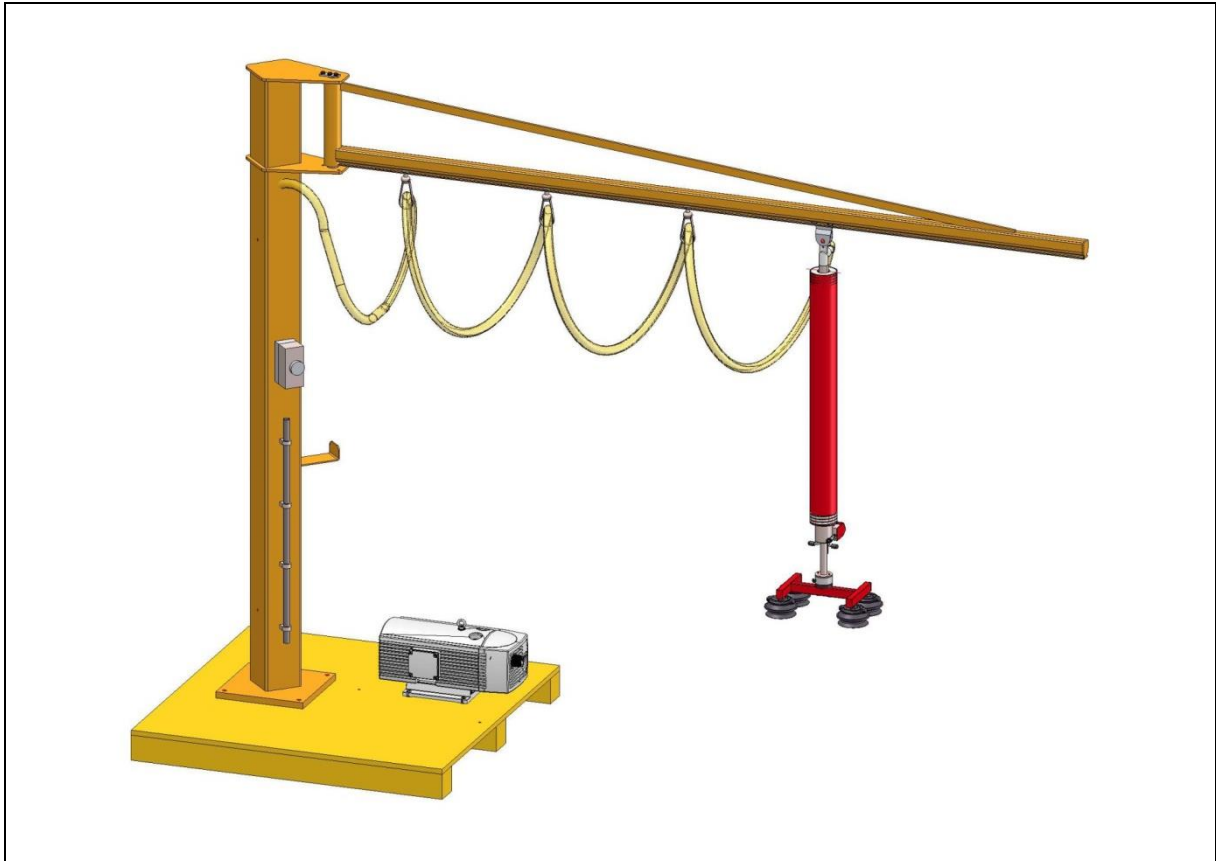


OPERATING MANUAL

(Translation of the original operating manual)



Vacuum lift mini smilift

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Keep for future use!

Machine Vacuum lift mini smilift
Year of manufacture: See rating plate

Version 01

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1 Introduction

This operating manual provides all the information you need to smoothly operate the Vacuum lift mini smilift (called machine from now on).

All persons responsible for operating, maintaining, cleaning, and troubleshooting the machine must read, understand, and comply with the operating manual. This applies in particular to the safety information that is given.

After reading the operating manual you will be able to

- operate the machine safely,
- maintain the machine according to the rules,
- clean the machine according to the rules and
- take the necessary action in the event of a fault.

In addition to this operating manual, it is necessary to comply with the general laws and other regulations concerning accident prevention and environmental protection in the country of use.

The operating manual must always be kept at the machine's point of deployment.

1.1 Notational conventions

Passages of this operating manual that require special attention or are a direct hazard warning are shown as follows:

1.1.1 Section-related warnings

Section-related warnings are not limited to just one specific action, but apply to all the actions performed within a section.

Structure



SIGNAL WORD



Symbol that describes the danger in more detail

Type and source of danger

Possible consequence(s) of failure to comply

– Measure(s) to avoid the danger

Danger levels



DANGER

Hazard with a high level of risk which if not avoided can lead to death or serious injury.



WARNING

Hazard with a medium level of risk which if not avoided can lead to death or serious injury.



CAUTION

Hazard with a low level of risk which if not avoided can lead to negligible or moderate injury.

NOTE

Hazard with a low level of risk which if not avoided can lead to damage to property.

1.1.2 Other notational conventions



The information symbol is followed by useful information.

- Text following this mark represents an item in a list.
- Text following this mark describes actions to be performed in the specified order.
- " " Text in double quotation marks refers to other chapters or sections.

1.1.3 Symbols used in the manual

Particular hazards in connection with hazard warnings are shown in addition as follows:



Fatal injury hazard due to electricity

This symbol warns of a life-threatening electrical hazard.
Touching live parts poses a direct risk of death.



Warning of raised loads

This symbol warns of hazards when standing under suspended loads.



Warning of hot surface

This symbol warns of a burn hazard due to hot surfaces.



Warning of sharp blades

This symbol warns of cutting hazards when using sharp blades.



Observe manufacturer documentation

This symbol refers to a manufacturer's documentation of an additionally purchased part which must be observed.

1.2 Warranty and liability

The obligations under the supply contract, the general and delivery terms and conditions of the machine and the legal regulations in force at the time the contract was signed will apply.

All information in this operating manual has been compiled in line with the applicable standards and regulations, the state of the art, and our longstanding knowledge and experience.

Warranty and liability claims for personal injury and material damage are excluded if they are attributable to one or more of the following causes:

- Unintended or inappropriate use of the machine
- Inappropriate installation, commissioning, operation, maintenance, or cleaning of the machine
- Failure to heed information in the operating manual regarding installation, commissioning, operation, maintenance, and cleaning of the machine
- Deployment of non-qualified personnel who have not been provided with adequate instruction for the tasks concerned.
- Structural alterations to the machine (conversions or other alterations to the machine are not allowed to be made without prior written permission from SMI Handling Systeme GmbH; any breach of this causes the machine to lose its EC conformity)
- Improperly executed repairs
- Use of non-permitted spare parts or of spare parts that do not satisfy the technically established requirements
- Disasters, effects of extraneous elements and force majeure

We reserve the right to make technical alterations in the course of further development and improvement of features.

1.3 Copyright

This operating manual is protected by copyright and intended for internal use only.

This operating manual or parts thereof must not be passed or disclosed to any third party or be reproduced or exploited in any form without the prior written consent of SMI Handling Systeme GmbH except for internal use.

Contravention results in liability for damages. Further claims remain reserved.

1.4 Guarantee terms

The Terms and Conditions of Guarantee are contained in the General Terms and Conditions of Trade of SMI Handling Systeme GmbH.

1.5 Service / Customer service



Our Customer Service department is at your disposal for any technical queries you may have.

Phone: +49 2335 9608 0

In addition, our employees welcome all new information and experiences gained in your application that may be of value in improving our products.

1.6 Further product information



Further product information (e.g. video instructions for assembly work) can be found on our website.

In addition to the information in this operating manual, please also observe the information on our website:

www.smi-handling.de

2 Safety



Failure to observe the safety information below may have serious consequences:

- Risk to persons due to electrical or mechanical effects
- Failure of important machine functions.

Read the safety and hazard information in this section thoroughly before putting the machine into operation.

In addition to the information specified in this operating manual, always comply with general safety and accident prevention regulations.

Comply with existing internal plant regulations.

In addition to the information specified in this operating manual, the plant operator/machine operator must comply with national occupational, health, and safety regulations.

2.1 Intended use

The safety of the machine is only ensured if it is used as intended.

The machine is designed to be suspended in a rail or swivel system. The machine is designed for lifting loads such as boxes, containers, plates, and machine parts (max. load capacity: see rating plate) by means of differential pressure.

The machine is not intended for use other than as described here; other use counts as inappropriate. The following uses are inappropriate and prohibited:

- Lifting of persons,
- Lifting of loads other than those specified in the intended use,
- Lifting of loads that do not correspond to the loads specified lifting capacities in the intended use,
- Use of load handling attachments that are not intended for use.

Intended use also includes:

- Heeding all information from the operating manual,
- Complying with the inspection and maintenance intervals
- Using operating material and auxiliary resources in accordance with applicable safety regulations
- Adhering to the specified operating conditions.

The technical specifications listed in the technical data must be observed without exception.



Only use the machine as intended; otherwise there is no guarantee of safe and reliable operation.

It is not the manufacturer but the plant operator who is responsible for any and all personal injuries and material damage resulting from unintended use.

2.1.1 Structural alterations to the machine

Construction and manufacturer's acceptance are based on the German Product Safety Act (ProdSG). The machine is not allowed to be converted or otherwise altered without prior written permission from SMI Handling Systeme GmbH.

Any breach of this causes the machine to lose its EC conformity. Such a breach absolves the manufacturer of the machine from warranty. This also applies to welding work on load-bearing parts.

Any parts not in a perfect state must be replaced immediately.

Use original spare/wearing/accessory parts only. These parts have been specifically designed for the machine. For parts from other sources there is no guarantee that they have been designed and manufactured in line with load and safety requirements.

Parts and special features not delivered by SMI Handling Systeme GmbH have not been released for use with the machine.

2.1.2 Foreseeable misuse

Any use exceeding the concept of intended use and/or other use of the machine can lead to severe injuries.

- Only use the machine for its intended purpose.
- Lifting of persons is prohibited.
- Lifting of loads other than those specified in the intended use is prohibited.
- Lifting of loads that do not correspond to the loads specified lifting capacities in the intended use is prohibited.
- Use of load handling attachments that are not intended for the load to be carried (special load handling attachments) is prohibited.

2.2 Personnel requirements

The machine is only allowed to be operated, maintained, and repaired by persons who have been qualified and/or trained for this. These persons must know the operating manual and act in accordance with it. The respective authorizations for personnel must be defined clearly.

In the operating manual, the following qualifications are specified for the various activities:

Personnel requiring training

Personnel requiring training, such as trainees or temporary workers, are not aware of all hazards that operation of the machine can entail. They are only allowed to work on the machine under the supervision of qualified and instructed personnel.

Instructed personnel

Instructed personnel have been instructed by the plant operator or by qualified personnel about their tasks and the potential risks of inappropriate behavior.

Qualified personnel

Qualified personnel are able to do their work and recognize/avoid potential hazards on their own as a result of their training, knowledge and experience and their familiarity with regulations.

Electrical specialists

Electrical specialists are able to work on electrical equipment and recognize/avoid potential hazards on their own as a result of their training, knowledge and experience and their familiarity with standards and regulations.

Electrical specialists have been trained for their specific point of deployment and know the relevant standards and regulations.

2.2.1 Responsibilities

Inappropriate handling can lead to severe personal injury and material damage.

All activities must therefore be carried out by qualified personnel only.

- Personnel must consist of individuals who can be expected to perform their work reliably. Individuals whose response is impaired by drugs, alcohol, medication, and the like must not work on the machine.
- All persons working on the machine must read the operating manual and confirm with their signature that they have understood it.
- Initially, personnel requiring training are only allowed to work on the machine under the supervision of qualified personnel. The completion and success of instruction must be confirmed in writing.

The plant operator is responsible for training and instructing personnel.

2.2.2 Obligations of personnel

Before working on or with the machine, all persons undertake the following:

- To comply with basic regulations concerning health, safety, and accident prevention
- To read the safety information and warnings in this operating manual and to confirm with their signature that they have understood the issues

2.2.3 Unauthorized persons

Unauthorized persons who do not have the required qualifications are not aware of the hazards in the work area.

- Keep unauthorized persons away from the work area.
- Address unauthorized persons in case of doubt and eject them from the work area if applicable.
- Interrupt work while any unauthorized persons are in the work area.

2.2.4 Instruction

The plant operator must instruct personnel at regular intervals. Keep a record of all instructions given in order to keep track of matters.

Date	Name	Type of instruction	Instruction given by	Signature

2.3 General safety information

- Always read and understand the operating manual before operating and maintaining the machine.
- Only use the machine for its intended purpose (see "2.1 Intended use").
- Special load handling equipment is not considered in this operating manual. Contact the manufacturer for further assistance where necessary.
- The machine consists partly of additionally purchased parts which must work together in order to ensure reliable function. Please also observe the safety instructions in the manufacturer's documentation of the additionally purchased parts.
- Refrain from any act which is likely to compromise the health and safety of people and safe operation of the machine.
- Always keep the work area around the machine clean and tidy to prevent hazards due to dirt and things lying around.
- Do not exceed the technical data (see "3.3 Technical data").
- Keep all safety and hazard signs on the machine clean and renew them if necessary.
- Only qualified or trained personnel are allowed to operate or work on this machine (see "2.2 Personnel requirements").
- Take the machine out of operation immediately if a fault occurs. Have faults rectified by appropriately trained specialists or by SMI Handling Systeme GmbH.
- Always keep the operating manual at the machine's point of deployment. It must be ensured that all personnel working on the machine can view the operating manual at any time.

2.4 Safety measures for environment protection

In all work obey the regulations for waste avoidance and proper waste disposal/recycling.

In the course of installation, maintenance, and decommissioning, in particular, it must be ensured that materials that could jeopardize the groundwater – such as greases, oils, coolants, solvent-containing cleaning fluids and the like – do not pollute the ground or get into the drains. These materials must be collected, kept, and transported in suitable containers and disposed of in compliance with national regulations.

2.5 Special types of warning

2.5.1 Symbols used on the machine



Fatal injury hazard due to electricity

This symbol warns of a life-threatening electrical hazard. Touching live parts poses a direct risk of death.



Burn hazard due to hot surfaces

This symbol warns of a burn hazard due to hot surfaces. Hot surfaces such as machine parts, containers, and materials as well as hot fluids are not always apparent. Always wear protective clothing and safety gloves during all work in order to avoid burns through hot surfaces.



Note: Load duration

Never leave the load attached longer than is necessary for the movement cycle.



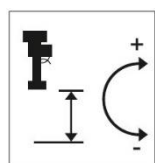
Note: Steady, smooth movements

Carry out all handling operations with steady and smooth movements.



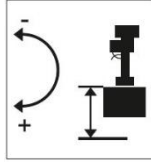
Note: Suspended load

During work procedures, do not walk under suspended loads.



Note: Balancing without load

This icon indicates a balance adjustment knob for adjusting the balancing of the manipulator without load.



Note: Balancing with load

This icon indicates a balance adjustment knob for adjusting the balancing of the manipulator without load.



Keep all safety and hazard signs on the machine in a legible state. Renew the signs if necessary.

2.5.2 Hazards due to electricity



The vacuum lift (lift hose and control unit) and the load handling attachment do not pose any electrical hazards, as these modules do not have any electrical components.

However, there are electrical hazards when handling additionally purchased parts (conveyor technology, vacuum generator).

- Read the manufacturer's documentation thoroughly before installing, mounting, operating, or maintaining the equipment.



DANGER

Voltage

If live parts are touched there is danger of an electric shock.

- Make sure electrical components are always fully closed.
- Have work at electrical equipment only be carried out by electrical specialists who, as a result of their training, knowledge, and experience, are able to recognize and avoid potential hazards.
- Observe the five golden safety rules:
 1. Disconnect completely
 2. Secure against reconnection
 3. Verify that it is disconnected
 4. Carry out grounding and short circuiting
 5. Project against live parts



DANGER

Voltage

Electric shocks can lead to indirect accidents, e.g. falling from a height, as a result of the person concerned being startled.

- Always observe the five golden safety rules when working on electrical equipment.
- Only allow work with electrical equipment to be carried out by a trained electrician.



- Before working on electrical equipment switch off the machine completely and secure it against being switched on again.
- Only electrical specialists - e.g. plant electricians - are allowed to work on the electrical equipment.
- Regularly check the electrical equipment for defects such as loose connections or scorched cables. Have any defects rectified immediately.
- Have the electrical equipment and fixed electrical apparatuses tested by an electrical specialist every 4 years at least.

Fixed electrical apparatuses are permanently installed apparatuses or apparatuses that do not offer any carrying device and which, due to their weight, are difficult to move. This also includes electrical equipment that is fitted on a temporary basis and operated using movable device cabling.

- Have portable electrical equipment and extension and device cabling with plugs and sockets tested by an electrical specialist, or by a trained person using suitable inspection facilities, every 12 months at least.

Equipment is portable if, by its nature and in its normal use, it is moved while under power. This includes, for example, electric floor cleaners.

- Alterations at electrical equipment made after testing must comply with DIN EN 60204-1.
- Only use original fuses.
- Damaged housings and leads must be repaired immediately or replaced before being switched on.

2.5.3 Hazards due to vacuum

Hair, clothing, and skin areas can be drawn in by the airflow. This can cause injuries such as bruising.

- Regularly check the lift hose, all supply lines as well as rubber seals and screw connections for leaks, firm attachment, and visible external damage.
- Always keep the control unit away from the body when the vacuum generator is switched on.
- When the vacuum generator is switched on, **do not** grasp or look into the suction foot under the control unit.

2.5.4 Hazards due to hot surfaces

Hot surfaces can form on the vacuum generator. Contact with hot parts can cause burns.

- Always wear protective clothing and safety gloves when working near hot parts. Parts that can become hot are indicated by the "Warning of hot surface" symbol (see "2.5.1 Symbols used on the machine").
- Before maintenance and repair work, let all machine components cool down to the ambient temperature.
- Never lift loads with the vacuum lift for longer periods of time. The vacuum generator can heat up considerably and become damaged.
- Heed the vacuum generator's manufacturer documentation.

2.5.5 Hazards due to work at great height

When hanging the vacuum lift (lift hose, control unit) in a rail system or a swivel system, work at height is necessary. When working at height, there is the hazard of falling, which can lead to severe injuries.

- Use a suitable auxiliary materials during mounting.

2.5.6 Hazards due to noise

The sound pressure level occurring in the working area (due to the vacuum generator) can cause permanent hearing damage under continuous exposure.

- From a sound pressure level of 80 dB(A), the operator must wear hearing protection.
- From a sound pressure level of 85 dB(A), the hearing protection must be worn.
- Heed the vacuum generator's manufacturer documentation.

2.5.7 Hazards due to incorrect spare parts

Incorrect or faulty spare parts may cause damage, malfunctioning or total failure, and may also give rise to safety hazards.

- Use original spare parts only.
- Procure spare parts via SMI Handling Systeme GmbH. The necessary details about spare parts are given in the supplied bills of material or in "1.5 Service / Customer service".

2.6 Personal protective equipment

During machine operation, always wear personal protective equipment, irrespective of the risk assessment at work, to minimize health hazards.

- Always wear the personal protective equipment required for the respective task when carrying out work.
- Never wear rings, necklaces, or other jewelry.
- In the work area, obey all signs relating to personal protective equipment.

The symbols have the following meaning:



Protective clothing

Protective clothing refers to tight-fitting working clothes that tear easily and feature tight sleeves and no loose parts.



Safety shoes

Wear non-slip safety shoes to protect yourself against heavy falling parts and prevent you from slipping.



Safety gloves

Wear safety gloves to protect your hands against friction, grazes, punctures, deeper wounds, hot surfaces, and chemical substances.



Safety helmet (transport, installation, dismantling)

Wear a safety helmet to protect yourself against falling or flying parts.



Hearing protection

Wear hearing protection to prevent hearing impairment.

The personal protective equipment must be provided by the plant operator and must be fit for purpose.

It is also necessary to obey national regulations, the guidelines of the risk assessment at work and, if applicable, the operator's internal instructions.

2.7 Safety devices and guards

- Before switching the machine on always make sure that all guards (e.g. housing) have been fitted properly.
- Guards must not be removed during operation.
- Guards are only allowed to be removed after the machine has come to a standstill and when unexpected restoration of power to the machine has been prevented.

2.8 Information for emergencies

Preventive measures

- Always be prepared for accidents or fires.
- Keep first aid equipment (first aid box, blankets etc.) and fire extinguishers at hand.
- Familiarize the personnel with accident reporting, first aid, fire-extinguishing, and rescue equipment.
- Keep access routes for rescue vehicles clear.

Measures in the event of accidents

- Switch off the vacuum generator.
- Bring persons out of the danger zone.
- In the event of cardiac and/or respiratory arrest, administer resuscitation immediately.
- If anybody is injured, notify the first aid officer or the emergency medical service.
- Clear the access routes for rescue vehicles. If needed, detail somebody to marshal the rescue forces.
- Extinguish any burning oil/grease with a CO₂ or powder extinguisher.
- Use a CO₂ extinguisher to put out any fire in the electric control system.

2.9 Obligations of the plant operator

The machine is used in an industrial plant. The machine operator is therefore subject to the legal requirements concerning health and safety at work.

In addition to the safety information in this operating manual, it is necessary to comply with the safety, accident prevention and environmental protection regulations in force where the machine is being used. The following applies in particular:

- The plant operator must ensure that the machine is only used as intended (see "2.1 Intended use").
- The plant operator must always keep the operating manual in a legible and complete state at the machine's point of deployment.
- The plant operator must clearly define and arrange the responsibilities for installation, commissioning, operation, maintenance, and cleaning.
- The plant operator must verify that no individual working on the machine is under the minimum age stipulated by law.
- The plant operator must only let suitably qualified and trained personnel work on the machine.
- The plant operator must ensure that all personnel working on or with the machine have read and understood this operating manual.
The plant operator must also train the personnel and inform them about hazards at regular intervals.
- The plant operator must provide personnel with personal protective equipment and also ensure that this is used.
- The plant operator must make sure that individuals whose response is impaired by drugs, alcohol, medication and the like do not work on the machine.

In addition, the plant operator is responsible for keeping the machine in a perfect technical state so the following also applies:

- The plant operator must ensure compliance with the maintenance intervals described in this operating manual.
- The plant operator must regularly check that all guards (e.g. housings) are functioning correctly and are complete.
- The plant operator must regularly check that all safety and warning signs on the machine are legible and stay on the machine.

3 Description of the machine

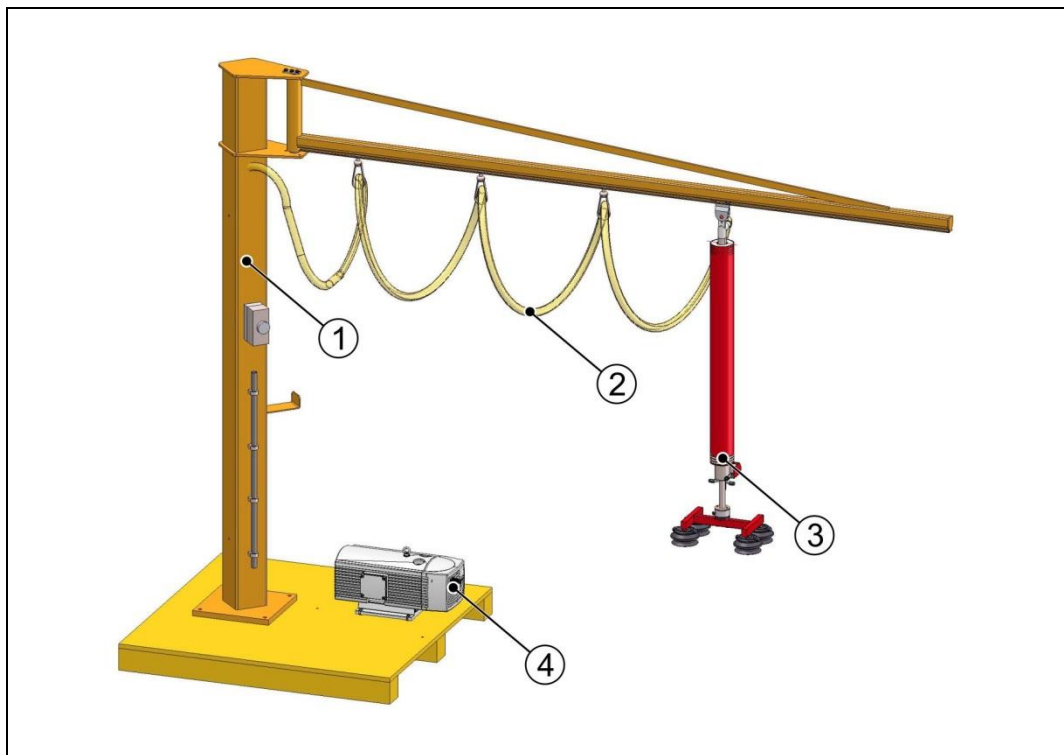
3.1 Overviews

3.1.1 Entire system



The following overview shows an example of suspending the vacuum lift (lift hose, control unit) on a swivel system.

Suspension on a rail system is also possible.



1 Swivel system

2 Supply lines

3 Vacuum lift

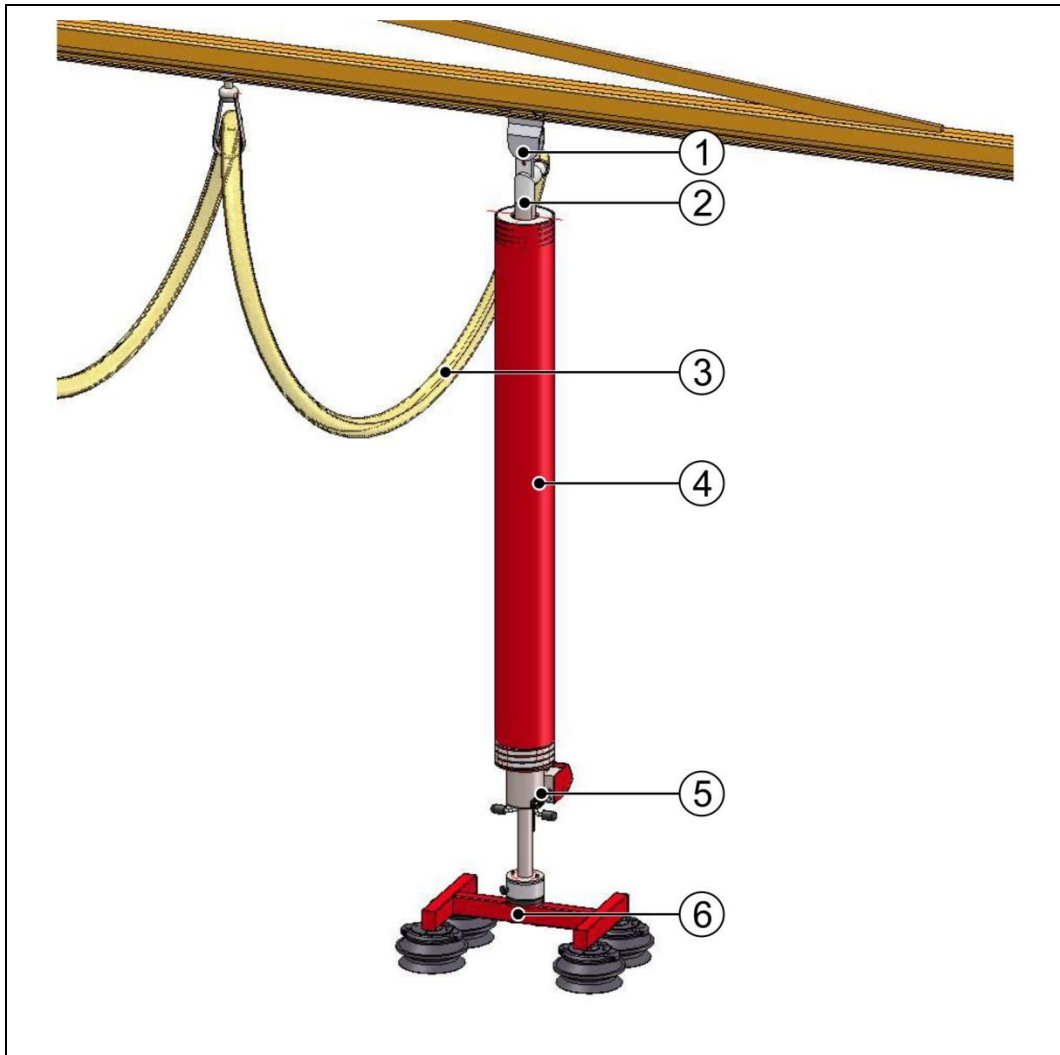
4 Vacuum generator

3.1.1.1 Vacuum lift



The following overview shows an example of how to attach a standard load handling device to the control unit.

Depending on the type and weight of the load, the load handling attachment must be replaced (see "5.2.4 Mounting the load handling attachment" and "7.1.1 Maximum lifting capacities").



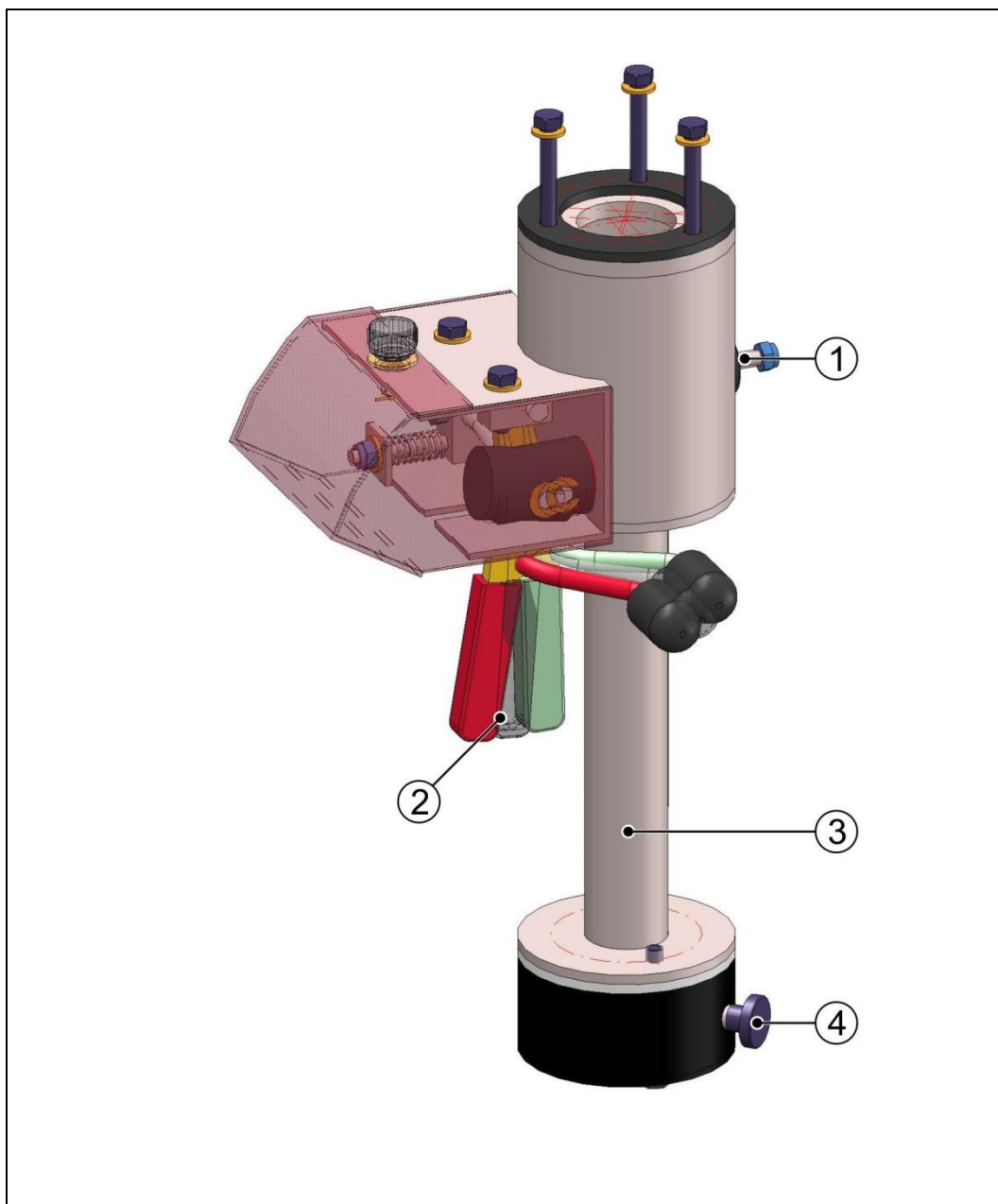
- | | |
|--|---|
| 1 Suspension | 4 Lift hose with protective hose covering |
| 2 Upper swivel unit incl. pipe bend and non-return valve | 5 Control panel |
| 3 Supply line, vacuum hose | 6 Standard load handling device |

3.1.2 Control panel



The following overview shows all possible control handle positions (pos. 3) for opening and closing the control valve.

Depending on the valve position, the vacuum lift lowers or raises (see "3.1.2.1 Control handle - valve positions").



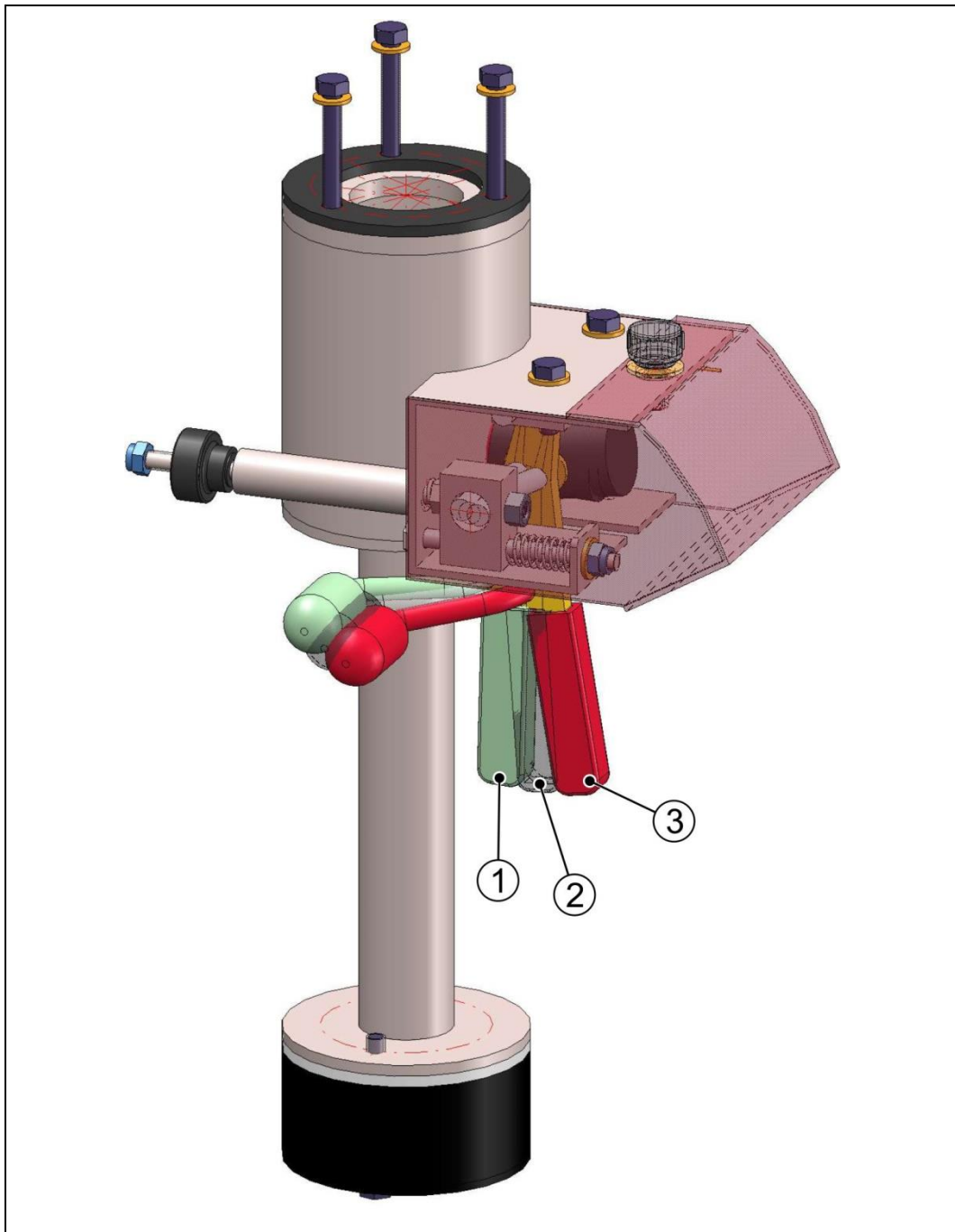
1 Balance adjustment knob for adjusting the balance with load

2 Control handle for adjusting the control valve

3 Handle

4 Balance adjustment knob for adjusting the balance without load

3.1.2.1 Control handle - valve positions



1 Valve position 1 (lifting):

The control valve closes completely and airtight. The vacuum inside the lift hose increases. A lifting force is created and the lift hose contracts.

2 Valve position 2 (normal position):

The control valve is in normal position. There is not sufficient lifting power. A vacuum is not built up.

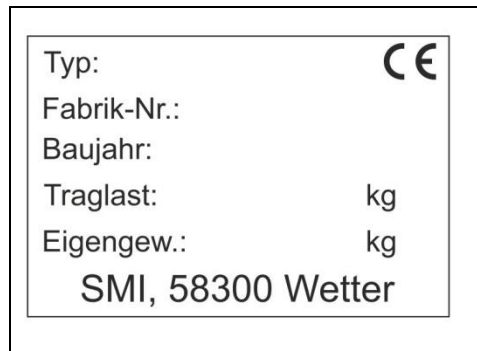
3 Valve position 3 (lowering):

The control valve opens. The vacuum inside the lift hose decreases. The lift hose lengthens and lowers the load.

Valve position 4 (release load)

The load is released by pressing the control handle all the way and tilting the control unit.

3.1.3 Rating plate, markings



The rating plate is located on the control unit of the vacuum lift.

Special markings are additionally attached to the load handling attachments.

3.2 Functioning

Precondition:

- The vacuum generator has been properly installed and is ready for operation.
- The swivel system / rail system has been properly installed and is ready for operation.
- The vacuum lift has been mounted in the swivel or rail system as intended and is ready for operation.

The operator mounts the appropriate load handling attachment onto the control unit by means of screws or a quick-change device. The load handling attachment is selected depending on the lift hose diameter and the surface texture of the load to be carried.

The operator then switches the vacuum generator on by turning the main switch to the "ON" position. A differential pressure is created within the vacuum lift, causing the lift hose to contract and the vacuum lift to return to its normal position.

The operator sets the balance of the normal position using the balance adjustment knob on the control unit for balancing without load.

Balancing of the vacuum lift without load

In operation with a running vacuum generator, a vacuum is generated within the lift hose. To prevent the lift hose from contracting without load, the leakage air enters through a choke valve. The leakage air reduces the vacuum inside the lift hose. The amount of air flow leakage is regulated by the balance adjustment knob without load.

The operator can use the control handle to open/close the control valve and thus regulate the vacuum in the vacuum lift. This allows the vacuum lift to be raised or lowered.

The operator uses the handle to guide the vacuum lift to the load to be carried. As soon as the load handling attachment is vertically above the load to be carried, the operator lowers the vacuum lift by pulling the control handle forward.

As soon as the load handling attachment or the suction foot is placed on the load, suction is applied to the load by a vacuum in the vacuum lift. When the control handle is operated, the vacuum lift is raised, including the load. To do so, the control handle must be pushed backwards and the balance must be adjusted with load using the balance adjustment knob.

Balancing of the vacuum lift with load

When lifting a load, it is preferable to balance the vacuum lift with load, in order to achieve a weightless condition. Balancing is carried out using the corresponding balance adjustment knob with load. This makes balancing possible to any desired height position.

After setting the optimum height with load, the vacuum lift is ready for handling loads and can be raised and lowered as described.

Load handling attachments and accessories

The choice of load handling attachment depends on the load to be lifted.

Vacuum grippers, mechanical load handling attachments and various attachments are possible to create the connection between the vacuum lift and the load. The holding force of the vacuum grippers is calculated with a safety factor of 2.0. Mechanical grippers operate with force- and/or form-fitting.

3.2.1 Safety devices

3.2.1.1 Non-return valve

The upper swivel device is equipped with a non-return valve, which allows air to flow through in only one direction. By using the non-return valve, the vacuum lift only lowers slowly if the power supply is missing or fails before the load is set down.

The non-return valve must be checked for function before each operation of the machine (e.g. at the beginning of a shift). If the non-return valve does not work, it must be replaced and the machine is not allowed to be operated.

3.3 Technical data



Please refer to the manufacturer's documentation for technical data of additionally purchased parts. The suppliers' documentation is part of this operating manual and is attached.

- Conveying technology (swivel, rail system)
- Vacuum generator

3.3.1 Dimensions and weight

Information on the dimensions and weight of the machine can be found in the quotation data.

3.3.2 Airborne noise emissions

A-weighted emission sound pressure level max. 78 dB(A)

3.3.3 Environmental conditions

Permissible ambient temperature in production	+10 °C up to +40 °C
Permissible ambient temperature in storage	+5 °C up to +40 °C
Permissible humidity	80 % relative humidity
Well-ventilated room, well-ventilated hall	

4 Transport and storage

The machine is delivered to the customer by SMI Handling Systeme GmbH or by an authorized transport company.

4.1 Inspection by the recipient on handover

When the machine arrives at the customer's plant it must be inspected for visible damage in transit. Report any damage in transit immediately to the truck driver.

The vacuum lift (lift hose, control unit) is supplied in components.

- Be careful during the delivery control work, and check whether the components correspond to the delivery note and are complete.
- Immediately report any damage in transit to the transporting organization.

4.2 Safety

Observe the following safety instructions when transporting the machine or machine components:

- The transport takes place in a box on a pallet. Removal from the transport vehicle may only be carried out using a forklift truck.
- The machine is only allowed to be transported by suitably instructed, qualified personnel (certified forklift operators) in compliance with all safety information.
- When unpacking the delivery, suitable lifting equipment (e.g. swivel system) is to be used. When choosing suitable lifting equipment and load handling attachments, always take the weight of the heaviest component into consideration.
- Wear protective clothing, safety shoes, safety gloves and a helmet during the work.
- Always have the transport route on site secured by an additional person.
- Make sure that nobody is in the transport route or beneath suspended loads.
- Always lift the machine slowly and carefully to ensure stability and safety.

Vacuum generator

- Avoid shocks and pressure on the vacuum generator.

4.3 Permissible transport aids

Shackles or hooks must be chosen in accordance with the transport weight of the machine/
component and must only be attached to the intended points.

Avoid contact between the carrying chains or ropes and the machine/component. If this is not possible, take action to prevent damage of the machine/component.

Set the suspension elements to a length that allows the machine/component to be transported at a horizontal level.

4.4 Intermediate storage

If the machine is not installed directly after delivery, it must be stored carefully in a protected location. The machine must be stored in such a way that it is protected from low temperatures, moisture, contamination from dirt and mechanical influences.

Please find the recommended storage conditions for the machine in "3.3.3 Environmental conditions".



No liability will be accepted for damage arising in the event of incorrect storage.

5 Installation

5.1 Information about installation hazards



WARNING

Trip hazard due to inappropriately laid power supply lines

- Lay all lines in the supply slot in such a way that they cannot be tripped over and do not cause an obstruction.
- Color highlight any tripping points that are unavoidable.



WARNING

Injury hazard due to unsuitable mounting material!

Unsuitable mounting material can result in serious injuries during operation.

- Only use the installation material supplied by the manufacturer.

Be careful during mounting so that no components are forgotten or incorrectly assembled.

5.2 Preparations

Prior to installing the machine, make sure

- the connections for the power supply (conveyor system, vacuum generator) have been prepared
- the necessary tools are available for assembly,
- the suitable floor space at the installation site is level, clean and dust-free.

5.2.1 Mounting the conveyor system (swivel, rail system)



WARNING



Dangers to man and machine due to faulty mounting

There are various injury hazards during the installation and mounting of additionally purchased parts. Furthermore, incorrect mounting can result in hazards for man and machine during operation.

- Observe the instructions in the manufacturer's documentation.
- Mount the conveyor system (swivel, rail system) according to the manufacturer's documentation.

5.2.1.1 Floor requirements



WARNING

Loss of stability

A loss of stability can lead to a considerable injury hazard (e.g. due to instability and overturning of the module).

- The floor must be level.
- The foundation must have the necessary load capacity.
The plant operator is responsible for the structural integrity of the foundations.
Always observe the foundation regulations of the manufacturer.

5.2.2 Mounting the vacuum generator



WARNING



Dangers to man and machine due to faulty mounting

There are various injury hazards during the installation and mounting of additionally purchased parts. Furthermore, incorrect mounting can result in hazards for man and machine during operation.

- Observe and follow the instructions in the manufacturer's documentation.
- The vacuum generator must be mounted in a well-ventilated room due to the fact that heat is generated during operation and warm air is emitted.



WARNING

Injury hazard due to the vacuum generator falling down

In case of a floor-free installation (installation at height) there are crushing and clamping hazards due to instability of the suspension and falling of the vacuum generator.

- Fasten the vacuum generator so that it cannot twist and fall down. The filter canister ought to be mounted in a place within reach, due to the fact that it must be continually maintained.

- Mount the vacuum generator according to the manufacturer's documentation.
- Remove the cover at the air inlet of the vacuum generator.
- Do not operate the vacuum generator without the dust filter installed.
- Check the direction of rotation of the vacuum generator motor in accordance with the attached indicator arrow. Also check if the outlet air is coming from the muffler.



The vacuum generator can be mounted at a distance of up to approx. 30 m from the vacuum lift.

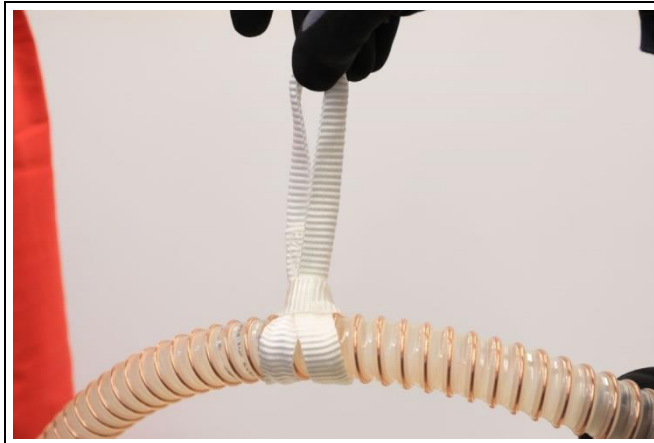
If a longer distance is required, contact your distributor.

5.2.3 Mounting the vacuum lift

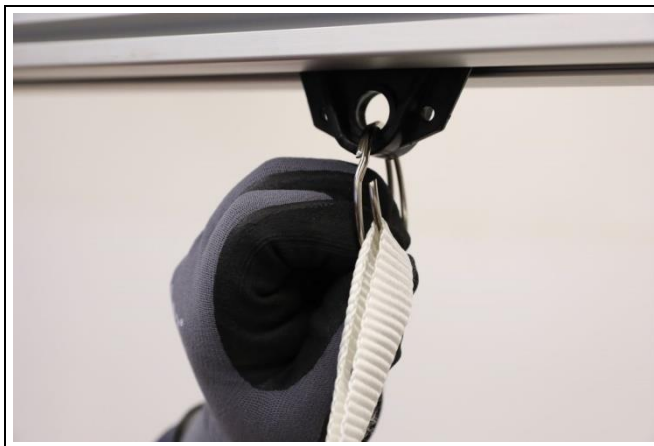
Precondition:

- The conveyor system (swivel/rail system) has been installed properly.
- The vacuum generator has been installed properly.

5.2.3.1 Suspending the supply hose



- Tighten one loop on each 1.5 m of supply hose.



Version 1: Eyelets

- Hook the loops into the eyelets on the rail system.



Version 2: Gliders

- Hook the loops into the gliders on the rail system.

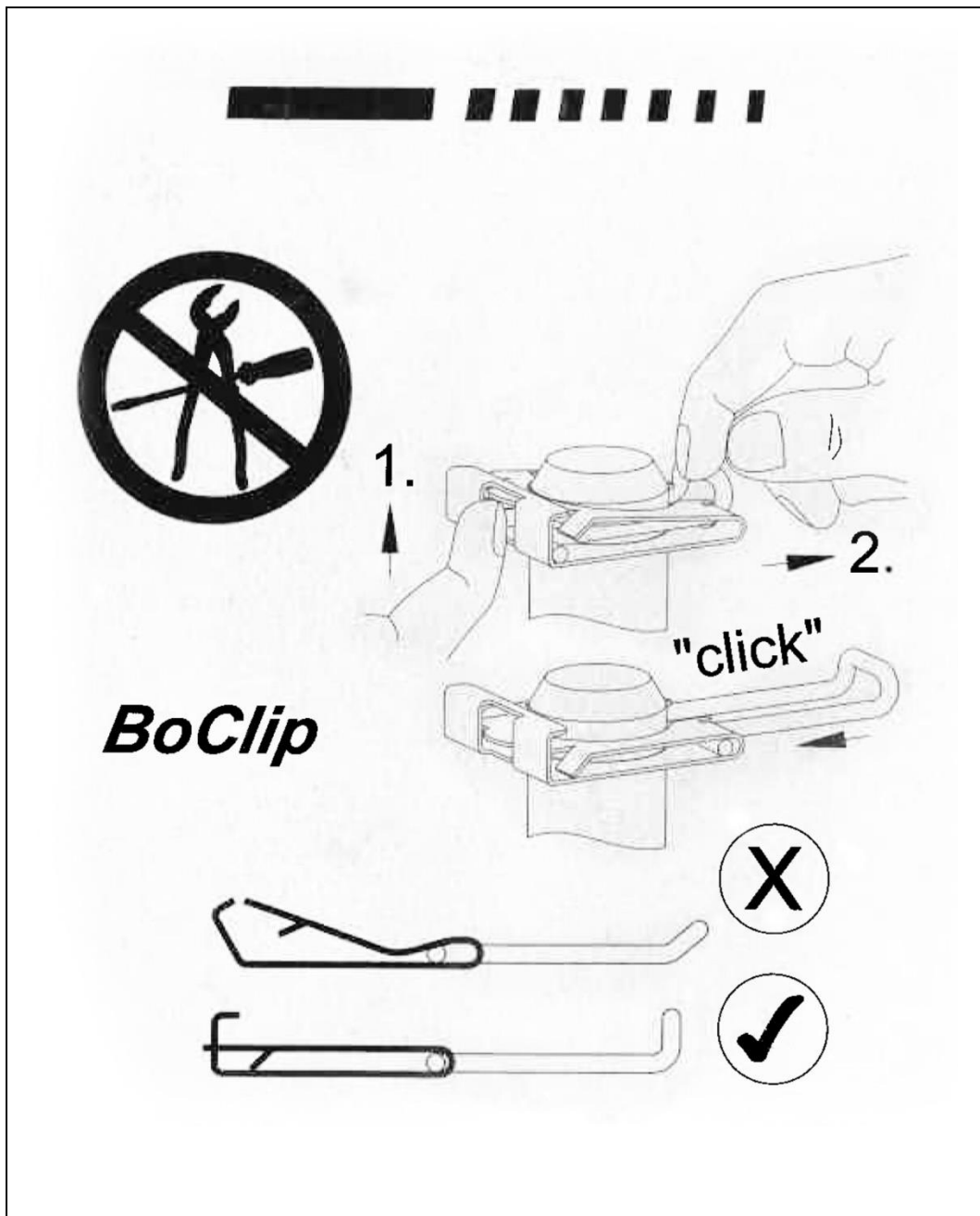


- Ensure that the supply hose is suspended in equally sized spirals (approx. \varnothing 500 mm).

5.2.3.2 Suspending the vacuum lift

The vacuum lift is hooked into the load trolley by means of a BoClip.

The use of the BoClip is presented in the following illustration:





- Hook the vacuum lift into the load trolley using the BoClip (2).
- Connect the end of the supply hose to the pipe bend (3) of the upper swivel unit on the vacuum lift and fasten the supply hose by tightening the hose clamp.
- Lay the supply hose (1) up to the vacuum generator.
- Properly connect the end of the supply hose to the vacuum generator and fasten the supply hose by tightening the hose clamp.
- Mount a suitable load handling attachment (see "5.2.4 Mounting the load handling attachment").
- Check if the suspension height of the entire device is correct. The suspension height is correct if, when the vacuum generator is switched off and the load handling attachment is mounted, the entire device has a clearance of at least 3 cm from the floor.
- Shorten the lift hose where necessary (see "5.2.5 Shortening the lift hose").

5.2.4 Mounting the load handling attachment



WARNING

Injury hazards through loads falling down due to the unsuitable load handling attachments.

Exceeding the maximum lifting capacities or the use of unsuitable load handling attachments may cause the load to suddenly fall down. There is a danger of crushing and clamping of feet.

If the load suddenly drops during the lifting process, the vacuum lift quickly jerks upwards. There is an impact hazard for the head (e.g. chin, nose).

- Only use suitable load handling attachments.
- Please note the maximum lifting capacities.



The load handling attachments are provided with markings (e.g. max. 120). The markings indicate that the load handling attachment may only be used up to mini smilift type 120, not for larger types.

The surface of the suction foot must be approx. 2.0 times larger than the surface of the lift hose. This is the only way to ensure safety and prevent loads from falling down.

The load handling attachment is mounted with 4 connecting screws. Optionally, a quick-change device can be used (for different loads).

- Mount the load handling attachment to the control unit by attaching the load handling attachment with screws or by screwing the quick-change device into the underside of the control unit at a 90° rotation.

5.2.5 Shortening the lift hose



WARNING



Cutting hazards due to sharp knives

To shorten the lift hose, a cutter knife must be used. There is a cutting hazard due to contact with the sharp blade.

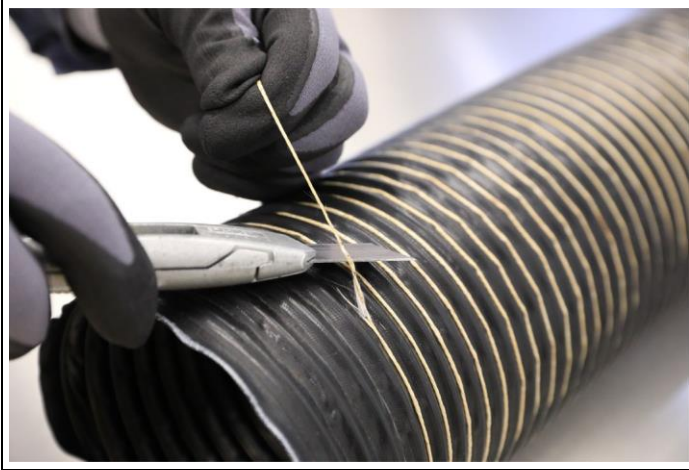
- **Do not** touch the sharp blade.
- Cut carefully and evenly.

Precondition:

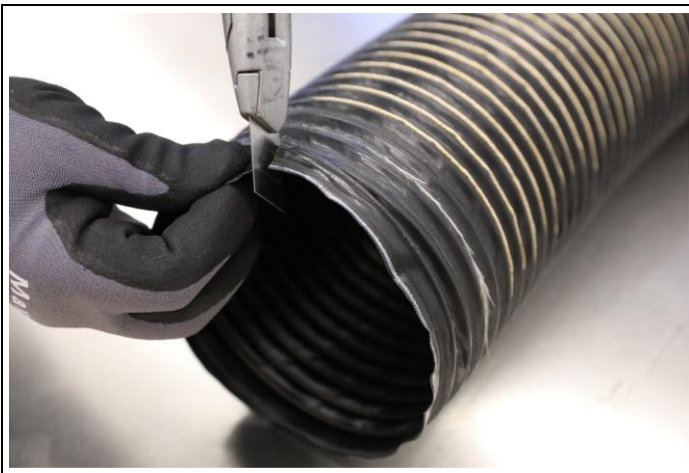
- The vacuum lift is not suspended from the swivel system.
- There is no load handling attachment placed on the control unit.
- Remove the protective hose covering and the tape from the suction head.
- Unscrew the lift hose from the hose adapter.
- Measure the length of the lift hose that must be shortened to allow the vacuum lift to hang 3 cm above the floor.
- Shorten the lift hose to the desired length and cut the wire with pliers.
Then carry out the following work steps:



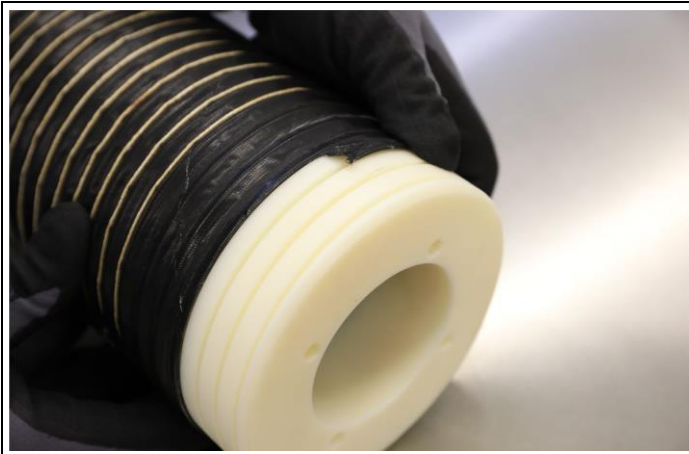
- Depending on the desired length, pull the cord off the hose (approx. 40 – 50 mm).



- Cut the cord with a cutter knife.



- Using a cutter knife, shorten the lift hose to the desired length. When cutting in, make sure there is a slight offset.



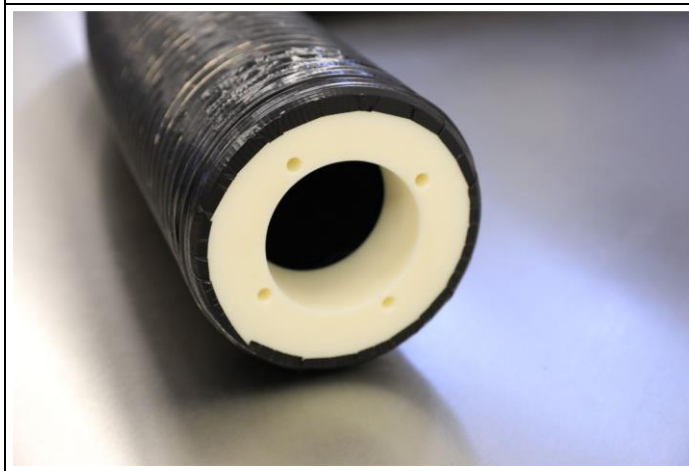
- Screw the hose adapter into the shortened lift hose.



- Cover the surface of the hose adapter with an adhesive strip.



- Tape the end of the hose adapter such that the adhesive strip protrudes slightly.



- Press the end of the adhesive strip onto the hose adapter so that no air can escape.

- Pull the hose-protection stocking back over the lift hose.

5.3 Connecting the power supply

5.3.1 Power supply



DANGER



Voltage

Connections to the power supply system are required for operating the vacuum generator and the conveyor system. If live parts are touched there is danger of an electric shock.

- Have work at electrical equipment only be carried out by electrical specialists who, as a result of their training, knowledge, and experience, are able to recognize and avoid potential hazards.



WARNING



Dangers to man and machine due to faulty connection

There are various injury hazards when connecting additionally purchased parts to the power supply. Furthermore, incorrect mounting can result in hazards for man and machine during operation.

- Observe and follow the instructions in the manufacturer's documentation for the conveyor system and the vacuum generator.

- Connect the additionally purchased parts properly to the power supply.

6 Commissioning

6.1 Safety measures to be taken before commissioning

Familiarize yourself with

- the components of the machine (vacuum lift, vacuum generator, swivel system, rail system)
- operator and system controls of the components,
- the equipment of the components,
- the mode of operation of the components,
- the immediate environment of the components,
- the safety devices of the components,
- and the measures for an emergency.

Carry out the following activities before commissioning:

- Inspect the machine and its components for visible damage; rectify any detected defects immediately or notify them to the supervisory staff – the machine must only be operated in a perfect state.
- Check and make sure that only authorized persons are in the machine's work area and that no other person is endangered by starting up the machine.
- Remove all objects and other materials from the machine's work area that are not needed for its operation.
- When operating the vacuum lift, please ensure that no persons are underneath the suspended load.
- Operate the control handle on the control unit smoothly and lightly. Practice handling before starting operation.
- Do **not** try to manually influence the lifting- or lowering movement.
- Never leave the vacuum lift with load attached for a longer period of time. The vacuum generator may become too hot and be damaged as a result.
- In the event of a power failure, pull back the control handle.

6.2 Performing the lifting test



CAUTION



Dangers to man and machine due to defective vacuum generator

Unusual noises coming from the vacuum generator may indicate a defect.

- Do not operate the vacuum generator in case there are unusual noises.
- Observe the instructions in the manufacturer's documentation for the vacuum generator.
- Contact the manufacturer.

Before operating the machine, it is necessary to perform a lifting test in order to check the machine and its components for proper function.

- Switch the machine on (see "7.2 Switching the machine on").
- Lift a load for the lifting test. Please note the maximum lifting capacities (see "7.1.1 Maximum lifting capacities").

Not lifting the load may mean the following:

- Vacuum in the lift hose too low, e.g. due to leaks.
- Load too heavy or leaking.

7 Operation

7.1 Safety measures during normal operation

- No components on the machine are allowed to be removed while the machine is in operation.
- Operating personnel must ensure that no unauthorized persons are in the machine's work area.
- Observe the load carrying capacity. Loose container lids must be tightly closed before lifting. Boxes must not be wet, otherwise they can tear. This causes the vacuum lift to move up rapidly and creates impact hazards.
- Please note the maximum lifting capacities of the machine (see "7.1.1 Maximum lifting capacities").
- Only lift the load vertically, diagonal pull is prohibited.
- Keep the vacuum lift away from the body when lifting the load.

Carry out the following inspection activities every day (before every shift):

- Inspect the machine for externally visible damage and leaks.
- Perform lifting test (see "6.2 Performing the lifting test").
- Simulate a power failure to check the function of the non-return valve. To simulate a power failure, switch off the vacuum generator with the load lifted. If the non-return valve is functioning properly, the vacuum lift incl. load will only lower slowly.

7.1.1 Maximum lifting capacities



WARNING

Risk of injury from lifting too heavy loads and using the wrong load handling attachment

- Take note of the specified maximum lifting capacities of the conveyor system.

The selection of a suitable load handling attachment is shown in the following table:

Type	mini sml 60	mini sml 80	mini sml 100	mini sml 120	mini sml 140
Lift hose diameter	60 mm	80 mm	100 mm	120 mm	140 mm
Lift hose surface	28.26 cm ²	50.24 cm ²	78.5 cm ²	113.04 cm ²	153.85 cm ²
Area of the suction foot required for 2-fold safety	56.52 cm ²	100.48 cm ²	157 cm ²	226.08 cm ²	307.7 cm ²
Required suction foot					
Required circular suction foot	85 mm	113 mm	142 mm	169 mm	197 mm
SMI suction foot as bellows suction cup or flat suction	100 mm	110 mm	150 mm	180 mm	200 mm
SMI suction foot as sponge rubber suction foot	160 mm	160 mm	210 mm	250 mm	250 mm
SMI rectangular suction foot	80x200 mm	80x200 mm	80x200 mm	90x245 mm	120x310 mm
SMI 2 rectangular suction feet adjustable on traverse	2x 80x200 mm	2x 80x200 mm	2x 80x200 mm	2x 80x200 mm	2x 80x200 mm
SMI H4 suction foot with 4-piece bellows suction cups	50 mm	75 mm	75 mm	110 mm	110 mm
SMI suction foot for sacks			170x300 mm	170x300 mm	170x300 mm
Load capacity at differential pressure					
Load capacity at -0.3 bar	8.5 kg	15 kg	23.5 kg	34 kg	46 kg
Load capacity at -0.45 bar	12.7 kg	22.5 kg	35 kg	51 kg	69 kg
Nominal load	10 kg	20 kg	35 kg	45 kg	60 kg

7.2 Switching the machine on

- Before switching on the vacuum generator, make sure that the load handling attachment is not touching the ground.
- Switches the vacuum generator on by turning the main switch to the "ON" position.
- Adjust the balance of the vacuum lift (see "7.3.1 Balancing of the vacuum lift without load").
- Adjust the balance of the vacuum lift (see "7.3.2 Balancing of the vacuum lift with load").

7.3 Operating the control panel

The control panel is operated via the control handle and the balance adjustment knobs with and without load.



WARNING

Dangers due to careless operation of the control handle

When lifting and lowering the load, there are injury hazards such as crushing and bumping due to uneven and sudden operation of the control handle.



- Only move the control handle up and down carefully and evenly.
- Avoid sudden movements.
- Practice lifting and lowering with the control handle a few times to get the best feel for the control handle.



WARNING

Hazards due to suspended loads

When transporting loads and during balancing with load, there is a risk of crushing and clamping of feet by lifting and lowering the load.

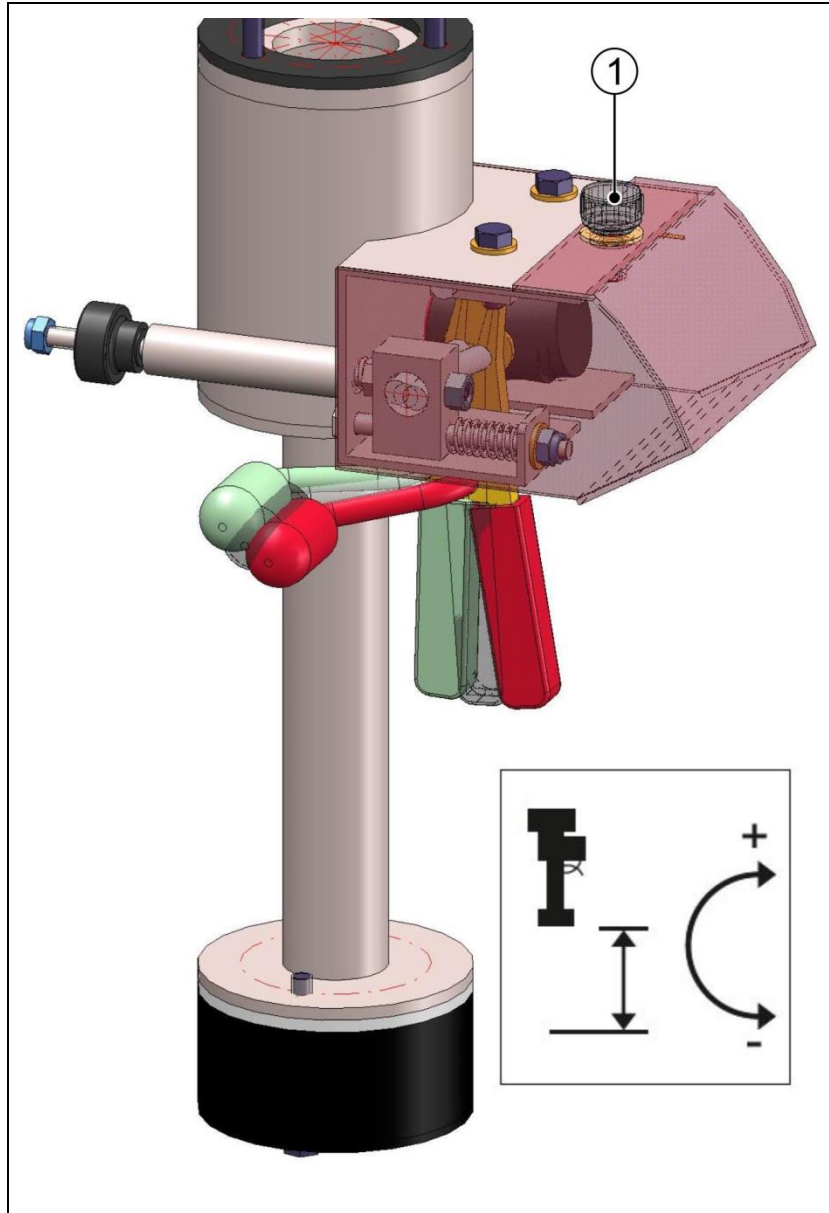


- Never walk or stand under suspended loads.
- Adjust balance slowly and carefully using the balance adjustment knob on the front of the control unit (1).

7.3.1 Balancing of the vacuum lift without load

When the vacuum generator is switched on, a vacuum is generated within the lift hose.

To prevent the lift hose from contracting without load, the leakage air enters through a choke valve. This leakage air reduces the vacuum inside the lift hose.



The air flow leakage can be adjusted by turning the balance adjustment knob (1) on the rear of the control unit.

- Adjust an optimal balance (e.g. chest height) of the vacuum lift without load.

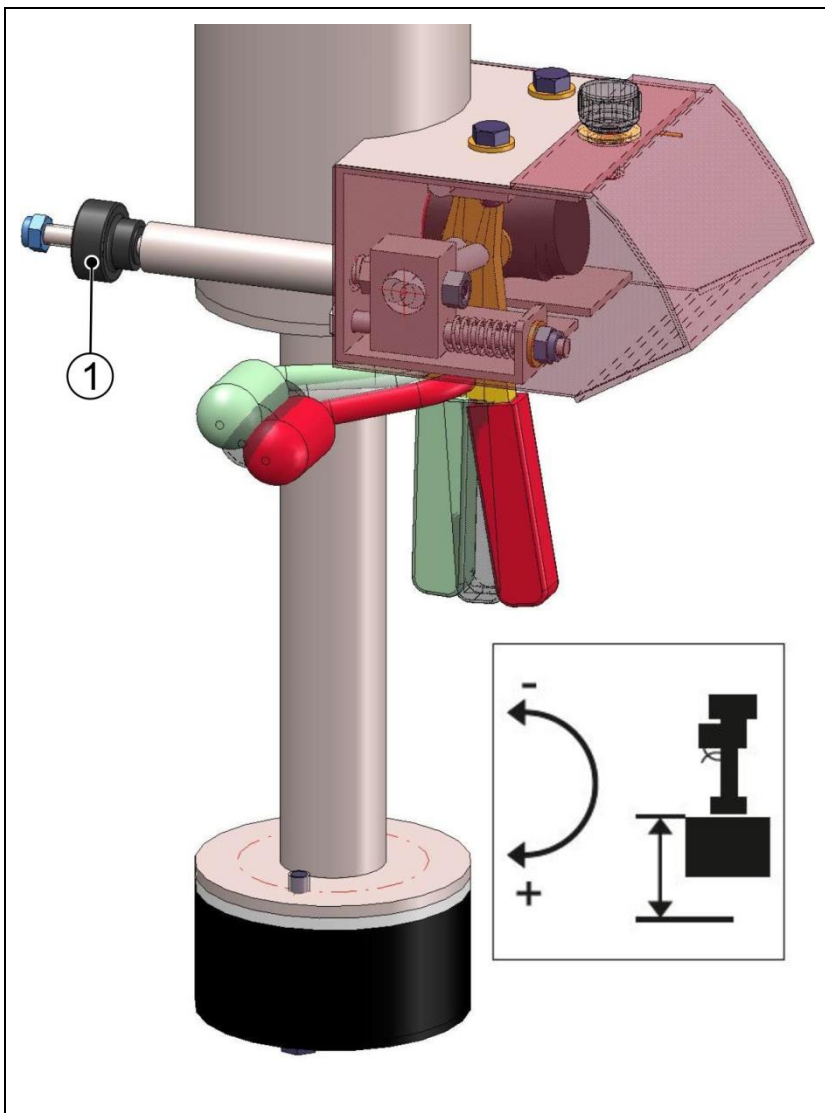
7.3.2 Balancing of the vacuum lift with load

When lifting a load with the vacuum lift, it is preferable to balance the weight with load, in order to achieve a weightless condition.

Another benefit from balancing the load to a weightless state, is that a middle position of the control handle reaches a similar length of stroke upwards as well as downwards.

More sensitive handling is possible by an optimal balancing.

When handling loads of different weights, adjust the vacuum lift roughly according to the average weight.



The balance of the vacuum lift with load is adjusted using the balance adjustment knob (1) on the front of the control unit.

- Adjust an optimal balance (e.g. chest height) of the vacuum lift with load.
- Re-adjust an optimal balance (e.g. chest height) of the vacuum lift without load.

7.3.3 Lifting and lowering the load



WARNING

Injury hazards due to falling of the load through use of manual force

Attempting to influence the lifting and lowering process with manual force will cause the load to suddenly fall. There is a danger of crushing and clamping of feet.

If the load suddenly drops during the lifting process, the vacuum lift quickly jerks upwards. There is an impact hazard for the head (e.g. chin, nose).

- Do **not** attempt to influence the lifting and lowering process using manual force.
- Only use the control handle provided for lifting and lowering the vacuum lift.

NOTE

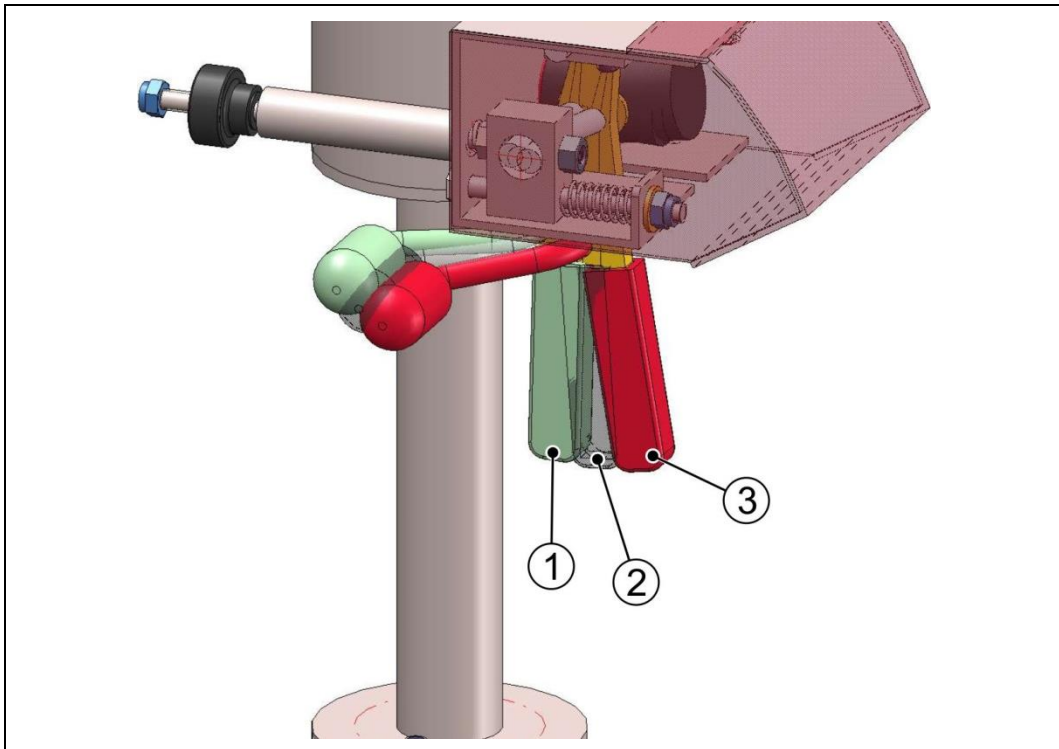


Dangers to machine due to increased load duration

The vacuum generator can heat up and be damaged if the load is in the lifted state for a longer period (>1 min).

- Do **not** leave the load lifted for a long time.

When the control handle is not actuated, the control handle is in the normal position (2).



Perform the following actions to lift the load:

- Guide the vacuum lift to the load to be carried. Use the handles at the front and back for this purpose.
- Lower the vacuum lift and guide the suction foot onto the surface of the load to be carried by pushing the control handle away from the handle (3). When placing the load, make sure that the suction feet are in full contact with the surface of the load.

The load is picked up by the differential pressure at the suction feet.

- Raise the vacuum lift including the load by pulling the control handle towards the handle (1).

The vacuum lift incl. load is lifted to the pre-set height when the control handle is pulled back (see "7.3.2 Balancing of the vacuum lift with load").

Perform the following actions to set down the load:

- Lower the vacuum lift including the load by pushing the control handle away from the handle (3).

When placing the load down, the load is released by tilting the suction unit.

- Lift the vacuum lift without load by pulling back the control handle (1).

8 Fault

8.1 Faults and remedial measures

Fault	Cause	Remedy
The vacuum lift is not lifting	Vacuum generator switched off or defective	Check operation and direction of rotation of the vacuum generator
	Vacuum hose or seals leaky	Check vacuum hose (supply line), lift hose and rubber seals for noises and proper fit, replace if necessary
The vacuum lift increasingly loses lifting power	Filter cartridge of the vacuum generator is contaminated	Check filter cartridge for impermeability to dust, clean where necessary
	Non-return valve leaking, jammed, worn	Check non-return valve, replace if necessary
	Load handling attachment leaking	Check the mounting of the load handling attachment on the control unit. Check for leaks. Check screw fitting.
	Supply line leaking	Check supply hose; replace if necessary

Malfunctions of additionally purchased parts

NOTE



In case of malfunctions of additionally purchased parts, please refer to the manufacturer's documentation provided:

- Vacuum generator
- Conveyor system

9 Maintenance

9.1 Safety measures when carrying out maintenance

Carry out the prescribed maintenance work like cleaning, maintenance, and inspection according to the prescribed intervals.

Heed the following points before doing maintenance work:

- Using the main switch, switch off the vacuum generator's central power supply. If possible, secure the main switch by padlocking it. Attach a warning sign against restarting on the main switch.
- Block off access to the working area of the machine. Make sure that no unauthorized persons are in the machine's work area.
- Ensure that all machine parts have cooled down to the ambient temperature.
- Ensure that appropriate hoists and other lifting equipment are available for replacing large machine parts (e.g. vacuum generator).
- Make sure you do not bend your back when working on parts fitted at a low level; always crouch. Make sure you are standing upright and your back is straight when working on parts fitted at a high level.
- Replace any imperfect machine parts immediately.
- Use original spare parts only.
- Make sure that suitable collecting containers are available for all materials that could jeopardize the groundwater (oils, coolants, cleaning agents and the like).

Carry out the following activities after maintaining and before switching on the vacuum generator:

- Check that all previously released screw connections have been retightened properly.
- Make sure that all previously removed covers have been refitted.
- Make sure that all tools, materials, and other equipment have been removed from the work area.
- Clean up the work area. Remove any leaked liquids and similar substances.

9.2 Inspection and maintenance work

9.2.1 Maintenance intervals

Maintenance point	Maintenance work	See section
Daily		
Complete machine	Visual inspection	9.2.3.1
Sealings	Check for leaks; replace if necessary	9.2.3.2
Non-return valve	Check function; replace if necessary	9.2.3.3
Every week		
Filter of the vacuum generator	Check function, cleaning where necessary according to manufacturer documentation	9.2.4.1
Every year		
Complete machine	Annual inspection according to DGUV regulation 52 §26	9.2.5.1
Special maintenance intervals		
Electrical equipment	Safety check	9.2.6.1
Vacuum generator	Maintain according to the manufacturer documentation	9.2.7.1
Conveyor system	Maintain according to the manufacturer documentation	9.2.7.2

9.2.2 Preparations



DANGER



Fatal injury hazard due to electric shock

Touching live parts may result in a fatal electric shock.

- Prior to carrying out maintenance and inspection work on the vacuum generator or the conveyor system, disconnect them from the power supply and secure them against being switched on again unexpectedly.



WARNING

Injury hazards during maintenance and repair work

Performing maintenance and repair measures can lead to various mechanical hazards (e.g. crushing, clamping, impact).

- The work is only allowed to be done by qualified technical personnel.

9.2.3 Maintenance – daily operations

9.2.3.1 Visual inspection of the entire machine

- Inspect the entire machine for
 - Mechanical damage
 - Damaged seals
 - Dirt deposits and
 - unusual noises.
- Report any damage to your supervisor immediately.

9.2.3.2 Checking for leaks

NOTE



Hazards due to incorrect spare parts

The use of incorrect spare parts can lead to material damage to the machine and to limited functionality of the machine.

- Please observe the spare parts lists of the manufacturer, SMI Handling Systeme GmbH. The suppliers' documentation is part of this operating manual and is attached (see "11.2 Documents in the annex").
- Use only original spare parts.

- Check the seals of the suction feet for leaks.
- Check that all screw fittings of the machine are firmly in place.
- Check the lift hose for leaks.
- Check the supply hose for leaks.

In case of leaks:

- Replace porous or damaged rubber seals.
- Tighten any loose screw fitting (at torques in line with the screw size and strength class).
- Replace the lift hose.
- Replace the supply hose.

9.2.3.3 Checking the non-return valve

NOTE



Hazards due to incorrect spare parts

The use of incorrect spare parts can lead to material damage to the machine and to limited functionality of the machine.

- Please observe the spare parts lists of the manufacturer, SMI Handling Systeme GmbH. The suppliers' documentation is part of this operating manual and is attached (see "11.2 Documents in the annex").
- Use only original spare parts.

- Check the correct function of the non-return valve by switching off the vacuum generator when the load is lifted.
- Replace the non-return valve if there is a defect.

The non-return valve is OK if the vacuum lift incl. load lowers only very slowly.

The non-return valve is defective if the vacuum lift is lowered jerkily or the load falls down.

9.2.4 Maintenance – weekly

9.2.4.1 Cleaning the filter of the vacuum generator

NOTE



For more information about maintenance work on additionally purchased parts, please refer to the suppliers' documentation (see "11.2 Documents in the annex").

– Heed the vacuum generator's manufacturer documentation.

- Check correct functioning of the vacuum generator.
- Check the filter of the vacuum generator and for soiling.
- Clean the filter of the vacuum generator where necessary.

9.2.5 Maintenance – annual

9.2.5.1 Annual inspection according to DGUV regulation 52 §26

- Carry out a visual and functional check according to DGUV regulation 52 §26.

9.2.6 Special maintenance intervals

9.2.6.1 Electrical equipment



DANGER



Fatal injury hazard due to electric shock

Touching live parts may result in a fatal electric shock.

- Only skilled electricians are allowed to work on the electrical equipment.
- Disconnect the electrical power supply to the machine before carrying out any maintenance and inspection work.

- Carry out the preparations (see "9.2.2 Preparations").
- Carry out safety checks in accordance with the country-specific guidelines and standards.

9.2.7 Maintenance of additionally purchased parts

NOTE



For more information about maintenance work on additionally purchased parts, refer to the suppliers' documentation (see "11.2 Documents in the annex").

- Vacuum generator
- Conveyor system

9.2.7.1 Maintenance of vacuum generator

- Carry out maintenance procedures according to the manufacturer's documentation

9.2.7.2 Maintenance of conveyor system

- Carry out maintenance procedures according to the manufacturer's documentation

10 Decommissioning and dismantling

WARNING

Hazard of severe injuries due to improper decommissioning/disposal!

- The procedures are only allowed to be carried out by authorized and trained personnel. The personnel must have practical experience in the maintenance and repair of the machine.
- Before dismantling work on the machine, switch the machine off.
- Wear protective clothing, safety shoes, safety gloves and a helmet during the work.
- In case of doubt, please contact SMI Handling Systeme GmbH.

10.1 Decommissioning / dismantling the machine

- Switch the machine off (see "7 Operation").

DANGER

Fatal injury hazard due to electric shock

There is a fatal injury hazard if work on the electric system is carried out by unqualified personnel.



- Only electrical specialists are allowed to carry out work at the electric system. Electrical specialists have been specifically trained to carry out work on electrical systems. They are aware of electrical voltage hazards and are able to maximize safety and minimize potential risks by taking the correct measures.
- Switch off the power supply to the machine prior to decommissioning and dismantling.

- Have power supply lines disconnected by qualified personnel.

10.2 Disposal of the machine

NOTE

Environmental harm due to inappropriate disposal

- Auxiliary materials or lubricants should not be allowed to enter groundwater, water bodies or the sewage system.
- Cleaning agents and auxiliary materials used to clean the machine must be disposed of in accordance with local regulations and in compliance with the instructions in the manufacturer's safety data sheets.



- Dispose of the machine in an environmentally friendly manner, separating the various materials.
- Dispose of lubricants and lubricating oils in conformity with valid regulations or, if necessary, contact SMI Handling Systeme GmbH.

11 Annex

11.1 EC Declaration of conformity

The EC Declaration of conformity for this machine is shown on the next page.

EC Declaration of conformity

(Translation of the original)

We

SMI Handling Systeme GmbH
An der Brille 5-7
D-58300 Wetter (Ruhr)

hereby declare that the machine

Vacuum lift mini smilift including

- Vacuum generator (additionally purchased)
- Conveyor system (additionally purchased)

complies with the basic safety requirements of the Machinery Directive 2006/42/EC for lifting loads such as boxes, containers, plates, and machine parts (max. 20 – 60 kg load capacity) by means of differential pressure.

The special technical documentation was prepared in accordance with the Machinery Directive 2006/42/EC. We oblige to transmit them electronically to the market surveillance authorities upon justified request within a reasonable time.

Additional directives and standards used:

- EN ISO 12100
- DIN EN 14238:2010-02

Person authorized to compile the technical documentation:

Wetter (Ruhr), 01.12.2022

(Mrs. Julia Fischer)

11.2 Documents in the annex

11.2.1 Supplier documentation

11.2.1.1 Vacuum Generator Operating Manual

11.2.1.2 Conveyor System Operating Manual

11.2.2 Spare parts list



The spare parts lists can be downloaded in PDF format.
Please visit our website for this purpose:

www.smi-handling.de

11.2.3 Spare parts drawings



The spare parts drawings can be downloaded in PDF format.
Please visit our website for this purpose:

www.smi-handling.de

11.2.3.1 Vacuum lift

11.2.3.2 Load bearing capacities