

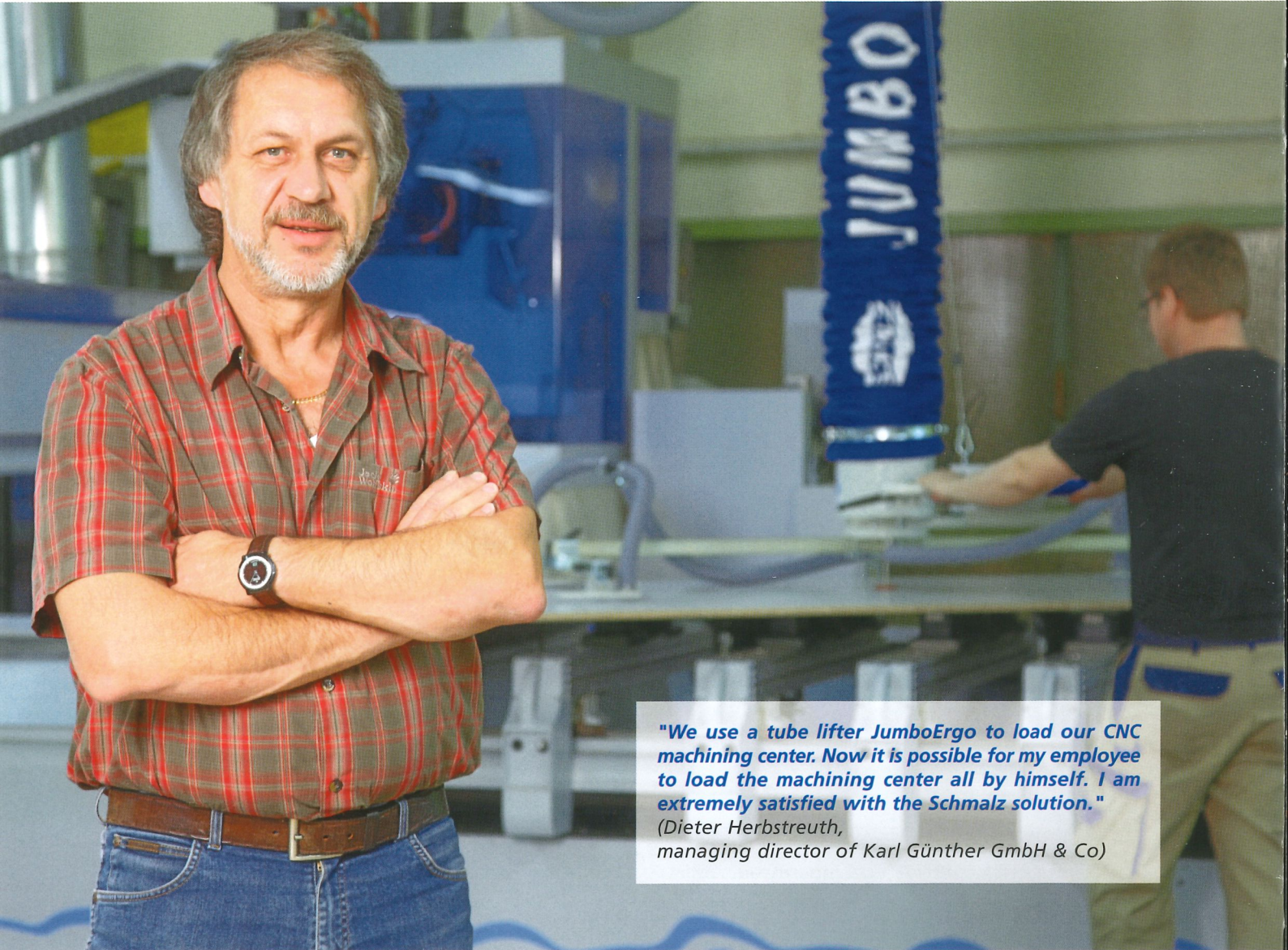


**Vacuum Handling Systems**  
Solutions for the Wood and Glass Industry

# Vacuum Handling Systems

## Ergonomic handling solutions

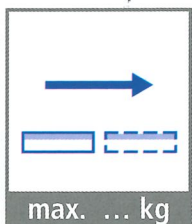
Manually operated vacuum handling systems rationalize manufacturing processes and reduce lead times while increasing employees' motivation and performance. Schmalz lifting devices and tube lifters feature functionality, safety and ergonomic operation in processes such as the loading and unloading of machines. The lifting systems relieve the operator from the workpieces weight and enable to work ergonomically and health protective.



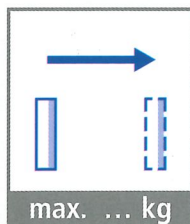
*"We use a tube lifter JumboErgo to load our CNC machining center. Now it is possible for my employee to load the machining center all by himself. I am extremely satisfied with the Schmalz solution."  
(Dieter Herbstreuth,  
managing director of Karl Günther GmbH & Co)*

The following symbols will help you navigate through this brochure:

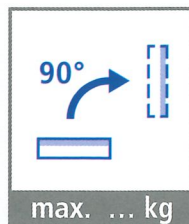
### Type of handling



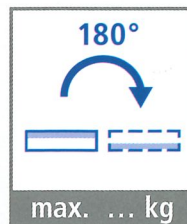
Horizontal,  
max. load



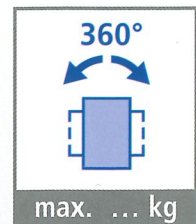
Vertical,  
max. load



Swivel by 90°,  
max. load



Turn by 180°,  
max. load

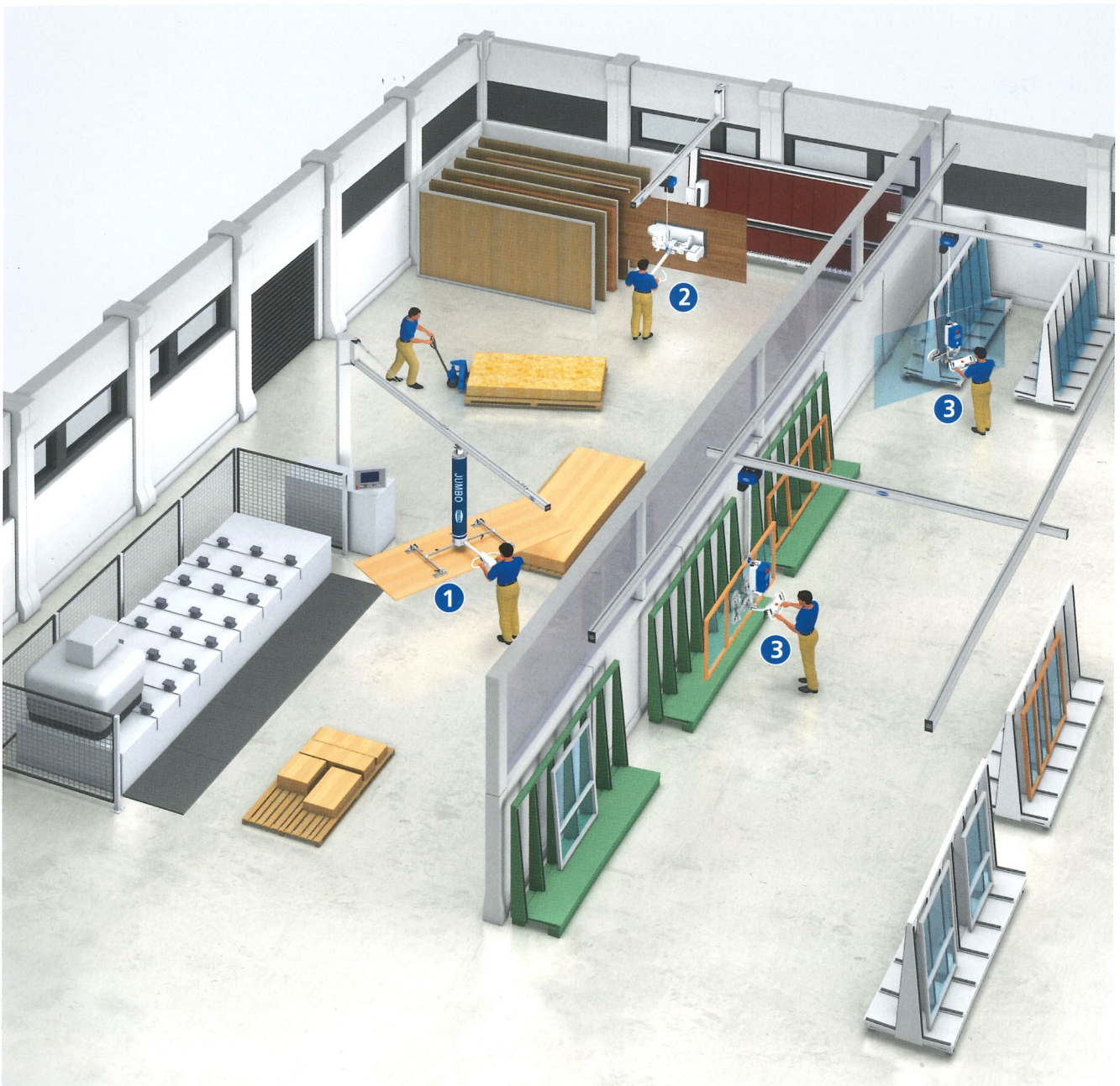


Rotate by 90°,  
max. load

# Vacuum Handling Systems

Ergonomic handling solutions

Handling Tasks in the Wood and Glass Industries



1

## Horizontal Handling of Wooden Workpieces

- Horizontal gripping of workpieces
- Horizontal loading and unloading of machines

Sample application, page 2

2

## Swiveling and Turning of Wooden Workpieces

- Horizontal or vertical gripping of workpieces
- Horizontal or vertical loading and unloading of machines

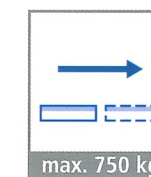
Sample application, page 4

3

## Handling of Glass Workpieces

- Vertical or horizontal gripping of workpieces
- Vertical or horizontal loading and unloading of machines

Sample application, page 6



## Horizontal Handling of Wooden Workpieces

Simple and ergonomic

The workpiece is gripped and transported horizontally.

The wood machining tool, e.g. a CNC machining center or a horizontal saw, is loaded and unloaded using Schmalz lifting systems.

### Special Industry Requirements

- Horizontal handling of large workpieces
- Secure gripping of coated and porous workpieces
- Often used in tight spaces



Vacuum tube lifter JumboFlex for handling light, coated wooden boards up to 35 kg



Vacuum lifting device VacuMaster VHB for unplaned boards and planks



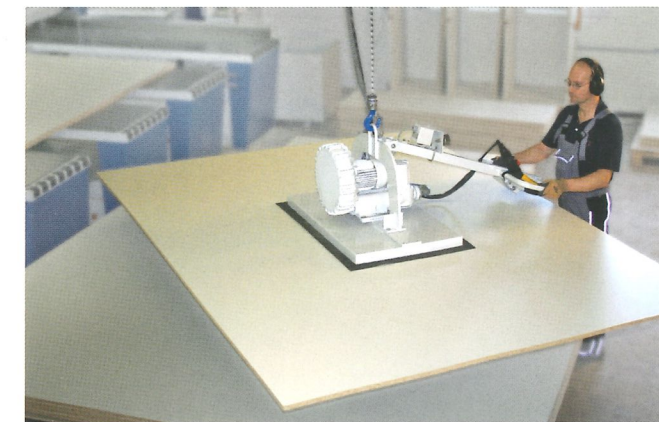
Vacuum tube lifter JumboErgo being used to load a CNC machining center



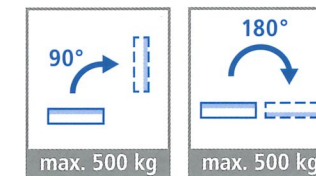
Vacuum tube lifter JumboErgo being used to load a CNC machining center



Vacuum tube lifter JumboErgo with large-area grippers FM being used to handle workpieces with gaps



Vacuum lifting device VacuMaster Multi for handling a large, porous wooden board



## Swiveling and Turning of Wooden Workpieces

### Quick and easy

The workpiece can be gripped horizontally or vertically and swiveled by 90° or turned by 180° during the handling process.

The wood machining tool, e.g. a CNC machining center or a horizontal or vertical saw, is loaded and unloaded using Schmalz lifting systems.

#### Special Industry Requirements

- Swivel large workpieces by 90° or turn by 180°
- Secure gripping of coated and porous workpieces
- Often used in tight spaces



Vacuum lifting device VacuMaster HHVM being used to load a vertical saw



Vacuum lifting device VacuMaster Comfort being used to turn wooden boards by 180°



Vacuum tube lifter JumboErgo with pneumatic swiveling unit PSE for swiveling workpieces by 90°



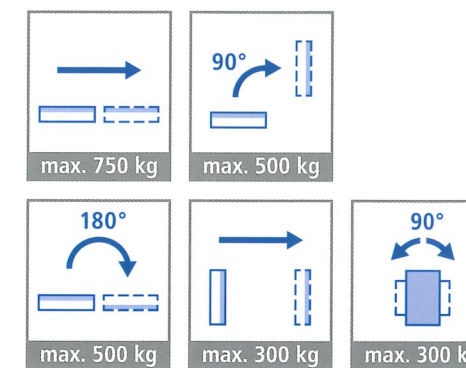
Vacuum lifting device VacuMaster Multi with two suction plates being used to handle heavy, porous wooden boards



Vacuum lifting device VacuMaster HHVM being used to load a vertical saw



Vacuum lifting device VacuMaster Multi being used to swivel large, porous wooden boards by 90°



## Handling of Glass Workpieces

### Safe and minimal marking

The sensitive glass workpieces are gripped horizontally or vertically and can be rotated, swiveled by 90° and turned by 180° during handling.

Schmalz lifting systems realize the transportation of workpieces as well as the loading and unloading of the machining tool.

#### Special Industry Requirements

- Rotate workpieces by 90°
- Swivel workpieces by 90° or turn by 180°
- Handle sensitive workpieces safely with minimal marking
- Exact, infinitely variable workpiece positioning



Vacuum lifting device VacuMaster Window being used to unload a vertical glazing press



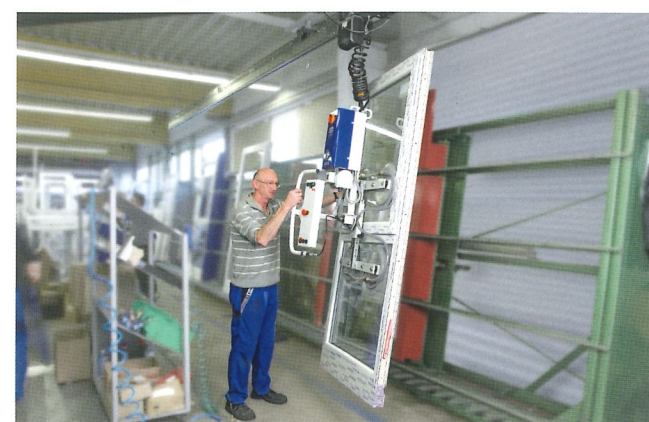
Vacuum lifting device VacuMaster Comfort being used to turn a glass sheet by 180°



Vacuum lifting device VacuMaster Basic being used to swivel a glass sheet by 90°



Vacuum lifting VacuMaster Window device being used for picking windows with plastic frames



Vacuum lifting device VacuMaster Window Comfort being used to handle a multi frame window



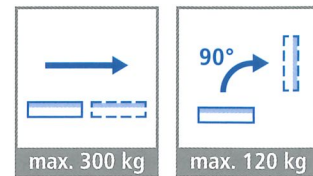
Vacuum lifting device VacuMaster Window being used to handle a glass sheet vertically

# Vacuum Tube Lifter Jumbo

## Modular system design

The vacuum tube lifter Jumbo is particularly suited to frequent and fast lifting and transportation of workpieces weighing up to 300 kg. Loads are gripped and lifted exclusively by using the medium vacuum.

Due to its modular design, the vacuum tube lifter can be customized to each individual application.



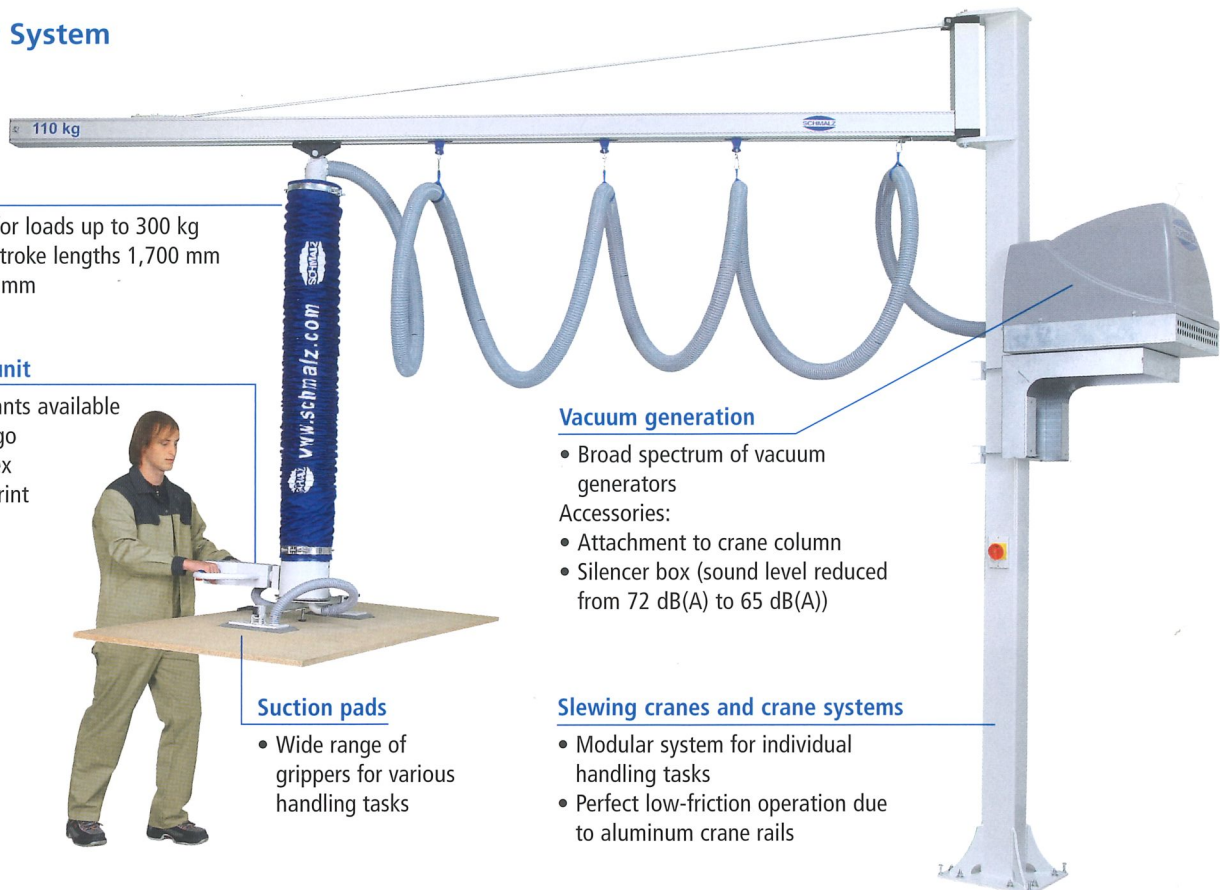
## Modular System

### Lifting unit

- Available for loads up to 300 kg
- Standard stroke lengths 1,700 mm and 2,100 mm

### Operating unit

- Three variants available
  - JumboErgo
  - JumboFlex
  - JumboSprint



### Vacuum generation

- Broad spectrum of vacuum generators
- Accessories:
  - Attachment to crane column
  - Silencer box (sound level reduced from 72 dB(A) to 65 dB(A))

### Slewing cranes and crane systems

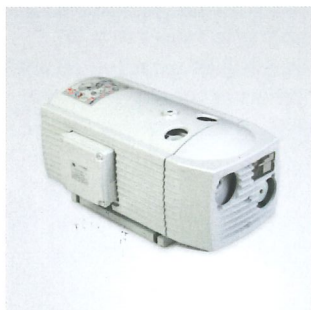
- Modular system for individual handling tasks
- Perfect low-friction operation due to aluminum crane rails

### Suction pads

- Wide range of grippers for various handling tasks

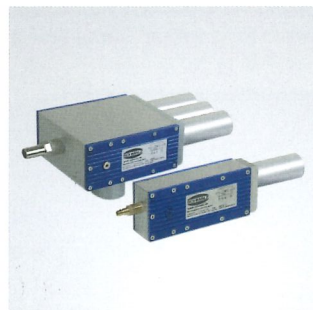
## Vacuum Generation

Depending on the surface characteristics and the weight of the workpiece, three different vacuum generators are available for usage.



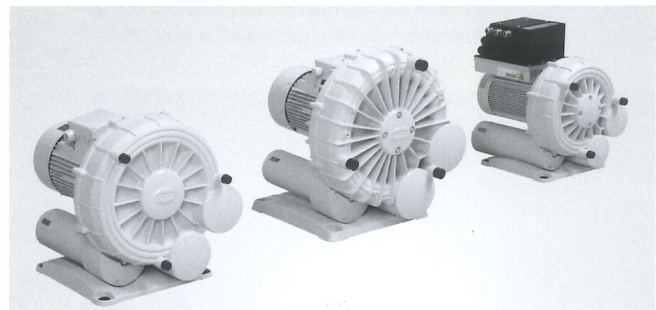
### Vacuum pumps EVE

- Electrically operated vacuum generator



### Vacuum ejectors SEM

- Pneumatically operated vacuum generator



### Blowers SB-M, SB-L and SB-V

- Electrically operated vacuum generator for handling porous and vacuum-tight workpieces
- Blower SB-V, frequency-controlled for optimum adjustment of the suction capacity for a wide range of applications

# Functionality

## Ergonomic Operating Unit

The selection of a suitable operating unit depends upon the requirements of the handling task.



### Operating unit JumboErgo

- Handling of large, light and heavy loads
- Twist grip operation (similar to motorcycle gas grip): load is lowered by "accelerating," load is lifted by "decelerating"
- Workpiece dimensions: max. 4,000 x 2,000 mm
- Maximum load: 300 kg

[www.schmalz.com/jumboergo](http://www.schmalz.com/jumboergo)



### Operating unit JumboFlex

- Precise, ergonomic single-hand operation with integrated controls for both right-handed and left-handed operators
- Quick-change function as standard
- Workpiece dimensions: max. 2,000 x 1,000 mm
- Maximum load: 35 kg

[www.schmalz.com/jumboflex](http://www.schmalz.com/jumboflex)



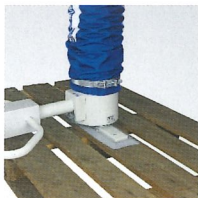
### Operating unit JumboSprint

- Accurate, gentle handling of heavy, compact loads in a harsh working environment
- Lower the load by "pressing down" the handle, lift the load by "pulling up" the handle
- Workpiece dimensions: max. 4,000 x 1,000 mm
- Maximum load: 300 kg

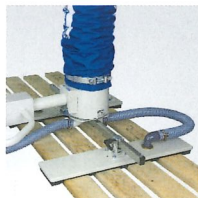
[www.schmalz.com/jumbosprint](http://www.schmalz.com/jumbosprint)

## Replaceable Suction Pads

The vacuum tube lifter Jumbo can be equipped with a quick-change function. Grippers can be changed quickly and without using tools. A wide range of gripper solutions are available for the tube lifter. The following grippers are normally used for handling tasks in the wood and glass industries:



Single suction pad



Double suction pad FM



Double suction pad



Quadruple suction pad



Round suction pad



Double suction pad

## Accessories



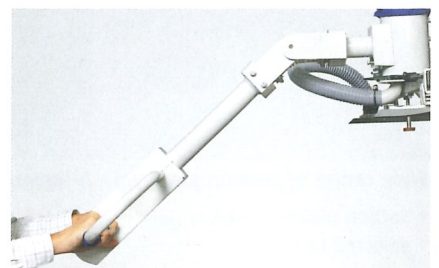
### Pneumatic swiveling unit PSE

- Swiveling by 90° with no jarring
- Low headroom requirement thanks to its compact construction
- Swiveling position is maintained in the case of a loss of compressed air
- Max. load: 120 kg



### Wireless remote control SRC

- The vacuum generator can be switched on/off directly on the controller
- Regulation of the frequency of the vacuum blower SB-V
- Transmitting frequency 868 MHz



### Movable operator handle for JumboErgo

- For easy control, even with a long lifting stroke
- With optional catch lever to attach the controller

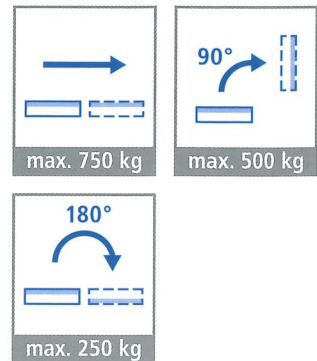


# Vacuum Lifting Devices VacuMaster

## Modular system design

The vacuum lifting device VacuMaster is the ideal tool for handling workpieces weighing up to 2,000 kg. The workpiece to be lifted is gripped by the lifting device VacuMaster and then lifted safely with the aid of the chain hoist. Robust and reliable performance are the major features of these lifting devices.

Thanks to the modular design, the vacuum lifting devices of the Basic and Comfort series can be adjusted to each individual application.



## Modular System



### Slewing cranes and crane systems

- Modular system for individual handling tasks
- Perfect low-friction operation due to aluminum crane rails

### Electrical chain hoist

- Chain hoist for safe lifting and lowering of the lifting device
- The Schmalz chain hoist is optimally matched to the lifting device VacuMaster
- With optional frequency control

### Basic module with integrated functions

- Components are protected under a sturdy metal cover
- Simple to use thanks to easily readable, integrated display instruments
- Low sensitivity to dust and dirt

### Operating unit

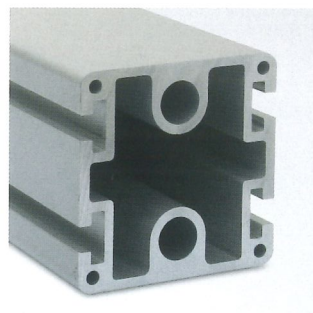
- Two variants available
  - VacuMaster Basic
  - VacuMaster Comfort

## Technical Equipment



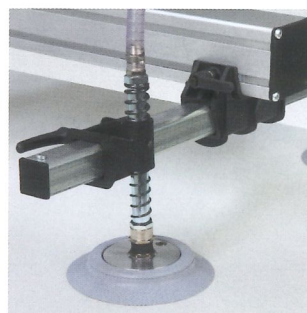
### Wide range of suction plates

- Suction plates can be adjusted to the:
  - Workpiece weight
  - Workpiece size
  - Workpiece surface



### Aluminum main beam

- Quick gripping of the workpiece via integrated vacuum reservoir and distributor
- Safety in the event of power outage
- Compact design thanks to integrated vacuum distributor
- Corrosion-free



### Plastic connectors

- Simple adjustment of the crossbeam and the suction plates
- Low weight
- Tried and tested function and high reliability



### Electrical linear actuator

- Quick and infinitely variable swiveling by 90° or turning by 180°
- Low headroom requirement thanks to compact construction
- Swiveling position is maintained in the event of a power outage
- Maximum load: 500 kg

# Functionality

## Ergonomic Operating Units

The vacuum lifting device VacuMaster can be equipped with the Basic and Comfort operating units.



### VacuMaster Basic

- Ergonomic operator handle
- Manual sliding valve with clamp-safe catch lever prevents incorrect operation
- Easy to operate, even when wearing gloves
- The chain hoist controller can be attached to the operator handle
- Maximum load: 750 kg

[www.schmalz.com/vm-basic](http://www.schmalz.com/vm-basic)



### VacuMaster Comfort

- Ergonomic arrangement of all control elements on the operator handle
- Integrated controller:
  - Vacuum "on/off"
  - Chain hoist "up/down"
  - Swiveling/turning the workpiece by 90°/180° (with the slewable version)
- Easy to operate, even while wearing gloves
- Safe thanks to two-hand-vacuum-off function
- Maximum load: 750 kg

[www.schmalz.com/vm-comfort](http://www.schmalz.com/vm-comfort)

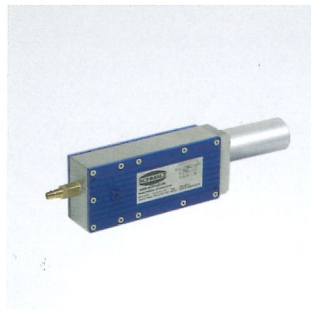
## Vacuum Generation

Two different vacuum generators are available for the VacuMaster:



### Vacuum pumps EVE

- Electrically operated vacuum generator

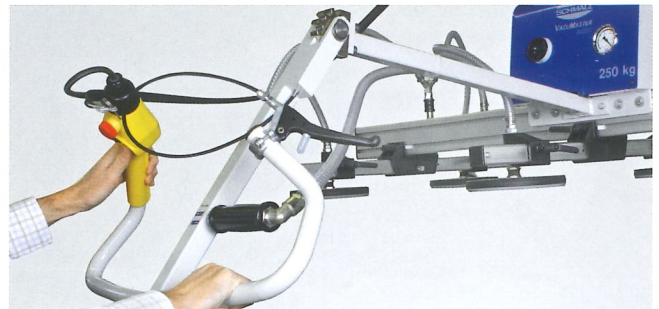


### Vacuum ejector SEM

- Pneumatically operated vacuum generator

## Accessories

The vacuum lifting device VacuMaster can be equipped with additional functions:



### Swiveling and locking operator handle

- For easy control, even with a long lifting stroke

# Vacuum Lifting Devices VacuMaster

## Safe handling of heavy wooden workpieces

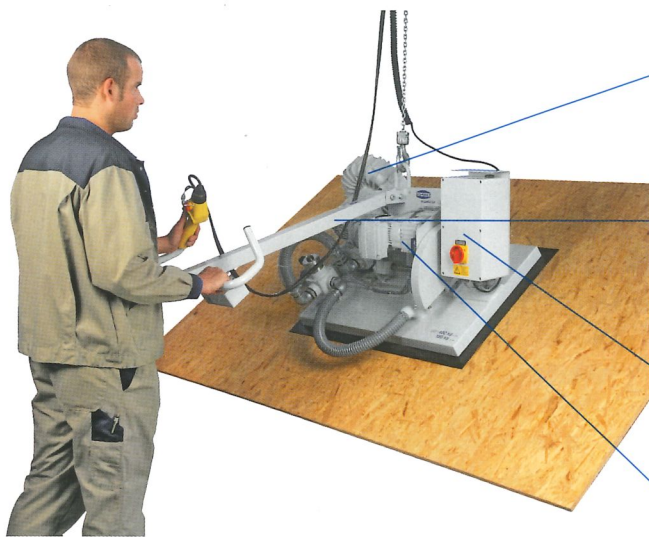
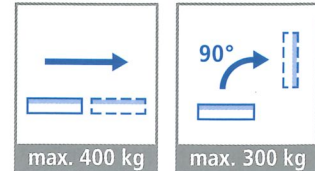
In addition to the modular design for standard solutions, Schmalz offers vacuum lifting devices that are specially configured for applications in the wood industry. These special lifting devices can be individually customized to the requirements of the handling task by selecting the fitting capacity of the vacuum generators and suction plates.

### Vacuum Lifting Device VacuMaster Multi

Ergonomic handling of rough and coated particle boards, MDF and OSB sheets, gypsum fiber and gypsum plaster board as well as plastic sheets.

- Maximum load: 400 kg

[www.schmalz.com/vm-multi](http://www.schmalz.com/vm-multi)



#### Vacuum blower

Powerful vacuum blower for porous workpieces; quick release of load due to reversing valve on the blower

#### Swiveling operator handle

Ergonomic handling at all working heights due to swiveling operator handle installed as standard component

#### Electronic warning device

Acoustic warning signal guarantees safe work in the event of a power outage

#### Electric gear motor

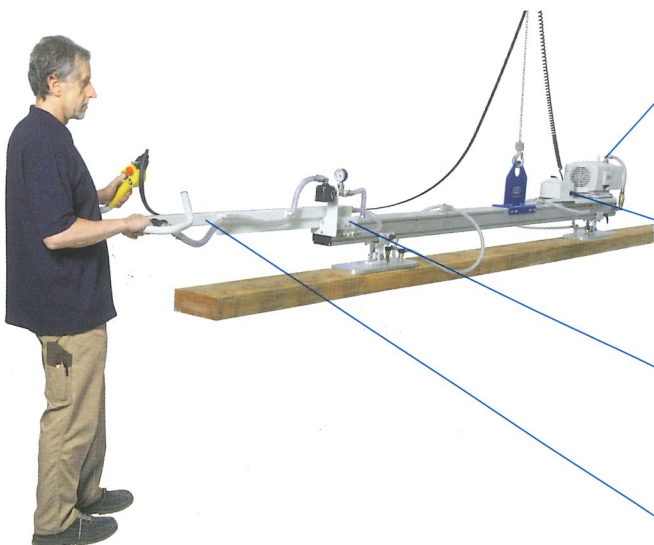
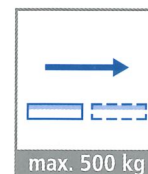
Infinitely variable swiveling of workpiece by 90°

### Vacuum Lifting Device VacuMaster VHB

Safe handling of moist, unplanned and brittle wood such as planks and boards.

- Maximum load: 500 kg

[www.schmalz.com/vm-vhb](http://www.schmalz.com/vm-vhb)



#### Vacuum pump

Vacuum pump for quick gripping of workpieces

#### Electronic warning device

Acoustic warning signal guarantees safe work in the event of a power outage

#### Water separator and filter

Handling of moist wood and sawdust sticking to its surface due to water separator and filter

#### Longitudinal operator handle

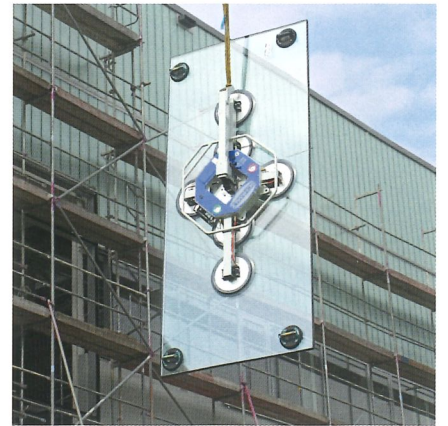
Ergonomic handling of long workpieces

# Vacuum Lifting Devices VacuMaster Glass

Innovative and functional

The vacuum lifting device VacuMaster Glass is ideal for a safe handling of glass workpieces in outdoor areas. VacuMaster Glass is attached to the site crane and effortlessly lifts maximum loads with either 350 kg or 600 kg. The workpieces are gripped by up to eight suction plates. Only vacuum is used to hold the workpiece in place.

## The Reliable Way to Handle Workpieces Made of Glass in Outdoor Areas



Vacuum lifting device VacuMaster Glass 600 for handling glass panes outdoors

### Technical Data

**Power supply:** Battery – 12 V, 4 A  
**Capacity:** Battery 7 Ah  
**Suction capacity:** 2.3 m<sup>3</sup>/h  
**Height VacuMaster 350:** 205 mm

**Operating temperature:** 0 °C to 40 °C  
**Operating time:** 8 h  
**Height VacuMaster 600:** 235 mm / 150 mm (without load arm)

Type	Volume safety reservoir (each) in l	Number / Diameter of suction plates	Arrangement of suction plates	Weight of device in kg	Max. load horiz. / vert. in kg	Min. size of workpiece in mm
VacuMaster Glass 350	0.5	4 / 300 mm	••	35	350 / 200	700 x 700
	0.5	4 / 300 mm	••••	39	350 / 200	320 x 1750
	0.5	4 / 300 mm	••••	43	350 / 200	1350 x 1350
VacuMaster Glass 600	1.0	4 / 400 mm	••	62	300 / 300	1000 x 1000
	1.0	4 / 400 mm	••••	66	300 / 300	420 x 2100
	1.0	6 / 400 mm	••••••	73	450 / 450	1400 x 1700
	1.0	8 / 300 mm	••••••••	83	600 / 600	1700 x 1700

# Robust and safe

## Vacuum Lifting Device VacuMaster Glass 350

The vacuum lifting device VacuMaster Glass 350 is designed for loads up to 350 kg (horizontal) or 200 kg (vertical).

[www.schmalz.com/vm-glass](http://www.schmalz.com/vm-glass)

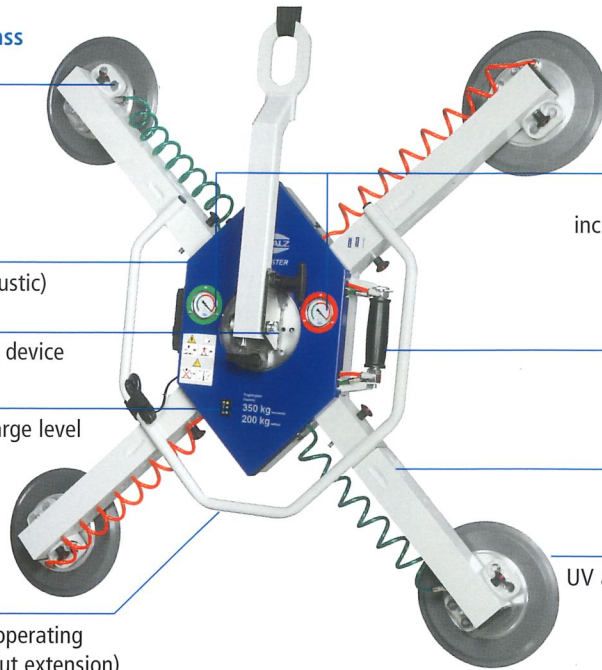
Quick-change adapter for all suction plates

Electronic warning device (acoustic)

Manual swiveling and rotating device

Status indicator for battery charge level

Bar to assist depositing when operating with four suction plates (without extension)

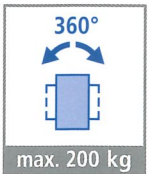
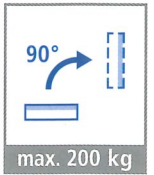
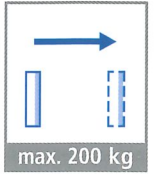
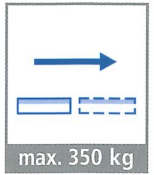


Redundant vacuum system including two pressure gauges for indicating the vacuum

Manual slide valve for turning the vacuum on/off

Removable extension arm

UV and ozone-resistant suction plates including covers



## Vacuum Lifting Device VacuMaster Glass 600

The vacuum lifting device VacuMaster Glass 600 is designed for loads up to 600 kg (horizontal and vertical).

[www.schmalz.com/vm-glass](http://www.schmalz.com/vm-glass)

Removable load arm

Manual swivelling and rotating device; swivelling from vertical to horizontal can be triggered remotely

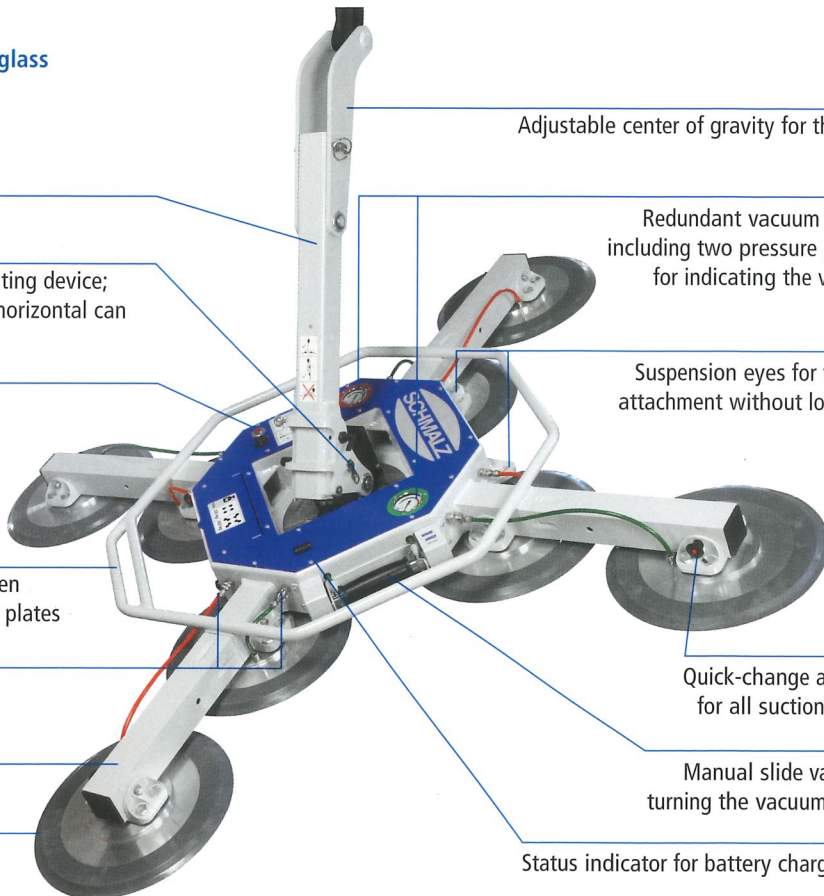
Electronic warning device (visible and audible)

Bar to assist depositing when operating with four suction plates

Coded plug connections for the vacuum hoses

Removable extension arm

UV and ozone-resistant suction plates incl. covers



Adjustable center of gravity for the load

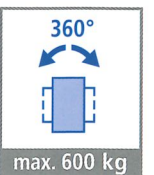
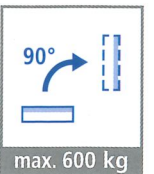
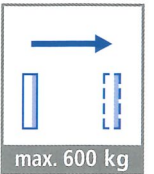
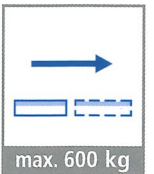
Redundant vacuum system including two pressure gauges for indicating the vacuum

Suspension eyes for vertical attachment without load arm

Quick-change adapter for all suction plates

Manual slide valve for turning the vacuum on/off

Status indicator for battery charge level



# Safe handling of sensitive glass workpieces

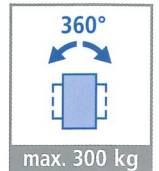
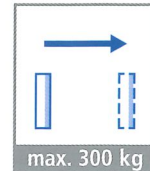
In addition to the modular design for standard solutions, Schmalz offers vacuum lifting devices, that are specially configured for applications in the glass industry.

## Vacuum Lifting Device VacuMaster Window

Safe and mark-free handling of glass sheets and windows as well as frame parts and mullions protruding out by up to 45 mm.

- Diagonal measurement of the workpiece when rotating: Max. 3,000 mm
- Maximum load: 300 kg

[www.schmalz.com/vm-window](http://www.schmalz.com/vm-window)



### Electronic warning device

Acoustic warning signal guarantees safe work in the event of a power outage

### Vacuum pump

Vacuum pump for quick gripping of workpieces

### Ergonomic operating units

#### VacuMaster Window

With separate controller for operating the chain hoist

#### VacuMaster WindowComfort

All main controls located directly on the control handle (as pictured)

### 90° rotation

Integrated rotation unit for manual rotation of glass sheets clockwise and counter-clockwise by 90°; an electrical rotation unit is available as an alternative

### Suction plates

Special UV and ozone-resistant suction plates for handling sensitive workpieces with few marks

## Additional Solutions for the Wood and Glass Industry



### Plant equipment

Schmalz plant equipment serves as an important aid in industry and professional trades. The product portfolio ranges from rack trolleys to vacuum work stands and turning benches.



### Vacuum clamping technology

Innovative Schmalz clamping systems ensures short set-up times for CNC machining centers. Schmalz offers solutions for the initial setup as well as for the modernization of machining centers.

## Contact

Do you have questions or would you like to learn more about our products? Our specialists would be happy to help you.

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[www.schmalz.com](http://www.schmalz.com)

Videos of  
our vacuum  
solutions in action:  
<http://video.schmalz.com>





### 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.

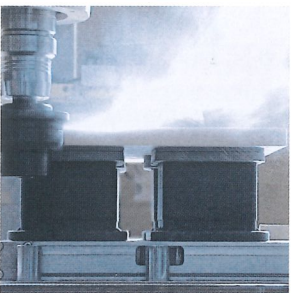
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### Vacuum Handling Systems

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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Fax +49 (0)7443 2403 399



### 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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