



## **Operating Instructions**

**Vacuum based lifting device  
for prefabricated glass and cladding elements**

# **OKTOPUS<sup>®</sup> GLASS-Jack GL-RN 400/600/800**

Serial no.: A 810 772

Technical documentation

BA 000 101

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## 1 General information regarding the OKTOPUS®

### 1.1 Manufacturer's information

Manufacturer's name and registered office:

WIRTH GMBH  
Installation Systems Division  
Brehnaer Straße 1  
D-06188 Landsberg  
Germany

Device characteristics:

Product description:	OKTOPUS® GLASS-Jack GL-RN 400/600/800
Type:	OKTOPUS® GLASS-Jack GL-RN 400/600/800 R M B24 P 110
Serial number:	(see type plate)
Year of manufacture:	(see type plate)
Weight:	approx. 55 kg (basic unit, crane arm, 4 suction pads) approx. 60 kg (basic unit, crane arm, 4 suction pads, 4 extensions) approx. 70 kg (basic unit, crane arm, 6 suction pads, 4 extensions) approx. 80 kg (basic unit, crane arm, 8 suction pads, 4 extensions) approx. 60 kg (basic unit, guide ring, 4 suction pads)
Working Load Limit:	max. 300 kg (guide ring, 4 suction pads Ø 400 mm) max. 400 kg (crane arm, 4 suction pads Ø 400 mm) max. 600 kg (crane arm, 6 suction pads Ø 400 mm) max. 800 kg (crane arm, 8 suction pads Ø 400 mm)
CE mark:	pursuant to EC Declaration of conformity Annex 3
Test badge as per Annex 4 on the unit.	

### 1.2 Service workshop

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### 1.3 Scope of application

The operating instructions on hand represent the state-of-the-art and the safety measures defined by the European Machinery Directive valid at the editing date of the manual.  
Diverging or amending national regulations may not be considered eventually.  
The user is exclusively responsible to observe such regulations.

## 2 Proper use of the OKTOPUS®

### 2.1 Mode of operation and safety concept of the OKTOPUS® system

The devices of the OKTOPUS® system are *„Load lifting attachments“* following the principle of a *„Vacuum lifter“*. They are installed to a hoist or work as a stand-alone unit, and are used for handling and positioning large-size construction elements.

The basic functions of the OKTOPUS® system comprise:

- ⇒ Controlled suction and release of large-size construction elements having sufficient inherent stability by use of one or more vacuum suction pads of the OKTOPUS®,
- ⇒ transport and positioning of the sucked construction elements by manipulating the OKTOPUS®,
- ⇒ fine positioning of the construction elements using the control of the OKTOPUS®-axes (if available).

The OKTOPUS® system is offered in various types of design and models for different fields of application. These differ depending on the used hoist, the loads to be lifted, the necessary positioning movements and the used controls.

For further information please do not hesitate to contact us ([www.wirth-gmbh.com](http://www.wirth-gmbh.com)).

Specific safety requirements, which have been taken into account during construction, execution, technical documentation and in drawing up the operating instructions for the OKTOPUS® system, arise due to the special function of the OKTOPUS system as a “load lifting attachment”.

Therefore, strict compliance with the instructions and information for proper and safe use of the device given in the operating instructions is a prerequisite for the manufacturer’s warranties during the agreed warranty period.

The OKTOPUS® user is responsible for combining the OKTOPUS® system to a hoist. The user himself is responsible for proper implementation of the relevant guidelines and instructions. The information provided by the manufacturer of the OKTOPUS® system through these operating instructions shall be considered as an additional support for the user.

Before initial start-up of the system, skilled staff shall check at the user’s premises, whether the combination of OKTOPUS® system / crane or hoist is suitable for use.

Moreover, the OKTOPUS® shall be subject to tests by an expert at regular intervals (please refer to pt. 4.1). Experts are persons who have sufficient knowledge in the field of load lifting attachments on account of their education and experience in the concerned subject and who are being highly acquainted with the relevant safety-at-work instructions and safety precautions, guidelines and generally accepted engineering standards, so that they can evaluate the state of the load lifting attachments as being safe for operation.

Initial testing of the crane or lifting device/OKTOPUS® combination as well as the successful completion of the annual test of the OKTOPUS® system by an expert shall be documented.




The manufacturer of the OKTOPUS® system offers expert testing as a service and documents testing of the OKTOPUS® by placing the test badge on the test card in accordance with Annex 4 together with the indication of the date for the next test.

## 2.2 Safety instructions

- (1) Only employ cranes with a **Working Load Limit that exceeds the live weight of the OKTOPUS® GLASS-Jack GL-RN 400/600/800** in all working positions by at least 90 kg!
- (2) **Never use a damaged**, not fully functioning or incomplete OKTOPUS®!
- (3) Have your combination crane/OKTOPUS® tested and documented **by an expert** prior to initial start-up!
- (4) Operate the crane with an **operating license** only!
- (5) Only operate the OKTOPUS® and the crane, if you are familiar with the **operating and display elements as well as with the operating instructions**. You shall be aware of the impact of a function on the entire unit!
- (6) Before operating the OKTOPUS® and the crane, test the **function of the operating and display elements as well as the alarm unit!**
- (7) Make sure that the crane operator has a **sufficient view** over the sling and assembly site!
- (8) Arrange **hand signals** with the installer and fitter for the necessary crane operations!
- (9) It is absolutely necessary to observe the maximum Working Load Limit of the **OKTOPUS® GLASS-Jack GL-RN 400/ 600/800** stipulated in section **2.3 Symbols and markings!** These specifications only apply to a working height up to 400m above sea level!
- (10) If there are any protection hoods on the suction pads, remove them before initial start-up!
- (11) Only work in **wind strengths less than 30 km/h**, otherwise the load will be endangered by swinging uncontrollably!
- (12) **Check the suction pads daily for damage; if necessary** replace with new pads
- (13) **Clean the suction surfaces** on the elements. Do not place the suction pads on protective film, instead, remove the film before – at least at the contact areas of the suction pads
- (14) **Never stand or walk** under the **suspended load!**
- (15) Ensure that **nobody attempts to mount or ride** on the OKTOPUS® GLASS-Jack GL-RN 400/600/800 or the suspended construction elements.
- (16) **Stop work immediately when the acoustic alarm sounds and/or the warning light flashes up!** In this case, danger of severe damage to the system exists, and the sucked load might drop down. Carefully put down the OKTOPUS® together with the sucked load by the used hoist until the load is rested safely. Find and remove the cause for the alarm. If the defects cannot be removed, finish working with the OKTOPUS® immediately. The OKTOPUS® has to be secured against further use!
- (17) In the event of **faults** and during servicing and maintenance work, **always switch off** the OKTOPUS®. Therefore, turn the main switch to the OFF position!
- (18) Please note that **low temperatures and humidity can cause freezing of the vacuum system!**
- (19) **Never use** the OKTOPUS® **within highly explosive ranges** or **within the range of aggressive substances!**
- (20) **Never attempt to lift damaged glass or cladding elements!**
- (21) **Do not lift** the load higher than necessary!
- (22) Wet components **must not be sucked**, because
  - a. **this reduces the safe work load capacity considerably** and
  - b. the vacuum system and/ or the control system of the OKTOPUS® might be damaged!
- (23) Protect the suction pads of the OKTOPUS® against damage by using protection hoods after use!
- (24) Always wear suitable protection clothes, helmets, gloves and industrial safety shoes!
- (25) **Never leave** a lifted load unsupervised!
- (26) **Never lift more than one** glass or cladding element at the same time!

- (27) Always stick to the prescribed **maintenance instructions**:
- **daily visual and functional test** (charge level of the battery, vacuum gauges, suction cups, warning light, signal light, acoustic alarm, manual control)!
  - depending on the operating conditions, **at least annually**, inspection by a qualified expert !
- (28) **Never modify the OKTOPUS®** in such a way, that its safety is impaired. **Otherwise the manufacturer's warranty is rescinded!**
- (29) Never remove **information signs, safety signs and test card (with test badge) from the OKTOPUS®!** **Otherwise the manufacturer's warranty is rescinded!**

## 2.3 Symbols and markings

Signal word	Meaning	Consequences of non-compliance
	Warns of imminent threat of danger	Death or serious injury or substantial material damage as consequence.
	Warns of potential threat of danger	Death or serious injury or substantial material damages are possible.
	Warns of possibly dangerous situation	Light injury or material damages are possible.

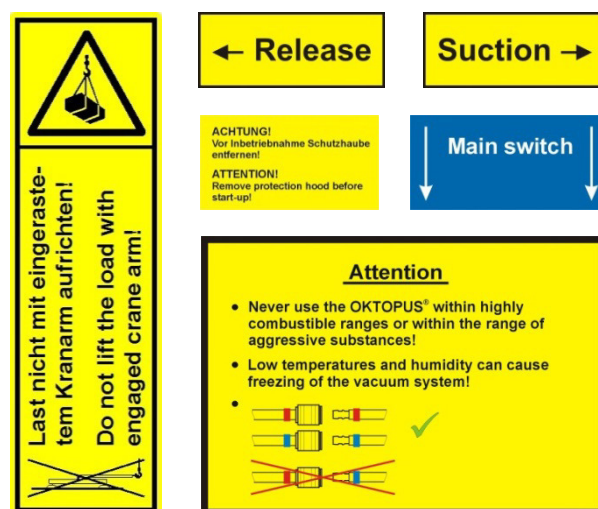
Next to the type plate the following safety-related signs and pictographs are attached to the OKTOPUS®:



(Working Load Limit OKTOPUS®)



(Before operating, read and comply with operating manual as well as safety instruction!)



(Warning signs / General information)

Inspection card in accordance with Annex 4

(Inspection card)



## 2.4 Design and application of the OKTOPUS®

The OKTOPUS® GLASS-Jack GL-RN 400/600/800 is a load lifting attachment of modular design for large glass and cladding elements of sufficient inherent stability with a surface that is, at least on one side, partially smooth and airtight. It is designed for wall and roof assemblies on building sites.

The OKTOPUS® is equipped with a load lifting eye to be hooked into a lifting device provided by the customer. The basic frame can be rotated manually by 360° and swivelled by 90°.

By dismounting the crane arm the overall height of OKTOPUS® is minimized to 140 mm only. The low overall height allows - in combination with the guide ring optionally available - the installation of elements weighing up to 300 kg in clearances of normally max 300 mm only between the building front and the scaffolding in front of it. The arrangement of the guide ring allows rotating the lifting attachment with the sucked load by 360°.

Depending on the load class the following OKTOPUS® models are distinguished:

Max. Working Load Limit 400 kg: OKTOPUS® GLASS-Jack GL-RN 400 (4 suction pads on the unit)

Max. Working Load Limit 600 kg: OKTOPUS® GLASS-Jack GL-RN 600 (6 suction pads on the unit)

Max. Working Load Limit 800 kg: OKTOPUS® GLASS-Jack GL-RN 800 (8 suction pads on the unit)

Each of the models mentioned above can be equipped with a guide ring. In case of using the guide ring, the Working Load Limit of the OKTOPUS® is limited to 300 kg.

The functional main groups of components are (see fig. 1 to 5):

- the crane eyes (1, 12, 19) to connect the OKTOPUS® to the crane,
- the red signal light (17) indicating hazardous situations and the green signal light (18) defining the working area,
- the vacuum gauge (7) indicating the vacuum level,
- the basic frame (5) and the extension arms (17) with the suction pads fixed thereto (8),
- the charge indicator (11) permanently showing the actual charge of battery,
- the main switch (10) for switching on and the switch „Suction/Release“ (15) to operate the OKTOPUS®.

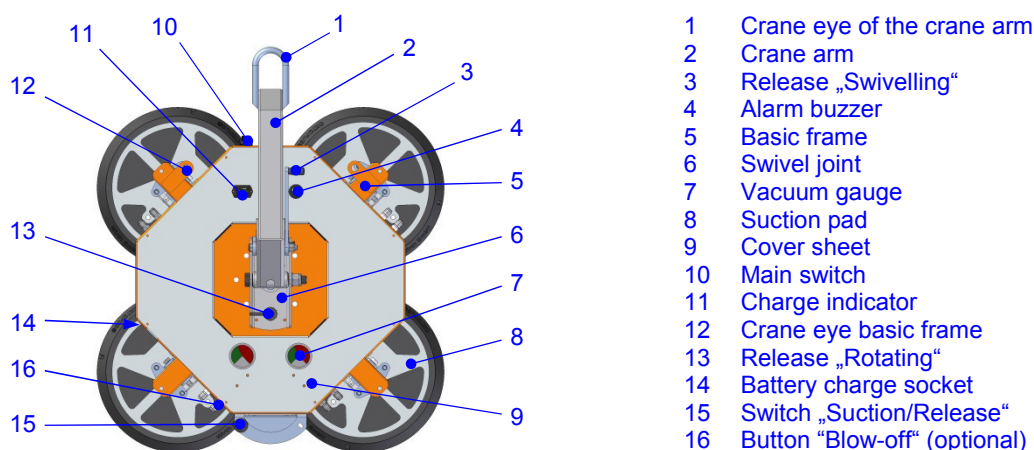


Fig. 1: OKTOPUS® GLASS-Jack GL-RN 400 with crane arm



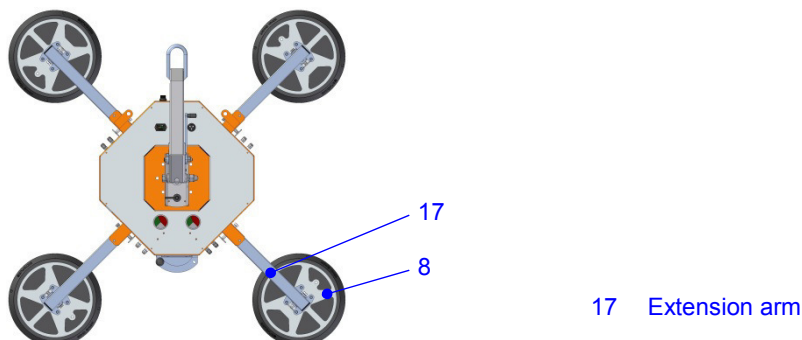


Fig. 2: OKTOPUS® GLASS-Jack GL-RN 400 with crane arm and extensions

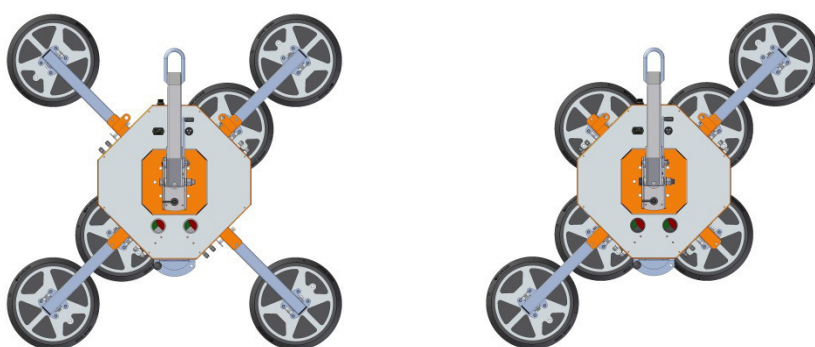


Fig. 3: OKTOPUS® GLASS-Jack GL-RN 600 with crane arm and extensions



Fig. 4: OKTOPUS® GLASS-Jack GL-RN 800 with crane arm and extensions

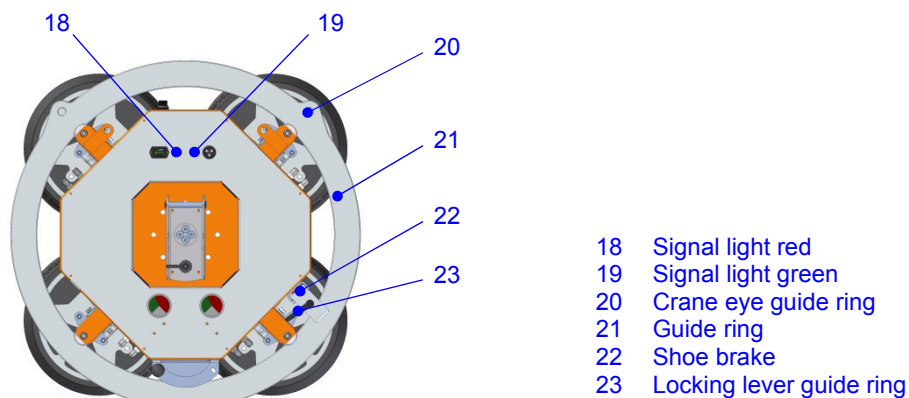


Fig. 5: OKTOPUS® GLASS-Jack GL-RN 400/600/800 with guide ring

The load lifting attachment OKTOPUS® GLASS-Jack GL-RN 400/600/800 is designed as an attachment and is mounted to the crane as per fig. 6.

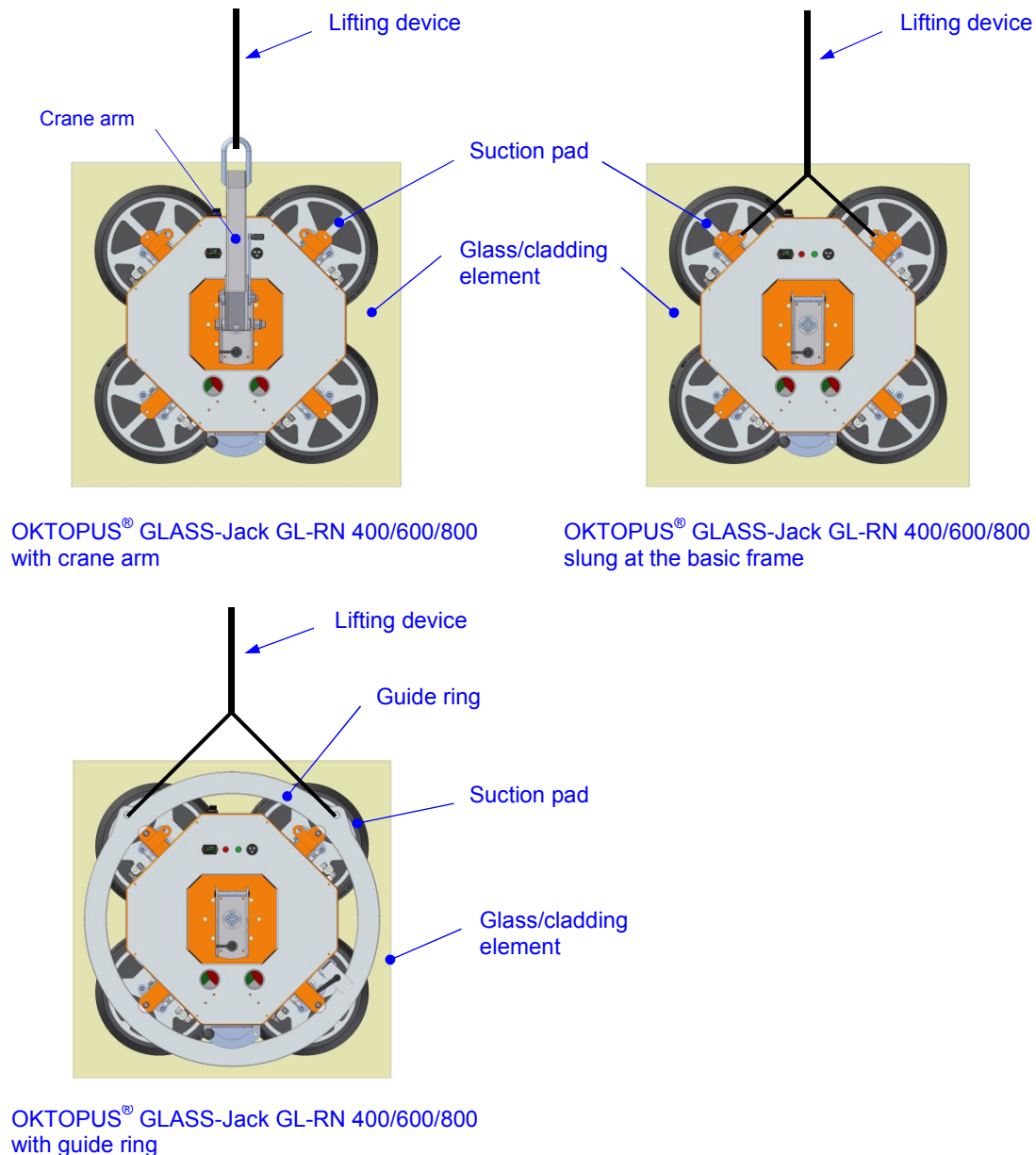


Fig. 6: Load lifting attachment OKTOPUS® GLASS-Jack GL-RN 400/600/800

Applying the load lifting attachment system OKTOPUS® will have the following effects on the installation of large-size glass and cladding elements:

- rapid, efficient and effective assembling procedure,
- small-sized assembly team,
- high process quality through material-preserving handling,
- low physical stress for the assembler as heavy carrying and lifting works is avoided,
- high occupational safety.

## 2.5 Conditions and restrictions of application

The glass and cladding elements to be processed with the OKTOPUS® GL-RN 400/600/800 have to fulfil the following criteria in the suction areas:

- they have to be airtight,
- they must have a smooth, dry, oil-free and clean surface and
- they must not be equipped with a protective plastic film.

The OKTOPUS® shall be delivered with suction pads for smooth glass and cladding elements.

Generally, no statements can be made on the length and the width of the elements to be installed with the OKTOPUS®, as this depends - upon observing of the safe work load criteria - almost exclusively on the inherent rigidity and the deformation behaviour of the construction elements connected thereto.

The suction of oil, water, vapours or aggressive gases shall be avoided. The ambient temperature shall be min 0 °C and may be max 40 °C (valid for 1013 mbar and sea level). At low temperatures the capacity of the batteries in use is reduced. The airborne sound deriving from the OKTOPUS® GLASS-Jack GL-RN 400/600/800 is < 70 dB(A), vibrations are at < 2.5 m/s<sup>2</sup>, so that no special protective measures are required.

Limitations of application arise from the limited Working Load Limit of the OKTOPUS® GLASS-Jack GL-RN 400/600/800 (see section 2.3 Symbols and markings) as well as from the capacity data, the conditions of application of the crane to be used and the building site conditions. Furthermore, it shall be taken into account that the element to be installed should be of sufficiently inherent stability and appropriate for mounting by vacuum lifting attachments (to be clarified with the elements' manufacturer if so).

Due to the large number of the elements existing in the market and their surface coatings, we cannot take over liability in case of possible material incompatibilities between suction pad and surface coating.

The maximum Working Load Limit stipulated on the OKTOPUS® only applies to the use of the original suction pads and a working height of maximum 400 m above sea level. Employing the OKTOPUS® in heights above 400 m leads to a decreased Working Load Limit of the OKTOPUS® on the one hand, on the other hand the OKTOPUS® control system needs to be adjusted. If you want to employ the OKTOPUS® in heights above 400 m, please contact the Wirth Service Team beforehand.



**Employing the OKTOPUS® at heights above 400 m leads to a decreased Working Load Limit! The Working Load Limits stipulated on the OKTOPUS® and in this operating manual do not apply in this case!**



**Never carry out unauthorized adjustments at the control system of the OKTOPUS® as it may lead to serious malfunctions of the device! It means danger to life and limb! Consult with the OKTOPUS® manufacturer if it is necessary to adjust the control system of the OKTOPUS®, e.g. for height adjustment.**

## 2.6 Transport and storage

The OKTOPUS® may be moved only by a suitable lifting device/means of transport of appropriate Working Load Limit.



**Shut down the OKTOPUS® for transport! Turn the main switch to the OFF position!**



**Protect the rubber lip of the suction pad from pollution and damage by protection covers!**



**To avoid damage to the batteries by deep discharge during storage, the OKTOPUS® shall be charged every two weeks at least.**

### Transport rack

The transport rack shown in figure 7 is optionally available. It allows:

- ⇒ space-saving storage of the OKTOPUS® GLASS-Jack GL-RN 400/600/800 and
- ⇒ protecting the suction pads, especially the rubber lip during transport and storage.

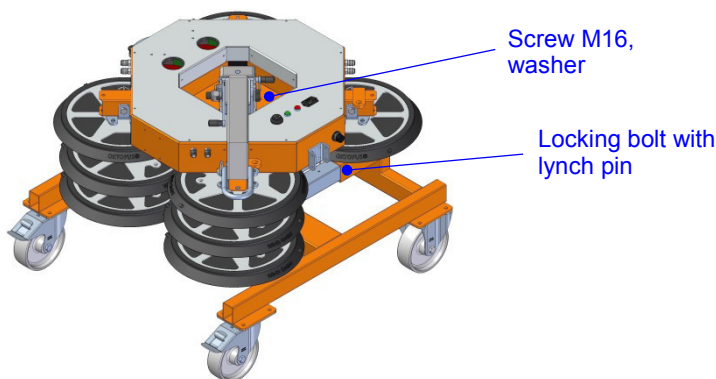


Fig. 7: Transport rack



**Always completely secure the OKTOPUS® in the transport rack using the screws, washers and locking bolts with lynch pins provided in the delivery!**

### 3 Instructions for use of the OKTOPUS®

#### 3.1 Power supply

The electrical power is provided by a battery 24 V / 7 Ah (two 12-V batteries in series connection).

The charge level is controlled by a charge indicator according to fig. 8. After switching on the OKTOPUS®, light-emitting diodes (LED) in the signal colours green, yellow and red indicate the current charging level.

The charge indicator shows the following charging status:

- ⇒ If one of the green LED lights up, the battery is charged. Now you can work with the OKTOPUS®.
- ⇒ If the third LED from the left (yellow LED) lights up, the battery should be charged.
- ⇒ If the second LED from the left (yellow LED) lights up or if the second LED from the left and the red LED are alternately flashing, the battery shall be charged immediately to avoid a deep discharge and damages.

The charge indicator is arranged according to fig. 1.

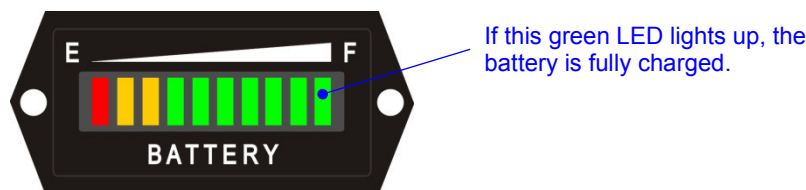


Fig. 8: Charge indicator



**Do not use the OKTOPUS®, if the yellow LED flashes or the yellow and the red LED are flashing alternately. An eventually sucked load should be lowered. The OKTOPUS® should be immediately charged to avoid a deep discharge and damages.**



**The user shall ensure that the battery of the OKTOPUS® is sufficiently charged while operating the OKTOPUS®.**



**The charge indicator only shows the current voltage level of the battery that shall not be considered as a reliable qualitative indication in terms of the batteries' capacity.**



**The charge indicator reacts/responds slowly. To judge the actual voltage level after charging (see point 4.4), the vacuum pump of the attachment needs to run for approx. 2 minutes. The indicated charging level of the batteries allows you to decide about the use of the attachment.**

### 3.2 Vacuum supply

The vacuum supply is provided by a vacuum pump, which is powered by electricity and supplied by the battery. Starting from the vacuum pump, the OKTOPUS® GLASS-Jack GL-RN 400/600/800 is developed as a dual circuit system. That means, all the following vacuum modules, like non-return valve, vacuum reservoir, pressure controller, vacuum gauge and suction pads exist twice (2 vacuum circles).

At the OKTOPUS® GLASS-Jack GL-RN 400/600/800 the 2 vacuum circles are marked by different colours, one colour per vacuum circuit (usually blue and red). Please note, that only vacuum hoses and vacuum hose couplings of the same colour shall be interconnected.

Mounted to the crane, the OKTOPUS® GLASS-Jack GL-RN 400/600/800 is ready for operation as soon as sufficient vacuum is provided in both vacuum reservoirs. The current vacuum level is constantly indicated via two vacuum gauges (fig. 9).

The green scale sector is the

**permissible working range from -0.65 bar to -0.9 bar**

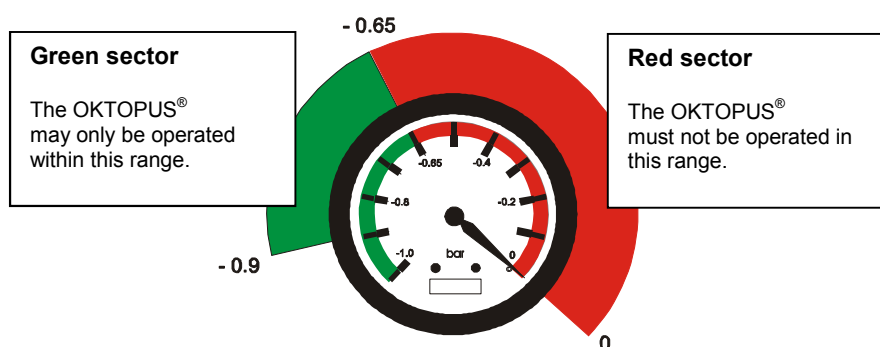


Fig. 9: Vacuum gauge

During operation the vacuum is monitored by two pressure control devices. If the vacuum is in both vacuum circles in the working area, the green signal light shines. The OKTOPUS® is ready for use. If the vacuum descends in one or both vacuum circles below the prescribed level (pressure exceeding the -0.65 bar mark = red sector), an alarm is automatically activated:

- ⇒ the acoustic alarm sounds,
- ⇒ the red warning light flashes up.



**Only interconnect vacuum hoses and couplings of the same color! Non-compliance with these instructions could, in case of a breakdown of a vacuum circuit, lead to the load suddenly dropping due to uneven load distribution.**



**If the alarm is activated, stop working instantly and evacuate the hazard zone, as the sucked element could disengage suddenly. Never stand or walk under the OKTOPUS® or the suctioned element!**



**The alarm remains active until the vacuum pressure is restored within its permitted limits.**



### 3.3 Control panel/switch

The OKTOPUS® GLASS-Jack GL-RN 400/600/800 is operated by a control panel according to fig. 10.

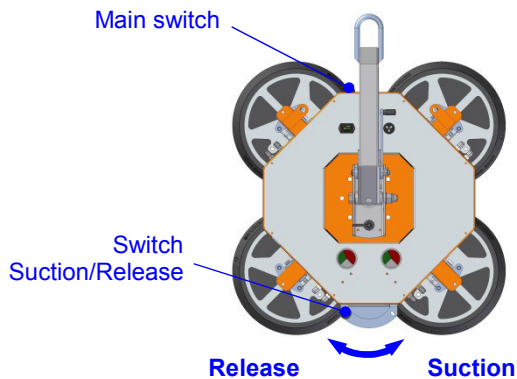


Fig. 10: Control panel

### 3.4 Start-up

Proceed as follows to start the operation of the OKTOPUS®:

- Place the suction pads of the OKTOPUS® onto the element to be sucked!
- Turn the main switch to the "ON" position.
- Slightly lift the switch SUCTION / RELEASE, and then push it towards SUCTION!
- Check the charge level of the battery on the charge indicator,
  - ⇒ The operational readiness is indicated through the luminescence of a green LED.
  - ⇒ If the second LED from the left (yellow LED) flashes or the second LED from the left (yellow LED) and the red LED flash alternately, the battery needs to be charged!
- Check the vacuum on the vacuum gauges,
  - ⇒ if the needle of both gauges are in the green range, the unit is ready for operation!
  - ⇒ if one or both needles are in the red range, the alarm will be activated, and the vacuum must be built up first.
    - Vacuum is built up to -0.73 bar, the red warning light goes out and the green signal light goes on.
- Slightly lift the switch SUCTION / RELEASE and slide it towards RELEASE.

### 3.5 Handling of glass and cladding elements

First of all the OKTOPUS® GLASS-Jack GL-RN 400/600 /800 has to be coupled to the crane as a load lifting attachment in order to get it ready for operation.

The assembly of the OKTOPUS® shall be carried out while the crane is immobile and the OKTOPUS® is switched off.

The assembly of the building elements is carried out as follows:



**Make sure that the load is placed properly to the OKTOPUS®. Unbalanced loads can tilt or turn unexpectedly.**

#### 3.5.1 Handling of lying glass and cladding elements

- ⇒ In order to suck a lying load, you need the OKTOPUS® GLASS-Jack GL-RN 400/600/800 in the version with a crane arm or with a crane arm and extensions (see fig. 11, ex. OKTOPUS® GLASS-Jack GL-RN 400 and 800).



**Never use the OKTOPUS® with a mounted guide ring for putting up or lifting a horizontally lying load!**

- ⇒ Unlock the release "Swivelling" (see fig. 11) and move the crane arm with the mounted OKTOPUS® GLASS-Jack GL-RN 400/600/800 to the elements. Place the OKTOPUS® on the topmost element.



**Never attempt to lift a horizontally lying load if the pivoting of the crane arm is latched!**



- ⇒ Place the OKTOPUS® above the centre of mass ( $\pm 5$  cm) of the load.
- ⇒ Slightly lift the switch SUCTION / RELEASE and push it towards SUCTION (see fig. 10) until it snaps into place.
- ⇒ After the warning light and the buzzer have both gone out, the vacuum gauge indicates that the working range has been reached (see fig. 9) and you have made sure, that no one stays in the danger area, you can lift the load.
- ⇒ Only lift the load as high as necessary!
- ⇒ After the element has been placed at the assembly location, fasten it completely to avoid any danger after release!
- ⇒ After that, the building element is detached. For release, again raise the switch SUCTION / RELEASE a bit and push it towards RELEASE. Raising the switch is an additional safety feature against unintentional faulty operation.

If your OKTOPUS® is equipped with the optional blow-off function, subsequently press the button "Blow-off" (see fig. 1, pos. 16). Keep the button pressed until all suction pads have completely disengaged from the load. In this case the suction pads are supplied with compressed air which ensures that the suction pads are released quicker from the load.

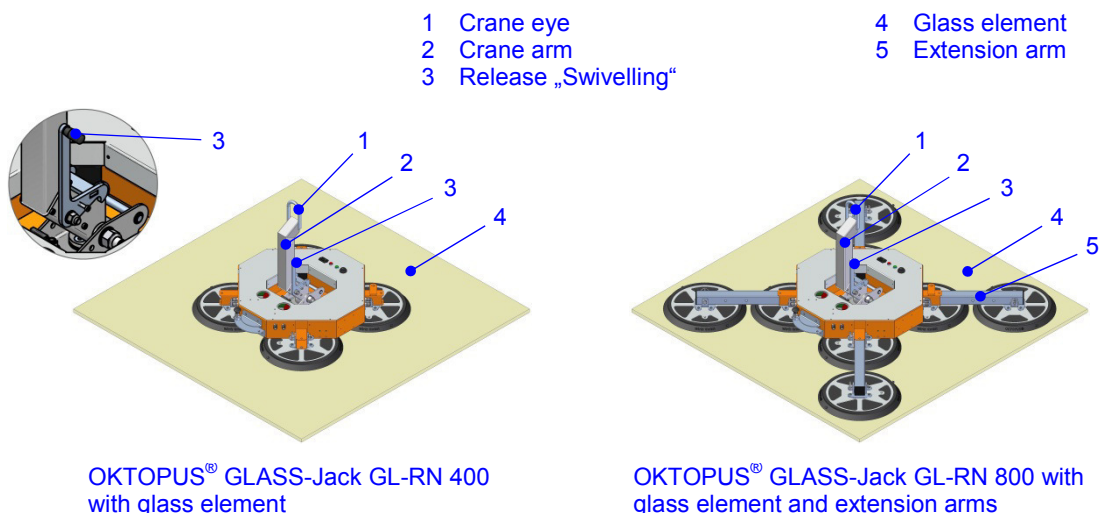


Fig. 11: OKTOPUS® GLASS-Jack GL-RN 400 and 800 with glass element



**Due to the dead weight of the OKTOPUS®, a residual vacuum remains even after ventilating the suction pads by the evacuated system. Jerky rising of the OKTOPUS® strengthens this effect. Therefore, take the equipment always slowly and steadily off from the elements shifted.**

### 3.5.2 Handling of glass and cladding elements standing upright

- ⇒ Move the crane with the attached OKTOPUS® GLASS-Jack GL-RN 400/600 /800 to the elements. Place the OKTOPUS® onto the topmost element.
- ⇒ Position the OKTOPUS® onto or above the centre of mass of the load (max.  $\pm 5$  cm)!



**In order to avoid unintended load rotation, make sure that the sliding lever „Rotation“ (see fig. 12) is locked. The sliding lever „Swivelling“ shall be released and the crane arm be vertical !**

- ⇒ Slightly lift the switch SUCTION / RELEASE and push it towards SUCTION (see fig. 10) until it snaps into place.
- ⇒ After the warning light and the buzzer have both gone out, the vacuum gauge indicates that the working range has been reached (see fig. 9) and you have made sure, that no one stays in the danger area, you can lift the load.
- ⇒ Only lift the load as high as necessary!
- ⇒ After the element has been placed at the assembly location, fasten it completely to avoid any danger after release!
- ⇒ After that, the building element is detached. For release again raise the switch SUCTION/RELEASE a bit and push it towards RELEASE. Raising the switch is an additional safety feature against unintentional faulty operation

If your OKTOPUS® is equipped with the optional blow-off function, subsequently press the button “Blow-off” (see fig. 1, pos. 16). Keep the button pressed until all suction pads have completely disengaged from the load. In this case the suction pads are supplied with compressed air which ensures that the suction pads are released quicker from the load.

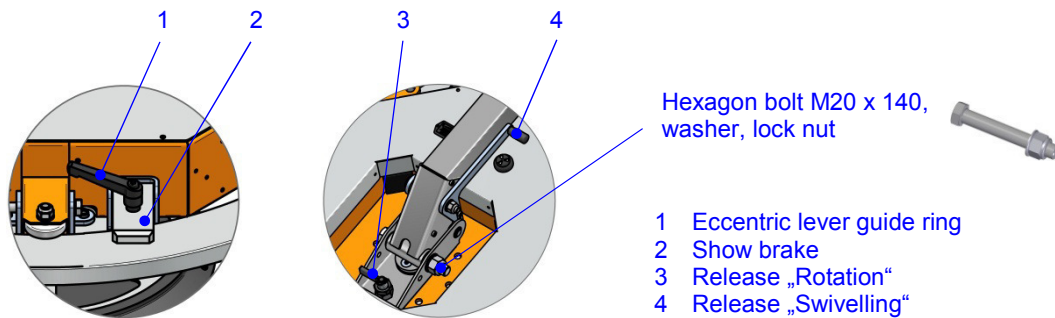


Fig. 12: OKTOPUS® GLASS-Jack GL-RN 400/600/800 with guide ring resp. crane arm



Due to the dead weight of the OKTOPUS®, a residual vacuum remains even after ventilating the suction pads by the evacuated system. Jerky rising of the OKTOPUS® strengthens this effect. Therefore, take the equipment always slowly and steadily off from the elements shifted.

### 3.5.3 Rotating a load hanging in a vertical position with the OKTOPUS® GLASS-Jack GL-RN 400/600/800 with a crane arm

⇒ Suck the element as described in 3.5.2!



**Never unlock the release "Rotation" and "Swivelling" at the same time! Unlocking both the releases may cause damages to the attachment and/or the load!**

- ⇒ Before rotating the load, make sure that there is enough space available. Ensure that the load does not strike anything during rotation!
- ⇒ Unlock the release "Rotation" (see fig. 12) and turn the load into the appropriate position. After that relock the sliding lever.

### 3.5.4 Rotating a load hanging in a vertical position with the OKTOPUS® GLASS-Jack GL-RN 400/600/800 with guide ring

- ⇒ Suck the element as described in 3.5.2!
- ⇒ Position the OKTOPUS® above the centre of mass of the load (max. ±5 cm).



**To avoid unintended load rotation, make sure that upon use of the version GLASS-Jack GL-RN 400/600/800 with guide ring, the eccentric lever guide ring (see fig. 12) shall be tightened!**

- ⇒ Before rotating the load, make sure that there enough space is available. Ensure that the load does not strike anything during rotation!
- ⇒ Slowly release the eccentric lever guide ring (see. fig. 12)!
- ⇒ Turn the load into the appropriate position.
- ⇒ Engage the clamping again by moving the eccentric lever!

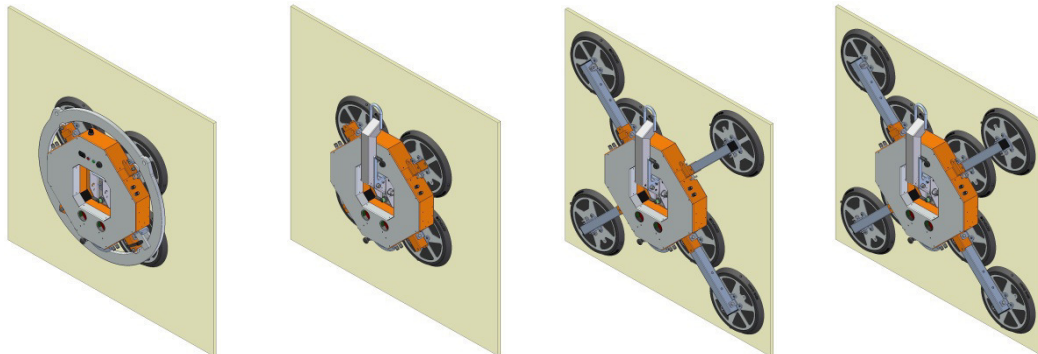


Fig. 13: OKTOPUS® GLASS-Jack GL-RN 400/600/800 with guide ring, with crane arm, and with crane arm and extension arms (6 or 8 suction pads respectively)

### 3.5.5 Swivelling a load hanging in a vertical position with the OKTOPUS® GLASS-Jack GL-RN 400/600/800 with crane arm

⇒ Suck the element as described in 3.5.2!



**Never attempt to unlock release “Swivelling” (see fig. 12), if it carries a load. This would cause uncontrollable “downward tilting” of the load.**



**In order to swivel the load from a vertical into a horizontal position, at least 3 persons are needed. Two persons have to secure and guide the load, while the third person has to release the interlock!**

- ⇒ Before swivelling the load you have to take into account that the swivelled load needs more horizontal space. Make sure that the load does not strike anything during swivelling!
- ⇒ Unlock the release “Swivelling” (see fig. 12) and move the load into a horizontal position.

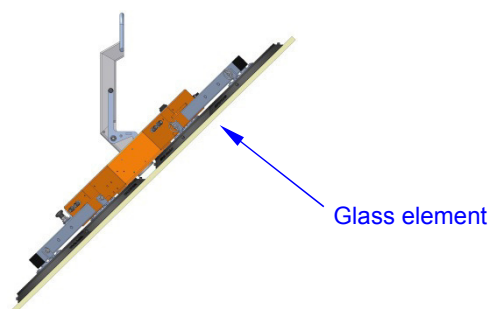


Fig. 14: OKTOPUS® GLASS-Jack GL-RN 800 during swivelling

### 3.5.6 OKTOPUS® GLASS-Jack GL-RN 400/600/800 slung to the basic frame

As for handling standing glass and cladding elements the OKTOPUS® GLASS-Jack GL-RN 400/600/800 may directly be slung to the basic frame (see fig. 6). However, in this case the load can neither be rotated nor swivelled.

## 3.6 Converting the OKTOPUS® into its different versions

### 3.6.1 Assembly of the guide ring

- ⇒ Place the OKTOPUS® GLASS-Jack GL-RN 400/600/800 in a flat position on a clean and even surface (suction pads are pointing down).
- ⇒ Dismount the crane arm. To do so remove the hexagon bolt (see fig. 12).
- ⇒ Dismount the extension possibly installed and any suction pads from the attachment. Remove the clip pin and the locking bolt to which the extensions /suction pads are fixed to the basic frame.
- ⇒ Mount the guide roll completely (see fig. 14). For this use a roller pin M10, a washer and a lock nut enclosed in the scope of supply. Insert the roller pin from bottom-up.
- ⇒ Push the remaining 3 guide rolls loosely into the remaining roller seats.
- ⇒ Put the guide ring over the basic frame and insert it into the slot of the first firmly mounted guide roll.
- ⇒ Lift the guide ring and position the roll being opposite the first mounted guide roll that way, so that it runs in the slot of the guide ring. Fix the second guide roll by means of a roller pin M10, a washer and a lock nut.
- ⇒ Mount the remaining 2 guide rolls.
- ⇒ Mount the brake being part of the scope of supply (see fig. 12 and 15) as follows:
  - If the holding plate has not yet been installed, then mount it by using the bolts M6, washers and lock nuts forming part of the scope of supply.
  - Fix the preassembled brake to the holding plate. Use the bolts, washers and lock nut likewise enclosed in the scope of supply.
- ⇒ Mount the four suction pads by using the locking bolts (scope of supply). Secure each suction pad with a clip pin.
- ⇒ Check again the proper seat of the guide ring, the roller seats, and the guide rolls as well as the fixing material!

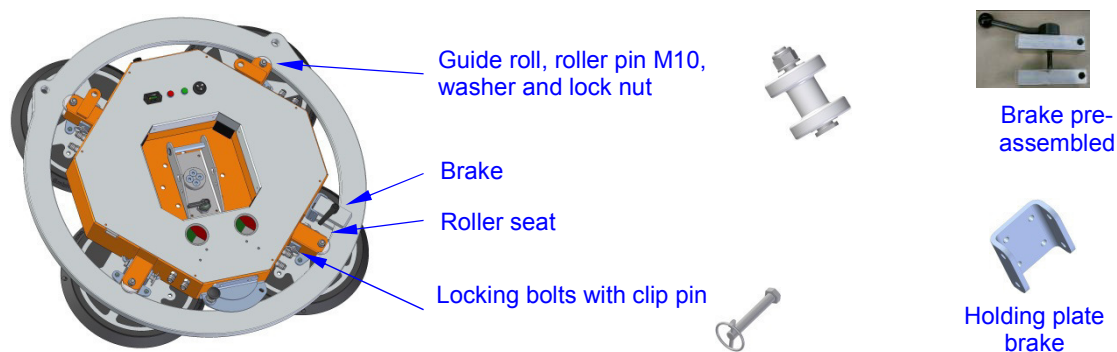


Fig. 15: Guide ring mounting





Please note that after the alteration works to the OKTOPUS® any mounted parts are always secured entirely through fixing material licensed by the manufacturer!

### 3.6.2 Mounting of the crane arm

- ⇒ Place the OKTOPUS® GLASS-Jack GL-RN 400/600/800 in a flat position on a clean and even surface (suction pads are pointing down).
- ⇒ In case the guide ring is mounted, dismount it as well as the 4 guide rolls and the brake.
- ⇒ Mount the crane arm (see fig. 1) by means of the hexagon bolt M20 X 140, the washer and the lock nut being part of the scope of supply (see fig. 12).
- ⇒ Mount the tension spring between the release „Swivelling“ and the crane arm.

### 3.6.3 Mounting of the extension arms (4 suction pads)

- ⇒ Place the OKTOPUS® GLASS-Jack GL-RN 400/600/800 in a flat position on a clean and even surface (suction pads are pointing down).
- ⇒ In case the guide ring is mounted, dismount it as described in pt. 3.6.2.
- ⇒ Carry out one after another the following working steps applying to each of the four extensions:
  - Dismount a suction pad from the basic frame. For this disconnect it from the vacuum system by releasing the quick coupling and remove the clip pin as well as the associated locking pin.
  - Push an extension arm into the basic frame and lock it by a locking pin belonging to the scope of supply. Secure the locking pin by a clip pin enclosed in the scope of supply, either.
  - Now install the suction pad removed before to the extension arm by using the locking pin removed before. Secure the locking pin with a clip pin.
  - Couple the suction pad placed onto the extension arm to the vacuum system by inserting the quick coupling.

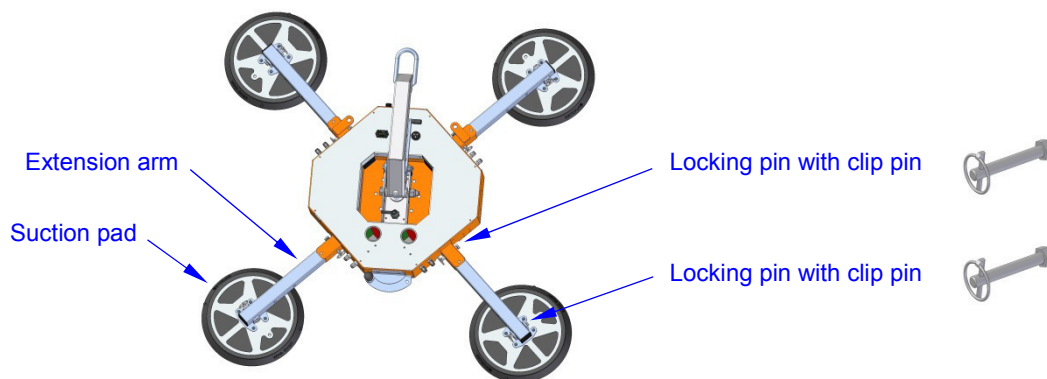


Fig. 16: Mounting of the extensions (4 suction pads)



**Connect only vacuum hoses resp. couplings of the same colour!**



**Make sure that the locking pins are always secured entirely by the clip pins supplied by the manufacturer!**

The **dismounting** of the extension arms is done in reversed order.

### 3.6.4 Mounting of the extension arms (6 resp. 8 suction pads)

- ⇒ Place the OKTOPUS® GLASS-Jack GL-RN 400/600/800 in a flat position on a clean and even surface (suction pads are pointing down).
- ⇒ In case the guide ring is mounted, dismount it as described in pt. 3.6.2.
- ⇒ Carry out one after another the following working steps which apply to each of the four extensions:
  - Dismount the clip pin as well as the associated locking pin of one of the suction pads fixed to the basic frame.
  - Push one extension arm with suction pad into the basic frame.
  - Lock the extension arm, thus locking the suction pad placed on the basic frame at the same time with the locking pin removed before as well as with the clip pin.
  - Couple the suction pad placed onto the extension arm to the vacuum system by inserting the quick coupling.

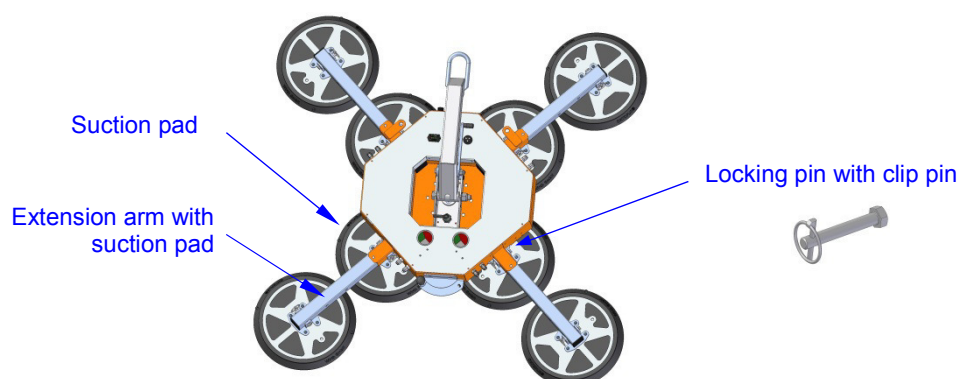


Fig. 17: Mounting of the extension arms (ex. 8 suction pads)



**Connect only vacuum hoses resp. couplings of the same colour!**



**Make sure that the lock pins are always secured entirely by the folding safeguard plugs supplied by the manufacturer!**

The **dismounting** of the extension arms is done in reversed order.

## 4 Servicing and Maintenance

### 4.1 General

As the OKTOPUS® system is a load lifting attachment, the manufacturer and operator bear great responsibility for ensuring a high standard of safety during the entire operation of the unit. For this reason, servicing and maintenance are of prime importance.

In order to maintain a high level of operational safety the OKTOPUS® GLASS-Jack GL-RN 400/600/800 must be inspected by the service centre of Wirth GmbH or a specially qualified technician:

- ⇒ at least every 12 months or at shorter time intervals, if required by national standards or regulations or
- ⇒ after any special incidents.

Any operative and scheduled servicing, maintenance and repair work exceeding this inspection should be carried out by trained and skilled staff only.

Servicing and repair work should only be carried out when the machine is out of operation.



**Before performing any repair or maintenance work on the OKTOPUS® switch the entire unit off. Turn the main switch to the “OFF” position.**

For the exchange of faulty parts only original spare parts shall be used. These will be supplied after consulting the service centre of the OKTOPUS® manufacturer upon request. The manufacturer will not accept any liability in the event of installation of anything but original spare parts.

Only use suitable tools to perform repair and maintenance work.



**Always carry out a functional test after completing repair works.**

In case of faults, which cannot be remedied by in-house personnel, please contact the Wirth GmbH service centre.

### 4.2 Mechanical components

The mechanical components are sturdy and provided with a surface protection. Maintenance work on your side comprises:

- ⇒ **daily** inspection of the mechanical components of the OKTOPUS® GLASS-Jack GL-RN 400/600/800 to detect any damage before starting the operation of the unit.

The OKTOPUS® GLASS-Jack GL-RN 400/600/800 is a load lifting attachment. Therefore, repairs to the mechanical function components can only be carried out by the OKTOPUS® manufacturer.



**Never carry out any repair work on the mechanical function components!**

### 4.3 Vacuum system

Vacuum components, which are subject to wear and relevant to safety, must be inspected on a regular basis. For this purpose:

- ⇒ **Daily** check the components in terms of their correct position and mechanical damages, in particular:
- the suction pads (replace suction pad(s) if so),
  - the hoses,
  - the vacuum gauges.



**Replace the suction pads and the hoses immediately if these have mechanical damages (cracks, cuts, etc.)! These damages could lead to a reduced Working Load Limit of the OKTOPUS®.**

The vacuum pump runs completely oil-free. The robust design allows a maintenance-free operation.

The infiltration of dust into the vacuum pump is prevented by a filter screwed in into each individual suction pad. Therefore, maintenance of the vacuum system is focused on this component.

- ⇒ Slightly lift the OKTOPUS® without the load. The filter is in the through-hole to the connection of the vacuum hose. Dirty filters shall be cleaned.

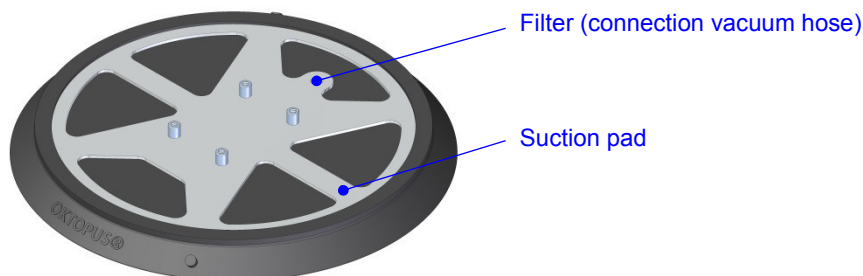


Fig. 18: Suction pad

#### 4.3.1 Cleaning the suction pads

Always clean the suction pads prior to every operation of the OKTOPUS®, if the suction areas are soiled (dirt, dust, oil, etc.). Dirt could cause leakages and leave marks on the manipulated elements.

For cleaning the suction pads we recommend to use water, if necessary add some detergent. Do not use chemical solvents, petrol, diesel oil or similar in any case.



**Never use solvents, petrol or aggressive chemicals for cleaning the suction pads! Otherwise this may result in damaging the suction pads, which could endanger the operator as well as others.**

Ensure that fluids cannot enter the vacuum system during the cleaning process by positioning the suction pads or by covering the suction opening. Give the suction pads a sufficient amount of time to completely dry before operating the OKTOPUS®.

## 4.4 Electrics and electrical components

The OKTOPUS® GLASS-Jack GL-RN 400/600/800 is running with a maintenance-free lead-gel battery (acidic). The battery casing is hermetically sealed.

Maintenance focuses on:

⇒ **daily** inspection of the external electrical functions and alarm devices:

- Alarm signal,
- Signal light,
- Alarm buzzer.

⇒ checking the charging level of the battery on the charge indicator (see fig. 8).

⇒ battery charging

A 24 V / 5 A charger for charging the battery is supplied by the OKTOPUS® system manufacturer (see fig. 19).

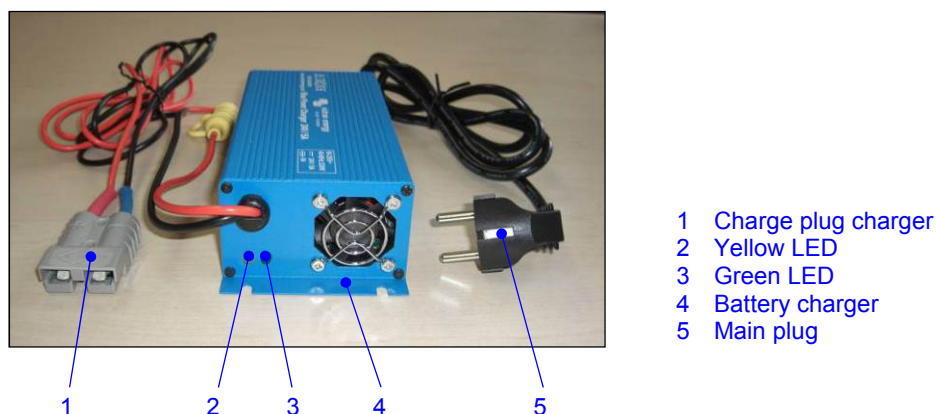


Fig. 19: Battery charger (sample)



**Before connecting the charger to the power supply, check whether appropriate! The respective data of capacity you will find on the charger.**



**In case you want to use a charger other than the one belonging to the OKTOPUS® scope of supply, it becomes essential to contact the Wirth Service Team in advance!**

The battery has to be charged as follows:

- Switch off the OKTOPUS®. For this turn the main switch to „OFF“ position!
- Connect the charger plug to the battery socket for charging OKTOPUS®.
- Connect the power plug of the charger to the power supply via socket to start the charging procedure.
- The charging is finished as soon as the yellow LED lights up permanently.
- Proceed as follows to disconnect the charger from the OKTOPUS®:
  1. Disconnect the charger from the power supply,
  2. Separate the connection between charger and battery.

**LED display**

- ⇒ The green LED will be on when the charger is connected to the mains supply.
- ⇒ The yellow LED will flash at a fast rate during bulk charge and at a slower rate during absorption charge. The yellow LED will be continuously on after the charging is complete.

Please contact the Wirth service centre for maintenance and in the event of failure of the charger.



**The sealed lead-gel battery entails the absolute observation of the charging instructions!**



**In order to prevent the battery from destruction caused by deep discharging, the OKTOPUS® should be recharged at least every two weeks.**



**The charger shall be protected against splash and installed in such a position that the ventilator and the ventilation slots are not covered and cannot be penetrated by sharp objects.**



## 5 Conduct in the event of hazardous incidents

In the event of hazardous incidents the acoustic alarm sounds and the red warning lamp lights up. The total failure of the electric power supply is signalled by a fading sound of the alarm buzzer.

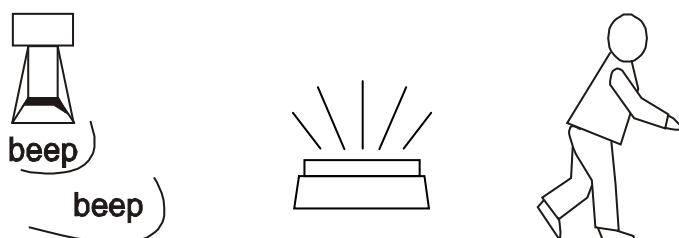


Fig. 20: Warning devices

In case the alarm buzzer sounds and/or the red warning light flashes, immediately leave the danger area, since the sucked elements could suddenly drop down. The cause for the alarm should be found and removed. In case the defects cannot be removed, stop working with the OKTOPUS® immediately. After releasing a possibly sucked element the OKTOPUS® shall be secured against further use.



**In case of faults that cannot be remedied, working with the OKTOPUS® shall be stopped immediately. Der OKTOPUS® shall be secured against further use.**

If there is no indication is given on the charge indicator when the OKTOPUS® is switched on, always contact the Wirth GmbH service centre of immediately.

## 6 Disposal and Recycling

For the packaging of the OKTOPUS®, materials like wood, cardboard, paper and film are used. These materials shall be recycled according to national regulations.

To dispose the OKTOPUS®, hand it in to a waste management company. If you have any questions, please do not hesitate to contact Wirth GmbH.



**For environmental reasons hand over the OKTOPUS® for disposal to a waste management company being fully aware and observing the national regulations!**

## **Abridged operating instruction**

### **OKTOPUS® GLASS-Jack GL-RN 400/600/800**

#### **1 Assembly**

- (1) Configure the OKTOPUS® in correspondence with the application, and fix to the crane hook.

#### **2 Start-up of the OKTOPUS®**

- (1) Place the OKTOPUS® onto the element to be sucked.
- (2) Turn the main switch to ON position.
- (3) Slightly lift the switch „Suction/Release“ and push towards „Suction“.
- (4) Check the charging status of the battery via charge indicator.
  - the green LED shows readiness for operation,
  - when the third LED from the left (yellow LED) lights up, the battery should be charged,
  - when the second LED from the left (yellow LED) flashes or the second LED from the left (yellow LED) and the red LED light up in turns, the battery must be charged.
- (5) Check vacuum pressure at the vacuum gauge (permissible green sector -0.65 to -0.9 bar):
  - In case pressure in one or in both gauges is in the red sector, the alarm will be activated and vacuum needs to be built up.
  - If pressure in both vacuum gauges is in the green area, the OKTOPUS® is ready for operation; the red signal light switches off and the green signal lamp turns on.

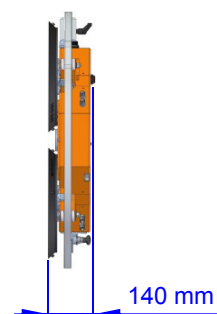
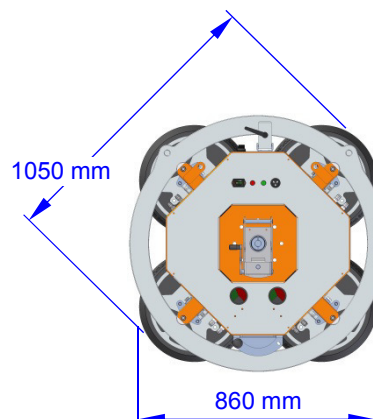
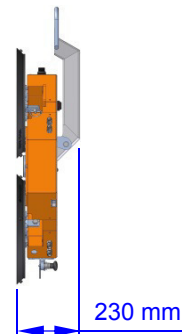
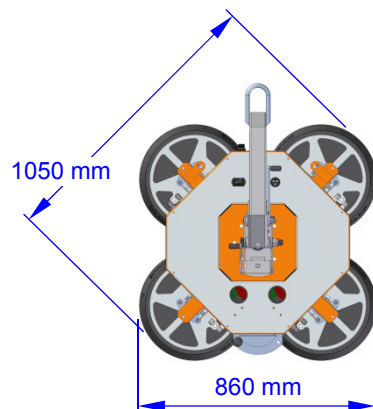
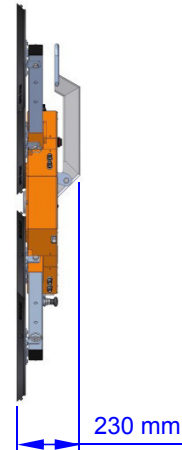
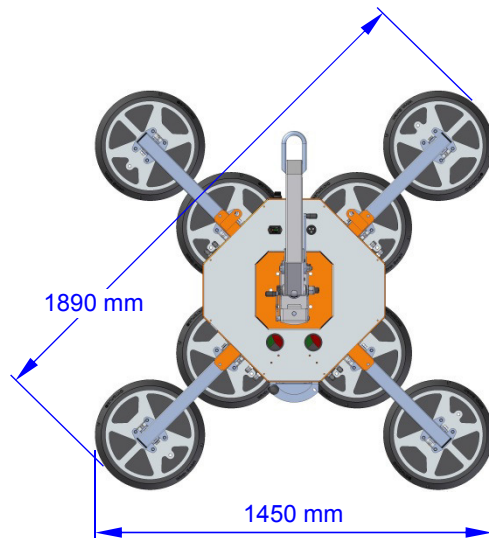
#### **3 Instruction for use**

- (1) Preparation of the elements:
  - Check the surface of the element: The surface shall be smooth, airtight, clean and dry at least at the suction spots. There must not be any protection film in the suction area.
- (2) Lifting the element:
  - Place the OKTOPUS® onto the element.
  - Slightly lift the switch „Suction/Release“ and push towards „Suction“.
- (3) Positioning the element:
  - Erect/lift the element by crane lifting movement,
  - Positioning of the element by crane driving and lifting movement together with simultaneous manual guidance of the element by the installer.
  - Fixation of the element to the installation point.
- (4) Detaching the element
  - Slightly lift the switch „Suction/Release“ and push towards „Release“.

#### **4 Shutdown**

- Lower the crane.
- Separate the connection OKTOPUS® / crane.
- Turn the main switch of the OKTOPUS® to OFF position.
- In case of shutdown over a longer period, the batteries of the OKTOPUS® shall be charged at least every 2 weeks.

## Functional dimensions



## **Declaration of Conformity**

Pursuant to Appendix II A of the EU machinery directive 2006/42/EC

**Manufacturer:** WIRTH GMBH  
Vacuum lifting technology division  
Brehnaer Straße 1  
D-06188 Landsberg  
Germany

**Herewith we declare that the machine hereinafter described** is in conformity with any provisions relevant to the EU machinery directive 2006/42/EC:

Product description: OKTOPUS® GLASS-Jack GL-RN 400/600/800  
Type: OKTOPUS® GLASS-Jack GL-RN 400/600/800 R M B24 P 110  
Serial number: *A 810 772*  
Year of manufacture: *09/2017*

In addition the partly completed machinery is in conformity with the **EC directive concerning the minimum safety and health requirements for the use of work equipment by workers at work 2009/104/EC**, the **EC directive on product safety 2001/95/EC** and the **EC directive on electromagnetic compatibility 2014/30/EU**.

Harmonized standards applied:

**DIN EN ISO 12100 (03/11)**

Safety of machines – General principles of Design – Risk assessment and Risk reduction

**DIN EN ISO 13857 (06/08)**

Safety of machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs

**DIN EN 60204 Part 1 (06/07)**

Electrical equipment of machines – General requirements

**DIN EN 13155 (08/09)**

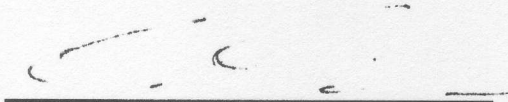
Crane – Safety – Non-fixed load lifting attachment

**Authorized staff to compile the relevant technical documents:**

Mr. Sven Röthe, Brehnaer Straße 1, D-06188 Landsberg

This declaration solely corresponds to the machine in the status as put on the market; any parts additionally installed and/or modifications additionally carried out by the end user shall be unconsidered. This declaration will become invalid, in case the product should be modified without our approval.

Landsberg, *18.09.2017*



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Holger Schadwinkel  
(Managing Director)

## Test badge for the **OKTOPUS® GLASS-Jack GL-RN 400/600/800**

Pursuant to the Directive 2006/42/EU

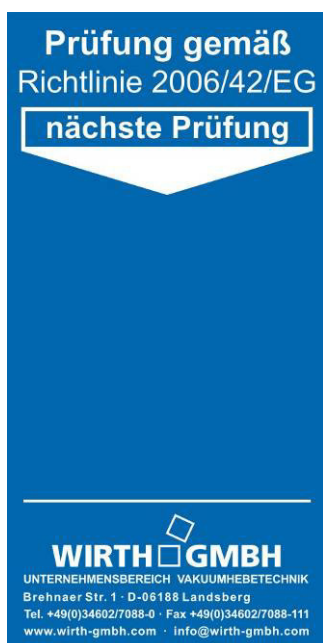


Plate dimensions: 80 x 40 mm

Background: blue

Foreground: white

Script: white on blue

Badge dimensions: diameter 30 mm

Background: depending on the year

Foreground: depending on the year

## Electrical Circuit Diagram

