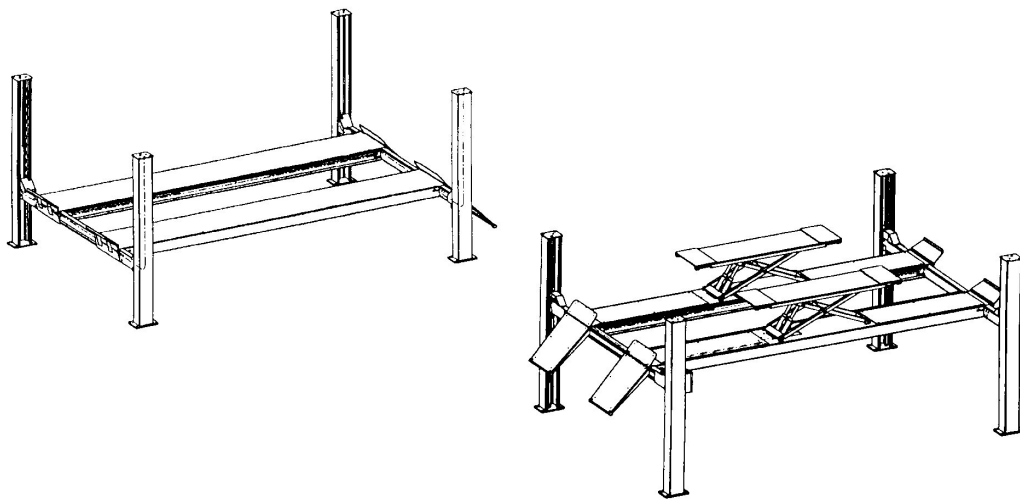


4.50H/ 4.50H plus **Nussbaum**

Automotive-Lift date 08/1998
Manual date: 01.04.2012



Operating instructions and documentation

Serial-number:

original documentation

Retailer address / phone

Made in Germany

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Foreword

Nussbaum Lifts are the result of 25 years experience in the automotive lifting industry. The high quality and the superior concept ensure reliability, a long lift lifetime and above all an economic business solution. To avoid unnecessary damages and dangers, read the operating instruction carefully and observe the contents. Nussbaum Lifts is not responsible for incidents involving the use for applications others than those for which they were designed.

Otto Nußbaum 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 to work with or around the unit, who

- are familiar with the basic regulations concerning labour safety and accident prevention and being trained to operate the particular unit.
- have read and understood the chapter concerning safety and warning symbols and signed 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 others 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.

Organizational 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 retightened!

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 within 7 days. The copy must remain in the manual.

Otto Nußbaum 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:..... in:.....

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, brand)

Minimum depth of anchorage observed*:mm okay

Torque observed*:NM okay

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

.....
date name of the expert signature of the expert

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

* see information sheet of dowel manufacturer

Record of handing over

The automotive lift

with the serial number: was installed on:.....

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

The lift was installed, checked and started up.

The persons below were familiarized with the operation of the automotive lift after the installation. The briefing was performed by an expert from the lift-manufacturer or from a franchised dealer:

..... date name signature
---------------	---------------	--------------------

..... date name signature
---------------	---------------	--------------------

..... date name signature
---------------	---------------	--------------------

..... date name signature
---------------	---------------	--------------------

..... date name signature
---------------	---------------	--------------------

..... date name signature
---------------	---------------	--------------------

..... date name of expert signature of the expert
---------------	-------------------------	----------------------------------

Your customer service:

1 Introduction

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

To furnish proof of **installation of the automotive lift** the form "Record of Installation" must be signed and returned to the manufacturer.

To furnish proof of the first use, regular and extraordinary checks, this documentation contains forms. Use these forms to document the checks. **Note:** The forms need to remain in this documentation.

Any **changes to the construction** and **displacement** of the automotive lift must be registered in the "**Master document**".

1.1 Installation and check of the automotive lift

Only specialist staff is allowed to do work concerning safety and to do the safety checks for the lift. They are called experts and competent person in this document.

Experts are persons (i.e. self-employed engineers, experts), who have received instruction and have experience to check and to test automotive lifts. They know the relevant labour and accidents prevention regulations.

Competent persons are persons (i.e. service technicians of the manufacturer or dealer) who have acquired adequate knowledge and experience with automotive lifts. They took part in training from the lift-manufacturer.

1.2 Warning notices

To show danger and to show important information the three symbols below are used. Pay attention to those passages, which are marked with these symbols.



Danger! This sign indicates danger to life. Inexpert handling of the described operation may be dangerous to life.



Caution! This sign indicates a warning against possible damage to the automotive lift or other material defects in case of inexpert handling.



Attention! This sign indicates an important function or other important notes.

2 Master document of the automotive lift

2.1 Lift-manufacturer

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

2.2 Application

The automotive lift 4.50H/ 4.50H plus is a lifting mechanism for lifting motor vehicles with a total weight of up to 5000 kg (11000 lb). The maximum load distribution is 2:1 or 1:2 in or against drive-on direction.

It is not allowed to install the standard automotive lift in a hazardous location. It is also not allowed to carry persons on the lift.

After construction changes, repair or displacement, the lift needs to be rechecked by an expert.

2.3 Changes to the construction

Changes to 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 expert

2.5 Declaration of conformity

EG- Konformitätserklärung



gemäß Maschinenrichtlinie Anhang II 1A

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

Hiermit erklären wir, daß die Hebebühne Modell:
Hereby we declare that the lift model:
Par là présente nous déclarons que le pont élévateur modèle:
Por la presente declaro, que el elevador modelo:
Con la presente si dichiara che il sollevatore:

COMBI LIFT
COMBI LIFT 4.50 H
COMBI LIFT 4.50 H A
COMBI LIFT 4.50 H Plus
COMBI LIFT 4.50 H Plus A

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

Maschinenrichtlinie / Machinery Directive
EMV Richtlinie / EMC Directive

2006/42/EG
2004/108/EG

in Übereinstimmung mit den folgenden harmonisierten Normen gefertigt wurde
was manufactured in conformity with the harmonized norms
fabriqué en conformité selon les normes harmonisées en vigueur
producido de acuerdo a las siguientes normas armonizadas:
è stato fabbricato in conformità con le norme armonizzate:

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

EN 1495: 2010
EN 61000-6-2 ,-6-4

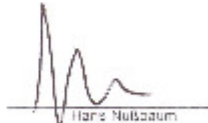
Beauftragter für die Technische Dokumentation
Authorised to compile the technical file

Otto Nussbaum GmbH & Co. KG

Seriennummer
Serial number

Seriennummer

Kehl- Bodersweier, 12.03.2012


Hans Nussbaum

Docu-Combi-0_019-05-000



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3 Technical information

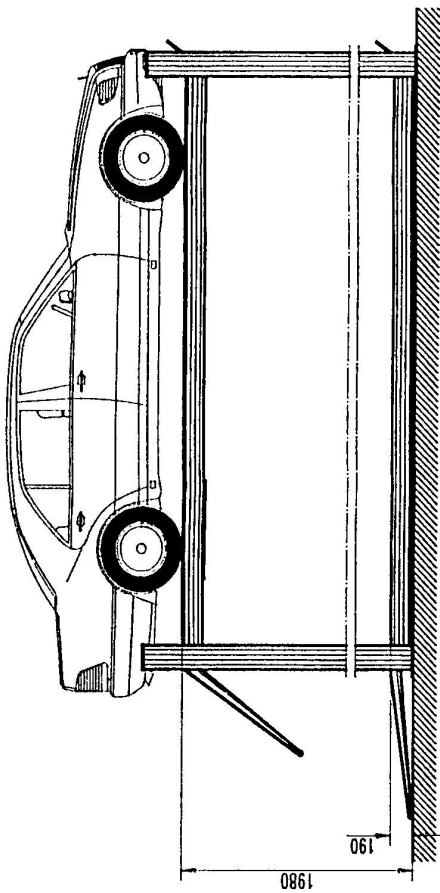
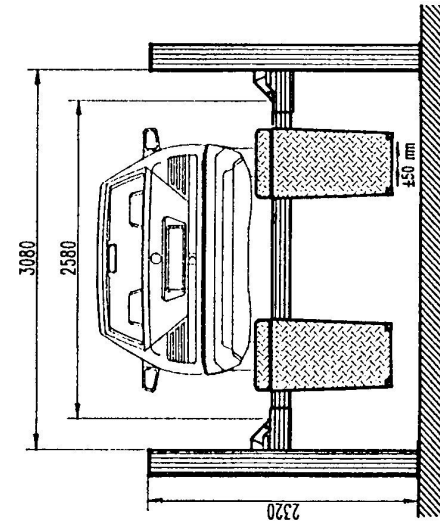
3.1 Technical ratings

capacity automotive lift:	5000kg (11000 lb)
load distribution:	2:1 in or against drive-on direction
lifting time automotive lift:	approx. 41 sec.
lowering time automotive lift:	approx. 36 sec.
lifting height:	max. 1800mm
capacity wheel free jack:	3500 kg (7700 lb)
lifting height:	approx.442 mm
line voltage:	3 x 400 Volt , 50Hz
driving voltage	24 Volt
power rating:	3 kW
motor speed:	2800 rpm
pump capacity:	3 cm ³ /revolution
hydraulic pressure:	approx. 200 bar
pressure relief valve:	approx. 220 bar
oil tank:	approx. 10 litre - viscosity 32 cst.
sound level L _{pA} :	≤ 70 dB
connection by customer (standard)	3~/N+PE, 400V, 50 Hz with fuse 16A T (Pay attention to the voltage of your country)

3.2 Safety devices

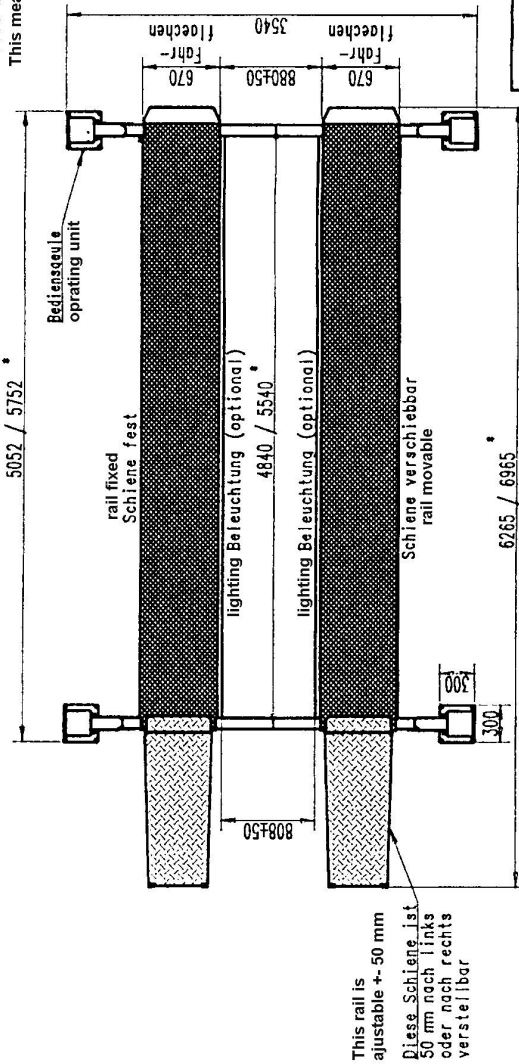
1. Pressure relief valve
Overprint-safety of the hydraulic system
2. Holding valve
Safety device against unintentional lowering
3. Key-operated switch
Safety against unauthorized operation
4. Safety ratchet
Safety device against unintentional lowering
5. Safety limit switch
If a rope breaks, the automotive lift switches off
6. CE-STOP
The automotive lift stops automatically 200 mm before the lowest position

3.3 Datasheet



* Diese Masse beziehen sich auf die optionale Schienentlänge von 5500 mm
This measure is for the rail of 5500 mm length

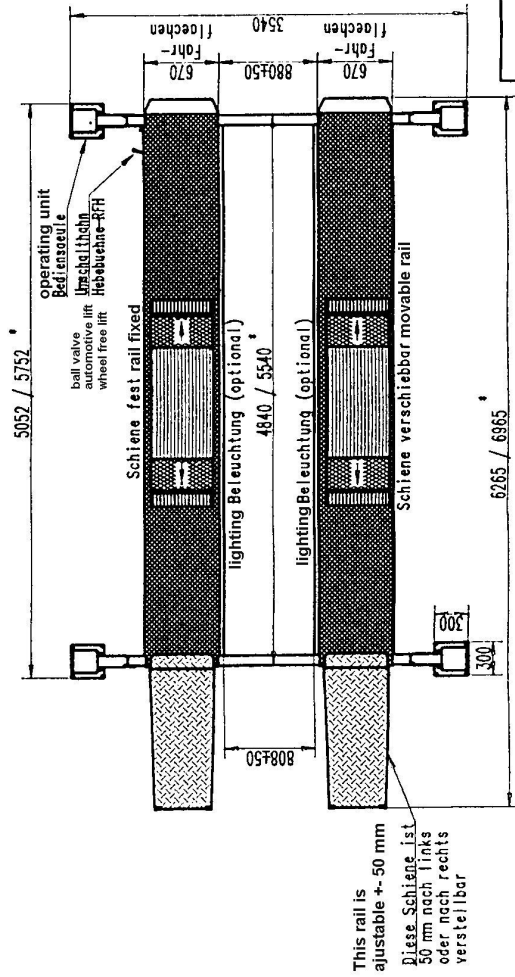
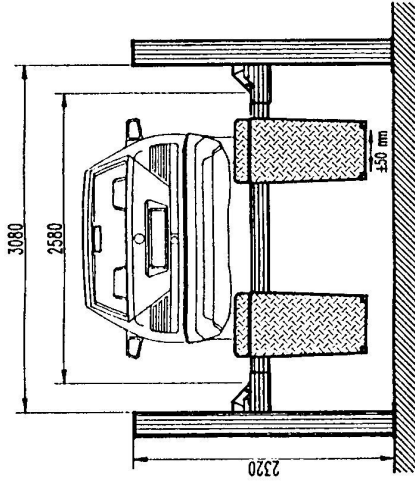
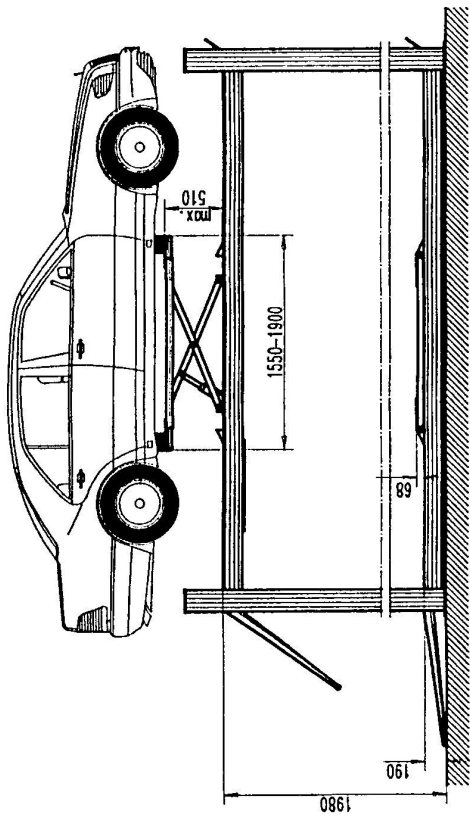
Technische Daten:
 Tragfähigkeit : 5000/6500 kg
 Nutzhub : 1 790 mm
 Auffahrhöhe : 190 mm
 Motorleistung : 3 kW
 Elektroanschluss : 3 Ph, N + PE, 400/230 V, 50 Hz



This rail is adjustable +/- 50 mm
 Diese Schiene ist 50 mm nach links oder nach rechts verstellbar

Mass- und Konstruktionsänderungen vorbehalten!

4.50H/4.65H	
Massstab 1:40	
05.06.1998 / VEID	EINBAU1831



Technische Daten:
 Tragfähigkeit : 5 000 kg / 6 500 kg
 Nutzhub : 1 790 mm
 Auffahrhöhe : 190 mm
 Motorleistung : 3 kW
 Elektroanschluss : 3 Ph, N + PE, 400/230 V, 50 Hz
 Tragfähigkeit RFH : 3 500 kg
 Nutzhub RFH : 442 mm
 Auffahrhöhe RFH : 68 mm

* Diese Masse beziehen sich auf die optionale Schienenlänge von 5500 mm
 This measure is for the rail of 5500 mm length

4.50 H Plus / 4.65 H Plus

mit Radfreibeber
 with wheel free lift

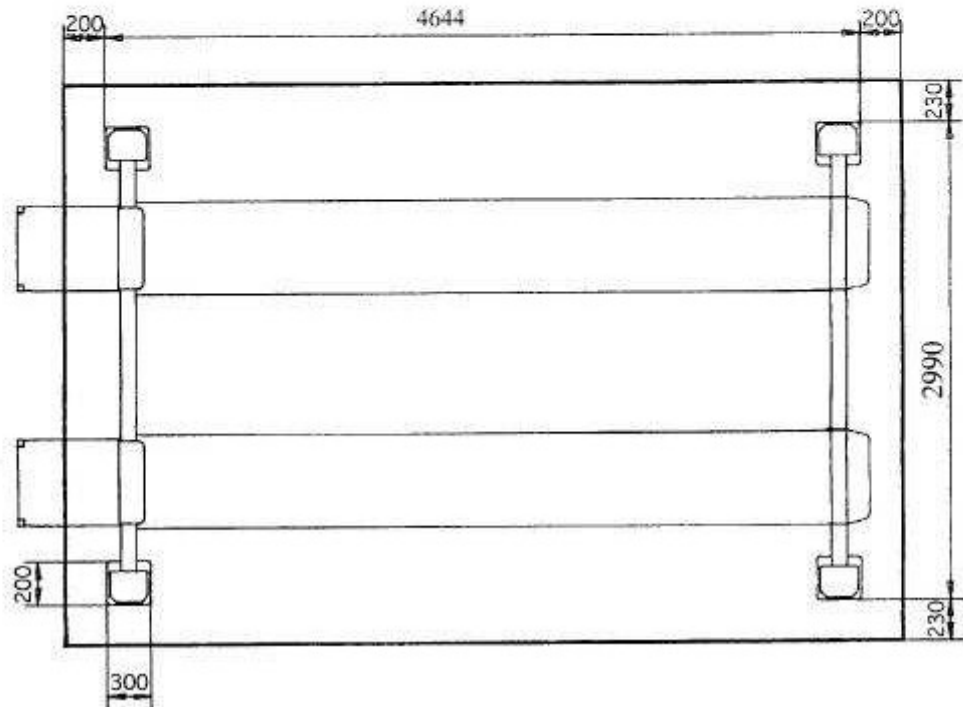
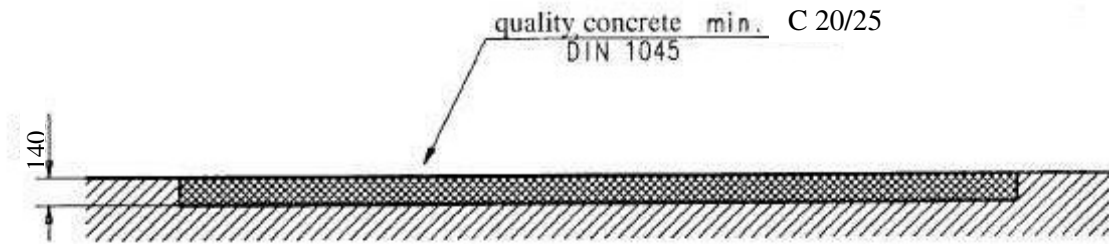
Masstab 1:40

EINBAU1829

04.06.1998 / VE:ID

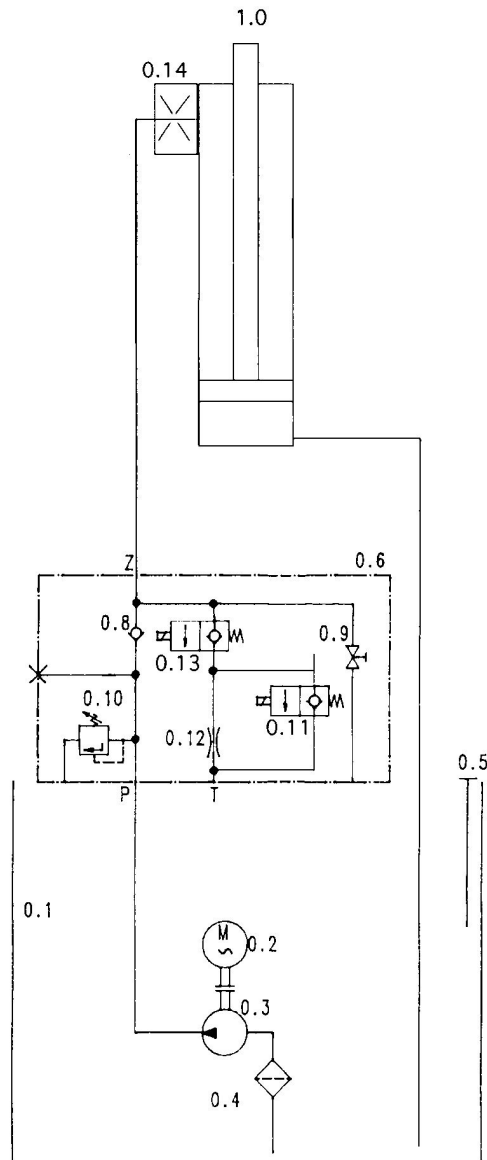
Mass- und Konstruktionsänderungen vorbehalten!

3.4 Foundation diagram



If the concrete is available, the quality C20/25 and the minimum thickness of 140 mm must be guaranteed.

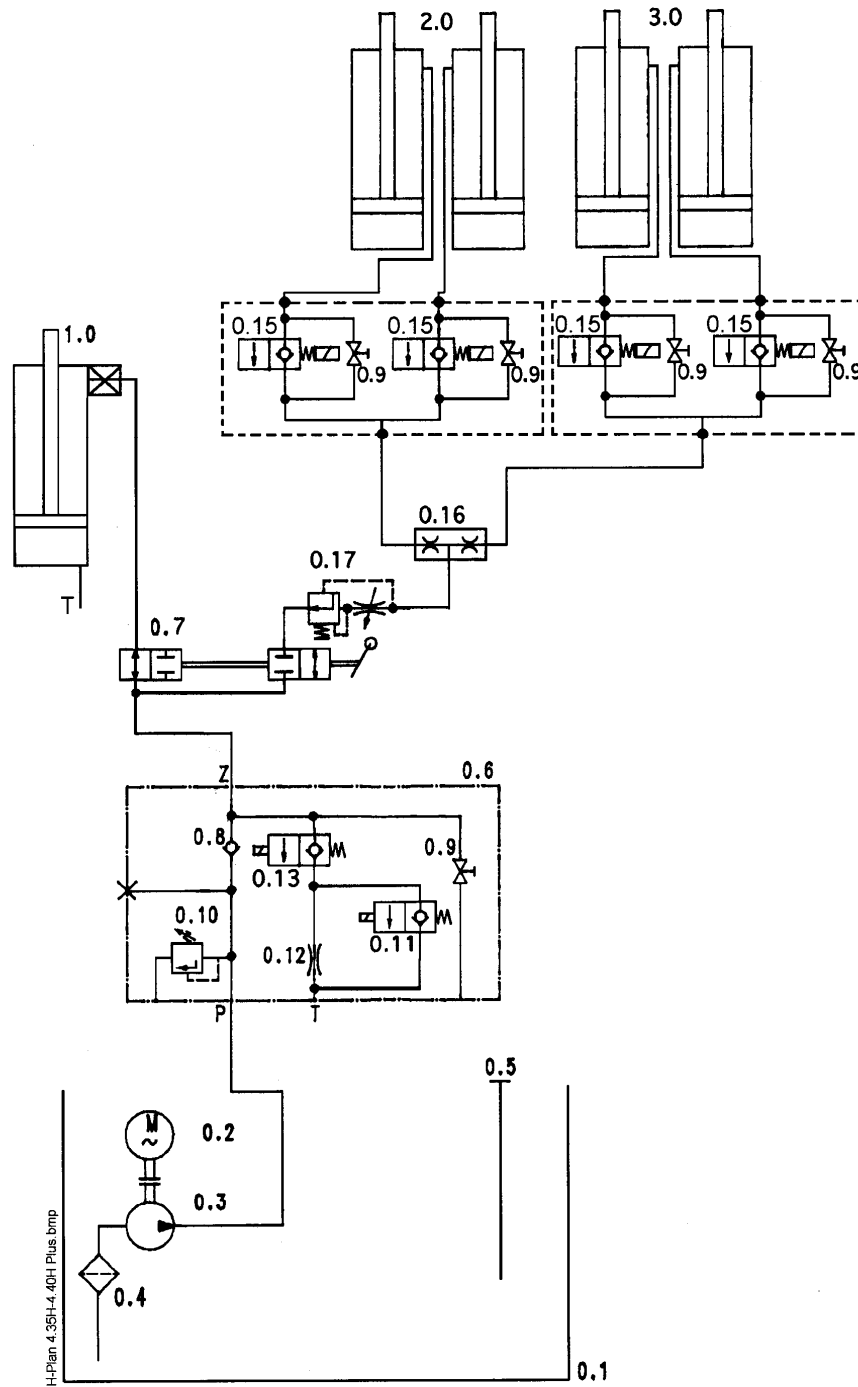
3.5 Hydraulic diagram w/o wheel free jack



Hydraulic parts list

part #	description
0.1	oil tank
0.2	sub oil motor
0.3	gear pump
0.4	filter
0.5	oil level gauge
0.6	hydraulic block complete
0.8	holding valve
0.9	emergency lowering screw
0.10	pressure control valve
0.11	electrical holding valve
0.12	flow control valve
0.13	electrical holding valve
0.14	set screw with a bore hole
1.0	cylinder

3.6 Hydraulic diagram with wheel free jack

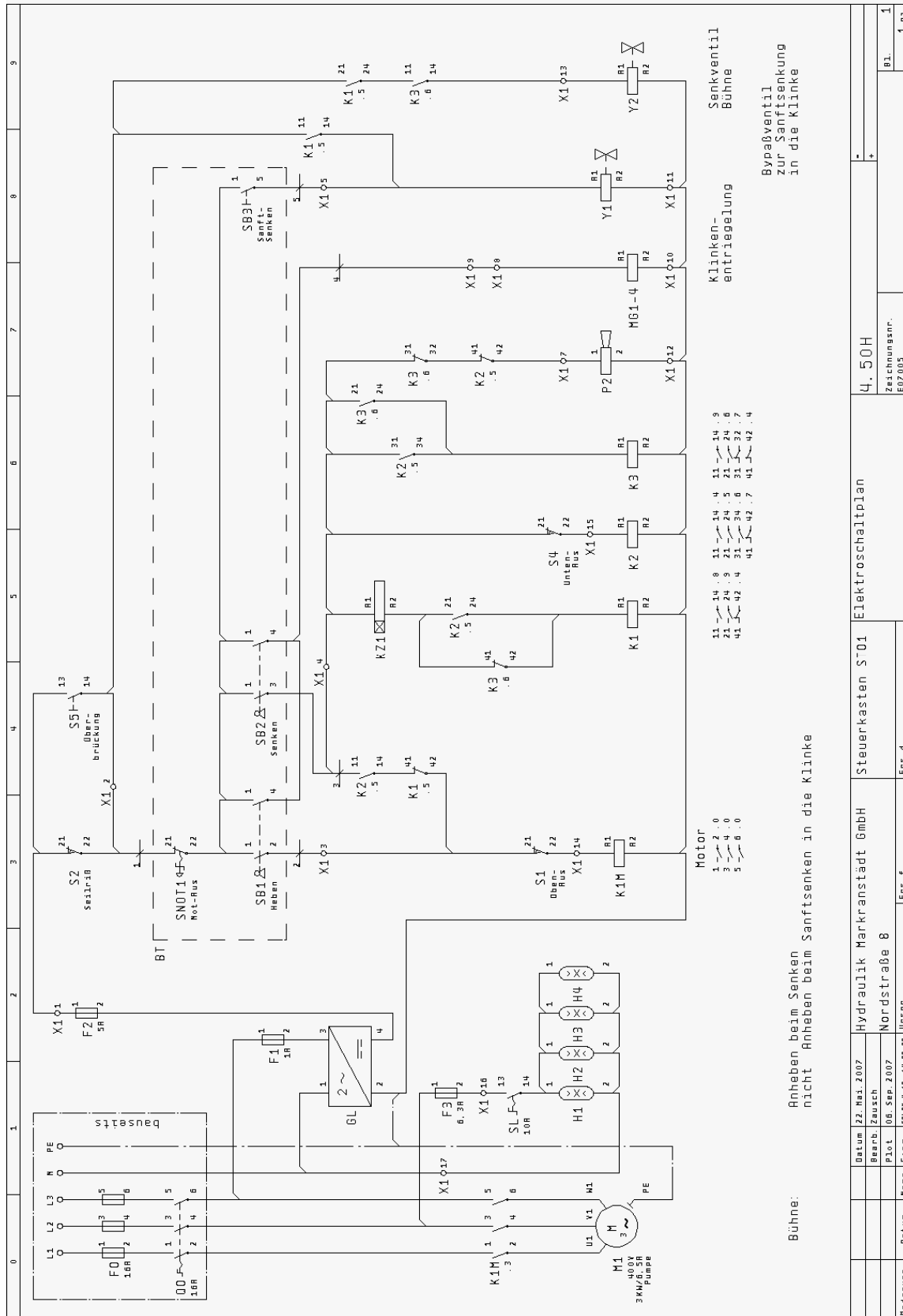


H-Plan 4.35H-4.40H Plus.bmp

Hydraulic parts list

part #	description	
0.1	oil tank	435H01003
0.2	motor	990445
0.3	gear pump	980486
0.4	filter	980201
0.5	screw	9VSTIR1/4ED
0.6	hydraulic block complete	435H01073
0.7	ball valve (main lift / wheel free lift)	980513
0.8	holding valve	980480
0.9	emergency lowering screw	9232TTL42038
0.10	pressure relief valve	232NSTL02082
0.11	magnetic valve	980478
0.12	screen	
0.13	magnetic valve	980478
0.15	magnetic valve	980478
0.16	flow control valve	
0.17	lowering valve (active during lowering)	980247
1.0	cylinder main lift	435H02000
2.0	cylinder wheel free lift	
3.0	cylinder wheel free lift	

3.7 Electrical diagram w/o wheel free jack



List of electrical parts

part #	description
Q1:	main switch (by customer)
M1:	motor
KM1:	contactor motor
SB1:	key switch "lift"
SB2:	key switch "lower"
SB3:	button "soft lowering in the ratchets" (main lift)
S1:	top limit switch (main lift)
S2:	limit switch „the rope is torn“
S4:	limit switch „CE-Stop if the main lift is approx. 200 mm over the floor
S5:	override switch
K1-K3:	relay
P*:	speaker
MG1:	electromagnet (ratchet)
MG2:	electromagnet (ratchet)
MG3:	electromagnet (ratchet)
MG4:	electromagnet (ratchet)
GL:	transformer 230V/24V
GL:	rectifier
F1:	fuse 0,5 A
F2:	fuse 5A
F3:	fuse 10A
Y1:	override valve (soft lowering)
Y2:	valve (main lift)
KZ1:	timing relay
H1-H4:	lighting
SL:	light switch

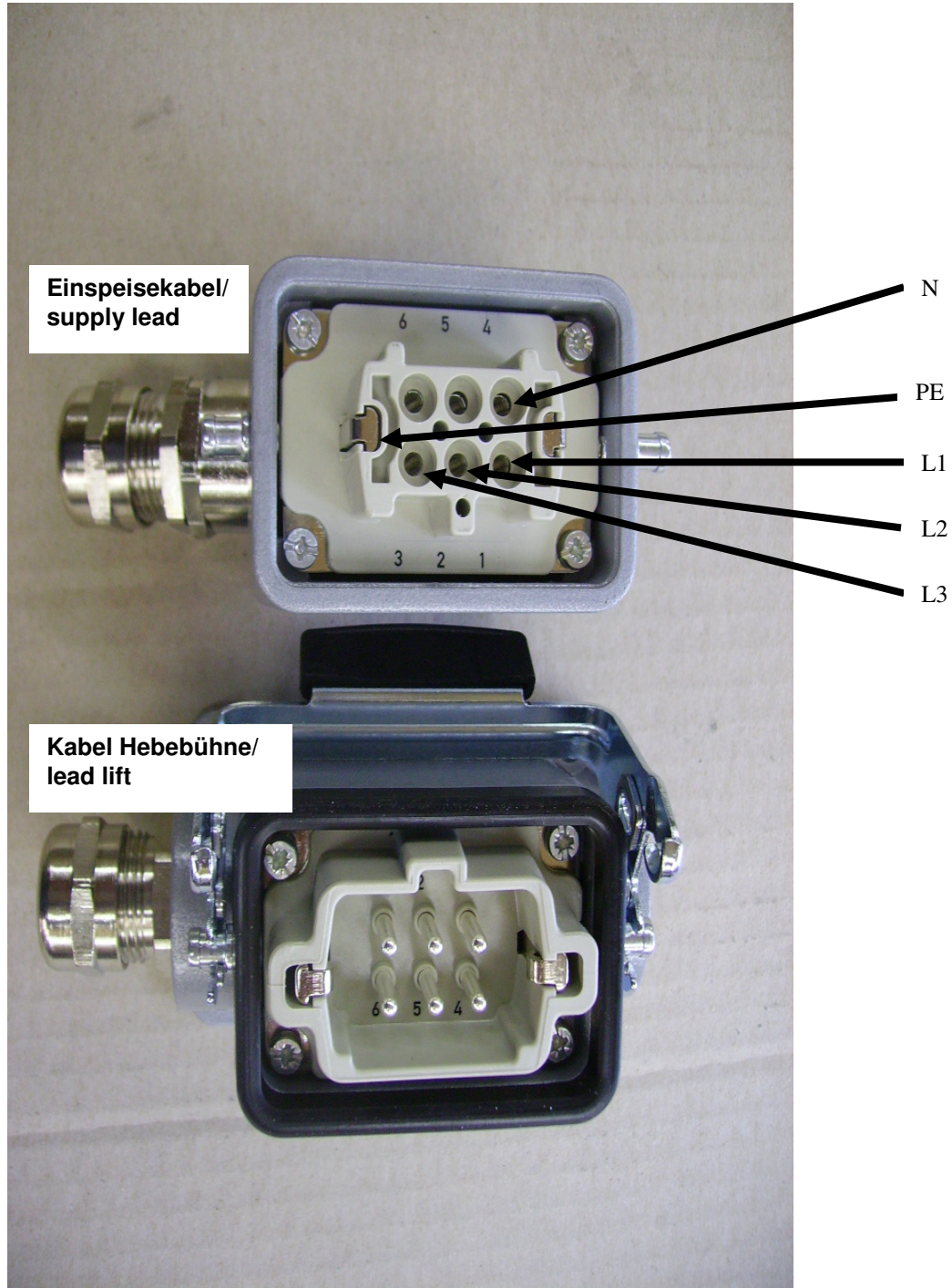
List of electrical parts

part #	description
Q0:	main switch (by customer)
M1:	motor
KM1:	contactor motor
SB1:	key switch "lift"
SB2:	key switch "lower"
SB3:	button soft lowering in the ratchets (main lift)
S1:	top limit switch (main lift)
S2:	limit switch „the rope is torn“
S4:	limit switch „CE-Stop if the main lift is approx. 200 mm over the floor
S5:	override switch
S6:	switch automotive lift/ wheel free jack
K1-K3:	relay
P2:	speaker
MG1:	electromagnet (ratchet)
MG2:	electromagnet (ratchet)
MG3:	electromagnet (ratchet)
MG4:	electromagnet (ratchet)
GL:	transformer 230V/24V
GL:	rectifier
F1:	fuse 0,5A
F2:	fuse 5A
F3:	fuse 10A
F4:	fuse 4A
Y1:	override valve (soft lowering)
Y2:	valve (main lift)
Y3:	valve wheel free jack
Y4:	valve wheel free jack
KZ1:	time relay
H1-H4:	lighting
SL:	light switch

3.9 Connection-command (picture)

Electrical wiring has to be executed by qualified personnel only!

Einspeisung / supply Bild 1



Einspeisung / supply Bild 2



N

L3

L2

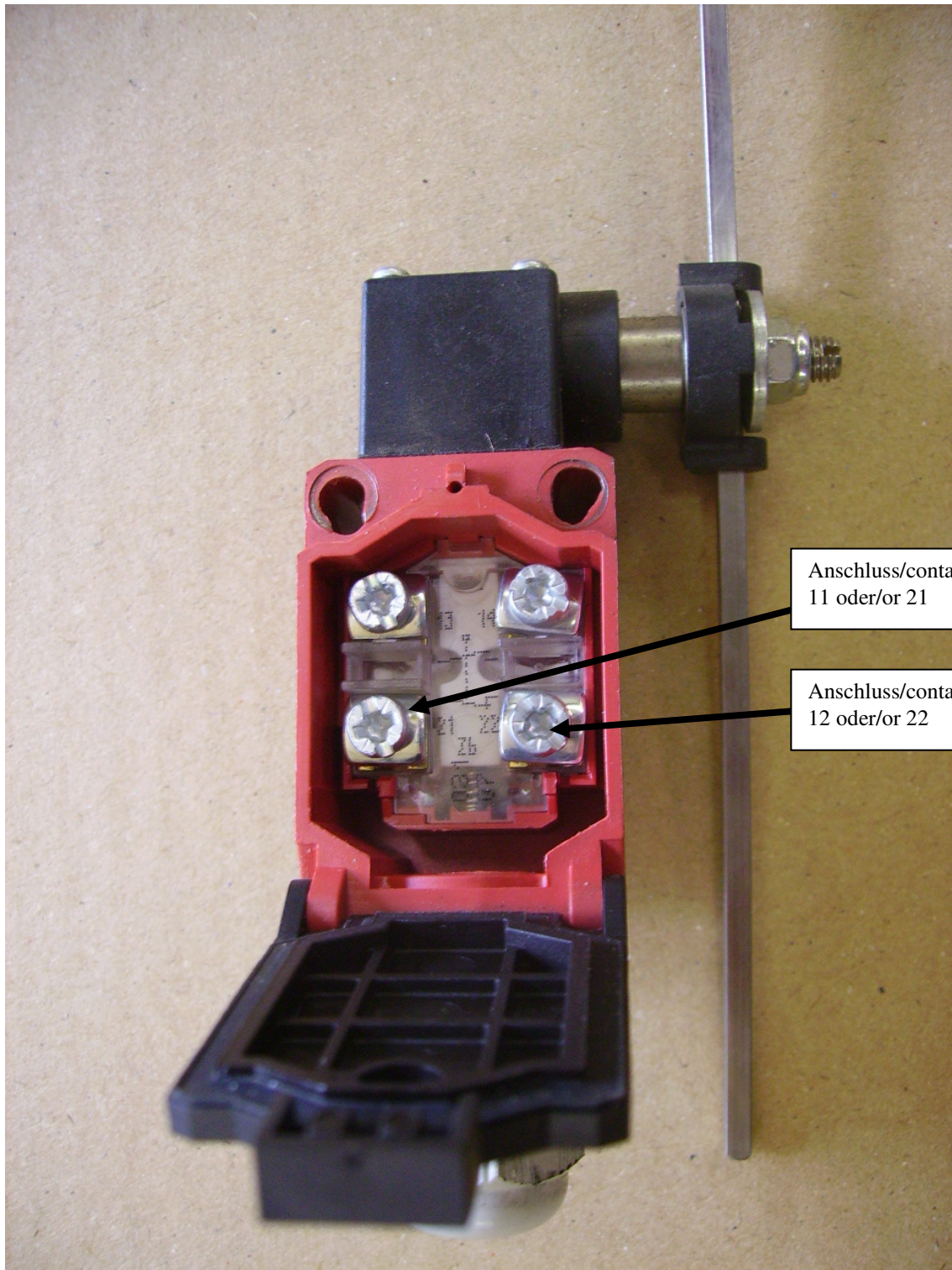
L1

PE

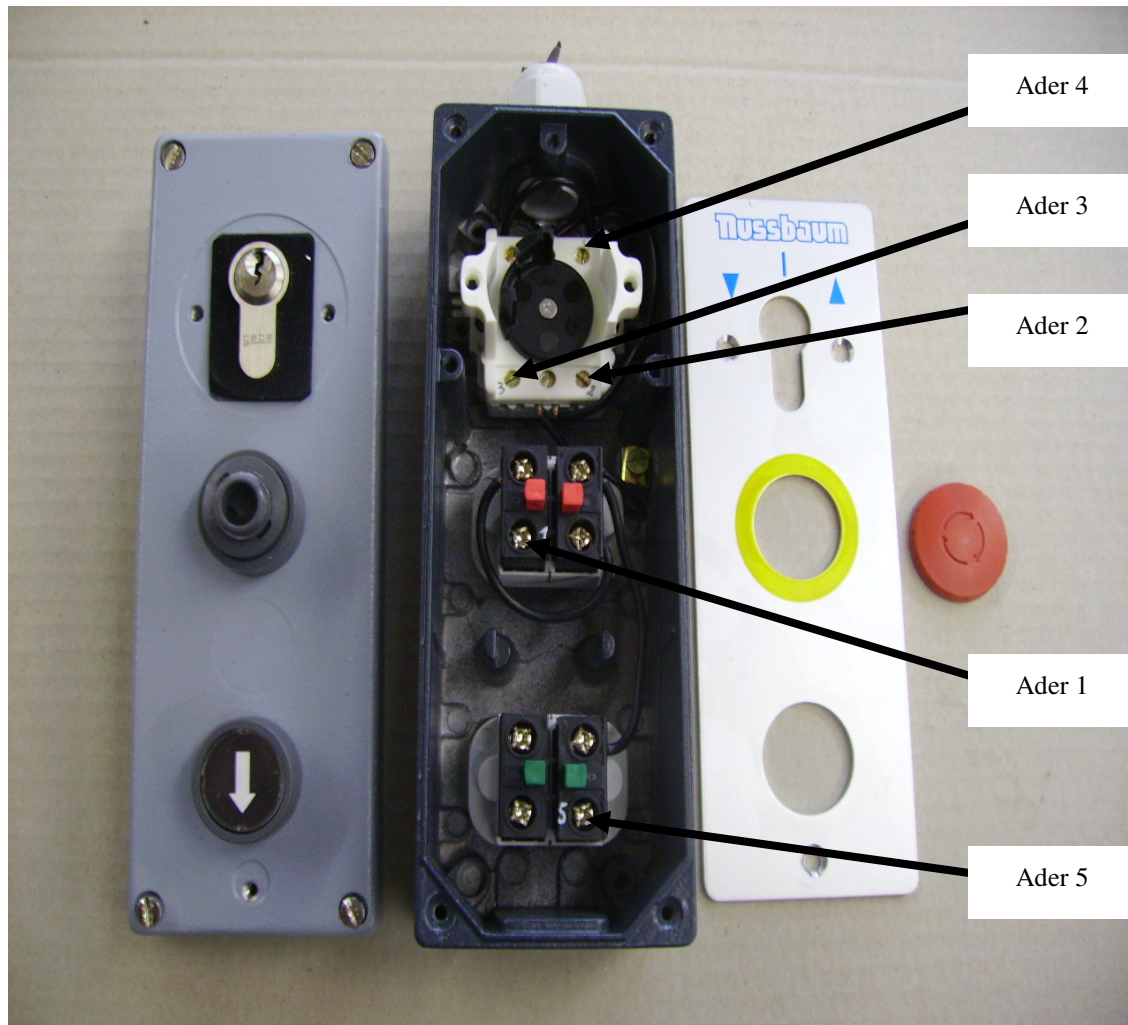
Einspeisung / supply Bild 3



Oben-Aus-Schalter / top-off switch



Schlüsselschalter / key switch



see also pag. 37-38

4 Safety regulations

If you use the automotive lift, the German following regulations are to be considered:

BGG945: Examine of automotive-lifts; BGR500 Using automotive-lifts; (VBG14).

Especially the following regulations are very important:

- The laden weight of the lifted vehicle must not be more than the maximum capacity of the lift.
- The automotive lift must be lowered completely, before the vehicle is driving, in the provided direction, on the lift.
- During working with the lift the operating instruction has to be followed.
- For vehicles with low sub-ground clearance or with optional equipment (sport equipment) or sport-vehicles, you need to check previously whether damages can appear.
- Only trained personnel at the age of 18 years or older are allowed to operate this lift.
- It's not allowed to stay under the lifted or lowered vehicle (except for the operator).
- It is not allowed to transport passengers on the lift or in the vehicle.
- It is not allowed to climb onto the lift or onto a lifted vehicle.
- The automotive lift must be checked by an expert after changes to construction or after repairing carrying pads.
- It is not allowed to start with operations at the lift before the main switch is switched off.
- During lifting or lowering the vehicle must be observed by the operator.
- It is not allowed to install the standard-automotive lift in hazardous location or in washing bays.

5 Operating instructions

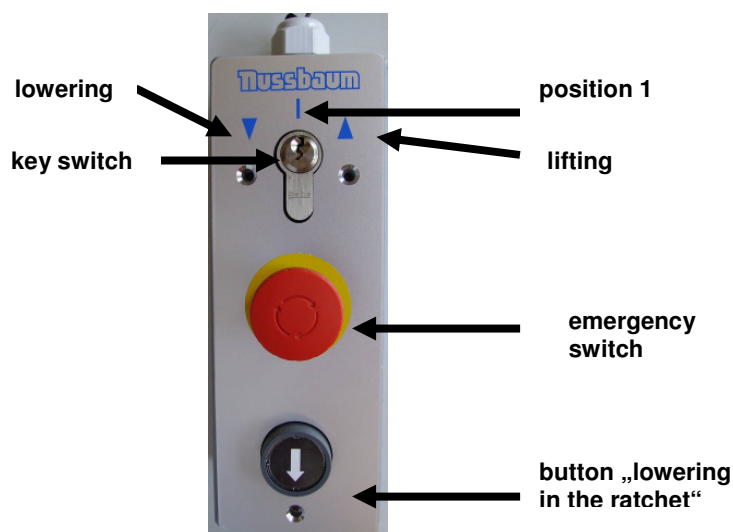


**The safety regulations must be observed during working with the automotive lift.
Read the safety regulations in chapter 4 carefully before working with the lift!**

5.1 Lifting the vehicle with automotive lift

- Drive vehicle in the middle of the lift.
- Block the vehicle against rolling, put into gear.
- Check 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 control system; main switch on position "1" (see picture1)
- Raise the lift. Press the button „lifting“.
- Lift the vehicle on the working height. Press the button „lifting“.
- Observe the complete lifting process.

picture 1: key switch



5.2 Lowering the vehicle with automotive lift

- Check 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.
- Turn the key on the position "▼".
- The four safety ratchets are pulled back automatically. After 1 sec. the lowering starts.
- Lower the lift into desired position. Observe the complete process.



If the main lift is on a height of approx. 200 mm over the floor, the lift stops the lowering (CE-Stop). Check 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. Turn the key in position 0 and after this in position "▽". You hear an acoustic warn signal until the lift is in the lowest position.

- If the lift is in the lowest position drive the vehicle off the lift.

5.3 Lowering the automotive lift in the ratchet strip (wheel alignment)

- Before the first wheel alignment, loose only the nuts (M8) from the sliding plates under the rails.
- The sliding plates must be locked when using the automotive lift.
- Position the vehicle on the lift.
- Unlock the sliding plates.
- Position the turn tables under the wheel. If necessary use the Jack.
- Check 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.
- Press the button "lowering in the ratchet" at the key switch. (see pic.1)
- Press the button so long until all four ratchets are locked.

5.4 Raise the automotive lift out of the ratchet strip

- Check 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.
- Turn the key on the position "Δ" until the ratchets are free.

5.5 Lifting the vehicle with wheel free jack

- Drive vehicle onto automotive lift, position centered.



The vehicle needs to stand completely on the drive-on rail to prevent it from falling off.



***For short vehicles flap off ramps and/ or slide support arms so that the wheels can move freely.
For extra long vehicles pull out the support arms to extend the drive-on rails by the ramps.***

- Protect vehicle against rolling: engage the gear, put hand brake.
- Check 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.
- Position polymeric overlay underneath the application points required by the vehicle manufacturer.



Never position polymeric overlay vertically to prevent vehicle from falling off. Vehicle needs to stand secured on the overlay.

- Put selector switch into position „wheel free jack“
- Lift up vehicle until wheels are free; turn main switch to position „lift“, check if vehicle is fixed on the automotive lift.
- Lift up vehicle onto desired operation height; turn main switch to position „lift“.

5.6 Lowering the vehicle with wheel free jack

- Check 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.
- Lower vehicle onto desired operation height or lowest position; turn main switch to position „lower“.
- Observe complete lowering process.

5.7 Equalization of drive on rails

When the wheel free jack is used for a longer period without reaching the lowest position, an unequal run can occur. Normally the rails equalize again after the hydraulic oil cooled off. If the unequal run remains, follow these steps:

- put selector switch into mode „wheel free jack“
- turn main switch to position „lower“ and hold until both rails have reached the lowest position.
- wheel free jack returns to normal function.

6 Troubleshooting

If the lift does not work properly, the reason for this might be quite simple. Please check the lift for the potential reasons mentioned on the following pages. If the cause of trouble cannot be found, please call the technical service.



Repairs at the lift's security devices as well as repairs and examinations of the electrical fittings may only be performed by specialists.

Problem: Motor does not start!

- potential causes:
- *Main switch is not engaged.*
 - *The feed line is cut.*
 - *Power failure.*
 - *Thermofuse in the motor is active(let it cool down approx. 10 min).*
 - *Ropes are flabby and the limit switch is pressed.*

Problem: Motor starts, lift does not raise!

- potential causes:
- *The vehicle is too heavy*
 - *Level of the oil is too low.*
 - *The emergency lowering screws are not closed.*
 - *The hydraulic hoses are dirty.*
 - *Cylinder is defective*

Problem: The lift does not lowered!

- potential causes:
- The lift is standing on a obstacle.
 - The hydraulic valve is defective.
 - The key switch is not active.
 - The lift is in the ratchet.

6.1 Driving on an obstacle with the main lift

If the lift is running onto an obstacle during the lowering, it stops mechanically. In this case press the override switch at the rail and turn the key on position "Δ" simultaneously until the obstacle can be removed.

6.2 Emergency lowering in case of power failure or defective valve

In case of power failure or defective valves, the hydraulic valves of the lift will not open anymore. Therefore the lift can not be lowered. In this case you can open the hydraulic valve manually and lower the lift into lowest position, so the vehicle can be driven off.



The emergency lowering can only be performed by persons instructed to use the lift. Please refer to the regulation „Lowering the vehicle“.

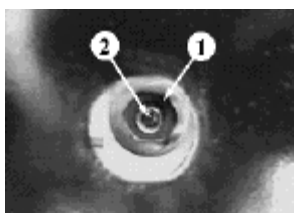


Every kind of external leakage must be removed. This is necessary particular before emergency lowering.

In case of power failure the emergency lowering can only performed if the ratchets are not engaged.

In case of defective valves the lift can be lifted a bit. So it is possible to pull back the ratchets manually.

- Pull back the ratchets manually and lay a suitable support (wedge) between the ratchet strip and the ratchet. Or fix the ratchet with the help of a wire. This step should be taken at all four ratchets.
- Loose the lock nut (red nut).
- 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.
- Loose the emergency screw (set screw) one turn to start lowering.
- The emergency lowering starts. The lowering speed can be controlled with this emergency lowering screw.
- Lower the lift in the lowest position.
- Observe the complete process.
- Retighten the emergency lowering screw and the lock nut.



picture: emergency lowering screw at the side of the rail

- 1 lock nut
- 2 emergency lowering screw



After finishing the emergency lowering, close the emergency screw and fasten the lock nut. Otherwise a malfunction of the lift can occur.

- Remove the support (wedge) or the wire from the ratchets.

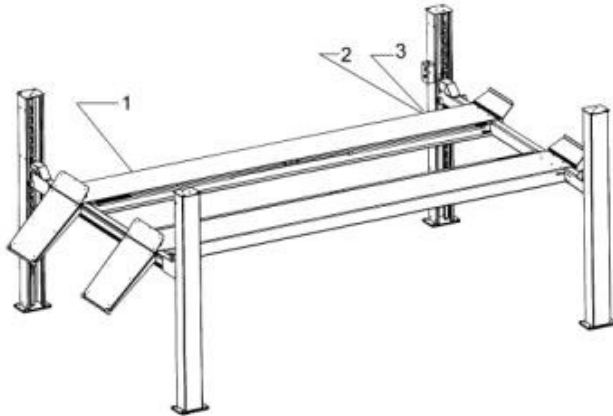


To guarantee the safe running of the lift, the supports must be removed.

- Do not work with the lift until the faulty parts are exchanged. Call the service-partner.



Switch off the main switch and lock it. Do not work with the lift until the faulty parts are exchanged.



picture 2: 1 emergency lowering screw
2 lever
3 override switch

6.3 Emergency lowering of the wheel free lift

In case of power failure or defective valves, the hydraulic valves for lowering of the wheel free jack and the safety valves at lower side of the hydraulic cylinders and the magnet to unlock the ratchet can not be opened. Therefore the lift cannot be lowered. In this case it is possible to lower the lift by opening the hydraulic valve manually, so the vehicle can be driven off.



The emergency lowering must only be performed by persons instructed to use the lift. Please refer to the regulation "Lowering".

- Put the lever (on the side of the rail) on position wheel free lift.
- On the cylinder (wheel free lift) are safety valves. Unscrew the red locknut and turn the set screw with a hexagon socket screw key one direction clockwise.
- Unscrew the red locknut (on the side of the rail) and turn the set screw with a hexagon socket screw key one direction anticlockwise.
- The lowering process starts. Observe the complete process.
- If the wheel free lift is in the lowest position. Fasten and safe the set screw and the locknut.



After finishing the emergency lowering, the emergency screw and the red security nut must be brought into the position they have had before. Otherwise malfunction of the wheel free jack can occur.

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.
- Clean the protection hose at the operating column. Grease it with a multipurpose liquid, otherwise the hose sticks to the column.
- Check the condition of ropes. If torn wires are discovered, the complete rope-set must be changed.
- 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. (i.e. Auto Top 2000 LTD. Agip).
- 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.
- It is prescribed (VBG 14, § 52-3 German regulation) to exchange the hydraulic hose if its necessary, but at least every 6 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

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 a 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.

8 Security check

The security check is necessary to guarantee the safety of the lifting 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 recommended to maintain the lift at this occasion.



After changes to the construction of the lift and after serious maintenance works (i.e. welding on carrying parts) an extraordinary security check must be performed by an expert.

This manual contains form with a schedule for the security checks. Please use the adequate form for the different security checks. The form should remain in this manual after they have been filled out. In the following there is a short description about special safety devices.

9 Installation and Initiation

9.1 Regulations

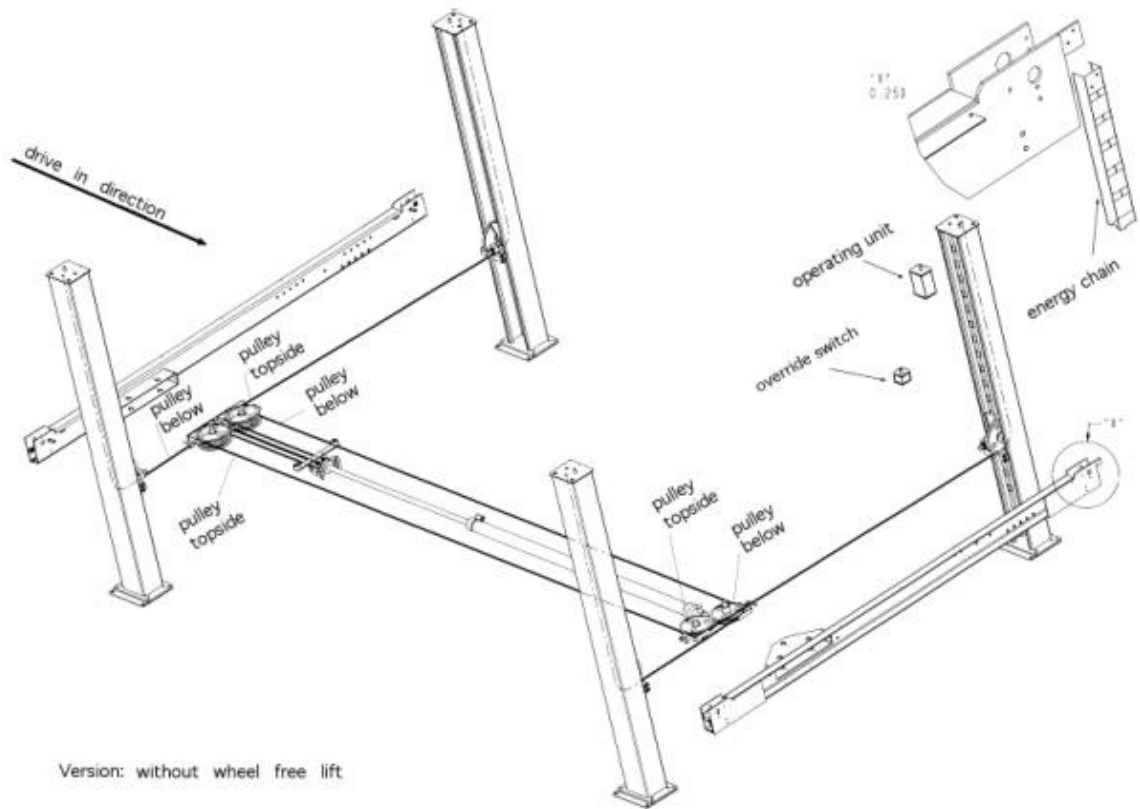
- The installation of the lift is performed by trained technicians of the manufacturer or one of its distribution partners. If the operator can provide trained mechanics, he or she can install the lift by him or herself. The installation has to be done according to this regulation.
- Installing the standard-automotive 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.

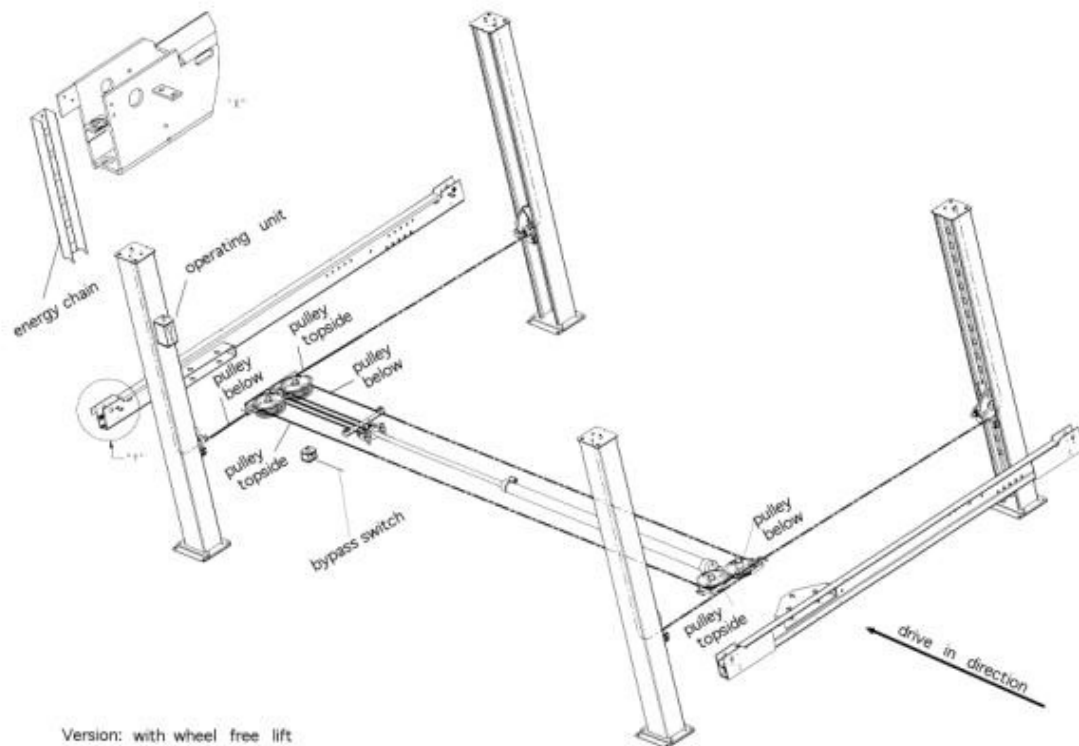
9.2 Erecting and dowelling the lift

It is necessary to dowel the columns at 4 points and to safe the lift against slipping. Therefore a concrete floor without reinforcement, thickness of 160 mm and quality C20/25 is needed. In case of doubt perform a test drill and put a dowel in. Afterwards fasten the dowel with a specified torque. If the necessary torque is too low or if there are cracks in the concrete floor, erect a foundation in accordance with the sheet "foundation plan". Pay 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 to exact difference between the runways (refer to data sheet).
- Position the crossbeams on the face of the runways, and put the plugs together.
- Mount the ropes (see picture 5).
- Position the columns at the ends of the crossbeams.
- Line up operating column (with bubble level) and drill holes for dowel-fixing through four bore-holes of base plates. Clean bore-holes with pressure air. Put in the safety dowels with washers in borings.
- Take carrying ropes through columns to upper side and fix them in the head plate
- Check the position of the lift and the position of the operating columns again.
- 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 (German dowel manufacturer) or equal dowels of another manufacturer (with allowance) but observe their regulations! Before doweling check concrete floor with quality C 20/ 25 if the concrete floor goes to the top edge of the floor. In this case the dowels have to be chosen according to picture 6. If the ground is covered with floor tiles, the dowels have to be chosen according to picture 7.
- Tighten the dowels a little.
- Connect power supply:
Pull the **electrical cable (5x 1,5 cable)** from the hydraulic-unit (under the rail) via the crossbeam and through the energy chain to the top of the operating column.
Pull the **control line (7x1 cable)** (see pic. Connect the operating unit as well via crossbeam through the energy chain to the top of the operating column and afterwards from the topside through the cable channel to the key switch.
- Tighten the screws at the crossbeam.
- Fill in the hydraulic-oil, approx. 10 litre.
- Raise the lift a bit with the key switch and push the override switch at the side of the rail simultaneously.
- Remove the erection trestles.
- Mount the safety ratchets in the column - if necessary lower the lift.
- Lower the lift in the ratchet (read chapter "lowering in the ratchet)
- Line up the columns with a help of a bubble level again.
- Tighten the dowels with the dynamometric key (example Liebig-dowels M = 50Nm)
Each dowel must be tightened with the demanded torque. Otherwise the normal function of the lift can not be guaranteed. Observe the regulations of the other dowel-manufacturer.
- Mount the ramps and the loading ramp.
- 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 into the ratchet (refer to operating Instructions).
- Position each of the measuring scales on the traverse and check the level of the two rails.
- Adjust the rails with the screws of the ratchet-rod (on the "head-plate" at the top of the column).
- Raise and lower the lift several times with load. Check the torque of the dowels and check the hydraulic parts for tightness.
- Mount the covers.





9.3 Adjusting the rails

The standard distance between the rails is 950 mm. It is possible to adjust the rails +/- 100 mm (see datasheet). Lower the lift in the ratchets until there is no tractive power on the ropes.

- Lower the main lift in the ratchet.
- Remove the ramp and the roll-off safety device from the adjustable rail.
- Remove both covers of the crossbeam.
- Remove the screws and if necessary position supports under the rail.
- Adjust the rail.
- Tighten the screw.
- Mount the cover.
- Mount the ramp and the roll-off safety device.
- Raise the lift out of the ratchets.

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 has 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.

9.5 Displacement of the automotive lift

If the place of installation is to be changed, the new place has to be prepared according to 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 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”.

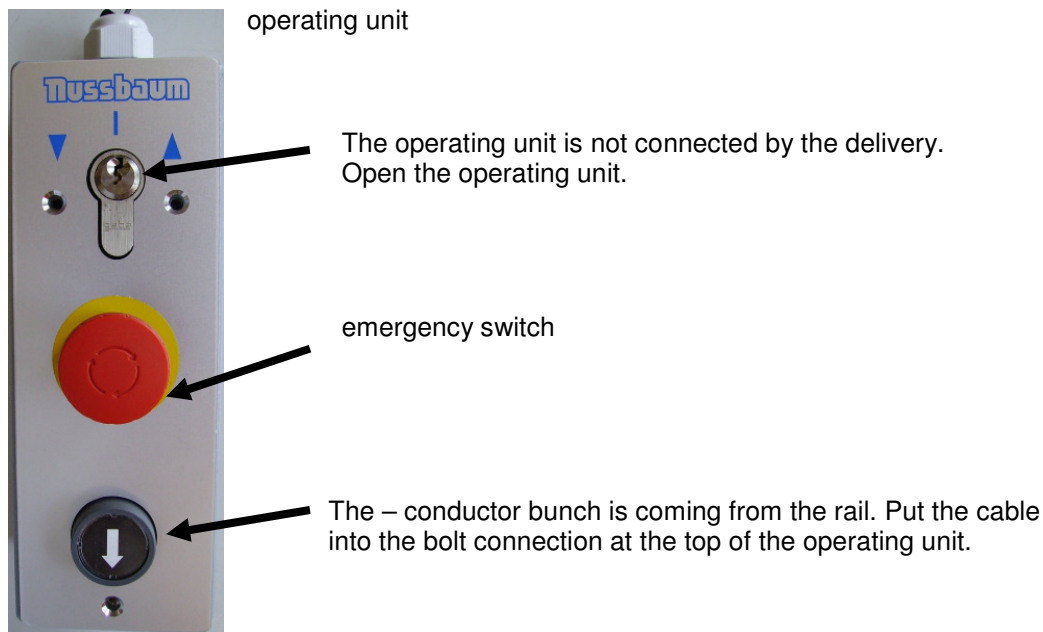


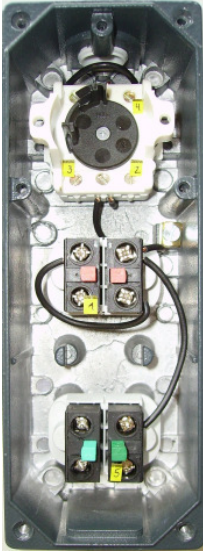
Use new masonry-bolts, the used bolts can not be used again.



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

9.6 Connecting the operating unit

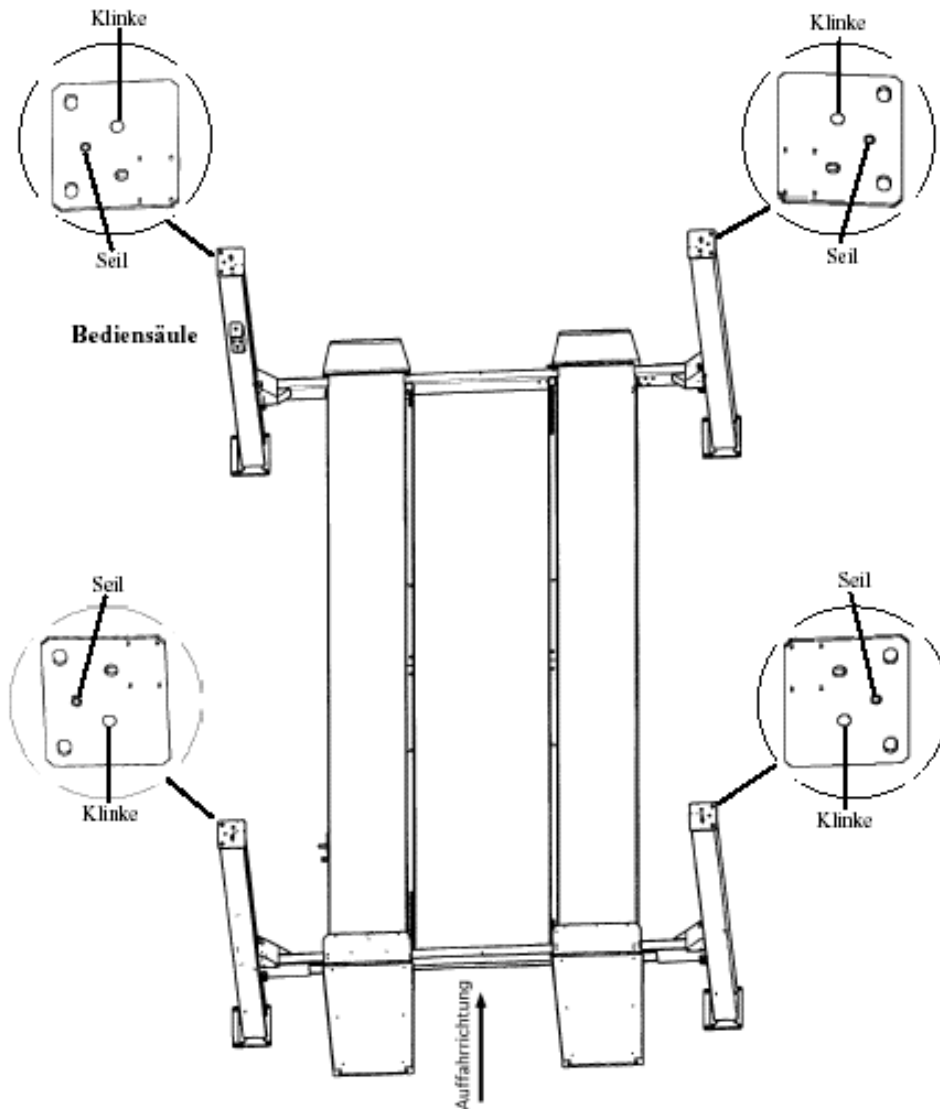




The operating unit is not connected when the lift is delivered.
The-conductor bunch is coming from the rail.
Put the cable into the bolt connection at the top of the operating unit.

1. Open the operating unit.
2. Connect the electrical cable (with 7 leads) as following.
Described with the operating unit:
- Every lead of the cable has number on the side.
Put the cable in the numerated part and fasten it.
3. Cable No. 6 and No.7 are not needed.
4. Cable No. 5 connect it with the press button.
Close the cover.

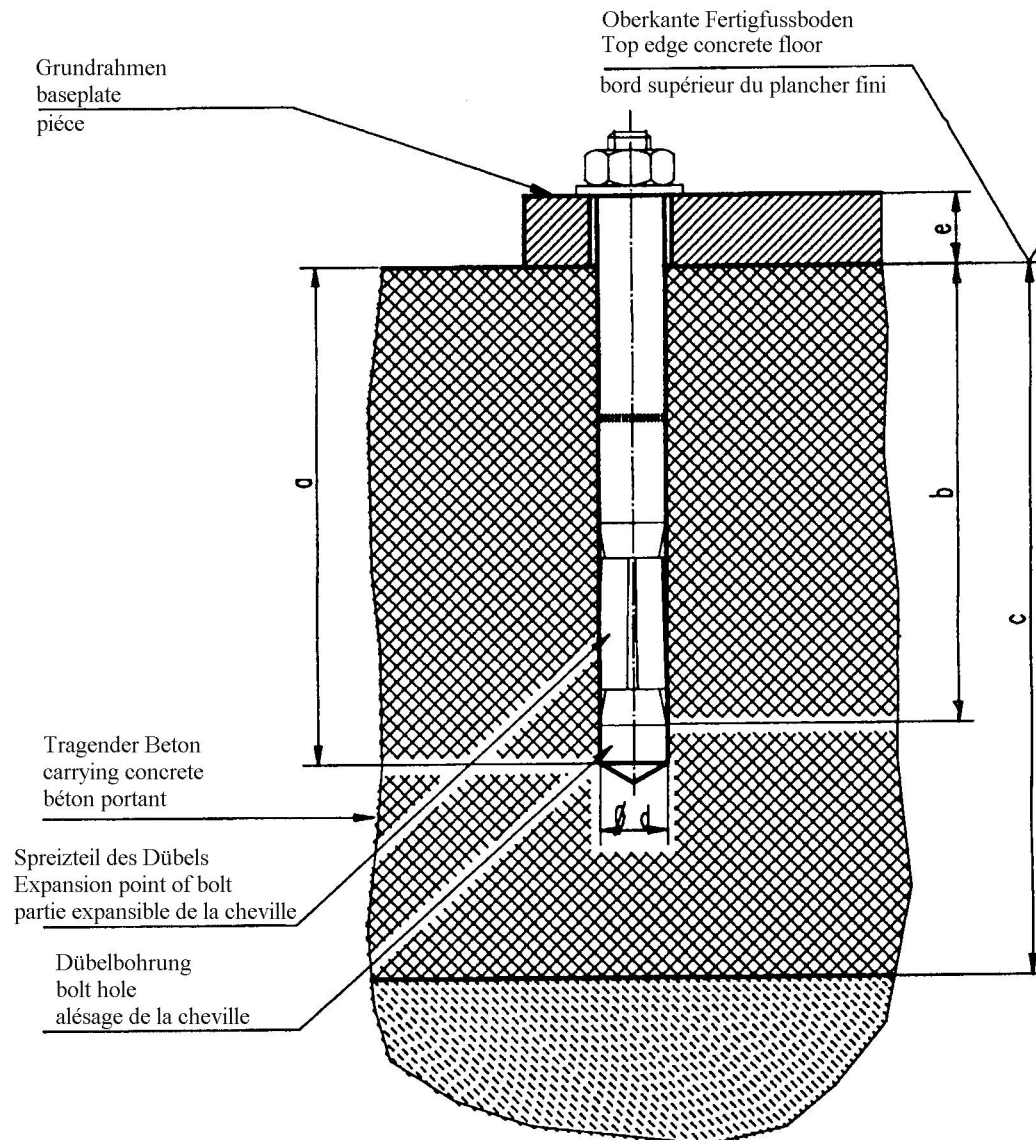
9.7 Position of the columns



Klinke = ratchet
Seil = rope
Auffahrriichtung = drive-on direction

Choice of the dowel length w/o floor pavement or tile surface

BM10-15



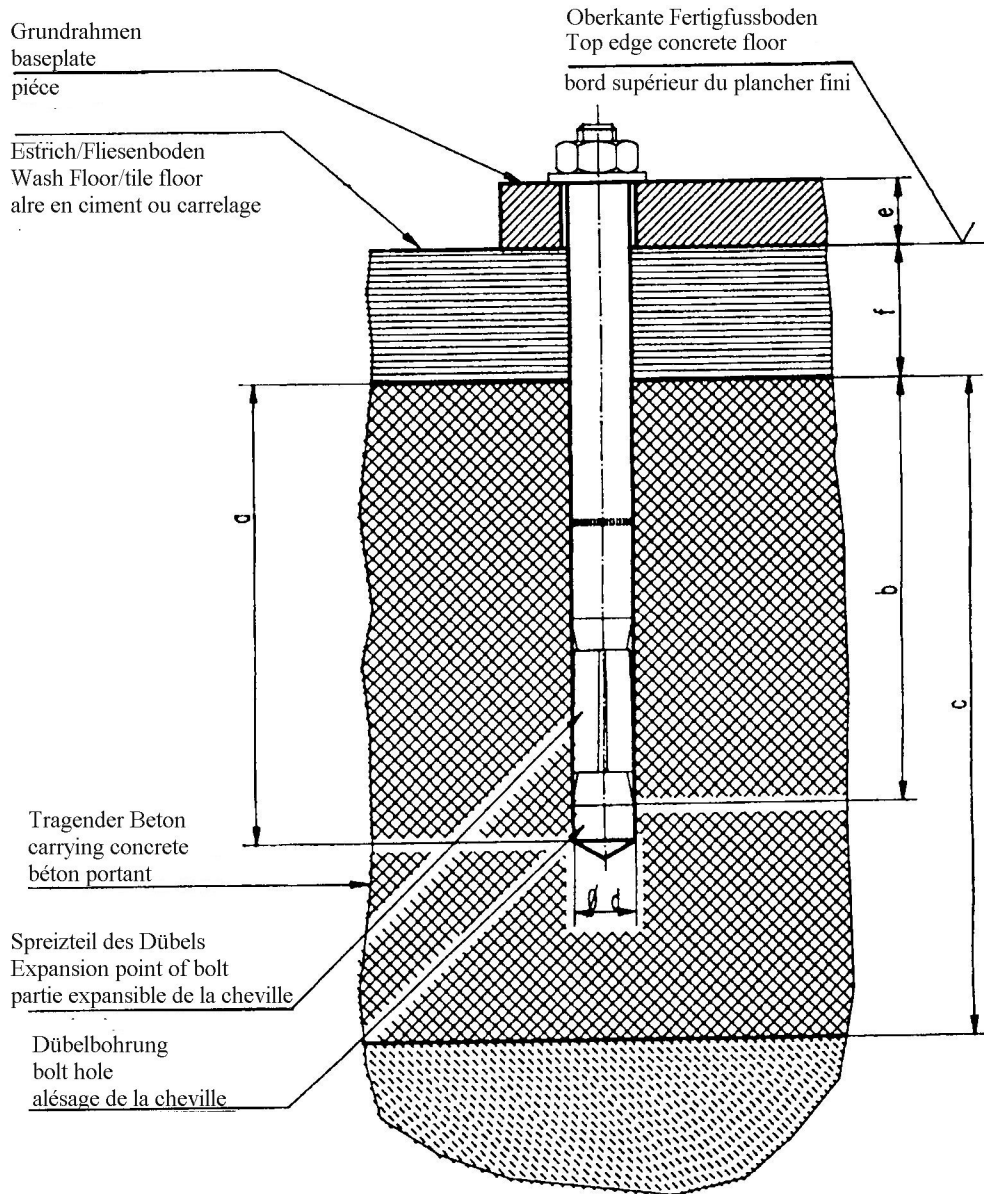
Liebig-dowels

Dowel type	BM10-/70/40
Drilling depth	a 85
Min. anchorage depth	b 70
Thickness of concrete	c min.140(*)
Diameter of bore	d 15
Thickness of the lift-pieces	e 0-40
Number of dowels	X
Starting torque	40

(*) minimum thickness of concrete by using the mentioned dowels. Otherwise, observe the regulation of the foundation plan.

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

choice of the dowel length with floor pavement or tile surface



Liebig-dowels

Dowel type		BM10-15/70/65	BM10-15/70/100	BM10-15/70/140
Drilling depth	a	85	85	85
Min. anchorage depth	b	70	70	70
Thickness of concrete	c	min.140(*)	min.140(*)	min.140(*)
Diameter of bore	d	15	15	15
Thickness of the lift-pieces	e	40-65	65-100	100-140
Number of dowels		x	x	x
Starting torque		40 Nm	40Nm	40Nm

(*) minimum thickness of concrete by using the mentioned dowels. Otherwise, observe the regulation of the foundation plan.

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

First security check before installation



complete and leave in this manual

Serial-no.: _____

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"/>
Function key switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function limit switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition/Function Ramps.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function override switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque of the dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition operating unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition surface piston rod	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function flabby switch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-STOP.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition ratchets.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition slide-guidance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition plugs.....	<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:

Date of repair:
signature of the operator

(Use another form for verification!)

Regular security check



Complete and leave in this manual

Serial-no.: _____

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"/>
Function key switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function limit switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition/Function Ramps.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function override switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque of the dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition operating unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition surface piston rod	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function flabby switch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-STOP.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition ratchets.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition slide-guidance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition plugs.....	<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:

Date of repair:
signature of the operator

(Use another form for verification!)

Regular security check



Complete and leave in this manual

Serial-no.: _____

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"/>
Function key switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function limit switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition/Function Ramps.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function override switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque of the dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition operating unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition surface piston rod	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function flabby switch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-STOP.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition ratchets.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition slide-guidance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition plugs.....	<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:

Date of repair:

.....
signature of the operator

(Use another form for verification!)

Regular security check



Complete and leave in this manual

Serial-no.: _____

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"/>
Function key switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function limit switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition/Function Ramps.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function override switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque of the dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition operating unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition surface piston rod	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function flabby switch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-STOP.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition ratchets.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition slide-guidance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition plugs.....	<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:

Date of repair:

.....
signature of the operator

(Use another form for verification!)

Regular security check



Complete and leave in this manual

Serial-no.: _____

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"/>
Function key switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function limit switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition/Function Ramps.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function override switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque of the dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition operating unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition surface piston rod	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function flabby switch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-STOP.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition ratchets.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition slide-guidance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition plugs.....	<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:

Date of repair:
signature of the operator

(Use another form for verification!)

Regular security check



Complete and leave in this manual

Serial-no.: _____

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"/>
Function key switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function limit switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition/Function Ramps.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function override switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque of the dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition operating unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition surface piston rod	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function flabby switch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-STOP.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition ratchets.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition slide-guidance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition plugs.....	<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:

Date of repair:
signature of the operator

(Use another form for verification!)

Extraordinary security check



Complete and leave in this manual

Serial-no.: _____

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"/>
Function key switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function limit switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition/Function Ramps.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition automotive lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function override switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque of the dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition operating unit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition surface piston rod	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Closeness of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function flabby switch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-STOP.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition ratchets.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function/condition slide-guidance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition plugs.....	<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:

Date of repair:
signature of the operator

(Use another form for verification!)