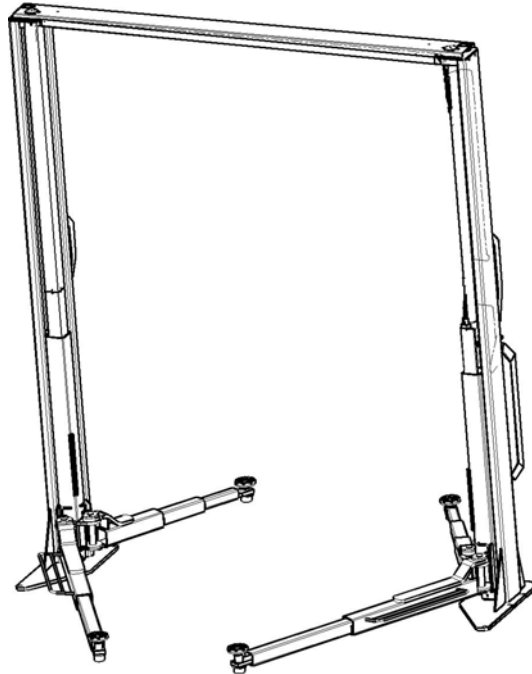


# SPL 4000(SPL2.40)

Automotive Lift date: 07/2005

Manual date: 04.12.2007



## Operating instruction and documentation

Serial-number:.....

Retailer address / phone



# Nussbaum

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Fax: +49(0)7853/8787//E-Mail:info@nussbaum-lifts.de//http://www.nussbaum-lifts.de

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## Foreword

Nußbaum-Lifts are a result of long-standing experiences.

The high quality and the superior concept guarantee them reliability, a long lift time and the economic business.

To avoid unnecessary damages and dangers, read the operating instruction attentive and observe the contents.

Another or the described purpose going out use is not valid when not as agreed.

This is valid particularly for climb and go.

***Otto Nußbaum Company is not liable for from it resulting damages. The user carries the risk alone.***

## For the use belonged:

- to observe all the notice in the operating instruction and
- the following of the inspection and maintenance work and the prescribed tests.
- The instruction for use have to be observed by all persons working with the lift.
- Especially the chapter "Safety/accident Prevention" has to be observed.
- In addition to the safety remarks of the instructions for use the regulations and instructions being valid at the place of operation have to be considered.

## Obligations of the operator:

The operator is obliged to allow only those persons complying with the following requirement to work at the unit

- being well acquainted with the basic regulations concerning labour safety and accident prevention and being trained to operate the unit.
- having read and understood the chapter concerning safety and warning instructions and confirmed that by their signature.

## Dangers when operating with the lift:

The Nußbaum-Lifts are designed and built according to technical standard and the approved regulations for technical security. Yet, danger for body and life of the operator may turn up when using the lift inexpertly.

## The lift must only be operated :

- for its appropriate use
- in unobjectionable condition concerning technical security.

## Organising requirements

- The instructions for use are constantly to be kept at the place of operation being at hand 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 directed.
  - Safety- and danger alert operation of personal is occasionally and by observing the instructions for use to be controlled.
  - As far as required and ordered by regulations personal protective equipment is to be used
  - All safety- and danger-hints at the lift are to be observed!
  - Spare parts must comply with technical requirements laid down by the manufacturer. This is only warranted with original parts.
- Consider time intervals given or fixed in instructions for use for repeated tests/inspections.

## Maintenance works, remedy of faults and disposal

- Fixed Adjusting-, maintenance- and inspection works and time intervals including Details for exchange of parts/part components as mentioned in the instructions for use are to be adhered.  
These works must only be carried out by expert personal.
- After maintenance- and repair works loose screw connections 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 injuries of persons or things if these injuries are caused by one or by some 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 or do not work correctly or are not installed correctly.
- Not to follow the regulations of the operating instruction concerning transport, storing, installation, initiation, operation and maintenance of the lift.
- Changes of the construction of the lift without asking the producer.
- Changes of important adjustments of the lift (e.g. driving elements, power rating, motor speed, etc)
- Wrong or incorrect maintenance.
- Catastrophes, acts of God or external reasons.



**Filling out and undersigned and copying this sheet and send the original to the lift manufacturer. The copy remains 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:..... 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)

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

Automotive Lift date: 07/2005 / Manual date: 04.12.2007

## Record of handing over

The automotive lift SPL 4000 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 from an erector of 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 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 singular, felt this documentation contains forms. The forms should be used to document the checks. They should not be removed from this documentation.

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

### 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 of the lift. They are called experts and competent person in this document.

**Experts** are persons (for example 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 person** are persons who have acquired adequate knowledge and experience with automotive lifts. They took part in training from the lift-manufacturer (servicing technicians of the manufacturer or dealer, are competent)

### 1.2 Information of Warning

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 cautions against possible damage to the automotive lift or other material defects in case of inexpert handling .***



***Attention! This sign indicates for 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 SPL 4000 is a lifting mechanism for lifting motor vehicles with a laden weight of up to 4000 kg. The max. Load distribution is 2:1 in or against drive-on direction.

The automotive lift is only designed for servicing vehicles. It is not allowed to carry persons with the lift.

It's not allowed to install the standard-automotive lift in a hazardous location or washing bays.

### 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 Attestation of conformity

# Nussbaum



**Konformitätserklärung**

Declaration of Conformity

Déclaration de conformité

Declaración de conformidad

Dichiarazione di conformità

gemäß Maschinenrichtlinie 98/37/EG Anhang II.



**OTTO NUBBAUM GmbH & Co. KG**

Korker Str.24

D - 77694 Kehl-Bodersweier

Hiermit erklären wir, daß die Hebebühne, Modell ...  
Hereby we declare that the lift model ...  
Déclare par la presente que le pont elevateur modèle ...  
Por la presente declara, que el elevador modelo ...  
Con la presente dichiariamo che il ponte sollevatore modello ...

**Typ: SPL 4000 (2.40 SPL)**

Seriennummer: \_\_\_\_\_

in Übereinstimmung mit den folgenden EG – Richtlinien und harmonisierten Normen gefertigt wurde  
was manufactured in conformity with EC directives and the harmonized norms  
fabriqué en conformité avec les directives européennes suivantes et selon les normes harmonisées en vigueur.  
producido de acuerdo a las siguientes reglas de la Comunidad Europea y normas armonizadas.  
é stato costruito in conformità con le direttive CE e le relative norme armonizzate

- 73/23/EWG	Niederspannungsrichtlinie in der gültigen Fassung
- 89/336/EWG	EMV- Richtlinie in der gültigen Fassung
- EN 1493	Fahrzeug- Hebebühnen
- EN 60204.1/2	Sicherheit von Maschinen – Elektrische Antriebe

Prüfinstitut – Certification institute  
Organisme certificateur – Ente certificatore

**CE 0044 (RWTÜV)**

Registrier Nr. – Registered No.  
Enregistrement N° - Registrazione Nr.

**04 205-2740/98**

*Robswen 31.03.04*

Ort, Datum

Otto Nußbaum GmbH & Co. KG  
Korker Straße 24  
77694 Kehl-Bodersweier  
0 78 53 7 833-0  
i.A. *Thomas Hassler*  
Thomas Hassler

## 3 Technical Information

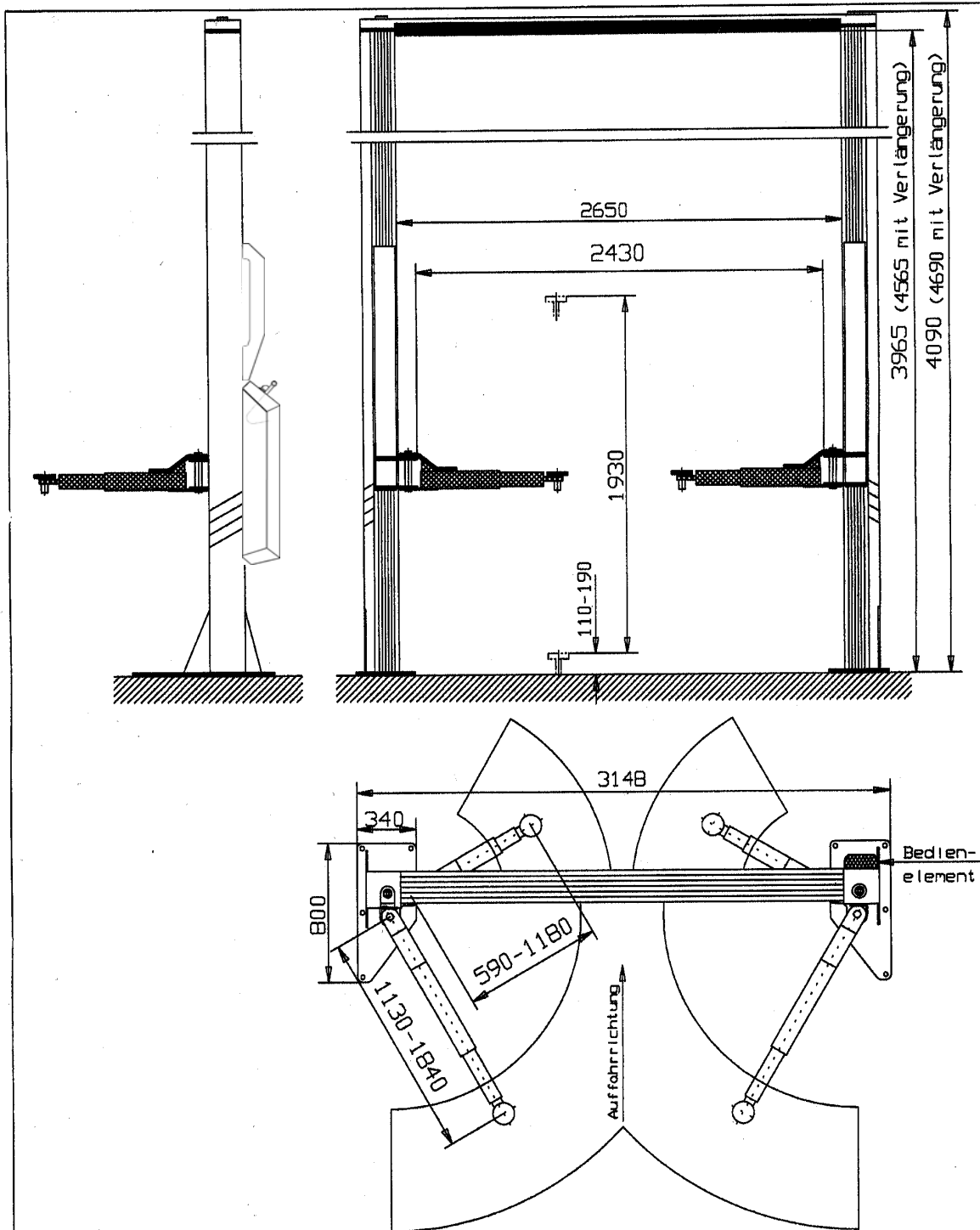
### 3.1 Technical ratings


Capacity	4000 kg / 9000 lbs
Load distribution	max. 2:1 in or against the drive on direction
Lifting time	approx. 30 sec
Lowering time	according to the position of the lever
Lifting height	max. 1820 mm long/1740mm short
Line voltage	3~/N+PE, 400V, 50 Hz
Control voltage	24 V
Power rating	1,5 kW
Motor speed	1500 rotation/min
Hydraulic pump	4,2 cm <sup>3</sup> /rotation
Hydraulic pressure	approx. 220 bar
Pressure control valve	approx. 240 bar
Oil tank	approx. 10 liter
Sound level	≤ 75 dB (A)
Connection by customer	3~/N+PE, 400V, 50 Hz fuse T16A (time-lag fuse) observe your state regulations

### 3.2 Safety device

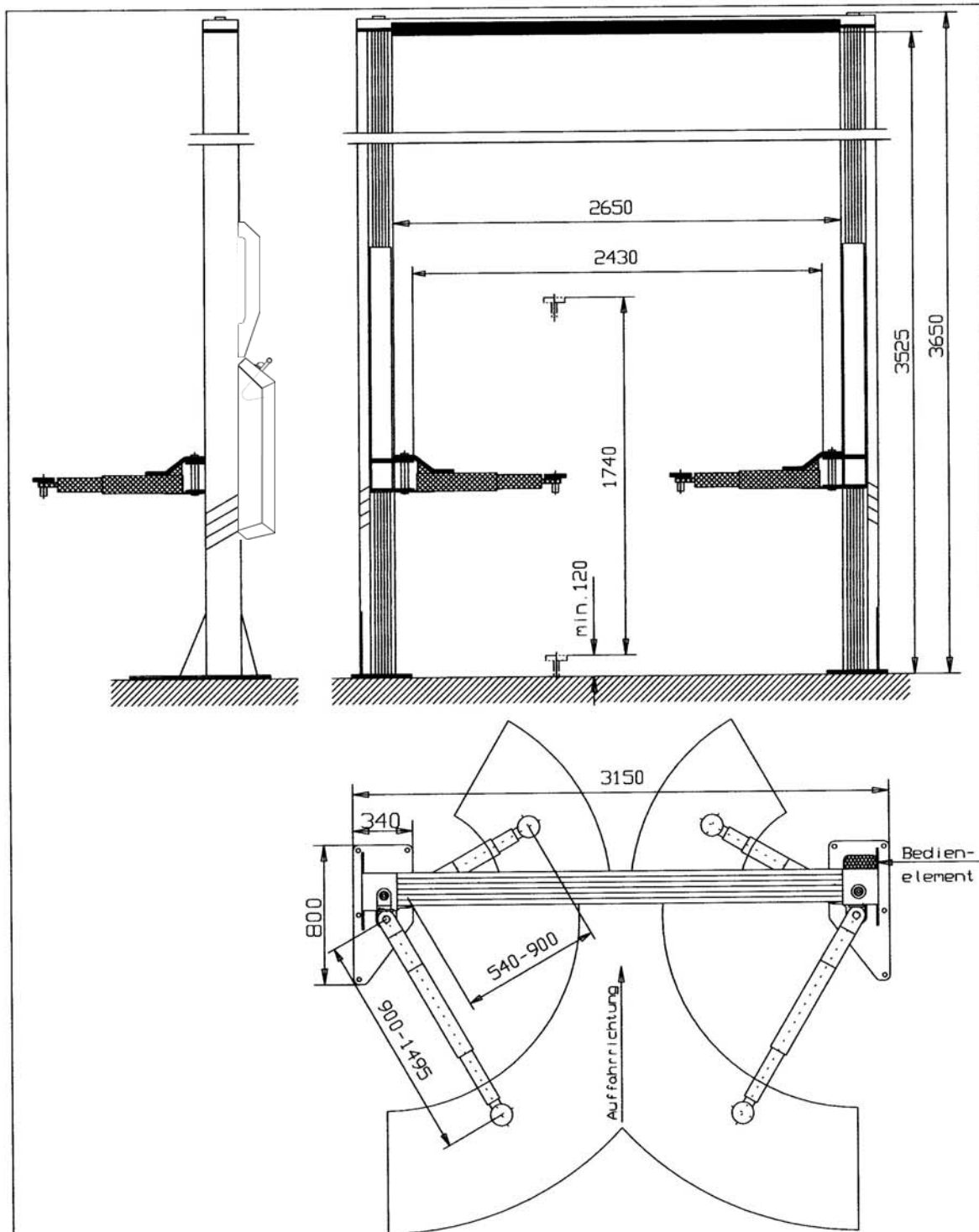
1. Safety device at the carrying arms.  
Safety device against unintentional movement.
2. Equalization ropes  
Safety device against inequality of the load.
3. Lockable main switch  
Safety device against unauthorised operation
4. Foot-protection at the arms  
Safety device to avoid crushing
5. Top limit switch  
Safety against collision with the vehicle
6. Optional: additional top limit rope  
Safety against collision with the vehicle
7. Press button  
If not pressing the button any more, the lift stops the movement.
8. Safety ratchets  
Safety device against unintentional lowering

### 3.3 Data sheet 4090 mm (with extension)



SPL 4000 Universal Tragarme		 TEL 07853/899-0 FAX 07853/8787 www.nussbaum-lifts.de 77694 KEHL-BODERSWEIER
09.04.03 // M.G.	6055-3 EINBAU	

## 3.3.1 Data sheet (3650 mm)



Power-Lift SPL 4000

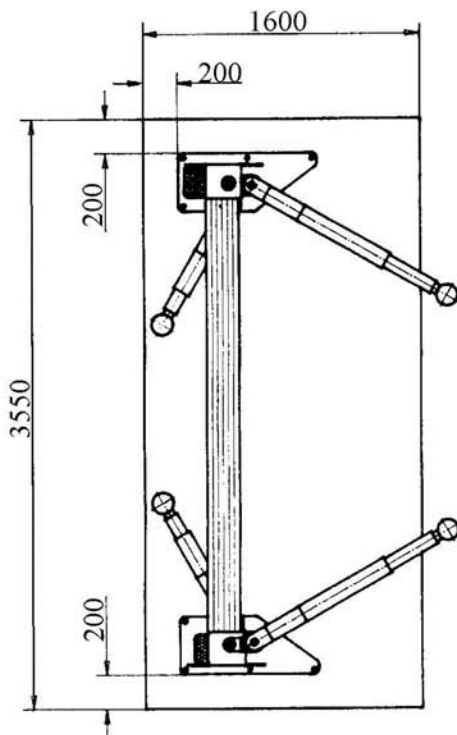
# Nussbaum

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www.nussbaum-lifts.de  
77694 KEHL-BODERSWEIER

03.12.03 // M.G

0983-5 EINBAU

## 3.4 Foundation diagram

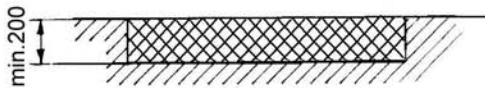


Thickness of the concrete: 260mm  
Observe the regulations of the Dowel Manufacturer  
Concrete quality min. C20/25 normal reinforcing  
foundation base: frost protected floor!

We point out the minimum requirement of the foundations in our plans. The condition of the local environment (for example: ground under the foundation) is not our responsibility. If necessary an architect must be consulted.

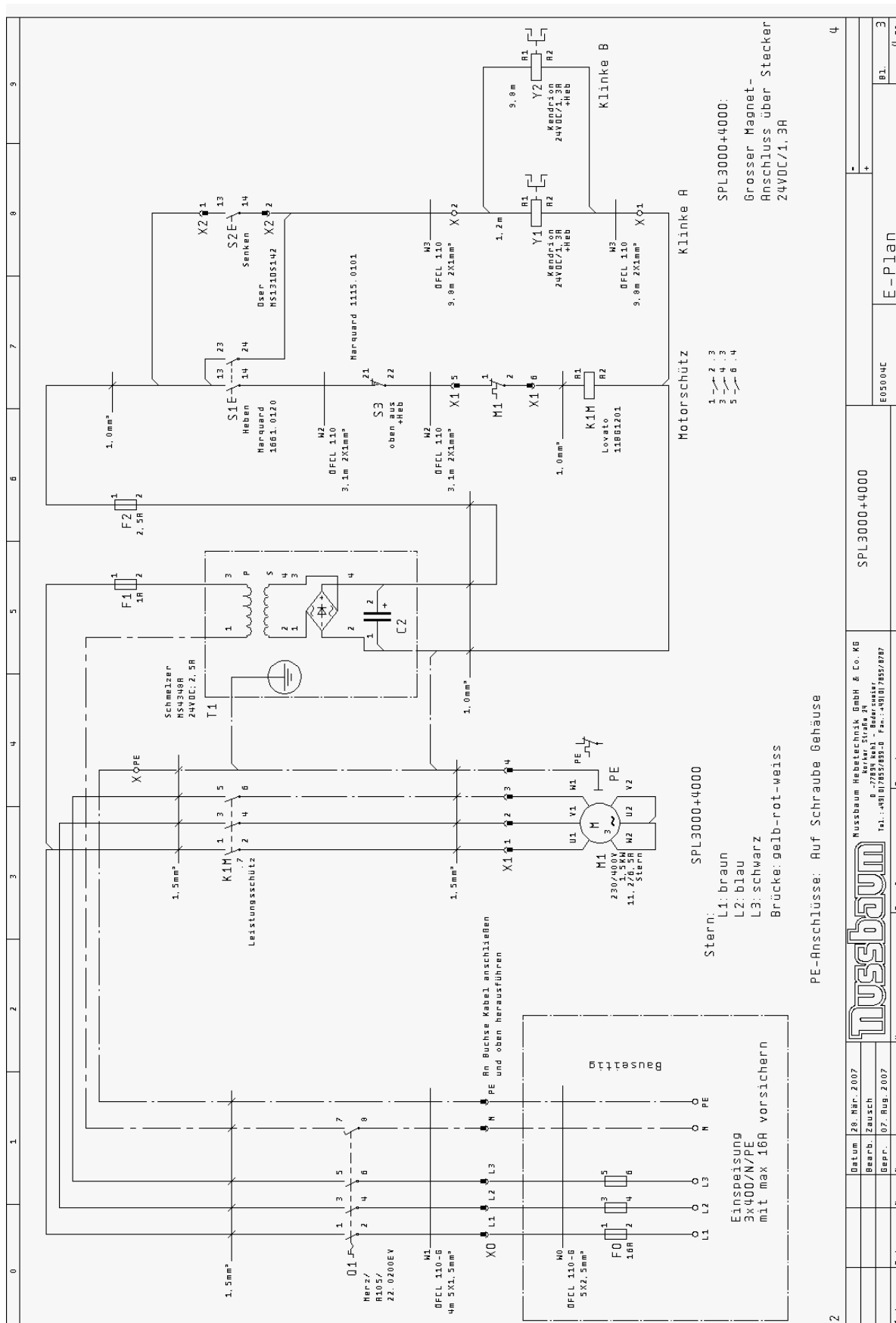
Betondicke: min: 200  
Beachte die Bestimmungen der Dübel-Hersteller  
Betonqualität: min. C20/25 normal bewehrt

Der Aufstellplatz muß planeben sein.  
Fundamente im freien oder in Räumen,  
in denen mit winterwitterung oder Frost  
zu rechnen ist, sind frosttief zu gründen



Wir weisen in unser Plänen auf die Mindestanforderung des fundamentes hin. Jedoch der zustand der örtlichen Gegebenheiten (z.b. Untergrund Aufbau auf Decke etc.) obliegt nicht in unserer Verantwortung. Im Bedarfsfall ist ein Architekt, Statiker zu kontaktieren.

### 3.5 Electrical diagram drawing (Standard 3x400V)



Änderung	Datum	Name	Norm	Erst. f.	Erst. d.
	28. Mär. 2007				
	Bearb. Zausch				
	Bearb. 07. Aug. 2007				
<b>Nussbaum</b>					
Nussbaum Hebeltechnik GmbH & Co. KG Kerkerstraße 24 D-72764 Bad Rappenau Tel.: +49 0 71 7852400-0 Fax: +49 0 71 7852477					
SPL3000+4000				E-Plan	
				E05004C	
				Bl. 3	
				Bl. 4 Bl.	

## Electrical Parts List

M1	Motor	992463
F1	Fuse	9951863
F2	Fuse	990705
S1	Button "Lifting"	990334
S2	Button „Lowering“	990366
K1M	Motor Contactor	990842
S3	Top Limit Switch	990322
Y1	Magnet Coil	109503
Y2	Magnet Coil	109503
T1	Transformer	991002
Q1	Main Switch	9951257
X0	Jack / Plug	990407 + 990408
X1/2	Jack / Plug	990407 + 990408
X	Strip Terminal	995205 + 9950189

### 3.6 Instruction for assembly to the change of 3x400V on 3x230V



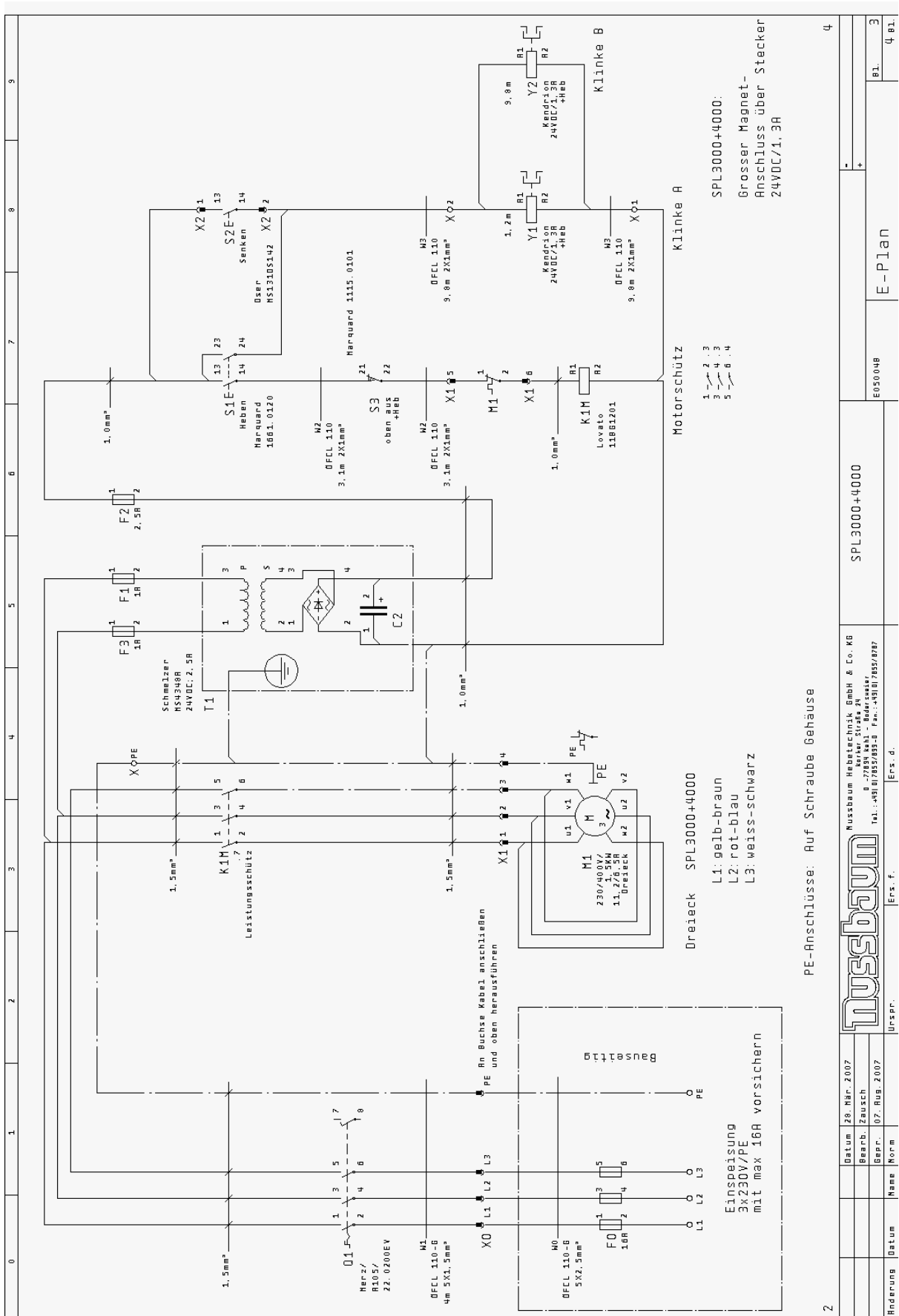
**SPL 4000- hydraulic unit with option:**

**We point out that reconnection may be accomplished only by an electrical specialist!**

1. The controller housing is from the aggregate to loose (1 screws). The front cover is to be removed. Afterwards can be begun with the change of wiring.
2. The light blue wire is to be taken off from the transformer. The prepared black wire, of safety device F3, is to be attached to the transformer.
3. The engine is from star on delta connection to re-wire (s.g. also the circuit diagrams in addition). It is the star bridge: to isolate yellow-red-white.  
At the engine plug is: X1=1 yellow with brown X1=2 red with blue X1=3 white also black to crimp.
4. Subsequently, everything is to be built again together in reverse order.

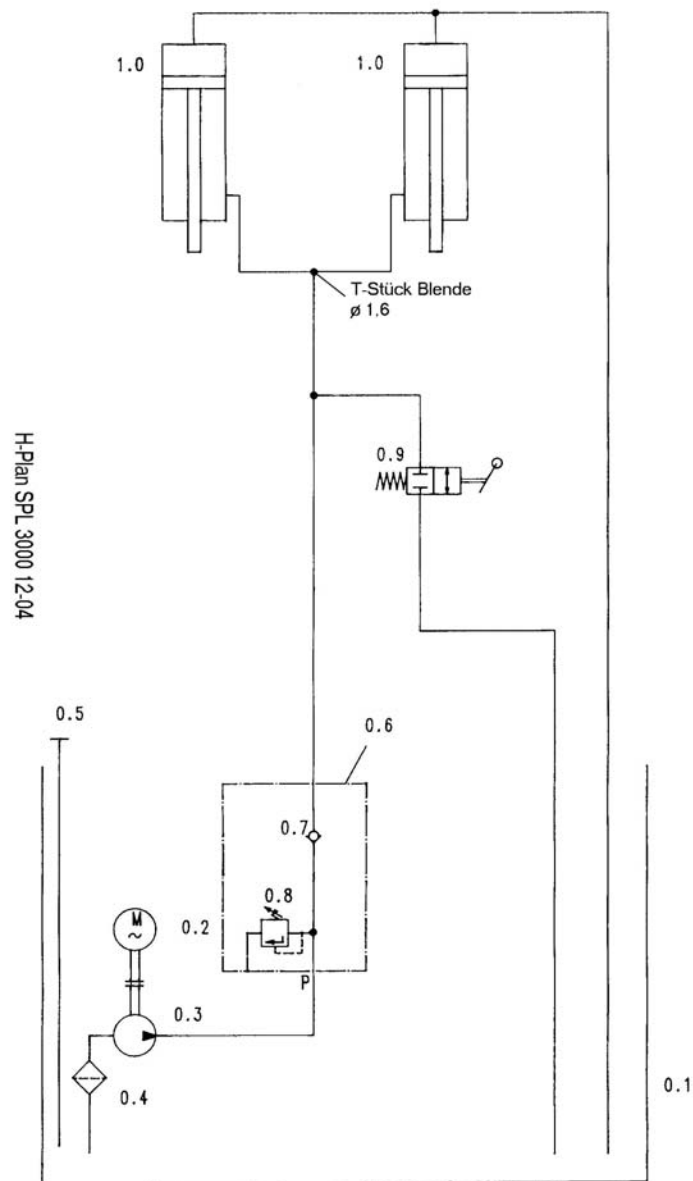
**Attention! Please see the next Page!**







## 3.7 Hydraulic diagram drawing



### Hydraulic parts list

0.1	Oil tank	
0.2	motor	992463
0.3	gear pump	1BK7D6.7Q
0.4	Oil filter	980012
0.5	Oil level gauge	980098
0.6	Hydraulic block	230SPL01053
0.7	Holding valve	980480
0.8	Pressure relief valve	232NSTL02082
0.9	Ball valve	1BKHDN8/10L
1.0	Hydraulic cylinder	

## 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 exceed 4000 kg for the automotive lift.
- 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.
- Check the centre of gravity of the vehicle if heavy parts (e.g. the motor) are removed.
- If heavy parts must be removed (motor) the centre of gravity will change. Secure the vehicle before removing parts to avoid the possibility of the vehicle becoming insecure.

## 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!**

Pic. 1: Operational control



Pic 1:  
A button "lifting"  
B lever "lowering" + button "unlocking the ratchets"  
C main switch

## 5.1 Lifting the vehicle

- Drive the vehicle onto the middle of the lift.
- Secure the vehicle from rolling, put into gear, and apply the hand brake.
- Before positioning the arms under the vehicle, press the button; “unlocking the arms” and the pneumatic safety device will open.  
Slew the carrying arms under the vehicle and position the pads at the points specified by the vehicle-manufacturer. The arms will lock, if the button “lifting” is pressed.
- Determine the centre of gravity. This point must be located in the middle of the lift. If necessary, adjust the lifting-pads until the vehicle is in the raising condition, that is horizontally level.
- Check all the danger points of the lift and ensure that there are no objects or people in the working area around the lift or on the lift.
- Switch on the main switch.
- Raise the vehicle. Press the button “lifting” until the wheels are free. Once the wheels are free, check the safety position of the vehicle on the pads again.



***Closely observe how the vehicle is positioned on the lifting pads. If the vehicle is not correctly positioned on the pads the vehicle is not secure and the risk exists that the vehicle may fall.***

- Raise the vehicle to the required working height. Press the button “lifting”.
- Observe the complete process.

## 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.
- Lower the lift to the required working height or to its lowest (or fully collapsed) position. Press the button “lowering“. The lift will rise approx. 1 mm (safety function) before it starts to lower.
- 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 “lowering” 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 (fully collapsed) position.
- Observe the complete lowering process.
- Once the arms are in the lowest position, press the button “unlocking the arms” and remove the arms from under the vehicle.
- Drive the vehicle off the lift.

## 5.3 Lowering the lift in the ratchets

- 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.
- Pull only the lever slowly down.

## 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.

<b>Problem: Motor does not start!</b>	
Potential causes:	Repair failures:
<i>No power supply</i> <i>The main switch is not switch on</i> <i>Defective fuse</i> <i>The feed line is cut</i> <i>Thermo fuse is active</i> <i>Motor is defective</i> <i>Top limit switch is pressed or defective</i>	<i>Check the power supply</i> <i>Switch on the main switch</i> <i>Change the fuse</i> <i>Check it</i> <i>Let it cool down</i> <i>Call the technical service</i> <i>Check top limit switch</i>

<b>Problem: Motor starts, lift does not lift!</b>	
Potential causes:	Repair failures:
<i>The vehicle is too heavy</i> <i>The oil level is too low</i> <i>Defective hydraulic valve</i> <i>Gear pump is defective</i> <i>Leakage in the hydraulic system</i>	<i>Unload the vehicle</i> <i>Refills</i> <i>Call the technical service</i> <i>Call the technical service</i> <i>Check if leakage is present</i> <i>Call the technical service</i>

<b>Problem: the lift does not lower!</b>	
Potential causes:	Repair failures:
<i>An obstacle is restricting the lift from being lowered</i>  <i>Ball valve is defective</i> <i>Button „lowering“ is defective</i>	<i>Press button „Lifting“ until the obstacle is removed</i>  <i>Call the technical service</i> <i>Check the button</i>

<b>Problem: the lift is lowering without handling!</b>	
Potential causes:	Repair failures:
<i>Ball valve is defective</i>	<i>Call the technical service</i>

### 6.1 Lowering onto an obstacle

If the carrying arms are lowered on an object, the lift stops the lowering process. Press the button „lifting“ and raise the lift until the object can be removed.

## 6.2 Emergency lowering



***A emergency lowering is an intervention into the control of the lift and can be planned only by experienced expert.***

***The emergency lowering must be carried in this order. Otherwise a malfunction can lead it to damages or lead to danger for body and lives.***



***The emergency-lowering can only carry out, if the ratchets are not locked.***

- Press the button „Lifting“ until the ratchets are free.
- Remove the cover of the safety ratchets.
- Pull back the ratchets manually and fix it with suitable object (example: wire).
- 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.
- Pull the lever slowly down. The lowering process starts.
- Observe the complete process.
- Lower the lift in the lowest position.
- After the emergency lowering, the lift must shut down until the defective part has been changed.

## 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 and grease all moving parts. (bolts of the pads, slide ways, sliding blocks, carrying arms..)
- Check the condition of ropes. If torn wires are discovered, the complete rope set must be changed.
- Clean and check the function of the ratchet. Grease the surface with a multipurpose lipid.
- 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).

- Check the hydraulic hoses for leakage.
- Check the condition of ropes. If torn wires are discovered, the complete rope set must be changed.
- 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 the safety device of the lift.
- Check the rubber of the carrying arms and replace them if its necessary.
- Check all surfaces and repair if necessary.
- Damage to external surfaces, must be immediately repaired.  
If theses 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.
- Check the rolls and the equalisation ropes of the lift.
- Check the electrical parts.
- 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 Cleaning of the automotive lift

A regular and appropriate maintenance served the preservation of the lift.

It can be a prerequisite for claims at possible corrosion.

The best protection for the lift is the regular cleaning of dirt of all manner.

- Including this:

- de-icing salt
- sand, pebble stone, natural soil
- industrial dust of all manner
- water; also in connection with other environmental influences
- aggressive deposit of all manner
- constant humidity by insufficient ventilation

### How often must the lift be cleaned?

This is dependent on the use, of the working with the lift, of the cleanness of the workshop and location of the lift. The degree of the dirt is dependent on the season, of the weather conditions and the ventilation of the workshop.

Under bad circumstances it is necessary to clean the lift every week, but a cleaning every month can suffice.

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

- Do not use for cleaning a steam jet cleaning.
- Remove all dirt careful with a sponge if necessary with a brush.
- Pay attention that are no remains of the washing-up liquids on the lift after cleaning.
- Do not use aggressive means for cleaning the workshop floor and the automotive lift.
- A permanent contact with every kind of liquid is forbidden. Do not use any high pressure device 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 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 service the lift at this occasion.***

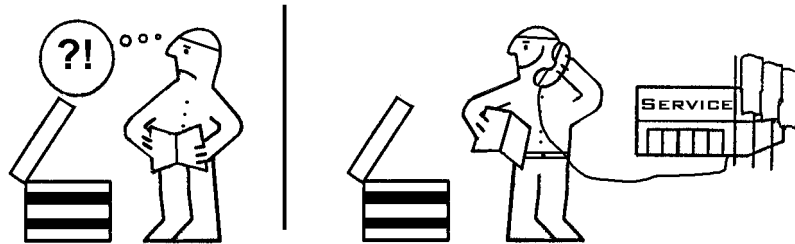




**After the construction of the lift has been changed (changing the lifting height or capacity for example) and after serious maintenance works (welding on carrying parts) an extraordinary security check must be performed by an expert.**

This manual contains form with a schedule for the security checks. Please use the adequate form for the 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 for the installation

- The installation of the lift is performed by trained technicians of the manufacturer or its distribution partner. If the operator can provide trained mechanics, he can install the lift by himself. The installation has to be done according to this regulation.
- The standard lift must not be installed in hazardous locations or washing areas.
- Before installation a sufficient foundation must be proved or constructed.  
An even installation place has to be provided. The foundations must be based in a frost resistance depth, both outside and indoors, where you must reckon with frost.
- An standard electrical supply 3~/N+PE, 400 V, 50 Hz has to be provided. The supply line must be protected with T16A (VDE0100 German regulation). The minimum diameter amounts to 2,5 mm<sup>2</sup>. (Pay attention to the tension of your state)
- All cable ducts have to be equipped with protective coverings to prevent accidents.
- After assembly of the lift, the protective grounding of the lift must be examined after International Electronical Commission (IEC) guidelines (60364-6-61) before first start-up by operators. Also an insulation resistance examination is recommended.

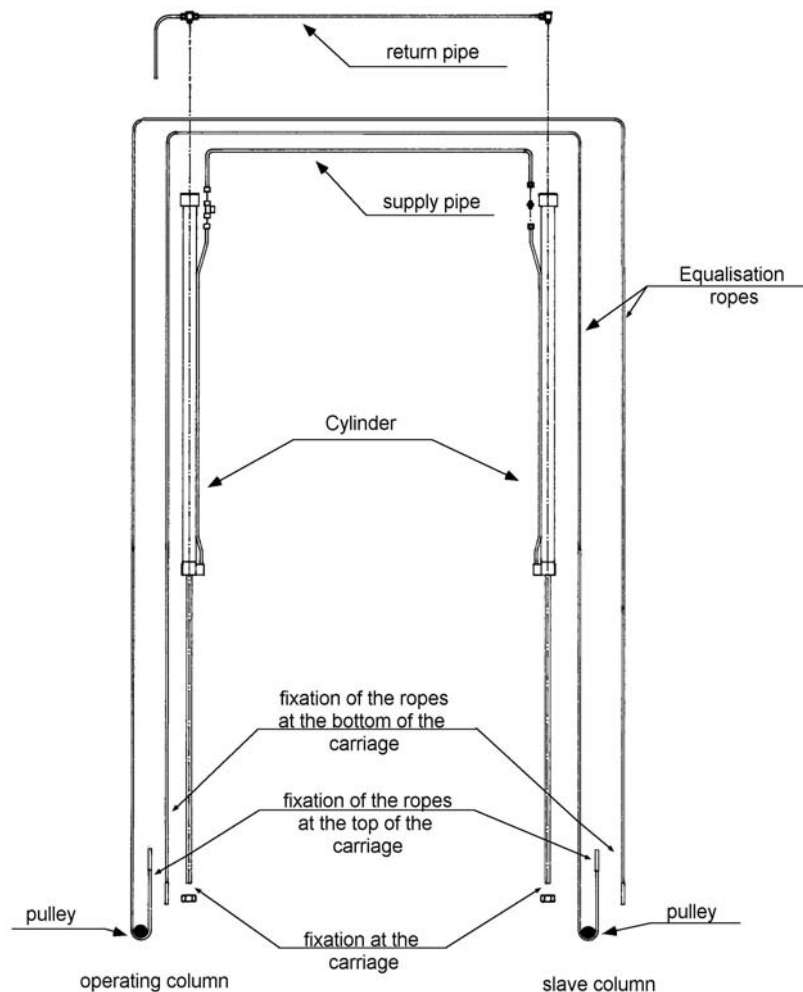
### 9.2 Erection and doweling of the lift

- Install the lift according to the data sheet and the foundation plan and line it up.
- Put both synchronising ropes over the rolls at the top and insert them from the upper side in column. (see pic. 3). Attention: The ropes must not be crossed!
- Connect hydraulic hose between the two columns. Don't fix connection at opposite side too tight and don't fasten the connection. Be sure that hydraulic hose doesn't hinder the course of the synchronising ropes.
- Put traverse topside on columns and fix it with enclosed cylinder screws and washers.
- The hydraulic cylinders of the opposite side was filled with oil. Before the working with the lift, connect the plastic tube at the cylinder-ground and at the tank. Connect the oil-return line (synthetic material) afterwards at both columns (see pic. 3)
- Check the position of the lift 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



recommend LIEBIG safety dowels or equal dowels of another manufacturer but pay-attention their regulation, with min. 200 mm concrete-thickness and a concrete-quality of min.C20/25, Before doweling check concrete floor with quality C20/25 if the concrete floor goes to the top edge of the floor. In this case the dowels have to be chosen according to picture 4. If the ground is covered with floor tiles, the dowels have to be chosen according to picture 5.

- Check line-up of the columns and look if they are vertical. If they aren't vertical correct with suitable bases.



pic 3:  
course of the ropes

Tighten the Dowels with a dynamometric key. Pay attention the regulation of the dowel manufacturer.



**Each Dowels must be tightened with a demanded torque, otherwise the normal function of the lift cannot be guaranteed**

- Connect power supply. The cable entry is at topside of operating column (standard version).
- Fill oil-tank with oil: viscosity 32 cst, hold-up: approx. 8 litre. After the fill in, the level of the oil must be between the lowest and the highest marking of the oil level gauge.
- Switch on the main switch.
- Press the button „Lifting“. Only one side of the lift is lifted. Raise the lift

until oil comes out of the loosen threaded joint at the topside of opposite column.

- Fasten the threaded joint at the top of opposite column.
- Load this carriage which has got a higher position (stand on it) and press simultaneously the button „Lifting“ . Only that carriage without load is lifted. That carriage must be lifted until the carriage at the operating side is 10 cm higher than the carriage at the opposite side.
- Dismount pulley at lower side in column (opposite side) by loosening the circlip. Lay loosen synchronising rope from topside round the pulley and remount pulley with rope.



**Secure the pulley with washer and circlip while installing it.**

- Insert synchronising rope from lower side in ratchet strip which is fixed at lower side of carriage. Insert thread bolt at end of the rope through bore-hole which is located at hang up of the rope topside at ratchet strip.
- Screw self-locking nut approx. 4 turns on thread bolt to fix the rope safely at carriage. Do not damage the piston rod.
- Load carriage of operating side (stand on it) and press the button „Lifting“. Only the opposite side of the lift is lifted.
- Lift the opposite side until the carriage of the operating side is lifted.
- Mount the second rope in the operating column as well.
- Fasten self-locking nuts at upper side in both carriages regularly until both ropes are tighten lightly. If the thread at upper side of carriage is too short, the self-locking nut at the other side carriage (lower side) must be fastened accordingly.
- Lower automotive lift to lowest position and lift it afterwards 500 - 600 mm. Both ropes must be tightened lightly. In any other case the self-locking nuts at the upper side on both carriages must be adjusted again.



***Pay attention that each of the two ropes is tightened regularly and that it is not too slack, otherwise exactly synchronisation can not be guaranteed. Pay attention that the ropes are not too tight, otherwise there is the possibility that the lift jerks, or that the lift is too slow while lowering. The ropes don't carry load. They must regulate an exactly synchronisation of the lift.***

- Install carrying arms (refer to data sheet), lubricate bolts and secure them with enclosure circlips at both ends.
- Test the function of the safety ratchet.
- Test the function (top limit switch) of the cover of the crossbeam.

### 9.3 Deaerate the hydraulic-system

- Lower the lift in the lowest position.  
Loose the thread joint at the lower side of the cylinder which must be deaerated. Raise the lift until oil comes out of the thread joint. Close the thread joint and fasten it.



***In case the lift jerks while the lowering there are two possibilities: the synchronising ropes are too tight or oil is in oil circulation (deaerate according to instruction ahead)***

## 9.4 Initiation



**Before the initiation a security check must be performed. Therefore use form: First security check.**

If the lift is installed by a competent person, he will perform this security check. If the operator installs the lift by himself, he has to instruct a competent person to perform the security check. The competent confirms the faultless function of the lift in the installation record and form for the security check and allows the lift to be used.



**Please send the filled installation record to the manufacturer after installation.**

## 9.5 Changing the installation place

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

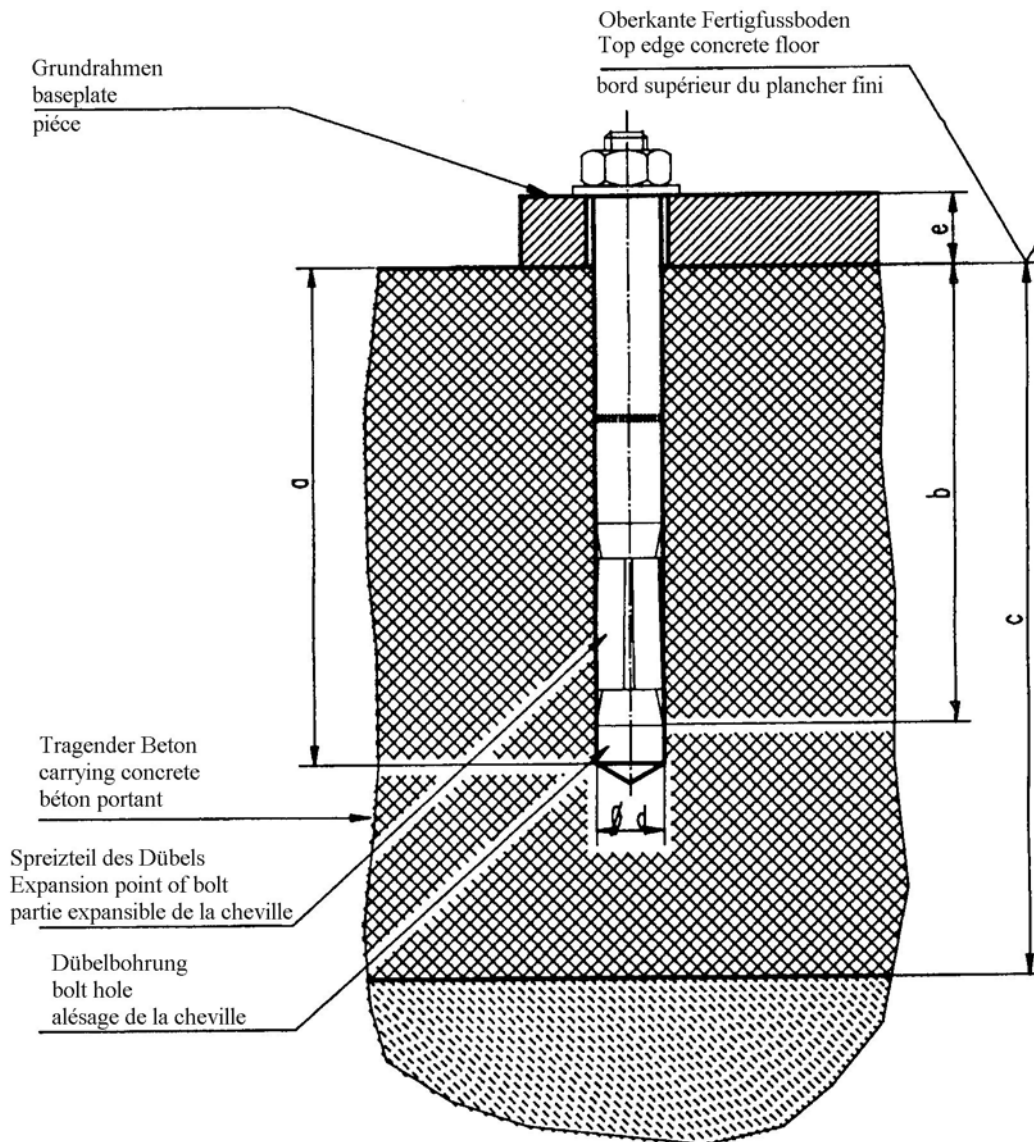
- Raise the lift on approx. 800 mm
- Switch off the main switch and lock it.
- Loose and remove the plug of the power supply.
- Loose and remove all the covers.
- Drain off the oil tank.
- Dismount the carrying arms.
- Dismount the ropes. Loose only the ropes at the bottom of the carriage.
- Loose the pulley at the base plate and remove the ropes.
- Dismount the electrical cable of the ratchet magnet of the slave column.
- Remove the plastic tube.
- Loose the hydraulic pipe between the cylinders.
- Dismount the crossbeam.
- Loosen the dowels.
- Install the lift in accordance with chapter 8 "Installation and Initiation"



**Use new dowels, the used dowels can not be used anymore.**



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



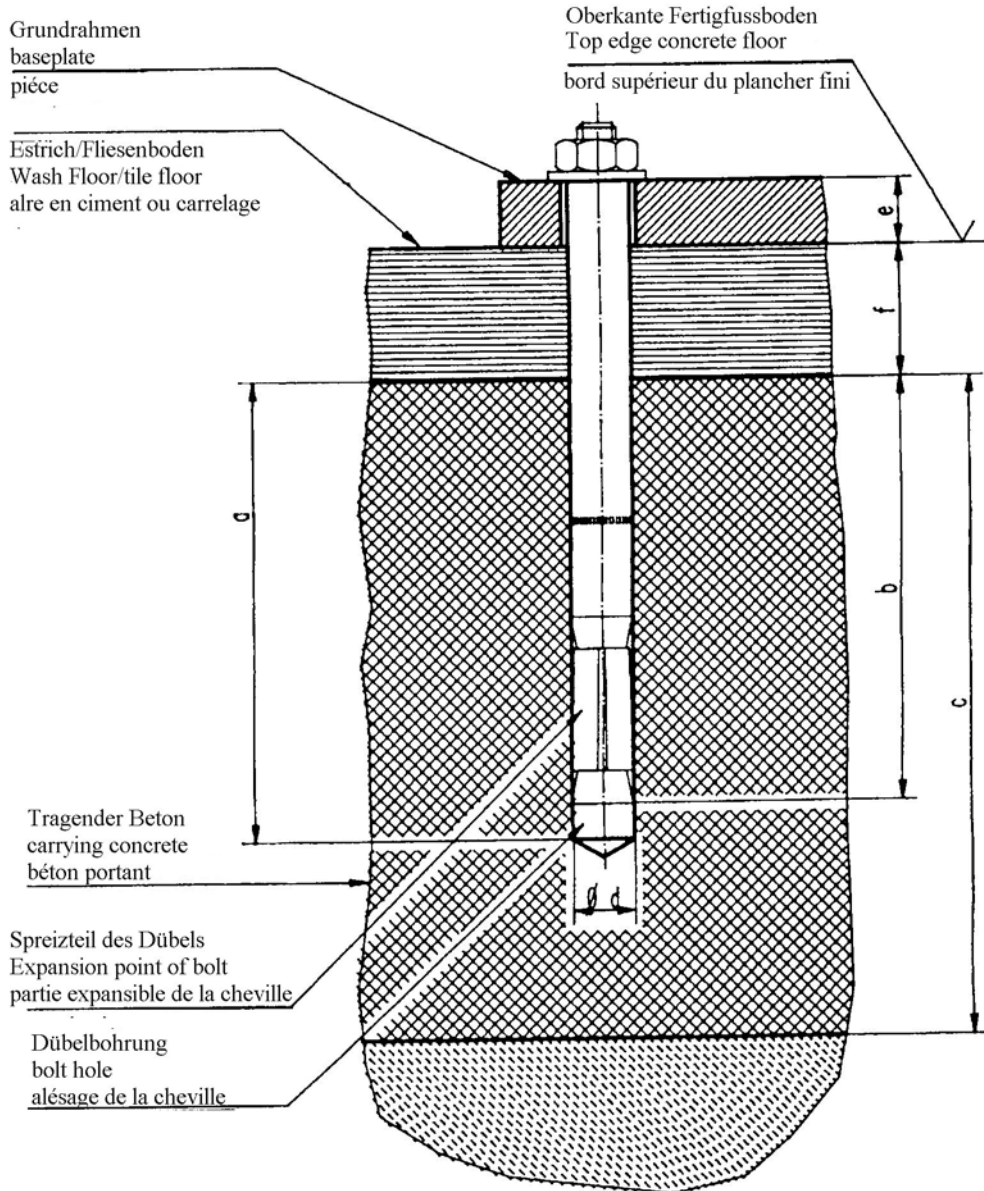
Liebig-dowels

Dowel type	BM12-20/80/40
Drilling depth	a 100
Min. anchorage depth	b 80
Thickness of concrete	c min.160(*)
Diameter of bore	d 20
Thickness of the lift-pieces	e 0-40
Number of dowels	12
Starting torque	70

**(\*) 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.**

Pic 5: choice of the dowel length with floor pavement or tile surface






### Liebig-dowels

Dowel type		BM12-20/80/65	BM12-25/80/100	BM12-20/80/140
Drilling depth	a	100	100	100
Min. anchorage depth	b	80	80	80
Thickness of concrete	c	min.160(*)	min.160(*)	min.160(*)
Diameter of bore	d	20	20	20
Thickness of the lift-pieces	e	40-65	65-100	100-140
Number of dowels		12	12	12
Starting torque		70 Nm	70Nm	70Nm

**(\*) 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

 Filling 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"/>	.....
Sticker 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"/>	.....
Main switch lockable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button “unlocking the ratchet”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function the lever “lowering”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function fixing of the carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Securing of the bolts.....	<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"/>	.....
Torque of the screws and dowels.....	<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 of the cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the welding.....	<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"/>	.....
Condition 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 equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the equalisation ropes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition rubber pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition concrete floor.....	<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

 Filling 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"/>	.....
Sticker 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"/>	.....
Main switch lockable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button “unlocking the ratchet”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function the lever “lowering”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function fixing of the carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Securing of the bolts.....	<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"/>	.....
Torque of the screws and dowels.....	<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 of the cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the welding.....	<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"/>	.....
Condition 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 equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the equalisation ropes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition rubber pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition concrete floor.....	<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



Filling 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"/>	.....
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Sticker 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"/>	.....
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Function fixing of the carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
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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"/>	.....
Torque of the screws and dowels.....	<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 of the cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the welding.....	<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"/>	.....
Condition of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
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Condition rubber pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition concrete floor.....	<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



Filling 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"/>	.....
Sticker 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"/>	.....
Main switch lockable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button “unlocking the ratchet”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function the lever “lowering”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
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Securing of the bolts.....	<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"/>	.....
Torque of the screws and dowels.....	<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 of the cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the welding.....	<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"/>	.....
Condition 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 equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the equalisation ropes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition rubber pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition concrete floor.....	<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



Filling 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"/>	.....
Sticker 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"/>	.....
Main switch lockable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button “unlocking the ratchet”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function the lever “lowering”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function fixing of the carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Securing of the bolts.....	<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"/>	.....
Torque of the screws and dowels.....	<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 of the cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the welding.....	<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"/>	.....
Condition 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 equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the equalisation ropes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition rubber pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition concrete floor.....	<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



Filling 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"/>	.....
Sticker 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"/>	.....
Main switch lockable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button “unlocking the ratchet”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function the lever “lowering”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function fixing of the carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Securing of the bolts.....	<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"/>	.....
Torque of the screws and dowels.....	<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 of the cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the welding.....	<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"/>	.....
Condition 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 equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the equalisation ropes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition rubber pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition concrete floor.....	<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



Filling 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"/>	.....
Sticker 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"/>	.....
Main switch lockable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button “unlocking the ratchet”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function the lever “lowering”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function fixing of the carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Securing of the bolts.....	<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"/>	.....
Torque of the screws and dowels.....	<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 of the cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the welding.....	<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"/>	.....
Condition 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 equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the equalisation ropes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition rubber pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition concrete floor.....	<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



Filling 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"/>	.....
Sticker 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"/>	.....
Main switch lockable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button “unlocking the ratchet”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function the lever “lowering”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function fixing of the carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Securing of the bolts.....	<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"/>	.....
Torque of the screws and dowels.....	<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 of the cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the welding.....	<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"/>	.....
Condition 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 equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the equalisation ropes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition rubber pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition concrete floor.....	<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

 Filling out and leave in this manual

Serial-number: \_\_\_\_\_

kind of check	all right	defect missing	ver- 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"/>	.....
Sticker 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"/>	.....
Main switch lockable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function button “unlocking the ratchet”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function the lever “lowering”.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Function fixing of the carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Securing of the bolts.....	<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"/>	.....
Torque of the screws and dowels.....	<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 of the cover.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the welding.....	<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"/>	.....
Condition 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 equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition of the equalisation ropes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition rubber pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition pulleys.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Condition concrete floor.....	<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!)