



O p e r a t i n g M a n u a l

**vacuum-based lifting device
for glass and façade elements**

OKTOPUS[®] GLASS-Jack GL-N 400/300

Serial No.: A 810 693

Technical Documentation

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This technical documentation corresponds to the status as per the issue date.

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1 General Information on the OKTOPUS®

1.1 Manufacturer's information

Manufacturer's name and registered office:

WIRTH GMBH
Division Vacuum Lifting Technology
Brehnaer Straße 1
D-06188 Landsberg

Device characteristics:

Product description: OKTOPUS® GLASS-Jack GL-N 400/300
Type: OKTOPUS® GLASS-Jack GL-N 400/300 DES So 110 R E B24 P
Serial number: (see type plate)
Year of manufacture: (see type plate)
Weight: ca. 35 kg (without extension arms)
ca. 45 kg (with extension arms)
Working Load Limit: vertical: 300 kg (4 suction pads ø300 mm)
horizontal: 400 kg (4 suction pads ø300 mm)
CE mark: according to EC-Declaration Annex 3
Inspection tag according to Annex 4 attached to the device.

1.2 Service workshop

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1.3 Scope of application

This operating manual represents the current state of technology and the safety measures defined by the European Machinery Directive valid at the date of issue of this manual.

Diverging or amending national regulations may not be taken into account.

To comply with these amending or diverging regulations is exclusively the responsibility of the user.

2 Proper use of the OKTOPUS®

2.1 Functional principle and safety concept of the OKTOPUS® system

Devices of the OKTOPUS® system are “*load lifting attachments*” operating according to the principle “*vacuum lifter*”. They are mounted to a hoist or operate as a stand-alone unit and are used for handling and positioning large-sized construction elements.

The basic functional principles of the OKTOPUS® system are:

- ⇒ controlled suction and release of large-sized construction elements having sufficient inherent stability using one or more suction pad of the OKTOPUS®,
- ⇒ transport and positioning of the sucked elements by manipulating the OKTOPUS®,
- ⇒ vernier positioning of the elements attached to the OKTOPUS® by controlling the OKTOPUS® axes (if available).

For various fields of application we offer different designs and types of the OKTOPUS®. These differ depending on the used hoist, the loads to be lifted, the required positioning movements and the used controls.

For further information please contact us or visit our website at 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, result from the function of the OKTOPUS® being a load lifting attachment.

Therefore, strict adherence to the instructions and information for proper and safe use given in the operating manual is a prerequisite for the manufacturer's warranty during the stipulated warranty period.

Combining the OKTOPUS® with a hoist is the responsibility of the OKTOPUS® user. The user himself is responsible for proper implementation of the relevant guidelines and instructions. The instructions given in this operating manual by the OKTOPUS® manufacturer are considered to be additional support.

Prior to initial startup of the machine the suitability of the combination OKTOPUS®/forklift or crane in operating conditions has to be checked by skilled personnel.

Furthermore, the OKTOPUS® has to undergo regular inspections by an expert (see point 4.1). An expert is a person that due to his technical training and experience has sufficient knowledge in the area of load lifting attachments and is familiar with relevant occupational and safety instructions, regulations and generally recognized codes of practice which enables him to assess operational safety of load lifting attachments.

The initial inspection of the combination hoist/OKTOPUS® as well as the successful performance of the annual inspection of the OKTOPUS® by an expert has to be documented.




The OKTOPUS® manufacturer offers expert inspections as a service and documents the inspections on the OKTOPUS® by placing the inspection tag on the inspection card according to Annex 4 with the indication of the next test date.

2.2 Safety instructions

- (1) Only employ cranes with a **Working Load Limit** that **exceeds the live weight** of the **OKTOPUS® GLASS-Jack GL-N 400/300** by **at least 50 kg** in all possible working positions.
- (2) **Never operate a damaged, not fully functional or incomplete OKTOPUS®!**
- (3) Prior to initial startup **have an expert check and document** the combination crane/OKTOPUS®!
- (4) Only operate the crane with an **operating license!**
- (5) Only operate OKTOPUS® and crane if you are familiar with **the control and display elements as well as the operating manuals**. You have to know how the functions affect the entire construction!
- (6) **Prior to using OKTOPUS® and crane check the function of the control and display elements as well as the warning devices!**
- (7) Ensure that the crane operator is able to overview the assembly and installation site!
- (8) Agree on **hand signals** with the technician or installer for the necessary crane movements!
- (9) It is absolutely necessary to observe the maximum Working Load Limit of the **OKTOPUS® GLASS-Jack GL-N 400/300** stipulated in section **2.3 Symbols and markings!** These specifications only apply to a working height corresponding 400 m above sea level!
- (10) If the suction pads are covered by **protecting cowls**, these have to be **removed** before startup!
- (11) Only work at wind speeds **less than 30 km/h**, otherwise you risk uncontrollable swinging of the load!
- (12) **Check the suction rubbers daily for damages**; if necessary replace the suction rubbers by new ones.
- (13) **Clean the suction areas** of the glass panes. **Do not place** the suction pads on **protective foil, releasing agents** or similar, but remove it at least at the contact areas of the suction pads.
- (14) **Never stand or walk under the suspended load!**
- (15) Make sure that **nobody climbs** the OKTOPUS® GLASS-Jack GL-N 400/300 or the suspended load and **tries to ride along**.
- (16) **Stop working instantly if the acoustic alarm sounds and/or the red warning light is illuminated!** In this case the system is severely damaged and there is the risk that the sucked load might drop. Carefully lower the OKTOPUS® together with the sucked load with the help of the used hoist until the load is securely placed. The cause of the alarm has to be found and removed. In case of unrecoverable errors all operations with the OKTOPUS® have to be discontinued immediately. The OKTOPUS® has to be secured against further use.
- (17) In case of **incidents** and maintenance work turn off the OKTOPUS®.
- (18) After use, protect the suction pads of the OKTOPUS® against damage by using protection cowls!
- (19) Take into consideration that **low temperatures and high humidity may cause freezing of the vacuum system!**
- (20) **Do not suck wet elements**, because
 - a. **Working Load Limit is decreased considerably** and
 - b. the vacuum system or the control system of the OKTOPUS® could be damaged!

- (21) Never employ the OKTOPUS® in **explosive areas or in the area of aggressive media!**
- (22) **Never attempt to lift damaged glass or façade elements!**
- (23) **Do not lift the load higher than necessary!**
- (24) **Always** wear suitable protective clothing, helmets, gloves and safety shoes!
- (25) **Never** leave the lifted load unsupervised!
- (26) **Never lift more than one glass or façade element at a time!**
- (27) Comply with the stipulated **maintenance information**:
 - **daily visual and functional inspection** (battery's charge level, vacuum gauges, suction pads, alarm buzzer, control panel!
 - depending on the operating conditions, **but at least annually**, inspection by an expert!
- (28) Never modify the OKTOPUS® in a way that safety is impaired. **Otherwise the manufacturer's warranty will be void!**
- (29) Do not remove information signs, safety signs and inspection tags and plates from the OKTOPUS®. **Otherwise the manufacturer's warranty will be void!**

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.

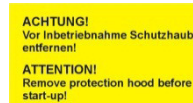
Next to the type plate the following safety-related signs and pictographs are attached to the OKTOPUS®:



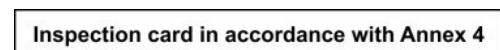
(Working Load Limit OKTOPUS®)



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



(General information / Warning signs)



(Inspection card)

2.4 Structure and use of the OKTOPUS®

The OKTOPUS® GLASS-Jack GL-N 400/300 is a vacuum-based load lifting attachment for large-sized glass and façade elements with sufficient inherent stability and a (at least) partially smooth and airtight surface.

It is designed for installation of construction elements for cladding and roofing on construction sites.

The functional main assemblies are (see fig. 1):

- the crane eye (1) to couple the OKTOPUS® to the crane,
- the alarm buzzer (17) and the red warning light (16), that indicates a hazardous situation,
- the vacuum gauges (5), that indicate the existing negative pressure and define the working range,
- the suction frame (9) with the attached suction pads (8),
- the charge indicator (12), that always indicates the battery's current charge level,
- the switch "Suction/Release" (15) to turn the OKTOPUS® on/off and to ensure the suction/release function.

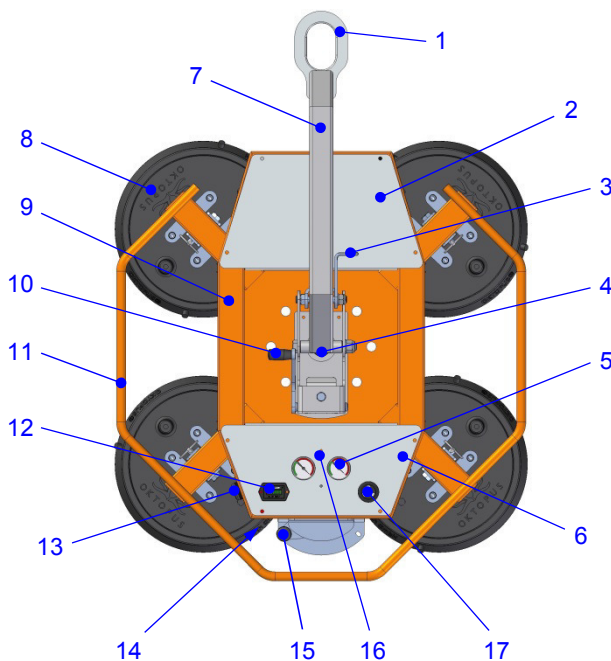


Fig. 1: OKTOPUS® GLASS-Jack GL-N 400/300

1	Crane eye	10	Unlocking "Rotate"
2	Bonnet A	11	Handle
3	Unlocking "Tilt"	12	Charge indicator
4	Swivel joint	13	Button "Blow-off" (optional)
5	Vacuum gauge	14	Socket battery charger
6	Bonnet B	15	Switch "Suction/Release"
7	Crane arm	16	Red warning light
8	Suction pad	17	Alarm buzzer
9	Suction frame		

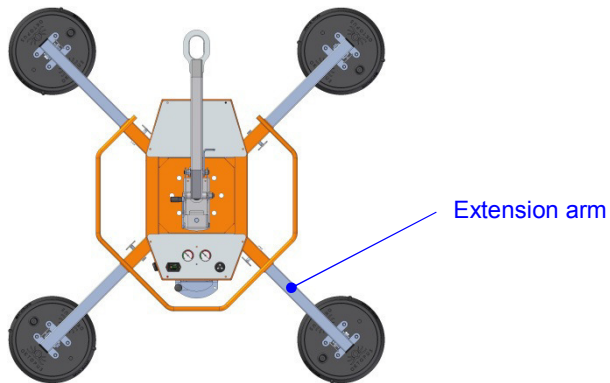


Fig. 2: OKTOPUS® GLASS-Jack GL-N 400/300 with extension arms

The load lifting attachment OKTOPUS® GLASS-Jack GL-N 400/300 is designed as an attachment and is mounted to a crane according to fig. 3.

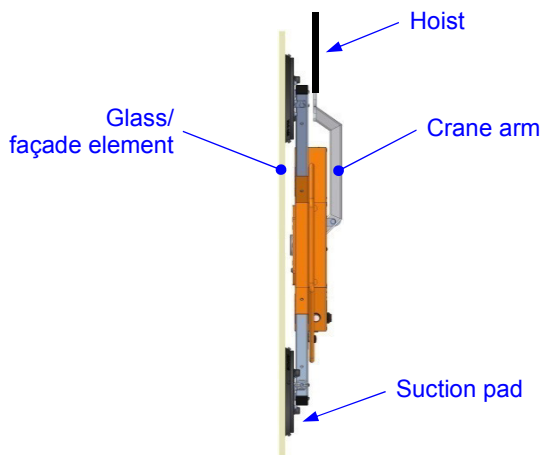


Fig. 3: Load lifting attachment OKTOPUS® GLASS-Jack GL-N 400/300

2.5 Operating conditions and restrictions

The suction areas of the glass and façade elements to be assembled with the OKTOPUS® GLASS-Jack GL-N 400/300:

- have to be air-impermeable,
- have to have an even, dry, oil-free and clean surface and
- must not be covered with a protective film!

The OKTOPUS® is delivered with suction pads for even glass and façade elements.

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

Avoid suction of oil, water, vapors or aggressive gases. Ambient temperature has to be at least 0°C and must not exceed 40°C (applies to 1013 mbar and sea level). At low temperatures the capacity of the used batteries is reduced. The airborne sound emitted by the OK-

TOPUS® GLASS-Jack GL-N 400/300 amounts to < 70 dB (A), vibrations are < 2,5 m/s², which means that special protective measures are not required.

Operating restrictions result from the limited Working Load Limit of the OKTOPUS® GLASS-Jack GL-N 400/300 (see section 2.3 Symbols and markings) as well as the performance data, the operating conditions of the used crane and the conditions of the construction site. Furthermore, you have to regard the fact that the manipulated elements have to have sufficient inherent stability and are suitable to be installed with a vacuum lifting device (if necessary consult with the manufacturer of the elements).

Due to the broad variety of elements with many different surface coatings offered on the market we cannot assume liability in case of possible material incompatibilities between suction rubber 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.



When operating the OKTOPUS® at heights above 400 m the Working Load Limit is reduced! The Working Load Limits stipulated on the OKTOPUS® and in this operating manual do not apply in this case!



Never perform any unauthorized adjustments at the control system of the OKTOPUS®; this may lead to severe malfunction of the device! Danger to limb and life! Consult with the OKTOPUS® manufacturer if it is necessary to adjust the control system of the OKTOPUS®, e.g. to perform a height adjustment.

2.6 Transport and storage

The OKTOPUS® may only be moved with a suitable hoist/means of transport with appropriate Working Load Limit.



For transport purposes take the OKTOPUS® out of operation by sliding the switch “Suction/Release” to position “Release”!



Protect the rubber lip of the suction pads with protective cowls from dirt and damage!



In order to avoid damage due to deep discharge the batteries during storage, the OKTOPUS® has to be charged at least every two weeks.

3 Instructions for using the OKTOPUS®

3.1 Electrical power supply

Power supply is effected by a 24 V / 4,5 Ah battery system (2 pcs 12 V batteries).

The battery's charge level is monitored through a charge indicator according to figure 4. Light-emitting diodes (LED) in the signal colors green, yellow and red indicate the current charge level after the OKTOPUS® has been turned on.

The following charge levels can be read from the charge indicator:

- ⇒ If at least one green LED is illuminated the battery is charged. You can operate the OKTOPUS®.
- ⇒ If the third LED from the left is illuminated (yellow LED), you should charge the battery.
- ⇒ If the second LED from the left (yellow LED) is flashing, or the second LED from the left (yellow LED) and the red LED are flashing alternately, the battery needs to be charged instantly in order to avoid deep discharge and by that possible damage.

The charge indicator is arranged on the device according to figure 1.

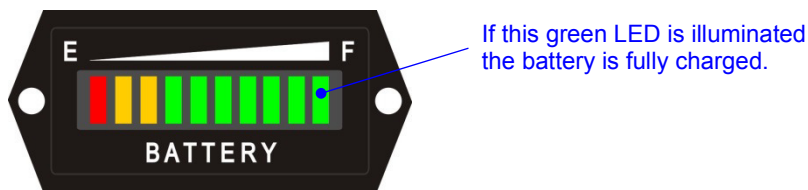


Fig. 4: Charge indicator



Do not use the OKTOPUS®, if the yellow LED is flashing, or the yellow and the red LED are flashing alternately. Possibly sucked loads shall be lowered. The OKTOPUS® has to be charged instantly in order to avoid deep discharge and by that possible damage to the battery.



The user has to ensure that the battery is properly charged when operating the OKTOPUS®.



The charge indicator only indicates the current voltage level of the battery. It does not give any reliable information regarding the battery's capacity.



The charge indicator responds rather slowly. In order to assess the voltage level realistically after the charging process (see point 4.4) you have to run the vacuum pump of the device for approximately 2 minutes, and then use the indicated charge level of the battery as a basis for assessing how to employ the device.

3.2 Vacuum supply

Vacuum supply is effected by an electrical operated vacuum pump that is powered by the battery. Starting at the vacuum pump the OKTOPUS® GLASS-Jack GL-N 400/300 is designed as a dual circuit system. That means that all the following vacuum components such as non-return valve, vacuum reservoir, pressure controller, vacuum gauge and suction pad exist twice (two vacuum circuits).

The two vacuum circuits of the OKTOPUS® GLASS-Jack GL-N 400/300 are marked by different colors, one color per vacuum circuit (blue and red). You have to ensure that suction pads with vacuum hoses of the same color are always arranged diagonally to each other at the suction frame.

The OKTOPUS® GLASS-Jack GL-N 400/300 mounted to the crane is ready for use, when a sufficient vacuum level is reached in both vacuum tanks. The current vacuum level is constantly indicated on the vacuum gauges (figure 5).

The green scale range is the

permissible working range from -0,65 bar to -0,9 bar.

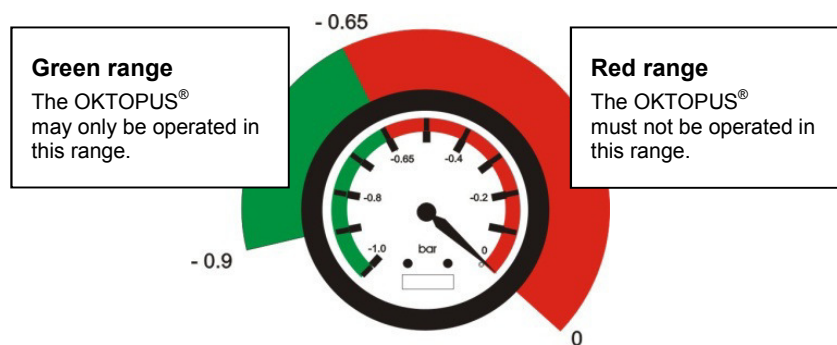


Fig. 5: Vacuum gauge

During operation the vacuum is monitored by two pressure controllers. If the vacuum is in the working range in both vacuum circuits, the OKTOPUS® is ready for use.

If the vacuum decreases impermissibly in one or both vacuum circuits or the pressure rises above -0,65 bar (red scale range) a warning is triggered automatically:

- ⇒ the alarm buzzer sounds.
- ⇒ red warning light illuminates.



Always arrange suction pads with vacuum hoses of the same color diagonally to each other at the suction frame! 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 Operating switch

The OKTOPUS® GLASS-Jack GL-N 400/300 is operated on the device according to fig. 6.

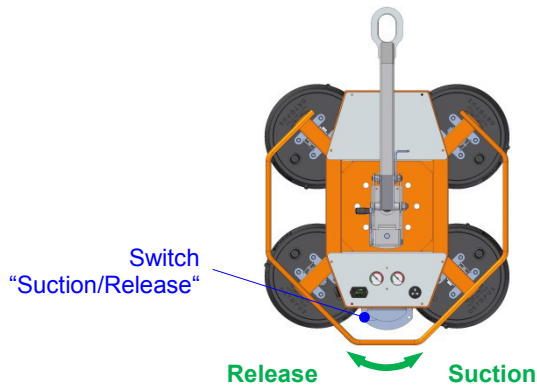


Fig. 6: Operating switch

3.4 Startup

In order to startup the OKTOPUS® proceed as follows:

- Place the suction pads of the OKTOPUS® on the element to be suctioned!
- Slightly lift the switch “Suction/Release” and slide it towards “Suction”!
- Check the battery’s charge level on the charge indicator:
 - ⇒ operational readiness is indicated by an illuminated green LED,
 - ⇒ If the second LED from the left (yellow LED) is flashing, or the second LED from the left (yellow LED) and the red LED are flashing alternately, the battery needs to be charged!
- Check the vacuum level on the vacuum gauges:
 - ⇒ if the pressure indicated on the vacuum gauges is in the green range the device is ready for use!
 - ⇒ if the pressure is in the red range in one or more vacuum gauges the alarm buzzer sounds, the red warning light illuminates and vacuum has to be built up.
- Slightly lift the switch “Suction/Release” and slide it towards “Release”.

3.5 Handling of glass and façade elements

Prior to attaching construction elements the OKTOPUS®:

- ⇒ has to be coupled to the crane as a load lifting device. The coupling crane/OKTOPUS® has to be performed with the crane at standstill and the OKTOPUS® taken out of operation.
- ⇒ has to be configured depending on the load to be manipulated (if necessary, mount extension arms).
- ⇒ has to be started up according to section 3.4.

3.5.1 Handling of lying glass and façade elements

- ⇒ Disengage unlocking “Tilt” (see fig. 7) and move the crane with the attached OKTOPUS® GLASS-Jack GL-N 400/300 to the elements. Position the suction pads parallel to the suction area of the load by the tilting the suction frame, by driving and lifting movements of the crane as well as manual guidance.



In order to avoid unintended rotating of the load, you have to ensure that the release lever “Rotate” (see fig. 8) is engaged. The release lever “Tilt” has to be disengaged and the crane arm in a vertical position!



Never attempt to lift a horizontally lying load, if the tilting function of the crane arm is locked!



- ⇒ Position the suction pads of the OKTOPUS® above the center of mass of the load (± 5 cm) and place it on the suction area. If the surface of the construction element is coated with protective film, it has to be removed at least in the area of the suction pads before placing the OKTOPUS®.



Make sure that the load is properly attached to the OKTOPUS®! Loads that are not balanced can suddenly turn over or rotate!

- ⇒ Now the construction element is suctioned. Slightly lift the switch “Suction/Release” (see fig. 6) and then slide it towards “Suction” until it latches (see also section 3.4 “Startup”).
- ⇒ You can lift the load only if the red warning light and the alarm buzzer have turned off, the vacuum gauges indicate that the working range has been reached (see figure 5) and you have ensured that nobody is in the danger area.
- ⇒ Do not lift the load higher than necessary!
- ⇒ Fix the element at the installation site in that way, that it does not pose a threat after being released from the OKTOPUS®!
- ⇒ Then the construction element is released by slightly lifting the switch “Suction/Release” and sliding it towards “Release”. Lifting the switch is an additional safety measure against unintentional operating errors.

If your OKTOPUS® is equipped with the optional blow-off function, subsequently press the button “Blow-off” (see fig. 1, pos. 15). 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.



As a result of the own weight of the OKTOPUS® there is still vacuum remaining after venting the suction pads through the vacuum system. Lifting the OKTOPUS® jerkily increases this effect. For this reason, always remove the device slowly and evenly from the installed elements!

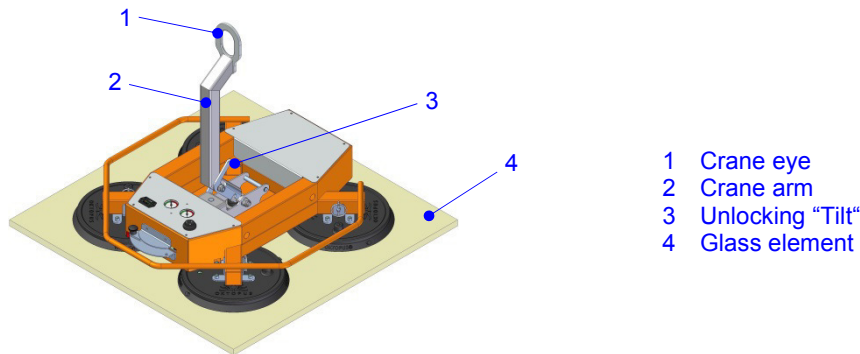


Fig. 7: OKTOPUS® GLASS-Jack GL-N 400/300 with horizontal glass element

3.5.2 Handling of glass and façade elements standing upright

- ⇒ Move the crane with the attached OKTOPUS® GLASS-Jack GL-N 400/300 to the elements. Position the suction pads parallel to the suction area by driving and lifting movements of the crane as well as manual guidance.



In order to avoid unintended rotating or tilting of the load, you have to ensure that the release levers are engaged (see fig. 8)!

- ⇒ Position the suction pads of the OKTOPUS® above center of mass of the load (± 5 cm) and place it on the suction area. If the surface of the construction element is coated with protective film, it has to be removed at least in the area of the suction pads before placing the OKTOPUS®.
- ⇒ Now the construction element is suctioned. Slightly lift the switch "Suction/Release" (see fig. 6) and slide it towards "Suction" until it latches (see also section 3.4 "Startup").
- ⇒ You can lift the load only if the red warning light and the alarm buzzer have turned off, the vacuum gauges indicate that the working range has been reached (see figure 5) and you have ensured that nobody is in the danger area.
- ⇒ Do not lift the load higher than necessary!
- ⇒ Fix the element at the installation site in that way, that it does not pose a threat after being released from the OKTOPUS®!
- ⇒ Then the construction element is released by slightly lifting the switch "Suction/Release" and sliding it towards "Release". Lifting the switch is an additional measure against unintentional operating errors.

If your OKTOPUS® is equipped with the optional blow-off function, subsequently press the button "Blow-off" (see fig. 1, pos. 15). 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.



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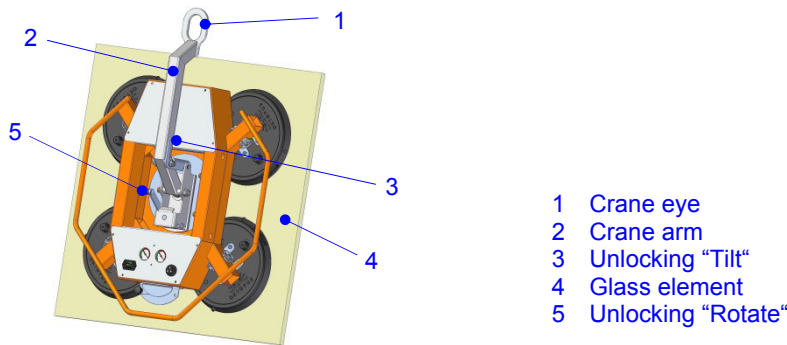


Fig. 8: OKTOPUS® GLASS-Jack GL-N 400/300 with vertical glass element

3.5.3 Rotating a vertically hanging load

⇒ Suction the element as described in 3.5.2!



Never release the unlocking "Rotate" and "Tilt" at the same time! Releasing both unlockings may lead to damaging the device and/or the load!

- ⇒ Before rotating the load, ensure that there is enough room. Make sure that the load cannot hit anything when being rotated!
- ⇒ Release the unlocking "Rotate" (see fig. 8) and rotate the load into the required position. Engage the release lever afterwards.

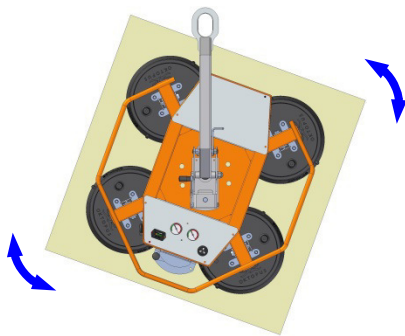


Fig. 9: OKTOPUS® GLASS-Jack GL-N 400/300 during rotation

3.5.4 Tilting a vertically hanging load

⇒ Suction the element as described in 3.5.2!



Never release the unlocking "Tilt" (see fig. 8) when loaded! This would result in the load tipping down uncontrollably!



In order to tilt the load from a vertical into a horizontal position at least 3 persons are required. Two persons secure and guide the load; the third person operates the unlocking!

- ⇒ Before tilting the load, please note that a tilted load requires more horizontal room. Make sure that the load cannot hit anything when being tilted!

⇒ Release unlocking “Tilt” (see fig. 8) and position the load horizontally.

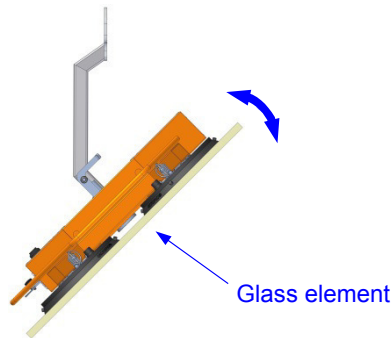


Fig. 10: OKTOPUS® GLASS-Jack GL-N 400/300 during tilting

3.6 Mounting the extension arms

- ⇒ Place the OKTOPUS® GLASS-Jack GL-N 400/300 flat on a clean and even surface (suction pads facing the floor).
- ⇒ Perform the following steps one after another for each extension arm to be attached:
 - Demount a suction pad from the suction frame. Therefore remove the lynch pin as well as the corresponding locking bolt.
 - Slide an extension arm into the base frame and fasten it with a locking bolt that is provided in the delivery. Secure the locking bolt with a lynch pin that is also provided in the delivery.
 - Mount the suction pad that was removed beforehand to the extension arm using the locking bolt that was removed beforehand. Secure the locking bolt with a lynch pin.

Demounting the extension arm is done in reverse order.

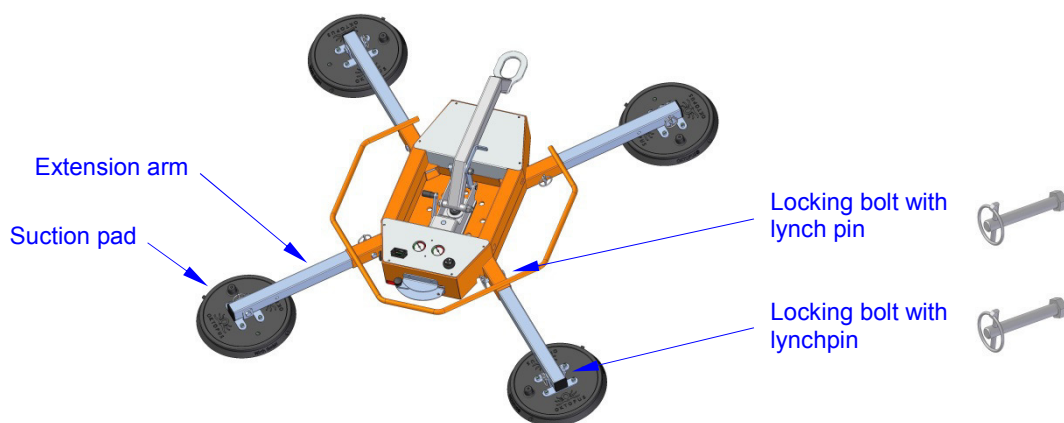


Fig. 11: Mounting the extension arms



Make sure that the locking bolts are always completely secured with the lynch pins provided by the manufacturer!

4 Service and Maintenance

4.1 General remarks

Since the OKTOPUS® system is a load lifting attachment both the manufacturer and the operator carry a high responsibility to guarantee the relevant safety standard throughout the entire operating time. Thus, service and maintenance are of great importance.

For maintaining a high level of operational safety the OKTOPUS® GLASS-Jack GL-N 400/300 has to be inspected by the service workshop of Wirth GmbH or by an especially qualified person

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

Additional operative and scheduled maintenance and service work may only be performed by a skilled expert. Maintenance and service work may only be performed when the device is taken out of operation.



Before performing any repair and maintenance work switch off the OKTOPUS®; slightly lift the switch “Suction/Release” and slide it towards “Release”.

Defective parts may only be replaced with original spare parts. They will be provided on request after consulting with the service team of the OKTOPUS® manufacturer. Using not original spare parts leads to exemption from liability by the manufacturer.

In order to perform maintenance and service work an appropriate tool kit has to be used.



Maintenance has always to be followed by a functional check.

If damages cannot be repaired by the operator's staff the Wirth GmbH service workshop needs to be informed.

4.2 Mechanical system

The mechanical system is sturdy and provided with a surface protection. Maintenance works on your side comprise

- ⇒ **daily visual inspection of the mechanical components of the OKTOPUS® GLASS-Jack GL-N 400/300 for damages before startup.**

The OKTOPUS® GLASS-Jack GL-N 400/300 is a load lifting attachment. Therefore, repairs on the mechanical function parts shall exclusively be carried out by the OKTOPUS® manufacturer.



Do not perform any repairs at mechanical functioning parts!

4.3 Vacuum system

Vacuum components, subjected to wear and being relevant to safety have to undergo inspections on a regular basis. You have to

- ⇒ **daily** check the components in terms of their correct position and mechanical damages, especially
- the suction pads (if necessary, replace suction pads),
 - 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 works oil free. The solid design allows maintenance-free operation.

The infiltration of dust into the vacuum pump is prevented by dust filters. For this reason maintenance of the vacuum system focuses on this component and mainly consists of:

- ⇒ replacing the dust filter if it is polluted. The dust filters are located under the bonnets of the OKTOPUS® (see fig. 1, pos. 2 and 6).

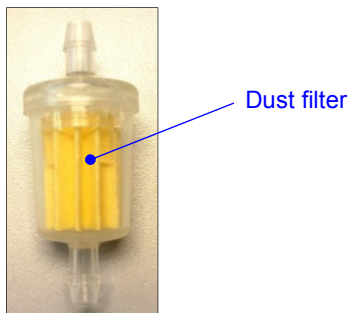


Fig. 12: Dust filter

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 Electrical and electronic components

The OKTOPUS® GLASS-Jack GL-N 400/300 is powered by two maintenance-free lead-batteries with acid-gel as electrolyte. The battery casings are sealed hermetically.

Maintenance work focusses on:

- ⇒ **daily** visual inspection of the external electrical functional and alarming equipment:
 - alarm buzzer and red warning light,
 - operating switch.
- ⇒ visual inspection of the battery's charge level shown on the charge indicator (see figure 4).
- ⇒ charging the battery

For charging purposes a charging unit 24 V / 2 A is provided by the OKTOPUS® manufacturer (see fig. 13).



Before connecting the charging unit, check if it is compatible with your mains supply! The performance data is stipulated on the charging unit.



Make sure that the arrow of the selector switch (see fig. 13, pos. 4) points at 24 V. Otherwise there is a danger of explosion during the charging process!

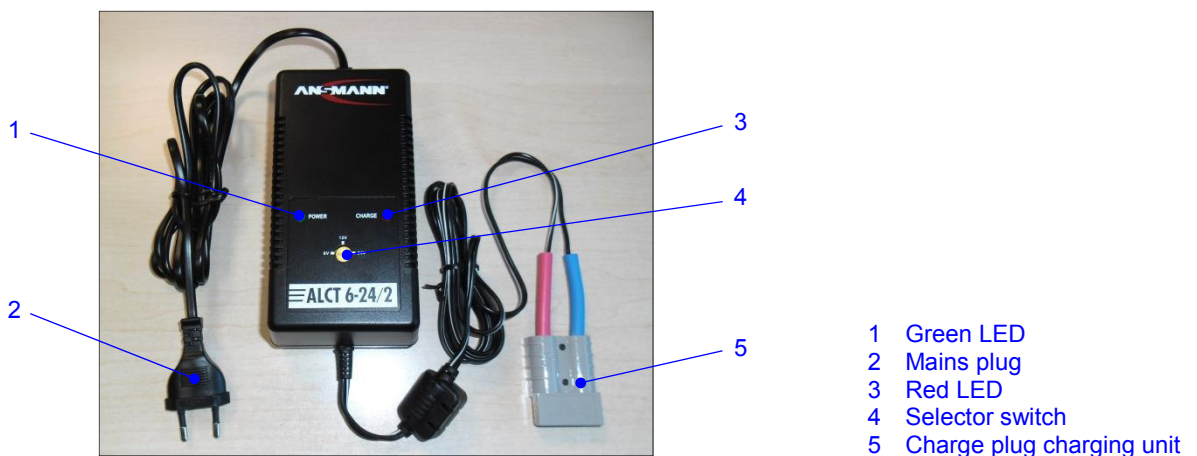


Fig. 13: Battery charger (example illustration)

Safety instructions for the charging unit:

- Only use the charging unit as intended.
- Do not expose the charging unit to high humidity or high temperatures.
- In order to eliminate danger of fire and danger of electric shock the charging unit has to be protected from rain/spray water.
- Do not open the charging unit.
- For maintenance purposes and in case of complete failure please contact our service team.
- Clean with a dry cloth only.
- Do not operate the charging unit unattended.
- Improper use of the charging unit may result in endangering the operator.

Non-compliance with the safety instructions may lead to damages to the charging unit or even to dangerous injuries to persons!

The charging process is performed as follows:

- Turn off the OKTOPUS®. Therefore slightly lift the switch “Suction/Release” (see fig. 6) and slide it towards “Release”.
- Connect the charge plug of the charging unit with the socket of the battery charger of the OKTOPUS®.
- Connect the mains plug of the charging unit to a power outlet and by that to the mains grid in order to start the charging process. The green LED “Power” indicates operational readiness. The red LED “Charge” indicates the charging process. After the charging process is completed the batteries are buffered with a float current.
- The charging process is completed when the red LED has turned off.
- Proceed as follows in order to disconnect the OKTOPUS® from the charging unit:
 1. Disconnect the charging unit from the mains grid,
 2. Disconnect the charging unit from the battery.

LED Display

- ⇒ Green LED “Power” is illuminated: operational readiness.
- ⇒ Red LED “Charge” is illuminated: batteries are being charged.
- ⇒ Red LED “Charge” is not illuminated: Charging is completed, batteries are charged, trickle charging.



If you want to use a charging unit other than that included in the delivery of the OKTOPUS®, it is absolutely necessary to contact the Wirth Service Team beforehand!



The sealed lead-gel battery requires strict adherence to the charging instructions.



In order to avoid damage due to deep discharge the batteries of the OKTOPUS® have to be charged at least every two weeks.

5 Handling incidents

Incidents are indicated by the red warning light and the sound of the alarm buzzer. A fading sound of the alarm buzzer signals total breakdown of electrical power supply.

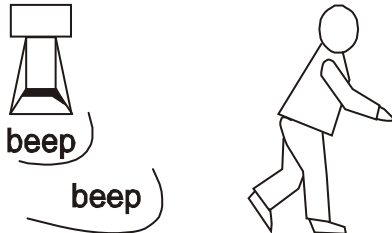


Fig. 14: Warning equipment

When the alarm buzzer sounds and/or the red warning light flashes immediately leave the danger area, since the sucked element might suddenly drop. Locate and eradicate the cause for the alarm. If you cannot remedy the fault, stop operating the OKTOPUS® immediately. After releasing a possibly sucked element the OKTOPUS® has to be secured against further use.



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

If the display of the charge indicator is not illuminated after turning on the OKTOPUS®, please immediately contact the service workshop of the Wirth GmbH.

6 Disposal and Recycling

For packaging the OKTOPUS® materials such as wood, cardboard, paper and foil are used. These materials have to be recycled according to national regulations.

Assign a waste management company to dispose of the OKTOPUS®. If you have any queries, please contact Wirth GmbH.



In order to protect the environment assign a waste management company that is familiar and complies with the national regulations to dispose of the OKTOPUS®!

Abstract of operating manual OKTOPUS® GLASS-Jack GL-N 400/300

1 Assembly

- (1) Attach OKTOPUS® to the crane hook.
- (2) If necessary, mount extensions.

2 Startup of the OKTOPUS®

- (1) Place OKTOPUS® on the element to be suctioned.
- (2) Slightly lift switch "Suction/Release" and slide it towards "Suction".
- (3) Check the battery's charge level on the charge indicator:
 - operational readiness is indicated by an illuminated green LED,
 - if the third LED from the left (yellow LED) is illuminated, the battery needs to be charged,
 - if the second LED from the left (yellow LED) is flashing or the second LED from the left (yellow LED) and the red LED are flashing alternately, the battery needs to be charged.
- (4) Check the negative pressure on the vacuum gauges (permissible green range -0,65 to -0,9 bar):
 - if the pressure is in the red range on one or more gauges the alarm buzzer sounds, the red warning light illuminates and vacuum has to be built up,
 - if the pressure is in the green range on both vacuum gauges, the OKTOPUS® is ready for use, the alarm buzzer turns off.

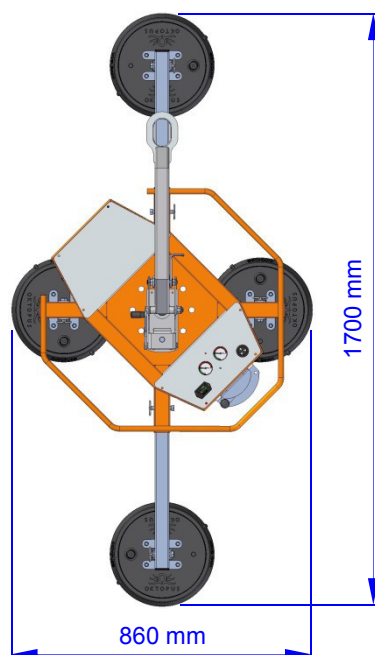
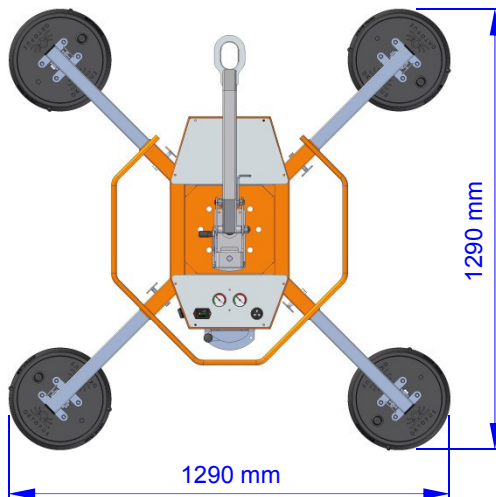
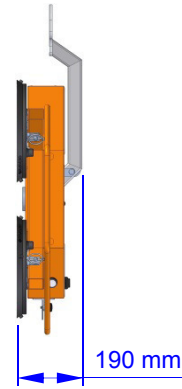
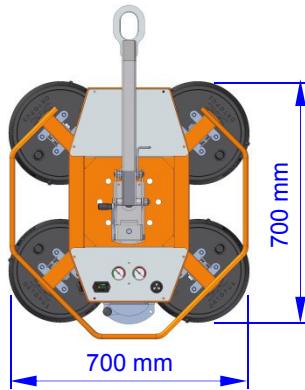
3 Instructions for use

- (1) Preparing the element:
 - Check the surface of the construction element: The surface has to be even, air-impermeable, clean and dry at least at the suction areas. There must be no protective film on the suction areas.
- (2) Attaching the element:
 - Place the suction pads of the OKTOPUS® in the center of the element.
 - Slightly lift the switch "Suction/Release" and slide it towards "Suction".
- (3) Positioning the element:
 - Raise/lift the element with lifting movement of the crane.
 - Position the element by driving and lifting movements of the crane and manual guidance of the installer at the same time.
 - Fix the element at the installation site.
- (4) Releasing the element:
 - Slightly lift the switch "Suction/Release" and shift it towards "Release". If the device is equipped with the blow-off function press the button "Blow off" and keep it pressed until all suction pads have completely disengaged from the load.

4 Taking the device out of operation

- Lower the crane.
- Disconnect OKTOPUS® / crane.
- Turn off the OKTOPUS®. Therefore, slightly lift the switch "Suction/Release" and slide it towards "Release".
- If the OKTOPUS® is taken out of operation for a longer period, the batteries have to be charged at least every two weeks.

Functional dimensions



EC-Declaration of Conformity

According to Annex II A of EC-Machinery Directive 2006/42/EC

Manufacturer: WIRTH GMBH
Department Vacuum Lifting Devices
Brehnaer Straße 1
D-06188 Landsberg

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

Product description: OKTOPUS® GLASS-Jack GL-N 400/300
Type: OKTOPUS® GLASS-Jack GL-N 400/300 DES So 110 R E B24 P
Serial number: *A 810 693*
Year of manufacture: *04/2017*

Furthermore, the machine corresponds with the requirements of **EC-Directive 2009/104/EC concerning the minimum safety and health requirements for the use of work equipment by workers at work**, of **EC-Directive 2001/95/EC on general product safety** and of **EC-Directive 2014/30/EU on electromagnetic compatibility**.

Applied harmonized standards:

DIN EN ISO 12100 (03/11)

Safety of Machinery – General Principles for 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 – Part 1: General Requirements

DIN EN 13155 (08/09)

Cranes - Safety - Non-fixed Load Lifting Attachments

Authorized representative for compiling the relevant technical documents:

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 shall become invalid, in case the product should be modified without our approval.

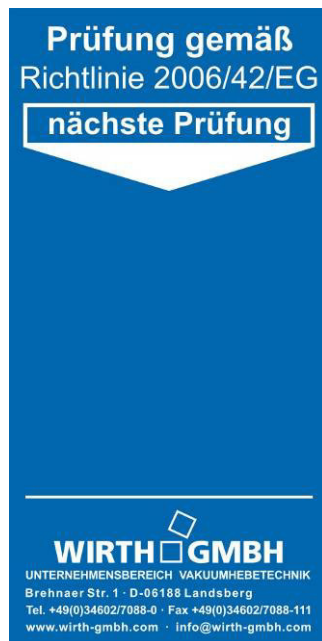
Landsberg, *27.04.2017*



Holger Schadwinkel
(Managing Director)

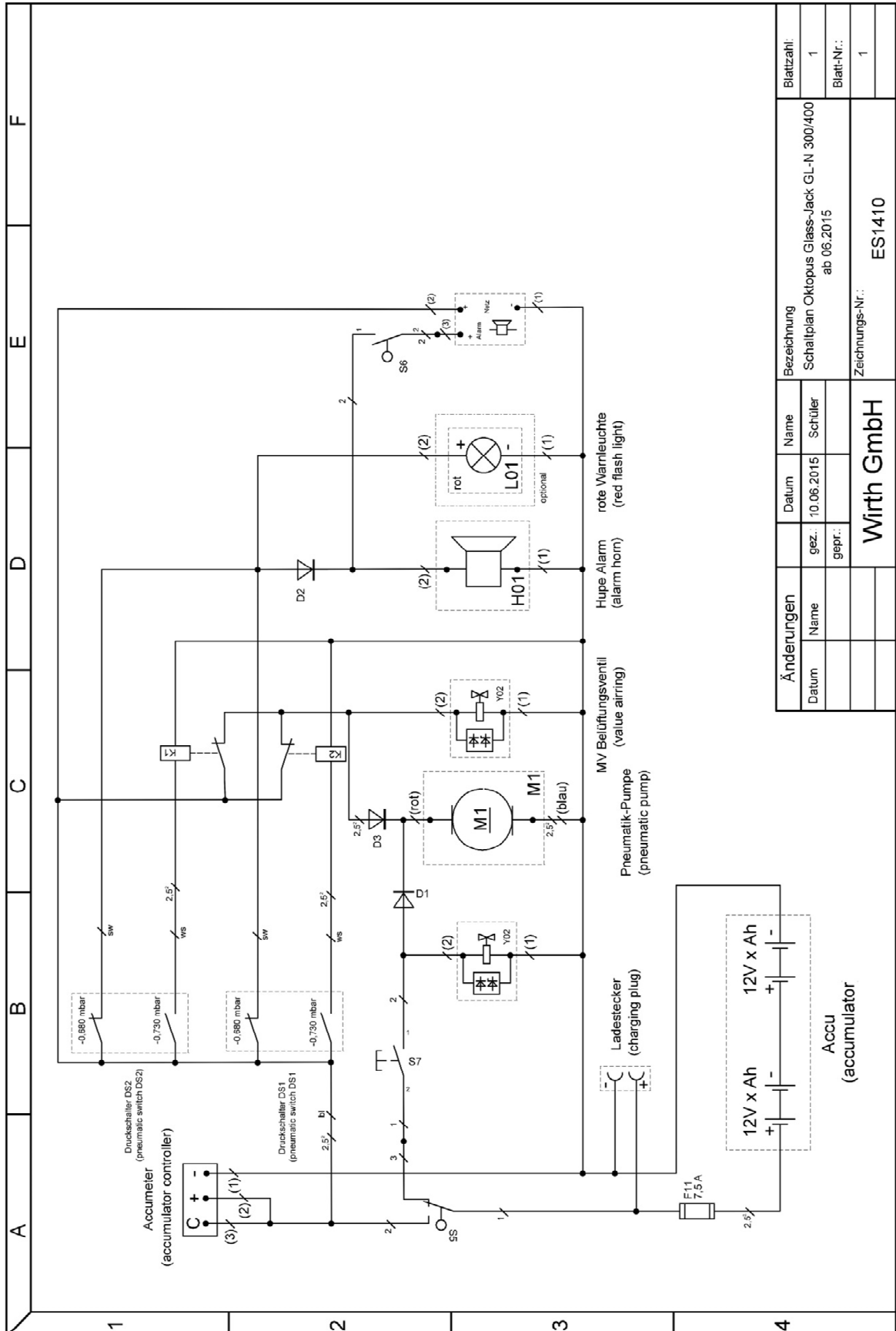
Inspection Tag of the OKTOPUS® GLASS-Jack GL-N 400/300

according Directive 2006/42/EC



Sign size:	80 x 40 mm
Background:	blue
Foreground:	white
Typing:	white on blue
Plate size:	diameter 30 mm
Background:	depending on the year
Foreground:	depending on the year

Electrical Circuit Diagram



Änderungen		Name		Datum		Bezeichnung		Blattzahl:	
Datum	Name	gez.:	Schüler	10.06.2015		Schaltplan Oktopus Glass-Jack GL-N 300/400 ab 06.2015		1	1
		gepr.:				Zeichnungs-Nr.:		1	1
Wirth GmbH				ES1410					