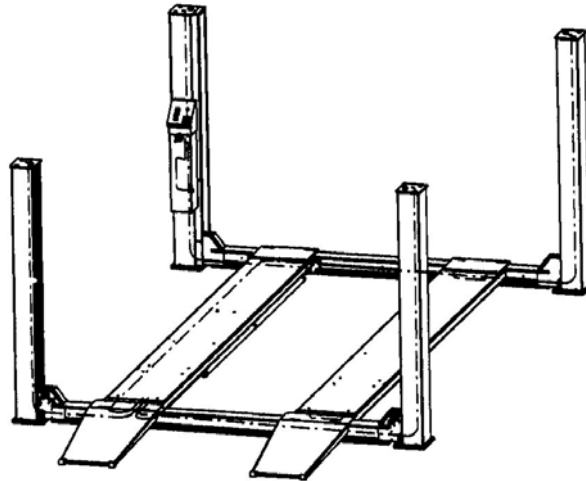


4.50 HN

Automotive-Lift date: 12/2006

Manual date: 27.12.2006



Operating Instruction and Documentation

Serial-number:.....

Retailer address / phone



Nussbaum

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

Tel: +49(0)7853/8990 Fax: +49(0)7853/8787

E-mail: info@nussbaum-lifts.de// <http://www.nussbaum-lifts.de>

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Foreword

Nußbaum lifting systems are the result of over 25 years experience in the automotive lifting industry.

The high quality and the superior concept ensure reliability, a long lift lifetime and above all and economic business solution.

To avoid unnecessary damage, injury or even death, read the operating instructions with care and observe the contents.

Nußbaum lifts is not responsible for incidents involving the use of Nußbaum lifting systems for applications other than those for which they were designed.

Nußbaum Hebetchnik GmbH & Co. KG is not liable for any resulting damages. The user carries the risk alone.

Obligations of the user:

- To observe and adhere to the operating instructions.
- To follow the recommended inspection and maintenance procedures and carry out the prescribed tests.
- The operating instructions must be observed by all persons working with or around the lift.
- Above all chapter 4 "Safety Regulations" is very important and must be closely adhered to.
- In addition to the safety regulations stated in the operating instructions manual, the appropriate safety regulations and the operating procedures of the place of operation must also be considered.

Obligations of the operator:

The operator is obliged to allow only those persons complying to the following requirements to work with or around the unit.

- Persons being familiar with the basic regulations concerning labour safety and accident prevention and being trained to operate the particular unit.
- Persons having read and understood the chapter concerning safety and warning symbols.
- Persons using the lift are required to confirm that they have read and understood the chapter on safety and warning symbols by signing the appropriate form.

Dangers when operating the lift:

Nußbaum-Lifts are designed and built according to technical standards and the approved regulations for technical safety. The use of Nußbaum lifts for purposes other than those for which they were designed, may result in injury or even death.

The lift must only be operated :

- For its appropriate use
- In faultless condition concerning technical security.

Organisational Requirements

- The instructions for use are to be kept at the place of operation being easily accessible at any time.
- In addition to the instructions for use, rules pertaining to other regulations i.e. accident prevention and environmental rules are to be observed and adhered to.
- The owner of the Nußbaum lifting system must ensure that operators and persons working with or around the lift occasionally conduct “refresher” courses to ensure that the appropriate operating procedures and safety precautions are known.
- Personal Protective Equipment (PPE) must be used according to the appropriate regulations.
- All safety- and danger signs on and around the lift are to be observed and followed!
- Spare parts must comply with the technical requirements specified by the manufacturer. This is only warranted with original parts.
- Observe and adhere to the specified time intervals between tests and inspections.

Maintenance works, repairing faults

- Adjustments, maintenance, and inspections, are to be followed according to the time intervals specified. Details regarding the exchange of parts and components as mentioned in the operating instructions are to be adhered to.
These works must only be carried out by expert personal.
- After maintenance- and repair works loose screws, nuts and bolts must always be firmly tightened!

Guarantee and liability

- Our “General conditions of selling and delivering” are in force.
There will be no guarantee or liability for incidents involving injuries or death or damage to equipment if these incidents are the result of one or more of the following reasons.
- Inappropriate use of the lift
- Inappropriate installation, initiation, operation and maintenance of the lift.
- Use of the lift while one or several security devices do not work, do not work correctly or are not installed correctly.
- Failure to follow the regulations of the operating instructions regarding transport, storage, installation, initiation, operation and maintenance of the lift.
- Unauthorized changes to the structure of the lift without first asking the producer.
- Unauthorized changes of adjustments of important components of the lift (e.g. driving elements, power rating, motor speed, etc)
- Wrong or incorrect maintenance practice.
- Catastrophes, acts of God or external reasons.



After completely filling out this sheet including signatures, copy and return the original to the manufacturer. The copy must remain in the manual.

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

Record of installation

The automotive lift with the

serial number:..... was installed on:.....

at the firm:..... at:.....

The initial safety check was carried out and the lift was started.

The installation was carried out by the operating authority/competent (please delete as applicable).

The initial safety check was carried out by a competent person before the initial operation.

The operating authority confirms the correct installation of the automotive lift, the competent person confirms the correct initial operation.

Used Dowels(*): _____ (Type/Name) ok

Minimum anchorage depth (*) kept: _____ mm ok

Starting torque (*) kept: _____ NM ok

.....
date name of the operating authority signature of the operating authority

.....
date name of the competent person signature of the competent person

Your customer service:.....(stamp)

(*) see supplement of the dowel manufacturers

Record of handing over

The automotive lift with the

serial number:..... was installed on:.....

at the firm:..... at:.....

the safety was checked and the lift was started.

The persons below were introduced after the installation of the automotive lift. The introduction was carried out by either the erector from the lift-manufacturer or from a franchised dealer (competent person).

.....
date name signature

.....
date name signature

.....
date name signature

.....
date name signature

.....
date name signature

.....
date name signature

.....
date name of competent signature of the competent

Your customer service:.....(stamp)

1. General Information

The document “**Operating Instructions and Documentation**” contains important information about installation, operation and maintenance of the automotive lift.

- Conformation of **installation of the automotive lift** is recorded on the “Record of Installation” form and must be signed and returned to the manufacturer.
- Conformation of once of, regular and out of the ordinary service checks is recorded in the respective check forms. The forms are used to document the checks. They should not be removed from the manual.

All **Changes to the structure** and any change of **location** of the automotive lift must be registered in the “**Master document**” of the lift

1.1 Installation and service checks of the automotive lift

Only specialised staff are allowed to repair and maintain the lift and only these specialised staff are allowed to conduct safety checks on the lift. For the purposes of this document these specialised staff will be called Experts and Competent persons.

Experts are persons (for example self-employed engineers, experts) which have received instructions and have the appropriate experience to check and to test the automotive lifts. They are aware of the work involved and know the accident prevention regulations.

Competent persons are persons who have acquired adequate knowledge and experience with automotive lifts. They have completed the appropriate training provided by the lift-manufacturer (the servicing technicians of the manufacturer or dealer, are regarded as competent)

1.2 Warning Symbols

The three symbols below are used to indicate danger and other important information. Pay attention to areas on and around the lift that are marked with these symbols.



Danger! This sign indicates danger. Ignoring this warning may result in injury or even death.



Caution! This sign cautions against possible damage to the automotive lift or other material objects in the case of improper use.



Attention! This sign indicates an important function or other important information regarding the operation of the lift.

2. Master document of the automotive lift

2.1 Lift–manufacturer

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

2.2 Application

The automotive lift is a lifting mechanism for lifting motor vehicles with a laden weight of up to 5000 kg . The max. load distribution is 2:1 either in or against the drive-on direction.

The automotive lift has been designed for servicing vehicles only. It has not been designed to carry people. Carrying people either directly on the lift or in vehicles that are on the lift is therefore not allowed.

The installation of the standard lift in hazardous or dangerous locations such as wash bays is dangerous and is therefore not allowed.

Changes of construction, repairing and changes of place must be registered in this master document.

2.3 Changes at the construction

Changes at the construction, expert checking, resumption of work (date, kind of change, signature of the expert)

.....
.....
.....

name, address of the expert

.....
place, date

.....
signature of the expert

2.4 Displacement of the automotive-lift

Displacement of the automotive-lift, expert checking, resumption of work (date, kind of change, signature of the competent)

.....
.....
.....

name, address of the competent

.....
place, date

.....
signature of the competent

2.5 Page for notice

3. Technical Information


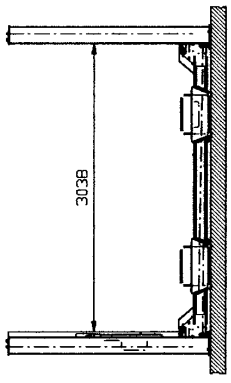
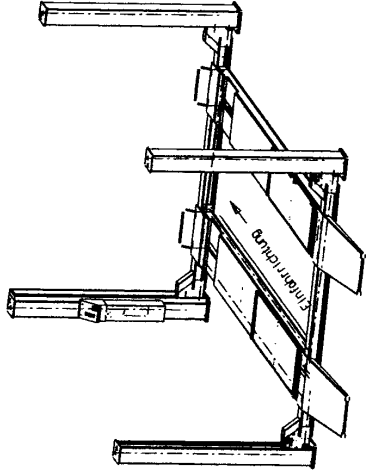
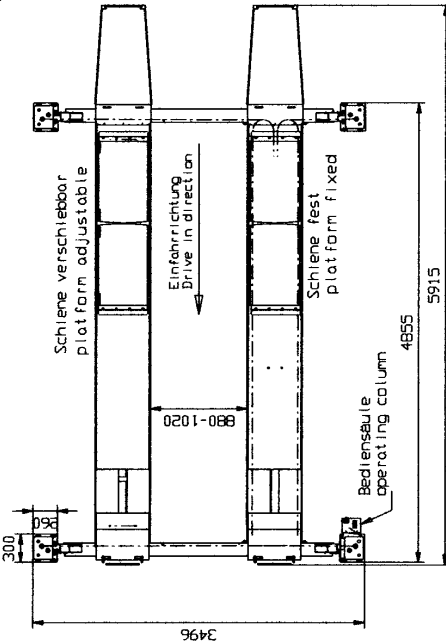
3.1 Technical ratings

Capacity:	5000 kg
Load distribution:	max. 2:1 in or against the drive on direction
Lifting time:	approx. 50 sec. with 2670 kg Load
Lowering time:	approx. 30 sec. + CE-Stop with 2670 kg Load
Lifting height:	max. 1840 mm
Line Volthage:	3 x 400 Volt , 50Hz
Power rating:	1,5 kW
Motor rotation:	1490 rotation/min
Pump capacity:	4,3 cm ³ /rotation
Hydraulic pressure:	approx. 190 bar
Pressure relief valve:	approx. 210 bar
Oil Tank:	approx. 10 Litre
Sound level:	≤ 75 dB(A)
Connection by customer	3~/N+PE, 400V, 50 Hz fuse T16A (time-lag fuse) observe your regulations of your country

3.2 Safety device

1. Safety ratchet
Safety device against unintentional lowering.
2. Holding valve
Safety device against unintentional lowering.
3. Pressure relief valve
Overpressure safety of the hydraulic system
3. Lockable main switch
Safety device against unauthorised operation
4. Safety device at the platform against rolling.
Safety device against falling down, in case the hand brake is not fasten.
5. Safety switch
Safety device against unintentional lowering in case a rope is slack or torn.
6. CE-Stop
Safety device against squeeze.

3.3 Data sheet

<p>Mir weisen in unseren Plänen auf die Mindestanforderung des Fundamentes hin. Jedoch der Zustand der örtlichen Gegebenheiten (z.B. Untergrund) obliegt nicht in unserer Verantwortung. In Bedarfsfall ist ein Architekt/Statiker zu kontaktieren.</p> <p>We point out the minimum requirement of the foundation in our plans. The condition of the local realities should be checked by the architect. In our responsibility, the execution of the installation situation must be individually specified by the planning architect or by the engineer engaged in statically calculations in the special case.</p>	<p>Bauseits an der Bediensäule bereitstellen: prepared by customer at the operating column:</p> <p>Elektrik/electric: 3Ph. N+PE, 400V, 50Hz Absicherung/fuse: 16 A Träger/line tag observe your regulations of your country)</p> <p>Version mit Achsheber/with Jack Druckluft/air pressure Lichte Weite/diameter 6mm Druck/pressure 6-8 bar</p>	<p>Betonqualität quality of concrete min. C20/25 (B25) DIN EN206-1</p> <p>Foundations in the free one are to be created frost low</p>	<p>Optional: Beleuchtung/lighting Achsheber/Jack Achsseset/wheel alignment set nur für interne Zwecke: Zeichnungsnummer 450HN00050</p>	<p>Alle measure in millimeter Alle Maße in Millimeter</p>	<p>Mass- und Konstruktions- änderungen vorbehalten! subject to alterations!</p>	 <p>TEL: 030 600 00 00 FAX: 030 600 00 01 FERTIGUNGSTECHNIK UND MASCHINENBAU 77694 KEHL-BODERSWEIER</p>
<p>Versorgungsleitung Strom, Luft fuer Jack von oben an die Bedieneinheit fuehren.</p> <p>Supply lines electric supply, air pressure for Jack from the top into the operating unit</p> <p>Bediensäule operating column</p> 	<p>Betonqualität quality of concrete min. C20/25 (B25) DIN EN206-1</p> 	<p>Schiene verschiebbar platform adjustable</p> <p>Einbaueichtung Drive in direction</p> <p>Schiene fest platform fixed</p> <p>Bediensäule operating column</p> 	<p>Tragfähigkeit capacity: 5000kg</p>	<p>4.50 HN 4800mm</p>	<p>10.01.07 // M.G.</p>	<p>6487-EINBAU</p>
<p>Bei Bestellung ist der Einbau-, Fundamentplan beizulegen oder die Zeichnungsnummer immer anzugeben.</p>		<p>When ordering the foundation plan is to be attached or the drawing number is to be always indicated</p>				

Wir weisen in unseren Plänen auf die Mindestanforderung des Fundamentes hin. Jedoch der Zustand der örtlichen Gegebenheiten (z.B. Untergrund) obliegt nicht in unserer Verantwortung. In Bedarfsfall ist ein Architekt/Statiker zu kontaktieren!

We point out the minimum requirement of the foundation in our plans. The condition of the local realities (for example, the ground under the responsibility of the architect) is not our responsibility. The execution of the installation situation must be individually specified by the planning architect or by the engineer engaged in static calculations in the special case.

Bausitz an der Bediensäule bereitstellen:
prepared by customer at the operating column:

Elektrik/electric: 3Ph, N+PE, 400V, 50Hz
Absicherung/fuse: 16 A Träger/time lag
(observe your regulations of your country)

Version mit Achsheber/with Jack
Druckluft/air pressure
Lichte Weite/diameter: 6mm
Druck/pressure: 6-8 bar

Betonqualität
quality of concrete
min. C20/25 (B25)
DIN EN206-1

Foundations in the free one are to be created frost low

Optional:
Beleuchtung/lighting
Achsheber/Jack
Achsmessset/Wheel alignment set
nur für interne Zwecke
Zeichnungsnummer
450HN0095

Alle Maße in millimeter
Alle Maße in millimeter

Mass- und Konstruktionsänderungen vorbehalten!
subject to alterations!

When ordering, the foundation plan is to be attached. Or the drawing number is to be always indicated

Bei Bestellung ist der Einbau-, Funktions- und Zeichnungsnummer immer anzugeben.

<p>4.50 HN</p> <p>5500mm</p>	<p>10.01.07 // M.G.</p>	<p>6488-EINBAU</p>
------------------------------	-------------------------	--------------------

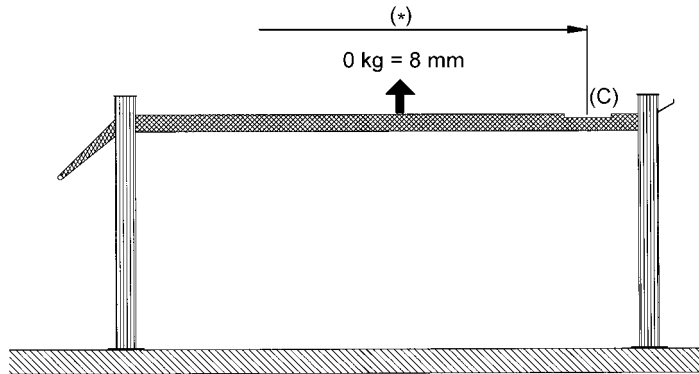


3.4 Manufacturing reference

Each platform becomes with a curvature upward manufactured by approx. + 8 mm. (initial tension)
Dependent on the vehicle weight and wheel base can the initial tension reduce.

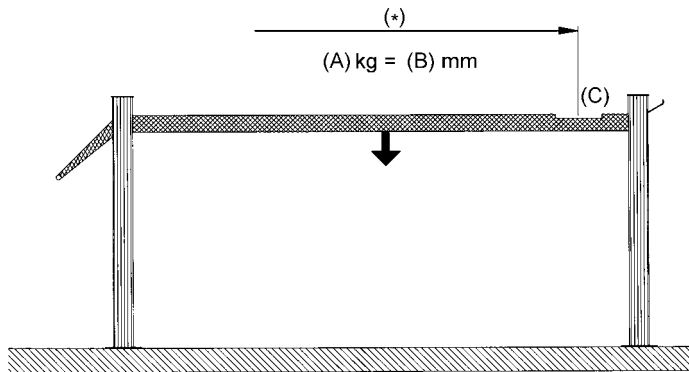
With tests determined results of measurement were registered into the following table.

Each individual manufactured Platform is submitted of a measurement and logged in a result table.



Each platform becomes with a curvature upward manufactured by approx. + 8 mm. (initial tension)

(* mm = measuring point)



(C) starting point = Centre turntable

Excerpt from inspection report of 11.07.06:

length	5500 mm	5500 mm	5500 mm	5500 mm	5500 mm
wheel base (*)	3000 mm	2700 mm	2500 mm	2200 mm	2200 mm
load (A)	1000 kg	1000 kg	1000 kg	1000 kg	1500 kg
Initial tension (B)	+4mm	+3mm	+2mm	+1mm	-1mm (Deflection)

4. Safety regulations

If you use the automotive lift, the German following regulations are to be considered:
BGG945: Examine of automotive-lifts; BGR260 Using automotive-lifts; (VBG14).

Especially the following regulations are very important:

- The laden weight of the lifted vehicle must not exceed 5000 kg for the automotive lift. Load distribution max. 2:1 in or against the drive on direction.
- The automotive lift must be in its lowest position (fully collapsed), before the vehicle can be driving on to the lift. Only then can the vehicle be lifted.
- While working with the lift the operating instructions must be followed.
- Vehicles with low clearance or vehicles that are specially equipped should be pre tested to ensure that they clear the lift ramp to avoid damage.
- Only trained personnel over the age of 18 years old are to operate this lift.
- No one is to stand within the working area (danger area) during lifting and lowering
- No one is to be raised or lowed either directly or in a vehicle by the automotive lift.
- No one is to climb onto the automotive lift or onto an already raised vehicle.
- The automotive column lift must be checked by an expert after changes in the construction have been made.
- The main switch must be switched off and locked before work on the vehicle can commence. This is a safety precaution to ensure that the lift does not move during work.
- The main switch must be switched off and locked before any maintenance or repair work on the automotive lift itself can be carried out.
- During lifting or lowering the operator must observe the vehicle to ensure that the vehicle and the lift are functioning correctly.
- Installation of the standard-mobile column lift in hazardous or dangerous locations such as washing bays is dangerous and is not allowed.

5. Operating Instructions



The Safety Regulations must be observed and adhered to while working with the automotive lift. Read the safety regulations in chapter 4 carefully before working with the lift!

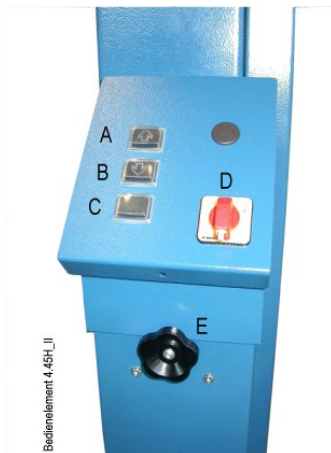
5.1 Lifting the vehicle

- Drive the vehicle onto the middle of the lift.



The complete wheels must be standing on the platform, otherwise the vehicle can fall down.

- The Version with sliding plates. The Plates must be locked if the vehicle is driving on the platform.
- Secure the vehicle against rolling, put into gear, apply the hand brake.
- Control the dangerous places of the lift and be sure that there are no objects or people in the immediate area of the lift or on the lift.
- Switch on the main switch.
- Raise the vehicle Press the button „Lifting“.
- Raise the vehicle to the required working height. Press the button “lifting“ .
- Observe the complete process.



Pic 1: operating element

A Button „Lifting“

B Button „Lowering“

C Button "override switch"

D Main switch

C lowering valve (slowly lowering into the safety ratchet rod)

Operation :

Lifting:	press button (A)
Lowering:	press button (B)
Lowering into the safety ratchet:	press button (C and B)
Lifting out of the safety ratchet:	press button (A and C)
Lowering from CE-Stop	press button (B and C)

5.2 Lowering the vehicle

- Check all danger points of the lift and be sure that there are no objects or people in the working area (danger area) around the lift or on the lift.
- Press the button (B).
- The lowering process starts.
- In case the lift is in the safety ratchets, raise the lift a few millimetres. Press the button "A" and "C" simultaneously. and repeat the lowering process, again. Only if the lifting platform is not more into the safety ratchet, it is possible to lower the lift with the button "B"; until to the CE-Stop.
- Lower the lift to the required working height or to its lowest position. Observe the complete lowering process.
- Before the lift reaches its lowest position, the lift stops automatically (CE-Stop). After the lift has stopped, check the danger areas around the lift. Press the button "B" again. A warning signal will sound as the lift is further lowered. This is to warn against the risk of crushing as the lift is lowered to its lowest position. Press the button "B" and "C" simultaneously.
- The lowering movement can be adjusted. Turn the flow control valve.
- Drive the vehicle off the lift if it is in the lowest position.

5.3 Lowering into the ratchet rod

- Press the button „B and „C“ – Lowering into the safety ratchets. The lowering movement can be adjusted. Turn the flow control valve at the operating unit. The lowering process begins directly.
- Raise the lift out of the safety ratchets, press the button „A“ and „C“ simultaneously.

5.4 Adjusting the platform

- It is possible to adjust the rail of the different wheelbase. That is necessary to reach the different wheelbases of the vehicles. One platform is only movable without load. (See the measure at the data sheet)
- Remove the load and raise the lift on approx.1000 mm height. The platform is movable on the chosen position without high force.
- Before moving the rail, loosen the screw in front of it.

6. Troubleshooting

If the lift does not work properly, the reason might be quite simple. Please check the lift for the potential reasons mentioned on the following pages. If the cause of trouble still cannot be found, please call technical service.
Self-employer repair-working is prohibited.

Problem: Motor does not start!	
Potential causes: <i>No power supply</i> <i>Main switch is not engaged</i> <i>The main switch is defective</i> <i>The main fuse defective</i> <i>The feed line is cut</i> <i>Thermal switch in the motor is active</i> <i>Motor is defective</i> <i>Top-Limit switch active or defective</i> <i>Button "Lifting" defective</i> <i>Rope is torn</i>	solution: <i>examine the power supply</i> <i>examine the main switch</i> <i>examine the main switch</i> <i>examine the Fuse</i> <i>examine the complete cable</i> <i>Let motor cool down</i> <i>Phone the technical service</i> <i>examine the switch</i> <i>Switch off the main switch and</i> <i>phone the technical service</i>

Problem: Motor starts, lift does not lift!	
Potential causes: <i>The vehicle is too heavy</i> <i>Level of the oil is too low</i> <i>Hydraulic valve is defective</i> <i>Gear pump is defective</i>	solution: <i>unload the vehicle</i> <i>check the oil level, fill with hydraulic</i> <i>oil as required</i> <i>Phone the technical service</i> <i>Phone the technical service</i>

Problem: the lift does not lower!	
Potential causes: <i>An obstacle is restricting the lift from being lowered</i> <i>Fuse is defective</i> <i>The ratchets are locked or defective</i> <i>Button "unlocking the ratchets" is defective</i> <i>Wrong sequence when operation</i> <i>No feedback from the ratchet switch</i>	solution: <i>(see chapter 6.1)</i> <i>Check the fuse</i> <i>Phone the technical service</i> <i>Phone the technical service</i> <i>See chapter 5.2</i> <i>Phone the technical service</i>

6.1 Lowering onto an obstacle

- In case the lift is lowering onto an obstacle, only the ropes becomes flabby (slack) which are in the near area of the obstacle. Under the rail at the hydraulic cylinder is a safety device, which switches the lifting platform off as soon as a rope becomes flabby or tears. During this procedure by spring action a sliding element on the piston rod is pushed onto a limit switch.
The lift switched off and the lowering procedure stops.
- In case the ropes are slack, press only the button "lifting" (A) and the button (C) simultaneously and raise the lift until the obstacle can be removed.

6.2 Emergency lowering

It is possible to open the hydraulic valve manually to lower the lift into the lowest position.



A emergency lowering is an intervention into the controls of the lift and can be done only by experienced expert.

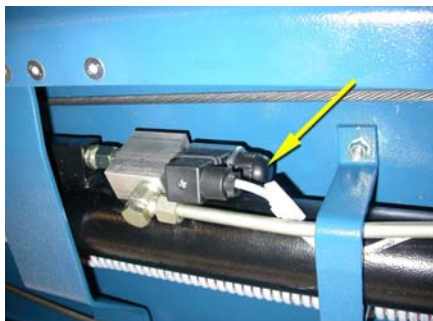
The emergency lowering must be carried in this order. Otherwise a malfunction may lead to damage to equipment, injury or even death.



Every kind of external leakage must be removed. This is particularly necessary before an emergency lowering.

The emergency lowering may only be done by persons who are trained in using the lift.

- Loosen and remove the cover of the safety ratchet at the crossbeam.
- In case the lift is locked in the safety ratchets, every ratchet must pull back manually. First, raise the crossbeam with a help of a jack until the tooth of the ratchet is movable. Fasten the ratchet with suitable support (wire), so the ratchet tooth of the ratchet can not engage in ratchet-strip any more.
Repeat this process at all four ratchets.
- Check all danger points of the lift and be sure that there are no objects or people in the working area (danger area) around the lift or on the lift.
- Version with double set valve at the hydraulic cylinder. Press the valve (under the Platform directly at the cylinder) with a suitable object (a long and hold it during emergency lowering).



Pic 2: Double seat valve with lowering device

- Check all danger points of the lift and be sure that there are no objects or people in the working area (danger area) around the lift or on the lift.
- This valve is to be pressed with a suitable article. The lowering begins directly.

- Observe the complete lowering procedure. With danger let go off the valve.
- Lower the lift in the lowest position and remove the vehicle.
- Switch off the main switch and secure it against unauthorised operation until the defective pieces or valves have been replaced.
Phone your service partner.
- If the lift has been deemed safe to operate, carry out a reset as described in the operating instructions.



Do not work with the lift until the defective parts are changed.



After the emergency-lowering process, remove the wire at the ratchets; otherwise the safety device is out of function.

7. Inspection and Maintenance



Before conducting maintenance work, preparations must be made to ensure that during maintenance and repair work there is no risk to the safety of people working on or around the lift and also that there is no risk of damage to equipment being used on or around the lift.

To guarantee the utmost availability and to ensure that the lift remains functional, maintenance work contracts are organised between our clients and their local retailers.

A service must be performed at regular intervals of 3 months through the operator in accordance with following service manual. If the lift is in continuous operation or in a dirty environment, the maintenance rate must be increased.

During daily operation the lift must be closely observed to ensure that it is functioning correctly. In the case of malfunction or leakage the technical service must be informed.

7.1 Maintenance plan of the lift

- Before beginning any maintenance work isolate the power supply. Secure the main switch (lock it). Secure the danger area around the automotive lift and secure the lift against unintentional lowering.
- Clean and check the stripper of the cylinder.
- Clean the piston-rod using compressed air.
- Examine the energy chain. Clean it and examine the supply lines and the chain for damages.
- Check the condition of ropes. If torn wires are discovered, the complete rope set must be changed.
- Check all roles for wear.
- Check the condition of the electrical parts.
- Clean and lubricate the moving parts of the lift (hinge bolts, sliding pieces, sliding surfaces) grease with a multipurpose liquid (example: Auto Top 2000 LTD. Agip).
- Grease the lubricate nipples with a multipurpose lipid. (example: Auto Top 2000 LTD. Agip).
- Check the function of the CE-Stop, acoustic signal.
- Clean and check the function of the ratchet. Grease the surface with a multipurpose lipid
- Check all welded joints for cracks on the automotive-lift.
If any cracks are found on the lift cease use immediately. Switch-off and secure the main switch (lock) and call the service partner.
- Check all surfaces and repair if necessary.
- Damage to external surfaces, must be immediately repaired.

If these repairs are not made immediately, permanent damage to the powder-coated surface may result.

Repair and clean damaged areas with an abrasive paper (grain 120). After this is complete, use a suitable paint (observe the RAL Number).

- Check the zinc surface and repair it with a suitable tool. Use abrasive paper (grain 280). White rust can result from moisture laying in certain areas for long periods of time. Poor aerating can also result in rust formation.

Rust may result from mechanical damage, wear, aggressive sediments (de-icing salt, liquids) or insufficient cleaning.

Repair and clean these areas with abrasive paper (grain 280).

After this is complete, use a suitable paint (observe the RAL Number).

- The hydraulic oil has to be changed at least once a year. To change the oil, lower the lift into its lowest position. Empty all tanks and refill with clean oil, approx. (see chapter 3.) per hydraulic unit are needed.

Use an ATF-Suffix hydraulic-oil (OEST Company) if the ambient temperature is under 5 degrees centigrade. After filling, the hydraulic oil must be between the upper and lower markings of the oil level gauge.

Remove the old oil according to the appropriate regulations.

- Check the hydraulic tubes for leakage.
- Durability of the hydraulic hoses:

The use duration of the hose lines should not exceed six years, including a storage time of at most two years.

- Check that all screws and bolts are correctly torque (turning moments, see the list)

Turning moment for screws

property class 8.8

	0,10*	0,15**	0,20***
M8	20	25	30
M10	40	50	60
M12	69	87	105
M16	170	220	260
M20	340	430	520
M24	590	740	890

property class 10.9

	0,10*	0,15**	0,20***
M8	30	37	44
M10	59	73	87
M12	100	125	151
M16	250	315	380
M20	490	615	740
M24	840	1050	1250

Drehmomenttabelle 8.8-10.9 E

- * sliding friction 0,10 for very good surfaces, lubricated
- ** sliding friction 0,15 for good surfaces, lubricated oder dry
- *** sliding friction 0,20 surface black or phosphatized, dry

Pic. 3:

7.2 How often must the lift be cleaned?

A regular and appropriate maintenance practice will aid the preservation of the lift.

No guarantees can be given when damage (egg rust or fading colour) is the direct result of poor maintenance and cleaning practice.

Regular cleaning of all kinds of dirt is the best protection against wear and the formation of rust and will prolong the life of the lift

- Dirty deposits that can cause rust include:

- de-icing salt
- sand, pebble stone, natural soil
- all types of industrial dust
- water; also in connection with other environmental influences
- all types of aggressive deposits

- constant humidity caused by insufficient ventilation

Obviously this is dependent on the type of work being done with the lift, the degree of cleanliness of the workshop and location of the lift. The degree and amount of dirt is dependent on the season, on the weather conditions and the ventilation of the workshop.

During poor conditions it may be necessary to clean the lift once week, but cleaning once a month will suffice.

Clean the lift and the floor with a non-aggressive and non-abrasive detergent. Use a gentle detergent to clean the parts. Use an standard washing-up liquid and lukewarm water.

- Do not use steam jet cleaners.
- Remove all dirt carefully with a sponge or if necessary with a brush.
- Ensure that no washing-up liquid is left on the lift after cleaning.
- Do not use aggressive means for cleaning the workshop floor and the automotive lift.
- A permanent contact with any kind of liquid is not allowed. Do not use high pressure devices for cleaning the lift.
- After cleaning dry the automotive-lift with a suitable type of cloth and inject it with a wax spray or an oil spray.

8. Security check

The security check is necessary to guarantee the safety of the lift during use. It has to be performed in the following cases:

1. Before the initial operation, after the first installation.
Use the form "First security check before initiation"
2. In regular intervals after the initial operation, at least annually.
Use the form "Regular security check at least annually"
3. Every time the construction of that particular lift has been changed.
Use the form "Extraordinary security check"



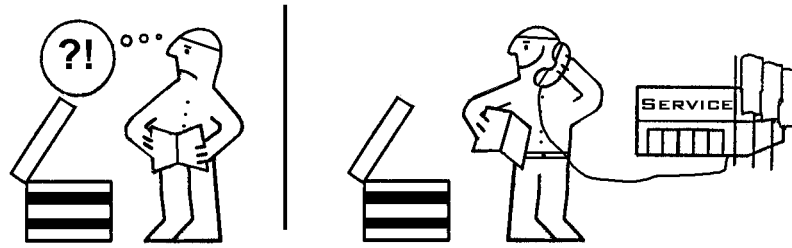
The first and the regular security check must be performed by a competent person. It is also recommended to carry out a service on the lift at this time.



After the construction of the lift has been changed (changing the lifting height or capacity for example) and after serious maintenance works (welding load bearing parts) an extraordinary security check must be performed by an expert.

This manual contains forms with a schedule for the security checks. Please use the appropriate forms for the security checks. The forms should remain in this manual after they have been filled out. A short description about special safety devices follows.

9. Handing over and Initiation



Pic 4:

9.1 Regulations

- The installation of the lift is performed by trained technicians of the manufacturer or one of its distribution partners. If the operator can provide trained mechanics, he or she can install the lift by him or herself. The installation has to be done according to this regulation.
- Installing the standard-automotive lift in a hazardous location or a washing bay is not allowed.
- Before installation a sufficient foundation must be constructed. If the foundation is already constructed then proof that the foundation conforms to the standard is required. A level foundation for the installation is required. The foundations must be based in a frost resistance depth, both outdoors and indoors in a position where the installer believes there is no chance of frost.
- An electrical supply 3~/N+PE, 400 V, 50 Hz must be provided. The supply line must be protected with a time-lag fuse T16A (VDE0100 German regulation). The minimum diameter amounts to 2.5 mm².
- All cable ducts must be equipped with protective coverings to prevent accidents.
- After assembly of the lift, the protective grounding of the lift must be examined after International Electrotechnical Commission (IEC) guidelines (60364-6-61) before first start-up by operators. Also an insulation resistance examination is recommended.

9.2 Erection and doweling of the lift

It is necessary to dowel the columns at 4 points. For this a concrete floor without reinforcement, thickness of 180 mm and quality C20/25 (B25) is needed. In case of doubt a test drill is necessary and a dowel is to put in. Afterwards the Liebig-dowel (German Dowel manufacturer) is to fasten with a torque of 50 Nm. If the necessary torque is too low or if there are cracks in the concrete floor, a foundation in accordance with the sheet "foundation plan" is to erected. As well it must be paid attention that the installation place is even to guarantee a horizontal erection of the lift.

- Put runways on two erection trestles at installation place, pay attention of exactly difference between the runways (refer to data sheet)
- Position the Traverses on the face of the runways, and put the plugs together.
- Lay out Ropes into right position (see Pic.)
- Fasten the crossbeam at the rail. Connect the plugs (optional: lighting, CE-Stop switch).
- Pull the ropes through the crossbeam.
- Pull cables (power supply, air etc.) through the crossbeam and connect.
- Position the columns at the end of the crossbeam.
- Adjust the columns with a water bubble.

- Bore holes to fix the dowels through the borings of the base plates. Clean holes with pressure air. Put in safety dowels with washers in borings. The manufacturer demands LIEBIG safety dowels type B 15 or equal dowels of another manufacturer (with allowance) but observe their regulations! Before doweling check concrete floor with quality C20/25 (B25) if the concrete floor goes to the top edge of the floor. In this case the dowels have to be chosen according to picture 8. If the ground is covered with floor tiles, the dowels have to be chosen according to picture 9.
- Tighten the dowels a little bit.
- Fasten the ropes at the top of the column.
- Check the position of the columns again.
- Connect the electrical power supply.
- Fasten the crossbeam at the rail one more time.
- Fill in the hydraulic oil. (Litre ? see chapter 3.)



In case of operation the automotive-lift, the chapter " Safety regulations" and "Operating instruction" must be observed.

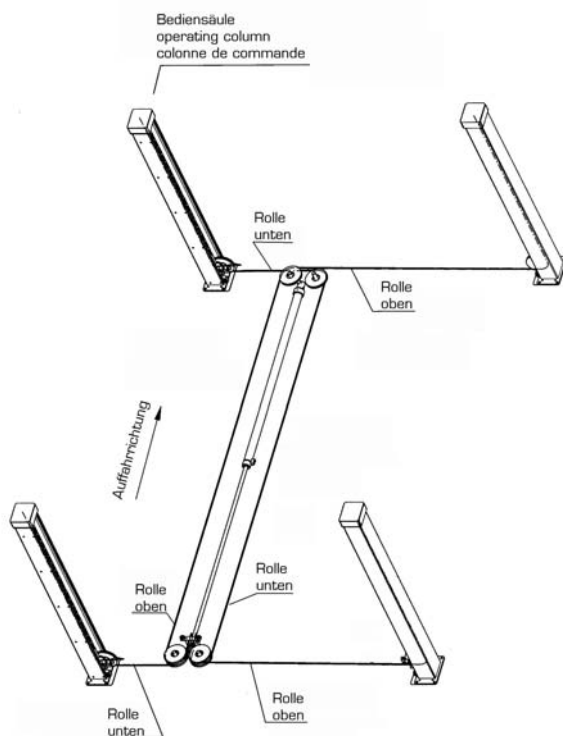
- Raise the lift until the supports can be removed. Press the button "lifting"
- Remove the supports.
- Lower the lift into the lowest position. (See chapter 5.2). Fasten the ratchet-strip.
- Raise the lift and hang the spring into ratchet strip.



DSC07249.jpg

Pic 6: Hang up the spring into the ratchet-strip

- Lower the lift into the ratchet. (press the button „lowering“ and the button “C”).
- Adjust the columns again with a water bubble.
- Fasten the dowels with a torque key.
- Fasten the ramps and the safety device at the end of the rail.
- Adjust the sliding guidance at the crossbeam (approx. 4-5 mm movement between the sliding guidance and the column).
- Adjust regular height of the rails at all of the four columns by moving the nuts, which fix the carrying ropes in the head plate. For demanded measuring accuracy of all important vehicle manufacturer it is necessary to install the lift very exactly and to line it up. For this to the following points should be paid attention.
- Lift the automotive lift to eye level and lower it down in the ratchet (refer to operating instructions).



Rolle unten = role down
Rolle oben = role above

Pic 7: position of the ropes

9.3 Change of lift location

If the place of installation is to be changed, the new place has to be prepared in accordance with the regulations of the first installation. The change should be performed in accordance with the following points:

- Remove the spring at the ratchet-strip.
- Lower the lift in the lowest position
- Loosen and remove the ratchet-strip. If necessary, pull back the ratchet manually.
- Remove the cover of the Oil tank and remove the oil.
- Raise the lift on a working height. Press the button „lifting“
- Lower the lift until the rails are lay on the erection trestles.
- Disconnect the power supply.
- Disconnect the hydraulic hoses.
- Loosen and remove the dowels.
- Loosen and remove the screws of the crossbeam.
- Transport the automotive-lift to the its new location
- Install the lift in accordance with chapter 9 “ Installation and Initiation”.



Use new masonry-bolts, the used bolts can not be used again.



A security check must be performed before reinitiating by a competent person. Use form “Regular security check”

9.4 Initiation



Before the initiation a security check must be carried out. Therefore use the form: First security check.

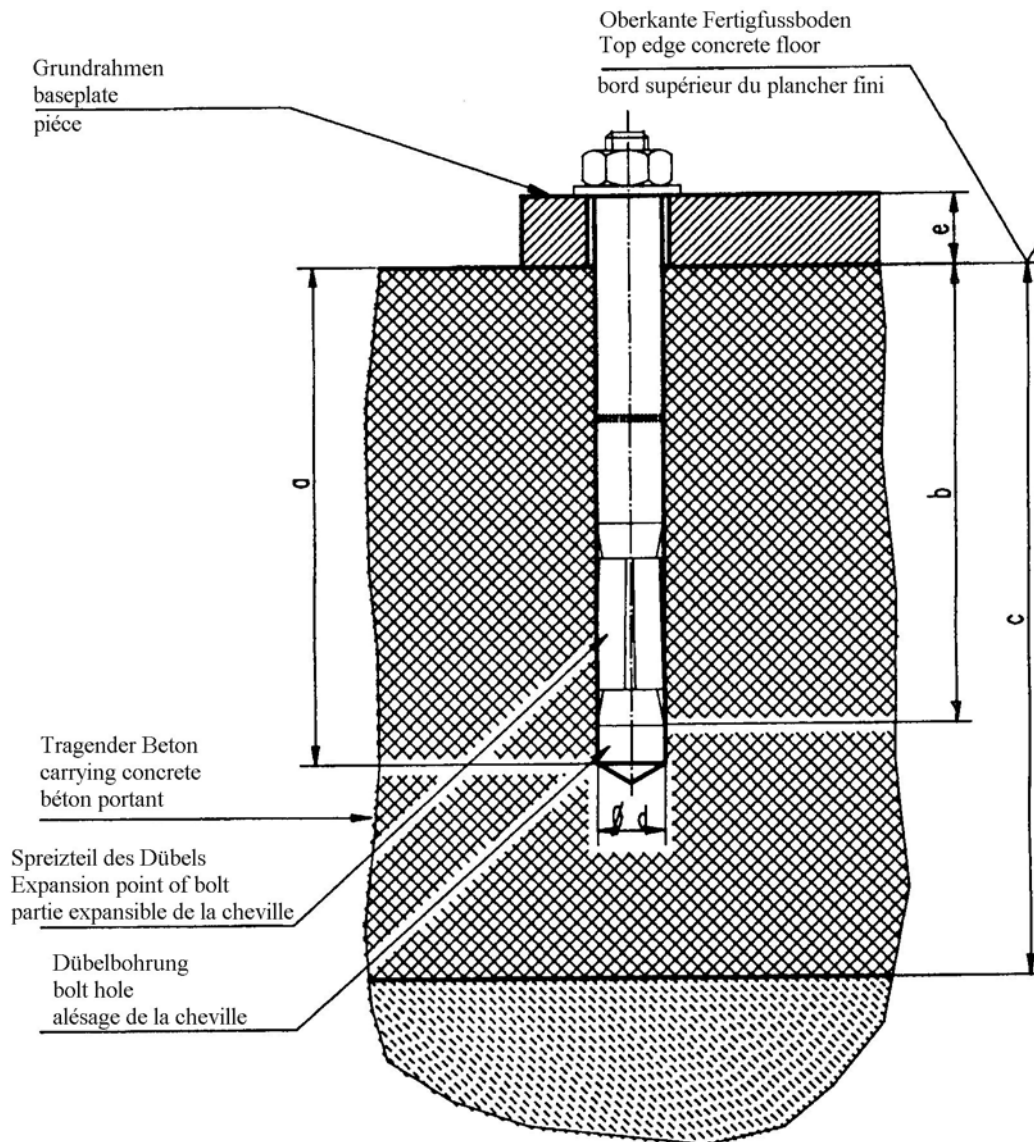
If the lift is installed by a competent person, he or she is to perform the security check. If the operator installs the lift by him or herself, he or she must instruct a competent person to perform the security check.

The competent confirms the faultless function of the lift in the installation record and the form for the security check and authorises the use of the lift.



Please send the completed installation record to the manufacturer after installation.

Pic 8: choice of the dowel length without floor pavement or tile surface

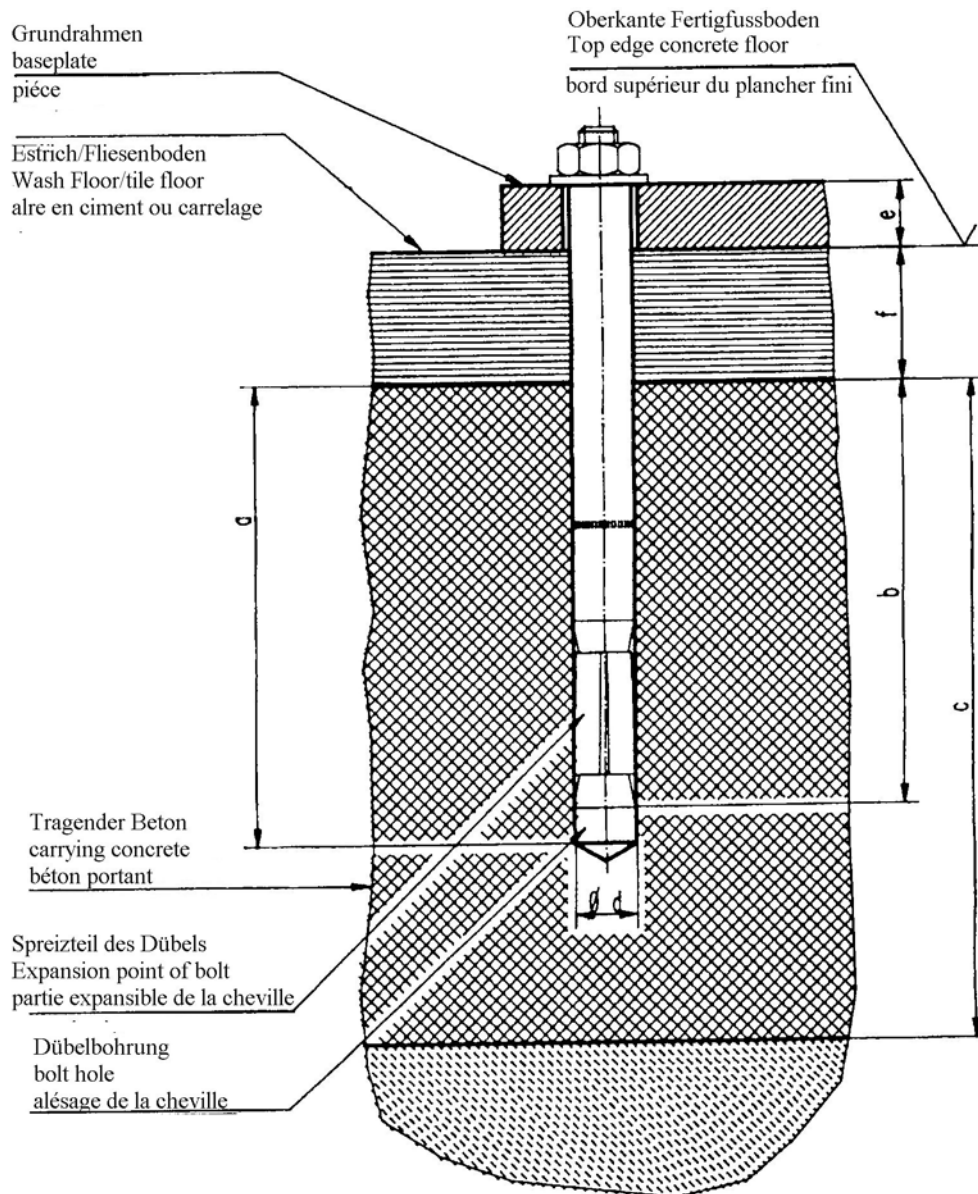


Liebig-dowels

Dowel type		B15/75	B15/95
Drilling depth	a	112	112
Min. anchorage depth	b	72	72
Thickness of concrete	c	160	160
Diameter of bore	d	15	15
Thickness of the lift-pieces	e	0-40	40-65
Number of dowels		16	16
Starting torque		according to dowel manufacturer	

You can use equivalent dowels from another dowel manufacturer (with license) but observe their regulation.

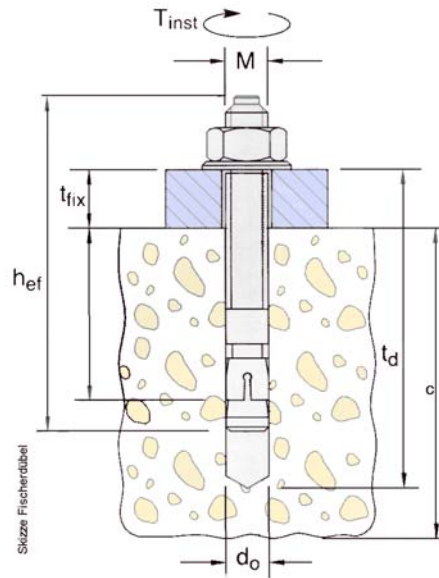
Pic 9: choice of the dowel length with floor pavement or tile surface



Liebig-dowels

Doweltyp		B15/70	B15/95	B15/120	B15/145
Drilling depth	a	112	137	162	187
Min. anchorage depth	b	72	72	72	72
Thickness of concrete	c	160	160	160	160
Diameter of bore	d	15	15	15	15
Thickness of the lift-pieces	e	0-40	40-65	65-90	90-115
Number of dowels		16	16	16	16
Starting torque		according to dowel manufacturer			

You can use equivalent dowels from another dowel manufacturer (with license) but observe their regulation.

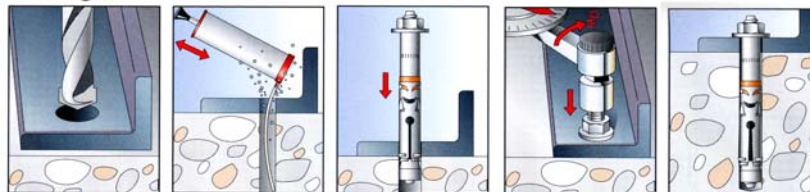


Änderungen vorbehalten!
subject to alterations!
sous réserve des modifications!

fischer-Dübel		Jumbo ^b , Sprinter ^b , 4.32H ^a , 4.45 HN ^a – 4.50 HN ^a , 4.100H ^a 4.300H ^a , 1.25 SH-1.35SH ^a , 2.30 TLS ^a , 2.35 TS/TSA/TSK ^a , 2.32TSAP ^a , 2.35TSAPH ^a ,	2.25SL ^a , 2.32SL ^a -2.35 SL ^a , SPL ^b 1/Power-Lift ^b , 1.20 SE ^b UNI-LIFT 3500 NT/CLT ^d , 2.32TTL ^a	HDL5000 ^c , HDL6500 ^c , 250SE ^f
Dübel typ of dowel type de cheville		FH 15/50 B	FH 18 x 100/100 B	FH 24/100 B
Bohrtiefe drilling depth Profondeur de l'alsage	t _d	145	230	255
Mindestverankerungstiefe min.anchorage depth Profondeur minimale d'ancrage	h _{ef}	70	100	125
Betonstärke thickness of concrete Epaisseur du béton	c	siehe den aktuellen Fundamentplan see current foundation-diagram drawing vois le plan de fondation actuel		
Bohrerdurchmesser diameter of bore Diamètre de l'alsage	d _o	15	18	24
Bauteildicke thickness of the lift-piece Epaisseur de la pièce	t _{fix}	0-50	0-100	0-100
Anzugsdrehmoment Nm turning moment moment d'une force	M _D	40	80	120

Stückzahl piece number nombre des pièces	a	4
	b	8
	c	10
	d	12
	e	16
	f	20

Montage



Es können auch gleichwertige Sicherheitsdübel anderer Hersteller (mit Zulassung) unter Beachtung deren Bestimmungen verwendet werden.
It is possible to use equivalent safety-dowels (with license) of other manufacturer but observe their regulations.
Des chevilles des autres marques (autorisées) peuvent aussi être choisies en respectant les directives du fabricant.

First security check before installation



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	veri- fication	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning designation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sticker max. capacity.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation lifting/lowering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lockable main switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lifting“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lowering „.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function Button „unlocking ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function „Lowering into the ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition „roll over safety device“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ratchet and ratchet strip.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function movable rail.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ropes and fastening.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition piston rod.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function lighting (optional).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(mark here applicable, in case of verification mark in addition to the first mark!)

Security check carried out:.....

Carried out the company:.....

Name, address of the competent:.....

Result of the Check:

- Initiation not permitted, verification necessary
- Initiation possible, repair failures

until.....

- No failings, Initiation possible

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Regular security check and Maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	veri- fication	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning designation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sticker max. capacity.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation lifting/lowering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lockable main switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lifting“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lowering „.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function Button „unlocking ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function „Lowering into the ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition „roll over safety device“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ratchet and ratchet strip.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function movable rail.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ropes and fastening.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition piston rod.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function lighting (optional).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(mark here applicable, in case of verification mark in addition to the first mark!)

Security check carried out:.....

Carried out the company:.....

Name, address of the competent:.....

Result of the Check:

- Initiation not permitted, verification necessary
- Initiation possible, repair failures

until.....

- No failings, Initiation possible

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Regular security check and maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	verification	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning designation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sticker max. capacity.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation lifting/lowering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lockable main switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lifting“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lowering „.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function Button „unlocking ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function „Lowering into the ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition „roll over safety device“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ratchet and ratchet strip.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function movable rail.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ropes and fastening.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition piston rod.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function lighting (optional).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(mark here applicable, in case of verification mark in addition to the first mark!)

Security check carried out:.....

Carried out the company:.....

Name, address of the competent:.....

Result of the Check:

Initiation not permitted, verification necessary

Initiation possible, repair failures

until.....

No failings, Initiation possible

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....

signature of the operator

(Use another form for verification!)

Regular security check and maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	verification	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning designation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sticker max. capacity.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation lifting/lowering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lockable main switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lifting“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lowering „.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function Button „unlocking ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function „Lowering into the ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition „roll over safety device“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ratchet and ratchet strip.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function movable rail.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ropes and fastening.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition piston rod.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function lighting (optional).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(mark here applicable, in case of verification mark in addition to the first mark!)

Security check carried out:.....

Carried out the company:.....

Name, address of the competent:.....

Result of the Check:

Initiation not permitted, verification necessary

Initiation possible, repair failures

until.....

No failings, Initiation possible

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Regular security check and maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	verification	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning designation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sticker max. capacity.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation lifting/lowering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lockable main switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lifting“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lowering „.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function Button „unlocking ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function „Lowering into the ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition „roll over safety device“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ratchet and ratchet strip.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function movable rail.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ropes and fastening.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition piston rod.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function lighting (optional).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(mark here applicable, in case of verification mark in addition to the first mark!)

Security check carried out:.....

Carried out the company:.....

Name, address of the competent:.....

Result of the Check:

Initiation not permitted, verification necessary

Initiation possible, repair failures

until.....

No failings, Initiation possible

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Regular security check and maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	veri- fication	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning designation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sticker max. capacity.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation lifting/lowering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lockable main switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lifting“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lowering „.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function Button „unlocking ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function „Lowering into the ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition „roll over safety device“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ratchet and ratchet strip.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function movable rail.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ropes and fastening.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition piston rod.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function lighting (optional).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(mark here applicable, in case of verification mark in addition to the first mark!)

Security check carried out:.....

Carried out the company:.....

Name, address of the competent:.....

Result of the Check:

Initiation not permitted, verification necessary

Initiation possible, repair failures

until.....

No failings, Initiation possible

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Regular security check and maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	verification	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning designation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Designation lifting/lowering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lockable main switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lifting“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lowering „.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function Button „unlocking ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function „Lowering into the ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition „roll over safety device“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ratchet and ratchet strip.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function movable rail.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ropes and fastening.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition piston rod.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function lighting (optional).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(mark here applicable, in case of verification mark in addition to the first mark!)

Security check carried out:.....

Carried out the company:.....

Name, address of the competent:.....

Result of the Check:

Initiation not permitted, verification necessary

Initiation possible, repair failures

until.....

No failings, Initiation possible

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Regular security check and maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	veri- fication	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning designation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sticker max. capacity.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation lifting/lowering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lockable main switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lifting“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lowering „.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function Button „unlocking ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function „Lowering into the ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition „roll over safety device“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ratchet and ratchet strip.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function movable rail.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ropes and fastening.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition piston rod.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function lighting (optional).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(mark here applicable, in case of verification mark in addition to the first mark!)

Security check carried out:.....

Carried out the company:.....

Name, address of the competent:.....

Result of the Check:

Initiation not permitted, verification necessary

Initiation possible, repair failures

until.....

No failings, Initiation possible

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Extraordinary security check



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	veri- fication	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning designation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sticker max. capacity.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation lifting/lowering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lockable main switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lifting“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Button „Lowering „.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function Button „unlocking ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function „Lowering into the ratchet“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition „roll over safety device“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ratchet and ratchet strip.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function movable rail.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition ropes and fastening.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition piston rod.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function lighting (optional).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(mark here applicable, in case of verification mark in addition to the first mark!)

Security check carried out:.....

Carried out the company:.....

Name, address of the competent:.....

Result of the Check:

Initiation not permitted, verification necessary

Initiation possible, repair failures

until.....

No failings, Initiation possible

.....
signature of the expert

.....
signature of the operator

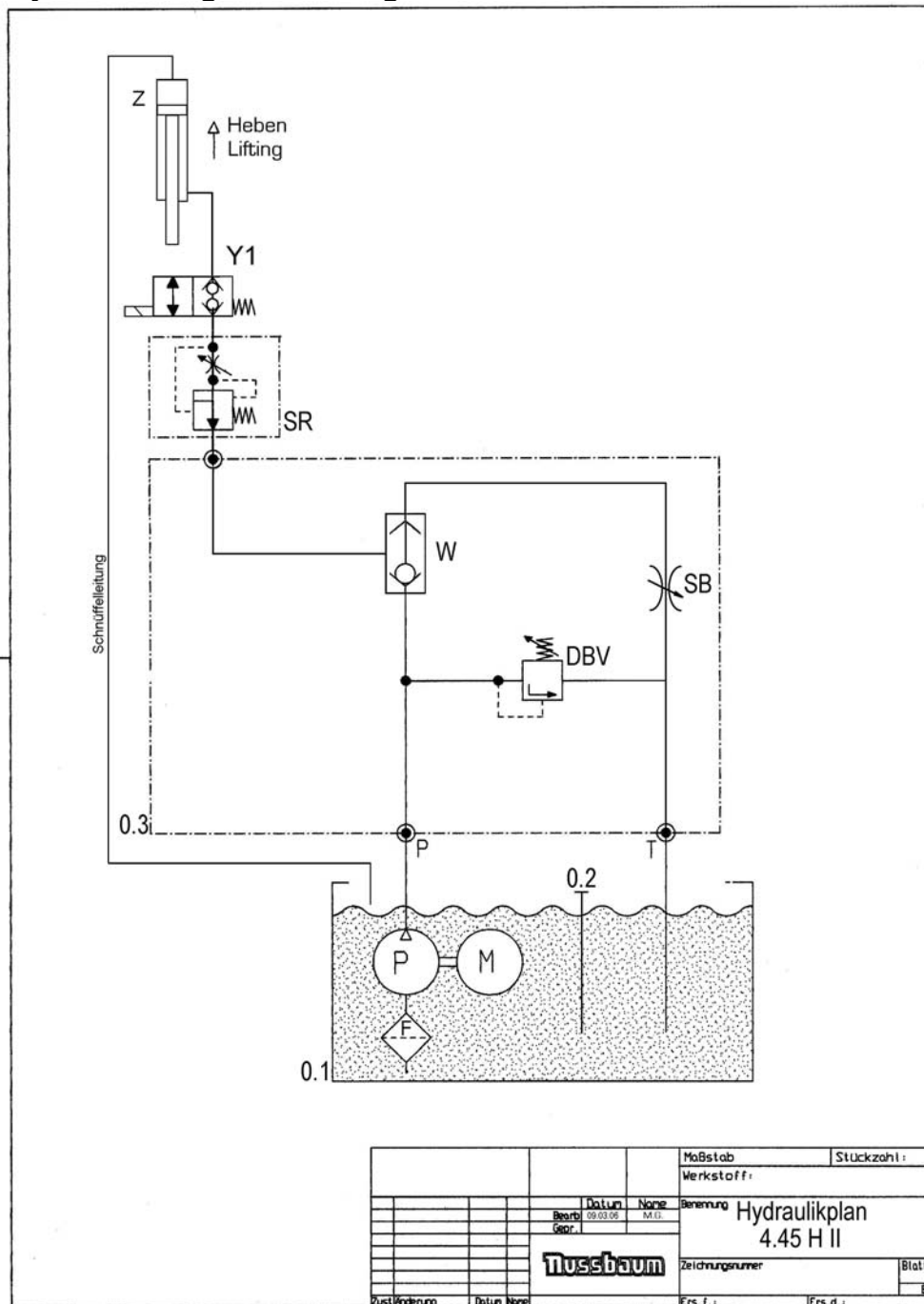
If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Hydraulic diagram drawing



Hydraulic parts list

0.1	Oil tank	
0.2	Oil level gauge	980098
0.3	Hydraulic block	050JK01100
M	sub oil motor 1,5 kW	991033
P	gear pump 4,3 cm ³	1BK7D6,3
F	Oil filter	980201
W	shuttle valve	600124
DBV	pressure relief valve	232NSTL02082
Y1	double seat valve	158641 (980853)
SB	lowering valve	981063
SR	flow control valve complete	9957400
Z	Cylinder complete	445H12000
		Alu-Block 9933016005

Electrical diagram drawing

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Nussbaum

Nussbaum Hebetchnik
 GmbH & Co. KG
 Korker Straße 24
 D-77694 Kehl Bodersweier
 Tel.: +49(0)7853/899-0

SCHALTPLAN

OBJEKT : 4.35/45H -2 ohne RFH
ANLAGE :
KUNDE :
SCHALTPLANNR: 4.35/45H -2 03/06/001

3.) Sicherheitsprüfung und Schutzmaßnahmen
 Der Schaltschrank wurde unter Beachtung der anerkannten Regeln der Technik nach VDE0100/5 73 mit den folgenden Schutzmaßnahmen ausgestattet und geprüft.
 Folgende Prüfungen wurden durchgeführt:
 1. Prüfung der Schutzmaßnahmen im Falle des Schaltisabreakes nach VDE0100/5 73.
 2. Prüfung der Markierung der angegebenen Schutzmaßnahmen bei indirektem Berühren nach VDE0100/7 75 Par. 22.
 3. Schutzmaßnahmen und Stöberprüfung nach VDE500/11 87.
 4. Schutzmaßnahmen und Stöberprüfung nach VDE0100/5 73 Par. 4.
 1. Schutz gegen direktes Berühren nach VDE0100/5 73 Par. 5.
 2. Schutz bei indirektem Berühren nach VDE0100/5 73 Par. 5.

1.) Schaltpläne und Schaltunterlagen
 Die Schaltpläne werden von uns nach bestem Gewissen angefertigt. Für beigezeichnete Schaltpläne und Schaltunterlagen sind wir nicht verantwortlich. Alle nach dem Bauantrag übergebenen Unterlagen werden von uns nach den vom Auftraggeber überlassenen Unterlagen des Herstellers ausgeführt.

2.) Funktionsprüfung der Schaltanlagen
 Schaltpläne sind keine Serienerzeugnisse. Bei der Prüfung des Schaltchranks im Werk können Feldgeräte wie Fühler, Thermosensoren und Motoren nicht einbezogen werden. Auch bei sorgfältiger Montage durch uns zu erfolgen. Sie ist grundsätzlich Bestandteil unserer Rufnummer. Mängel werden im Rahmen unserer Gewährleistung bei der Inbetriebnahme beseitigt. Unsere Haftung umfasst nur die Kosten der Nachbesserungen einschließlich der Berechnung von Schaltplänen bei Nacht von uns an Betriebsbetriebern. Nachbestellungen werden deshalb nur gegen Berechnung gemäß unseren Service-Bedingungen ausgeführt. Kosten für Nachbesserungen durch Dritte können wir nicht anerkennen.

Erdung nach örtlichen Vorschriften
 Vor Inbetriebnahme prüfen, ob Motornennstrom mit Motorschutzrelais übereinstimmt. Alle Klemmstellen auf Ordnungsgemäße Verbindung und alle Kontaktschrauben auf festen Sitz prüfen.
 Vor Inbetriebnahme Verdrahtung und Steuerung auf richtige Funktion überprüfen. Keine Inbetriebnahme von unbefugter Seite vornehmen lassen. Änderungen vorbehalten

Diese Schaltpläne sind unser geistiges Eigentum. Sie dürfen ohne unsere Genehmigung weder vervielfältigt noch Dritten weitergegeben werden!

1.) Datum
 Bearb. BOE
 Gepr. 10.03.2006

Nussbaum Hebetchnik GmbH & Co. KG
 Korker Straße 24
 D-77694 Kehl - Bodersweier
 Tel.: +49(0)7853/899-0 Fax: +49(0)7853/8787

Name Form
 Urspr. Ers. f. Ers. d.

Nussbaum

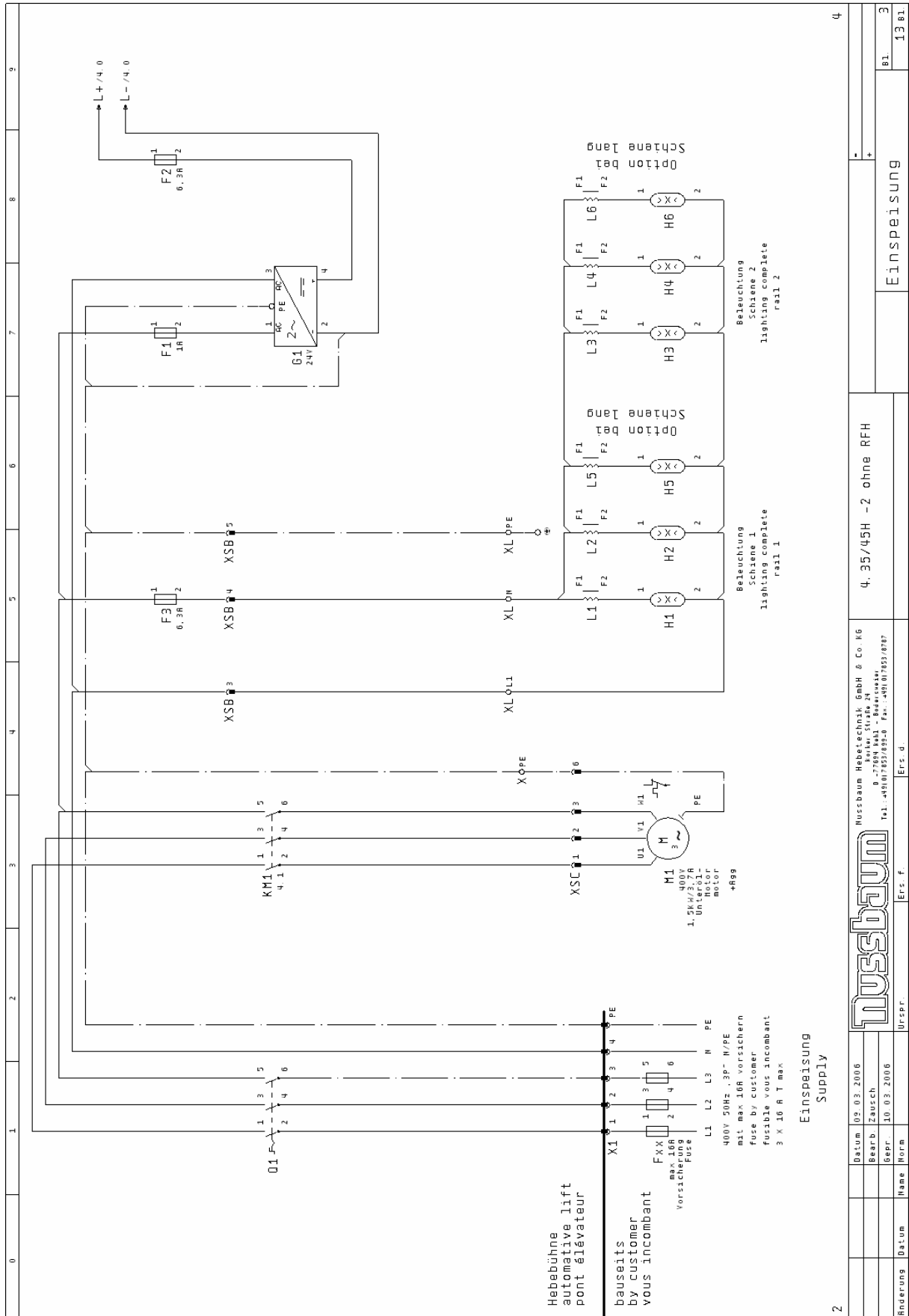
4.35/45H -2 ohne RFH

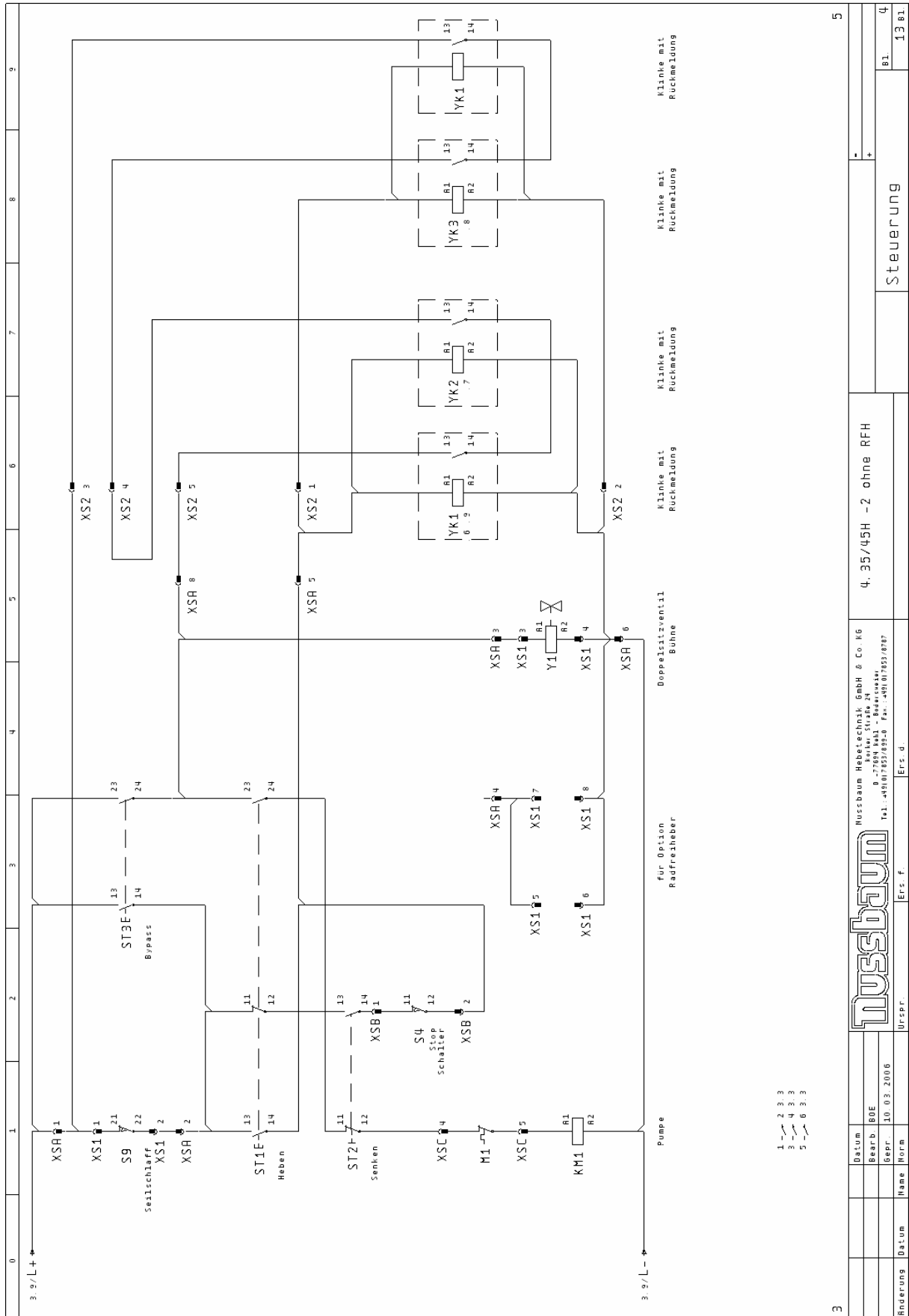
Deckblatt

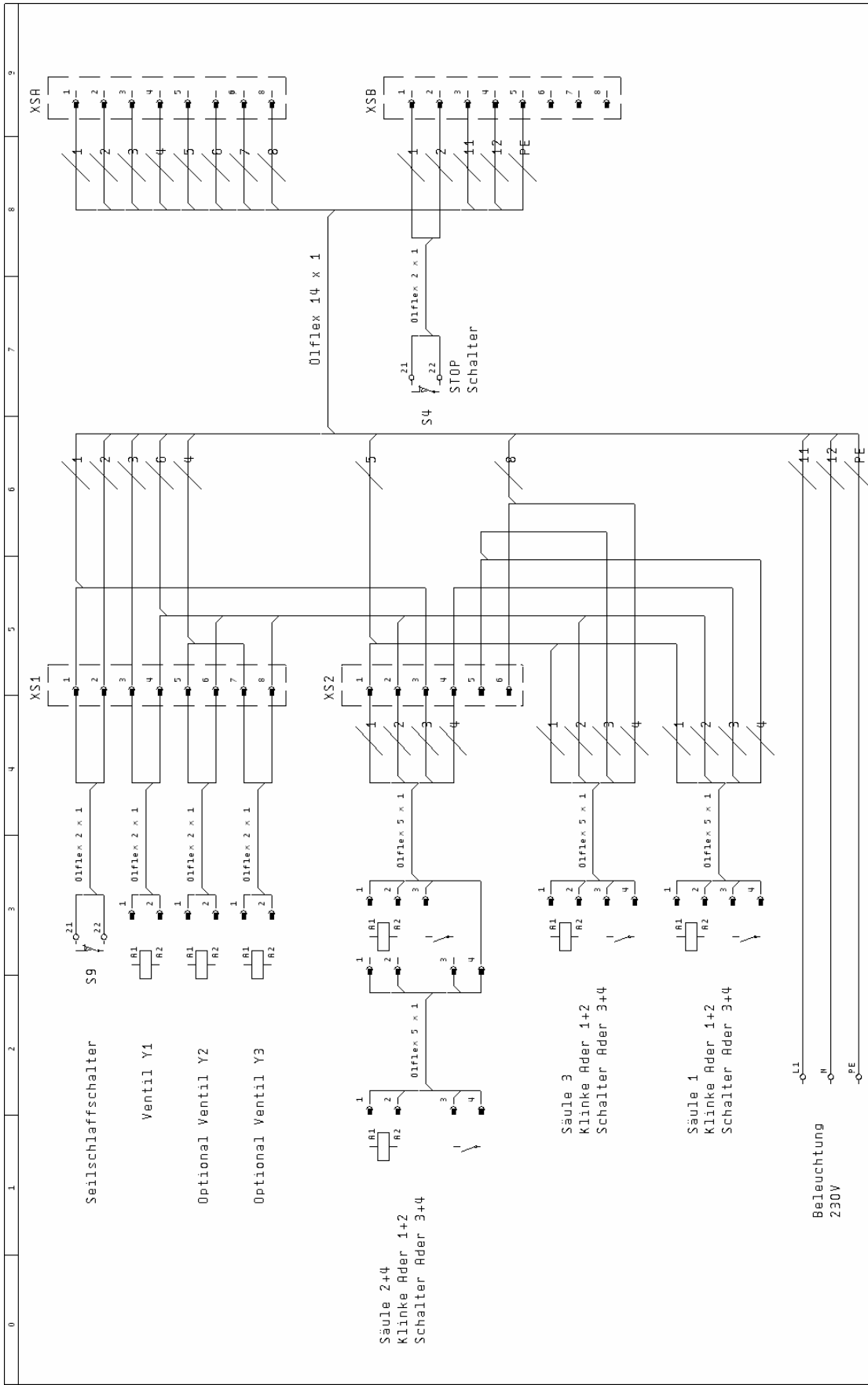
2

81. 1
13 Bl.

0	1	2	3	4	5	6	7	8	9		
<p>Inhaltsverzeichnis</p> <p style="font-size: small;">Spalte X: eine automatisch erzeugte Seite wurde manuell nachbearbeitet ESS10100 12.12.01</p>											
Seite	Seitenbenennung	Seitenzusatzfeld	Datum	Bearbeiter	X						
1	Deckblatt		09. 03. 2006	BOE	X						
2	Inhaltsverzeichnis		10. 03. 2006	BOE	X						
3	Einspeisung		09. 03. 2006	Zausch							
4	Steuerung		10. 03. 2006	BOE							
5	Kabelbaum		10. 03. 2006	BOE							
5.1	Kabelbaum Umbau		10. 03. 2006	BOE							
6	X1		09. 03. 2006	BOE							
7	XSR		09. 03. 2006	BOE							
8	XSB		09. 03. 2006	BOE							
9	XSC		09. 03. 2006	BOE							
10	XS1		09. 03. 2006	BOE							
11	XS2		09. 03. 2006	BOE							
12	Stückliste		10. 03. 2006	BOE	X						
13	Stückliste		10. 03. 2006	BOE	X						
						3					
1						-				+	
	Datum	BOE									
	Bearb.	10. 03. 2006									
	Bepr.									B1	2
	Name	Norm						Inhaltsverzeichnis			
Bänderung	Datum						Ers. f.	Ers. d.		13 B1	
<p style="font-size: x-small; margin: 0;">Tussbaum Hebeteknik GmbH & Co. KG Luiser-Str. 24 D-70372 Bad-Lichtenberg Tel. +49(0)7142998250 Fax. +49(0)7143518707</p>											
						4. 35/45H -2 ohne RFH					

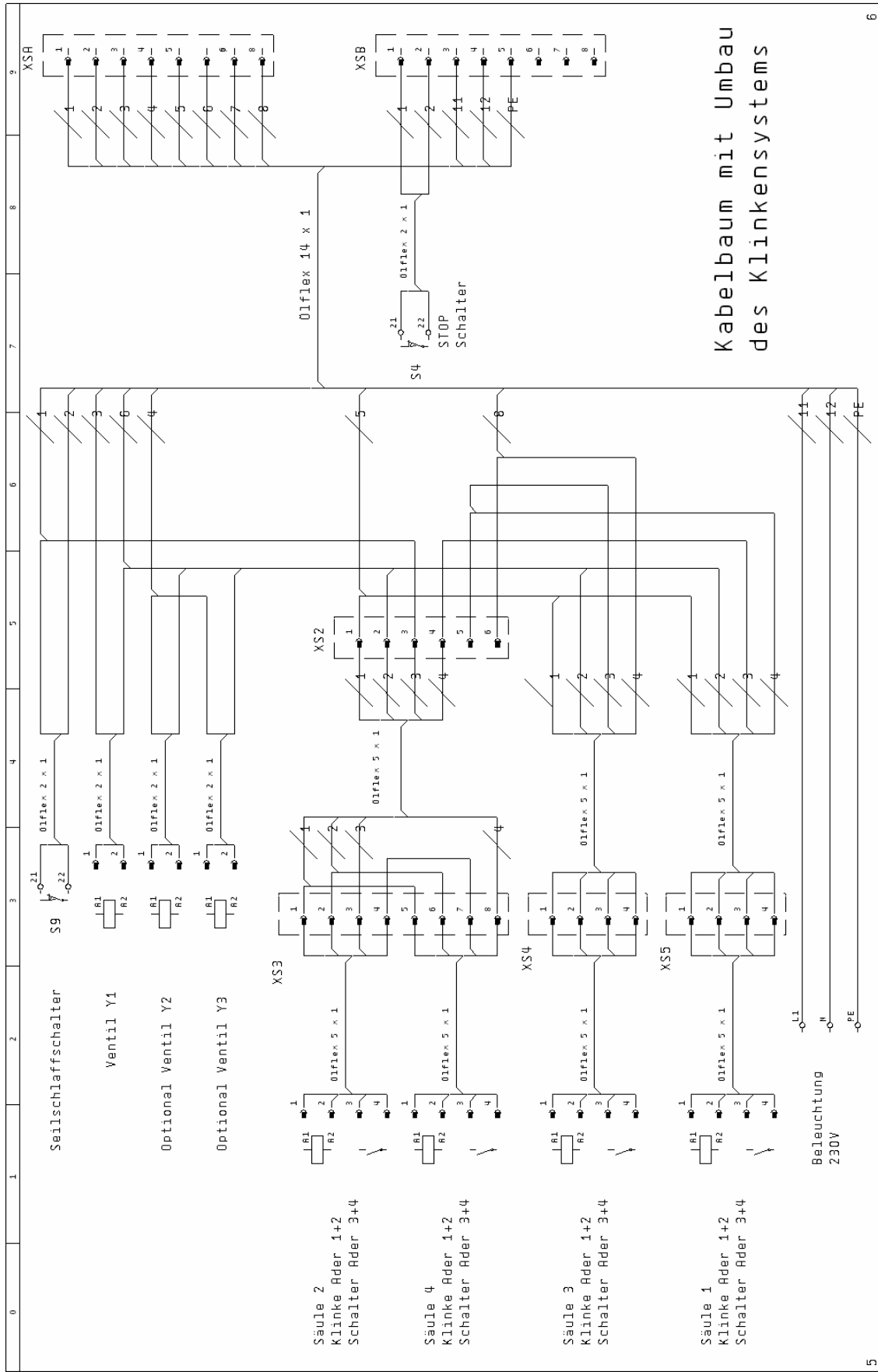






5.1

Datum		Nussbaum Hebe-Technik GmbH & Co. KG	
Bearb.	80E	Kaiser, Straße 24	
Bepr.	10.03.2006	D-70839 Lahti - Beiertheim	
		Tel.: +49(0)7142928250 Fax: +49(0)714521870	
Änderung		Ers. F	Ers. d
		Kabelbaum	
		81	5
		13	81



Kabelbaum mit Umbau des Klinkensystems

5 6

Datum		-	
Bearb. BOE		-	
Bepr. 10.03.2006		4.35/45H - 2 ohne RFH	
Name Norm		Erspr. Ers d.	
Urspr.		Ers f.	
Nussbaum Rebertechnik GmbH & Co. KG Bismarckstraße 24 D-70548 Leinfelden-Echterdingen Tel.: +49(0)7142929222 Fax: +49(0)714521870		Kabelbaum Umbau	
Bl. 5.1		13 Bl.	

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3	Kabelname								
4	Kabeltyp								
5	Anschluss	ST2	14	ST4	14	ST4	5	ST4	14
6	Zielbezeichnung								
7	Klemmen-Symbol								
8	Brücken								
9	Klemmen-nummer								
10	Anschluss	S4	11	S4	12	N	4	XL	PE
11	Zielbezeichnung								
12	Kabelname								
13	Kabeltyp								
14	Funktionslekt								
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WUPKHZD / 22.04.1998

Klemmenplan



Nussbaum Hebeltechnik GmbH & Co. KG
 D-70544 Bad-Neuenahr-Ahrweiler
 Tel. +49(0)2220/99240 Fax. +49(0)2220/99241

4.35/45H - 2 ohne RFH

XSB

9

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Bl.

13 Bl.

Änderung	Datum	Name	Horn

Datum: 02.03.2006
 Bearb.: BDE
 Bepr.: 10.03.2006

Urspr.

Ers. f.

Ers. d.

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Klemmenplan	Leistungsbezeichnung	Kabelname																				
		Kabeltyp																				
		Anschluss																				
		Ziel- bezeichnung	XSR 1	XSR 2	XSR 3	XSR 4	XSR 5	XSR 6	XSR 7	XSR 8	XSR 9	XSR 10	XSR 11	XSR 12	XSR 13	XSR 14	XSR 15	XSR 16	XSR 17	XSR 18	XSR 19	XSR 20
		Klemmen- symbol																				
		Brücken																				
		Klemmen- nummer																				
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		Ziel- bezeichnung																				
		Kabeltyp																				
Klemmenplan	Funktionslekt																					

WUPK020 / 22.04.1998

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Datum	02.03.2006		
Bearb.	BOE		
Begr.	10.03.2006		
Name	Norm		
Urspr.	Erspr.		
Ers.f.	Ers.d.		
4.35/45H - 2 ohne RFH		XS1	
		81	
		13 81	

Stückliste Bill of materials

MUSTUCK2 16.11.2004

0	1	2	3	4	5	6	7	8	9
Bauteilbenennung Component design.	Menge Amount	Bezeichnung Designation			Typen number Model number	Lieferant Supplier	Artikelnummer Article number		
F1	1	Sicherungsklemme Trenner 5x20 mm			N4/8 5F	Entelec	950661		
F1	1	Feinsicherung			FEINSICHERUNG	Entelec	950475		
F2	1	Sicherungsklemme Trenner 5x20 mm			N4/8 5F	Entelec	950661		
F2	1	Feinsicherung			FEINSICHERUNG	Entelec	950286		
F3	1	Sicherungsklemme Trenner 5x20 mm			N4/8 5F	Entelec	950661		
F3	1	Feinsicherung			FEINSICHERUNG	Entelec	950286		
F4	1	vom Kunden bereitgestellt, oder Option			BRUSEITIS	Zulieferer	BRUSEITIS		
G1	1	Trafo + Blechrichter + Kondensator			TREFO 1-PH	Schaezler	950835		
M1	1	Leistungsschutz 5,7 kW 24 V DC			LS652 01.0 24V DC	Levato electric	950842		
L1	1	2 x Stabtaeuche, 1x Klemmkasten			BELEUCHTUNG UNILIFT	Nussbaum	030ULH03302		
L1	1	Unterlampe			RT 808-4	Nussbaum	030ULH03302		
H1	1	Hauptsch. Mot.-Bus 3p 16R 5,5kW			R 1057/3 0200-EV/50	ELMA Elektromotoren GmbH	951033		
S9	1	TI-01 RD 90			GRENZTRISTER 10 15 KLEIN STRANGE	Herz GmbH	950403		
S11	1	Drucklaste schwarz 25 20 Harquard			1063 0101	Bernstein	950003		
S11	1	PVC-KAPPE für Schalter Harquard			203 201 011	Harquardt GmbH	950334		
S12	1	Drucklaste schwarz 25 20 Harquard			1063 0101	Harquardt GmbH	950324		
S12	1	PVC-KAPPE für Schalter Harquard			203 201 011	Harquardt GmbH	950321		
S13	1	Drucklaste schwarz 25 20 Harquard			1063 0101	Harquardt GmbH	950334		
S13	1	PVC-KAPPE für Schalter Harquard			203 201 011	Harquardt GmbH	950321		
X	1	Schutzleiterk1 0 1, 97,6 P. RD0 schin-schn			D 1 57,6 P. RD0	Entelec	950278		
X1	1	Stechergehäuse 6 polig ku			05 0-480906-0	RHP	950327		
X1	5	Flachsteckhülse Stecker 6, 3mm			05447 123 111	RHP	950328		
X1	5	Flachsteckhülse Buchse 6, 3mm CUZN ohne ISO			08832 123 211	RHP	950329		
X1	1	Buchsengehäuse 6 polig ku			2 105 50290253	RHP	950330		
X51	1	Buchsengehäuse 8 polig ku			0-0463008-0	RHP	950402		
X51	1	Stechergehäuse 8 polig ku			0-0463007-0	RHP	950410		
X51	8	Flachsteckhülse Stecker 6, 3mm			05447 123 111	RHP	950328		
X51	8	Flachsteckhülse Buchse 6, 3mm CUZN ohne ISO			08832 123 211	RHP	950329		
X52	1	Stechergehäuse 6 polig ku			05 0-480906-0	RHP	950330		
X52	1	Buchsengehäuse 6 polig ku			2 105 50290253	RHP	950327		
X52	4	Flachsteckhülse Stecker 6, 3mm			05447 123 111	RHP	950328		
X52	4	Flachsteckhülse Buchse 6, 3mm CUZN ohne ISO			08832 123 211	RHP	950329		
X5A	1	Buchsengehäuse 8 polig ku			0-0463008-0	RHP	950402		
X5A	1	Stechergehäuse 8 polig ku			0-0463007-0	RHP	950410		
X5A	8	Flachsteckhülse Stecker 6, 3mm			05447 123 111	RHP	950328		
X5A	8	Flachsteckhülse Buchse 6, 3mm CUZN ohne ISO			08832 123 211	RHP	950329		
X5B	1	Stechergehäuse 8 polig ku			0-0463008-0	RHP	950410		
X5B	1	Stechergehäuse 6 polig ku			0-0163007-0	RHP	950409		
X5B	5	Flachsteckhülse Stecker 6, 3mm			05447 123 111	RHP	950328		
X5B	5	Flachsteckhülse Buchse 6, 3mm CUZN ohne ISO			08832 123 211	RHP	950329		
X5C	1	Stechergehäuse 6 polig ku			05 0-480906-0	RHP	950327		
X5C	6	Flachsteckhülse Stecker 6, 3mm			05447 123 111	RHP	950328		
X5C	6	Flachsteckhülse Buchse 6, 3mm CUZN ohne ISO			08832 123 211	RHP	950329		
X5C	1	Buchsengehäuse 6 polig ku			2 105 50290253	RHP	950330		
Y1	1	Ventilstecker			GERRITSTECKER	Seehausen	980654		
YK1	1	MAGNETSYSTEM für Klinke 4, 35 H-2, 4 45H-2			KLINKEHABET 4.35H-2	Nussbaum	435HM23060		
YK1	1	1. Hechler mit Hebel (Metall)			MICRO-SCHALTER	Seehausen	980654		
YK1	1	Ventilstecker			GERRITSTECKER	Seehausen	980654		
YK1	1	MAGNETSYSTEM für Klinke 4, 35 H-2, 4 45H-2			KLINKEHABET 4.35H-2	Nussbaum	435HM23060		

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Datum	09.03.2006								
Bearb	80E								
Bepr.	10.03.2006								
Name		Ers. F.		Ers. d.					
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						4.35/45H -2 ohne RFH			
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