sensitive workpieces

Jointed mountings

- Fully flexible design
- Optimal adjustment of vacuum suction pad to uneven workpiece surfaces

Vacuum Generators

Vacuum generators can be pneumatically or electrically operated. With varying operating principles and performance levels, they can generate the appropriate vacuum for every application.



Ejectors

- Pneumatic vacuum generation
- Light, compact design
- Wear-resistant for low maintenance
- Fast generation of vacuum
- Integrated filters, control valves and system monitoring functions
- Integrated automatic air saving function for energy-efficient operation
- Condition monitoring ensures process optimisation and reduction of down times
- Remote parameterisation using the new high innovative communication standard IO link
- Application in all industries, especially in combination with robot applications and automated processes

Pumps

- Electrical vacuum generation
- High vacuum values and high suction capacity
- Suitable for different applications in all industries; in both automated and manual processes

Blowers

- Electrical vacuum generation
- Enormous suction capacity for high leakage compensation
- Application in all industries, especially with porous workpieces such as cardboard boxes, thermal insulation material, bags or chipboards

Valve Technology

Valve technology is used to control vacuum and compressed air, as well as to improve process safety in automated processes. It is based on various principles of operation and valve designs.



Solenoid valves

- Vacuum and compressed air is controlled by solenoid valves, which are available in directly controlled versions and versions with pneumatic pilot control for different flow rates

Check valves

- Check valves close automatically if the vacuum suction pad is not in use

Flow resistors

- Reduction of the cross-sectional area, which ensures that the system vacuum is maintained even if the suction pads are not in contact with a work piece

Sensing valves

- The vacuum line opens when the vacuum suction pad comes into contact with a work piece

Manual valves

- Manual activation and deactivation of vacuum and compressed air

Switches and System Monitoring

Switches as well as measuring and control components facilitate system monitoring. They are decisive for the safe and energy-efficient operation of a vacuum system, and thus guarantee maximum process safety.



Switches

- Electronic, electromechanical and pneumatic versions are available
- Optional digital or analogue output
- Wide range of setting and programming options
- Display or LED indicators
- Available as vacuum or pressure switch, or a combined vacuum/pressure switch
- Suitable for automated applications in all industries

Measuring and control devices

- Pressure gauge for analogue measuring of the vacuum
- Vacuum regulator to maintain the vacuum value at a constant level in the system

Filters and Connections

Filters protect a vacuum system against contamination effectively. Hoses and distributors are used to connect individual components. In combination with different connectors they facilitate the construction of an entire vacuum system.



Vacuum filters

- Filters with different filtration grades, nominal flows and connection shapes
- Used to protect the vacuum generator from contamination

Vacuum distributors

- Large cross sections for optimal flow characteristics
- Varying connection and mounting options
- Used to distribute vacuum and compressed air in the entire system

Hoses and connectors

- Broad range of hoses with varying diameters and materials
- Wide selection of accessories including plug-in connections, hose connectors, etc.
- Used in the construction of compressed air and vacuum systems

Vacuum Gripping Systems

Vacuum gripping systems delivered ready for connection – Schmalz provides innovative, integrated solutions for a diverse range of applications. The Schmalz product range covers vacuum gripping system from large-area and layer gripping systems to ready-assembled vacuum spiders.



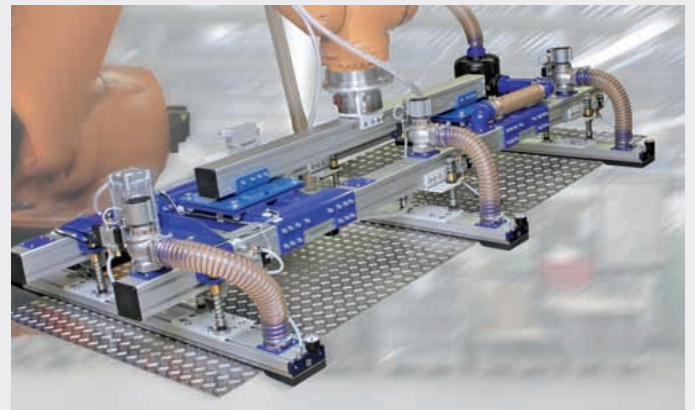
Large-area vacuum gripping systems

- Maximum flexibility for automated handling processes



Layer gripping systems

- Palletising and depalletising with minimum cycle times



Vacuum suction spiders

- Sophisticated, complete systems for individual applications



Vacuum Components

Innovative vacuum components from Schmalz offer many users in various sectors of industry reliable support in the solution of automation and handling tasks. The wide range of components extends from suction pads and vacuum generators to mounting elements and system monitoring devices.

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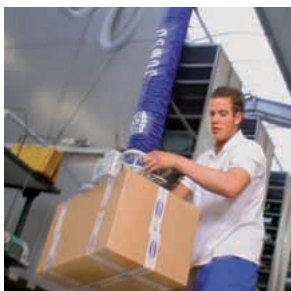


Vacuum Gripping Systems

Complex vacuum gripping systems from Schmalz permit decisive productivity improvements to be achieved. The range extends from layer and large-area gripping systems to complete vacuum spiders, delivered ready for connection, for use in all areas of automation.

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Vacuum Handling Systems

Ergonomical vacuum lifting devices Jumbo and VacuMaster for effortless, damage-free handling of workpieces. Crane systems to supplement these to form complete system solutions which are precisely matched to the planned application. Workshop equipment as practical aids in trade and industry.

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Vacuum Clamping Systems

Future-oriented vacuum clamping technology from Schmalz is the intelligent response to the continually increasing demands for more productivity and economic operation of CNC machine tools.

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