Ergonomic Handling Solutions

Vacuum Handling Systems
Tube Lifters Jumbo and Lifting Devices VacuMaster
Consistent customer orientation and groundbreaking innovations, excellent quality and comprehensive consulting competence make Schmalz the world’s leading partner for vacuum technology in automation, handling and clamping applications.

As a company that acts globally and offers innovative products and services, we provide our customers with efficient solutions tailored precisely to their particular applications’ requirements. We inspire our customers everywhere where production processes are designed more efficiently through the use of vacuum technology.

Schmalz Media Center

See our vacuum handling systems in action. The Schmalz Media Center will take you with few clicks to the application examples in your industry segment – user-friendly, informative and practical.

Lights, Camera, Action!
Just scan the QR code with your smartphone, select an industry segment and play the video.
Vacuum Handling Systems from Schmalz

Applications

Practical Examples from Selected Industries

Products

Vacuum Tube Lifters Jumbo
Move Goods Weighing up to 300 kg Quickly and Easily

Vacuum Lifting Devices VacuMaster
Move Heavy Loads Weighing up to Several Tons Ergonomically and Securely

Crane Systems
Aluminum Crane Systems and Jib Cranes that are Designed Specifically for Your Handling System

From Task to Solution

Decide
Select
Design
Service
Contact

Selection aid on page 46

www.schmalz.com
Vacuum handling systems from Schmalz are used in a wide variety of industries to ensure efficient material flows. Our many years of experience and our close relationships with our customers mean we understand your processes, which allows us to produce products to meet the highest standards. They allow loads to be handled faster and more securely while protecting both the materials and your employees. At your request, Schmalz can provide you with a complete workplace solution consisting of a handling system and a crane designed to work perfectly with that system.

Applications
Practical Examples from Selected Industries

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Vacuum tube lifter JumboFlex for handling baggage at airports

Vacuum tube lifter JumboFlex for lifting packages and for loading sorting and distribution machines

Vacuum tube lifter JumboErgo for packaging goods into boxes and handling the sealed boxes

Whether in the goods receiving or shipping area, in a parcel distribution center or in an airport – anywhere goods are moved quickly and frequently, the vacuum tube lifter Jumbo ensures efficient material flows while easing the burden on your employees.

Logistics

Flexible Handling Solutions for Intra-Logistics, Distribution Logistics and Baggage Logistics

www.schmalz.com/applications
Efficient Machine Loading for all Types of Wooden Boards

The woodworking industry has relied on Schmalz handling systems for decades. They are used in combination with CNC machining centers or panel saws to ensure efficient operation and can fulfill the most demanding requirements, such as turning or swiveling workpieces.
Glass

The Highest Level of Security and Precision

Fragile windows and glass sheets require an especially gentle handling process. Vacuum handling allows a single person to easily move even heavy glass components without the risk of breakage.

Vacuum lifting device VacuMaster Window Comfort for loading and unloading a glazing press.
Metal and Sheet Metal

**Increase Production Efficiency with Effective Machine Loading**

Using Schmalz handling systems to load and unload punching machines, bending machines or CNC laser cutting systems reduces downtime while protecting the surface of sensitive workpieces. They can also be used to optimize handling of metal sections and coils.

The TRUMPF TruLaser 1030 integrated loading solution: consists of vacuum lifting device VacuMaster Basic and column-mounted jib crane.

Vacuum lifting device VacuMaster Coil with 90° swivel angle for handling coils.

Vacuum lifting device VacuMaster Comfort for loading and unloading a laser cutting machine.

Vacuum lifting device VacuMaster Eco for energy-independent handling metal parts.

Vacuum lifting device VacuMaster Vario for handling heavy metal plates.
Vacuum tube lifter JumboFlex for palletizing plastic bags

Vacuum tube lifter JumboSprint Ex for handling bags in an explosion protection zone

Vacuum tube lifter JumboErgo with large-area gripper for handling four barrels at once

In the chemical and pharmaceutical industry, safety is of the utmost importance when handling loads. Schmalz products allow bags, barrels, buckets and jugs to be handled smoothly and efficiently. Special solutions are available for explosion protection areas (see page 23).

Chemicals and Pharmaceuticals

Reliable Handling of Goods in Potential Hazard Zones

Vacuum tube lifter JumboSprint Ex for handling bags in an explosion protection zone

Vacuum tube lifter JumboErgo with mechanical gripper for handling jugs

Vacuum tube lifter JumboFlex for palletizing plastic bags

Vacuum tube lifter JumboErgo with large-area gripper for handling four barrels at once

www.schmalz.com/applications
Other Industries

The Right Handling Solution for Virtually any Task
Schmalz handling systems ensure efficient material flows in a number of other industries: From universally applicable standard devices to customer-specific solutions, Schmalz is your partner for vacuum handling.

Automotive | Vacuum tube lifter JumboErgo for handling car body parts

Solar | Vacuum tube lifter JumboErgo with 90° swivel angle for handling solar panels

Automotive | Vacuum tube lifter JumboFlex Battery for handling batteries in the automotive industry

Building materials | Vacuum tube lifter JumboErgo with large-area gripper for palletizing grooved floor panels

Wind energy | Vacuum lifting device VacuMaster for GRP components in rotor blade manufacturing weighing several tons and up to 60 m in length
Custom solutions | Vacuum tube lifter JumboFlex for handling transport and storage boxes

Beverage industry | Vacuum tube lifter JumboErgo with mechanical pneumatic grippers for lifting and turning kegs

Custom solutions | Vacuum lifting device VacuMaster Box employed in the assembly of large advertising signs

Custom solutions | Vacuum lifting device VacuMaster for unloading barrels from a loading platform

Rubber | Vacuum tube lifter JumboSprint for handling raw rubber balls
Vacuum Tube Lifters Jumbo

Move Goods Weighing up to 300 kg Quickly and Easily

Cardboard boxes, bags, barrels, wooden boards and a variety of other applications – the vacuum tube lifter Jumbo tackles big jobs in the shortest amount of time. The intuitive operation allows you to move loads quickly, precisely and always ergonomically. It is the ideal aid for machine loading, for shipping and picking areas and for many other lifting applications.
Vacuum Tube Lifters Jumbo

Introduction

Application
Fast and frequent lifting and moving of workpieces weighing up to 300 kg, for example:
- Handling goods such as cardboard boxes, bags, barrels, buckets and jugs within in-house logistics processes
- Loading and unloading CNC machining centers

Your Benefits
- Increased productivity thanks to reduced handling and loading times
- Secure, damage-free gripping by using vacuum
- Minimization of downtime due to employee injury
- Increase in employee motivation
- Only one person for handling

Design and Function
The lifting unit, operating unit, vacuum grippers and vacuum generator on the vacuum tube lifter Jumbo can be configured according to customer specifications. The Jumbo is characterized by its lifting unit, which contracts and extends when lifting and lowering the load. The large effective suction area confers a safe holding of the workpiece. Schmalz also offers a comprehensive range of accessories and a complete system with a highly responsive aluminum crane upon request.

Product Overview
Three high-performance types for a variety of applications: JumboFlex, JumboErgo and JumboSprint differ in the form and function of their operator handles and are conceived in each case for specific applications.

<table>
<thead>
<tr>
<th>Typ</th>
<th>Max. lift capacity (horizontal)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20 kg</td>
</tr>
<tr>
<td>JumboFlex</td>
<td></td>
</tr>
<tr>
<td>JumboErgo/JumboSprint</td>
<td></td>
</tr>
</tbody>
</table>

JumboFlex
One-hand operation for workpieces weighing up to 50 kg (page 14)

JumboErgo
For workpieces of many different shapes and sizes weighing up to 300 kg (page 18)

JumboSprint
For compact workpieces weighing up to 300 kg (page 18)
JumboFlex
Lift Capacity up to 50 kg

The vacuum tube lifter JumboFlex allows you to move lighter goods up to 50 kg ergonomically and with high cycle rates. The control handle fits comfortably in the hand and allows the operator to work for a long period of time without fatigue. With simple one-finger control, lifting, lowering and releasing the load is extremely intuitive.

The JumboFlex’s wide range of features allows it to tackle virtually any task. It comes standard with a quick-change system for replacing the vacuum grippers. Workpieces which are gripped from the vertical side automatically swing back into the horizontal position where they can be continuously rotated.

www.schmalz.com/jumboflex
Vacuum Grippers

Versatility is key: Schmalz offers the correct vacuum grippers for virtually any application. You can also change grippers quickly and easily.

**Round vacuum gripper**
For compact goods such as cardboard boxes, barrels, buckets, jugs and cabinets.

**Round vacuum gripper with skirt**
For optimal sealing on plastic bags and shrink-wrapped packages.

**Double vacuum gripper**
For stapled, glued, strapped or open cardboard boxes as well as small wooden boards.

**Quadruple vacuum gripper**
For large cardboard boxes, wooden boards and other flat workpieces.

**Multiple vacuum gripper**
For uneven workpieces such as foil trays or unstable cardboard boxes. The individual vacuum grippers compensate for any unevenness.

**2-in-1 gripper**
Combination of a vacuum gripper and a suspension hook for baggage pieces such as suitcases or bags.

**Suspension hook**
For mechanical suspension of buckets, jugs and other workpieces with a point from which to hang.

**Box gripper**
For transport and storage boxes from all commercial manufacturers.

Quick-change adapter as standard

Vacuum Generators

**Vacuum pump EVE**
Electric vacuum generator with short evacuation times and low power consumption.

**Vacuum ejector SEM**
Compact compressed air vacuum generator with a high flow rate (up to JumboFlex 35).
Accessories

Save up to 40% in energy with the push of a button

With the radio remote control SRC, you can directly switch off the vacuum generator on the operator handle when not in use and then back on again. The radio remote control is activated by a simple button push and needs no energy source due to an integrated induction generator.

Reduced sound level

The silencer box SBB reduces the sound level of the vacuum generator to 65 dB(A) and protects it from outside dirt. It can be easily mounted on the optional blower console.

Protection against dirt

The dust filter STF keeps dirt particles away from the vacuum generator and is always recommended to protect the generator. It can be cleaned quickly and easily.

Protection against thermal overload

With the motor-protection switch MSS the vacuum generator can be switched on/off and protected against overcurrent. It can be integrated into the Schmalz crane column without the need for complicated wiring and can be optionally locked.

Secure storage

The storage rack AB-JU can be used to store the JumboFlex when not in use in order to protect the lift tube and vacuum grippers.

Potential energy savings with radio remote control SRC
JumboFlex
Technical Data

The vacuum tube lifter JumboFlex can be configured specifically based on the requirements of each individual application due to its modular design. The technical data varies depending on the configuration and on the vacuum gripper chosen.

Vacuum generator
• Pump with 25, 40, 50 or 67 m³/h suction capacity
• Ejector with 58 or 77 m³/h suction capacity

Lifting unit
• Max. lifting stroke (Z) 1,500 mm or 1,800 mm
• Diameter (D) 80, 100 or 120 mm

Vacuum gripper
Height from 50 mm up to 100 mm

The following technical data are standard values.

<table>
<thead>
<tr>
<th>Jumbo type</th>
<th>Max. lift capacity [kg]</th>
<th>Workpiece format* [mm]</th>
<th>Max. lifting speed [m/min]</th>
<th>Max. lifting stroke Z [mm]</th>
<th>With vacuum pump</th>
<th>Height H** [mm]</th>
<th>Lift tube Ø D [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Minimum</td>
<td>Maximum</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flex 20</td>
<td>20</td>
<td>200 x 200</td>
<td>2,000 x 1,000</td>
<td>60</td>
<td>1,500</td>
<td>2,500</td>
<td>2,680</td>
</tr>
<tr>
<td>Flex 35</td>
<td>20</td>
<td>200 x 200</td>
<td>2,000 x 1,000</td>
<td>60</td>
<td>1,500</td>
<td>2,500</td>
<td>2,680</td>
</tr>
<tr>
<td>Flex 50</td>
<td>50</td>
<td>200 x 200</td>
<td>2,000 x 1,000</td>
<td>60</td>
<td>1,500</td>
<td>2,500</td>
<td>2,680</td>
</tr>
</tbody>
</table>

*Depends on the vacuum gripper chosen
**Vacuum grippers not included (total height = H + height of the vacuum gripper)
JumboErgo and JumboSprint
Lift Capacity up to 300 kg

One modular system, two product types: The vacuum tube lifters JumboErgo and JumboSprint share a common technical basis but differ in terms of their operator handles.

JumboErgo
For workpieces of many different shapes and sizes
The twist grip on the JumboErgo is designed to operate like a motorcycle throttle. Large and heavy loads such as wooden boards, cardboard boxes and solar panels can be moved gently and precisely. The length of the operator handle can be varied, which allows the user to always maintain a safe distance from the load.

JumboSprint
For compact workpieces
The JumboSprint is equipped with a bow-shaped operator handle which extends all the way around the unit. This allows the user to optimally position it on compact goods such as bags or rubber bails. The load is raised by pulling up on the handle lever and lowered by pushing down.
**Vacuum Grippers**

Versatility is key: Schmalz offers the right vacuum grippers for virtually any application. With quick-change adapter the gripper can be changed quickly and easily.

- **Single vacuum gripper**
  For compact goods such as cardboard boxes, barrels, buckets, jugs and cabinets.

- **Single vacuum gripper, long**
  For pallets, narrow cardboard boxes, beams, square tubes and other elongated workpieces.

- **Round vacuum gripper**
  For barrels, buckets or stone slabs with rough surfaces.

- **Sack gripper**
  For paper and plastic bags, raw rubber bails and shrink-wrapped packages.

- **Double vacuum gripper**
  For cardboard boxes, crates or sheets. The vacuum grippers can be continuously adjusted along the beam.

- **Double vacuum gripper FM**
  For pallets, sections or cut pieces where the vacuum gripper is not fully covered by the workpiece. The grippers can be continuously adjusted along the beam.

- **Quadruple vacuum gripper**
  For large cardboard boxes, sheets and non-rigid pieces. The vacuum grippers can be continuously adjusted lengthwise and crossways.

- **Multiple vacuum gripper**
  For uneven workpieces such as foil trays or unstable cardboard boxes. The individual vacuum grippers optimally compensate for any unevenness.

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**Vacuum Generators**

- **Mechanical grippers**
  Schmalz offers mechanical gripper solutions for workpieces that cannot be vacuum-gripped, such as bags or open transport boxes.

- **Vacuum blowers SBM, SBL, SBV**
  Electric vacuum generators for workpieces weighing up to 300 kg. The frequency-controlled blower SBV is continuously variable, and its power can be adjusted to changing loads.

- **Vacuum ejector SEM**
  Compact, compressed air vacuum generator with high flow rate for workpieces weighing up to 85 kg.

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

Save up to 40% in energy with the push of a button
With the radio remote control SRC, you can directly switch off the vacuum generator on the operator handle when not in use and then back on again. The radio remote control is activated by a simple button push and needs no energy source due to an integrated solar cell.

Instantly switch vacuum gripper
The quick-change adapter SWA allows you to quickly and easily switch the vacuum gripper on your tube lifter in order to adapt to changing workpieces.

Swivel workpieces by 90°
With the push of a button, the pneumatic swiveling unit PSE allows the user to swivel workpieces weighing up to 120 kg securely and in an ergonomic fashion.

Continuously rotate workpieces
With the rotation unit DE, vacuum-gripped workpieces weighing up to 200 kg can be continuously rotated and positioned precisely.
**JumboErgo and JumboSprint**

Lift Capacity up to 300 kg

Maximize stack heights
High stacking heights are no problem with the movable operator handle (only for JumboErgo). An optional locking mechanism allows it to be fixed at different angles.

Protection against dirt
The dust filter STF keeps dirt particles away from the vacuum generator and is always recommended to protect the generator. An optional differential pressure monitor with a signal lamp indicates when the dirty filter has to be changed.

Reach into deep containers
The hose-cylinder extension S2V enables ergonomic loading and unloading of containers such as lattice boxes.

Protection against thermal overload
With the motor-protection switch MSS the vacuum generator can be switched on/off and protected against overcurrent. It can be integrated into the Schmalz crane column without the need for complicated wiring and can be optionally locked.

Spring balancer for long operator handles
The spring balancer FZG keeps the tube lifter JumboErgo balanced and is recommended if the operator handle is longer than 750 mm.

Protection against wear
The protective tube prevents mechanical damage to the lift tube and is easy to clean. The retaining net protects the vacuum grippers and the lift tube when the tube lifter is not in use and allows for space-saving storage.

Instantly release workpieces
The venting unit BEL allows non-porous workpieces to be released from the vacuum gripper and set down.

Reduce the sound level
The silencer box S88 reduces the sound level of the vacuum generator to 65 dB(A) and protects it from outside dirt. It can be easily mounted on the optional blower mounting platform.

www.schmalz.com/jumbo
The vacuum tube lifters JumboErgo and JumboSprint can be configured specifically based on the requirements of each individual application due to their modular design. The technical data varies depending on the configuration and on the vacuum gripper chosen.

### Vacuum generator
- Blower with 155, 185 or 220 m³/h suction capacity
- Ejector with 132 m³/h suction capacity

### Lifting unit
- Max. lifting stroke (Z) 1,700 mm or 2,100 mm
- Diameter (D) 120 mm up to 305 mm

### Operator handle
Operator handle length (L)
- JumboErgo: 350 mm up to 1,000 mm
- JumboSprint: 155 mm up to 500 mm

The following technical data are standard values.

<table>
<thead>
<tr>
<th>Type</th>
<th>Workpiece format* [mm]</th>
<th>Operator handle length [mm]</th>
<th>Max. lifting speed [m/min]</th>
<th>Max. lifting stroke Z [mm]</th>
<th>Height H** [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>JumboErgo</td>
<td>300 x 200</td>
<td>350 – 1,000</td>
<td>60</td>
<td>1,700</td>
<td>2,850</td>
</tr>
<tr>
<td></td>
<td>300 x 200</td>
<td>350 – 1,000</td>
<td>60</td>
<td>2,100</td>
<td>3,400</td>
</tr>
<tr>
<td>JumboSprint</td>
<td>300 x 200</td>
<td>155 – 500</td>
<td>60</td>
<td>1,700</td>
<td>2,850</td>
</tr>
<tr>
<td></td>
<td>300 x 200</td>
<td>155 – 500</td>
<td>60</td>
<td>2,100</td>
<td>3,400</td>
</tr>
</tbody>
</table>

A lift capacity of 140 kg and higher applies: lifting stroke Z +160 mm, height H +250 mm

*Depends on the vacuum gripper chosen

**Vacuum gripper not included (total height = H + height of the vacuum gripper)

### Lift Capacities

<table>
<thead>
<tr>
<th>Jumbo type</th>
<th>Max. lift capacity [kg]</th>
<th>Ø Lift tube D [mm]</th>
<th>Max. lift capacity [kg]</th>
<th>Horizontal</th>
<th>90° swivel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ergo / Sprint 35</td>
<td>35</td>
<td>–</td>
<td>120</td>
<td>90°</td>
<td>90°</td>
</tr>
<tr>
<td>Ergo / Sprint 45</td>
<td>45</td>
<td>30</td>
<td>140</td>
<td>90°</td>
<td>90°</td>
</tr>
<tr>
<td>Ergo / Sprint 65</td>
<td>65</td>
<td>50</td>
<td>160</td>
<td>90°</td>
<td>90°</td>
</tr>
<tr>
<td>Ergo / Sprint 85</td>
<td>85</td>
<td>70</td>
<td>178</td>
<td>90°</td>
<td>90°</td>
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<td>Ergo / Sprint 110</td>
<td>110</td>
<td>90</td>
<td>203</td>
<td>90°</td>
<td>90°</td>
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<tr>
<td>Ergo / Sprint 140</td>
<td>140</td>
<td>120</td>
<td>230</td>
<td>90°</td>
<td>90°</td>
</tr>
<tr>
<td>Ergo / Sprint 200</td>
<td>200</td>
<td>–</td>
<td>250</td>
<td>90°</td>
<td>90°</td>
</tr>
<tr>
<td>Ergo / Sprint 300</td>
<td>300</td>
<td>–</td>
<td>305</td>
<td>90°</td>
<td>90°</td>
</tr>
</tbody>
</table>

*www.schmalz.com/jumbo*
JumboSprint Ex
Safe Handling in an Explosion Protection Zone

Application
Efficient handling of loads weighing up to 85 kg in explosion protection zones
• Lifting of bags, barrels, cardboard boxes, jugs, buckets and varnish/paint containers
• Preparation and positioning of filled bags, e.g. for emptying into hoppers or mixers
• For use in explosion protection zones 1/21 and 2/22
• Certified according to ATEX 94/9/EC standard – Can be used throughout Europe without country-specific certificate

Special Features
• Operator handle and vacuum grippers made from stainless steel
• All conductive parts are connected with a potential equalization
• Conductive lift tube made from a special material
• Vacuum generator either compressed air driven (ejector up to 85 kg) or electric (blower up to 85 kg)
• Various vacuum grippers in explosion protection design
• Easily change vacuum grippers using the quick-change adapter (optional)
• Complete system for vacuum tube lifter and steel jib crane for explosion protection zone available

Areas of Application

<table>
<thead>
<tr>
<th>Explosion zone</th>
<th>Vacuum generator</th>
<th>Max. lifting stroke [mm]</th>
<th>Max. lift capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/21</td>
<td>Ejector</td>
<td>1,700/2,100</td>
<td>45 kg, 65 kg, 85 kg</td>
</tr>
<tr>
<td>2/22</td>
<td>Ejector</td>
<td>1,700/2,100</td>
<td>45 kg, 65 kg, 85 kg</td>
</tr>
<tr>
<td></td>
<td>Blower</td>
<td>1,700/2,100</td>
<td>45 kg, 65 kg, 85 kg</td>
</tr>
</tbody>
</table>

www.schmalz.com/jumbosprint-ex
The vacuum lifting device VacuMaster from Schmalz is the ultimate workhorse. Whether handling metal plates, wooden boards, plastic sheets, barrels, windows or glass sheets – the VacuMaster tackles even the heaviest tasks with weights up to several tons. For applications where many hands would normally be required, the VacuMaster allows workpieces to be handled effortlessly by just a single operator while protecting the employee’s health.
Vacuum Lifting Devices VacuMaster

Introduction

Application
For handling large, flat and typically non-porous workpieces, for example:
- Loading and unloading CNC laser cutting machines with metal plates
- Loading and unloading CNC machining centers with wooden boards or plastic sheets
- Handling and positioning glass panels and windows during production, framing and installation

Your Benefits
- Efficient, non-damaging handling of heavy loads
- To work ergonomically and protect operator health
- Excellent work safety and process reliability thanks to vacuum reservoir and audible warning device
- Long service life due to a robust mixture of steel, aluminum and high-strength plastic
- Low operating costs thanks to controlled vacuum generator with energy saving (Comfort version)

Design and Function
The vacuum lifting device VacuMaster has a modular design. Various basic modules, operator handles, load beams and suction plates allow you to customize the configuration. The necessary suction force is generated by the vacuum generator and transferred to the workpiece via the suction plates. For safety purposes, the aluminum load beam also serves as a vacuum reservoir. A chain hoist is required for lifting or lowering motion, which Schmalz offers along with a compatible crane system.

Product Overview
The right solution for any task: With their modular system, the VacuMaster Basic and VacuMaster Comfort cover standard applications weighing up to 750 kg. Schmalz also offers additional lifting devices which are specially designed for the specific requirements of certain industries.
VacuMaster Basic and VacuMaster Comfort
Lift Capacity up to 750 kg

The VacuMaster Basic’s versatile standard equipment makes it indispensable for many applications. In addition, the VacuMaster Comfort offers an operator handle that brings together all of the device’s controls as well as a controlled vacuum generator for reducing energy consumption.

VacuMaster Basic

Motor protection switch

Emergency-stop function for chain hoist

Chain hoist up/down
lifts and lowers the load

Operator handle
Schmalz chain hoist pendant can be attached

Vacuum on/off
picks up and releases the load via a highly reliable manual slide valve

VacuMaster Comfort

Integrated air-saving function

Operator handle
integrated function modules for Schmalz chain hoist

Vacuum on
picks up the load

Chain hoist up/down
lifts and lowers the load

Vacuum off
secure release of the load requiring two hands

Swivel function
continuous swiveling up to max. 90° or 180°
Basic Module
The basic module is the heart of every VacuMaster. It contains the vacuum generator, an audible warning device as well as all the measuring and control devices. Depending on the application, you can choose from three different basic modules whose shape and design are optimally suited to the handling task.

Horizontal handling
Standard design with vacuum generator, audible warning device, vacuum gauge (manometer) and motor protection switch. Protection of the components under a robust sheet metal barrier.
• For lift capacity up to 750 kg

90° swiveling
Basic version adds to electric drive for jolt-free, continuous swiveling through 90°.
• For lift capacity up to 500 kg

180° turning
Basic version adds to electric drive for jolt-free, continuous turning through 180°.
• For lift capacity up to 500 kg

Vacuum Generators

Vacuum pump EVE
Electric vacuum generator for smooth and suction-tight workpieces weighing up to 750 kg.

Vacuum ejector SEM
Compressed air vacuum generator with high flow rate for porous workpieces weighing up to 250 kg. Only for horizontal handling.

Manual Slide Valve

Reliable and safe vacuum control
VacuMaster Basic with manual slide valve for high safety by double actuation and anti-trap protection. Prevents unwanted loosing of the load.

Load Beam and Connection Elements

Light, robust and flexible
The combination of aluminum and high-strength plastic allows the cross beams and suction plates to be easily adjusted to quickly adapt to changing formats.

Integrated vacuum reservoir
The large vacuum reservoir prevents the load from falling in the case of a power failure and makes gripping faster during repeated lifting processes.

Suction Plates

Versatility for every task
Allows for optimal adaptation to the workpiece and to requirements such as heat resistance, food safety and mark-free gripping. Select from suspension which is rigid, spring-mounted or both flexible and spring-mounted.

www.schmalz.com/vacumaster
Accessories

Maximize stack heights
Large height differences are no problem with the swiveling and locking operator handle. The working posture remains ergonomic in any position.

Adapts to changing workpieces
With the vacuum gripper shut-off valve several vacuum grippers can be turned off for handling of cut pieces or pieces with gaps.

Secure storage of the lifting device
When the lifting device is not in use, the parking stands allow it to be stored securely while protecting the vacuum grippers. This allows the crane to be used for other purposes.

Quick-connect electrical connection
The CEE plug suggests the lifting device to be easily connected to the power supply and then quickly disconnected if necessary (only for VacuMaster Basic).

Mark-free handling
The suction plate covers prevent the plates from leaving marks on sensitive workpieces such as glass sheets or solar panels.

Protection against water
The maintenance-free water separator prevents water from entering the vacuum generator during moist processes such as waterjet cutting.
VacuMaster Basic and VacuMaster Comfort

Technical Data

Thanks to their modular system, the VacuMaster Basic and VacuMaster Comfort can be custom configured for any application. The technical data of the devices are dependent on the selected configuration. You can use the following data on pre-configured lifting devices for standard workpiece formats as a guide for determining the recommended values for your VacuMaster.

Proceed as Follows

1. Select type of handling
e.g. horizontal handling

2. Select lift capacity
 e.g. 250 kg

3. Select workpiece format
 e.g. 2,000 x 1,000 mm

Horizontal Handling

Eye for chain hoist
diameter 52 mm

Basic module with vacuum generator
vacuum pump with 4, 8, 16, 25 m³/h suction capacity
vacuum ejector with 58 m³/h suction capacity

Main beam (L)
800 mm up to 6,400 mm

Cross beams (B)
400 mm up to 1,500 mm

Operator handle (L1)
345 mm up to 1,060 mm

Overall height H (mm)
Suction plates

VacuMaster type* | Workpiece format [mm] | Dimensions L x B (length x width) [mm] | Overall height H [mm] | Operator handle L1 [mm] | Suction plates** | Weight [kg] |
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Basic / Comfort 125</td>
<td>1,000 x 1,000</td>
<td>490</td>
<td>445</td>
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<td></td>
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<td>2,500 x 1,250</td>
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<td>525</td>
<td>745</td>
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<td>555</td>
<td>590</td>
<td>945</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4,000 x 2,000</td>
<td>555</td>
<td>590</td>
<td>1,045</td>
<td>8</td>
</tr>
<tr>
<td>Basic / Comfort 250</td>
<td>1,000 x 1,000</td>
<td>490</td>
<td>445</td>
<td>655</td>
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<td>42</td>
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<tr>
<td></td>
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<td>2,000 x 1,000</td>
<td>410</td>
<td>445</td>
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<td></td>
<td>4,000 x 2,000</td>
<td>555</td>
<td>590</td>
<td>1,045</td>
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<td>605</td>
<td>760</td>
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<td>670</td>
<td>960</td>
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<td>Basic / Comfort 750</td>
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<td>4,000 x 2,000</td>
<td>635</td>
<td>670</td>
<td>1,060</td>
<td>8</td>
</tr>
</tbody>
</table>

*The shown VacuMaster are example configurations: The VacuMaster Basic/Comfort can be adapted flexibly to individual workpiece formats.

**The indicated number of suction plates is possible for handling of rigid goods. For unstable and thin workpieces the numbers of suction plates will be increased.
VacuMaster Basic and VacuMaster Comfort

Technical Data

90° Swiveling

Eye for chain hoist
diameter 50 mm

Basic module with vacuum generator
vacuum pump with
4, 8, 16, 25 m³/h suction capacity

Main beam (L)
800 mm up to 6,400 mm

Cross beams (B)
400 mm up to 1,500 mm

Operator handle (L₁)
425 mm up to 1,185 mm

Suction plates
125 mm up to 360 mm

Fig. shows VacuMaster Comfort

VacuMaster type* | Workpiece format [mm] | Dimensions L x B (length x width) [mm] | Overall height H [mm] | Operator handle L₁ [mm] | Suction plates** | Weight [kg] |
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic/Comfort</td>
<td>2,000 x 1,000</td>
<td>1,600 x 520</td>
<td>720</td>
<td>725</td>
<td>2</td>
<td>360</td>
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<tr>
<td>125</td>
<td>2,500 x 1,250</td>
<td>1,600 x 750</td>
<td>800</td>
<td>800</td>
<td>4</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td>4,000 x 2,000</td>
<td>3,200 x 1,500</td>
<td>800</td>
<td>800</td>
<td>8</td>
<td>210</td>
</tr>
</tbody>
</table>

| Basic/Comfort   | 2,500 x 1,250        | 1,600 x 750                            | 800                   | 800                    | 4              | 360         |
| 250             | 4,000 x 2,000        | 3,200 x 1,500                          | 800                   | 800                    | 8              | 210         |

| Basic/Comfort   | 2,500 x 1,250        | 1,600 x 750                            | 1,030                 | 1,030                  | 4              | 360         |
| 500             | 4,000 x 2,000        | 3,200 x 1,500                          | 1,030                 | 1,085                  | 8              | 360         |

*The shown VacuMaster are example configurations: The VacuMaster Basic/Comfort can be adapted flexibly to individual workpiece formats.

**The indicated number of suction plates is possible for handling of rigid goods. For unstable and thin workpieces the numbers of suction plates will be increased.
**VacuMaster Basic and VacuMaster Comfort**

### Technical Data

#### VacuMaster type

<table>
<thead>
<tr>
<th>Max. lift capacity [kg]</th>
<th>Workpiece format [mm]</th>
<th>Dimensions L x B [length x width] [mm]</th>
<th>Overall height H [mm]</th>
<th>Operator handle L1 [mm]</th>
<th>Suction plates **</th>
<th>Weight [kg]</th>
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</thead>
<tbody>
<tr>
<td>Basic/Comfort 75</td>
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<td>2,000 x 1,000</td>
<td>1,600 x 410</td>
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<td>1,265</td>
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<td>1,600 x 750</td>
<td>1,220</td>
<td>1,220</td>
<td>4</td>
<td>82</td>
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<tr>
<td>Basic/Comfort 125</td>
<td>2,000 x 1,000</td>
<td>1,600 x 520</td>
<td>1,160</td>
<td>1,265</td>
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<td>2,500 x 1,250</td>
<td>1,600 x 750</td>
<td>1,230</td>
<td>1,230</td>
<td>4</td>
<td>92</td>
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<tr>
<td>Basic/Comfort 250</td>
<td>2,000 x 1,000</td>
<td>1,600 x 750</td>
<td>1,770</td>
<td>1,830</td>
<td>4</td>
<td>137</td>
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<tr>
<td></td>
<td>2,500 x 1,250</td>
<td>1,600 x 750</td>
<td>1,750</td>
<td>1,830</td>
<td>8</td>
<td>147</td>
</tr>
<tr>
<td></td>
<td>4,000 x 2,000</td>
<td>3,200 x 1,500</td>
<td>1,750</td>
<td>1,830</td>
<td>8</td>
<td>165</td>
</tr>
</tbody>
</table>

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*The shown VacuMaster are example configurations. The VacuMaster Basic/Comfort can be adapted flexibly to individual workpiece formats.

Technical data for VacuMaster Basic/Comfort 500 on request.

**The indicated number of suction plates is possible for handling of rigid goods. For unstable and thin workpieces the numbers of suction plates will be increased.*

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The diagram shows the VacuMaster Comfort with 180° Turning. The main beam (L) stretches from 800 mm up to 6,400 mm. Cross beams (B) range from 400 mm up to 1,500 mm. Suction plates are available in diameters from 125 mm up to 360 mm. The vacuum generator includes a vacuum pump with 4, 8, and 16 m³/h suction capacity. The operator handle (L1) extends from 1,265 mm up to 1,830 mm. The adjustment possibility allows hooking the chain hoist with a diameter of 25 mm. The overall height ranges from 74 mm to 167 mm for different models. For more information, visit [www.schmalz.com/vacumaster](http://www.schmalz.com/vacumaster).
**VacuMaster Vario**

**Application**
Horizontal handling of especially heavy, airtight workpieces weighing up to 2,000 kg
• Loading and unloading machines with large-format metal sheets and plates
• Solutions for heavier loads are also possible, e.g. lifting devices for handling rotor blades weighing several tons and up to 60 m in length

**Design and Function**
• Modular vacuum lifting device with ergonomic operator handle
• Highly reliable manual slide valve to turn on/off the vacuum
• Electric vacuum pump for short evacuation times
• Robust steel load beam
• Audible warning device and vacuum reservoir for redundant safety in loss of vacuum and power failure respectively
• Large selection of suction plates

**Your Benefits**
• Heavy loads are handled very securely
• Simple adaption to the individual application

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**VacuMaster Vario**

**Workpiece format [mm]**

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. lift capacity* [kg]</th>
<th>Minimum</th>
<th>Maximum</th>
<th>L (length)</th>
<th>B (width)</th>
<th>Overall height H [mm]</th>
<th>Operator handle L</th>
<th>Number of suction plates</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vario 1000</td>
<td>1,000</td>
<td>900 x 520</td>
<td>6,000 x 2,000</td>
<td>2,000 – 4,000</td>
<td>1,150</td>
<td>630 – 935</td>
<td>910 – 1,250</td>
<td>1, 4, 8</td>
<td>116 – 252</td>
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<tr>
<td>Vario 2000</td>
<td>2,000</td>
<td>1,230 x 900</td>
<td>6,000 x 2,000</td>
<td>2,000 – 4,000</td>
<td>1,150</td>
<td>820 – 1,000</td>
<td>910 – 1,250</td>
<td>2, 4, 8</td>
<td>231 – 345</td>
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</tbody>
</table>

* Higher lift capacities available on request.
VacuMaster Eco

Application
Horizontal handling of smooth and airtight workpieces without an external energy source
• For example metal sheets/plates, barrels and stone slabs

Design and Function
• Modular vacuum lifting device with piston system for vacuum generation without energy
• Vacuum is established/dissipated by the lifting/lowering motion of the chain hoist (chain hoist not included)
• Aluminum load beam with integrated vacuum distributor (up to 750 kg lift capacity)
• Battery-operated warning device with battery test function for warning of fallen vacuum
• Easily adjustable vacuum grippers

Your Benefits
• Secure and gentle vacuum handling
• Energy independence allows for flexibility in use
• Quick installation and start of operations
• Minimal operating costs

VacuMaster type | Max. lift capacity* [kg] | Workpiece format [mm] | Dimensions [mm] | Overall height H [mm] | Operator handle L1 [mm] | Number of suction plates | Weight [kg]
---|---|---|---|---|---|---|---
Eco 75 | 75 | 220 x 220 | Minimum | Maximum | 210 | 210 | 368 – 382 | – | 1 | 1, 2, 4, 6, 8 | 8
Eco 250 | 250 | 360 x 360 | 3,000 x 2,000 | 800 – 2,400 | 400 – 1,500 | 450 – 825 | 400 – 1,100 | 1, 2, 4, 6, 8 | 33 – 59
Eco 500 | 500 | 480 x 480 | 4,000 x 2,000 | 800 – 3,300 | 400 – 1,500 | 605 – 1,600 | 500 – 1,500 | 1, 2, 4, 6, 8 | 93 – 141
Eco 750 | 750 | 900 x 620 | 4,000 x 2,000 | 800 – 3,200 | 400 – 1,500 | 735 – 1,130 | 500 – 1,200 | 4, 6, 8 | 132 – 141
Eco 1000 | 1,000 | 630 x 630 | 4,000 x 2,000 | 800 – 4,000 | 1,150 | 730 – 1,210 | 500 – 1,200 | 1, 4, 8 | 138 – 309

* The recommended minimum workpiece weight is 10% of the lift capacity.

www.schmalz.com/vm-eco
VacuMaster Window

**Application**
Vertical handling of windows, glass sheets and glass components
- For windows with sash parts or frames protruding up to 45 mm
- Workpieces can be rotated by 90° (3,000 mm maximum workpiece diameter for rotating)

**Design and Function**
- Operator handle with manual slide valve to turn on/off the vacuum
- Electric vacuum pump for short evacuation times
- Manual rotation unit, up to 90° left or right
- Audible warning device and vacuum reservoir for redundant safety in loss of vacuum and power failure respectively
- UV and ozone-resistant suction plates

**VacuMaster Window Comfort**
- Same basic features as VacuMaster Window
- Operator handle with integrated control of all functions (see page 26)
- Air-saving function to reduce energy consumption
- Electric rotation unit for one-directional motorized rotation through 90° (optional)

**Your Benefits**
- Secure handling of glass while leaving no marks
- Increase in productivity due to faster turnover
- Effortless rotation of workpieces
- Small basic body for a good view

![VacuMaster Window for rotating and palletizing windows](image)

![Design of VacuMaster Window](image)

![VacuMaster Window Comfort](image)

### VacuMaster Window Specifications

<table>
<thead>
<tr>
<th>VacuMaster type</th>
<th>Max. lift capacity</th>
<th>Workpiece format [mm]</th>
<th>Dimensions</th>
<th>Overall height H [mm]</th>
<th>Operator handle L [mm]</th>
<th>Suction plates No.</th>
<th>Ø [mm]</th>
<th>Weight [kg]</th>
<th>Rotation mechanism</th>
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<tbody>
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<td>Window 200</td>
<td>200</td>
<td>320 x 630, 2,000 x 2,000</td>
<td>630–930</td>
<td>300</td>
<td>920</td>
<td>390</td>
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<td>Manual, left/right</td>
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<tr>
<td>Window 300</td>
<td>300</td>
<td>630 x 630, 2,000 x 2,000</td>
<td>630–930</td>
<td>630</td>
<td>1,090</td>
<td>400</td>
<td>4</td>
<td>300</td>
<td>Manual, left/right</td>
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<td>Window Comfort 200</td>
<td>200</td>
<td>320 x 630, 2,000 x 2,000</td>
<td>630–930</td>
<td>300</td>
<td>920</td>
<td>550</td>
<td>2</td>
<td>300</td>
<td>Manual, left/right</td>
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<td>200</td>
<td>320 x 630, 2,000 x 2,000</td>
<td>630–930</td>
<td>630</td>
<td>920</td>
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<td>2</td>
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<td>630 x 630, 2,000 x 2,000</td>
<td>630–930</td>
<td>300</td>
<td>1,090</td>
<td>630</td>
<td>4</td>
<td>300</td>
<td>Manual, left/right</td>
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<tr>
<td>Window Comfort 300 EL</td>
<td>300</td>
<td>630 x 630, 2,000 x 2,000</td>
<td>630–930</td>
<td>630</td>
<td>1,090</td>
<td>650</td>
<td>4</td>
<td>300</td>
<td>Electric, right</td>
</tr>
</tbody>
</table>

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

Application
Handling large, heavy wooden boards, either airtight or porous
- Rough and coated MDF, OSB and particle boards
- Also for gypsum fiber and gypsum plaster board as well as plastic sheets
- 90° swiveling of workpieces (optional)

Design and Function
- Vacuum lifting device with movable operator handle to adjust the working height
- High-power vacuum blower with centrifugal mass to delay vacuum dissipation in event of a power failure
- Audible warning device
- Reversing valve to quickly release the load
- Electric drive for continuous and precise swiveling through 90° (optional)
- Large suction plates which can be shifted the main beam

Your Benefits
- Work ergonomically at any working height
- Porous workpieces are handled very securely
- Robust design for use in harsh working environments
- Precise, continuous swiveling (optional)
- Large volume for highly porous workpieces

<table>
<thead>
<tr>
<th>VacuMaster type</th>
<th>Max. lift capacity [kg]</th>
<th>Workpiece format [mm]</th>
<th>Main beam length L [mm]</th>
<th>Overall height H [mm]</th>
<th>Operator handle L1 [mm]</th>
<th>Suction plates</th>
<th>Weight [kg]</th>
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<tbody>
<tr>
<td>Multi 400</td>
<td>400</td>
<td>1,100 x 700</td>
<td>4,100 x 2,100</td>
<td>–</td>
<td>520</td>
<td>1,050</td>
<td>1,000 x 675</td>
</tr>
<tr>
<td></td>
<td>400</td>
<td>1,400 x 1,100</td>
<td>5,600 x 2,100</td>
<td>2,000</td>
<td>600</td>
<td>2,050</td>
<td>1,000 x 675</td>
</tr>
<tr>
<td>Multi 400/150 90°</td>
<td>400</td>
<td>1,100 x 700</td>
<td>4,100 x 2,100</td>
<td>–</td>
<td>540</td>
<td>1,050</td>
<td>1,000 x 675</td>
</tr>
<tr>
<td>Multi 400/300 90°</td>
<td>400</td>
<td>1,400 x 1,100</td>
<td>5,600 x 2,100</td>
<td>2,000</td>
<td>620</td>
<td>1,050</td>
<td>1,000 x 675</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>2,200 x 1,000</td>
<td>5,600 x 2,100</td>
<td>2,500</td>
<td>630</td>
<td>1,050</td>
<td>Ø 400</td>
</tr>
</tbody>
</table>

www.schmalz.com/vm-multi
VacuMaster HHVM

Application
Vertical handling of wooden boards and swiveling of workpieces 90° from horizontal to the right or left
- For very narrow pieces such as kitchen countertops or cutting scraps
- Removing wooden boards from upright storage
- Loading and unloading vertical saws

Design and Function
- Vacuum lifting device with flat design and front-side operator handle
- Highly reliable manual slide valve to turn on/off the vacuum
- Highly responsive pivot bearing with pneumatic latch bolt
- Pneumatic vacuum ejector with high suction flow rate
- Air-saving control to reduce energy consumption
- Audible warning device and vacuum reservoir for redundant safety in loss of vacuum and power failure respectively
- Offset suction plates available with either single or double deactivation

Your Benefits
- Lifting and swiveling of wooden boards allows for increased productivity
- Low overall height allows it to be used in tight spaces
- Low energy consumption with high suction flow rate

*For swiveling large panels the suction plates need to be attached off center.
VacuMaster VHB

**Application**
Horizontal handling of narrow workpieces such as planks, boards and beams with a minimum width of 120 mm
- Loading rip saws

**Design and Function**
- Vacuum lifting device with flat design and front-side operator handle
- Highly reliable manual slide valve to turn on/off the vacuum
- Electric vacuum pump with high suction capacity
- Audible warning device and vacuum reservoir for redundant safety in loss of vacuum and power failure respectively
- Two rectangular suction plates, can be shifted along the length of the beam
- VacuMaster VHB 350/500 with two separate suction areas per suction plate, including a self-locking ball valve that prevent vacuum loss by closing the vacuum feed to a particular area if there are cracks or damages on the workpiece

**Your Benefits**
- Secure handling of long boards and planks
- Excellent seal on moist, unplaned and cracked wood
- Suction plates can be quickly adapted to various workpiece lengths
- Low-noise operation with sound level below 65 dB(A)

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**VacuMaster type** | **Max. lift capacity [kg]** | **Workpiece format [mm]** | **Main beam length L [mm]** | **Overall height H [mm]** | **Operator handle L1 [mm]** | **Suction plate No.** | **Size [mm]** | **Weight [kg]**
--- | --- | --- | --- | --- | --- | --- | --- | ---
VHB 250 | 250 – | 120 x 1,200 | 1,000 x 6,000 | 3,210 | | | | 100
VHB 500 | 500 – | 220 x 1,200 | 1,000 x 6,000 | 3,210 | | | | 145
VHB 350/500 | 500 350 | 220 x 1,200 | 1,000 x 6,000 | 3,210 | | | | 145

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www.schmalz.com/vm-vhb
VacuMaster Coil

Application
Handling coils and slit strip, e.g. for positioning onto a decoiler mandrel
• For thin and ultra-thin sheet metal, steel and stainless steel, metal foils, tinplate and aluminum
• Maximum strip thickness of 3.0 mm (aluminum) or 1.5 mm (steel)
• Continuous swiveling up to 90°

Design and Function
• Vacuum lifting device with vacuum clamps (suction rings) that can be switched on/off separately
• Highly reliable manual slide valve for activating vacuum
• Electric vacuum pump for short evacuation times
• Precise electric drive for continuous swiveling of the load
• Audible warning device and vacuum reservoir for redundant safety in loss of vacuum and power failure respectively
• Transparent suction plate for easily positioning

Your Benefits
• Different sized coils can be handled with one device
• Exact positioning and safe gripping of coils
• Damage-free gripping without mechanical clamping
• Loads can be swiveled effortlessly and set down flush with the floor

### VacuMaster Coil Specifications

<table>
<thead>
<tr>
<th>VacuMaster type</th>
<th>Max. lift capacity [kg]</th>
<th>Workpiece format Ø [mm]</th>
<th>Max. coil height At 50 Hz [mm]</th>
<th>Overall height H [mm]</th>
<th>Operator handle L₁ [mm]</th>
<th>Suction plate Ø [mm]</th>
<th>Number of suction clamps</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coil 500 90°</td>
<td>500</td>
<td>600 - 1,200</td>
<td>400</td>
<td>1,300</td>
<td>660</td>
<td>3</td>
<td>410 - 850</td>
<td>140</td>
</tr>
<tr>
<td>Coil 750 90°</td>
<td>750</td>
<td>600 - 1,400</td>
<td>220</td>
<td>1,300</td>
<td>660</td>
<td>4</td>
<td>410 - 1,050</td>
<td>155</td>
</tr>
<tr>
<td>Coil 1000 90°</td>
<td>1,000</td>
<td>750 - 1,800</td>
<td>320</td>
<td>1,300</td>
<td>660</td>
<td>4</td>
<td>410 - 1,200</td>
<td>190</td>
</tr>
</tbody>
</table>

www.schmalz.com/vm-coil
VacuMaster Light

Application
Horizontal handling of mainly airtight small to medium-sized workpieces weighing up to 100 kg
• For example, metal plates, plastic sheets, barrels, cabinets, furniture parts or sections
• Its versatility allows it to be used in processes such as component assembly, packaging and machine loading

Design and Function
• Compact and light vacuum lifting device
• Pneumatic vacuum ejector with high suction capacity
• Central control button for vacuum control
• Choose between one large suction plate or four hinged pad mounting arms that are flexible and continuously adjustable

Your Benefits
• Ergonomic operation and low weight allow you to work for long periods without fatigue
• Vacuum grippers can be adjusted quickly and easily to handle different workpieces
• Quick and easy installation and startup
We have drawn on all of our experience and expertise as system manufacturers to create our Schmalz crane systems. Thanks to their consistently lightweight design, they are the perfect addition to your vacuum tube lifter Jumbo or vacuum lifting device VacuMaster. Whether as a jib crane or a crane system, the Schmalz modular system enables perfect integration into your working environment. Even as a stand-alone solution, the modern crane system provides numerous advantages for your benefit.

Crane Systems
Aluminum Crane Systems and Jib Cranes that are Designed Specifically for Your Handling System

We have drawn on all of our experience and expertise as system manufacturers to create our Schmalz crane systems. Thanks to their consistently lightweight design, they are the perfect addition to your vacuum tube lifter Jumbo or vacuum lifting device VacuMaster. Whether as a jib crane or a crane system, the Schmalz modular system enables perfect integration into your working environment. Even as a stand-alone solution, the modern crane system provides numerous advantages for your benefit.
Aluminum Crane Systems
Lift Capacity up to 1,200 kg

Application
Flexible modular system for the assembly of individual crane solutions
• Used in nearly all in-house handling and logistics processes

Your Benefits
• Optimally adjustable to the nominal lift capacity of the tube lifter or lifting device
• Outstanding low-friction operation and low moving mass
• High-quality wear-resistant components
• Modern design with anodized surfaces
• Speeds up working processes and enables high-precision positioning
• Supports ergonomic operation while reducing strain on workers

Design and Function
• Crane runway and crane girder made of aluminum sections SRA
• Extremely resistant to bending and torsion forces
• Can be configured as a single-girder, double-girder or monorail crane system
• Several crane girders (bridges) can be used in one crane system
• Crane runways can be extended as needed using rail connectors; also for existing cranes
• Optimized energy supply
• Easy to install on a ceiling or portal construction using rigid or height-adjustable suspension elements
• Flexible adjustable working area with variable end stops

Suspension of the crane runway
rigid or movable, height-adjustable

Crane runway made of aluminum crane section SRA
weighs as little as 3 kg/m

End plate
Crane girder made of aluminum crane section SRA
Transport trolley
fork versions
End stops
1x fixed and 1x adjustable
Chain hoist

www.schmalz.com/cranes
Aluminum Jib Cranes
Lift Capacity up to 1,000 kg

Application
Workplace crane solution for ergonomic and efficient handling of loads
• Available as a column-mounted or wall-mounted jib crane

Your Benefits
• Optimally adjustable to the nominal lift capacity of the tube lifter or lifting device
• Outstanding low-friction operation and low moving mass
• High-quality wear-resistant components
• Modern design with anodized surfaces
• Speeds up working processes and enables high-precision positioning
• Supports ergonomic operation while reducing strain on workers

Design and Function

Column-mounted jib crane SK
• Aluminum crane rail and pivot bearing
• Steel crane column, optional with integrated motor-protection switch
• Already fitted with anchors for floor mounting without additional intermediate plates
• Optionally available with a mobile base plate for easy transport using a forklift or pallet truck

Wall-mounted jib crane WK
• With the same jib boom as the column-mounted jib cranes
• Mounted using a wall bracket or clasp bracket (for example on a building column in a production room)

Application
Workplace crane solution for ergonomic and efficient handling of loads
• Available as a column-mounted or wall-mounted jib crane

Max. lift capacity

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. lift capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jib crane for Jumbo*</td>
<td>45 kg 65 kg 80 kg</td>
</tr>
<tr>
<td>Universal jib crane (for use with chain hoist/VacuMaster)</td>
<td>85 kg 110 kg 125 kg 140 kg 200 kg 300 kg 350 kg 650 kg 1000 kg</td>
</tr>
</tbody>
</table>

*The load classes correspond to the nominal lift capacities of the tube lifter Jumbo. The tube lifter’s weight has already been taken into account.
Crane Solutions for Confined Spaces

Chain Hoists
Lift Capacity up to 2,000 kg

Powerful and Durable – the Schmalz Chain Hoist SCH
Durable chain hoist with standard limit switches
• High-quality pressure-cast aluminum housing with molded cooling fins
• Plug & play connector means the chain hoist arrives ready to use
• Gearboxes are equipped with helical gearing, making them very responsive and quiet
• The control voltage of 42 V and the emergency-stop function ensure extremely safe operation
• Robust operator element can be put on the operator handle of the VacuMaster
• CSA certified (USA/Canada)
• Standard lifting height of 3,000 mm, optional variable chain length
• Available with optional frequency control for sensitive positioning

Wireless Power Supply for Crane Systems
The conductor line SCL provides electricity to all the devices carried along with the crane, such as a chain hoist or vacuum lifting device
• There are no cable storage devices or cable loops to cause interference
• Available in five different lengths ranging from 500 to 4,000 mm (can be expanded as needed)
• UL certified

Accessories

Conductor line SCL

Crane Solutions for Confined Spaces

Flat jib
for particularly low ceilings

Articulated-arm jib
to move around obstacles

Telescopic jib
for confined working areas

Chain hoist SCH
With a vacuum handling system from Schmalz, you're choosing more than just a product. We help you find a solution that allows you to work more quickly, more ergonomically, and more efficiently. Our expertise in designing and constructing systems is a result of our years of experience and the comprehensive knowledge of our employees.

From Task to Solution
Decide. Select. Design.

With a vacuum handling system from Schmalz, you’re choosing more than just a product. We help you find a solution that allows you to work more quickly, more ergonomically, and more efficiently. Our expertise in designing and constructing systems is a result of our years of experience and the comprehensive knowledge of our employees.
**Decide**

By Deciding on Schmalz, You’re Choosing …

---

**Maximum Safety and Reliability**

Safety for the operator and process reliability are our main priorities when developing handling systems. All Schmalz products meet or surpass the currently applicable European and international safety standards:

- Consistent observation of safety factors and compliance with safety regulations
- Safe operation with warning and protective systems
- Deliberated operating concept to prevent errors during operation
- High-quality products that are “Made in Germany”
- Comprehensive service package

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**Working Ergonomically**

Musculoskeletal disorders are the most often-cited reason for absence and sick leave from work. One cause of these disorders is lifting and carrying loads during the workday. Even when handling lighter loads, employees often move several tons per shift. For this reason, experts recommend using lifting aids for lifting and carrying even lighter loads. Vacuum handling systems from Schmalz are the perfect tools for lifting and carrying both light and heavy loads. The ergonomic working posture when using these tools is gentle on the spine and the muscles of the back, minimizing the risk of absences due to employee injuries.

---

**Increased Productivity**

Vacuum handling systems from Schmalz make your working processes not only more ergonomic, but also more productive:

- Handling speeds at a consistently high level
- Reduced work-related strain increases employee motivation
- Unproductive downtimes, such as during machine loading, are reduced
- Gentle handling minimizes waste

---

<table>
<thead>
<tr>
<th>Age range</th>
<th>Occasional lifting and carrying (no more than 1x per hour)</th>
<th>More frequent lifting and carrying (more than 2x per hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>15 – 18 years old</td>
<td>15 kg</td>
<td>35 kg</td>
</tr>
<tr>
<td>19 – 45 years old</td>
<td>15 kg</td>
<td>55 kg</td>
</tr>
<tr>
<td>&gt; 45 years old</td>
<td>15 kg</td>
<td>45 kg</td>
</tr>
</tbody>
</table>

Recommendation by the German Federal Ministry of Labour and Social Affairs for implementing the European Directive 90/269/EWG

---

**Data**

<table>
<thead>
<tr>
<th>Handling with the vacuum tube lifter</th>
<th>Manual handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handling speeds</td>
<td>Duration of handling per shift</td>
</tr>
</tbody>
</table>

Comparison of handling speeds between handling with the vacuum tube lifter and manual handling

---

More information about handling speeds and physically reasonable loads is available at [www.schmalz.com](http://www.schmalz.com)
Select
Jumbo or VacuMaster?

You can select which handling system is the ideal solution for your application based on the following characteristics.

Your Application

<table>
<thead>
<tr>
<th>Max. lift capacity</th>
<th>300 kg</th>
<th>2,000 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workpiece</td>
<td>Mainly porous and permeable e.g. cardboard boxes, bags and wooden boards</td>
<td>Mainly smooth and airtight e.g. metal plates and glass sheets</td>
</tr>
<tr>
<td>Workpiece format</td>
<td>Max. 4,000 mm x 2,000 mm</td>
<td>Max. 8,000 mm x 2,000 mm</td>
</tr>
<tr>
<td>Type of handling</td>
<td>Horizontal</td>
<td>90° swiveling</td>
</tr>
<tr>
<td></td>
<td>max. 300 kg</td>
<td>max. 120 kg</td>
</tr>
<tr>
<td>Lifting cycles per hour</td>
<td>up to ~ 500 picks/h</td>
<td>up to ~ 100 picks/h</td>
</tr>
</tbody>
</table>

Product Recommendation

<table>
<thead>
<tr>
<th>Vacuum tube lifter Jumbo</th>
<th>Vacuum lifting device VacuMaster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Move goods weighing up to 300 kg quickly and frequently</td>
</tr>
<tr>
<td>Functions</td>
<td>Vacuum-generated holding force and lifting force</td>
</tr>
<tr>
<td>Product information</td>
<td>Page 12</td>
</tr>
</tbody>
</table>

Your Schmalz system consultant would be happy to help you select the right system to fit your requirements. Contact us and benefit from our expertise and years of experience in the field of vacuum handling technology: www.schmalz.com/salesnetwork
Design and Function

**Vacuum Tube Lifter Jumbo**
The vacuum tube lifter Jumbo consists of a vacuum generator, a lifting unit, an operating unit and vacuum gripper. The Jumbo only uses vacuum to raise and lower loads.

**Picking up and Lifting the Load**
- The vacuum generator (pump, blower or ejector) generates a vacuum in the system by continually evacuating air.
- The difference between the negative pressure and the ambient pressure draws the workpiece to the vacuum gripper. This is generally called “picking up” the workpiece.
- Once the workpiece has been picked up, the flow rate causes the lift tube to contract. The workpiece is then lifted.

**Lowering and Releasing the Load**
- Operating the control element feeds atmospheric air into the system (“venting”). The vacuum is reduced.
- This causes the lift tube to expand and the load is lowered. The lifting height can be precisely controlled by controlling the amount of atmospheric air that is fed into the system. To release the load, the vacuum is completely eliminated through maximum venting (pressing the control button down fully).

**Vacuum Lifting Device VacuMaster**
The vacuum lifting device VacuMaster consists of a vacuum generator, load beam with vacuum reservoir and vacuum distributor, an operator handle and suction plates. The vacuum holds the workpiece and a chain hoist is used to lift the workpiece.

**Picking up and Lifting the Load**
- The vacuum generator (pump or ejector) generates a vacuum first in the vacuum reservoir and then in the vacuum distributor by evacuating the air.
- The difference between the negative pressure and the ambient pressure draws the workpiece to the suction plates when the device is placed onto the workpiece. This is generally called “picking up” the workpiece.

**Lowering and Releasing the Load**
- The lifting device with the load that has been picked up is moved up and down by controlling the chain hoist.
- To release the load, the vacuum in the distributor is eliminated through atmospheric venting (activating the valve). The vacuum reservoir remains filled for the next lifting process.
**Design**

Important Information for Designing Your System

When designing the perfect handling solution, there are a large number of deciding factors at play. Using the following questions, you can prepare yourself for the design discussion with your Schmalz system consultant.

1. **Workpiece**

   What are the dimensions of your workpiece [mm]?
   - Minimum ____________________
   - Maximum ____________________

   How thick is the workpiece [mm]?
   - Minimum ____________________
   - Maximum ____________________

   How much does the workpiece weigh [kg]?
   - Minimum ____________________
   - Maximum ____________________

   What is the workpiece material and what are the properties of this material (surface, porosity, etc.)?
   - Material ____________________
   - □ Airtight
   - □ Smooth
   - □ Porous
   - □ Rough/textured

   Are there sample workpieces available at the location?
   - □ Yes
   - □ No

   With no airtight workpieces we recommend the implementation of lifting tests.

2. **Handling Task**

   What is the workpiece's starting position?
   - □ Horizontal
   - □ Vertical

   How will the workpiece be handled?
   - □ Placed horizontally
   - □ Swiveled by 90°
   - □ Placed vertically
   - □ Rotated by 90°
   - □ Turned by 180°

   What are the minimum and maximum stack heights [mm]?
   - Consider e.g. building columns in production areas, roof girders or cable bridges
   - Minimum ____________________
   - Maximum ____________________

   How frequently must workpieces be lifted?
   - Picks per hour ____________________
3. **Power Supply**

What kind of power supply is available?

- Line voltage (V/Hz) _______________
- Compressed air (bar) _______________

Standard line voltage for devices with a vacuum blower or vacuum pump: 400 V 50 Hz (other voltage or frequency ranges available on request). Optimal input pressure (flow pressure) for devices with a vacuum ejector: 5.5 to 6 bar.

4. **Working Area**

How large is the working area that needs to be covered [mm]?

- L (length) x B (width) _______________ or radius _______________

How high are the ceilings [mm]?

What obstacles need to be taken into account?
- e.g. building columns in production areas, roof girders, pipes, light fixtures or cable bridges

Which crane system or which kind of mounting might be used?

- **Crane system**
  - Ceiling mounting
  - Portal mounting

- **Jib crane**
  - Floor mounting (column)
  - Wall mounting

Required concrete quality for anchoring a crane: at least B25 or C25/235

Required concrete thickness: at least 200 mm for edge distance at least 100 mm

Required concrete thickness: at least 130 mm for edge distance at least 200 mm

5. **Additional Requirements**

What are the additional environmental requirements?

Special environmental requirements necessitate special product solutions, for example:

- Extreme temperatures (heat, deep freeze sector)
- Particularly high humidity
- Clean room conditions
- Heavy contamination
- Avoidance of marks
- Explosion protection zone

Additional:

[www.schmalz.com](http://www.schmalz.com)
Service
Individually Tailored Service

At Schmalz, we strive to be your single go to source for all your vacuum lifting needs from start to finish. That’s why, alongside optimized product solutions, we also offer you a comprehensive range of services. Our system consultants offer quality advice regarding all your vacuum system needs, from planning and design to installation and start of operation, and much more.

On-Site Consultation
We support you every step of the way when designing a solution for your handling tasks. Our system consultants in the field are happy to advise you on-site. We would also be happy to provide you with a demonstration of our products at your location.

Test Center
Every workpiece is different. In order to err on the side of caution when designing systems, we also perform lifting tests with your sample workpieces upon request.

Assembly and Start of Operations
Our experienced service technicians can perform the entire installation upon request, including setup of the electrical connection by a qualified electrical specialist.

Safety Inspection
Before the initial start of operations, we recommend performing a safety inspection in accordance with standard accident prevention regulations. We would be happy to advise you on this topic.

Operation
We would be glad to provide training for you and your employees on location so that you can operate your handling system optimally. During ongoing operation, we promise to quickly and reliably provide you with replacement and wearing parts.

Warranty
When you choose Schmalz products, you’re putting your trust in quality that’s “Made in Germany”. We offer a warranty for our handling systems. If necessary, our service personnel can be on-location quickly anywhere in the world to provide efficient, straightforward assistance.

www.schmalz.com
**Contact**

Worldwide On-Site with Own Subsidiaries and Trade Partners in More Than 50 Countries

Our sales network of local field representatives, international subsidiaries and trade partners ensures quick and competent information and advice.

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You can find contact information for our trade partners in 50 countries at [www.schmalz.com/salesnetwork](http://www.schmalz.com/salesnetwork)

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**Workshop Equipment**

Damage-Free Storage, Transport and Clamping of Workpieces

Schmalz workshop equipment serves as an important aid in industry and professional trades. Transport trolleys facilitate space-saving storage of workpieces between individual production steps. Specifically, these trolleys are used to transport painted furniture pieces, sheets, profiles, metal/plastic components and solar panels, among other things.

Vacuum workbenches and vacuum work stands round off the product range. The vacuum is switched on and off using a foot-operated switch; workpieces are clamped using suction plates and fastened in place for processing. The workbenches and work stands can be adjusted to any height to enable ergonomic working.

[www.schmalz.com/workshop-equipment](http://www.schmalz.com/workshop-equipment)
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Shanghai

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Oy Schmalz Ab
Vantaa

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Champs-sur-Marne

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