# Operating instructions

# FIPALIFT swift

SH.SWT.100
SH.SET.SWT.100.40
SH.SET.SWT.100.60

# EC declaration of conformity

**Company:**
FIPA GmbH
Freisinger Str. 30
85737 Ismaning / Germany
www.fipa.com

declares under its sole responsibility that the FIPALIFTswift:

**Einzelschlauchheber** SH.SWT.100
**Set mit 40 m³/h Pumpe** SH.SET.SWT.100.40
**Set mit 60 m³/h Pumpe** SH.SET.SWT.100.60

are referred to in this declaration are being produced according to the following regulations:

2006/42/EG (Machinery Directive)
2006/95/EG (Low Voltage Directive)
2004/108/EG (EMC-Guideline)

Rainer Mehrer,
CEO

Ismaning, March 2024

# Content


| | | |
|---|---|---|
| 1. | INTRODUCTION | 4 |
| 2. | SAFETY | 5 |
| 3. | PRODUCT DESCRIPTION | 6 |
| 4. | INSTALLATION AND COMMISSIONING | 8 |
| 5. | OPERATION | 13 |
| 6. | Tooling ACCESSORIES | 15 |
| 7. | MAINTENANCE | 15 |
| 8. | TROUBLESHOOTING | 16 |
| 9. | SPARE AND WEAR PARTS | 17 |
| 10. | DIMENSIONS | 18 |


**Symbols**

 Warning

 Important information

 Commissioning

 Check

## 1. INTRODUCTION

The FIPALIFTswift tube lifter is a lifting device whose lifting force and movement is based on vacuum. The device can be adapted to a wide range of applications. It can be used to lift various objects such as metal sheets, wooden panels, glass panes, doors, windows, boxes, cartons, sacks, barrels and drums. Many applications are possible.

The FIPALIFTswift tube lifter was developed to enable ergonomic and smooth working. It can be used to lift and move heavy loads very easily. It is very time-efficient, as there is no need to spend a lot of time attaching the load.

The operating manual contains a description of the safety rules, installation, operation, maintenance and troubleshooting as well as the technical data. Special versions of the FIPALIFTswift tube lifter are not described. Information on these products can be obtained from our Technical Sales Department
(+49 89 962489-0).

The device supplied may only be used for lifting objects for which it is designed in accordance with your inquiry and order confirmation. If you intend to use the lifting device for other objects, please contact our Technical Sales Department.

Peripheral equipment such as cranes, with which the FIPALIFTswift tube lifter is installed together, are not described in these operating instructions. Please refer to the individual descriptions of these system components.

Rainer Mehrer,
CEO

| | |
|---|---|
|  | **The design and construction of the tube lifter may not be modified under any circumstances without the approval of FIPA GmbH. Only original FIPA accessories and spare parts may be used. Unauthorized modifications and/or the use of third-party accessories and spare parts can cause serious personal injury during the lifting process and will invalidate the warranty.** |

## 2. SAFETY

Read these operating instructions carefully before first use and observe the following safety rules. The tube lifter FIPALIFTswift may only be operated and maintained by personnel who have read these operating instructions and fully understood the contents. Hang the operating instructions near the tube lifter so that they are easily accessible and draw the attention of the operator to them.

### SAFETY REGULATIONS

> The device must not be operated or maintained by persons who are under the influence of alcohol, drugs that impair perception such as sleeping pills or strong painkillers or other drugs. Other conditions such as circulatory problems or dizziness are also a criterion for prohibiting the ability to operate this equipment

> It is the responsibility of the operator to ensure that no personal injury occurs during operation.

> Safety shoes must be worn during operation.

> Never allow yourself to be distracted when working with the tube lifter and never distract the operator. Lack of concentration can lead to accidents.

> Do not work with loads that are heavier than the device is designed for.

> The tube lifter may only be used to lift loads that are packaged in such a way that they do not fall apart when lifted.

> Do not place the vacuum cup on surfaces that have loose areas, such as address labels or lids that could come loose.

> Do not place the vacuum cup on surfaces that are so slippery that the load could possibly slide out from under the vacuum cup (slip effect).

> Take particular care when handling sharp-edged objects such as metal sheets.

> Never use the FIPALIFT tube lifter to lift loads containing hazardous or explosive substances. Ensure beforehand that it is safe to work with.

> Position the vacuum cup vertically above the center of gravity of the object to be lifted.
The tube lifter with a raised load may only be operated in such a way that the load cannot fall and cause personal injury.

> Never pass lifted loads over people. People must not stand under the lifted loads.

> Do not set down the lifted load if this could cause injury to persons or damage to objects.

> The vacuum cup must not be used on people or animals.

> Never lift objects with the vacuum cup (suction cup) of the tube lifter for longer than 60 seconds. This may cause the vacuum pump to overheat and may damage it and/or cause it to malfunction.

> Never manipulate the tube lifter manually when raising or lowering it. Always use the control trigger to lift and low.

> A lifted load must not be left unattended.

> The standard tube lifter must not be operated in potentially explosive atmospheres. Electrical and mechanical components can generate sparks and vapors can ignite. A specially modified device is required for this application. Please contact our technical sales department.

| | |
|---|---|
|  | **Observe the rules and regulations of your national authorities and institutions for occupational safety and the operation of lifting devices!** |

**ⓘ Important information**

> The entire manual must be read in detail before installing and commissioning the system and you must familiarise yourself thoroughly with the system.

> The tube lifter should only be operated with slight manual force on the control handle in order to avoid violent movements when lifting.

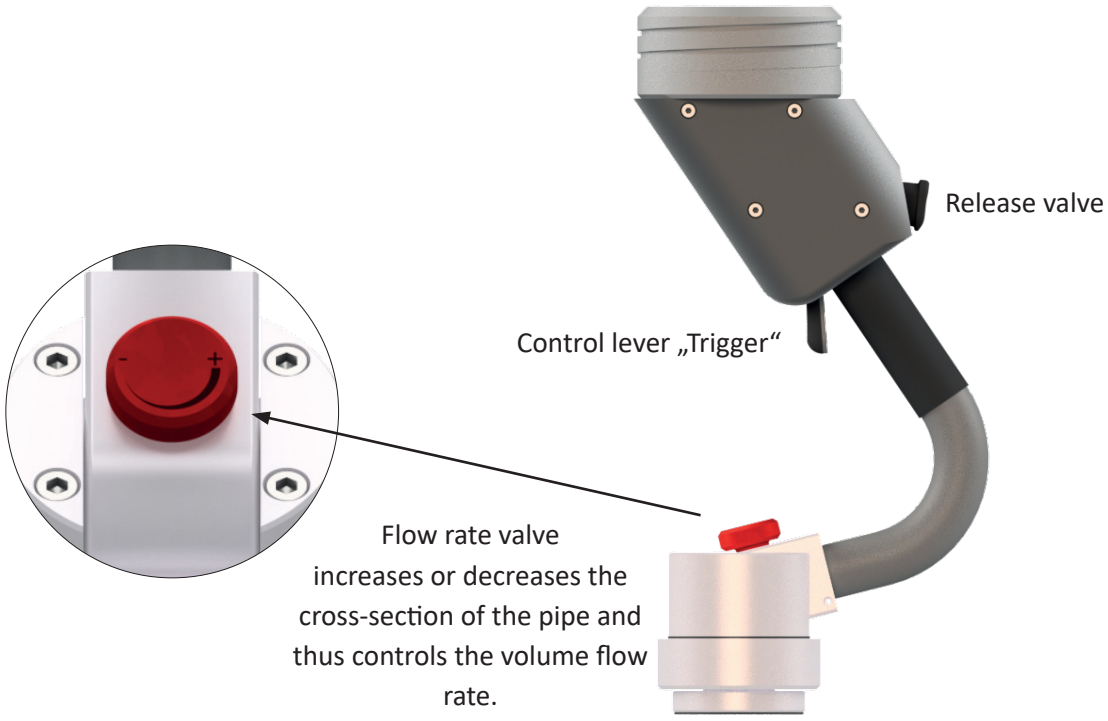
> During servicing and cleaning, the appliance must be switched off and isolated against being switched on again.

> The vacuum pump must be handled with particular care as it is sensitive to shocks and vibrations. We recommend the use of a soundproof box.

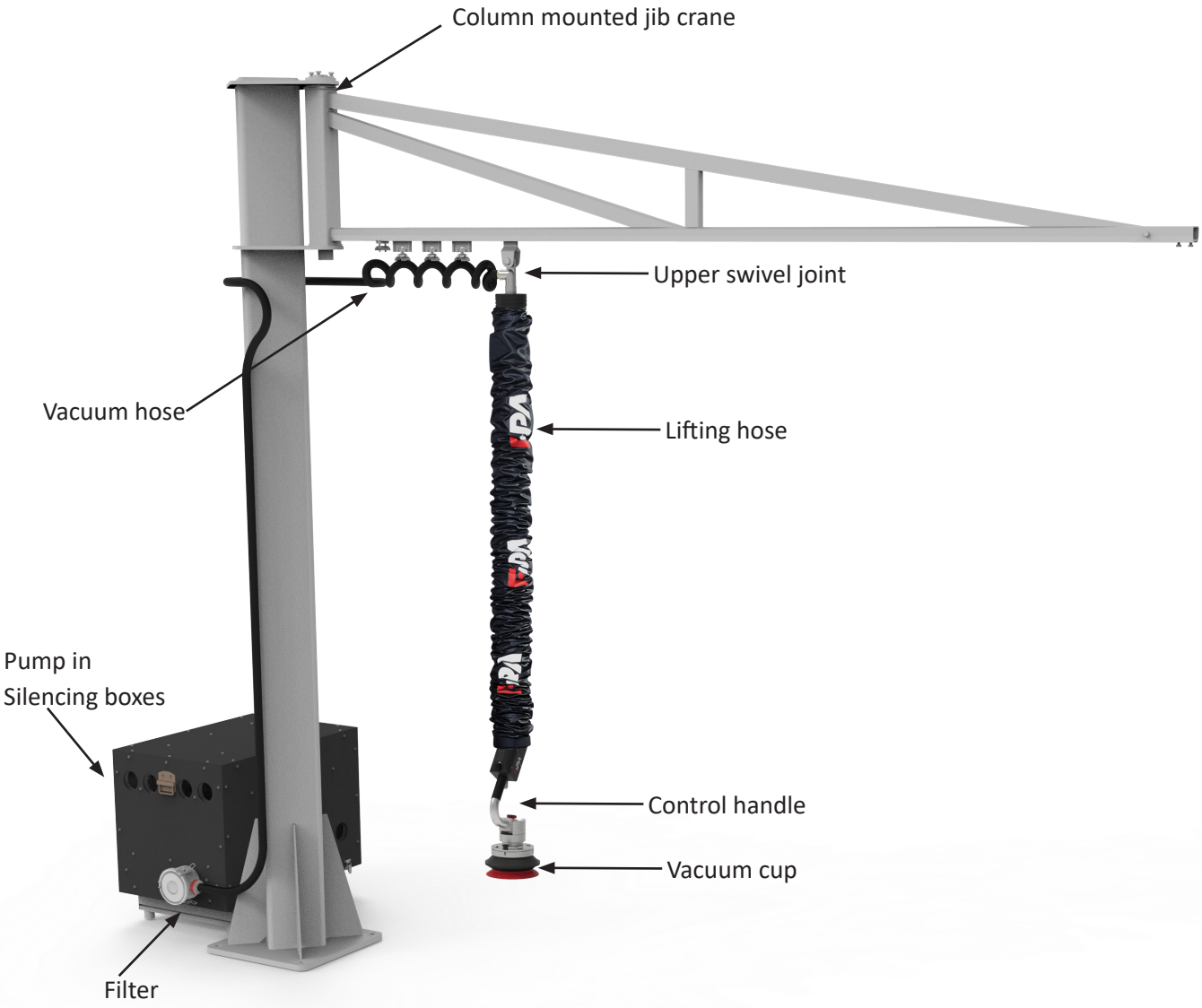
> The vacuum pump must not be operated without an air filter.

## 3. PRODUCT DESCRIPTION

**Control handle:**



**Example of a complete system:**



## 4. INSTALLATION AND COMMISSIONING

It must be ensured that the tube lifter supplied matches the delivery bill. If parts are missing, please contact our technical sales department. Problems during installation and the test run can be avoided if this manual is read carefully before installation! For safety reasons, it is essential to have in-depth knowledge of the equipment.
The FIPALIFT tube lifter is used together with an electric rotary vane pump. Please follow the instructions for the pumps carefully.

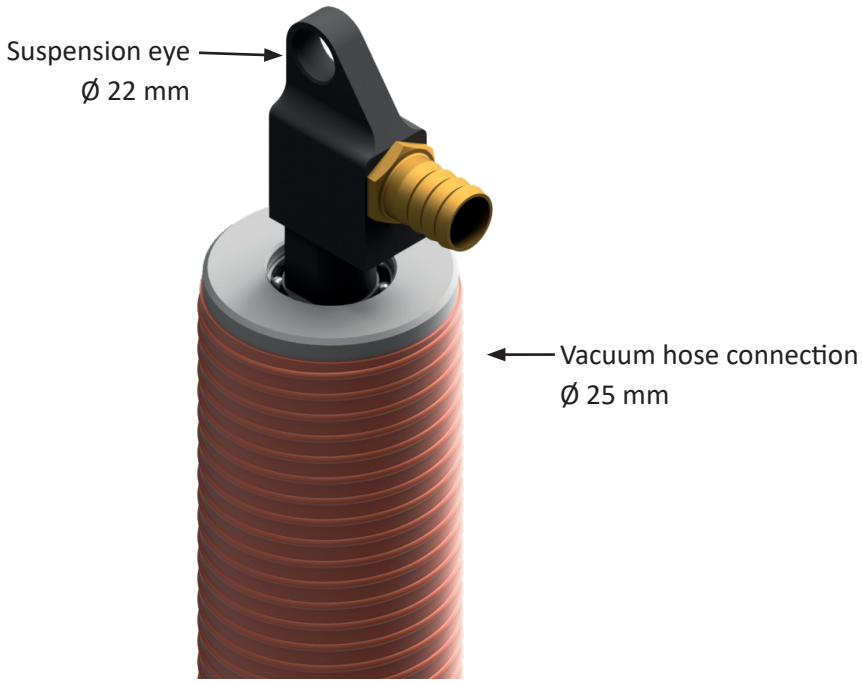
### Safety instructions for installation

> The person responsible for installing the FIPALIFT tube lifter must ensure that the suspension structure (e.g. the FIPA crane system or the FIPA jib crane or other) is sufficiently dimensioned to hold the dead weight of the tube lifter, including the maximum load plus a sufficient safety factor.

> The electrical installation must be carried out by a qualified electrician.

### Installing the tube lifter

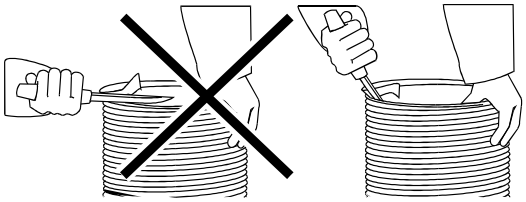
> The lifting unit is attached to the suspension eye. Ensure that the fastening elements are sufficiently dimensioned and, if necessary, adequately secured.




> When the lifting unit has been suspended, the vacuum cup should be 100 mm above the floor surface. If the vacuum cup is closer to the floor, the hose must be shortened or the suspension system must be raised.

ⓘ **It must be ensured that the tube lifter can still be reached by the operating personnel in the highest position and that the desired working height is achieved. If this is not the case, the length of the lifting hose must be adjusted and/or the height of the suspension changed.**

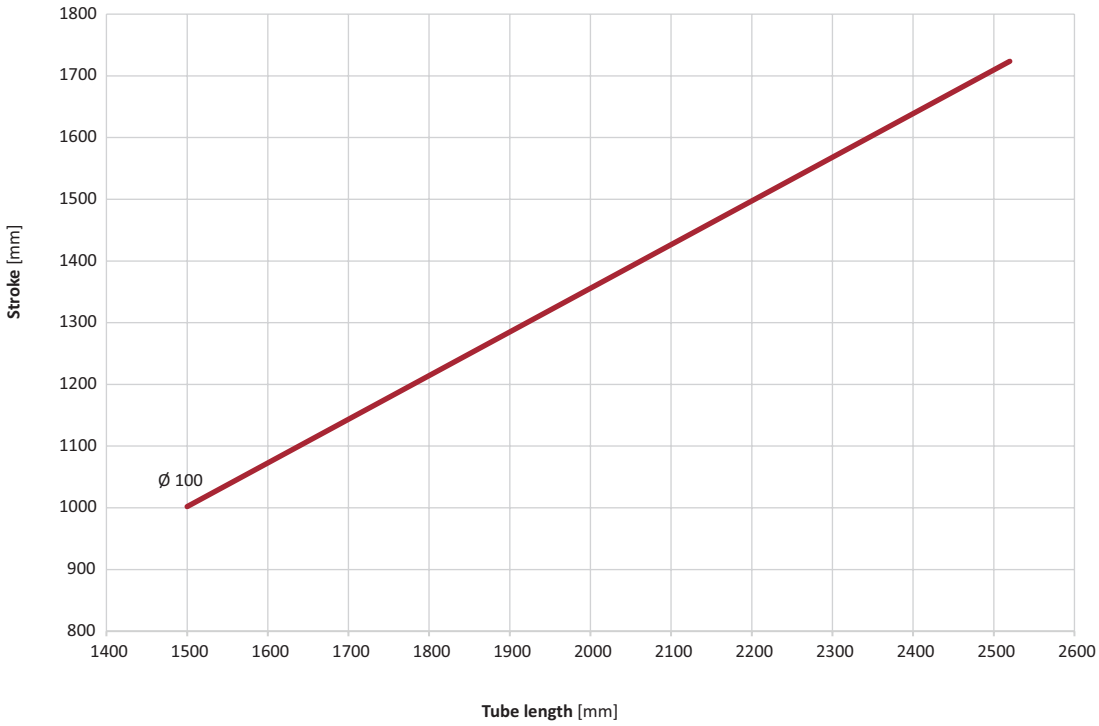
**Instructions for shortening the lifting hose**



Loosen the protective cover of the operating handle, remove the black tape and unscrew the lifting hose from the plastic adapter. Measure the length of the lifting hose by which it must be shortened to give the FIPALIFT tube lifter the correct height above the ground.

**Step 1:** Cut the lifting hose to length and cut away the spiral wire.
**Step 2:** Cut away the excess fabric and orange adhesive tape. If you proceed as shown in the illustration, the spiral wire will not detach from the fabric.
**Step 3**: Remove about 20 mm of orange tape from the spiral wire.
**Step 4:** Remove about 2 turns of the white cord from the cut end.
**Step 5:** Screw the lifting tube back onto the plastic adapter.
**Step 6:** Then cover the lifting tube and the plastic adapter with reinforced adhesive tape, (FIPA article number SH.SPP.ALL.0034). The adhesive tape must be stretched tight.
**Step 7**: Pull the protective cover back over the hose.

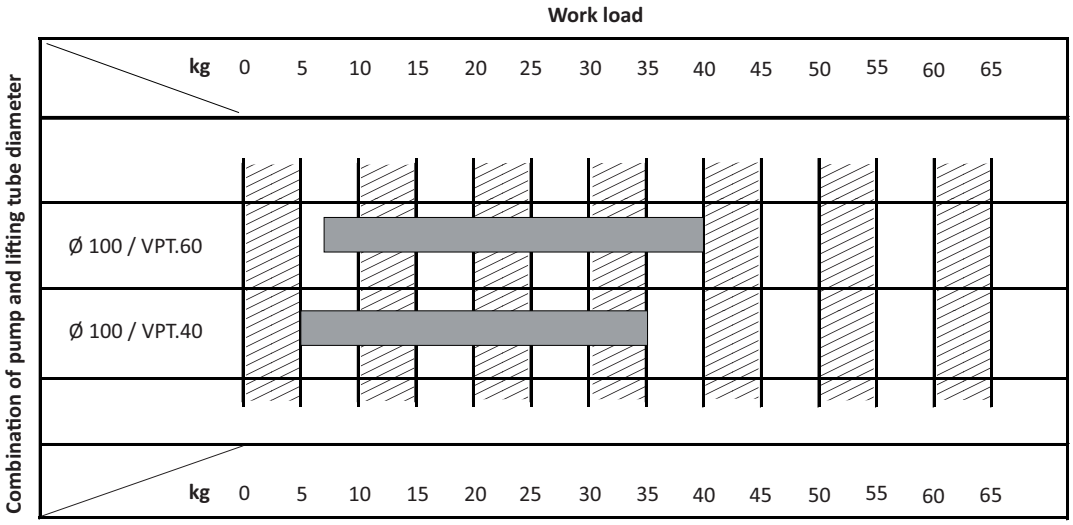
**Stroke with lift hose length**



**Selecting the vacuum pump**

The selection depends heavily on the nature of the load to be lifted; lifting tests may be necessary. Please contact our technical sales department regarding the correct design (+49 89 962489-0).

**Lifting hose diameter/pump combination**




The bars in the diagram show the recommended load weights that can be handled by the respective tube lifter/ pump combination. The recommendations are based on appropriate lifting speeds. A light load is lifted faster than a heavy load. A non-porous load, such as a steel sheet, is lifted faster than a porous load, such as cardboard. Do not use the tube lifter/pump combination for heavier loads than those recommended.

The pumps are included in the scope of delivery of the sets, the following pumps are available in combination with the FIPALIFT:

## Technical data: Rotary vane pump dry-running

| Item no. | VPT.40A-3-EU | VPT.60A-3-EU |
|---|---|---|
| **Motor type** | 3-phasig for the european market | 3-phasig especially for the North American market |
| **Rated power at 50 Hz [kW]** | 1.25 | 2.2 |
| **Rated power at 60 Hz [kW]** | 1,5 | 2,6 |
| **Power supply at 50 Hz [V]** | 190-255 / 330-440 | 230 / 400 |
| **Power supply at 60 Hz [V]** | 190-290 / 330-500 | 230 / 400 |
| **Current consumption at 50 Hz [A]** | 5.2-6.2 / 3.0-3.6 | 8.2 / 4.8 |
| **Current consumption at 60 Hz [A]** | 6.9-5.7 / 4.0-3.3 | 9.0 / 5.2 |
| **Suction power at 50 Hz [m3/h]** | 40 | 55 |
| **Suction power at 60 Hz [m3/h]** | 48 | 66 |
| **Sound pressure level at 50 Hz [dB(A)]** | 67 | 71 |
| **Sound pressure level at 60 Hz [dB(A)]** | 72 | 73 |
| **Suitable motor protection switch** | SH.ACC.ALL.0210<br>SH.ACC.ALL.0211<br>SH.ACC.ALL.0081 | SH.ACC.ALL.0211<br>SH.ACC.ALL.0212<br>SH.ACC.ALL.0082 |

## Installing the electric vacuum pump

> The vacuum pump must be positioned as close as possible to the lifting unit in order to minimize the length of the vacuum hose. If the FIPALIFT tube lifter is to lift loads as quickly as possible, it is particularly important that the vacuum hose between the vacuum pump and the lifting unit is not too long. A long vacuum hose reduces the lifting unit‘s ability to utilize the full capacity of the vacuum pump. It is recommended that the hose between the vacuum pump and the lifting unit is no longer than 30 m. If a longer hose is required, please contact our technical sales department.

> The vacuum pump must be installed in a well-ventilated area as it radiates heat. Ensure that there is at least 300 mm of free space around the pump and that no loose objects can cover the pump‘s ventilation openings.

> If the pump is not installed on the floor, ensure that it is mounted securely so that it cannot fall or tip over.

> The electrical installation must be carried out by a qualified electrician.

> Remove the cover from the vacuum inlet of the pump.

> The pump may only be operated when the filter is connected.

> Check the direction of rotation using the direction arrow on the electric motor and check whether air is escaping from the silencer. The pump can be damaged if it runs in the wrong direction.

> If several FIPA tube lifters are installed, the vacuum pumps must be labeled to make it clear which pump is connected to which tube lifter.

> Please also observe the operating instructions for the respective pumps.

| | |
|---|---|
|  | **The system may only be put into operation after a qualified electrician or electrician has installed a motor protection device. If a motor protection device is not installed, there is a risk of fire!** |

**Installing the vacuum hose and air filter to the vacuum pump**

> To begin with, attach the vacuum hose to the suspension system on which the lifting device is mounted (e.g. the FIPA crane system or the FIPA slewing jib crane or others). Attach the vacuum hose to the upper swivel joint of the lifting unit and to the air filter.

> Make sure that the vacuum hose cannot be pinched along its entire length or come into contact with anything that could damage it.

> Use the vacuum hose Ø 25 mm FIPA article number SH.ACC.ALL.0020

**Test operation and initial acceptance**

> Lift a load with a completely airtight surface. Allow the load to hang freely from the lifting device and listen for hissing noises throughout the device to ensure that no leaks have occurred during installation.

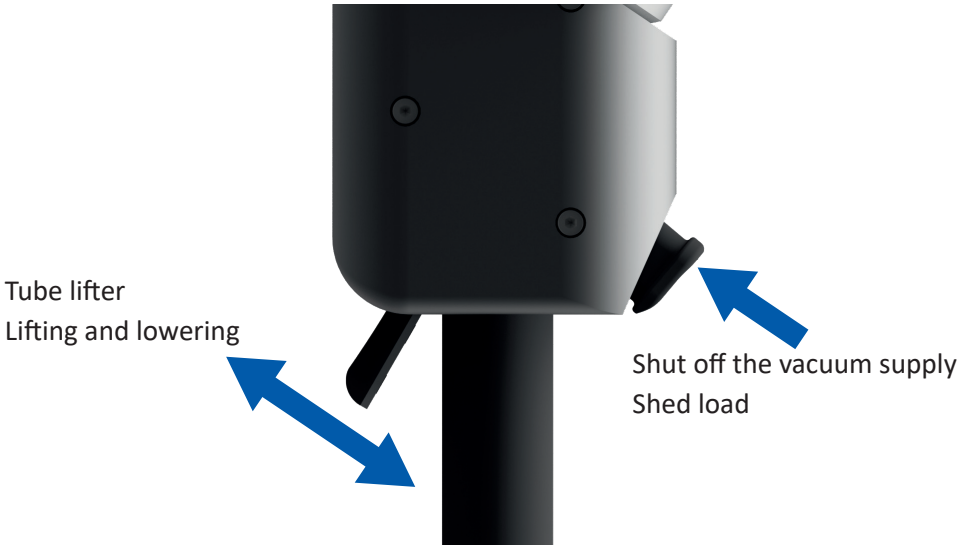
> Lift a load with an air-impermeable surface of about 5 kg. Allow the load to hang freely on the tube lifter and then switch off the vacuum pump. The load and lifting unit should now slowly sink to the floor. If this is not the case, please contact our technical sales department.

> Lift a load with a completely airtight surface and the maximum permissible weight for this version. See the „Troubleshooting“ section if the load is not lifted.

> Once the FIPALIFT tube lifter has been correctly installed on a suitable crane system, a plate with the maximum permitted load must be attached to the control unit. The maximum permitted load must correspond to the maximum load of the installed tube lifter and the maximum load of the lifting system. Please note that these plates are not supplied by FIPA.

## 5. OPERATION

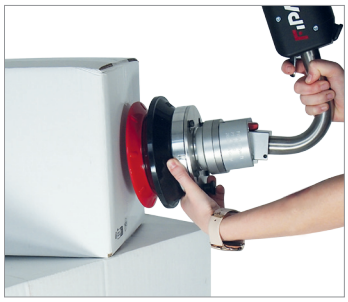
Use




Lifting and lowering: Pulling the „trigger“ operating lever lowers the tube lifter. The trigger is spring-loaded; if it is left unactivated, it returns to its original position and the tube lifter is raised. Actuate the operating lever slowly and carefully, first familiarise yourself with the device without a load.

**Gripping the load from above**

> Fully press in the „Trigger“ operating lever and place the vacuum cup on the load to be lifted. Release the lever completely or partially to lift the load.



**Gripping the load from the side**

> Turn the vacuum cup forwards if the load is to be held from the side.

> Do not lift the load with surfaces that have loose areas. These areas could become loose, be sucked into the vacuum cup and the load could fall!

> Only lift loads that are so stable that they will not fall apart when lifted.

ⓘ Grip the load from the side if the upper side does not have a suitable non-slip surface.

**Rotating the load**

> The entire control unit with the load can be rotated.

> The load can be rotated freely, even if the control unit is held in place.

ⓘ The ability to rotate the load even when the control unit is stationary is particularly helpful when the load needs to be manoeuvred into tight spaces.

## Releasing the load

**Per release valve**

> Press the release valve and the load is released and can fall down freely.

> Only use the release valve if it is certain that a free-falling load cannot cause personal injury.

> Only use the release valve if the load could not be damaged by a free fall.

> Caution! Suddenly shutting off the vacuum supply can cause the tube lifter to lift briefly.

ⓘ The release valve can be used, for example, when the load is dropped into a deep container.

ⓘ The use of the release valve may also be necessary for particularly light loads.

**Using the „Trigger“ control lever**

First pull the operating lever slowly until the load is in position and then suddenly pull it all the way to the stop. The immediate supply of atmospheric air causes the vacuum on the suction cup to collapse immediately and the load is released.

## 6. TOOLING ACCESSORIES

| Item no. | Description | Safety factor for Ø 100 mm |
|---|---|---|
| SH.ACC.PRO.0010 | Varioflex® bellows vacuum cup Ø 160 | 2 |
| SH.ACC.PRO.0011 | Varioflex® bellows vacuum cup Ø 200 | 2,4 |
| SH.ACC.PRO.FH-E3020 | FORMHAND for tube lifter 30 x 20 cm | 5,6 |
| SH.ACC.PRO.0050 | Traverse quadruple rigid 4x Varioflex® Ø115 mm | 3,3 |
| SH.ACC.PRO.0051 | Traverse quadruple rigid 4x Varioflex® Ø115 mm | 3,3 |
| SH.ACC.PRO.0052 | Traverse quadruple rigid 4x Varioflex® Ø160 mm | 6,25 |
| SH.ACC.PRO.0053 | Traverse quadruple rigid4x Varioflex® Ø160 mm | 6,25 |
| SH.ACC.OHO.0040 | Load hook with safety valve | Not necessary |

These accessories have been tested together with the FIPALIFTswift and their safe use is guaranteed when used as intended.

## 7. MAINTENANCE

The maintenance instructions must be followed exactly so that the system functions safely and the lifting properties are not impaired. If faults are detected in the system, they must be rectified immediately before the FIPALIFTswift tube lifter is put back into operation.

> During service work, the appliance must be switched off and secured against being switched on again.

> Only original FIPA spare parts should be used for maintenance and repair work. FIPA original spare parts are matched to the necessary loads and forces of the tube lifter; the use of other spare parts can lead to serious defects and invalidate the warranty.

### Daily maintenance and inspection

> Under dusty or dirty operating conditions, the filter must be checked daily. Shake out the filter and clean it with a hoover. Damaged filters or filters that can no longer be cleaned must be replaced.

### Weekly maintenance and inspection

> Test to check whether a power failure leads to a rapidly decreasing load:
**Step 1:** Start the vacuum pump.
**Step 2:** Lift a load with a completely air-impermeable surface and a weight of about 5 kg.
**Step 3:** Switch off the vacuum pump and simultaneously release the control trigger.
**Step 4:** The load should now slowly sink to the ground. If the load drops too quickly, the tube lifter must not be used until the fault has been rectified. Please contact our technical sales department.

> Check whether the filter is clogged or damaged.

> Check whether the vacuum cup is damaged.

> Check whether the lifting hose is damaged.

> The lifting hose becomes longer over time. Check the length of the lifting hose and ensure that the vacuum cup does not touch the floor. If necessary, shorten the suction hose, see page 9.

**Three-monthly maintenance and inspection**

> Check that the suspension eye and the crane system to which the FIPALIFT tube lifter is attached are in perfect condition.
***If parts are damaged, the tube lifter must not be used until the fault has been rectified. Please contact our technical sales department!***

> Check that the bolts and nuts of the fastening system are tight and secured if necessary.

> Check that the vacuum hose and the lifting hose are airtight and not pinched.

## 8. TROUBLESHOOTING

**Error: The load is not lifted or it is lifted more slowly than usual.**

- Is the air filter clogged?
- Shake out the filter and clean it with a hoover. Replace the filter if it is damaged.

- Is the cover cap of the filter unit correctly installed?
- Tighten the cap correctly.

- Does the system have any leaks? Place the vacuum cup (suction cup) on an airtight, flat board. Pull the operating handle upwards and check the vacuum hose, connections, air filter, upper swivel joint, lifting hose, control unit and vacuum cup for hissing noises.
- Seal leaks or replace leaking components.

- Are there any impurities in the vacuum cup?
- Remove impurities from the vacuum cup.

- Is the vacuum hose jammed somewhere?
- Seal leaks or replace vacuum hose.

- Carry out a test to check whether a power failure causes the load to drop quickly. (See „Weekly maintenance“)

- Is the load to be lifted too heavy? Check whether the weight corresponds to the lifting capacity of the FIPALIFT tube lifter supplied.

- When using a quick-change adapter: Is there a sealing ring on the lower connection piece?

**If you are unable to rectify the fault yourself, please contact our technical sales department.**

| | |
|---|---|
| ⓘ | **If the load is not lifted, this may be due to the fact that no vacuum is being generated in the lifting hose and/or vacuum cup. This is usually caused by a leak in the load or in the lifting device.** |

**Fault: The load is lifted very slowly at the beginning, but faster as the lifting height increases.**

- Is there a leak in the lifting hose?
- Replace the lifting hose without fail.

- Is there a leak in the vacuum hose?
- Seal the leak or replace the vacuum hose.

**Error: It is impossible to set the desired neutral position without load.**

- Unscrew the control unit from the lifting hose.
- Check that no impurities have accumulated in the equalising valve.
- Remove the impurities.

**Error: The vacuum pump does not start.**

- Please contact the person responsible for the electrical installation or our technical sales department.

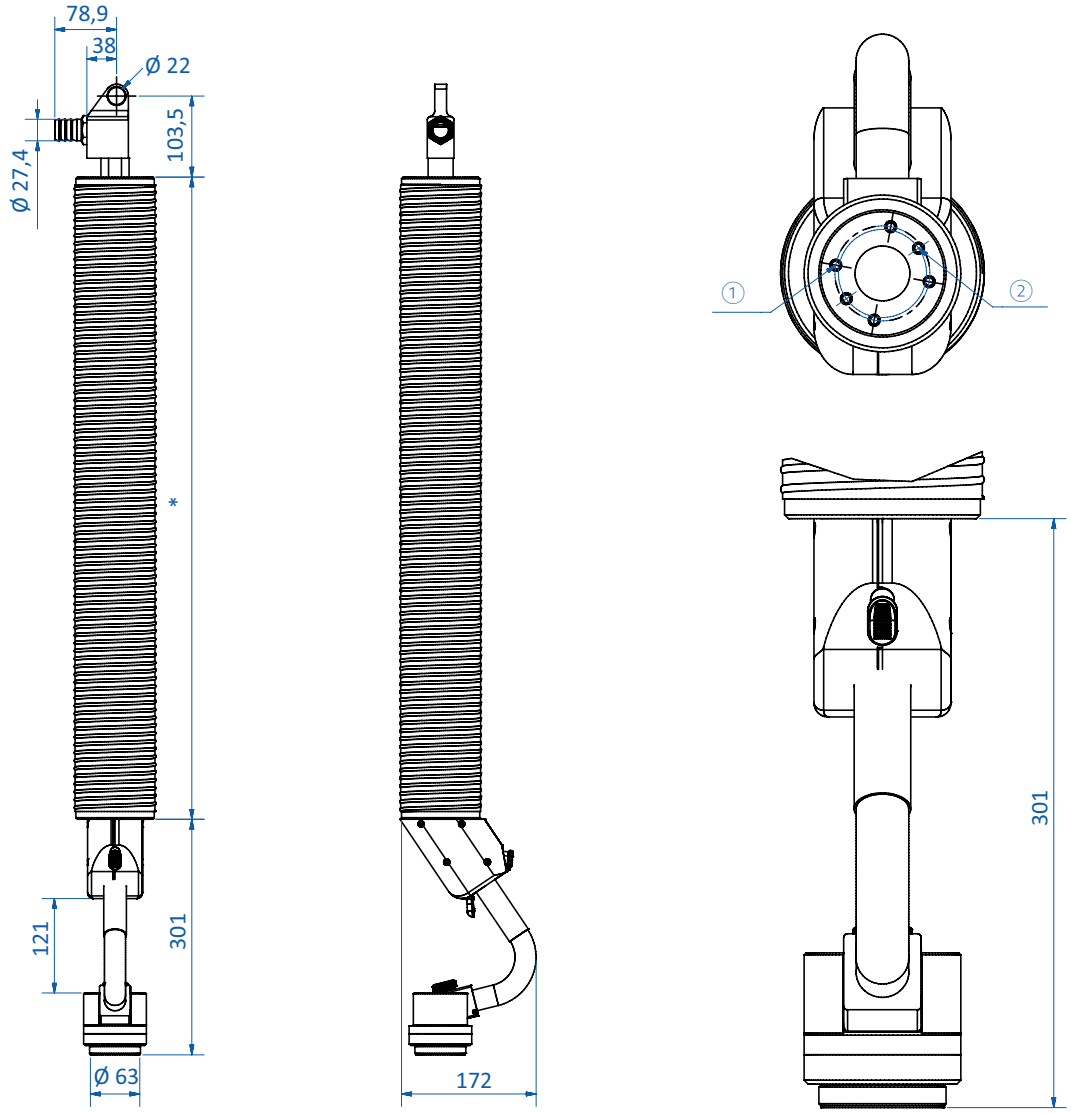
**Error: Extraneous noise from the vacuum pump.**

- Please switch off the vacuum pump and contact our technical sales department.

## 9. SPARE AND WEAR PARTS

| Item no. | Designation | Note |
|---|---|---|
| SH.SPP.ALL.0016 | Lifting hose Ø 100 mm x 2500 mm | |
| SH.SPP.ALL.0103 | Protective cover for lifting hose | |
| SH.SPP.SWT.0010 | Operating handle FIPALIFTswift cpl. for Ø 100 mm lifting tube | |
| SH.SPP.SWT.0014 | Housing parts Operating handle FIPALIFTswift | |
| SH.SPP.SWT.0015 | Finger pad for trigger FIPALIFTswift | |
| SH.SPP.SWT.0016 | Release button FIPALIFTswift | |
| SH.SPP.SWT.0017 | Adjusting screw for flow rate valve | |
| SH.SPP.SWT.0020 | Upper swivel joint cpl. for Ø 100 mm lift hose | |
| SH.SPP.SWT.0005 | Sealing ring for top quick-change adapter | |
| SH.ACC.ALL.0020 | Vacuum hose Ø 25 mm | By the metre |
| SH.SPP.ALL.0034 | Reinforced adhesive tape 50 m/50 mm | For sealing when changing the lifting hose |

## 10. DIMENSIONS




① = Pitch circle diameter 48.5 / hole pattern with 4xM5 ② = Pitch circle diameter 45 / hole pattern with 2xM5

* = Length of lifting hose can be individually adjusted (standard length 2.50 m)

**Hauptsitz:**

FIPA GmbH
Freisinger Straße 30
85737 Ismaning / Deutschland
Telefon +49 89 962489-0
Fax +49 89 962489-11
info@fipa.com | www.fipa.com