Operating manual | Inspection book

POWER LIFT HL 2.30 K
## ENGLISH

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1 Introduction

Nußbaum products are a result of many years of experience. A high quality standard and superior concept guarantees you reliability, long lifetimes and economical operation. To prevent unnecessary damage and hazards, read this operating manual carefully and always comply with its contents.

! Any other use, or use beyond purpose is considered improper.

! Otto Nußbaum GmbH & Co.KG is not liable for any resulting damage. The operating company alone carries the risk.

Proper use also includes:

- Adherence to all instructions in this operating manual and
- Compliance with inspection and maintenance work and the inspections stipulated.
- The operating manual is to be followed by all personnel working on the system. This is notably with regards to Section 3 “Safety conditions”
- In addition to safety information from the operating manual, comply with rules and regulations at the location of use.
- Proper system handling

Operating company obligations:

The operating company is obliged to only permit personnel to work on the system who

- Understand the principle regulations about work safety and accident prevention and who have been trained in working with the system.
- Have read the safety section and warning information in this operating manual, have understood it and confirmed learning with a signature.

Hazards in working with the system:

Nußbaum products have been designed and built to state-of-the-art and to recognized safety standards. However, improper use may lead to hazards to life and limb of the user or result in property damage.

The system may only be operated

- For proper intended use
- If it is technically in perfect condition

Organizational measures

- The operating manual is always to be kept ready at the location of use of the system.
- Supplemental to the operating manual, refer to and comply with generally valid legal and other binding regulations for accident prevention and for environmental protection.
- Check occasionally that personnel have an awareness of hazards and safe work in compliance with the operating manual!
- Use personal protective equipment as needed or required by regulations.
- All safety and hazard information on the system is to be kept in a legible condition!
- Replacement parts must meet technical specifications of the manufacturer. This is only guaranteed for original parts.
- Deadlines pre-set or given in the operating manual for repeating tests / inspections must be maintained.

Maintenance work, error removal

- Comply with pre-determined setting, maintenance and inspection work and intervals in the operating manual, including details for exchanging parts / part fittings! These activities may only be done by specialists who have participated in a special factory training.
Guarantee and liability

- In principle, our "General sales and supply conditions" apply. Guarantee and liability claims for personal and property damage are excluded if due to one or more of the following causes:

- Improper use of the system.

- Improper assembly, commissioning, operation and maintenance of the system.

- Operating the system with defective safety devices or improperly attached or non-functional safety and protection devices.

- Non-compliance with information in the operating manual in terms of transport, storage, assembly, commissioning, operation, maintenance and fitting of the system.

- Independent construction changes to the system.

- Independent changes to the system (e.g. drive ratios: power, rotation speed, etc.)

- Improperly done repairs.

- Catastrophic cases due to foreign influences or force majeure.
2 General information

Technical documentation contains important information for safe operation and for retaining functional safety of the system.

• To verify system set up, the set up protocol form is to be signed and sent to the manufacturer.

• Forms are available in this inspection book for use in verifying single, regular and extraordinary safety checks. Use the forms to document inspections and leave the completed forms in the inspection book.

• The system master forms must record changes to the construction and changes to set up and test location.

2.1 Set up and testing the system.

Safety relevant work on the system and safety inspections may only be done by personnel specifically trained to carry it out. They are designated in general and in this documentation as technical experts and specialists.

• Technical experts are people (freelance expert engineers, TÜV specialists) that may inspect and assess due to their education and experience with lift systems. They are knowledgeable in the appropriate work safety and accident prevention regulations.

• Specialists (competent people) are people who have sufficient knowledge and experience with lift systems and have participated in a special factory training by the system manufacturer.

2.2 Hazard information

To become aware of the hazardous points and important information, the following three symbols are used with the descriptive meaning. Pay particular attention to text positions that are labeled by these symbols.

![Note!](image)

Labels information about a key function or points to an important remark!

![Caution!](image)

Identifies a warning of possible system damage or other operating company property damage if the highlighted process is not done properly!

![Danger!](image)

Identifies a danger to life and limb, if the highlighted process is not done properly there is a mortal danger!
3 Safety regulations

When working with systems comply with legal accident prevention regulations according to BGG 945: inspection of lifts; BGR 500 operation of systems; VBG 14.

Particular attention is drawn to compliance with the following regulations:

- The total weight of the accepted load may not exceed 3,000 kg.
- When operating the system, follow safety regulations and operating instructions in the operating manual.
- Only personnel aged 18 or over may operate systems independently, they must be trained in system operation and have their work verified by the company. They must be explicitly tasked with operating the system (excerpt from BGR 500), see transfer protocol.
- The lift must be completely lowered before the vehicle is driven on, and it may only be done in the intended direction.
- Vehicles with low floor clearance or fitted with custom devices are to be checked to see whether damage could occur before positioning the lifting arm and raising the vehicle.
- Vehicles may only be attached at fixture points approved by the vehicle manufacturer.
- Fixture points may not have been weakened by rust, corrosion, damage or modifications.
- A single load point from only one or two lifting arms is not allowed.
- The proper positioning of the lifting arm is to be checked again after the vehicle has been raised slightly.
- After setting down the vehicle, check the lifting arm positions for proper seating below the fixture points before the vehicle is lifted again.
- During lifting or lowering, the work area of the lift should be clear or people.
- The entire lifting and lowering process is to be continuously observed.
- It is prohibited to move people with the lift.
- Climbing onto the lift and onto a lifted vehicle is prohibited.
- When dismantling heavy vehicle parts (e.g. motors) the entire centre of mass of the vehicle changes on the lift. The vehicle is to be appropriately secured using suitable materials against lifting or tipping (e.g. by additional beams, tensioning belts, support frame).
- Loaded vehicles change the total centre of mass of the vehicle. Use support blocks here if working on this vehicle. The safest method is to unload the vehicle in advance.
- Prevent extreme vehicle shaking while it is on the lift.
- Maintenance or repairs on the lift may only be done once the main switch is off, secured and locked against unauthorized access.
- After design and maintenance on load bearing parts the lift must be inspected by a technical expert.
- It is prohibited to set up a standard lift in explosion endangered workshops and humid spaces (e.g. washing halls).
- In our plans, we inform of the minimum specifications for the foundation, however local conditions (e.g. underground, etc.) are outside of our responsibility. In case of need, contact an architect or statics expert.
3.1 Safety inspection

The safety inspection is required to guarantee operational safety of the lift. It is to be done:

1. Before first commissioning after setting up the lift
   Use the "single safety inspection" form

2. After first commissioning, check regularly at least once per year.
   Use the "regular safety inspection" form

3. After changes to the lift system construction
   Use the "extraordinary safety inspection" form

⚠ Single and regular safety inspections must be done by a specialist. It is recommended to do maintenance at the same time.

⚠ After a change in construction (for example changing the load carrying capacity or changing the lifting height) and after significant maintenance on load carrying parts (e.g. welding work), inspection by a technical expert is required (extraordinary safety inspection)

This inspection book contains forms with a detailed inspection plan for safety inspections.

Please use the appropriate form, record the condition of the inspected system and leave the completed form in this inspection book.
4 Assembly and commissioning

4.1 Set up guidelines

- Lift set up is done by trained manufacturer personnel or a contract partner. If the operating company has appropriately trained assemblers, the lift can also be set up by them. Set up is to be done according to the assembly instructions.

- A standard lift may not be set up in explosion endangered spaces or wash halls.

- Before setting up, verify that there is a sufficient foundation or make it according to the guidelines in the foundation plan. The set up location must be level and even. Foundations in open air and spaces where winter storms or frost are to be expected, must have a foundation to frost depth.

- An on-site standard electrical connection of 3~/N + PE, 400 V, 50 Hz is to be provided. The supply is to be secured according to VDE0100 with 16 ampere fuses. The minimum line cross-section is 2.5 mm².

- To protect the electrical cable all cable conduits are to be fitted with cable sleeves or flexible plastic pipes.

- The lines can be fed through the cross-beams. In all cases, prevent kinks or tensional loads on the lines.

- After successful lift installation and before first commissioning, the operating company must have the lift grounding conductors inspected on-site according to IEC regulation (60364-6-61). An insulation resistance test is also recommended.

4.2 Commissioning

After commissioning, the set up protocol must be completed and sent to the manufacturer.

4.3 Changing the assembly location

To change the assembly location the pre-conditions must be met according to the assembly guidelines. The location change is to be done according to the following sequence:

- Move the lift rails to about half height.

- Disconnect electrical supply lines to the lift from mains power.

- Replace the cable harness.

- Remove hydraulic lines above on the opposite side and seal them off with blind stoppers.

- Remove cross-beams.

- Suction off hydraulic oil.

- Loosen the anchor fastenings.

- Carefully transport the lift column using appropriate auxiliary means (e.g. crane, forklift, etc) to the new assembly location.

- Assemble the lift according to the procedure during assembly and anchoring before first commissioning.

Use new anchors.
The old anchors are no longer fit for purpose!

Before re-commissioning, a safety inspection must be done by a specialist (use the regular safety inspection form).

If the lift set up is done by a specialist (factory trained assembler) then he can also do the safety inspection. If the set up is done by the operating company then a specialist must be tasked with the safety inspection. The specialist confirms seamless operation of the lift on the set up protocol for
4.4 Selecting the anchors

- **Fischer anchor**
  12 x high performance anchor
  FH 18 x 100/100 B - Item No. 972230

- **Hilti anchor**
  12 x Injection anchor
  HIT-V-5.8 M12 x 150 - Item No. 387061

4.5 Assembly

Follow the instructions enclosed in the anchor packaging.

4.6 Set up and anchoring the lift

On-site provision of suitable auxiliary materials (e.g. forklifts, crane, etc) are to be made available for unloading the lift and for assembly.

Before setting up the lift, the operating company must ensure or make a sufficient foundation. For this, a normal reinforced concrete floor with a value of a min. C20/25 is required.

The minimum foundation thickness (without screed and floor tiles) is to be taken from the foundation plan in this document.

In our plans, we inform of the minimum specifications for the foundation, however local conditions (e.g. underground, floor quality, etc.) are outside of our responsibility.

In special cases, the design of the installation location must be individually specified by planning architects and statics experts.

Open air foundations must be made to frost depth.

Similar value anchors and other known brands of anchor manufacturers can be used when considering the conditions.

The operating company is solely responsible for the set up location.

If the lift is to be assembled on an existing concrete floor, cement quality and strength are to be checked beforehand. In case of doubt, make a test bore and insert a heavy-duty anchor. Then tighten the anchor to the manufacturer recommended torque.

After inspection within the anchor zone of influence (see technical data sheet of the anchor manufacturer), if there is visible damage (hairline cracks, cracks or similar), or if the required torque cannot be applied then the set up location is unsuitable.

The following preparation and work steps are to be done:

- To reach a higher level of protection against humidity from the workshop floor, a thin PE foil should be put between the workshop floor and column base plate before anchors are placed. Also, the gap between the base plate and workshop floor should be silicone sprayed after anchoring.
• Set up and position the lift
• Fasten cross-beams above on the lifting columns.
• Holes for floor anchoring are to be placed through the holes in the base plates.
  Clean the bore holes by blowing them out with air. Insert safety anchors into the holes (also see 4.4 Selecting anchor).

• Connect the hydraulic lines.
• Before anchoring the lift, check whether the concrete is of quality C20/25 up to the finishing level of the completed floor. In this case, take the anchor length from the anchor manufacturer's data sheet.

! If there is a floor covering (tiles, screed) on the weight bearing concrete, the thickness of this covering must be determined. Afterwards, take the anchor length from the anchor manufacturer's data sheet.

• Position and align the lift and lift columns using a bubble level.
• Positioning the fastening anchor
  1 Column
  2 Base plate
  3 Positioning the fastening anchor

• The base plates are also to be supported with suitable underlays (thin metal strips) to ensure precise vertical set up and contact between the base plate and the floor.

• Tighten the anchors using a torque wrench.
• If an anchor is tightened to the specified torque, then the domed washer lays flat on the base plate. Secure anchor connection is then guaranteed.

4.7 Lifting arm assembly
• Hang in the standard lifting arm and then place an acid-free multi-purpose grease into the joint bolts (4) in each case from above into the hole and then insert the enclosed locking ring.

! The lifting arm bolts must be secured on both sides as otherwise a reliable connection is not given between the lift rails and lifting arm.

! See to it that the lifting arm blocks (5) are ratcheted in after the vehicle has been accepted.

4 Joint bolts
5 Drawbar with lifting arm block

For first commissioning, it is normal to have a different start up and a large "shaking" in the uppermost position.
Air trapped in the system must be completely removed first. Turn the reversing switch to ↑ "Lift" (8) and hold for at least 15 seconds.

• Prevent the pressure switch (60.14) from turning as there is a danger of cable break.
• When lowering the lift on an empty run, if it shudders or does not lower at all, a pressure switch (60.14) readjustment is necessary.

! Afterwards, the function must be tested as explained on the following page, by placing wooden jacks (or similar) and testing. The lowering motion of the stage must immediately stop after setdown onto the wooden jack. If this is not the case, the pressure switch must be readjusted and the test repeated.

Each anchor must be able to be tightened to the torque specified by the manufacturer. Safe operation of the lift is not guaranteed with a lower torque.
5 Operating manual

When handling the system, it must absolutely comply with safety regulations. Carefully read the safety regulations in Section 3 before first operation!

To prevent operation by unauthorized people, secure the reverse switch after working height has been reached.

Operating element

6 Reversing switch
7 Unit guard

5.1 Positioning the vehicle

- The lift must be completely lowered before the vehicle is driven on, and it may only be done in the intended direction.

Lifting arm start position

- Drive the vehicle onto the lift according to the following images, until the lifting arm receives it.

The lift column must be located between the steering wheel and the car door hinges!

- Swing in the lifting arms and place the adjustable receiving plate at the vehicle manufacturer specified points.

Drive in the middle of the lift.
• Vehicles with low floor clearance or fitted with custom devices are to be checked to see whether damage could occur before positioning the lifting arm and raising the vehicle.

• The lifting arm block must be ratcheted in after the fixture point has been reached.

5.2 Lifting the vehicle

• Lift the vehicle until the wheels are off the ground. Turn the reversing switch to "LIFT"(8) then stop.

• The proper positioning of the lifting arm is to be checked again after the vehicle has been raised slightly.

• Similarly check whether the lifting arm blocks are ratcheted in. Otherwise, lower the lift and reposition the vehicle.

• After setting down the vehicle, check the lifting arm positions for proper seating below the fixture points before the vehicle is lifted again.

• During lifting or lowering, the work area of the lift should be clear or people and objects.

• Afterwards, lift the vehicle to the desired working height.

Ensure secure vehicle placement on the carrier plate, otherwise there is a danger of the vehicle dropping.

See to it that the lifting arm blocks (5) are ratcheted in after the vehicle has been accepted.

5.3 Lowering the vehicle

! Check that there are no people or objects in the hazardous area of the lift.

• Lower the vehicle to the desired working height. Turn the reversing switch to "LOWER" (10). This releases the safety catches and the lift lowers.

• If the lift is held in the safety catches, these must be lifted first.

For heavier vehicles, lift slightly before lowering to prevent an "sticking" and any corresponding jolt during lowering.

• The entire lowering process must be observed.

• Once the lift is detected in the lowest position, swing out the lifting arms to the start position (see image 008).

• Move the vehicle out of the lift.

5.4 Lift synchronization

• The command, downstream cylinder system excludes any unsynchronous running when operated properly.

• However, if the lift must be equalized it is sufficient to move it to the upper end position. Push the reverse switch for ten more seconds. During this procedure the lift rails are equalized to each other as hydraulic oil flows to the tank as an overflow from the command cylinder via the downstream cylinder to the tank.

• Release the reversing switch. The lift rails then lower 1-2 millimetres and thereby block the overflow opening of the cylinder.

• Both lift rails are now at the same height.
6 Maintenance and care of the system

Before maintenance, do all preparation work so there is no danger to life or limb or object damage during maintenance and repair work.

Value is placed on long lifetimes and safety in the development and production of Nußbaum products. To guarantee the safety of the operator, product reliability, low running costs, keep the warranty and also the long-lifetime of the product, proper set up and operation is just as important as regular maintenance and sufficient care.

Our platforms fulfil or exceed all safety standards of the countries we supply to. For example, European regulations require a service by qualified experts every 12 months of work of the platform. To guarantee the largest possible availability and functional capacity of the lift system, ensure the list of any cleaning, care and maintenance work is done.

The lift system is to be serviced at regular intervals according to the following plan. For intensive operation and higher degree of contamination shorten the service interval.

The complete function of the lift system is to be observed during daily use. Customer service must be informed of any malfunctions or leaks.

To simplify maintenance work, follow instructions on the maintenance sticker that is found somewhere on the unit, depending on the lift design.

6.1 System maintenance plan

Before beginning service, disconnect from power. The system is to be secured against unintentional lowering and unauthorized access.

During assembly and maintenance always check the condition of electrical lines. All cables and lines must be secured so they cannot be crushed, kinked or contact any moving assembly.

6.1.1 Daily, as required or visible damage

• Check condition of the model plate, load capacity and sticker. Exchange them if damaged or illegible.

• Check the door stopper rubber for wear. Exchange if damaged

• Check the foot bumper for condition and function. Exchange if damaged

• The rubber acceptance plate is to be checked for wear and replaced if necessary.

• The lift cylinder can sweat and small oil droplets can form on the base plate, this is however, not a leak. Clean as required.

• Check the function of the safety catch.

6.1.2 Maintenance every 3 months

• Check the tracks and the lift rail equalization parts for wear. After cleaning, lubrication with an MO-S2.
6.1.3 Maintenance 1 x per year

- Check condition of the model plate, load capacity and sticker. Exchange them if damaged or illegible.

- Check the lifting arm block and gear for wear. Exchange both components if there is visible damage.

- The booms and bolts of the lifting arm and the threaded bolts of the carrier plate are to be checked for ease of running. If required, lightly grease with a multi-purpose grease. Do not over-lubricate.

- Electrical components (plug, electrical lines, cable, etc.) are to be checked for function. In particular, the reversing switch and the safety catch.

- The components are to be exchanged if there are defects or damage.

- Optional energy set
  Check the condition and function of electrical sockets and the pneumatic connections.

- Check all available safety devices for function.

- Check the oil. The oil is used if it has a milky colour or if the hydraulic oil smells unpleasantly.

- All weld seams must have a visual inspection. Stop the system and contact the manufacturer if there are cracks or breaks in weld seams.

- Check the powder coating and improve if required. Damage by external influences is to be treated immediately after detection. If these points are not treated, infiltration of deposits of all kinds can cause wide-ranging and permanent damage. These points are to be lightly sanded (120 grit), cleaned and degreased. Afterwards, rework with a suitable touch up paint (note the RAL No.).

- Check galvanized surfaces and touch up as needed. White rust is fostered by permanent humidity, poor ventilation. Rust is brought out by mechanical damage, wear, aggressive deposits (de-icing salt, leaking operating fluids) cleaning that is not done or incomplete. The affected areas can be treated by using a sanding cloth (A 280 grit). If required, the parts are to be treated with a suitable, resistant mate-

rial (paint etc).

- The condition and function of the load suspension means are to be checked.

- Check the torque of the fastening anchor. See the data sheet for the relevant anchor manufacturer.

- Check the torque of the fastening screws. Also see the assembly protocol.

Torque (Nm) for shaft screws

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<th>8.8</th>
<th>0.11</th>
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- * Slide friction number 0.10 for very good surface, lubricated
- ** Slide friction number, 0.15 for good surfaces, lubricated or dry
- *** Slide friction number 0.20 surface black or phosphated, dry
6.1.4 Maintenance every 2 years

- According to manufacturer details, the hydraulic oil should be changed every two years in normal operations. Various environmental influences e.g. location, temperature swings, intensive operation etc., can have an influence on the quality of the hydraulic oil. For this reason, the oil must be checked during annual safety inspections and maintenance.
- The oil is used if it has a milky colour or if the hydraulic oil smells unpleasantly.
- To change oil, lower the lift to its lowest position then suction the oil out of the oil container and replace the contents.
- The manufacturer recommends a high-quality clean hydraulic oil. The required oil volume and type is to be taken from the technical data. After filling, the hydraulic oil must be between the upper and lower marking on the oil dipstick, or approx. 2 cm below the oil filling opening.
- Dispose of the old oil according to regulations to the intended location (district offices, environmental protection office or commercial regulatory office has the obligation to disclose about disposal points).

6.2 Cleaning and care of the system

A regular and expert clean helps retain the value of the system.

Additionally, it can also be a pre-requisite for the preservation of guarantee claims for any eventual corrosion damage.

The best protection for the system is regular removal of contaminants of any kind.
- De-icing salt
- Sand, pebbles, earth
- Industrial dust of all types
- Water, also in connection with other environmental influences
- Aggressive deposits of all types
- Permanent humidity due to insufficient ventilation

The frequency of system cleaning depends, among other things on the frequency of use, of system handling, of workshop cleanliness, and the location of the system. Furthermore, the degree of contamination depends on the time of year, the weather conditions and workshop ventilation. Under adverse circumstances, weekly system cleaning might be required, however a monthly cleaning may be sufficient.

Do not use and aggressive and abrasive materials for cleaning, rather use mild cleaners, e.g. a commercially available detergent and luke warm water.

- For cleaning, do not use high pressure washers (e.g. steam cleaners)
- Carefully remove all contamination with a sponge, or if required with a brush.
- Make sure that there is no residue of the cleaner on the system.
- Dry the system with a cloth and spray it with a spray wax or oil.
- Moving parts (bolts, bearing zones) are to be lubricated or oiled according to instructions.
- When cleaning the workshop floor ensure that no aggressive cleaning materials come into contact with lift surfaces. Permanent contact with any kind of liquid is prohibited. This is also true for the fastening anchors.
7 Behavior in cases of error

Defective operational readiness of the system may be due to a simple error. Check the system for the listed sources of error.

If the error cannot be removed after an inspection to the named causes, then inform customer service or your dealer.

![Important information]

Independent repair work on safety devices of the lift and checking the electrical system may only be done by specialists.

### Problem: The lift cannot be raised

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>No power supply</td>
<td>Check the power supply</td>
</tr>
<tr>
<td>Only 2 phases active</td>
<td>Do an on-site check with a qualified electrician</td>
</tr>
<tr>
<td>The main switch is not switched on, or is defective</td>
<td>Check the main switch</td>
</tr>
<tr>
<td>Defective fuse</td>
<td>Check fuses</td>
</tr>
<tr>
<td>Defective reverse switch</td>
<td>Check function, Inform customer service</td>
</tr>
<tr>
<td>Motor has overheated</td>
<td>Let the water cool</td>
</tr>
<tr>
<td></td>
<td>(Cooling time depends on ambient temperature)</td>
</tr>
<tr>
<td>Motor defective</td>
<td>Do an emergency discharge (see Section 7.2) Inform customer service</td>
</tr>
<tr>
<td>The coupling between the motor and pump is defective</td>
<td>Inform customer service</td>
</tr>
<tr>
<td>Insufficient hydraulic oil available</td>
<td>Refill new hydraulic oil</td>
</tr>
</tbody>
</table>

### Problem: The lift cannot be lowered

<table>
<thead>
<tr>
<th>Possible causes</th>
<th>Remedy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The lifting arm has moved onto an obstacle</td>
<td>Raise the lift and remove the obstacle</td>
</tr>
<tr>
<td>Defective reverse switch</td>
<td>Check function, Do an emergency discharge (see Section 7.2) Inform customer service</td>
</tr>
<tr>
<td>The safety catch magnet is defective</td>
<td>Do an emergency discharge (see Section 7.2) Inform customer service</td>
</tr>
<tr>
<td>Lift rails are positioned in the safety catches</td>
<td>Push the &quot;LIFT&quot; button and then &quot;LOWER&quot;</td>
</tr>
</tbody>
</table>
7.1 Moving onto an obstacle

If the system moves onto an obstacle during lowering, then it remains in position due to the mechanical resistance. In this case, move the lift upwards by pushing the reversing switch \( \text{	extasciitilde "LIFT" (8)} \) on the operating panel until the obstacle can be removed. Afterwards the lift is in a normal work condition and can continue to be operated as described in the operating manual.

7.2 Emergency discharge

An emergency discharge is an access into the system controls and may only be done by experienced specialists. The emergency discharge must be done in the following described sequence, otherwise it can lead to damage and hazard to life and limb.

- People may not stand in the hazardous area around the lift.
- Loosen and remove the catch cover with a 3 mm Allan key.
- Retract the safety catches manually and secure against ratcheting in.
- If the safety catches are ratcheted in, then the lift rails must be lifted with a suitable auxiliary material to release the catch.
- Loosen and remove the unit hood (7).
- Push the pin in the centre of the valve (12) with a suitable object. The lowering process starts immediately.
- Always observe the lowering process.
- If there is a hazard, release the valve (12).
- Lower the lift to the lowest position.
- If required, firstly inform customer service.
- Only operate the lift if it is in seamless condition from a safety point of view.
8 Technical information

8.1 Technical data

System load capacity: 3,000 kg

Load distribution: Max. 3:2 or 2:3 in or against the drive-in direction

Effective lifting range of the system: Approx. 1990 mm

System lift time: Approx. 20s with 3,000 kg load

System lowering time: Approx. 16s with 3,000 kg load

Operating pressure without load: Approx. 65 bars

Operating pressure with load: Approx. 320 bars

Motor capacity: 3 kW

Motor speed: 2880 rpm

Hydraulic pump: 2.7 cm³/s

Pressure relief valve: Approx. 330 bars

Filling volume oil container: Approx. 8.5 litres

Hydraulic oil: HLP 32

Noise level: ≤ 70 dB(A)

Operating voltage: 3 x 400 V, 50 Hz

On-site connection: 3~/N+PE, 400 V, 50 Hz with 16 A fuses, slow, according to VDE regulations

8.2 Safety devices

- **Deadman controls**
  Lift movement stops when the reversing switch is released.

- **Reversing switch with curtain lock device**
  Fuse to prevent unauthorized use.

- **Over-pressure valve**
  Hydraulic system fuse against over-pressure.

- **Check valve**
  Secure the vehicle against unauthorized lowering.

- **Safety catch**
  Secure against unauthorized lowering of the lift.

- **Foot bumper**
  Secure against shear and crushing points in the foot area.

- **Lifting arm block**
  Secures the lifting arm against horizontal movement in a lifted condition.
9 System master sheet

9.1 Manufacturer

Otto Nußbaum GmbH & Co.KG
Korker Straße 24
D-77694 Kehl-Bodersweier

9.2 Purpose

The lift is a lifting tool for raising motor vehicles in normal workshop operation. A total weight of max. 3,000 kg for a maximum load distribution of 3:2 or 2:3 in the drive in direction or against the drive-in direction may not be exceeded. A single load from only one or two lifting arms may not happen.

Set up of the standard lift in explosion endangered workshops and humid spaces (e.g. washing halls) is prohibited.

Lift operation is done directly on the operating column.

After construction and maintenance changes on load carrying parts the lift must be inspected afterwards by a specialist who approves the changes. If the set up location is changed, the lift must be checked again by a specialist and changes approved.

9.3 Changes to the design / construction

Inspections by an expert are required before recommissioning (date, type of change, expert signature).

Name, address of expert

Location, date      Expert signature

9.4 Changing the assembly location

Inspections by an expert are required before recommissioning (date, type of change, specialist signature).

Name, address of expert

Location, date      Expert signature
11 Hydraulic plan

0.1 Oil container 230HL02013
0.2 Suction filter 980201
0.3 Mechanical pump 980340
0.4 Motor 992658
0.5 Oil dipstick 982186
0.6 Check valve 130053
0.7 Hydraulic block 230SPL01110
0.8 Pressure relief valve 155211
0.9 Lowering brake 1/4" 983629
0.10 Double-acting valve 600449
0.11 Pressure switch 983642
12 Replacement parts list

<table>
<thead>
<tr>
<th></th>
<th>Part Number</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>230HL65001</td>
<td>COMPLETE OPERATING COLUMN</td>
<td>1 PC.</td>
</tr>
<tr>
<td>2</td>
<td>230HL65032</td>
<td>COMPLETE COUNTER COLUMN</td>
<td>1 PC.</td>
</tr>
<tr>
<td>3</td>
<td>230HL96328</td>
<td>CROSS-BEAM</td>
<td>1 PC.</td>
</tr>
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</table>
10.xx  Column

10.1 230HL02001_ET  COMPLETE UNIT

10.2 230HL65001_ET  COMPLETE OPERATING COLUMN

10.3 230HL96000_ET  LIFT RAILS, OPERATING SIDE, COMPLETE

10.4 230HL96050_ET  LIFT RAILS, OPPOSITE SIDE LEFT, COMPLETE

10.5 230HL96300_ET  CROSS-BEAM COMPLETE

10.6 230HL65032_ET  COLUMN, OPPOSITE SIDE, COMPLETE

10.7 230HL18020_ET  LIFTING ARM SHORT OPERATING SIDE

10.8 230HL18030_ET  LIFTING ARM SHORT OPPOSITE SIDE

10.9 230HL18001_ET  LIFTING ARM LONG, COMP. 945-1493 MM
10.10 230HL18011_ET LIFTING ARM LONG, COMP. 945-1493 MM

10.11 230HL22351_ET DOWNSTREAM CYLINDER COMPLETE

! WE RECOMMEND THAT YOU SEND DEFECTIVE CYLINDERS TO US FOR REPAIR. CYLINDERS WILL BE INSPECTED AND SENT BACK!

10.12 230HL22301_ET CYLINDER COMMAND COMPLETE

! WE RECOMMEND THAT YOU SEND DEFECTIVE CYLINDERS TO US FOR REPAIR. CYLINDERS WILL BE INSPECTED AND SENT BACK!

20.xx Operating column

20.1 230HL65003 LIFTING COLUMN OPERATING SIDE

20.2 230HL96100 HEAD PLATE COM. COMPLETE

20.3 00MNG403170 MAGNET NG4
<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>20.4</td>
<td>9125_1-A10_5 WASHER</td>
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<tr>
<td>20.5</td>
<td>9985-M4 HEXAGONAL NUT DIN985</td>
</tr>
<tr>
<td>20.6</td>
<td>9933-M10X20 ALLAN SCREW</td>
</tr>
<tr>
<td>20.7</td>
<td>9471-12X1 SAFETY RING</td>
</tr>
<tr>
<td>20.8</td>
<td>9912-M4X25 CYLINDER SCREW</td>
</tr>
<tr>
<td>20.9</td>
<td>9912-M6X10 CYLINDER SCREW</td>
</tr>
<tr>
<td>20.10</td>
<td>230HL96431 CATCH BED. COVER</td>
</tr>
<tr>
<td>20.11</td>
<td>235SPL06031 AXIS</td>
</tr>
<tr>
<td>20.12</td>
<td>981346 WELD ON ANGLE SCREW FITTING 90°</td>
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<tr>
<td>20.13</td>
<td>230HL96430 CATCH</td>
</tr>
<tr>
<td>20.14</td>
<td>230HL96532 LINE CONDUIT</td>
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<td>20.15</td>
<td>230HL96533 LINE CONDUIT</td>
</tr>
<tr>
<td>20.16</td>
<td>9SEM06X008ZN FLANGED BUTTON HEAD SCREW</td>
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<tr>
<td>20.17</td>
<td>230HL92156 PIPE</td>
</tr>
<tr>
<td>20.18</td>
<td>230HL92158 PIPE</td>
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<td>20.19</td>
<td>230HL92162 PIPE</td>
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30.xx  Column, opposite side

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<tr>
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<th>230HL65033</th>
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<tr>
<td>30.2</td>
<td>230HL96200</td>
<td>HEAD PLATE FOLLOWING SIDE COMPLETE</td>
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<td>30.3</td>
<td>00MNG403170</td>
<td>MAGNET NG4</td>
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<td>9985-M4</td>
<td>HEXAGONAL NUT DIN985</td>
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<td>ALLAN SCREW</td>
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<tr>
<td>30.7</td>
<td>9471-12X1</td>
<td>SAFETY RING</td>
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<tr>
<td>30.8</td>
<td>9912-M4X25</td>
<td>CYLINDER SCREW</td>
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<tr>
<td>30.9</td>
<td>9912-M6X10</td>
<td>CYLINDER SCREW</td>
</tr>
<tr>
<td>30.10</td>
<td>230HL96431</td>
<td>COVER CATCH OPERATING SIDE</td>
</tr>
<tr>
<td>30.11</td>
<td>235SPL06031</td>
<td>AXIS</td>
</tr>
<tr>
<td>Code</td>
<td>Part Number</td>
<td>Description</td>
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<tr>
<td>-------</td>
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<tr>
<td>30.12</td>
<td>230HL96430</td>
<td>CATCH</td>
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<td>30.13</td>
<td>230HL96533</td>
<td>LINE CONDUIT</td>
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<td>30.14</td>
<td>9SEM06X008ZN</td>
<td>FLANGED BUTTON HEAD SCREW</td>
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<tr>
<td>30.15</td>
<td>230HL92156</td>
<td>PIPE</td>
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</table>
40.xx  Lift rails operating side

<table>
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<th></th>
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<tbody>
<tr>
<td>40.1</td>
<td>230HL96003  LIFT RAILS OPERATING SIDE R WELD PART</td>
</tr>
<tr>
<td>40.2</td>
<td>230HL28196  COMPLETE DRAWBAR</td>
</tr>
<tr>
<td>40.3</td>
<td>9985-M5    HEXAGONAL NUT DIN985</td>
</tr>
<tr>
<td>40.4</td>
<td>97991-M5X16 COUNTERSUNK SCREW</td>
</tr>
<tr>
<td>40.5</td>
<td>97346-4X20  FRICITION BOLT</td>
</tr>
<tr>
<td>40.6</td>
<td>230HL66014  SLIDING PART</td>
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<td>40.7</td>
<td>230HL66018-10  SLIDING PART</td>
</tr>
<tr>
<td>40.8</td>
<td>225SL06103S1 RUBBER PROFILE 400 MM  (970194)</td>
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</table>
50.xx  Lift rails opposite side

50.1 230HL96053  LIFT RAILS OPPOSITE SIDE L WELD PART
50.2 230HL28196  COMPLETE DRAWBAR
50.3 9985-M5  HEXAGONAL NUT DIN985
50.4 97991-M5X16  COUNTERSUNK SCREW
50.5 97346-4X20  FRICTION BOLT
50.6 230HL66014  SLIDING PART
50.7 230HL66018-10  SLIDING PART
50.8 225SL06103S1  RUBBER PROFILE 400 MM (970194)
60.xx  Cross-beam complete

60.1 97603-A13X18-CU  SEALING RING

60.2 9125_1-A10_5  WASHER

60.3 9933-M10X20  ALLAN SCREW

60.4 9912-M6X25  CYLINDER SCREW

60.5 982546  SCREW FITTING

60.6 980618  WELD ON ANGLE SCREW FITTING 90°

60.7 981346  WELD ON ANGLE SCREW FITTING 90°

60.8 980610  ADJUSTMENT ANGLE SCREW FITTING .

60.9 230HL92152  HYDRAULIC PIPE

60.10 230HL92154  HYDRAULIC PIPE

60.11 982126  MANOMETER SCREW FITTING

60.12 230HL96328  CROSS-BEAM

60.13 982269  PIPE CLAMPS DIN3015

60.14 983642  SWITCH

60.15 980020  T-SCREW FITTING
70.xx Lifting arm

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>70.1</td>
<td>225SL08073 COMPLETE RECEIVING PLATE</td>
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<tr>
<td>70.2</td>
<td>230HL18020_ET LIFTING ARM SHORT OPER.</td>
</tr>
<tr>
<td>70.3</td>
<td>230HL18030_ET LIFTING ARM SHORT OPP.</td>
</tr>
<tr>
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<td>230HL18001_ET LIFTING ARM LONG, COMP. 945-1493 MM</td>
</tr>
<tr>
<td>70.5</td>
<td>230HL18011_ET LIFTING ARM LONG, COMP. 945-1493 MM</td>
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<td>9985-M8 HEXAGONAL NUT</td>
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<tr>
<td>70.10</td>
<td>232NSTL08015 GEARED BLOCK</td>
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<td>225SL08227 SAFETY GUARD</td>
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<tr>
<td>70.12</td>
<td>230HL18040 LIFTING ARM BOLTS IN GENERAL</td>
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80.xx  Complete unit

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<td>80.1</td>
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### Complete Unit

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<tr>
<td>230HL02030_ET</td>
<td>COMPLETE PUSH IN</td>
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<tr>
<td>230HL02013</td>
<td>OIL CONTAINER WELD PART</td>
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<tr>
<td>97991-M6X30</td>
<td>COUNTERSUNK SCREW</td>
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<tr>
<td>973782_750</td>
<td>EDGE GUARD PROFILE</td>
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<tr>
<td>982186</td>
<td>OIL DIPSTICK</td>
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100.xx Complete push in

<table>
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<th>Description</th>
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<tbody>
<tr>
<td>100.1</td>
<td>230SPL01110_ET COMPLETE BLOCK</td>
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<td>100.2</td>
<td>980784 STRAIGHT SCREW IN FITTING</td>
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<td>100.3</td>
<td>9934-M6 HEXAGONAL NUT</td>
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<td>9125_1-A6_4 WASHER</td>
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<td>9125_1-A8_4 WASHER</td>
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<td>100.8</td>
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<td>Description</td>
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<tr>
<td>100.10 981295</td>
<td>SUCTION PIPE, PUMP</td>
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<tr>
<td>100.11 232HL01029</td>
<td>RECEIVING PANEL</td>
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<td>100.12 980610</td>
<td>ADJUSTMENT W SCREW FITTING.</td>
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<td>100.13 230SPL01112</td>
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<td>100.26 92980064</td>
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<tr>
<td>100.28 92992658</td>
<td>UNDER OIL MOTOR</td>
</tr>
<tr>
<td>100.29 92980340</td>
<td>MECHANICAL PUMP</td>
</tr>
</tbody>
</table>
13 Set up protocol

After successful set up, complete this form fully, sign it, make a copy and send to the manufacturer within a week.

Otto Nußbaum GmbH & Co.KG
Korker Straße 24
D-77694 Kehl-Bodersweier

The system with serial number ________________ was set up on (date) ________________ at (company name) ________________ in (town, city) ________________ checked for function and safety and put into operation. The set up was done by the operating company / specialist (score out the one that does not apply).

The operating company confirms proper system set up, has read and will comply with all information contained in this operating manual and inspection book, and will keep this document accessible to trained operators at all times.

The specialist confirms proper system set up, has read all information in this operating manual and inspection book, and has transferred the documents to the operating company.

Date ________________ Name, Operating company & company stamp ________________ Operating company signature ________________

Date ________________ Name, Specialist ________________ Specialist signature ________________

Service partner: _____________________________________________________________________ Stamp

Only fill out if the system has a fixed anchor.

Anchor used *) ________________ Type/ brand ________________

Minimum anchor depth *) complied with: ________ mm

Tightening torque *) complied with: ________ Nm

*) see 4.2.1 selecting the anchor
15.1 Transfer protocol

The system was set up on (date) at (company name) in (town, city) checked for function and safety and put into operation. The following listed people (operators) were trained to handle the lift after it was set up by a trained assembler of the manufacturer or a contract partner (specialist).

(Date, name, signature, empty lines must have a scored out)

Date
Name
Signature

Date
Name
Signature

Date
Name
Signature

Date
Name
Signature

Date
Name
Signature

Date
Name, specialist
Signature of specialist

Service partner: (Stamp)
**14 Single safety inspection before commissioning**

Copy, complete and leave in the inspection book

Serial number: ________________________________

Test step: OK = "o"   Defective or missing = "."   Post-inspection = "N"

<table>
<thead>
<tr>
<th>Model plate</th>
<th>Fastening anchor torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brief operating instructions on the column</td>
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</tr>
<tr>
<td>Operating manual</td>
<td>Unit condition</td>
</tr>
<tr>
<td>Load capacity details on the system</td>
<td>Paint condition</td>
</tr>
<tr>
<td>Condition/ function reverse switch</td>
<td>Cylinder condition</td>
</tr>
<tr>
<td>Label &quot;LIFT, LOWER&quot;</td>
<td>Condition wiper cylinder</td>
</tr>
<tr>
<td>General system condition</td>
<td>Piston rods surface condition</td>
</tr>
<tr>
<td>Condition of covers</td>
<td>Hydraulic system leak-tightness</td>
</tr>
<tr>
<td>Condition/ function lifting arm</td>
<td>Hydraulic oil filling level</td>
</tr>
<tr>
<td>Condition/ function lifting arm block</td>
<td>Condition of hydraulic lines incl. screw fittings</td>
</tr>
<tr>
<td>Condition/ function lifting arm movement</td>
<td>Functional test &quot;overflows&quot;</td>
</tr>
<tr>
<td>Condition/ function carrier plate / support parts</td>
<td>Condition electrical lines</td>
</tr>
<tr>
<td>Condition/ function foot bumper</td>
<td>Condition / function energy set (optional)</td>
</tr>
<tr>
<td>Securing the lifting arm bolts</td>
<td>Condition/ function safety catch</td>
</tr>
<tr>
<td>Load bearing construction (deformations, cracks)</td>
<td>Condition of weld seams</td>
</tr>
<tr>
<td>Condition of cross-beam</td>
<td>Functional test, system with load</td>
</tr>
<tr>
<td>Condition of concrete floor (cracks)</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: __________________________________________________________________________________________

____________________________________________________________________________________________________

____________________________________________________________________________________________________

Safety inspection done on: ___________________________________________________________________________

Performed by company: _____________________________________________________________________________

Name, address of specialist: __________________________________________________________________________

Result of inspection:  
- Continued operation questionable, reinspection required 
- Continued operation possible, remove defects by ____________________
- No deficiencies, continue to operate

Signature of specialist _______________________________________________ Operating company signature

If requested to take care of deficiencies

Deficiency removed on: ____________________________________________ Operating company signature

(use a new form for reinspection!)
14.1 Regular safety inspection and maintenance

Copy, complete and leave in the inspection book

Test step:  OK = "o"  Defective or missing = "-"  Post-inspection = "N"

<table>
<thead>
<tr>
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<td>Functional test, system with load</td>
</tr>
<tr>
<td>Condition of concrete floor (cracks)</td>
<td></td>
</tr>
</tbody>
</table>

*) Enter one of the following: "o" = OK, "-" = defective or missing and/or "N" = reinspect!

Remarks: ____________________________________________________________
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### 14.2 Exceptional safety inspection

- Copy, complete and leave in the inspection book

**Serial number:** _________________________________

**Test step:** OK = “o”   Defective or missing = “-”   Reinspection = “N”

<table>
<thead>
<tr>
<th>Model plate</th>
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</tr>
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<tbody>
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<td>Condition/ function safety catch</td>
</tr>
<tr>
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<td>Condition of weld seams</td>
</tr>
<tr>
<td>Condition of cross-beam</td>
<td>Functional test, system with load</td>
</tr>
<tr>
<td>Condition of concrete floor (cracks)</td>
<td></td>
</tr>
</tbody>
</table>

*) Enter one of the following: “o” = OK, “-” = defective or missing and/or “N” = reinspect!

**Remarks:** __________________________________________________________________________________________
____________________________________________________________________________________________________
____________________________________________________________________________________________________

Safety inspection done on: ___________________________________________________________________________

Performed by company: _____________________________________________________________________________

Name, address of specialist: __________________________________________________________________________

Result of inspection:  
- Continued operation questionable, reinspection required
- Continued operation possible, remove defects by ____________________________
- No deficiencies, continue to operate

Signature of specialist __________________________ Operating company signature __________________________

If requested to take care of deficiencies

Deficiency removed on: __________________________ Operating company signature __________________________

*use a new form for reinspection!*
15 Electrical circuit diagram

Object: 2.xx HL Klinke
System: 
Customer: 
Circuit diagram number: 2.xx HL K 11/14/008

Grounding according to local regulations
Before commissioning check whether the nominal motor current matches the motor protection relay. Check all terminal points for proper connection and that all contact screws are tight.
Before commissioning, check all wiring and controls for proper function. Do not permit commissioning from the unauthorized side.

These plans were generated on a CAD system. To keep plans to the current state, we ask that you request Nußbaum to make the changes.

These circuit diagrams are intellectual property. They may not be given to third parties or reproduced without our permission!

Rights to make changes are retained.

Circuit diagram and switch documents
Circuit diagrams were made to the best of our knowledge.
No warranty for the correctness of provided circuit diagrams and switch documents is given. This is particularly relevant for switches that were completed by us according to third party plans. This was done by us from purchaser provided manufacturer documentation.

Safety inspection and safety measures
The control cabinet has been produced, set up and inspected according to recognized technology rules according to VDE0100/0113 and accident prevention regulation VBG4 (electrical systems and equipment)
The following tests were done:

- Voltage test and/or insulation test of the control cabinet according to VDE0100/5.73
- Inspection of effectiveness of the safety measures used for indirect contact according to VDE0100g/7.75 para. 22
- Functional test and part test according to VDE560/11.87

Implemented safety measures:

- Protection against direct contact according to VDE0100/5.73. para. 4
- Protection against indirect contact according to VDE0100/5.73. para. 5

Functional test of switch systems
Circuit diagrams are not standard documents. When checking the control cabinet at the factory, field devices such as sensors, thermostats and motors cannot be included. For this reason, even with careful inspection, functional and switch errors cannot always be prevented.
Deficiencies are removed within the scope of guarantee during commissioning. During commissioning, if our services are not used, then no deficiency liability is accepted. Rework, including forming of circuit diagrams of switch systems not commissioned by us are therefore only done to an invoice according to our service terms and conditions. Costs for rework by third parties cannot be honoured.
<table>
<thead>
<tr>
<th>Seite</th>
<th>Seitenbenennung</th>
<th>Seitenzusatzfeld</th>
<th>Datum</th>
<th>Bearbeiter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Deckblatt</td>
<td></td>
<td>13.11.14</td>
<td>BDE</td>
</tr>
<tr>
<td>2</td>
<td>Inhaltsverzeichnis</td>
<td></td>
<td>16.11.14</td>
<td>BDE</td>
</tr>
<tr>
<td>3</td>
<td>E-Plan</td>
<td></td>
<td>16.11.14</td>
<td>BDE</td>
</tr>
<tr>
<td>4</td>
<td>Stückliste</td>
<td></td>
<td>16.11.14</td>
<td>BDE</td>
</tr>
<tr>
<td>Bauteilbezeichnung</td>
<td>Menge</td>
<td>Bezeichnung</td>
<td>Typennummer</td>
<td>Lieferant</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------</td>
<td>---------------------------</td>
<td>--------------</td>
<td>-----------</td>
</tr>
<tr>
<td>F1</td>
<td>1</td>
<td>Einschränkungsriemenhalter 5x20 mm</td>
<td>A47820</td>
<td>GIF</td>
</tr>
<tr>
<td>F2</td>
<td>1</td>
<td>Fesselsicherung</td>
<td>FEINSICHERUNG</td>
<td>GIF</td>
</tr>
<tr>
<td>F3</td>
<td>1</td>
<td>Einschränkungsriemensicherung 5x20 mm</td>
<td>A47820</td>
<td>GIF</td>
</tr>
<tr>
<td>F4</td>
<td>1</td>
<td>Fesselsicherung</td>
<td>FEINSICHERUNG</td>
<td>GIF</td>
</tr>
<tr>
<td>A3</td>
<td>1</td>
<td>Lasttransportfahrpumpe 5 x 150 mm</td>
<td>W35/9218, 1000-5000 N</td>
<td>Marz GmbH</td>
</tr>
<tr>
<td>A4</td>
<td>1</td>
<td>Lasttransportfahrpumpe 5 x 150 mm</td>
<td>W35/9218, 1000-5000 N</td>
<td>Marz GmbH</td>
</tr>
<tr>
<td>F21</td>
<td>2</td>
<td>Kolbenfußschalter 1 wechsel</td>
<td>KOLBENFUSSCHALT 1-10 BAR</td>
<td>Sisu Robert Schaufele</td>
</tr>
<tr>
<td>V1</td>
<td>1</td>
<td>Ventilstecker K3221042H Grau</td>
<td>VORSTIEFENHANSCHLUSS 1-10 BAR</td>
<td>Seehusen</td>
</tr>
<tr>
<td>V2</td>
<td>1</td>
<td>Ventilstecker K3221042H Grau</td>
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<td>Seehusen</td>
</tr>
<tr>
<td>W1</td>
<td>1</td>
<td>Steuerleitung mit Nut N 350, 2mm</td>
<td>STEUERLEITUNG FLEX</td>
<td>Kabaz Wächter GmbH &amp; Co KG</td>
</tr>
<tr>
<td>W2b</td>
<td>1</td>
<td>Steuerleitung mit Nut N 350, 2mm</td>
<td>STEUERLEITUNG FLEX</td>
<td>Kabaz Wächter GmbH &amp; Co KG</td>
</tr>
<tr>
<td>W2d</td>
<td>1</td>
<td>Steuerleitung mit Nut N 350, 2mm</td>
<td>STEUERLEITUNG FLEX</td>
<td>Kabaz Wächter GmbH &amp; Co KG</td>
</tr>
<tr>
<td>W2s</td>
<td>0,50</td>
<td>Steuerleitung mit Nut N 350, 2mm</td>
<td>STEUERLEITUNG FLEX</td>
<td>Kabaz Wächter GmbH &amp; Co KG</td>
</tr>
<tr>
<td>X1</td>
<td>1</td>
<td>Schutzleiter (0.5/6 N H C)</td>
<td>D 0,5/6 N H C</td>
<td>Entrelec</td>
</tr>
<tr>
<td>X2</td>
<td>1</td>
<td>Steckerschacht 6 mm hölzer</td>
<td>SD 0,5/6/0,5</td>
<td>HMP</td>
</tr>
<tr>
<td>X3</td>
<td>1</td>
<td>Buchsengehäuse 6 mm hölzer</td>
<td>KD 0,5/6/0,5</td>
<td>HMP</td>
</tr>
<tr>
<td>X4</td>
<td>1</td>
<td>Buchsengehäuse 6 mm hölzer</td>
<td>KD 0,5/6/0,5</td>
<td>HMP</td>
</tr>
<tr>
<td>X6</td>
<td>1</td>
<td>Buchsengehäuse 6 mm hölzer</td>
<td>KD 0,5/6/0,5</td>
<td>HMP</td>
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<tr>
<td>X6</td>
<td>1</td>
<td>Buchsengehäuse 6 mm hölzer</td>
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<td>X6</td>
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<td>Buchsengehäuse 6 mm hölzer</td>
<td>KD 0,5/6/0,5</td>
<td>HMP</td>
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<td>X6</td>
<td>1</td>
<td>Buchsengehäuse 6 mm hölzer</td>
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<td>Buchsengehäuse 6 mm hölzer</td>
<td>KD 0,5/6/0,5</td>
<td>HMP</td>
</tr>
</tbody>
</table>
16 Konformitätserklärungen, Declaration of conformity, Déclarations de conformité, Declaraciones de conformidad, Dichiarazione di conformità

16.1 POWER LIFT HL 2.30 K

EG-Konformitätserklärung

gemäß Maschinenrichtlinie Anhang II 1A

Declaration of Conformity according Machinery Directive 2006/42/EG ANNEX II 1A
Déclaration de conformité selon directive machines annexe II 1A
Declaración de conformidad según Directiva Maquinaria 2006/42/EG ANNEX II 1A
Dichiarazione di conformità in accordo alla direttiva 2006/42/EG ANNEX II 1A

Hiermit erklären wir, daß die Hebebühne, Modell:

Hereby we declare that the lift model:
Par la présente nous déclarons que le pont élévateur modèle:
Por la presente declara, que el elevador modelo:
Con la presente si dichiara che il sollevatore:

allen einschlägigen Bestimmungen der folgenden Richtlinien entspricht:
fulfills all the relevant provisions of the following Directives:
conform aux normes suivantes:
cumple todas las disposiciones pertinentes de las Directivas siguientes:
adempie a tutte le richieste delle seguenti direttive:

Maschinenrichtlinie / Machinery Directive
EMV Richtlinie / EMC Directive

2006/42/EG
2004/108/EG

in Übereinstimmung mit den folgenden harmonisierten Normen gefertigt wurde
was manufactured in conformity with the harmonized norms
fabriqué en conformité selon les normes harmonisées en vigueur.
prodotto di accordo a le seguenti norme armonizzate

Fahrzeug-Hebebühnen / Vehicle lifts
Elektromagnatische Verträglichkeit / Electromagnetic compatibility (EMC)

EN 1483: 2010
EN 81000-6-2, -6-4

Beauftragter für die Technische Dokumentation
Authorised to compile the technical file
Otto Nussbaum GmbH & Co. KG

Seriennummer
Serial number

Kehl-Bodersweier, 27.11.2014

Steffen Nussbaum
Geschäftsführer
16.2 HYMAX HL 3000 K

EG- Konformitätserklärung

gemäß Maschinenrichtlinie Anhang II 1A

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Déclaration de conformité selon directive machines annexe II 1A

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Por la presente declara, que el elevador modelo:

Con la presente si dichiara che il sollevatore:

allen einschlägigen Bestimmungen der folgenden Richtlinien entspricht:

fulfills all the relevant provisions of the following Directives:

correspond aux normes suivantes:

cumple todas las disposiciones pertinentes de las Directivas siguientes:

adempie a tutte le richieste delle seguenti direttive:

Maschinenrichtlinie / Machinery Directive

EMV Richtlinie / EMC Directive

2006/42/EG

2004/108/EG

in Übereinstimmung mit den folgenden harmonisierten Normen gefertigt wurde

was manufactured in conformity with the harmonized norms

fabriqué en conformité selon les normes harmonisées en vigueur.

producedo de acuerdo a las siguientes normas armonizadas.

è stato fabbricato in conformità con le norme armonizzate.

Fahrzeug- Hebebühnen / Vehicle lifts

Elektromagnetische Verträglichkeit / Electromagnetic compatibility (EMC)

EN 1493: 2010

EN 81000-6-2, 6-4

Beauftragter für die Technische Dokumentation

Authorised to compile the technical file

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Kehl- Bodersweier, 24.03.2015

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