Handling Systems

Ergonomic Vacuum Lifters

WWW.SCHMALZ.COM/VACUUM-LIFTERS
1500 employees
working hard for our customers.

19 locations
for outstanding customer service worldwide.

9 percent
of our revenue is invested in innovative ideas and new products.

580 copyrights
are proof of our groundbreaking innovations.

Schmalz: Vacuum Technology for Intelligent Automation and Ergonomic Handling Systems

Schmalz is the Market Leader in Vacuum Automation and Ergonomic Handling Systems.

The Handling Systems unit offers innovative handling solutions with vacuum lifters and crane systems for industrial and handicraft applications. The wide range of products in the Vacuum Automation unit includes individual components such as suction cups and vacuum generators, as well as complete gripping systems and clamping solutions for holding workpieces, for example in CNC machining centers.

Our products are used in different applications for example in the logistics industry, the automotive industry, the glass industry and in furniture production.

With comprehensive consulting, a focus on innovation and first-class quality, Schmalz offers its customers long-lasting benefits.

Schmalz’s intelligent solutions make production and logistics processes more flexible and efficient, while also preparing them for the increasing trend toward digitalization.
Schmalz Vacuum Lifters and Crane Systems

APPLICATIONS

LOGISTICS WOOD GLASS

METAL AUTOMOTIVE CHEMISTRY

PRODUCTS

12 Tube Lifters Jumbo
Move goods weighing up to 300 kg quickly and easily
Selection aid: Jumbo or VacuMaster? — P. 46

26 Lifting Devices VacuMaster
Move heavy loads weighing up to several tons ergonomically and securely
Selection aid: Jumbo or VacuMaster? — P. 46

40 Crane Systems
Aluminum crane systems and jib cranes that are designed specifically for your handling system

4 Practical Examples
Vacuum lifters in selected industries

FROM TASK TO SOLUTION

44 Select, Service, Contact
We help you find a solution that allows to work more quickly, more ergonomically, and more efficiently

SEE OUR VACUUM LIFTERS 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.

WWW.SCHMALZ.COM/VIDEO
The Right Solution for any Task.

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.
Flexible Handling Solutions for Intra-Logistics and Distribution Logistics

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

Vacuum tube lifters JumboErgo for lifting cardboard boxes

Vacuum tube lifter JumboFlex for commissioning cardboard boxes of varying sizes and qualities in distribution logistics

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

Vacuum tube lifter JumboFlex High-Stack for safe handling of various workpieces at stacking heights of up to 255 cm
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.
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

Vacuum lifting device VacuMaster Window for vertical handling of glass elements

Vacuum lifting device VacuMaster Window Comfort for handling windows, glass panes and glass components up to max. 500 kg

Vacuum lifting device VacuMaster Comfort for turning a glass sheet by 180°
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.
Move Goods Quickly and Easily

In manufacturing workflows manual processes occur such as loading and unloading of presses, handling of boxes and small load carriers in in-house logistics and supplying components to the line. Vacuum lifters relieve operators of the weight of the workpieces, allowing them to work ergonomically.
Reliable Handling of Goods in Potential Hazard Zones

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).

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 JumboSprint for handling barrels
The Right Handling Solution for 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.

**Beverages** | Vacuum tube lifter JumboErgo with mechanical pneumatic grippers for lifting and turning kegs

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

**Wind energy** | Vacuum lifting device VacuMaster for GRP components in rotor blade manufacturing weighing several tons and up to 60 m in length

**Airport** | Vacuum tube lifter JumboFlex for handling of luggage pieces
**Tube Lifters Jumbo – Great Help for Small Loads.**

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
Move Goods Weighing up to 300 kg Quickly and Easily

APPLICATION

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

PRODUCT HIGHLIGHTS

- 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

JumboFlex, JumboErgo and JumboSprint as well as JumboFlex High-Stack and Jumbo Low-Stack differ in the form and function of their operator handles and are conceived in each case for specific applications.
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 the 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.
VACUUM GRIPPERS

Versatility is key: Schmalz offers the correct vacuum grippers for virtually any application. With the quick-change adapter the gripper can be changed 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**
Universal gripping of various cardboard box sizes and qualities with a minimum occupancy rate of 75 %.

**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.

**VACUUM GENERATORS**

**Mandrel gripper**
Pneumatic mandrel expansion gripper for picking up wheel rims and other components with central bores.

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

**Ejector SBPL**
Basic ejector with maximum suction rate and low compressed air consumption (up to JumboFlex 35).
JumboFlex

ADDITIONAL FEATURES

**JumboFlex Safety+**
Two-hand release for extra safety. Adjustable, reduced lowering speed, e.g., for sensitive components or for disabled users.

**JumboFlex Easy-Release**
Reduced residual vacuum for easy release. The load is released using an additional release lever and only when fully lowered, e.g., with quadruple grippers or grippers with bellows suction cups.

**JumboFlex Quick-Release**
Allows loads to be deliberately ejected during lifting by means of an additional ejection lever. For use in baggage handling at airports or similar applications.

**JumboFlex Air**
For operating pneumatic gripping systems such as mandrel grippers for handling wheel rims or magnetic grippers for various applications.

ACCESORIES

**SRC**

Save up to 40 % energy at the push of a button
With the SRC radio remote control, you can switch the vacuum generator off and on again during work breaks directly at the operating element. The radio remote control requires no external energy (integrated induction generator) and is operated at the push of a button.

Energy saving potential with SRC radio remote control

Energy consumtion \([kWh]\)

Time \([\text{working days}]\)

Vacuum tube lifter with vacuum generator in continuous operation

Schmalz vacuum tube lifter with radio remote control SRC

Reduce sound level
The silencer box SBB reduces the sound of the vacuum generator and protects it from external contamination.

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.
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.

### Technical Data

<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>With vacuum ejector</th>
<th>Height H** [mm]</th>
<th>Lift tube Ø D [mm]</th>
</tr>
</thead>
<tbody>
<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>
<td>80</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>200 x 200</td>
<td>2,000 x 1,000</td>
<td>60</td>
<td>1,800</td>
<td>2,800</td>
<td>2,980</td>
<td>80</td>
</tr>
<tr>
<td>Flex 35</td>
<td>35</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>
<td>100</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>200 x 200</td>
<td>2,000 x 1,000</td>
<td>60</td>
<td>1,800</td>
<td>2,800</td>
<td>2,980</td>
<td>100</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>
<td>120</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>200 x 200</td>
<td>2,000 x 1,000</td>
<td>60</td>
<td>1,800</td>
<td>2,800</td>
<td>2,980</td>
<td>120</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.

1. Radio remote control SRC for vacuum generator (optional)
2. Frequency control with vacuum blower SBV
3. Twist grip for lifting, lowering and releasing the load
4. Filter – changeable without tools
5. Suspension height can be adjusted without a load attached
6. Quick-change adapter for vacuum grippers (optional)

MAX. 300 KG
MAX. 120 KG
MAX. 4 X 2 M

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.

1. Radio remote control SRC for vacuum generator (optional)
2. Filter – changeable without tools
3. Bow-shaped operator handle for lifting, lowering and releasing the load
4. Suspension height can be adjusted without a load attached
5. Quick-change adapter for vacuum gripper (optional)
6. Suspension height can be adjusted with a load attached

MAX. 300 KG
MAX. 3 X 1 M
MAX. 3 X 1 M
Versatility is key: Schmalz offers the right vacuum grippers for virtually any application. With the 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.

**Vacuum area gripper FMP**
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.

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

**Ejector SEM**
Compact, compressed air vacuum generator with high flow rate for workpieces weighing up to 85 kg.
JumboErgo and JumboSprint

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.

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, gripped workpieces weighing up to 200 kg can be continuously rotated and positioned precisely.

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.

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

Reduce the sound level
The silencer box SBB reduces the sound level of the vacuum generator and protects it from outside dirt. It can be easily mounted on the optional blower mounting platform.

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.

Protection against thermal overload
Motor-protection switch MSS for switching on the vacuum and protection against overvoltage.
JumboErgo and JumboSprint

Technical Data

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

Vacuum gripper
- Height around 80 mm up to 155 mm

The following technical data are standard values.

<table>
<thead>
<tr>
<th>Type</th>
<th>Workpiece format* [mm]</th>
<th>Operator handle length L [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>4,000 x 2,000</td>
<td>350 – 1,000</td>
<td>60</td>
<td>1,700, 2,850</td>
</tr>
<tr>
<td>JumboSprint</td>
<td>300 x 200</td>
<td>4,000 x 2,000</td>
<td>350 – 1,000</td>
<td>60</td>
<td>2,100, 3,400</td>
</tr>
</tbody>
</table>

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

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>
</tr>
</thead>
<tbody>
<tr>
<td>Ergo/Sprint 35</td>
<td>35</td>
<td>120</td>
<td>35</td>
</tr>
<tr>
<td>Ergo/Sprint 45</td>
<td>45</td>
<td>30</td>
<td>140</td>
</tr>
<tr>
<td>Ergo/Sprint 65</td>
<td>65</td>
<td>50</td>
<td>160</td>
</tr>
<tr>
<td>Ergo/Sprint 85</td>
<td>85</td>
<td>70</td>
<td>178</td>
</tr>
<tr>
<td>Ergo/Sprint 110</td>
<td>110</td>
<td>90</td>
<td>203</td>
</tr>
<tr>
<td>Ergo/Sprint 140</td>
<td>140</td>
<td>120</td>
<td>230</td>
</tr>
<tr>
<td>Ergo/Sprint 200</td>
<td>200</td>
<td>–</td>
<td>250</td>
</tr>
<tr>
<td>Ergo/Sprint 300</td>
<td>300</td>
<td>–</td>
<td>305</td>
</tr>
</tbody>
</table>

The operator handle for the JumboErgo is designed with safety in mind, allowing the operator to maintain a safe distance when oversized workpieces are being lifted.

Fig. shows JumboErgo
APPLICATION

• Efficient handling of loads weighing up to 250 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 2014/34/EU standard – Can be used throughout Europe without country-specific certificate

PRODUCT HIGHLIGHTS

• 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 250 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></td>
<td></td>
<td>45 kg</td>
<td>65 kg</td>
</tr>
<tr>
<td>1/21</td>
<td>Ejector</td>
<td>1,700 / 2,100</td>
<td></td>
</tr>
<tr>
<td>2/22</td>
<td>Ejector</td>
<td>1,700 / 2,100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blower</td>
<td>1,700 / 2,100</td>
<td></td>
</tr>
</tbody>
</table>

1. Vacuum generator – blower or ejector for special Ex version
2. Jib crane with steel crane rail
3. Vacuum tube lifter JumboSprint Ex
JumboFlex High-Stack

For optimal use of space in storage areas and transport equipment

APPLICATION

• Ideal for stacking cardboard boxes and bags in the optimum ergonomic range up to a stacking height of 255 cm
• Ergonomic movement of compact goods up to 50 kg at high cycle frequencies
• Ergonomic movement of various goods to ensure efficient material flows, e.g. in intralogistics applications
• Workpieces near floor height can be handled while maintaining upright posture

DESIGN AND FUNCTION

• Lifting unit (1) with sturdy lifting tube and integrated rotary union for continuous rotation of the tube lifter
• Vacuum generation by means of an electric pump
• Extended ergonomic one-handed control handle (2) with guide bars and a safety feature for releasing the workpiece
• Continuously rotatable vacuum grippers (3) that can be replaced without tools for a wide range of workpieces

PRODUCT HIGHLIGHTS

• Optimal use of space in storage areas and transport equipment
• Best possible ergonomics thanks to configurable handle length and continuously adjustable guide bar
• Integrated vacuum feed for minimum wear and avoidance of interfering contours
• Reduced residual vacuum at the gripper makes it easy to release the workpiece
• Universally applicable with standard quick-change system for replacing the extensive range of gripper accessories
Jumbo Low-Stack
Ergonomically picking up workpieces from low heights

APPLICATION
- Ideal for picking up and depositing workpieces up to 80 kg from low heights while maintaining upright posture
- Ergonomic handling in low and medium height working areas
- Ergonomic loading and unloading of transport containers, allowing you to reach deeply into grid boxes, crates, and cardboard boxes
- Fast and frequent lifting and moving of crates, bags and other airtight workpieces

DESIGN AND FUNCTION
- Shortened lifting unit (1) with sturdy lifting tube and integrated rotary union for continuous rotation of the tube lifter
- Vacuum generation by electric blower
- Operator handle (2) with lateral twist grip for lifting, lowering and releasing the load and integrated mechanism for adjusting the suspension height without load
- Individually selected vacuum grippers (3) for a wide variety of workpieces

PRODUCT HIGHLIGHTS
- Sustained reduction of back pain by maintaining upright posture while handling at low heights
- Intuitive and reliable operation – the twist grip slides through your hand during the lifting movement without the need to change your grip
- Can be used for a wide range of workpieces and transport containers thanks to the wide range of grippers
- Compact design that is ideal for reaching into narrow containers
Lifting Devices VacuMaster – Lighten Your Load.

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
Move Heavy Loads Weighing up to Several Tons Ergonomically

APPLICATION
• For handling large, flat and typically non-porous workpieces
• 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

PRODUCT HIGHLIGHTS
• 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, 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.

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. lift capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100 kg</td>
</tr>
<tr>
<td></td>
<td>125 kg</td>
</tr>
<tr>
<td></td>
<td>250 kg</td>
</tr>
<tr>
<td></td>
<td>500 kg</td>
</tr>
<tr>
<td></td>
<td>1,000 kg</td>
</tr>
<tr>
<td></td>
<td>1,500 kg</td>
</tr>
<tr>
<td></td>
<td>2,000 kg</td>
</tr>
</tbody>
</table>

VacMaster Horizontal
VacMaster 90° Swiveling
VacMaster 180° Turning

Additional lift capacities up to more tons on request

VacuMaster Basic and VacuMaster Comfort
Flexible modular system for standard applications weighing up to 750 kg
— P. 28

Additional VacuMaster
For special lift capacities and industry requirements
— P. 34
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**

- 1. Motor protection switch
- 2. Vacuum gauge (manometer)
- 3. Vacuum on/off – picks up and releases the load via a highly reliable manual slide valve
- 4. Operator handle – Schmalz chain hoist pendant can be attached
- 5. Chain hoist up/down – lifts and lowers the load
- 6. Emergency-stop function for chain hoist

**VACUMASTER COMFORT**

- 1. Vacuum gauge (manometer)
- 2. Integrated air-saving function
- 3. Emergency-stop function
- 4. Swivel function – continuous swiveling up to max. 90° or 180°
- 5. Vacuum off – secure release of the load requiring two hands
- 6. Chain hoist up/down – lifts and lowers the load
- 7. Vacuum on – picks up the load
- 8. Operator handle with integrated function modules for Schmalz chain hoist
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

VACUUM GENERATORS

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

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

 manual slide valve

succion plates

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

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 loosening 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.

SUCTION PLATES

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.

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.
## VacuMaster Basic and VacuMaster Comfort

### ACCESSORIES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximize stack heights</strong></td>
<td>Large height differences are no problem with the swiveling and locking operator handle. The working posture remains ergonomic in any position.</td>
</tr>
<tr>
<td><strong>Adapts to changing workpieces</strong></td>
<td>With the vacuum gripper shut-off valve several vacuum grippers can be turned off for handling of cut pieces or pieces with gaps.</td>
</tr>
<tr>
<td><strong>Secure storage of the lifting device</strong></td>
<td>When the lifting device is not in use, the parking stands allow it to be stored securely while protecting the suction plates. This allows the crane to be used for other purposes.</td>
</tr>
<tr>
<td><strong>Quick-connect electrical connection</strong></td>
<td>The CEE plug allows the lifting device to be easily connected to the power supply and then quickly disconnected if necessary (only for VacuMaster Basic).</td>
</tr>
<tr>
<td><strong>Mark-free handling</strong></td>
<td>The suction plate covers prevent the plates from leaving marks on sensitive workpieces such as glass sheets or solar panels.</td>
</tr>
<tr>
<td><strong>Protection against water</strong></td>
<td>The maintenance-free water separator prevents water from entering the vacuum generator during moist processes such as waterjet cutting.</td>
</tr>
</tbody>
</table>
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

![Diagram showing VacuMaster Comfort](image)

**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>
</tr>
</thead>
<tbody>
<tr>
<td>Basic/Comfort 125</td>
<td>1,000 x 1,000</td>
<td>800 x 750</td>
<td>490</td>
<td>445</td>
<td>655</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2,000 x 1,000</td>
<td>1,600 x 750</td>
<td>410</td>
<td>445</td>
<td>645</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>2,500 x 1,250</td>
<td>1,600 x 750</td>
<td>490</td>
<td>525</td>
<td>745</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3,000 x 1,500</td>
<td>2,400 x 1,150</td>
<td>555</td>
<td>590</td>
<td>945</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>4,000 x 2,000</td>
<td>3,200 x 1,500</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>800 x 750</td>
<td>490</td>
<td>445</td>
<td>655</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2,000 x 1,000</td>
<td>1,600 x 750</td>
<td>410</td>
<td>445</td>
<td>645</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>2,500 x 1,250</td>
<td>1,600 x 750</td>
<td>490</td>
<td>525</td>
<td>745</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3,000 x 1,500</td>
<td>2,400 x 1,150</td>
<td>555</td>
<td>590</td>
<td>945</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>4,000 x 2,000</td>
<td>3,200 x 1,500</td>
<td>555</td>
<td>590</td>
<td>1,045</td>
<td>8</td>
</tr>
<tr>
<td>Basic/Comfort 500</td>
<td>2,500 x 1,250</td>
<td>1,600 x 750</td>
<td>570</td>
<td>605</td>
<td>760</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3,000 x 1,500</td>
<td>2,400 x 1,150</td>
<td>635</td>
<td>670</td>
<td>960</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>4,000 x 2,000</td>
<td>3,200 x 1,500</td>
<td>635</td>
<td>670</td>
<td>1,060</td>
<td>8</td>
</tr>
<tr>
<td>Basic/Comfort 750</td>
<td>3,000 x 1,500</td>
<td>2,400 x 1,150</td>
<td>635</td>
<td>670</td>
<td>960</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>4,000 x 2,000</td>
<td>3,200 x 1,500</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](image)

Fig. shows VacuMaster Comfort

<table>
<thead>
<tr>
<th>VacuMaster type*</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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Basic</td>
<td>Comfort</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic / Comfort</td>
<td>2,000 x 1,000</td>
<td>1,600 x 750</td>
<td>720</td>
<td>720</td>
<td>2</td>
<td>360</td>
</tr>
<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>Basic / Comfort</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>
<tr>
<td>250</td>
<td>2,500 x 1,250</td>
<td>1,600 x 750</td>
<td>725</td>
<td>725</td>
<td>8</td>
<td>360</td>
</tr>
<tr>
<td>Basic / Comfort</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>360</td>
</tr>
<tr>
<td>500</td>
<td>2,500 x 1,250</td>
<td>1,600 x 750</td>
<td>1,025</td>
<td>1,025</td>
<td>8</td>
<td>360</td>
</tr>
<tr>
<td></td>
<td>4,000 x 2,000</td>
<td>3,200 x 1,500</td>
<td>1,030</td>
<td>1,030</td>
<td>8</td>
<td>360</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.

---

1. Suction plates – diameter 125 mm up to 360 mm
2. Operator handle (L1) – 425 mm up to 1,185 mm
3. Cross beams (B) – 400 mm up to 1,500 mm
4. Main beam (L) – 800 mm up to 6,400 mm
5. Basic module with vacuum generator – vacuum pump with 4, 8, 16, 25 m³/h suction capacity
6. Eye for chain hoist – diameter 50 mm
### VacuMaster type* Max. lift capacity

<table>
<thead>
<tr>
<th>Workpiece format (L x B length x width) [mm]</th>
<th>Dimensions H [mm]</th>
<th>Overall height H [mm]</th>
<th>Operator handle L1 [mm]</th>
<th>Suction plates** No. Ø [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic / Comfort 1,000 x 1,000</td>
<td>800 x 750</td>
<td>1,150</td>
<td>1,150</td>
<td>1,265</td>
<td>2</td>
</tr>
<tr>
<td>2,000 x 1,000</td>
<td>1,600 x 750</td>
<td>1,150</td>
<td>1,150</td>
<td>1,265</td>
<td>2</td>
</tr>
<tr>
<td>2,500 x 1,250</td>
<td>1,600 x 750</td>
<td>1,120</td>
<td>1,120</td>
<td>1,265</td>
<td>4</td>
</tr>
<tr>
<td>Basic / Comfort 2,000 x 1,000</td>
<td>1,600 x 750</td>
<td>1,160</td>
<td>1,160</td>
<td>1,265</td>
<td>2</td>
</tr>
<tr>
<td>2,500 x 1,250</td>
<td>1,600 x 750</td>
<td>1,230</td>
<td>1,230</td>
<td>1,265</td>
<td>4</td>
</tr>
<tr>
<td>125</td>
<td>2,000 x 1,000</td>
<td>1,770</td>
<td>1,770</td>
<td>1,830</td>
<td>4</td>
</tr>
<tr>
<td>Basic / Comfort 2,500 x 1,250</td>
<td>1,750</td>
<td>1,750</td>
<td>1,830</td>
<td>8</td>
<td>210</td>
</tr>
<tr>
<td>250</td>
<td>4,000 x 2,000</td>
<td>3,200 x 1,500</td>
<td>1,750</td>
<td>1,750</td>
<td>1,830</td>
</tr>
</tbody>
</table>

*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.
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

PRODUCT HIGHLIGHTS
- Heavy loads are handled very securely
- Simple adaption to the individual application

### VacuMaster Vario

<table>
<thead>
<tr>
<th>VacuMaster type</th>
<th>Max. lift capacity* [kg]</th>
<th>Workpiece format [mm]</th>
<th>Dimensions L (length) [mm]</th>
<th>Overall height H [mm]</th>
<th>Operator handle L1 [mm]</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, 6,000 x 2,000</td>
<td>2,000 – 4,000</td>
<td>1,150</td>
<td>630 – 935</td>
<td>1, 4, 8</td>
<td>116 – 252</td>
</tr>
<tr>
<td>Vario 2000</td>
<td>2,000</td>
<td>1,230 x 900, 6,000 x 2,000</td>
<td>2,000 – 4,000</td>
<td>1,150</td>
<td>820 – 1,000</td>
<td>2, 4, 8</td>
<td>231 – 345</td>
</tr>
</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

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

<table>
<thead>
<tr>
<th>VacuMaster type</th>
<th>Max. lift capacity* [kg]</th>
<th>Workpiece format [mm]</th>
<th>Dimensions [mm]</th>
<th>Overall height H [mm]</th>
<th>Operator handle L1 [mm]</th>
<th>Number of suction plates</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco 75</td>
<td>75</td>
<td>Minimum 220 x 220</td>
<td>Maximum 1,000 x 1,000</td>
<td>210 x 210 368 – 382</td>
<td>1 8</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Eco 250</td>
<td>250</td>
<td>Minimum 360 x 360</td>
<td>Maximum 3,000 x 2,000</td>
<td>800 – 2000 400 – 1,500</td>
<td>450 – 825 400 – 1,100</td>
<td>1, 2, 4, 6, 8</td>
<td>33 – 59</td>
</tr>
<tr>
<td>Eco 500</td>
<td>500</td>
<td>Minimum 480 x 480</td>
<td>Maximum 4,000 x 2,000</td>
<td>800 – 3,200 400 – 1,500</td>
<td>605 – 1,130 500 – 1,200</td>
<td>1, 2, 4, 6, 8</td>
<td>93 – 141</td>
</tr>
<tr>
<td>Eco 750</td>
<td>750</td>
<td>Minimum 900 x 620</td>
<td>Maximum 4,000 x 2,000</td>
<td>800 – 3,200 400 – 1,500</td>
<td>735 – 1,130 500 – 1,200</td>
<td>1, 2, 4, 6, 8</td>
<td>132 – 141</td>
</tr>
<tr>
<td>Eco 1000</td>
<td>1,000</td>
<td>Minimum 630 x 630</td>
<td>Maximum 4,000 x 2,000</td>
<td>800 – 4,000 400 – 1,500</td>
<td>730 – 1,210 500 – 1,200</td>
<td>1, 4, 8</td>
<td>138 – 309</td>
</tr>
</tbody>
</table>

*The recommended minimum workpiece weight is 10% of the lift capacity.
APPLYING
- 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°
- Simultaneous turning and swivelling with Window Comfort 500

DESIGN AND FUNCTION
- Operator handle with ergonomic bow shape
- Electric vacuum pump for short evacuation times
- 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 200/300**
- Manual rotation up to 90° (left/right)
- Electric turning (right) optional for Comfort version
- Comfort operation with integrated control of all functions

**VacuMaster Window Comfort 500**
- Electric rotation of 360° or electric rotation of 360° and swivelling of 90° optional
- Comfort operation with integrated control of all functions

PRODUCT HIGHLIGHTS
- Secure handling of glass while leaving no marks
- Increase in productivity due to faster turnover
- Effortless rotation of workpieces
VacuMaster Multi for swiveling wooden boards by 90°

**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

**PRODUCT HIGHLIGHTS**
- 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

### VacuMaster type

<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 [mm]</th>
<th>No.</th>
<th>Suction plates</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi 400</td>
<td>400</td>
<td>Horizontal 1,100 x 700</td>
<td>Vertical 4,100 x 2,100</td>
<td>–</td>
<td>520</td>
<td>1</td>
<td>1,000 x 675</td>
<td>80</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</td>
<td>1,000 x 675</td>
<td>133</td>
</tr>
<tr>
<td>Multi 400/150 90°</td>
<td>400 150</td>
<td>1,100 x 700</td>
<td>4,100 x 2,100</td>
<td>–</td>
<td>540</td>
<td>1</td>
<td>1,000 x 675</td>
<td>101</td>
</tr>
<tr>
<td>Multi 400/300 90°</td>
<td>400 300</td>
<td>1,400 x 1,100</td>
<td>5,600 x 2,100</td>
<td>2,000</td>
<td>620</td>
<td>2</td>
<td>1,000 x 675</td>
<td>159</td>
</tr>
<tr>
<td></td>
<td>400 300</td>
<td>2,200 x 1,000</td>
<td>5,600 x 2,100</td>
<td>2,500</td>
<td>630</td>
<td>8</td>
<td>Ø 400</td>
<td>189</td>
</tr>
</tbody>
</table>

**Blower**
- with extra high flow rate

**Extra large suction plate**
- with maximum suction force

Functional principle of VacuMaster Multi for picking up large and porous plates
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

PRODUCT HIGHLIGHTS
- 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

<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>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>410</td>
<td>1,300</td>
<td>3</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>410</td>
<td>1,050</td>
<td>3</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>410</td>
<td>1,200</td>
<td>3</td>
<td>190</td>
</tr>
</tbody>
</table>
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

PRODUCT HIGHLIGHTS
- 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

---

### VacuMaster Light

**VacuMaster Light for handling metal housings**

---

**Vacuum gripper spacing with adjustable suction feet (VacuMaster Light 100-4)**

---

<table>
<thead>
<tr>
<th>VacuMaster type</th>
<th>Max. lift capacity [kg]</th>
<th>Workpiece format [mm]</th>
<th>Length L [mm]</th>
<th>Overall height H [mm]</th>
<th>Operator handle L₁ [mm]</th>
<th>No.</th>
<th>Suction plates Ø [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light 100-1</td>
<td>100</td>
<td>250 x 250 1,500 x 800</td>
<td>260</td>
<td>270</td>
<td>405</td>
<td>1</td>
<td>250</td>
<td>15</td>
</tr>
<tr>
<td>Light 100-4</td>
<td>100</td>
<td>250 x 250 2,000 x 800</td>
<td>400</td>
<td>330</td>
<td>405</td>
<td>4</td>
<td>120</td>
<td>15</td>
</tr>
</tbody>
</table>
Crane Systems – The Easy Way.

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

**PRODUCT HIGHLIGHTS**
- 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

1. End plate
2. Crane girder made of aluminum crane section SRA
3. Transport trolley, fork versions
4. End stops, 1x fixed and 1x adjustable
5. Chain hoist
6. Cable trolley for the energy supply
7. Terminal clamp for the energy supply
8. Crane runway made of aluminum crane section SRA, weighs as little as 3 kg/m
9. Suspension of the crane runway, rigid or movable, height-adjustable
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

PRODUCT HIGHLIGHTS
- 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)

<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 85 kg 110 kg 125 kg 140 kg 200 kg 300 kg 350 kg 650 kg 1,000 kg</td>
</tr>
<tr>
<td>Universal jib crane (for use with chain hoist/VacuMaster)</td>
<td>45 kg 65 kg 80 kg 85 kg 110 kg 125 kg 140 kg 200 kg 300 kg 350 kg 650 kg 1,000 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

Modular flat jib
for particularly low ceilings

Articulated-arm jib
to move around obstacles

Telescopic jib
for confined working areas

ACCESSORIES

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

Conductor line SCL

Chain Hoists
Lift Capacity up to 2,500 kg

Powerful and Durable – the Schmalz Chain Hoist SCH
- Durable chain hoist with standard limit switches and phosphate-coated, case-hardened steel profile chain
- High-quality pressure-cast aluminum housing with molded cooling fins
- Plug & play connector, the chain hoist arrives ready to use
- Gearboxes with helical gearing make them responsive
- 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

Chain hoist SCH
Your Project in Good Hands

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

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>Physically Reasonable Loads</th>
<th>More frequent lifting and carrying</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Occasional lifting and carrying</td>
<td>(no more than 1x per hour)</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>Men</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

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

Annual UVV inspection by Schmalz service technicians
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>Workpiece</th>
<th>Max. lift capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. 300 kg</td>
<td>300 kg</td>
</tr>
<tr>
<td>Mainly porous and permeable</td>
<td>e.g. cardboard boxes, bags and wooden boards</td>
</tr>
<tr>
<td>Max. 2,000 kg</td>
<td>2,000 kg</td>
</tr>
<tr>
<td>Mainly smooth and airtight</td>
<td>e.g. metal plates and glass sheets</td>
</tr>
<tr>
<td>Workpiece format</td>
<td>Max. 4,000 mm x 2,000 mm</td>
</tr>
<tr>
<td>Max. 8,000 mm x 2,000 mm</td>
<td></td>
</tr>
<tr>
<td>Type of handling</td>
<td>Horizontal 90° swiveling</td>
</tr>
<tr>
<td>Horizontal 90° swiveling</td>
<td>MAX. 300 KG</td>
</tr>
<tr>
<td>MAX. 120 KG</td>
<td>90° swiveling 180° turning</td>
</tr>
<tr>
<td>MAX. 2,000 KG</td>
<td>MAX. 1000 KG</td>
</tr>
<tr>
<td>MAX. 500 KG</td>
<td>180° turning</td>
</tr>
<tr>
<td>Lifting cycles per hour</td>
<td>up to ~ 500 picks/h</td>
</tr>
</tbody>
</table>

PRODUCT RECOMMENDATION

<table>
<thead>
<tr>
<th>Application</th>
<th>Vacuum tube lifter Jumbo</th>
<th>Vacuum lifting device VacuMaster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move goods weighing up to 300 kg quickly and frequently</td>
<td>Move heavy loads weighing up to 2,000 kg ergonomically and securely</td>
<td></td>
</tr>
<tr>
<td>Functions</td>
<td>Vacuum-generated holding force and lifting force</td>
<td>Vacuum-generated holding force, lifting force generated by chain hoist</td>
</tr>
<tr>
<td>Product information</td>
<td>Page 12</td>
<td>Page 26</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 via the operator handle.

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
- Porous
- Smooth
- 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]?
LxB ____________________________ 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:
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
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.
Contact

Own Subsidiaries and Trade Partners in More Than 80 Countries

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

AUSTRALIA
Schmalz Australia Pty. Ltd.
25 Turbo Drive
Bayswater North VIC 3153
T: +61 3 9215 8800
F: +61 3 9720 7879
schmalz@schmalz.com.au

INDIA
Schmalz India Pvt. Ltd.
EL – 38 ‘J’ Block MIDC
Bhosari
411026 Pune
T: +91 20 4072 5500
F: +91 20 4072 5588
schmalz@schmalz.co.in

CANADA
Schmalz Vacuum Technology Ltd.
14-2900 Argentia Road
ON L5N 7X9 Mississauga
Ontario
T: +1 905 569 9520
F: +1 905 569 8256
schmalz@schmalz.ca

UNITED STATES
Schmalz Inc.
5850 Oak Forest Drive
Raleigh, NC 27616
T: +1 919 713 0880
F: +1 919 713 0883
schmalz@schmalz.us

WORLDWIDE
Headquarters in Germany
J. Schmalz GmbH
Johannes-Schmalz-Str.1
72293 Glatten
T: +49 7443 2403-0
F: +49 7443 2403-259
schmalz@schmalz.de

You can find contact information for our trade partners in 80 countries at WWW.SCHMALZ.COM/SALESNETWORK

Collaborative Rope Balancer SRBC

Intuitive. Safe. Collaborative.

- The Collaborative Rope Balancer SRBC combines efficient commissioning with delicate placing of workpieces
- Assistance of the operator with increasing complexity through changing workpieces, weights, pick-up and drop-off locations
- Motorized support for the operators movements in all three spatial dimensions
- Motorized acceleration and braking for accurate positioning
- Increases work safety through intelligent functions
- Operates quietly and energy efficiently
At your service worldwide

Schmalz Germany – Glatten
Schmalz Benelux – Hengelo (NL)
Schmalz Canada – Mississauga
Schmalz Finland – Vantaa
Schmalz France – Champs-sur-Marne
Schmalz Italy – Novara
Schmalz Mexico – Querétaro

Schmalz Australia – Melbourne
Schmalz Benelux – Hengelo (NL)
Schmalz China – Shanghai
Schmalz India – Pune

Schmalz Poland – Suchy Las (Poznan)
Schmalz Russia – Moscow
Schmalz Spain – Erandio (Vizcaya)
Schmalz South Korea – Anyang
Schmalz Switzerland – Nürensdorf
Schmalz Turkey – Istanbul

Schmalz Japan – Yokohama
Schmalz United States – Raleigh (NC)

You can find the Schmalz sales partner in your country at: WWW.SCHMALZ.COM/SALESNETWORK

Vacuum Automation
WWW.SCHMALZ.COM/AUTOMATION

Handling Systems
WWW.SCHMALZ.COM/HANDLING-SYSTEMS

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